



Raleigh-Durham
Airport Authority



SUSTAINABILITY PROGRAM



Annual Report

Fiscal Year 2024/2025

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Acronyms

AAAE	American Association of Airport Executives
ACA	Airport Carbon Accreditation
AFY	Accounting Fiscal Year
ASHRAE	The American Society of Heating, Refrigerating and Air-Conditioning Engineers
Authority (the)	Raleigh-Durham Airport Authority
CAB	Customer Amenity Building
CO ₂ e	Carbon Dioxide Equivalent
DEMLR	Division of Energy, Mineral, and Land Resources
DEQ	North Carolina Department of Environmental Quality
ECR	Environmental Compliance Review
EMP	Energy Management Plan
EOC	Emergency Operations Center
EV	Electric Vehicle
FAA	Federal Aviation Administration
FIMS	Facility Improvement Measures
FY	Fiscal Year
GHG	Greenhouse Gas (Emissions)
GTC	Ground Transportation Center
HVAC	Heating, Ventilation, and Air Conditioning
Hz	Hertz
ICE	Internal Combustion Engine
kWh	Kilowatt hours
LED	Light Emitting Diode
LEED™	Leadership in Energy and Environmental Design
NC	North Carolina
PE3	Park Economy 3
SEER	Seasonal Energy Efficiency Rating
RDU	Raleigh-Durham International Airport
SMP	Sustainability Management Plan
US	United States
WELL	WELL Building Standard

From the President & CEO

On behalf of the Raleigh-Durham Airport Authority, it is my pleasure to present our Annual Sustainability Report for Fiscal Year 2024/2025. We are proud to share our progress in integrating sustainable practices into the development and operation of Raleigh-Durham International Airport.

This report provides an overview of our efforts organized by the nine focus areas of the Sustainability Management Plan we adopted in 2023. Through our plan and our Sustainability Policy, we are guided to weave sustainability into all of our planning, design, construction, operations, maintenance and business processes at RDU.

To do that, we consider the four pillars of sustainability and balance them in our decision-making efforts. These pillars include environmental stewardship, economic viability, operational efficiency and social responsibility. With this approach, we are continuously improving our sustainability practices as the airport grows and evolves to meet our region’s travel needs.

Striking the balance between environmental, economic, operational and social impacts is especially important as we embark on a \$2.5 billion capital campaign over the next 10 years. A discussion of our plans to integrate sustainability into our major capital projects is included in this report.

Notably, we are pleased to announce that the Airport Authority’s Park Economy 3 Expansion project received Platinum Envision verification from the Institute for Sustainable Infrastructure this year. This is the third project in North Carolina to earn Envision verification and the first in the state to achieve Platinum status. It is also the first airport project in North Carolina to receive the award.

We are also hard at work developing our Energy Management Plan and Greenhouse Gas Emissions Reduction Roadmap. These two important initiatives will lay the groundwork for improving energy efficiency and resiliency and reducing emissions in the years ahead.

Putting the Authority’s sustainability program into action has truly been a team effort. I would like to express my appreciation to our Board of Directors, staff, and business and community partners for contributing to our sustainability efforts and supporting our mission of delivering a world-class airport experience at RDU.

Sincerely,
Michael J. Landguth

Michael J. Landguth, A.A.E.
President & CEO
Raleigh-Durham Airport Authority



About the Raleigh-Durham Airport Authority

The Raleigh-Durham Airport Authority (Authority) is responsible for the development, operation and maintenance of Raleigh-Durham International Airport (RDU). The Authority was created by the North Carolina General Assembly in 1939 and is governed by an eight-member Board. Two representatives are appointed to the Board by each of the following governmental jurisdictions: the City of Durham, Durham County, the City of Raleigh and Wake County.

The Authority’s Board is authorized to act in an administrative capacity, overseeing the establishment, construction, management and regulation of the airport with complete control over jointly acquired lands. Its charter grants the Board broad operational powers, including the ability to enact rules and regulations, borrow funds and manage airport properties.

About this Report

The Fiscal Year 2024/2025 RDU Sustainability Program Annual Report covers the Authority’s fiscal year beginning April 1, 2024, and ending March 31, 2025. This is the second year of implementation of the Authority’s Sustainability Policy and the Sustainability Management Plan.

Sustainability initiatives align with the following goals and objectives in the Authority’s 2025 - 2030 Strategic Plan:

- Enrich the Community: Deliver and build on our sustainability commitments
- Grow Responsibly to Meet Demand: Build, maintain and operate in ways to promote sustainability

This report includes an overview of the nine focus areas of the Authority’s multi-year Sustainability Management Plan and highlights sustainability efforts in major capital projects underway as part of the Authority’s Vision 2040 Master Plan.

RDU at a Glance

Our Vision: To Deliver a World-Class Airport Experience



15.5 Million
Passengers
in 2024



79
Nonstop
Destinations



19
Air Carriers



590+
Daily Aircraft
Operations



\$24 Billion
Annual Economic
Impact



140,000
Regional Jobs
Supported



\$1.3 Billion
in State and Local
Taxes Generated

Major Capital Projects



Replacement of
Runway 5L/23R



Expansion of
Park Economy 3



Terminal 2 Landside
Expansion



John Brantley Blvd.
Extension

Raleigh-Durham Airport Authority Commitment to Sustainability

In 2023, the Raleigh-Durham Airport Authority adopted a Sustainability Policy (Policy) and Sustainability Management Plan (Plan) that committed the organization to a sustainable future consistent with its vision, mission and core values. While the Authority had long incorporated sustainable practices into its work, the Policy and Plan laid the foundation for the Authority's first comprehensive Sustainability Program.

Through its Policy, the Authority is committed to delivering a world-class airport experience in a sustainable manner by considering the four pillars of sustainability in its decision-making process.

- **Environmental Stewardship:** Minimizing harmful damage to the environment
- **Economic Viability:** Helping maintain high, stable levels of economic growth
- **Operational Efficiency:** Ensuring business and operations continue to function optimally
- **Social Responsibility:** Promoting activities for the public's wellbeing and integrating with local communities

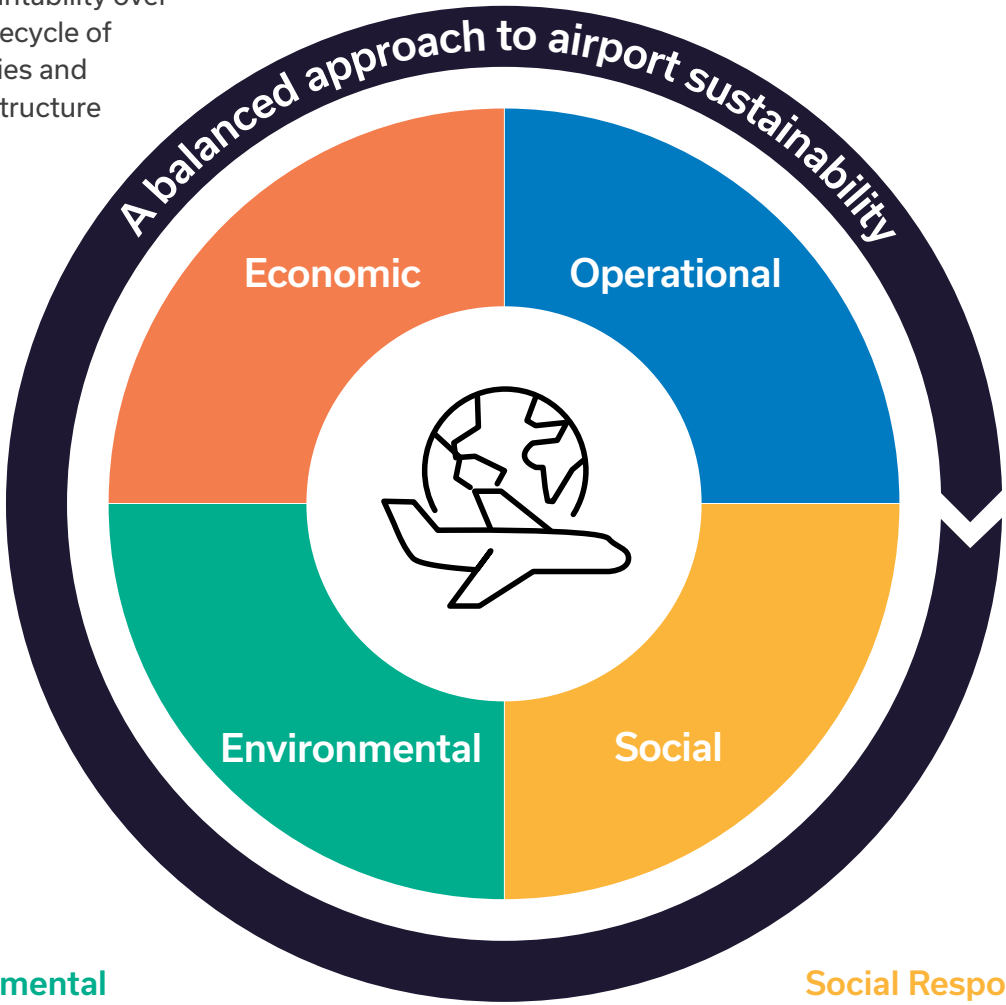


Economic Viability

- Reduces development and/or operations and maintenance costs
- Ensures financial accountability over the lifecycle of facilities and infrastructure

Operational Efficiency

- Improves efficient use of resources and facilities
- Minimizes waste



Environmental Stewardship

- Conserves and protects resources
- Reduces impacts
- Facilitates environmental approvals and permitting

Social Responsibility

- Improves passenger and employee experience
- Enhances quality of life and economic opportunities in the local community

Annual Sustainability Report

Executive Summary

The Sustainability Annual Report documents and showcases the Raleigh-Durham Airport Authority’s efforts to meet its sustainability commitments while working towards its Vision of delivering a world-class airport experience. The Authority is committed to investing in sustainable infrastructure and operations by meeting and exceeding regulatory standards and by launching new sustainability initiatives.

RDU’s Sustainability Management Plan provides the framework for integrating a balanced approach to airport sustainability. A balance of environmental stewardship, economic viability, operational efficiency and social responsibility is incorporated into all airport planning, design, construction, operations, maintenance and business processes.

The plan categorizes sustainability initiatives into nine focus areas, each with goals, targets and actions.



Sustainability Management Plan

FY 2024/2025 Strategies

The following is an overview of strategies and topics from FY 2024/2025 categorized by relevant focus area.

	Business Continuity & Resiliency
KEY STRATEGIES	Mass Notification System Conversion
	Emergency Operations Center Renovation Project
	Assessing Climate Change Resiliency for Capital Projects
	Sustainable Buildings & Infrastructure
KEY STRATEGIES	Sustainability Rating System Evaluation Process
	Building Commissioning Plan
	Energy
KEY STRATEGIES	Energy Management Plan
	Energy Data Tracking
	Energy Upgrades
	Sustainable Transportation
KEY STRATEGY	Authority Fleet

	Sustainable Transportation
KEY STRATEGY	Public Electric Vehicle Charging
	Greenhouse Gas Emissions
KEY STRATEGIES	GHG Emissions Inventory and Decarbonization Roadmap
	Airport Carbon Accreditation
	Community, Customers & Employees
KEY STRATEGIES	Industry and Community Collaboration
	Customer Engagement
	Employee Education
	Land Use & Natural Resources
KEY STRATEGIES	Minimizing Natural Resource and Wildlife Impacts for the Replacement of Runway 5L/23R
	Residential Land Use and Noise
	Landscape Master Planning
	Collaboration with Regional Partners to Enhance Recreational Opportunities

	Materials & Waste
KEY STRATEGIES	Minimizing Use of Deicing Fluid
	Reusing Material from Airfield Construction Projects
	Water and Stormwater
KEY STRATEGIES	Potable Water Usage
	Water Efficiency and Conservation
	Submerged Gravel Wetlands
	Erosion and Sediment Control in Park Economy 3

Key Accomplishments in FY 2024/2025



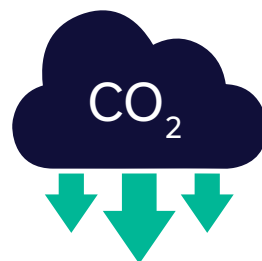
- In calendar year 2024, the Authority invested more than **\$19 million** in sustainability efforts through the purchase of hybrid and electric vehicles and chargers, pursuit of Envision sustainability ratings, development of an Energy Management Plan and Greenhouse Gas Emissions Inventory, upgrades to the Emergency Operations Center and other efforts.



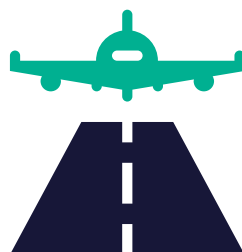
- **Park Economy 3:** Received a Platinum Envision Award from the Institute for Sustainable Infrastructure. It is the first project in North Carolina to achieve Platinum status.



- Achieved target of **reducing water consumption by 10%** on a per passenger basis.



- **Energy Management Plan and Greenhouse Gas Emissions Inventory:** Established baselines and developing reduction strategies.



- Host airport for the **American Association of Airport Executives / Airport Council International - North America Annual Noise Conference**, bringing together hundreds of planning, environmental, sustainability and noise professionals from around the world.

More information about the Authority's Sustainability Program can be found at www.rdu.com/sustainability.





Focus Area

Business Continuity & Resiliency

Goal: Enhance RDU's energy resiliency and adaptability to extreme weather events.

Airports are vital hubs for transportation and goods. Disruptions at airports can have significant impacts on travel, commerce and the economy depending on their duration and severity. In 2024, RDU focused its business continuity and resiliency efforts on improving systems and spaces that support the airport's ability to recover quickly and maintain essential operations during periods of uncertainty.

Mass Notification System Conversion

Mass notification systems are critical emergency preparedness tools that allow airports to prepare for, react to and communicate critical events to the right people at the right time. These systems enable the Authority to send information to the entire organization within seconds through text and email, facilitate two-way communication and mobilize response teams quickly.

In September 2024, the Authority underwent a mass notification system conversion from BlackBerry AtHOC to Everbridge. The Authority had used BlackBerry AtHOC as the airport's mass notification system since 2012.

The Authority was approached by Wake County to be added as a user in its Everbridge account at no cost to the Authority. Using the county's Everbridge account saves the Authority \$55,000 annually and allows it to streamline users, contacts and templates within the system.

Participation in the Everbridge system also allows Wake County to send out messages on the Authority's behalf if needed and gives the Authority the ability to send alerts to a broad geographic area in the event of a large regional emergency.

This conversion will help the Authority improve its mass notification process and improve coordinated response efforts during events that have the potential for disruption (e.g., security breaches, facility closures, emergencies, severe weather). Additionally, the interoperability of the system will also allow for more reliable mutual aid response.



Authority Staff Deploy to Asheville for Helene

In late September 2024, Hurricane Helene brought record-breaking rainfall and catastrophic flooding to the southern Appalachian region of North Carolina, causing massive and widespread damage. In response, about 15 Airport Authority Staff deployed to western North Carolina in October to support Asheville Regional Airport's recovery efforts. Deployed employees from Operations, Airport Rescue and Fire Fighting, Law Enforcement and Maintenance performed duties related to their areas of expertise and provided logistical support for hurricane relief operations. Over 600 hours of time was invested in these deployments.

Wake County			
Hazard	2024	2023	2022
Dense Fog	4	8	8
Flash Flood Warning	23	8	14
Flood Advisory	44	40	29
Freeze Watch	0	6	1
Freeze Warning	1	7	2
Heat Advisory/Excessive Heat	18	1	9
Severe Thunderstorm Watch	4	9	6
Severe Thunderstorm Warning	47	43	62
Tornado Watch	6	1	4
Tornado Warning	5	4	3
Tropical Storm Watch/Warning	0	0	1
Winter Storm Watch/Warning	0	0	4
Winter Weather Advisory	0	0	3

The Authority tracks severe weather events that may impact business continuity at the airport. With climate change causing increasingly frequent and extreme weather conditions, it is important to monitor weather events and use mass notification systems like Everbridge to provide early warning to stakeholders.

Emergency Operations Center Renovation Project

Emergency Operations Centers (or EOCs) are facilities where staff from multiple departments and agencies come together to address imminent threats and hazards. They can provide coordinated support for incident command, on-scene personnel and other EOCs.

RDU uses its EOC as a central hub for coordinating and managing emergency response activities, allowing for efficient communication, resource allocation and decision-making. This helps minimize disruptions and ensure the safety of passengers, staff and the surrounding community when an emergency or irregular event occurs at the airport.

RDU's EOC was activated 12 times in 2024 to manage a variety of incidents, threats and events, including but not limited to severe weather events, VIP movements, aircraft incidents and utility issues. Unique to 2024 was that just over half of RDU's EOC activations were related to political campaign events. Other notable events included a foreign head of state traveling through the airport and the arrivals of Air Force 1 and Air Force 2 at the same time.

In October 2024, the Authority finished construction of a new EOC space that is roughly three times as large as the previous EOC. The new space includes breakout rooms, an adjacent Joint Information Center, a redundant virtual ramp tower and quiet room space. Expansion of the EOC space was recommended following the full-scale triennial EOC activation training exercise in 2021.

More space will allow the Authority to organize EOC staff into work pods based on function to increase collaboration and efficiency and allow for scalability. Organizing the EOC in pods aligns with the Federal Emergency Management Agency's Incident Command System, a nationwide standard for all-hazard incident management. The increase in space was also necessary to accommodate the Authority's mutual aid partners who offer resources and services to the Authority in times of need. Furthermore, the new space will be more conducive for conducting large scale training and exercises.

This facility is a strategic investment by the Authority to build operational resiliency in the face of future uncertainties and improve the organization's situational awareness during response efforts.

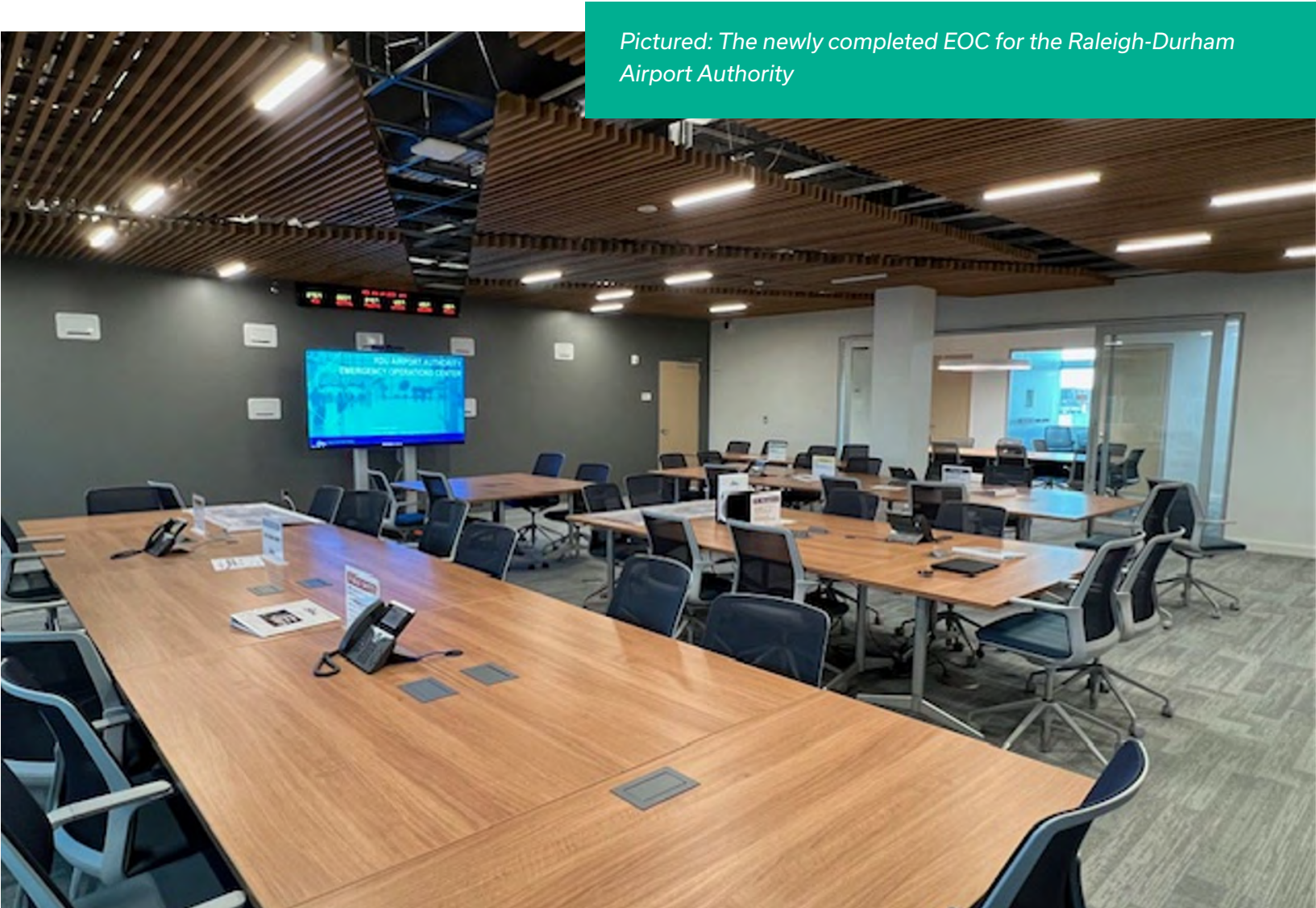
EOC Activation for Terminal 1 Power Outage

On August 1, 2024, a power line pole near the airport campus caught fire, causing Terminal 1 to lose power for several hours. At 7:47 a.m., the EOC was activated to minimize impacts on flights and passengers throughout the duration of the event. The EOC worked with Duke Energy to determine that equipment failure was the cause of the issue, and power was restored by 10:50 a.m. The new EOC facility will play an integral role in the Authority's rapid response to similar events in the future, supporting the Authority's business continuity goals.

Assessing Climate Change Resiliency for Capital Projects

To evaluate climate threats and develop mitigation actions for the Park Economy 3 Expansion project, the Authority conducted a climate change vulnerability assessment. The assessment concluded that this project is most vulnerable to extreme heat conditions as demonstrated by the high number of heat advisory days recorded in 2024 (see table on page 17). The project team considered how changes in extreme heat conditions due to climate change may impact parking lot users.

Design features such as bus stop location, proximity to amenity buildings and covered walkways were reviewed for their efficacy in mitigating the threat of extreme heat. Specific consideration was also given to the project's dependence on energy through the electric grid. Climate threats may increase demand on regional electric utilities, causing the grid to be susceptible to failure. The project team included solar canopies and backup generators in the design to address potential power outages. More information on the Park Economy 3 Expansion project can be found in the **Building a Better Future: Major Capital Projects** section of this report.



Focus Area



Sustainable Buildings & Infrastructure

Goal: Consistently adopt sustainability in all phases of Authority project development and maintenance activities.

This focus area addresses the Authority’s planning, design, construction, operation and maintenance of airport facilities and infrastructure to improve their sustainability performance. Sustainable facilities and infrastructure typically have longer life spans and use resources more efficiently throughout their life cycle.

Sustainable buildings and infrastructure may:

- Be sited and designed consistent with the four pillars of sustainability
- Promote efficient use of resources during construction and throughout their life cycle
- Incorporate renewable energy initiatives
- Enable the reuse and recycling of materials and waste
- Improve the health and wellbeing of facility occupants

Sustainability Rating System Evaluation Process

In FY 2024/2025, the Authority began to develop an evaluation process to determine which projects are suitable for sustainability rating systems such as Envision and LEED™. This effort supports a target in the RDU Sustainability Management Plan to pursue sustainable building ratings for new projects above \$25 million in construction costs.

While efforts are still underway, Authority staff has:

- Researched various sustainability rating systems (such as Envision, LEED™, WELL, Fitwel and Green Globes) to understand their certification requirements and the types of projects they are designed for.
- Identified a list of construction guidelines that project managers can use to better align their construction projects with RDU Sustainability Management Plan goals.
- Ensured those construction guidelines align with various rating system requirements to make for a more seamless certification process.

This information will be used to develop a checklist that project teams can use to determine which LEED™ and Envision credits best align with the Authority’s overall sustainability goals and whether or not pursuing a sustainability rating will be feasible.

Building Commissioning Plan

Building commissioning is the process used to ensure building systems, such as air conditioning, heating and lighting systems, are designed, installed and operate as intended and required.

The commissioning process helps create system efficiencies that reduce energy consumption and emissions, as well as prolong the life of the systems. It can reduce equipment maintenance costs, improve equipment performance and reduce post-occupancy corrective work. Commissioning can also provide for improved air quality, temperatures and lighting for those using the building. Commissioning efforts are often recognized in sustainability certifications such as LEED™ or WELL.

The Authority is developing a building commissioning process for one of its major building projects, Terminal 2 Landside Expansion. In FY 2024/2025, the Authority brought a commissioning agent onboard the Terminal 2 Landside Expansion team to plan and coordinate the project’s commissioning process throughout all phases of construction. The commissioning agent will define the Authority’s requirements and develop a commissioning plan. During design, the agent will ensure the project

Pictured: LED lighting fixtures in the Fuel Farm parking lot



Fuel Facility Improvements

The Authority is completing multiple improvements to fueling facilities across the airport campus. Construction on the projects started in March 2024. Sustainability accomplishments include the replacement of the 40 high pressure sodium lighting fixtures (250 watts each) with more energy efficient LED fixtures (150 watts each) at the Fuel Facility and its parking lot. This has resulted in consumption savings of about 19,000 kWh per year and cost savings of about \$1,800 annually. The lifespan of the new LED fixtures is about eight times longer than that of the existing fixtures.

requirements are considered in the contract documents. During construction, the agent will review and test the project’s systems and equipment holistically to ensure the project meets or exceeds stated goals and objectives. Commissioning requires an ongoing monitoring effort, and staff will continue to monitor systems after construction to ensure the building continues to operate efficiently.

Basic commissioning for energy-related systems is so important that it is a prerequisite for LEED™ certification. LEED™ offers additional credit opportunities for enhanced commissioning of specific building systems. In FY 2024/2025, the Authority registered the Terminal 2 Landside Expansion project for LEED™ v4 ID+C: Commercial Interiors certification, starting the LEED™ sustainability certification process.

Aviation Parkway and National Guard Interchange Focused Environmental Assessment

The intersection of Aviation Parkway and National Guard Drive is the busiest intersection that serves RDU and regional through-traffic between Interstate 540 and Interstate 40. It is located near the airport’s Park Economy 3 lot, and parking shuttles currently travel through it to transport passengers to and from the airport terminals.

As the Authority expands Park Economy 3, the traffic volume at Aviation Parkway and National Guard Drive will increase. The Aviation Parkway/National Guard Drive Interchange Improvements project will help RDU safely accommodate more traffic and improve the guest parking experience. The project aims to provide a new route for parking shuttles, reducing traffic at the intersection and improving travel time for passengers shuttling between Park Economy 3 and the terminals.

Based on discussion with the Federal Aviation Administration Airports District Office, the Authority began a Focused Environmental Assessment for the interchange project in December 2024. The focused assessment will include field investigations within the project area, an environmental analysis, and a public involvement process. Documentation will describe the project and study area, its purpose and need, alternatives analysis, environmental assessment results and mitigation measures for various environmental impacts.

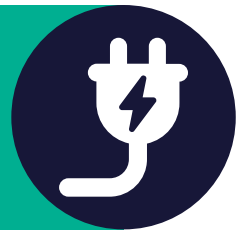
The Authority has also included funding in the project design to determine if the project may be suitable for pursuing Institute of Sustainable Infrastructure Envision certification.

Major Capital Projects

In FY 2024/2025, the Authority continued to advance key capital projects in alignment with the Vision 2040 Master Plan. Sustainability highlights for each of the following capital projects is discussed in the **Building a Better Future: Major Capital Projects** section of this report:

- Runway 5L/23R Replacement
- Park Economy 3 Expansion
- Terminal 2 Landside Expansion
- John Brantley Boulevard Extension





Energy

Goal 1: Develop a comprehensive energy management program and reduce energy consumption in Authority-controlled facilities.

Goal 2: Incorporate renewable energy options into the Authority's energy portfolio.

The Authority is committed to implementing strategies, technologies and practices to enhance energy conservation and sustainability at RDU. Doing so will help minimize the airport's environmental impacts, reduce energy costs and increase operational resiliency while supporting future growth.

Energy Management Plan

In June 2024, the Authority began work to develop an Energy Management Plan to serve as a long-term planning resource to drive and guide progress towards a more resilient, cost-effective and sustainable energy future at RDU.

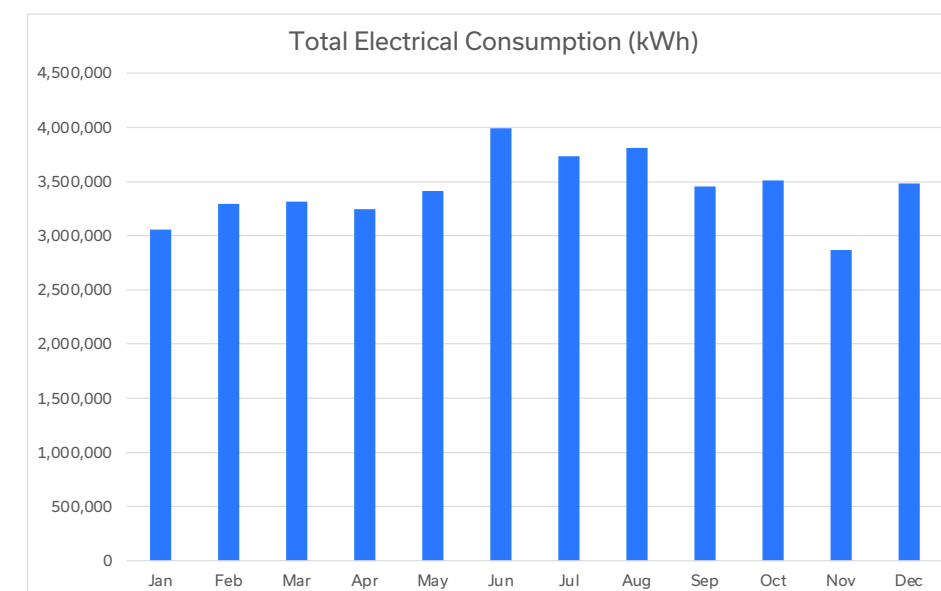
The first phase of work on the project focused on the following key elements:

- **Baseline Energy Assessment:** The EMP documented the airport's existing energy infrastructure, distribution and use, focusing on the airport's 10 largest energy users. These facilities account for roughly 85% of energy usage at RDU: Terminal 2, Terminal 1, the RDU Authority Building, the Aircraft Rescue and Firefighting Building, the Airport Operations Center Building, the Central Energy Plant, the Maintenance Building, Parking Garages 3 and 4, and the Fuel Facility Building. The baseline assessment process included gathering data, analyzing historical utility use, reviewing existing utility infrastructure and inventorying fleet electric vehicles to provide a clear understanding of current energy usage.
- **Energy Benchmarking:** The benchmarking process compared Authority buildings to buildings at other airports based on type, usage and geographic location. The benchmarking process included assessing energy end-use breakdown, reviewing electrical/natural gas/fuel oil consumption, and setting performance standards.
- **Energy Forecast:** Preliminary energy forecasts have been developed based on existing campus energy consumption data collected as part of the Baseline Assessment, the future energy needs of imminent building projects, and the effects of passenger growth on energy demand going forward.
- **Energy Audit:** American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Level 1 and 2 audits were completed for the Authority's 10 largest energy users.

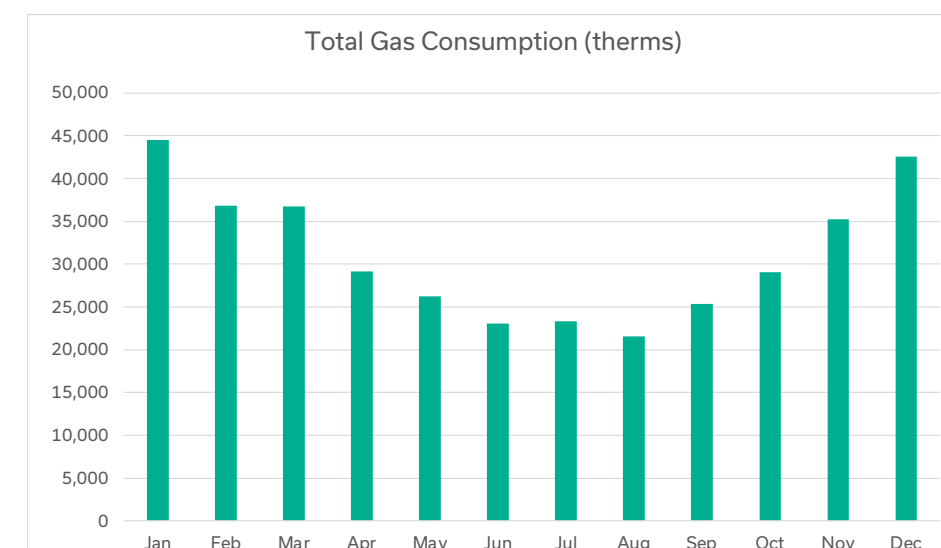
The ASHRAE Level 1 walk-through identified areas of energy inefficiency, detailed no- or low-cost changes that could be made to the buildings and identified other improvements for further study. The ASHRAE Level 2 energy survey and analysis helped identify projects that will provide the greatest energy reduction with the best return on investment.

The baseline, benchmarking, energy forecast and energy audits will guide subsequent phases of EMP development, which will focus on evaluating energy best practices, exploring renewable energy opportunities and enhancing energy resilience to support long-term goals.

The EMP team is also compiling a list of Facility Improvement Measures (FIMS), which are strategies to address identified deficiencies that the Authority will start to address in the coming year. FIMS are grouped by type: HVAC, Lighting, Building Envelope, Building Automation Controls and other improvements. FIMS were developed through evaluating existing infrastructure and operational practices and identifying areas where enhancements can improve energy efficiency, reduce costs and align with sustainability goals.



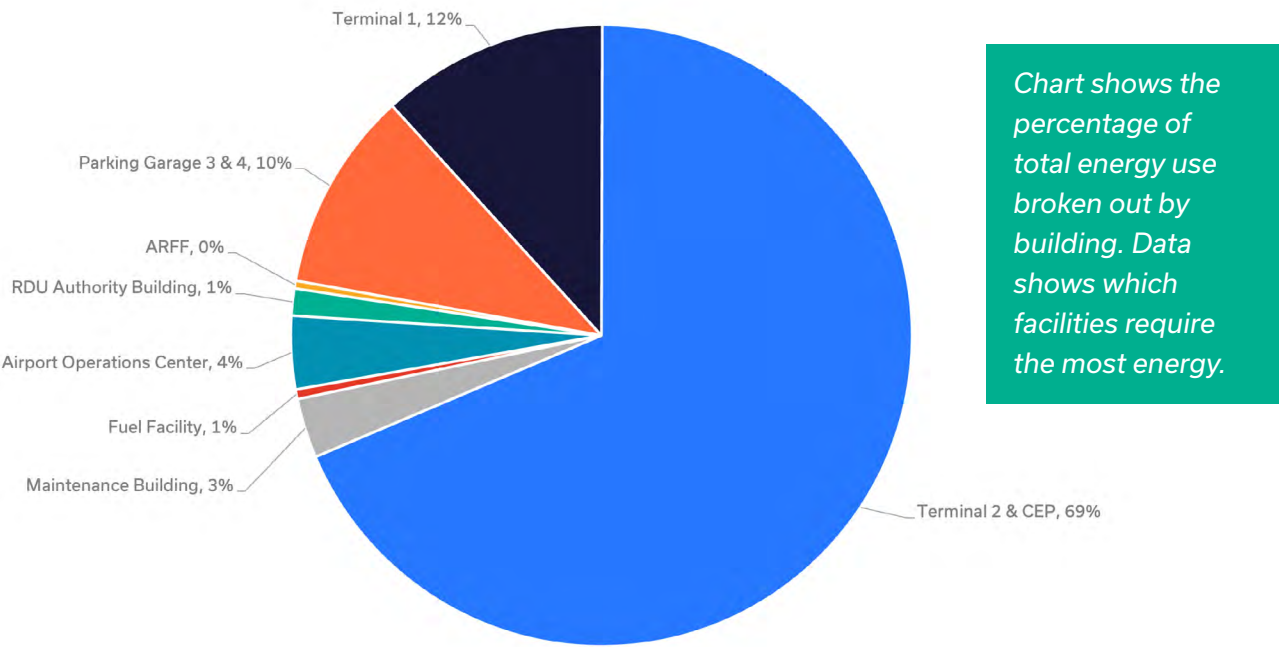
Graph shows the total electricity use for the airport's 10 largest energy using buildings by month in 2024. Data shows which months have the highest electricity demand.



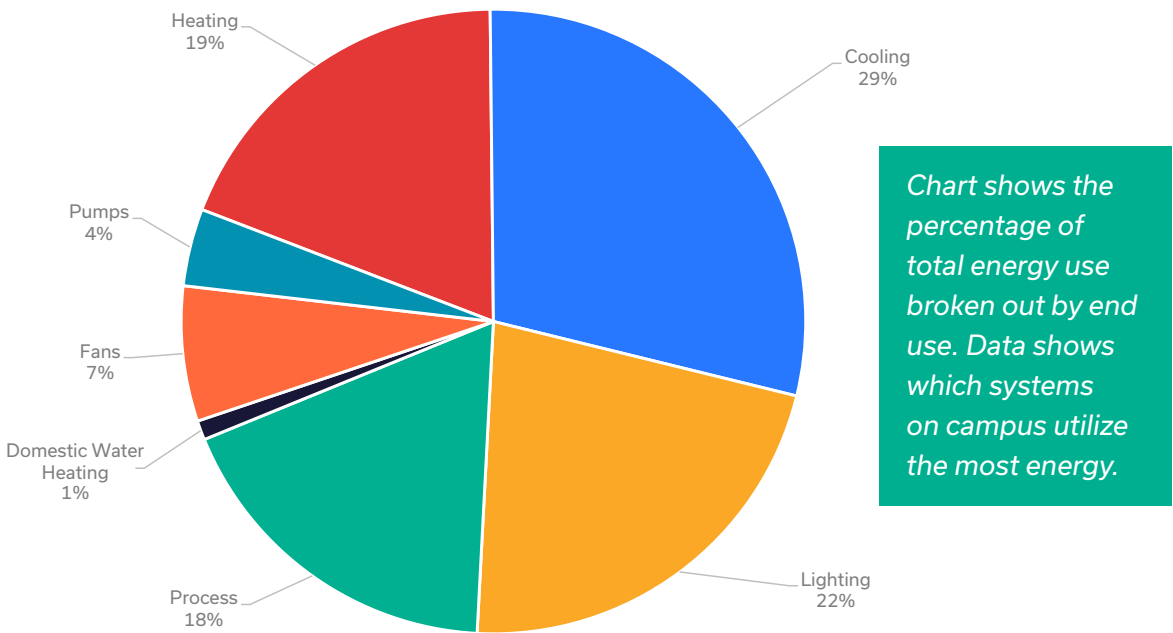
Graph shows the total natural gas use for the airport's 10 largest energy using buildings by month in 2024. Data shows which months have the highest heating demand.

The pie charts below show which buildings around campus were the heaviest energy users (Terminals 1 & 2, Central Energy Plant, and Parking Garages 3 & 4), and to what end that energy is being directed (primarily cooling, lighting, heating and process energy). This will help the Authority prioritize where to focus future energy reduction efforts.

Energy Use by Building (Aligned with AFY April 1, 2023 - March 31, 2024)



Energy Use by End Use - All Energy Management Plan Buildings (Aligned with AFY April 1, 2023 - March 31, 2024)



Energy Data Tracking

In FY 2024/2025, the Authority acquired an energy data tracking software system that will be pivotal to achieving its energy and sustainability goals. The system will provide a better way to track the impact of sustainability actions and monitor progress and performance. Data migration onto the new software platform will begin next fiscal year.

The energy-tracking platform will empower the Authority to manage its energy consumption and costs effectively, leading to significant savings. It offers unique features for tracking energy usage, analyzing utility bills, identifying areas for improvement and reporting on energy management efforts. Features include bill processing, meter tracking, benchmarking, budgeting and carbon tracking, among others.

Next fiscal year, this software will allow the Authority to report year over year energy and greenhouse gas performance metrics.

Energy Upgrades

The Authority completed two major lighting upgrade projects in Terminal 2 in FY 2024/2025. Replacing the existing lighting with light emitting diodes (LEDs) in Concourse D and the baggage makeup area is expected to have a major impact on energy usage and cost savings.

Location	LED Lamps Installed	Estimated Annual Energy Savings	Estimated Annual Cost Savings
Terminal 2 Concourse D	758	185,835 kWh	\$15,796
Baggage Makeup Area	600	152,424 kWh	\$12,956
Total	1,358	338,259 kWh	\$28,752

The following are additional examples of energy upgrades made this year:

- In Parking Garage 4, the existing HVAC unit, which had an 11-SEER (Seasonal Energy Efficiency Rating), was replaced with a high-efficiency 17-SEER unit.
- The 11-SEER HVAC unit at the South Cargo Building was replaced with a high-efficiency 14-SEER unit.
- The old boiler burner at the Central Energy Plant was replaced with an energy-efficient burner.



Pictured above is the new boiler at the Central Energy Plant.

Focus Area



Sustainable Transportation

Goal: Advance sustainable mobility options for airport users, tenants and employees, and reduce greenhouse gas emissions from the Authority’s vehicle fleet.

The Authority is working towards a sustainable transportation system at RDU that helps improve air quality, traffic congestion and roadway safety. This focus area addresses the use of vehicles and mobile equipment, as well as transportation infrastructure and policies, that support a system of sustainable transportation.

Authority Fleet

In FY 2024/2025, the Authority’s electric and hybrid vehicle fleet grew to include 26 vehicles.

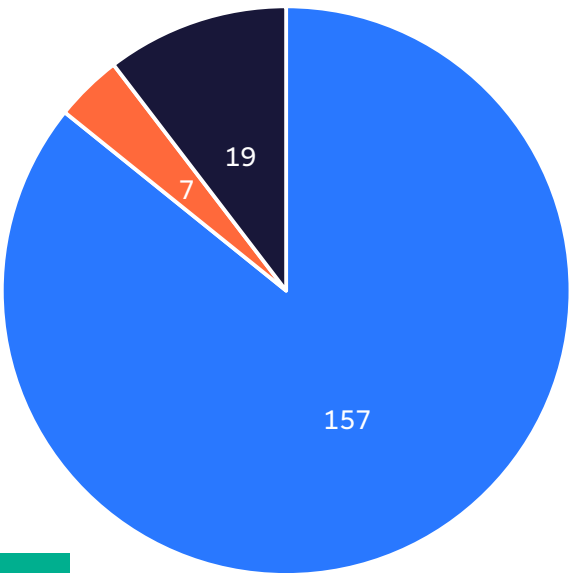
In addition, eight new electric buses are on order and expected to arrive by mid-summer 2025. This will bring the Authority’s total electric and hybrid vehicle fleet to 34.

The Authority continues to prioritize replacing internal combustion engine (ICE) vehicles with EV and hybrid options when applicable. This trend will continue as more EV and hybrid options hit the market and opportunities to replace fleet vehicles arise.

The Authority’s electric vehicle charging infrastructure increased from six chargers (four Proterra Level 3 chargers for buses and two Level 2 charging stations for light duty vehicles) to nine chargers in FY 2024/2025. Four additional 180kW Level 3 chargers were recently installed, bringing the Authority’s total electric vehicle charging infrastructure to 13 when they become operational in the summer of 2025.

The Authority’s recently acquired energy tracking software system will allow the Authority to quantify emissions savings from fleet conversion efforts in the future. The Authority’s sustainable transportation strategy will focus on converting the Authority’s fleet to electric and hybrid vehicles before expanding to address broader tenant fleet and transient public transportation options.

RDU Vehicle Fleet Composition



■ ICE ■ Hybrid ■ Electric

Chart shows the composition of RDU’s vehicle fleet that are hybrid, electric, and internal combustion engine.

RDU’s Electric and Hybrid Vehicle Fleet

Year	Make	Vehicle Type
2003	Honda Civic	Hybrid
2017	Gem E4	Electric
2017	Gem E4	Electric
2018	Proterra E2	Electric
2018	Proterra E2	Electric
2018	Proterra E2	Electric
2018	Proterra E2	Electric
2022	Proterra ZX5+	Electric
2022	Proterra ZX5+	Electric
2022	Proterra ZX5+	Electric
2022	Proterra ZX5+	Electric
2022	Proterra ZX5+	Electric
2022	Proterra ZX5+	Electric
2024	Ford E-Transit 350 Van	Electric
2024	Polaris Kinetic UTV	Electric
2022	Ford Transit 350 Van	Electric
2022	Ford Transit 350 Van	Electric
2024	Ford F-150 XLT Crew Cab Truck	Hybrid
2024	Ford F-150 XLT Crew Cab Truck	Hybrid
2024	Ford E-Transit 350 Van	Electric
2024	Ford E-Transit 350 Van	Electric
2025	Ford AWD Interceptor	Hybrid
2025	Ford AWD Interceptor	Hybrid
2024	Polaris Kinetic UTV	Electric
2025	Ford AWD Interceptor	Hybrid
2025	Ford AWD Interceptor	Hybrid

RDU Fleet Charging Infrastructure

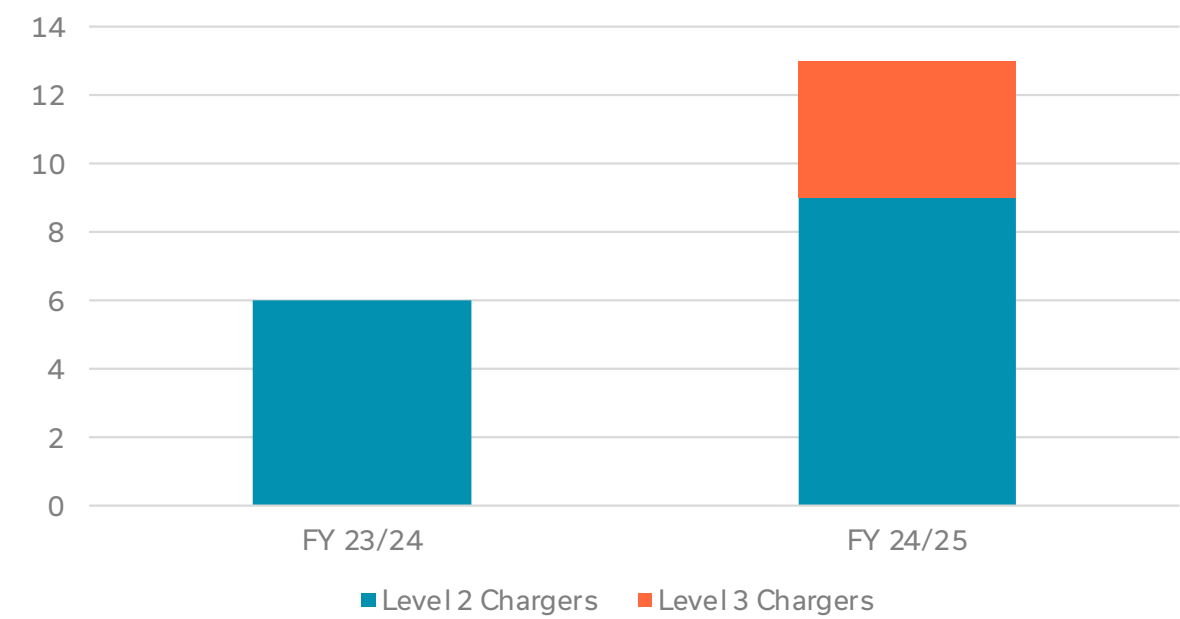


Chart shows the number of level 1 and level 2 fleet vehicle chargers installed at RDU.

Public Electric Vehicle Charging

The Authority is making plans to provide 100 Level 1 chargers as part of the ongoing Park Economy 3 Expansion project. The EV charging lot will be located near the entrance of the PE3 lot.

Sheetz gas station, located on airport property at the intersection of Aviation Parkway and National Guard Drive, constructed and opened a Tesla Supercharger station in 2024. This station offers the public 12 supercharger stations with up to 250kW charging each. Customers can typically achieve 200 miles of range in about 15 minutes, or a full charge in about an hour.

Enhancing Connectivity

Increased transit connectivity relieves roadway congestion, maximizes mobility and promotes regional equity. The Authority is committed to strengthening its relationships with local government agencies and transportation partners, meeting at least quarterly with stakeholders to better understand efforts that are underway and look for opportunities to enhance regional connectivity.

Authority staff have worked closely with GoTriangle, the entity that manages the regional transportation system, and have participated in Stakeholder Advisory Committee meetings for the Wake Transit Plan update. The Wake Transit Plan’s objective is to maximize connectivity between local communities and the greater Triangle region in ways that help enhance the quality of life for residents and reduce traffic congestion.

Additionally, the Authority’s Vision 2040 Master Plan includes capital improvements that support bus rapid transit implementation and improved regional access to the airport. The John Brantley Boulevard Extension project includes the development of a Ground Transportation Center in the parking garages that will provide easier bus access to the terminal curbs.





Greenhouse Gas Emissions

Goal: Reduce GHG emissions, setting the foundation to become a net zero airport.

Greenhouse Gases (GHGs) absorb and radiate heat in the atmosphere. Increased concentration of these gases, resulting from human activity, is contributing to more frequent and intense extreme weather events. The Authority is working to identify opportunities to reduce its GHG emissions.

GHG emissions are broken down into three scopes:

- Scope 1 emissions are direct GHG emissions that occur from sources that are controlled or owned by an organization. For the Authority, these sources are primarily the Authority’s fleet vehicles, equipment and fuel combustion sources like boilers, furnaces and emergency generators in Authority-controlled facilities.
- Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat or cooling. Electricity consumption comprises the majority of RDU’s GHG emissions.
- Scope 3 emissions are the result of activities from assets not owned or controlled by the Authority, but that the organization indirectly affects, including all emissions not within the Scope 1 and 2 boundaries. For RDU, Scope 3 emissions would be those from tenants, passengers and other users of the airport.

GHG Emissions Inventory and Decarbonization Roadmap

In FY 2024/2025, the Authority completed a GHG inventory in alignment with the energy baseline assessment effort described on page 24. The GHG inventory will serve as the baseline for the Authority’s Scope 1 and 2 carbon emissions.

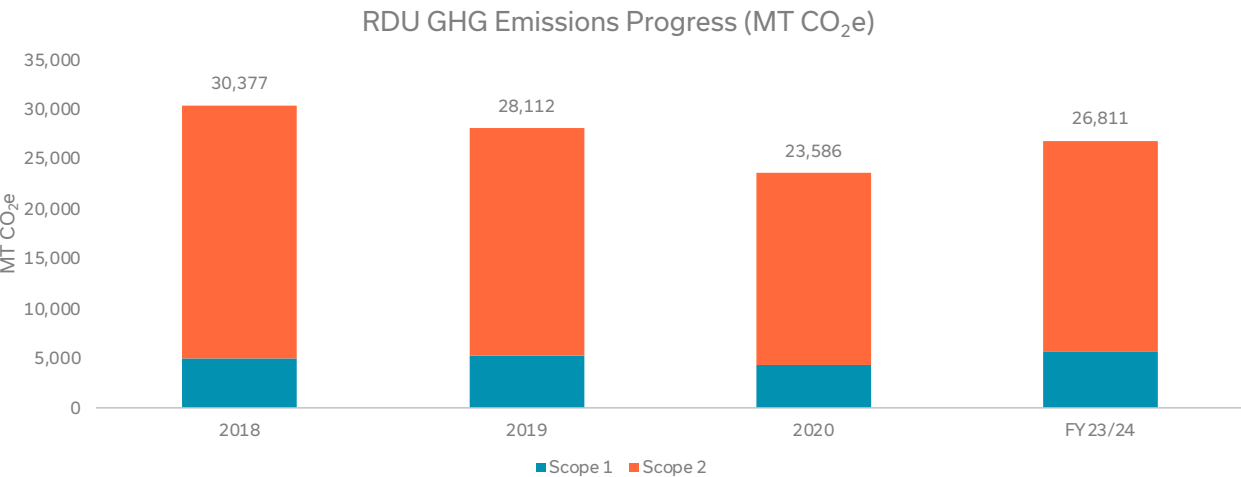


Chart shows the amount of Scope 1 and Scope 2 emissions generated by the Authority by year. Over time, data will show progress towards meeting GHG emission reduction goals.

RDU FY23/24 GHG Emissions by Source

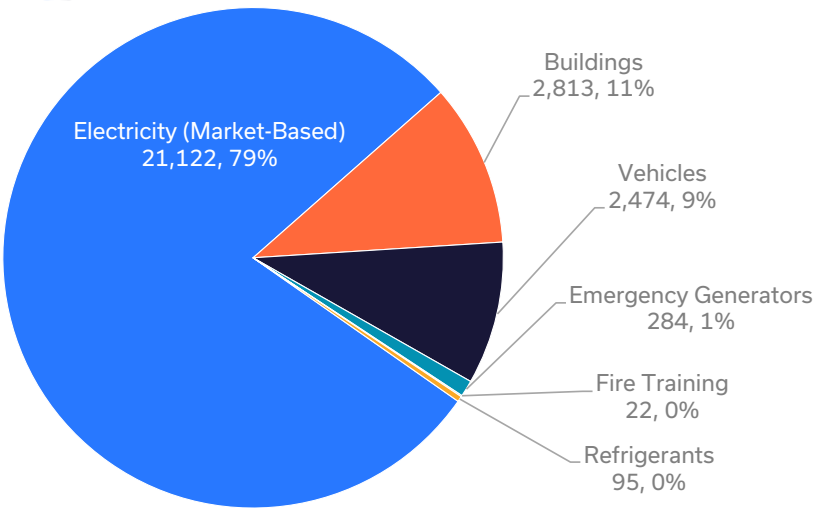
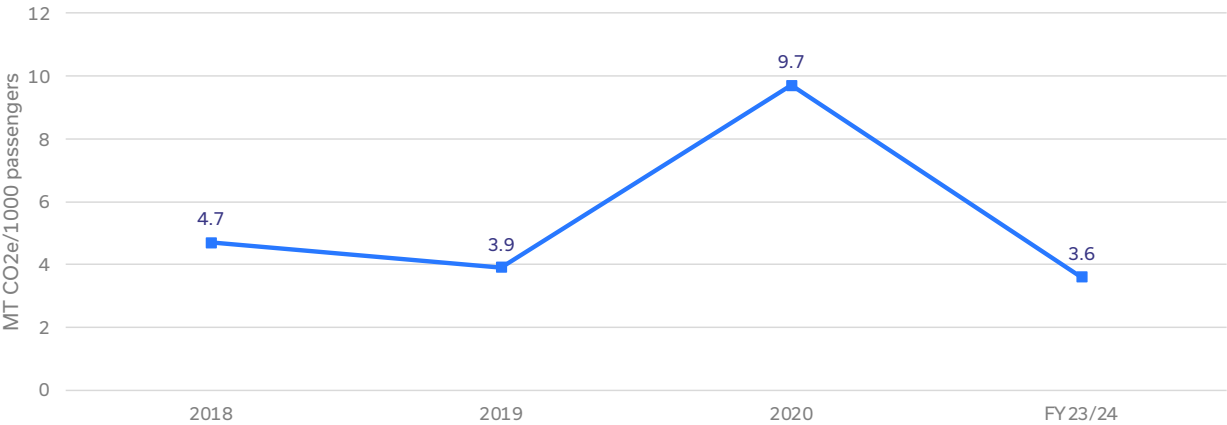


Chart shows the percentage of total GHGs emitted broken out by end use. Data shows the largest Scope 1 and Scope 2 GHG emitters on campus.

RDU GHG Intensity (MT CO₂e/1000 passengers)



Graph shows GHG emissions by year correlated with passenger numbers. The spike in 2020 was due to the sharp decrease in passenger traffic as a result of the COVID-19 pandemic.

The Authority will prepare an emissions forecast, set interim goals and targets, identify future energy conservation and emission reduction measures, and develop an implementation phasing approach to help the Authority meet established targets. The Authority’s Sustainability Management Plan includes the target of getting to net-zero emissions by 2050.

Once completed, the Authority will use the emissions inventory, baseline and forecast to develop a Decarbonization Roadmap. The roadmap will provide a path forward for the Authority to achieve net-zero carbon emissions by 2050.

The anticipated completion date for the Decarbonization Roadmap is the end of calendar year 2025.

Airport Carbon Accreditation (ACA)

One of the targets in the Authority's Sustainability Management Plan is to achieve Level 2: Reduction accreditation through the [Airport Carbon Accreditation \(ACA\) program](#) by the end of 2025. ACA is a certification program for airports to demonstrate their performance in reducing carbon emissions. The certification program is the only institutionally endorsed, global carbon management certification program for airports. As of January 2025, 617 airports in 93 countries had received ACA certification, including 60 airports in the U.S.

Developed by Airports Council International, ACA independently assesses and recognizes the efforts of airports to manage and reduce their carbon emissions through [7 levels of certification](#): Level 1: Mapping, Level 2: Reduction, Level 3: Optimization, Level 3+: Neutrality, Level 4: Transformation, Level 4+: Transition, and Level 5.



In FY 2024/2025, the Authority began its efforts to establish a baseline of carbon emissions that will help the Authority reach Level 1: Mapping. With the completion of its Decarbonization Roadmap, the Authority will meet requirements for Level 2: Reduction accreditation.



Focus Area



Community, Customers & Employees

Goal 1: Strengthen connections with customers, tenants, employees and the community to enhance RDU's sustainability program.

Goal 2: Incorporate sustainability into the airport experience and educate employees, customers and the community on how they can contribute to a more sustainable airport.

RDU serves as an economic and community hub for North Carolina's Research Triangle region. Approximately 5,000 employees work on the RDU campus, and 15.5 million people traveled through the airport last year. This focus area encourages the Authority to promote an airport culture that values sustainability through educating and engaging its community, customers and employees.

Industry and Community Collaboration

Communication about RDU's sustainability program extends beyond our own airport to the broader aviation community. Participating in industry conferences and events allows the Authority to share and learn best practices to improve its sustainability initiatives.

RDU served as the host airport for the American Association of Airport Executives Annual Noise Conference in October 2024. Hosting this conference afforded airport staff the opportunity to network with hundreds of planning, environmental, sustainability and noise professionals from around the world.

Authority staff presented on the following topics at the noise conference:

- Development pressures in a fast-growing community that have impacted land-use compatibility around RDU, the steps staff has taken to educate and work with local elected officials, and the strategic lessons learned.
- Community outreach the Authority performed in 2024 to educate local realtors about aircraft flight paths and noise abatement at RDU. Planning and noise staff visited 13 realtor offices and presented to hundreds of realtors and broker agents. These efforts allow the airport to strengthen open relationships with realtors across the region.
- Updates on the emerging Advanced Air Mobility (drones) sector of the industry, including current uses, regulations and opportunities that these new aircraft bring. Drones can



Authority staff leading a group of conference attendees on an airport campus tour as a part of the AAAE Annual Noise Conference.

potentially be used for the delivery of food, medicine and other goods, as well as emergency services, time-sensitive medical applications and eventual point-to-point air taxi deployment.

In November 2024, Authority staff presented about building airport and regional support for a sustainability program and sustainability communications efforts at the 17th Annual Airports Going Green Conference, the aviation industry's leading forum on sustainability.

Customer Engagement

In May 2024, the Authority engaged its on-site business partners with a Tenant Sustainability Survey. The purpose of the survey was to better understand tenants' current sustainability practices and ask what sustainability initiatives they would like to see implemented at the airport in the future.

Respondents included an array of airport user-types, including airlines, retailer, food and beverage concessionaires, and ground transportation companies. The questions gauged their engagement at the corporate and RDU levels across five focus areas: energy efficiency and reduction, sustainable design and building standards, sustainable transportation, water efficiency and reduction, and waste reduction. More than 75% of respondents reported having corporate sustainability goals.

The survey found the highest interest in energy efficiency and reduction, followed by waste reduction. Tenants also expressed interest in electric ground support equipment infrastructure, recycling and composting programs, and increased engagement with the Airport on their sustainability programs and outreach. The Authority will use the results of the survey to help inform future sustainability related policies, procedures and programs.

Employee Education

In honor of America Recycles Day on November 15, the Authority implemented a month-long educational campaign in November 2024 for staff to learn how to reduce waste and properly handle recyclable materials at work and home.

The campaign consisted of weekly newsletter blasts, informative postings on the employee intranet site and a Recycling BINGO game through which participants could learn how to divert waste from landfills and reduce waste management costs.

Recycling BINGO consisted of an interactive game board that required participants to complete a short educational activity to cover a square. Participants who covered all 16 squares by the end of the month received a wooden pencil that could be planted to grow a variety of wildflowers.

The campaign familiarized staff with the various bins and bags they might encounter around campus and the proper recycling techniques for common materials like paper, cardboard, metal, glass and plastics. The campaign also focused on the impact individuals can make when they remain informed participants in the recycling process.

The campaign is part of a larger effort to build upon the sustainability culture at the Authority. Other sustainability campaigns are being planned for the future to align with key sustainability actions and projects, and to provide additional training to staff members.





Focus Area

Land Use & Natural Resources

Goal 1: Protect the environment while meeting RDU's operational and business needs.

Goal 2: Ensure surrounding land use and zoning requirements are compatible with the current and future operation of RDU.

Environmental stewardship and the conservation of natural resources are important to the Authority's efforts to protect water quality, preserve biological diversity and protect wildlife habitat. The Authority must balance its use of land and natural resources with its business and operational needs.

Minimizing Natural Resource and Wildlife Impacts for the Replacement of Runway 5L/23R

On August 31, 2023, the Federal Aviation Administration issued a Finding of No Significant Impact and Record of Decision for the Environmental Assessment completed for the replacement of RDU's primary runway.

The Environmental Assessment estimated that approximately five million cubic yards of fill material from approximately 480 acres of forested area would be needed to level the area proposed for the new runway. Three borrow sites were identified in the document as potential sources for this fill material: Site 1A, Site 1B and Site 4 (see map on following page).

Upon completion of the design phase, the Authority was able to remove Site 1A as a potential borrow site for the project, reducing the 480 acres of estimated land disturbance and tree clearing by approximately 200 acres. Site 1A is adjacent to Brier Creek Reservoir and is a forested area composed of a mixed canopy of loblolly pine and hardwood species with a sub-canopy of relatively open shrubs.

Pictured opposite page: Aerial map showing the location of potential borrow sites for the Runway 5L/23R Replacement from the Environmental Assessment document for that project.



Residential Land Use and Noise

In 2024, the Authority's Noise Office presented to 13 local realtor offices as part of an outreach campaign geared towards helping the community make informed decisions about real estate in proximity to the airport.

These meetings aim to communicate aircraft noise impact areas, aircraft noise profiles and key airport operational information to realtors. Realtors are uniquely positioned to share important information to prospective homebuyers so they know what aircraft noise impacts to expect prior to buying. Real estate agents are also given information about tools that the Noise Office provides on rdu.com to access flight track and aircraft noise data.

The Noise Office received 392 inquiries in 2024, up from the 251 inquiries in 2023. The increase was likely due to proactive outreach efforts and a growing awareness among the general public. This increased communication between the Authority to the community helps ensure that the airport's continuing growth will be sustainable by making sure home buyers and sellers know where aircraft noise is now and where it will be in the future.

To further improve its efforts, the Authority is now leasing two portable noise monitors that can be placed in the community to get real-time location specific noise measurements. Previously, the Authority used six stationary monitors. The new, portable monitors allow noise officers to be more responsive to community concerns and save the Authority thousands in utility costs.

Landscape Master Planning

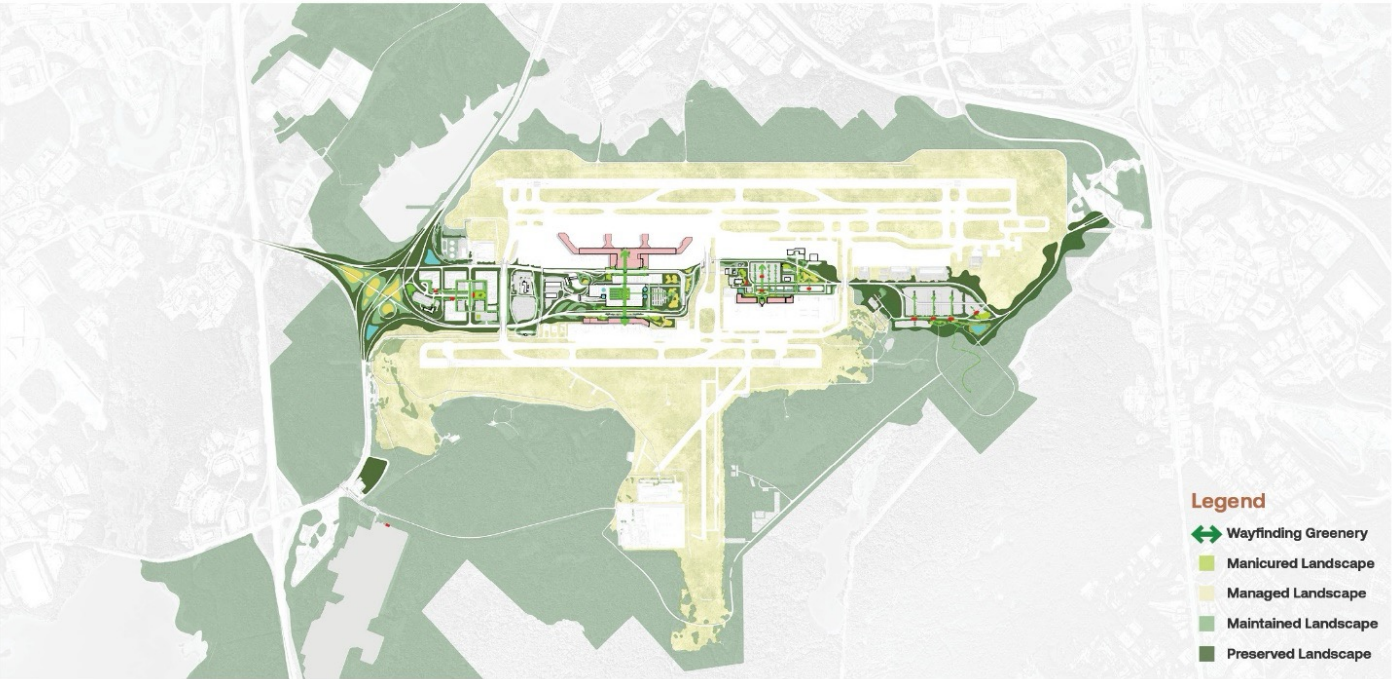
The RDU campus encompasses approximately 2,000 acres, excluding airside areas. This provides the Authority with ample landscaping opportunities to demonstrate good stewardship of the resources under its care while balancing operational needs.

In August 2024, the Authority began to develop a campus-wide Landscape Master Plan to ensure the longevity of the diverse landscapes within the limits of its property. Key objectives for the development of the Landscape Master Plan include but are not limited to:

- Minimizing disturbance of landscaped areas
- Limiting water consumption (i.e., installation of heartier, drought-resistant plants)
- Designing to Envision sustainability rating system standards where feasible to facilitate achievement of certification if pursued

RALEIGH-DURHAM INTERNATIONAL AIRPORT LANDSCAPE MASTER PLAN

OVERALL - PLANTING ZONES + PEDESTRIAN CIRCULATION

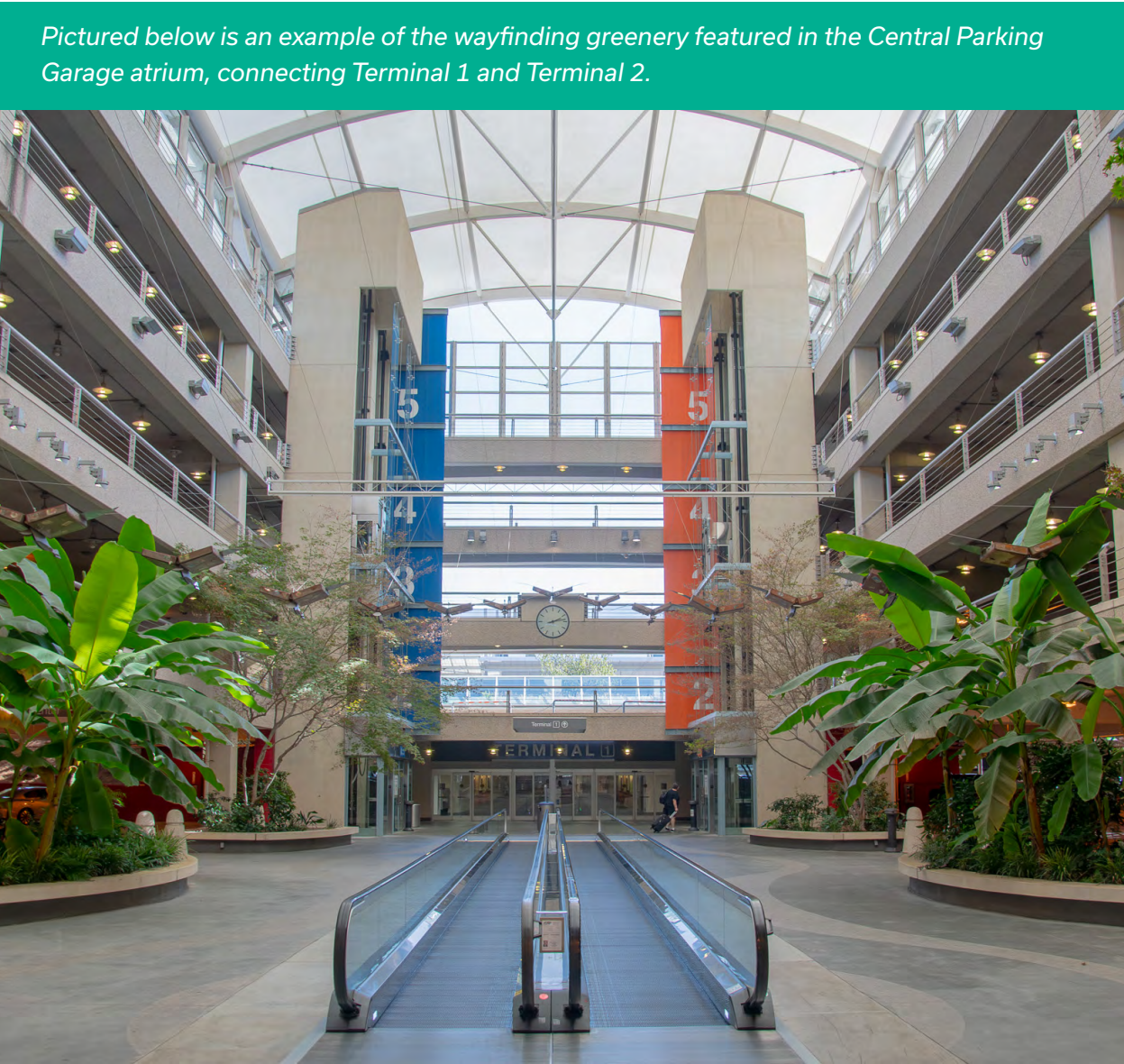


Pictured above is a figure showing potential future landscape typologies from the draft Landscape Master Plan document

The plan will consider the balance of people (the passenger and staff arrival experience, pedestrian and vehicle circulation, safety, human health and wellness, community and equity, and economics), ecology (ecological context, water and soils) and resource management (carbon, energy, materials and waste and maintenance).

In October 2024, the Authority conducted an existing conditions assessment of landscaped areas around the campus with a team of experts that included a landscape architecture and design specialist, a certified arborist, a civil engineer, an ecology specialist and an irrigation design specialist. Areas that were assessed during this inventory-taking effort included airport entrance and exit arteries, the parking garage entrance plaza, observation park and other high-visibility landscaped areas. Experts conducted soil borings to facilitate accurate soil typing and a conditions assessment of trees, groundcover and shrubs. Opportunities were identified to improve the health and resiliency of landscaped areas.

The team is using the information collected during the site walks to develop the first iteration of landscaping guidelines that will be included in the larger Landscape Master Plan. Anticipated completion of the Landscape Master Plan is the summer of FY 2025/2026.



Collaboration with Regional Partners to Enhance Recreational Opportunities

On Jan. 1, 2023, the Raleigh-Durham Airport Authority leased a 151-acre parcel of property to Wake County that is situated adjacent to William B. Umstead State Park. Wake County is now working to provide recreational opportunities to the public on the 151-acre parcel, as well as on a 214-acre portion of Umstead State Park.

Wake County contracted with a local landscape architecture and civil engineering firm to prepare a concept plan study for the two pieces of land to facilitate planning and design efforts for a trail system that preserves, connects, promotes and establishes sanctioned mountain biking and hiking trails.

Efforts on the study started in July 2023 and resulted in the completion of the RDU & Umstead Tract Trail Assessment and Concepts report in 2025. Stakeholders on the project included representatives from Wake County, the North Carolina Division of Parks and Recreation, International Mountain Bicycling Association Trail Solutions and the Authority. Stakeholders were involved in touring the site on several occasions, discussing general concepts, opportunities and constraints, and providing feedback on the draft concept report. Wake County will be continuing the project with design efforts.

The Authority is committed to working with local governmental agency partners to bring about a shared vision of an environmentally responsible development that is compatible with operational growth demands at RDU and enhances the quality of life in the local community.





Materials & Waste

Goal: Enhance the Authority's waste management program to increase waste diversion and reduce costs.

Waste is generated daily in an airport setting through terminal and airside operations, construction, tenant operations and other activities. The Authority aims to reduce the amount of waste destined for landfills by consuming and using less, as well as by reusing and recycling materials.

Minimizing Use of Deicing Fluid

Type 1 glycol is used at airports to remove ice, snow, frost and other frozen precipitation from aircraft surfaces in cold weather conditions. Removing ice prior to flight is necessary to ensure airflow around aircraft wings and surfaces is not disrupted, reducing lift.

Deicing fluids work best when diluted with water, and dilution must be done in accordance with ambient weather conditions. In November 2024, the Authority began using four deice blending cubes to mix and dispense Type 1 glycol.

The new deice blending cubes allow each vendor and airline at RDU to automatically blend Type 1 glycol with water based on temperature. The cubes are reliable and accurate and provide faster mixing of glycol and water than other methods. Cubes also eliminate potential tripping hazards and reduce the operator burden of handling heavy hoses on slippery ground. The more precise mixing can reduce glycol usage, costs and environmental impact.

Reducing the amount of glycol usage is important because glycol can impact water quality by reducing dissolved oxygen content, which can disrupt aquatic ecosystems. Deicing fluids also contain additives, which have the potential to impact aquatic and human life due to their toxicity. The Authority samples primary stormwater outfalls on a quarterly basis for a variety of contaminants and water quality indicators.

Reusing Material for Airfield Construction Projects

A multi-year effort to preserve Runway 5L/23R began in 2019. Surface repairs and replacement of deteriorated concrete slabs is required so aircraft can continue to use the runway, particularly aircraft departing for long-haul destinations. Slab replacements can take up to 20 hours, as crews demolish the pavement, pour and finish new concrete, and allow for sufficient curing before the runway can be reopened to air traffic. Up to three slabs per day can be replaced. The preservation project will continue periodically, as necessary, until the new runway is operational.



Pictured above is a deice blending cube installed as part of the Fuel Farm Improvement Project.

In 2024, 70 slabs were replaced and recycled into "P-219," which is a recycled concrete aggregate blend made from crushed concrete and carefully graded to FAA specifications. It is mainly used as a subbase, but the material has several other uses. Roughly 2,800 cubic yards of P-219 was generated and reused from the 70 replaced slabs.

A similar method was used in 2023 and 2024 for the replacement of the North Cargo Taxiway with the following results:

- North Cargo Paving Season 1: 5,650 cubic yards
- North Cargo Paving Season 2: 528 cubic yards
- North Cargo residual: 3,300 cubic yards
- North Cargo Total: 9,478 cubic yards

Construction of the replacement Runway 5L/23R began in earnest in April 2024 with site and tree clearing activities. A total of 13,000 cubic yards of mulch from clearing activities was reused on-site to provide erosion and sediment control and reduce turbidity within the project limits. The mulch will provide a stable working platform for the future utility corridor work.

An additional estimated 54 cubic feet of mulch was donated to a local farm to be used for vegetation control around animal fencing and composting efforts.

The Runway 5L/23R Replacement project has also been tracking waste diversion rates. So far, the project has been able to achieve a 72% recycling rate.

Focus Area



Water & Stormwater

Goal 1: Reduce potable water usage.

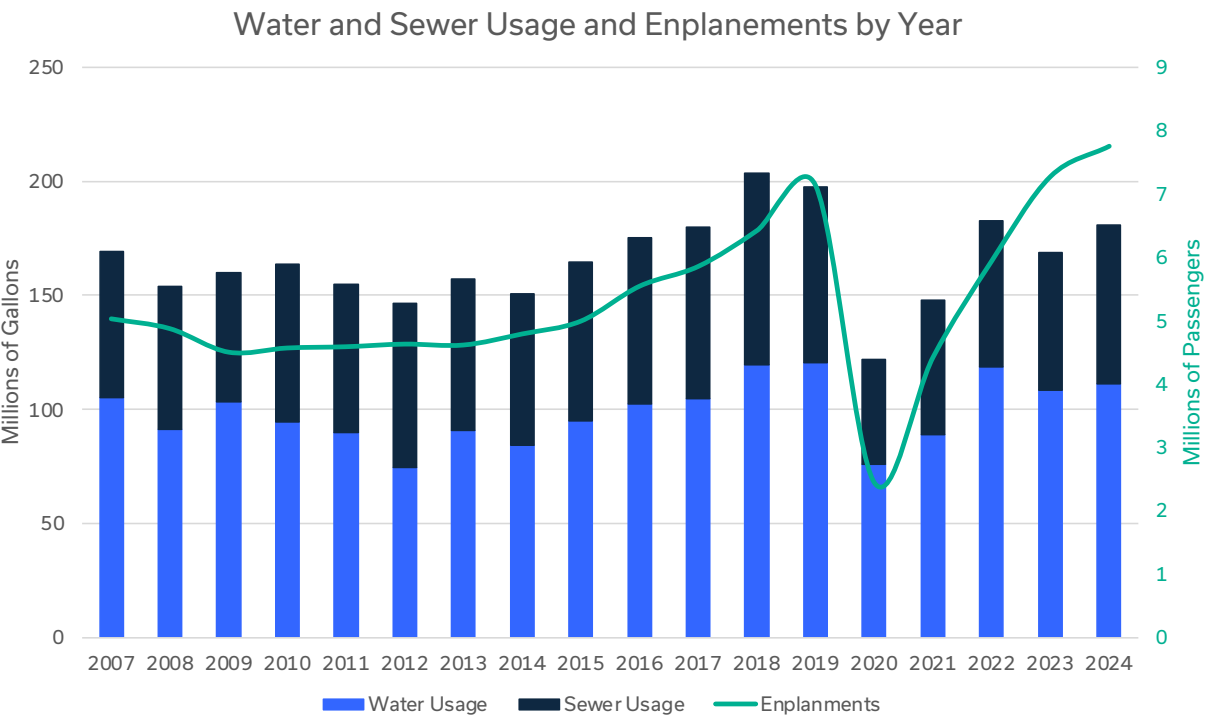
Goal 2: Develop and maintain a best-in-class stormwater management program.

Managing water and stormwater is a key element of the Sustainability Management Plan. At RDU, water is used for providing drinking water, cleaning aircraft, maintaining landscaped areas and other purposes throughout the airport’s campus.

The Authority is working to reduce the use of potable water (i.e., water that is suitable for human consumption) by selecting water efficient fixtures for upcoming projects such refreshing the bathrooms in Terminal 2 and constructing the customer amenity building in Park Economy 3.

Potable Water Usage

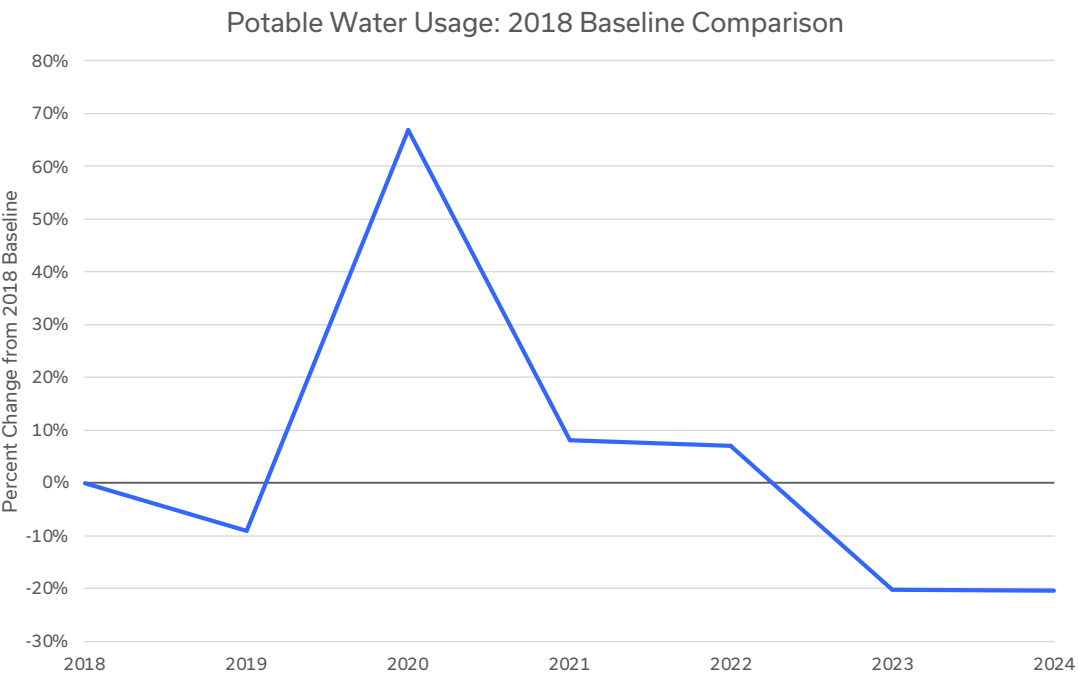
The Authority is actively tracking water and sewer usage data to better understand historical consumption trends. The data will also be useful to assess the impact of potable water reduction strategies as they are implemented across campus. Data from 2007 through 2024 is depicted in the graphic below.



Graph shows water and sewer usage at the Authority correlated with enplaned passengers by year. Data shows that in recent years, despite passenger levels increasing, both water and sewer usage have remained mostly level.

In the Sustainability Management Plan, the Authority set a target to reduce building potable water usage by 10% on a per passenger basis compared to the 2018 baseline by 2028. In calendar year 2023, the Authority achieved this goal. For calendar year 2023, the Authority consumed approximately 20% less water per passenger in comparison to the 2018 baseline. The Authority continued to achieve more than a 10% reduction in 2024. The graph below shows RDU’s trend in water consumption on a per passenger basis.

The Authority is actively tracking water and sewer usage to better understand historical consumption trends. The data will also be useful to assess the impact of potable water reduction strategies as they are implemented across campus.



Graph shows that the Authority has met its Sustainability Management Plan target to reduce potable water usage by 10% on a per passenger basis compared to the 2018 baseline four years earlier than planned.

Water Efficiency and Conservation

The Authority is completing a refresh to the bathrooms in Terminal 2 to improve the customer experience, replace aging infrastructure and increase fixture reliability. The refresh will include replacing all water-related fixtures in toilets, sinks and electric water coolers. The selected fixtures are expected to improve efficiency to reduce water and energy consumption.

The Authority has begun construction on a single-story Customer Amenity Building (CAB) as part of the larger Park Economy 3 Expansion project. More information on the Park Economy 3 Expansion project can be found in the **Building a Better Future: Major Capital Projects** section of this report. The CAB will enhance the parking customer’s experience by providing restrooms, vending machines and a customer lounge with monitors to display flight information. Offices for

law enforcement and parking staff will enhance the overall security of the lot and ensure timely response to customers.

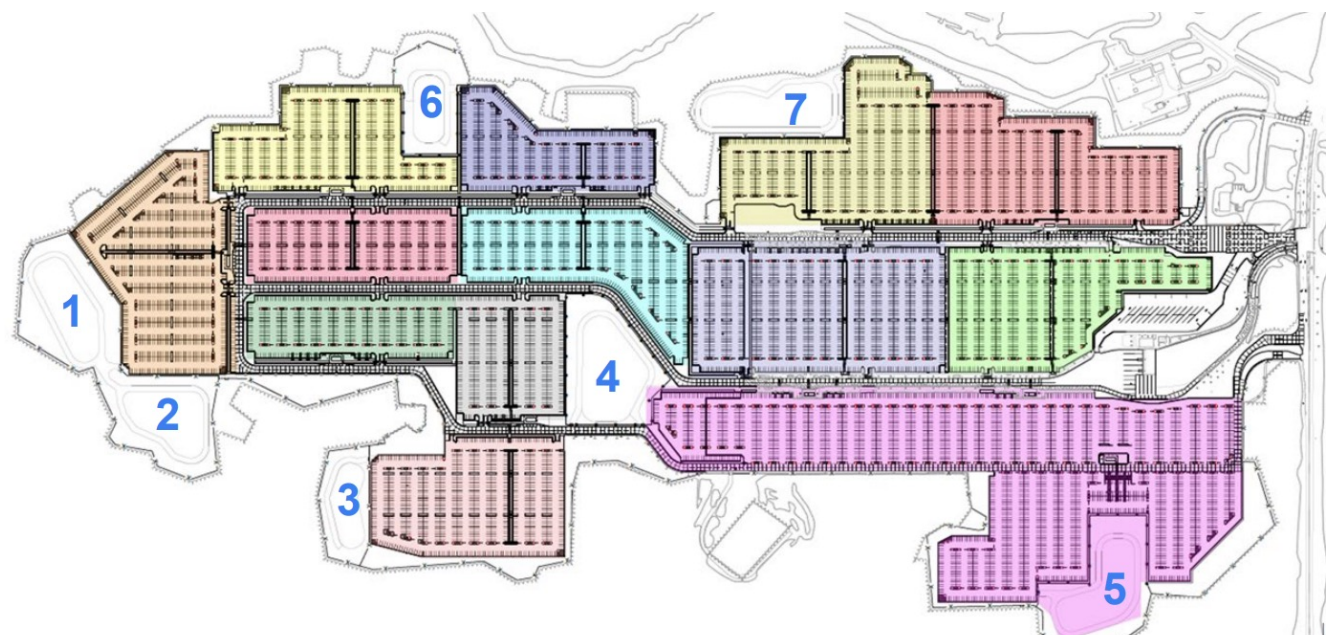
At a minimum, the CAB will reduce indoor aggregate water consumption by 20% from the baseline through the use of more efficient water fixtures and fittings, reducing outdoor water use by minimizing (or eliminating) irrigation, and installing permanent water meters that measure the total potable water use for the building and associated grounds.

The CAB will also have a green roof that is partially or completely covered with vegetation. According to an Environmental Protection Agency report, green roofs can effectively decrease peak stormwater flows, lower the overall volume of stormwater runoff and reduce the discharge of certain pollutants typically linked to conventional roofs. Construction of the green roof should be completed by spring 2026.

Submerged Gravel Wetlands

In 2024, the Authority began construction on seven submerged gravel wetlands for the Park Economy 3 Expansion project. The submerged gravel wetlands, designed in partnership with North Carolina State University, will be used to treat stormwater runoff from the lot's impervious surface area. The submerged gravel wetlands are designed to maintain a consistent water level to support plants that complete the biochemical process of treating the stormwater.

Placement of the Future Submerged Gravel Wetlands in Park Economy 3



Pictured above is the placement of the future submerged gravel wetlands in Park Economy 3.

To date, construction crews have completed digging the basins and have begun preparing for the installation of various wetland components. All submerged gravel wetlands are expected to be fully constructed and operational by spring 2026.

Erosion and Sediment Control in Park Economy 3

The Authority is making a significant investment in erosion and sediment control for the Park Economy 3 Expansion project. The Authority's erosion control plan uses erosion and sediment control measures, procedures and infrastructure above standard requirements. Some of these measures include the use of flocculants to encourage particulate settling, turbidity curtains and silt socks in sediment ponds to reduce off-site sediment transport.

The Authority and its contractors have requested monthly meetings with the North Carolina Department of Environmental Quality (DEQ) Division of Energy, Mineral, and Land Resources (DEMLR) to review current site conditions. The Authority met with DEMLR at least monthly in 2024 and implemented DEMLR's suggestions and recommendations as feasible and appropriate. The extra inspections and implementation of DEMLR's suggestions demonstrates the Authority's commitment to minimizing impacts to the surrounding areas.

Building a Better Future: Major Capital Projects

Like the region it serves, RDU is experiencing tremendous growth. A record 15.5 million people traveled through the airport in 2024, and RDU now offers flights to more than 79 nonstop destinations in partnership with 19 airlines.

To accommodate more flights and travelers in the years ahead, the Authority is making important investments in airport infrastructure. RDU's Vision 2040 Master Plan for growth guides decisions about major construction projects to meet the community's demand for aviation. Phase 1 of the plan includes \$2.5 billion of projects over the next 10 years and another \$500 million investment to maintain current infrastructure.

The Authority is working to ensure sustainability is a priority throughout the capital project lifecycle. Capital projects are planned, designed, constructed and maintained in accordance with the four pillars of sustainability with an emphasis on reducing carbon footprint, improving energy efficiency, reducing waste, enhancing the customer experience and reducing operational costs. Additional information about the sustainability accomplishments of key capital projects can be found on the [Authority's "Sustainable Construction" webpage](#).

This section of the annual report will focus on the sustainability highlights and accomplishments of the four development projects that form the backbone of the Authority's capital improvement program:

- Runway 5L/23R Replacement
- Park Economy 3 Expansion
- Terminal 2 Landside Expansion
- John Brantley Boulevard Extension

The Authority is committed to pursuing sustainability ratings when applicable for its significant capital development projects. While multiple frameworks or performance rating systems are available to recognize sustainable development practices, the Authority is primarily focusing on two ratings systems: Envision and LEED™.



Envision: Envision is a sustainability rating system developed by the Institute of Sustainable Infrastructure that is geared for civil engineering projects, such as roads, runways and taxiways.

The Envision framework encourages innovation and provides direction in the planning, design and construction of sustainable and resilient infrastructure. The criteria and performance objectives available in the Envision framework promote sustainable choices throughout a project's lifecycle, including in the operations and maintenance stages.

Projects seeking an Envision rating can earn up to 64 credits that are organized into five categories: quality of life, leadership, resource allocation, natural world, and climate and resilience. For each credit, a narrative with supporting documentation must be submitted, and third-party verification that criteria have been met is required. Envision has four award levels based on credits earned: Verified, Silver, Gold and Platinum.



LEED™: Leadership in Energy and Environmental Design (LEED™) is a globally recognized green building rating system that signifies achievement and leadership in sustainability. LEED™ certification provides a framework for healthy, highly efficient and cost-saving buildings.

Projects seeking LEED™ certification must address carbon emissions, energy consumption, waste reduction, sustainable transportation, materials selection, occupant health and indoor environmental quality before undergoing a third-party evaluation process by Green Business Certification, Inc. A point system determines the project's level of achievement: Certified, Silver, Gold or Platinum.



Runway 5L/23R Replacement

Current Project Phase



Construction is underway on one of the most pivotal projects in the Vision 2040 Master Plan—the replacement of RDU’s primary commercial runway, 5L/23R. The new 10,639-foot runway will be located 537 feet west of the current location, and the old runway will be converted to a taxiway. Lumley Road will be relocated to meet Federal Aviation Administration safety standards.

In August 2023, the FAA issued a Finding of No Significant Impact and Record of Decision, providing the Authority with its final environmental determination and approval of the runway project. The Environmental Assessment included a robust public involvement process in compliance with policies from the National Environmental Protection Act and Council on Environmental Quality.

The Runway 5L/23R Replacement project will provide greater economic opportunities for the region, ensure RDU maintains its transatlantic connections and allow for domestic long-haul aircraft to move more passengers and cargo. It will also make room for the future addition of gates at Terminal 2.

The Authority broke ground on the project in October 2023 and is currently performing site work, grading, drainage and utility relocation. The runway is expected to be completed in 2029.



Key Project Sustainability Initiatives

- **Envision Verification:** In 2024, the Authority registered the Runway 5L/23R Replacement project for Envision verification. Envision application documentation will start in summer 2025 and has already been a focus of discussion in the project’s design and construction.
- **Minimizing Land Disturbance:** At the start of design efforts, the project team estimated five million cubic yards of fill material would be needed to level the area proposed for the relocated runway. Through the design phase of the project, the Authority was able to eliminate the need for one of the borrow sites identified in the Environmental Assessment document (Site 1A). Removing this borrow site from the project reduced land disturbance and tree clearing activities for the project by 200 acres in an area adjacent to the Brier Creek Reservoir.
- **Wetlands Mitigation Banking:** The FAA Record of Decision requires all wetland impacts incurred by the project be fully offset through wetland mitigation banking or participation in the State of North Carolina’s in-lieu fee program. A wetlands mitigation bank is a wetland area in the same watershed that has been restored, established, enhanced, or preserved, and set aside to compensate for future impacts on wetlands during developmental activities. Permittees, upon approval of regulatory agencies, can purchase credits from a mitigation bank to meet their requirements for compensatory mitigation. The Authority has expended over \$11 million in wetland mitigation banking to compensate for project impacts.
- **Particle Pollution and Greenhouse Gas Emissions Reduction:** Construction equipment and construction activities will aim to minimize particle pollution and reduce greenhouse gas emissions. Some of the reduction strategies may include the use of alternatively fueled vehicles, the minimization of vehicle idle time, and the use of a blasting plan and coverings.
- **Material Recycling and Reuse:** Work on construction of the replacement Runway 5L/23R began in earnest with site and tree clearing activities on April 8, 2024. A total of 13,000 cubic yards of mulch from clearing activities was reused on-site to provide erosion and sediment control and reduce turbidity within the project limits. The mulch will provide a stable working platform for the future utility corridor work. Additional mulch generated on-site was donated to a local farm to be used for vegetation control around animal fencing and composting efforts. The Runway 5L/23R Replacement project has also been tracking waste diversion rates. So far, the project has been able to achieve a 72% recycling rate.
- **Quarterly Sustainability Reporting:** The contractor is required to submit quarterly reports detailing progress towards general sustainability measures, recycling and reuse, noise minimization efforts, and light and vibration mitigation efforts.

Park Economy 3 Expansion

Current Project Phase



The Authority’s Park Economy 3 Expansion project involves the expansion of the public surface parking lot located near the intersection of Aviation Parkway and National Guard Drive. The lot offers one of the lowest daily parking rates and provides shuttle bus service to Terminal 1 and Terminal 2.

The existing lot has approximately 3,820 spaces, and the proposed expansion will add 7,000 new spaces to meet future parking demand while maintaining economy parking pricing for airport customers. The project site encompasses 158 acres and will also include new circulation roadways, drainage areas and a single-story Customer Amenity Building.

The Customer Amenity Building will enhance the customer experience by providing restrooms, vending machines and a customer lounge with monitors to display flight information. Offices for law enforcement and parking staff will enhance the overall security of the lot and ensure timely customer service and maintenance response.

The Park Economy 3 Expansion project was the first project for which the Authority conducted an Environmental Compliance Review. The Authority developed its Environmental Compliance Review (ECR) process to ensure responsible environmental planning for projects not subject to federal or state approvals. The ECR report was issued in August 2023, after a thorough environmental analysis and public comment periods for the project. For more information, visit [Project Environmental Compliance Review](#).

The Authority began construction on the Park Economy 3 Expansion project in the fall of 2023. It is expected to be completed in phases through 2026.

Key Project Sustainability Initiatives

- **Platinum Envision Verification:** In March 2025, the project received Platinum Envision verification from the Institute for Sustainable Infrastructure. The Envision framework evaluates civil infrastructure projects across a range of sustainability indicators. Platinum is the highest level of recognition. Park Economy 3 is the third project in North Carolina to earn Envision verification and the first in the state to achieve Platinum status. It is also the first airport project in North Carolina to receive this prestigious certification.

Among the many sustainability achievements contributing to the award are:

- **Renewable Energy and Energy Conservation:** Approximately 55% of the total energy consumed at Park Economy 3 is expected to be renewable energy generated with solar panels. Sustainability efforts are expected to reduce energy consumption by 33% throughout the operational life of the parking lot. Conservation measures have also been employed during construction, including the purchase of green power for 100% of

workstation energy consumption and a 38% reduction of energy consumption through improved planning and logistics.

- **Greenhouse Gas Emissions Reduction:** The project is anticipated to reduce total CO₂e by 69% over the course of the lot’s 10-year operational life compared to standard practice alternatives. This will be achieved through the use of electric buses and solar canopies and the conversion of existing parking lot lights to LED. The reduction may increase after electric charging stations for public use are installed.
- **Jobs and Economic Impact:** The project is estimated to create more than 500 jobs in design and construction, with targeted outreach to hire minority and women-owned small businesses. The economic impact from the project is estimated to be approximately \$300 million.
- **Customer Amenity Building LEED™ Certification:** In FY 2023/2024, the Authority announced its intention to pursue LEED™ certification for the Customer Amenity Building and registered it with the U.S. Green Building Council. Decisions for the project have been made with this sustainability framework in mind.
- **LED Lighting:** All existing high pressure sodium parking lot lighting will be converted to LED lighting that is more energy efficient, free of toxic materials, recyclable, longer lasting and more durable than traditional lighting options. LED lighting allows light to be delivered more efficiently to desired locations for the safety and security of patrons, and with less light distribution to off-site areas. William B. Umstead State Park is more than 400 feet away from the parking lot, and the lighting is designed to not extend farther than 40 feet outside project boundaries.
- **Solar Panels and Electric Vehicle Charging:** The project will include the installation of solar technology that will help power new electric vehicle charging infrastructure. Authority staff have prepared multiple concepts with the aim of optimizing power generation, increasing reliability and reducing costs. Solar panels are expected to produce enough electricity to offset much of the energy used at the parking lot and supply power to the charging infrastructure. The Authority has committed to providing 100 Level 1 chargers as part of the ongoing Park Economy 3 Expansion project that can utilize the solar panels as an energy source. The EV charging lot will be located near the entrance of the PE3 lot.
- **Submerged Gravel Wetlands:** The Authority worked with the N.C. Department of Environmental Quality and North Carolina State University to implement a submerged gravel wetland approach for stormwater control and treatment at Park Economy 3. A submerged gravel wetland is a treatment pond filled with gravel substrate material, topped with wetland soil and seeded with wetland plants. It filters out pollutants, mitigates flow rates, reduces sedimentation, and promotes infiltration and recharge. This approach has the added benefit of attracting less wildlife than other treatment methods, reducing airport safety hazards such as bird strikes. Seven submerged gravel wetlands have been designed and are under construction. More information about the submerged gravel wetlands at Park Economy 3 can be found in the **Water & Stormwater** section of this report.

- **Minimized Land Disturbance:** The parking lot expansion was configured to reduce the overall footprint of land disturbed, minimize rock blasting and reduce water resource impacts. The design of the lot avoids developing on or near wetlands and surface water. Approximately 34% of the project area is on previously developed (paved) land. The layout of the remainder of the lot was configured to reduce required soil grading and tree clearing and limit soil disturbance. This effort resulted in reducing the area that needed to be cleared and graded by 1.51 acres. A tree buffer between Park Economy 3 and William B. Umstead State Park was included to further minimize light and noise impacts.
- **Vegetation and Landscaping:** Post-construction, 100% of vegetated areas will be restored to a condition that supports healthy plant and tree growth through topsoil conservation, seeding and sodding. The project will use natural, native soil that is devoid of toxic substances, possesses the appropriate pH range and contains organic matter that fosters optimal plant growth. Future landscaping will eliminate the need for pesticides and fertilizers in areas where they were previously used. Sustainability was also considered in the design to reduce maintenance needs. Monitoring and maintenance plans were developed with specific sustainability performance targets, an implementation schedule, and goals and milestones.
- **Material Recycling and Reuse:** The project is using over 40% of recycled materials by volume, including at least 25% recycled asphalt pavement in the new parking lot sections. Reused materials are being incorporated into the development of the submerged gravel wetlands, minimizing the need to bring new materials to the site. Much of the construction waste will be recycled or reused. The project has a target of diverting 75% of construction waste but is tracking at 99% waste diversion. The diversion rate is expected to remain high throughout the rest of construction.
- **Addressing Turbidity Concerns:** A concern raised early in the construction process was the turbidity, or cloudiness, of water that accumulated in graded areas. The Authority responded rapidly by reviewing best management practices from the erosion and soil control plan and then took action to minimize potential downstream impacts. The Authority installed natural systems and runoff interceptors to capture potentially polluting substances and prevent them from reaching surface water sources. Additionally, efforts were made to reduce sediment transport during construction.
- **Noise and Vibration Mitigation Efforts:** In addition to establishing a tree buffer between Park Economy 3 and William B. Umstead State Park, the Authority requires construction noise mitigation measures including noise buffering or dampening for large machinery and activities such as blasting. With modifications made to the footprint area, blasting occurrences were also minimized. These efforts were documented in a construction management plan and communicated to construction contractor staff.

- **Comfort and Safety Enhancements:** The expanded Park Economy 3 lot was designed with the comfort of guests in mind. It meets all health and safety regulations and laws for operations as defined by the U.S. Department of Transportation, Federal Highway Administration, U.S. Department of Justice (for Americans with Disabilities Act compliance), Federal Aviation Administration and N.C. Department of Environmental Quality. It goes beyond minimum requirements to reduce walking distance to bus stops. Most of the spaces are located within 600 feet of continuously served bus stops and are illuminated by overhead lighting. Covered walkways will provide protection from adverse weather conditions. Blue light phones and the addition of law enforcement and parking staff at the Customer Amenity Building will provide greater assurance of a safe environment for airport guests. Wayfinding signs will reduce the risk of accidents between cars and buses. The project widens traffic lanes from 10 to 12-13 feet and adds additional lanes to reduce potential congestion at the lot entrance.
- **Climate Resiliency:** A climate threat analysis and vulnerabilities assessment was performed for the project, focusing on extreme heat, wind, extreme precipitation events and storms, increased wildfires and unpredictable weather and their potential threats to infrastructure systems. The project is most vulnerable to extreme heat. Designs were modified with climate considerations in mind, resulting in the strategic placement of bus stops, the amenity building and covered walkways to best adapt to threats.



Terminal 2 Landside Expansion

Current Project Phase



The Authority will soon begin work to expand the Terminal 2 landside areas from the terminal curbside to the passenger security checkpoint area. The vision for the Terminal 2 Landside Expansion project is to create a modern, functional and sustainable space that enhances the passenger experience and accommodates growth.

The project will expand the ticketing and international arrival areas, add security checkpoint lanes and upgrade the baggage handling system.

The project is currently in the construction phase, with expected construction completion in 2032.

Key Project Sustainability Initiatives

- **Sustainable Building Rating System:** In February 2024, the Terminal 2 Landside Expansion project was registered to pursue LEED™ v4 ID&C: Commercial Interiors certification. The Authority has a LEED™ consultant onboard to ensure project design and specifications meet the established LEED™ certification goals.
- **Energy Efficiency and Resiliency:** The project team will explore upgrades to the building’s mechanical control systems that can reduce overall operations and maintenance costs. The project team is also looking at reducing heat gain with the addition of sunshades on the more exposed windowed areas, particularly for the harsh south and southwest sun angles.
- **Commissioning:** A building commissioning plan is being developed as part of the project with a commissioning agent onboard to help plan and coordinate the commissioning process throughout all phases of construction. The work includes setting owner’s requirements and testing to ensure those requirements are met.
- **Lighting Upgrades:** The project team is upgrading and retrofitting the decorative post lighting throughout Terminal 2 ticketing and the concourse areas to LEDs. LEDs are more energy efficient than traditional lighting options, free of toxic materials and recyclable. In addition, LEDs are longer-lasting and more durable than traditional lighting options, which decreases the frequency of replacement. LED lighting options also enable light to be delivered more efficiently to the desired location, with less light distribution off-site.
- **Material Selection and Waste Reduction:** The project team will investigate ways to reduce the building’s embodied carbon through thoughtful materials selection. Embodied carbon is the energy and emissions that come from materials used in construction. The team is reusing materials where possible and investigating the use of materials with recycled content. These lower carbon alternatives can reduce the airport’s overall carbon footprint. Also, as a standard practice, the project team will pursue recycling and reuse opportunities during construction to

minimize the amount of waste going to landfills. For example, the project is reclaiming stone panels to reuse and keep as backstock, reclaiming steel from ongoing demolition work, and reclaiming glass from interior panels and railings. Finally, the team is incorporating the use of wood materials in the design to bring biophilic and natural elements indoors for building occupants to experience.

- **Ergonomics:** The project is redesigning its new ticket counters to be more ergonomic for airline operations staff. The operation of airport ticket counters has changed over the years due to the introduction of new processes and technologies, and the new design will support those changes while being protective of staff’s health and wellness.

As the Terminal 2 Landside Expansion project progresses, the Authority will implement additional sustainable practices that align with the goals and targets from RDU’s Sustainability Management Plan.



John Brantley Boulevard Extension

Current Project Phase



To accommodate current and future traffic volumes, the Authority will extend and widen its primary roadway. The John Brantley Boulevard Extension project aims to address congestion issues while providing safe and convenient access to the airport for guests.

The project will add capacity on the roadway, replace a stop-controlled intersection with free-flow movement, and expand the Terminal 2 curbside sidewalk and amenities.

The project will also include a new Ground Transportation Center (GTC) on the ground level of the existing Parking Garage 3 and Parking Garage 4. The GTC will accommodate various commercial ground transportation operations, such as taxi pick-up, Transportation Network Company (TNC) pick-up, hotel/motel shuttle drop-off and pick-up, off-airport parking courtesy shuttles drop-off and pick-up, limousines pick-up, and prearranged vans/mini-buses drop-off and pick-up. The GTC will help reduce congestion on the terminal curbside roadway and improve operational efficiency with a central location for commercial ground transportation activities.

The project is currently in the design phase. Construction is anticipated to begin in 2025, with expected completion in late 2030.

Key Project Sustainability Initiatives

- **Environmental Compliance Review:** Through the Environmental Compliance Review (ECR) process, the Authority will conduct an environmental analysis of the John Brantley Boulevard Extension project, seek public comment and develop a report that will be presented to the Authority’s Board. RDU’s ECR process is the first of its kind among airports nationwide and ensures responsible environmental planning for projects not subject to federal or state approvals. The ECR process includes two public workshops, the first of which was held on December 11, 2024. Biological resources and archaeological resources surveys for the site have been completed. For more information, visit [Project Environmental Compliance Review](#).
- **Envision:** The Authority has included funding in the project design to provide Envision support to determine suitability for certification.
- **Material Conservation and Reuse:** The project team is investigating the possibility of incorporating recycled material in the paved asphalt portions of the project. There may also be opportunities to reuse material generated on-site
- **Lighting Upgrades:** The project team will install LEDs for necessary lighting along the new John Brantley Boulevard Extension. LEDs are more energy efficient than traditional lighting options, free of toxic materials and recyclable. In addition, LEDs are longer-lasting and more durable than traditional lighting options, which decreases the frequency of replacement.

LED lighting options also enable light to be delivered more efficiently to the desired location, with less light distribution off-site.

- **GHG Emission Reductions:** Operational emissions inventories were prepared for the project using the U.S. Environmental Protection Agency’s Motor Vehicle Emissions Simulator (MOVES) emission factors. The tool identified a decrease in net emissions associated with the project once the GTC is operational since it would cause ground transportation vehicles to turn off John Brantley Boulevard before Terminal 1, reducing the driving distance to the airport exit. The shorter route for these vehicles over time will result in a decrease of 688 metric tons of CO₂e emissions per year.



Looking Forward

The Raleigh-Durham Airport Authority remains focused on employing a balanced approach to sustainability that considers long-term environmental, economic, social and operational impacts in its decision-making processes.

Several sustainability initiatives will gain momentum next year, including efforts to achieve Airport Carbon Accreditation: Level 2 by the end of 2025. The ACA program is the only industry-endorsed, carbon management certification standard for airports. Pursuit of ACA Level 2 accreditation is part of the Authority's Greenhouse Gas Emissions Roadmap project and will encompass carbon mapping and reduction efforts. The Authority will also continue to improve GHG emission and energy usage data tracking through the migration of data into EnergyCAP.

Additionally, the Authority will work to reduce its energy consumption in the year ahead by expanding its use of building automation and building management systems in airport buildings, investigating renewable energy alternatives and exploring opportunities for greater energy efficiencies.

The Authority will also develop an Electric Vehicle Infrastructure Plan for its vehicle fleet. This will include analyses of electric, zero-emission, low-emission and alternative fuel vehicles, as well as a plan for installing the infrastructure necessary to support electric vehicles.

These efforts and others support our commitment to achieving a sustainable future for RDU as we strive to meet the growing air service needs of our community.





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