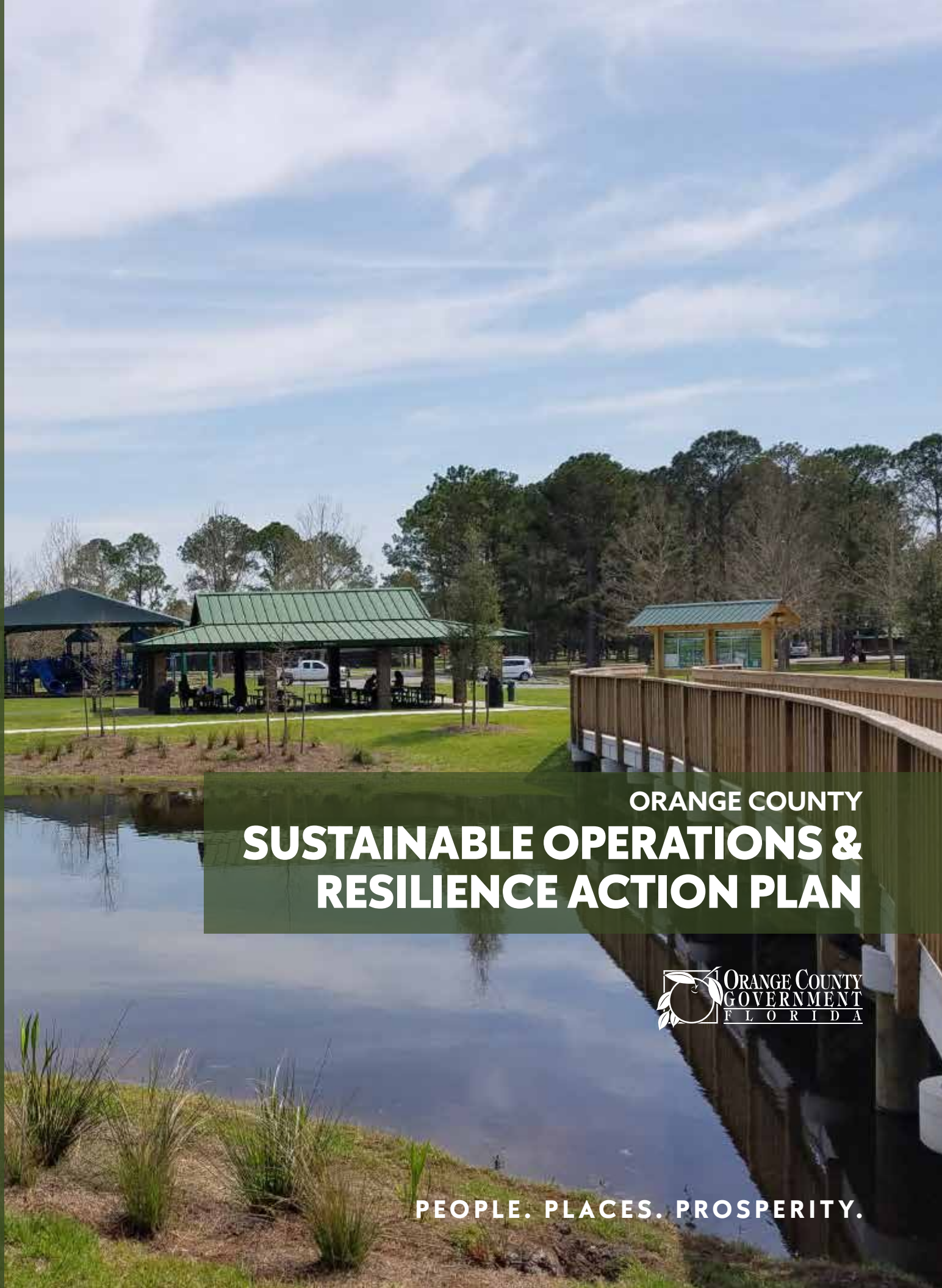

ORANGE COUNTY

SUSTAINABLE OPERATIONS & RESILIENCE ACTION PLAN

ORANGE COUNTY GOVERNMENT FLORIDA

PEOPLE. PLACES. PROSPERITY.

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LEAD BY EXAMPLE STRATEGY

One of my top priorities as Mayor has been to enhance Orange County's sustainability and resilience efforts. Although the 2020 pandemic has presented some challenges, it is has not kept us from moving county-wide operations and our community toward the future. It is my pleasure to present the 2030 Orange County Sustainable Operations & Resilience Action Plan.

In 2019-2020, Orange County developed a phased approach to become a top-ranked community for sustainability. The first phase prioritizes leading by example through the implementation of internal actions and practices throughout our operations, assets, and day-to-day procedures. The second phase will focus on aligning and updating Orange County's community-wide initiatives to benefit all residents and businesses in our community.

The internal goals will help us achieve a variety of benefits such as reducing our infrastructure risks and operational costs as well as continuing to fund critical programs and services. Collaboration, innovation, and inclusion have been at the forefront of this action plan's development.

I firmly believe that this comprehensive plan will have a lasting impact on our ability to meet the challenges before us. With your help, we can do this while preserving our natural environment, creating sustainable jobs, and providing a more inclusive and healthy future for all.

Sincerely,

Jerry L. Demings
Orange County Mayor

Nicole Wilson
District 1 Commissioner

Christine Moore
District 2 Commissioner

Mayra Uribe
District 3 Commissioner

Maribel Gomez Cordero
District 4 Commissioner

Emily Bonilla
District 5 Commissioner

Victoria P. Siplin
District 6 Commissioner

Byron W. Brooks
County Administrator

EXECUTIVE SUMMARY

Purpose and Vision

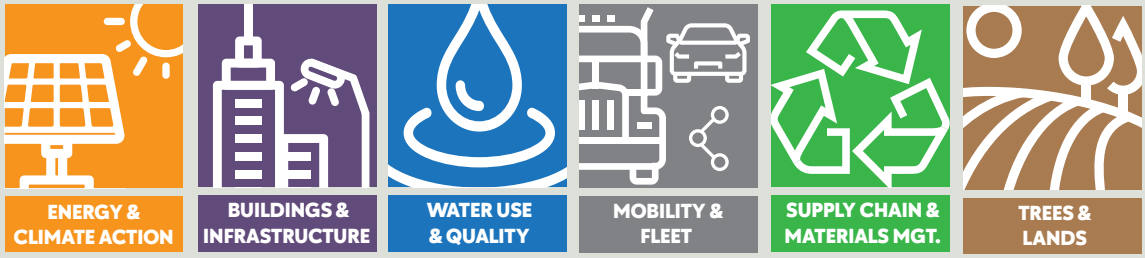
Over the last five years, cities, counties, private industry, and non-profit organizations on a global scale have accelerated their sustainable development agenda to drastically reduce environmental impacts, fast-track adoption of clean energy and unify around a path to resolve global issues such as poverty, hunger, and pollution. Mayor Jerry L. Demings embraces a leadership role in regional efforts to ensure that sustainability, resilience, and environmental preservation are considered in every decision with advocacy and prioritization at the most senior level.

A concise, measurable, and collaborative Sustainable Operations & Resilience Action Plan (Action Plan) has been developed in this first phase that focuses on Orange County operation to lead by example. Outcomes of the Action Plan include:

- Lead-by-example strategy to measure performance and become a top-ranked and recognized County in sustainability and resilience.
- Reduce infrastructure risks and operational costs to continue to fund critical programs and services.
- Position Orange County for innovative grant funding opportunities and public-private partnerships.
- Develop data-driven goals and recommended actions to enhance Orange County's sustainability and resilience programs.
- Collaborate across departments around the themes of resilience, inclusion, and innovation.

Government Operations Focus Areas

The planning effort focuses on internal operations, procedures, and assets. Additionally, the Action Plan has been aligned with recommendations from the 2018 Mayor Demings Transition Team Report, the 2014 Our Home for Life Community Sustainability Plan, and the 2007 Orange County Climate Protection Plan. The Action Plan outlines a strategy to achieve 17 goals among six focus areas including:



The goals are specifically aligned with national initiatives that are measurable against other peer communities. The goals are time based and data driven with a collection of 100 short- and long-term actions that drive cross-departmental implementation and ultimately goal achievement.

Benefits to Orange County:

Along with the vision of becoming a world-class community, our commitments to innovation, sustainability, and resilience will help position Orange County at the international scale and as a leader in many of the outlined focus areas. The Action Plan provides a clear set of expectations to measure accountability. The implementation of the Sustainable Operations & Resilience

Action Plan, along with selected international commitments, will solidify Orange County's strategy with national and global accountability measures. Our staff, elected officials, the public, and regional stakeholders will understand Orange County's vision to align with other communities and become a top-ranked sustainable community.

Implementing the Action Plan will result in:

- Operational cost savings that will help continued funding of critical programs and services
- Increased grant opportunities and public/private partnerships
- Enhanced socio-economic inclusion in the design and development process
- Decreased environmental impacts to our community

Benefits to Community:

While this is an internal Action Plan, benefits to the community were considered for each goal. The outlined actions were developed with a triple bottom-line approach: People, Places, and Prosperity. Mayor Demings appointed a 40-member external committee of community leaders who worked July through November 2020 with our staff to craft this Action Plan. Additional focus areas that were discussed in the public meetings included Education, Civic Engagement, Arts & Culture, Local Food, and Socio-Economic Resilience. A community-focused update to the Orange County Our Home for Life will follow as part of this enhanced initiative.

Fiscal Impacts:

This Action Plan was developed during the COVID-19 pandemic. As such, future budgets, staff support, and implementation timelines have been carefully considered, along with the current economic conditions, and have remained fiscally conservative. Most of the actions and goals have been designed with the current levels of budget in mind. Key operational efficiencies, utility savings, and targeted grant opportunities will be critical and significant. These savings will be utilized to offset future costs, prioritize investments, and assist in in future budget planning.

Orange County, Florida, at a Glance

Under the leadership of Mayor Jerry L. Demings, County employees embrace a culture of innovation, collaboration, and inclusiveness. The Board of County Commissioners (BCC) is responsible for governance of a community of almost 1.4 million residents. There are approximately 8,000 employees under the BCC and the FY21 approved budget is $4.8 Billion. The BCC represents all residents of Orange County, including those in Orlando, Apopka, Bay Lake, Belle Isle, Eatonville, Edgewood, Lake Buena Vista, Maitland, Oakland, Ocoee, Windermere, Winter Garden and Winter Park.

GOAL SUMMARY

Energy & Climate Action

1. Reduce County operations greenhouse gas emissions from 2015 baseline 30% by 2030
2. Achieve 100% of County operations electricity load from clean, renewable sources by 2035
3. Implement community-wide energy saving programs for all

Buildings & Infrastructure

4. Beginning in FY21, County-funded buildings and infrastructure will meet new high-performance and green building standards
5. Align energy management strategies across County departments to reduce 30% of building and infrastructure energy use by 2025
6. Reduce risks for County services and infrastructure based on regional resilience indicators and updated mitigation plans

Water Use & Quality

7. Protect water quality through innovative technology and integrated water management audits at County facilities
8. Reduce water use 25% across County facilities by 2030 through water reuse and equipment efficiencies
9. Develop clean and safe access to alternate water supply to meet future demand

Mobility & Fleet

10. Optimize vehicle fleet performance through onboard technology and a 50% reduction of petroleum-based fuel by 2030
11. Deploy EV-ready infrastructure and convert 100% of light-duty County fleet to electric or alternative by 2030
12. Improve vehicle, bicycle, and pedestrian roadway safety, resilience, and interoperability through traffic technology retrofits at 300 intersections by 2025

Supply Chain & Materials Management

13. Implement a sustainable procurement program with supplier metrics by 2023
14. Increase waste diversion rates to 70% by 2030 at County facilities
15. Decrease the per customer landfill disposal tonnage 15% by 2025

Trees & Lands

16. Preserve an additional 23,000 acres of environmentally sensitive lands and increase County natural land assets by 2030
17. Protect and enhance tree canopy and wildlife habitats on County properties

Plan Development Strategy

To prepare a foundation for the Action Plan, a 30-member cross-departmental staff team was formed to develop a preliminary sustainability and resilience strategy. Mayor Demings subsequently appointed a 40-member external committee of community leaders, Orange County municipalities, agencies, universities, and subject matter experts to assist staff with crafting the internal goals and actions. The resonating themes of resilience, inclusion, and innovation have been at the forefront of the Action Plan development.

The Action Plan is intended to be reviewed every five years or as needed to account for changing regional, national, and global sustainability and resilience initiatives, evolving technology, science-based models, and policy changes. Our continuous improvement approach follows a four-step model (Plan - Do - Check - Act).

Plan Implementation

Along with the appointed Orange County Citizen Sustainability Advisory Board, the internal Sustainability and Resilience Team and County Leadership will implement the goals and actions of the plan to influence and weave through a variety of guidelines, procedures, administrative codes, and guiding documents, both internal and external, such as:

1. Comprehensive Plan & Orange Code
2. Sustainable Orange County Our Home for Life Plan
3. OCCC Sustainability Action Plan
4. Orange County Utilities Strategic Plan
5. Capital Improvement Plan
6. Sustainable Materials Management Plan
7. Parks Master Plan
8. Housing and Community Development Plan
9. Community Action Plan

ACKNOWLEDGEMENTS

From July through November 2020, Orange County kicked off a 40-member external Sustainability & Resilience Committee to assist with technical feedback, industry innovation, and socio-economic connections. While this initiative is an internally focused action plan, a well-planned effort to build a collaborative set of actions was a key requirement to Orange County pursuing a more aggressive sustainability agenda and establishing the platform for broader community adoption of new programs. The 40-member committee was led by two co-chairs from our community as follows:

Leila Jammal, PE, Vice President, NV5

"This journey began with a challenge from our Mayor Jerry Demings to 'Build a Better Tomorrow.' It has been an honor to serve on this committee of leaders in very diverse disciplines from both the public and private sectors – all engaged in their communities. I am confident this plan will enhance the quality of life and well-being in a way that provides equitable access and resources to all."

Byron Knibbs, Fmr. Vice President, Orlando Utilities Commission

"As an Orange County native, I am honored to have been a member of the Orange County Sustainability Advisory Board and Mayor Demings' appointed committee to enhance our initiatives across the County. I share the County's vision to be a world-class and experimental community where technology, residents, and nature thrive as a sustainable system. We must be aggressive and visionary in order to achieve a better future for all."

SUSTAINABILITY & RESILIENCE EXTERNAL COMMITTEE

Rachel Allen, Peace and Justice Institute, Director

Madeline Almodovar, SAB, Jacobs, Environmental Scientist

Ivan Aron, General Manager of Smart Cities, Siemens

Mohamed Aty, Professor Department of Civil, Environmental and Construction Engineering, University of Central Florida

Jim Bacchus, Director of University of Central Florida's Center for Global Economic and Environmental Opportunity

Bill Bradford, Principal, Hanson Engineering

Tommy Boroughs, SAB, Retired, Former Attorney, Holland & Knight Law Firm

Shana Carson, SAB Shana Carson Attorney, CEO

Chris Castro, Director of Sustainability & Resilience, City of Orlando

Sam Choi, Renewable Energy Manager, Orlando Utilities Commission

Louis Divita, Florida Recyclers Coalition Inc., Executive Director

Philip Donovan, Principal, Little Architects

David Dunn, Director of Fleet and Facilities, City of Orlando

Derek Fehrer, WSP Sustainable Energy Consultant

Raquel Fernandez, Beyond Coal Coordinator, Sierra Club Central Florida

Susan Glickman, Executive Director, Southern Alliance for Clean Energy

Samuel Graham, SAB, President, Greenpath Energy Solutions

John Guziejka, UCF Urban Forestry & Land Management

C.T. Hsu, President, C.T. HSU + Associates, P.A

Leila Jammal, Vice President, NV5

Judith Ann Jarette, GOAA, Assistant Director, Airport Operations - Airfield

Nicole Kennedy, City of Apopka, Sustainability Coordinator

Byron Knibbs, SAB, Former Vice President, Orlando Utilities Commission

Ashia McMillon, Research & Grants, United Arts of Central Florida

John Martinez, SAB Chair, Senior Client Advisor, J.P. Morgan Private Bank

Kenneth Peach, SAB, Health Council of East Central Florida Executive Director

Melvin Pittman, SAB, Retired: County Planner, Former Director, Community and Environmental Services, Orange County Government

Alex Pressier, Mitigation Marketing, Vice President

Jenifer Rupert, East Central Florida Planning Council, Regional Resilience Collaborative Chair

Adel Shalaby, Principal, Rhodes Britto Architecture

Resham Shirsat, SAB, City of Orlando, Sustainability Project Coordinator

John Slot, Chief Innovation Officer, Lynx

Monica Socarras, Qlatinx, Climate Justice Organizer

Kristopher Stenger, City of Winter Park Assistant Director, Building Department

Jennifer Szaro, Executive Director, Association of Energy Services Professionals

Carlos Torrealba, Climate Justice Organizer, Central Florida Jobs with Justice

Susy Torriente, Jacobs, Resilient Cities Lead

Kristy Walson, Principal, TLC Engineering Solutions

Yara Watson, UCF, Sustainability Coordinator

Theo Webster, Arts and Non-Profit Consulting, CEO

SUSTAINABILITY & RESILIENCE INTERNAL TEAM

To prepare a foundation for the Action Plan, a 30-member cross-departmental staff team was formed to develop a preliminary sustainability and resilience strategy. This team is led by the Chief Sustainability & Resilience Officer and acts as a two-way line of communication and coordination for cross-County implementation of the goals and actions.

Alicia Baxter, Parks & Recreation
Jeff Benavides, Chief Sustainability & Resilience Officer
Matt Blowers, Utilities: Water and Engineering
Julie Bortles, Environmental Protection
Marc Cannata, Utilities: Water and Water Reclamation
Andres Salcedo, Engineering & Field Services
Alexis Clark, Environmental Protection
Jennifer Cummings, Public Works
Inshan Edoo, Fleet Management
Lori Forsman, Sustainability & Resilience
Philip Francom, Fire Rescue: Facilities Management
Jonathan Gerchar, Information Systems & Services
Jane Gregory, Environmental Protection
David Gregory, Utilities: Solid Waste
David Jones, Environmental Protection
Aleas Koos, County Attorney's Office
Sara Flynn-Kramer, Capital Projects
Aimee Krivan, Environmental Protection
Bryan Lucas, Fleet Management
Alan Marshall, Planning, Environmental & Development Services
Zulay Milan, Procurement
John Parker, Environmental Protection
Joel Prinsell, County Attorney's Office
Clara Quinones, Information Systems & Services
Teresa Remudo-Fries, Utilities
John Roberts, Convention Center: Facility Operations
Dhanraj Singh, Economic Planning
Rich Steiger, Facilities Management
Steve Urena, Facilities Management
Jim Ward, Planning
Roan Waterbury, Capital Projects

Capital Project Teams

Public Works: Development Engineering
Utilities: Engineering
Administrative Services: Capital Projects
PEDS: Transportation Planning
Public Works: Traffic Engineering
Convention Center: Capital Planning
Fire Rescue: Infrastructure and Asset Management

Facilities Teams

Administrative Services: Facilities Management
Fire Rescue: Fire Operations
Public Works: Stormwater Management
Public Works: Development Engineering
Utilities: Engineering
Utilities: Water & Water Reclamation
Convention Center: Facilities Operations

Energy Management Team

Marc Cannata, Utilities
Hector Clemente, Convention Center
Phillip Francom, Fire Rescue
Tad Parker, Utilities
Rich Steiger, Facilities Management
Steve Urena, Facilities Management
Chief John Westmoreland, Fire Rescue

Tree Team

Alicia Baxter, Parks & Recreation
Jennifer Cummings, Public Works
Brandy Driggers, Zoning
Jane Gregory, Environmental Protection
Beth Jackson, Environmental Protection
Regina Ramos, Parks & Recreation
John Roberts, UF/IFAS
Jim Ward, Planning
Anoch Whitfield, Zoning

Fleet Team

Bryan Lucas, Fleet Management
Inshan Edoo, Fleet Management
Nathaniel Haney, Utilities
John Parker, Environmental Protection
Kevin Simmonds, Utilities
Chief Brett Wasmund, Fire Rescue

REGIONAL & GLOBAL ALIGNMENT

Orange County is committed to enhancing collaboration between our cities and towns around sustainability and resilience efforts. In March 2019, the East Central Florida Regional Resilience Collaborative launched to push forward on the vision for a regional approach to Sustainability and Resilience. Local governments and key agencies signed on to a Memorandum of Understanding (MOU) committing to a coordinated and collaborative approach, building on current efforts to best serve the region. Along with Orange County, the region is comprised of seven other counties and 68 cities and towns representing more than 4.1 million residents and hosting more than 75 million visitors annually.

To build upon Mayor Demings' vision for a world-class community, Orange County is aligning itself with internationally accepted frameworks of unified strategy and targets to track progress and measure against our peers.

EAST CENTRAL FLORIDA REGIONAL RESILIENCE COLLABORATIVE

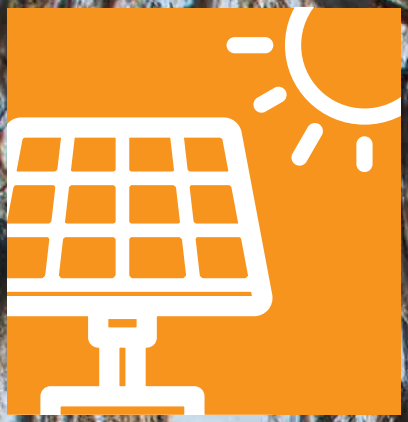
FAC All About Florida FLORIDA ASSOCIATION OF COUNTIES

ICLEI Local Governments for Sustainability

NATIONAL ASSOCIATION of COUNTIES NACo

SUSTAINABLE DEVELOPMENT GOALS

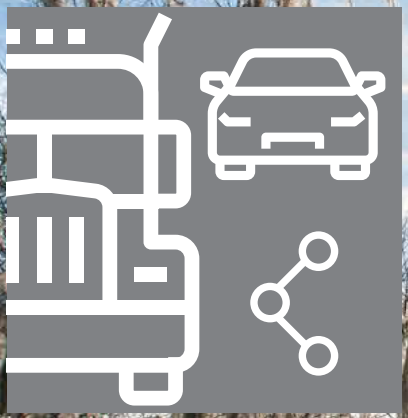
U.S. GREEN BUILDING COUNCIL USGBC



ENERGY & CLIMATE ACTION

BUILDINGS & INFRASTRUCTURE

WATER USE & QUALITY



MOBILITY & FLEET

SUPPLY CHAIN & MATERIALS MGT.

TREES & LANDS

ORANGE COUNTY GOVERNMENT FLORIDA

ENERGY & CLIMATE ACTION

Focus-Area Scope:

To address the effects of climate change on our residents, community, and infrastructure, Orange County is committing to reduce greenhouse gases (GHGs), specifically from fossil fuel usage, in the large number of buildings, facilities, plants, and vehicles owned and operated by the County. Orange County recognizes that efficiency gains through high-performance buildings and infrastructure will partially assist in achieving these goals. New commitments to develop clean energy projects and offset energy usage both on-site and off-site through utility partnerships are also underway.

Why This Is Important:

Transforming our global economy to operate on power sources that do not cause GHG emissions takes political will and time. The 2018 Intergovernmental Panel on Climate Change special report concluded that limiting global warming to 1.5°C above pre-industrial levels would require "far-reaching and unprecedented changes in all aspects of society and requires deep emissions reductions." Climate change will disproportionately affect our state's most vulnerable people. Without a strong federal framework in place, action has begun to make substantial progress at the local level.

What We Will Achieve:

Orange County will play a leadership role and gain recognition as a county by making bold sustainability commitments and reporting publicly on progress. Orange County will collaborate at the local, state, and federal level to develop policy and legislation to forge a pathway for a sustainable and resilient future.

Transition Team Report Recommendation(s) Addressed:

Dramatically expand the County's Clean Energy Production.

Implement recommendations from the Regional Affordable Housing Initiative Report through the Smart Growth Vision.

GOAL 1:

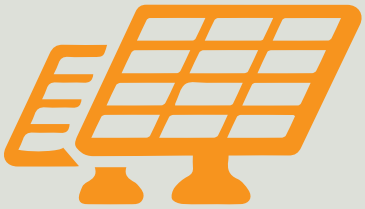
REDUCE COUNTY OPERATIONS GREENHOUSE GAS EMISSIONS FROM THE 2015 BASELINE 30% BY 2030

GOAL 2:

ACHIEVE 100% OF COUNTY OPERATIONS ELECTRICITY LOAD FROM CLEAN, RENEWABLE SOURCES BY 2035

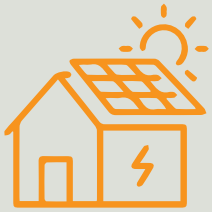
GOAL 3:

IMPLEMENT COMMUNITY-WIDE ENERGY SAVING PROGRAMS FOR ALL



1.115 MW
installed solar capacity at Orange County facilities

TOTAL ENERGY USE 2019 - 2,459,553 MMBTUs at a cost of **$46.9 million**



NEW GOOGLE ENVIRONMENTAL INSIGHTS EXPLORER shows rooftop solar potential across Orange County as **345,000** roofs with **9.2 MW** capacity

History and Baseline Status:

In 2007, the BCC passed a resolution committing to pursue five milestones to reduce GHG emissions by specified dates throughout our community. In September 2011, Orange County was recognized by ICLEI Local Governments for Sustainability for achieving all five of the Campaign's milestones. In May 2014, the Sustainable Orange County Plan ("Our Home for Life") was accepted by the BCC and included a goal to reduce criteria pollutants and GHGs. In 2015, accounting and tracking for energy use, water use, and GHG were put on hold until 2020.

SUMMARY OF GOALS

GOAL	METRIC	BASELINE (YEAR)	GOAL TARGET (YEAR)
GOAL 1: Reduce County operations greenhouse gas emissions from 2015 baseline 30% by 2030	Metric Tons CO2 equivalent (MTCO2e)	2015 - 590,485 $MTCO_2e$	2030 - 30% Decrease = 413,340 $MTCO_2e$
GOAL 2: Achieve 100% of County operations electricity load from clean, renewable sources by 2035	Installed renewable energy capacity (MW)	2019 - 1.1 MW (<1%) Installed solar capacity (2019 - 455,523,508 kWh)	2035 - 185 MW of renewable energy purchased, installed, or offset.
GOAL 3: Implement community-wide energy saving programs for all	2020 - New Goal	2020 - No Baseline	2030 – No Target

Project Highlight

In partnership with the Orlando Utilities Commission (OUC) since 1998, Orange County has been turning "trash into treasure" by capturing methane emissions from county landfill cells and piping it to Stanton Energy Center (SEC) where it is co-fired with coal. In addition to helping reduce GHG emissions from the landfills, the 8-megawatt (MW) green energy program displaces more than 3 percent of the fossil fuel required for SEC Units 1 and 2 and provides enough electricity every day for 10,000 homes. The OUC facility at the Orange County Landfill produces more than 100,000 MWh of reduced-emissions power – offsetting about 44,000 tons of coal each year.

As a reliable source of energy, landfill gas is also sustainable… which is why it's been part of the OUC energy portfolio since 1998.

GOAL 1: REDUCE COUNTY OPERATIONS GREENHOUSE GAS EMISSIONS FROM 2015 BASELINE 30% BY 2030

Overview:

Goals and actions within the other focus areas are connected to this overarching goal across our government operations. In 2007, the BCC passed a resolution pledging to address climate change and the mitigation of greenhouse gases. As a result of the most recent forecast of threats and vulnerabilities from the United Nations International Intergovernmental Panel on Climate Change, cities, counties, private industry and non-profits have stepped up across the globe over the last three years to protect natural resources, accelerate adoption of clean energy, and reduce greenhouse gas emissions.

Benefits to the County:

Through an update to the resolutions and goals stated in previous plans, the County will voluntarily sign on to national and international commitments. This action will showcase local/regional collaboration with our neighboring cities and counties, as well as with the East Central Florida Regional Planning Council and 26 other municipalities across Central Florida. Achieving connected goals will result in cost savings and environmental impacts.

Benefits to Community:

This commitment will support our vision to become a top-ranked sustainable county in the United States. The connected goals and actions will increase quality of life for our residents and enable new economic development and innovation opportunities. The County will also quantify local costs for the social and environmental impacts of GHG emissions.

Fiscal Impacts:

This goal has been designed to remain conservative in this time of budgetary constraints. The County will need to maintain current budgeted activities, strategic priorities, programs, and staff that are directly tied to greenhouse gas emissions. A total of $2.3 million per megawatt of solar power installed for County developed projects is used for future forecasts.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Complete an analysis of GHG emissions by sector based on overall percentages and potential mitigating actions and set sub-goals.	**FY21-22**	**Lead:** County Administration **Support:** Fleet Management, Energy Management Team, Utilities	Current budgeted activity
Sign on to the following international commitments: Global Covenant of Mayors, Climate Mayors, Mayor's for Solar Energy, and Ready for 100%.	**FY22**	**Lead:** County Administration **Support:** Mayor's Office, Environmental Protection, County Attorney	Current budgeted activity
Maintain GHG emission reporting and accounting practices at least every two years.	**FY21-50**	**Support:** County Administration, Environmental Protection, County Attorney	$5,700/yr
Complete County operations 2018-2019 GHG emissions inventory.	**FY21**	**Lead:** County Administration **Support:** Fiscal & Operational Support	Current budgeted activity
Complete community-wide GHG emission inventory with the East Central Florida Regional Planning Council.	**FY21-50**	**Lead:** County Administration **Support:** Fiscal & Operational Support	Current budgeted activity
Update the employee Vehicle Miles Traveled (VMT) with actual employee survey data.	**FY21**	**Lead:** County Administration **Support:** Human Resources, Transportation Planning	Current budgeted activity

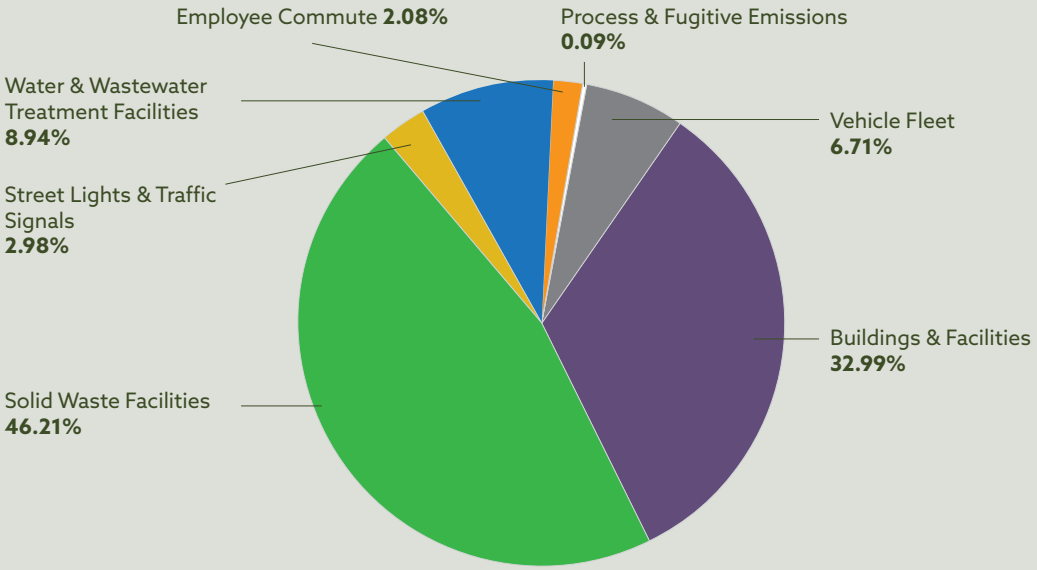
**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Complete a cost and feasibility study for a waste-to-energy facility and quantify avoided GHG emissions from the Orange County Landfill.	**FY23-25**	**Lead:** County Administration **Support:** Utilities	In coordination with SMMP budget
Create a mitigation program at Orange County Convention Center (OCCC) where clients can choose to offset their event's footprint. Funds generated would be used for County projects that support carbon mitigation.	**FY21-23**	**Lead:** OCCC **Support:** County Administration, IFAS, Planning, Environmental Protection, External Partners	Current budgeted activity
Create a regional nature-based carbon management strategy that protects, restores and manages natural land assets for the purposes of carbon sequestration and carbon storage. This strategy can include publicly-owned land and privately-owned land inside or outside the county boundary.	**FY22-23**	**Lead:** County Administration **Support:** IFAS, Planning, Environmental Protection, External Partners	$12,000 Consultant Support
Create a regional voluntary carbon offset program that establishes a fund used for local mitigation efforts such as tree planting, renewable energy installation or vehicle electrification. Enter into public-private partnerships to expand OUC's and OCCC's current voluntary carbon offset programs.	**FY22-23**	**Lead:** County Administration **Support:** IFAS, Planning, Environmental Protection, External Partners	$12,000 Consultant Support

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

2015 GHG EMISSIONS BREAKOUT BY SECTOR



This GHG Emissions baseline includes primarily Scope 1 and Scope 2 emissions for Orange County Government Operations, but also includes Scope 3 emissions associated with Employee Commute.

More than 600 local governments have made updated climate commitments in the last five years. Orange County believes a comprehensive decarbonization strategy with on-the-ground solutions will put our community on a path to climate neutrality.

Orange County's Climate Action Strategy is being developed in accordance with the resources and protocols from Rocky Mountain Institute, Google Environmental Insights Explorer, Global Covenant of Mayors, and ICLEI. These resources are geared to help governments implement climate programs and actions that resolutely place their communities on an aggressive path toward sustainable, low-carbon economies.

COUNTY OPERATIONS GHG EMISSION REDUCTION PLAN

GOALS & ACTIONS CONTRIBUTING TO GHG EMISSION REDUCTIONS	REDUCTION STRATEGY *(Shown in Metric Tons of Carbon Dioxide Equivalent)*
Fleet Tech Deployment at 600 vehicles would save 250,644 gallons of gasoline by 2030.	2,227 MTCO2e
Potential light-duty fleet vehicle electrification plan to include 662 fleet vehicles and would save 0.5 million gallons of gasoline by 2030.	4,444 MTCO2e
Potential diesel fleet conversion to Compressed Natural Gas (CNG) plan to include 263 medium- to heavy-duty fleet vehicles and would save 228,500 gallons of diesel and 5,000 gallons of gasoline by 2030.	2,371 MTCO2e
Reduce 30% of building and infrastructure energy use by 2025.	110,933 MTCO2e
Conduct feasibility study to expand biogas capture and reuse at three wastewater treatments plants for Renewable Compressed Natural Gas (r-CNG).	Under Review
Increase the amount of installed rooftop solar, ground-mounted solar, and floating solar PV systems on County facilities.	Under Review
Installation 2 MW ground mount solar PV array at a water treatment facility.	3,068 MTCO2e (4,339,000 kWh/yr)
Maintain landfill gas collection and delivery to Orlando Utilities Commission	70,704 MTCO2e According to OUC 44,000 tons of coal per year is avoided with the methane from our landfill.
Examine Planning Scenario to reduce employee vehicle miles traveled by implementing 3 days per week telecommuting for 2,600 employees.	2,483 MTCO2e VMT saved = 9,555,000 Estimated Gallons saved =279,386* (*CAFÉ std 34.2)
Total GHG Reduction Forecasted by 2030	196,230 MTCO2e

The County operations GHG emissions reduction plan outlined above would reduce environmental impacts equivalent to protecting 256,267 acres of forests, electricity use from 33,223 homes, and removing 42,394 vehicles from the road.

COUNTY OPERATIONS GHG EMISSION SOURCES

1. Buildings & Facilities	Electricity, Natural Gas, Propane
2. Vehicle Fleet	Diesel, Gasoline, Propane, Compressed Natural Gas, Electricity
3. Solid Waste Facilities	Methane
4. Streetlights and Traffic Signals	Electricity
5. Employee Commute	Diesel, Gasoline, Compressed Natural Gas, Electricity
6. Water and Wastewater Treatment Facilities	Electricity, Natural Gas, Methane, Methanol, Nitrogen
7. Process & Fugitive Emissions	Various Refrigerants

GOAL 2: ACHIEVE 100% OF COUNTY OPERATIONS ELECTRICITY LOAD FROM CLEAN, RENEWABLE SOURCES BY 2035

Overview:

In conjunction with our energy efficiency and fuel-reduction goals, the County will commit to transition from energy that is generated through the burning of fossil fuels and prioritize energy development from clean, renewable sources including wind, solar, tidal, and geothermal.

Benefits to the County:

Orange County will minimize its environmental impacts and contributions to global climate change from County operations. This is a lead-by-example approach designed to be in lockstep with community-wide energy and fuel transitions.

Orange County's goal for 100% clean, renewable energy is partially dependent on Duke Energy's and OUC's announced commitment to 100% net-zero carbon emissions community-wide by 2050.

Benefits to Community:

Community support of our region's clean and renewable energy goals will critical in order to transition our local economy and power sources. Continued education to businesses and residents is focused on energy efficiency and job growth to support a health economy and environment.

Fiscal Impacts:

The County will focus on reducing energy consumption and associated costs in order to lessen the amount of clean energy purchases or project development needed. The County's renewable energy roadmap will identify a Capital Improvement Plan (CIP) and associated costs to develop projects. Utility-led subscription programs and other alternative funding programs will be prioritized to reduce capital costs.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Complete a solar feasibility and capacity study, both on-site and off-site, for County facilities.	**FY21-22**	**Lead:** County Administration **Support:** Facilities Teams and Capital Projects Teams	Current County Administration & Energy Team. Utilities completed partial study.
Continue and expand the current landfill gas utilization system to produce additional energy.	**FY22-30**	**Lead:** Utilities **Support:** County Administration	To be determined by the Sustainable Materials Management Plan (SMMP)
Conduct a cost and feasibility study of the comprehensive biogas to energy project through incorporation of the Orange County Fats, Oils, and Grease (FOG) Management Program.	**FY22**	**Lead:** Utilities **Support:** Environmental Protection, Fleet Teams.	Biogas feasibility study for SWRF completed in 2019. Estimated capital cost $5.0 M.
Starting FY21, County-funded CIP roofing and electrical projects to be designed to be solar ready and EV ready.	**FY21-30**	**Lead:** Capital Project Teams, Facilities Teams **Support:** County Administration	Less than 0.25% of project costs.
County CIP projects are to be evaluated for on-site renewable energy production compared to utility-offered community solar programs. New County CIP project budgets need to accommodate 100% of energy usage from Duke Energy's Clean Energy Connection program and OUC's Community Solar program as applicable.	**FY23-30**	**Lead:** County Administration **Support:** County Attorney, Utilities, Capital Project Teams	Estimated utility bill increase up to $2.4M per year.
Install solar PV and energy storage systems on County buildings based on feasibility and financial prioritization study. Focus on hurricane mitigation efforts to have decentralized energy available. Evaluate a specific goal of having 50% of power used by County-owned buildings from clean energy sources within 10 years. The remainder of the 50% electric load can be offset through local clean energy purchase programs.	**FY22-30**	**Lead:** County Administration **Support:** Capital Project Teams, Facilities Teams, County Attorney	On-site installed solar estimated at $184M. Clean energy program costs estimated at up to $3.0 M annually.

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Orange County's goal for 100% clean, renewable energy is dependent on Duke Energy's and OUC's announced commitment to 100% net-zero carbon emissions community-wide by 2050. Continuously advocate and monitor progress on OUC's commitment to eliminate coal-fired electricity generation completely by 2027 and achieve 42% renewable energy fuel mix by 2030.	**FY21-50 Long-term action**	**Lead:** County Administration **Support:** County Attorney, Mayor's Office	No additional funding required
Advocate for strong renewable energy, energy efficiency, and energy storage policies through legislative priorities. Lobby the Florida Public Service Commission and utilities to protect net-metering policies and to create new programs.	**FY21-50 Long-term action**	**Lead:** Legislative Affairs **Support:** County Attorney, Mayor's Office, County Administration	No additional funding required

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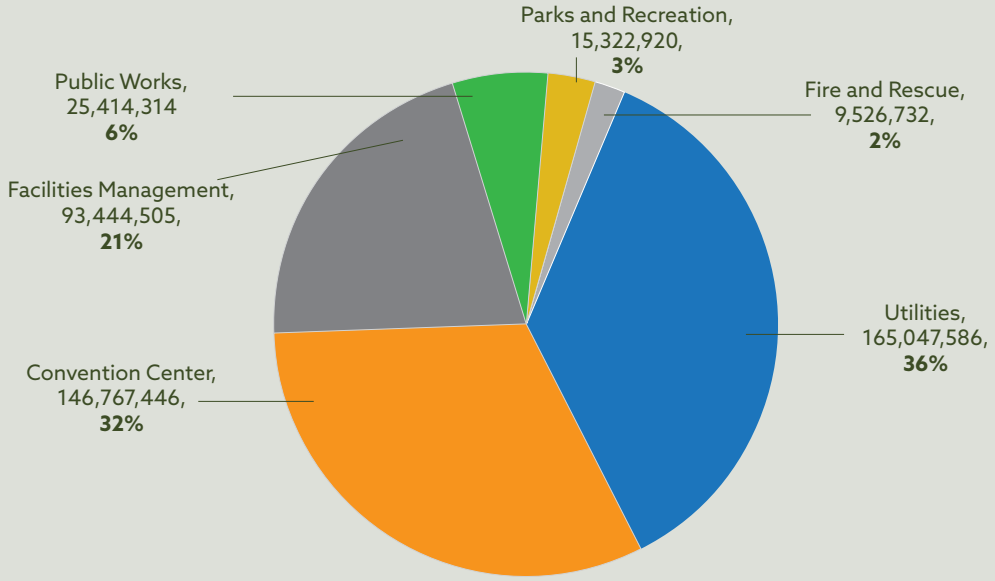
2019 TOTAL ENERGY CONSUMPTION AND COSTS

455,523,503 kWh, $43.8 M



Electricity usage and total bill charges from Duke Energy, OUC, and Winter Park Utilities

GOAL 3: IMPLEMENT COMMUNITY-WIDE ENERGY SAVING PROGRAMS FOR ALL

Overview:

Despite the community element of this goal, the County is uniquely positioned to provide access to secure, sustainable, and affordable energy for all. This goal drives socio-economic change, advocate for and create local policies, and develop new programs to direct a transition to a resource-efficient economy and resilient energy supply.

Benefits to the County:

Conducting a County-wide energy burden and economic study will help with the creation of a roadmap to drastically increase clean energy throughout the County. The study assists with the economic development strategy and prioritize investments and analyze current program budgets and reallocation of funds.

Benefits to Community:

Orange County is committed to a just and equitable transition to clean energy and energy conservation for our business, residents, and future generations. This strategy is timely as we craft an economic development strategy that includes energy, water, automation, and controls technologies. This goal is focused on attracting, creating, and growing the innovative high-value companies and jobs that produce the products and provide the services that will allow the County and the community to transition to a clean-energy economy.

Fiscal Impacts:

$400,000 to fund program developers, managers, trainers, and economists.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Complete an energy-burden analysis for unincorporated Orange County residents.	**FY21-22**	**Lead:** County Administration **Support:** Neighborhood Services, Planning, Community Action	$25,000 Consultant Support
Continue participation in the National Association of Counties' Housing and Health Action Learning Cohort collaborating with local and regional stakeholders in order to continue home rehabilitation for owner-occupied housing units to maintain quality of life.	**FY21-22**	**Lead:** Housing & Community Development **Support:** County Administration, Neighborhood Services, Family Services	No additional funding required
Strategically align utility provider programs with County-funded residential and business assistance programs including Housing Rehabilitation, Sustainable Neighborhoods Grants, Senior Climate Efficiency Program (SCEP), Business Assistance for Neighborhood Corridors (BANC) and the Solar & Energy Loan Fund (SELF). Prioritize vulnerable and disadvantaged communities through a variety of revitalization efforts.	**FY21-22**	**Lead:** County Administration **Support:** Neighborhood Services, Housing & Community Development, Family Services, Planning	No additional funding required
In conjunction with community members, create an Energy Access Plan to develop a strategy for secure, sustainable and affordable energy for all. Our various public and private utilities in Orange County offer inequitable access to renewable energy and energy conservation programs for our residents. Residents and businesses experience barriers regarding utility territory, existing infrastructure, and income level. Our vision is to have equal access to energy efficiency and home resilience programs across our community regardless of boundary.	**FY22-23**	**Lead:** County Administration **Support:** Neighborhood Services, County Attorney, Family Services, Planning	$25,000 Consultant Support

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Develop a regional fund through public-private partnerships for energy-efficiency investments into the community. Identify local, long-term energy-efficiency program funding from Duke Energy, OUC and other partners.	**FY23-25**	**Lead:** County Administration **Support:** Neighborhood Services, County Attorney, Family Services, Planning	No additional funding required
Establish a network of partnerships with technical colleges, online education providers, higher education communities, and OCPS High Schools to address workforce training for clean energy jobs.	**FY22-25**	**Lead:** Mayor's Office **Support:** Economic Development, Human Resources	No additional funding required

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

Project Highlight

"Building a community of the future powered by clean energy will help us achieve an inclusive and healthy quality of life while doing our part to address climate action." – Mayor Jerry Demings.

Orange County, City of Apopka, City of Orlando, and City of Winter Park have collaborated to be the first in Central Florida to launch Google's Environmental Insights Explorer (EIE). Using Google's Environmental Insights Explorer (EIE) data, Orange County was able to leverage the EIE solar analysis to conduct a rapid community-wide solar capacity study to understand the full technical potential of rooftop solar PV, while also the estimated economic impact of systems being deployed.

Building Emissions

Estimated emissions from buildings in county & city boundary based on Google Maps data.

Transportation Emissions

Estimated emissions of all trips that start or end within the county or city boundary based on aggregated, anonymized location history data.

Rooftop Solar Potential

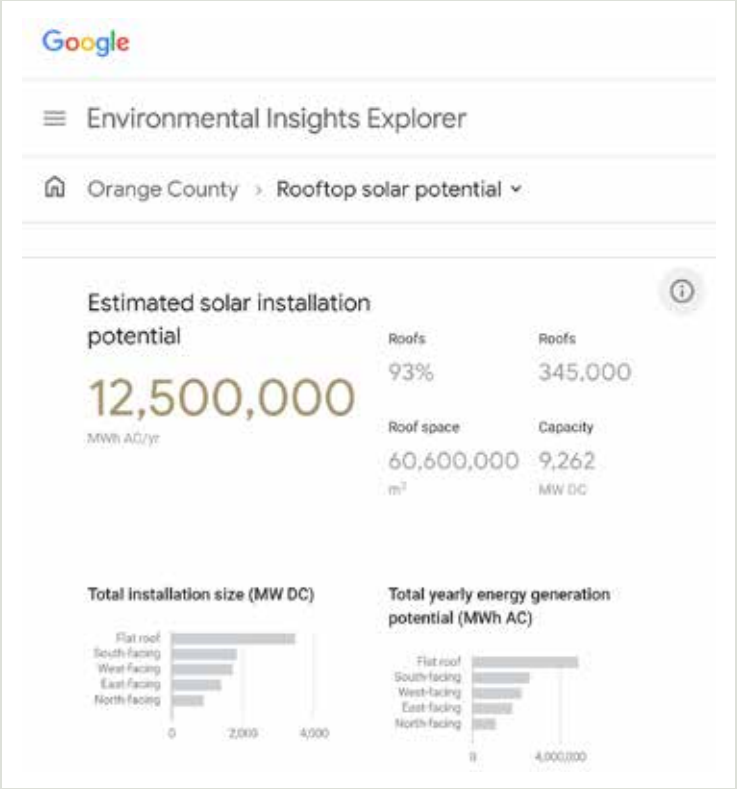
Estimated solar production potential of all buildings based on total sunshine exposure, weather patterns, roof size, and orientation.

Google

ENVIRONMENTAL INSIGHTS EXPLORER

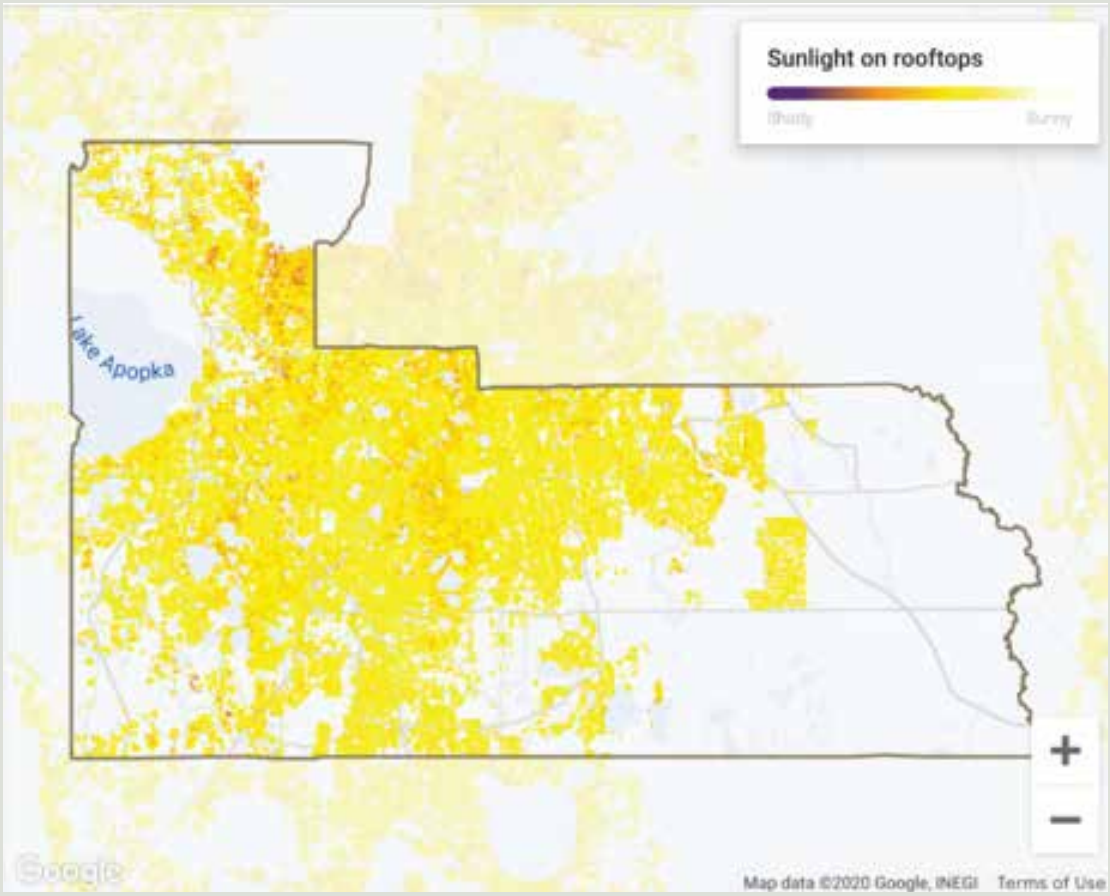
ORANGE COUNTY GOVERNMENT FLORIDA

I·C·L·E·I Local Governments for Sustainability



Big Data for Sustainable Development

These insights are timely as we create post-pandemic sustainable jobs, design new community workforce development programs, and address the environmental impacts of and contributions to global climate change. This powerful data is helping us create a roadmap that dramatically increases clean energy access throughout the County's residents, businesses, and land owners.



South Orange County Rooftop Solar PV Potential, Google Environmental Insights Explorer

Google ENVIRONMENTAL INSIGHTS EXPLORER

South Orange County
Rooftop Solar PV Energy Potential
Explore the data HERE

ORANGE COUNTY GOVERNMENT FLORIDA

ICLEI Local Governments for Sustainability

FIVE-YEAR HORIZON: Key Strategies and Initiatives for 2025

- Identify a Climate Action and Renewable Energy Transition Plan
- Explore public-private partnerships for alternative financing on energy efficiency projects.
- Implement demand control program to meet energy demands in a sustainable and resilient manner.
- Identify project feasibility areas for micro-grids development and energy storage.

ORANGE COUNTY CLIMATE ACTION STRATEGY

The 2018 IPCC special report concluded that limiting global warming to 1.5°C above pre-industrial levels would require far-reaching and unprecedented changes in all aspects of society including rapid and far-reaching transitions in energy, land, urban and infrastructure and industrial systems.[1]

From hurricanes to heat waves, Florida faces many climate-related hazards.

Although Orange County is located more than 30 miles inland and thus avoids the risks of sea level rise, storm surge and coastal flooding, it is still vulnerable to many other hazards, at higher rates than other parts of the state, such as high intensity storms, heat waves, lightning and sinkholes.[2] Adjacent coastal counties (Volusia & Brevard) have conducted a Resiliency Action Plan and respective Sea Level Rise Action Plans.

Recent weather, natural, health, and manmade events have resulted in increasing shocks and stressors to our economy, human security, health and equity, natural environment and built infrastructure. Vulnerable and underserved people in our region are disproportionately impacted from the aforementioned events and from on-going stressors to their human security.

"As founding signers to the East Central Florida Regional Planning Council's Regional Resilience MOU, the City of Orlando and Orange County are playing a leadership role in our region to develop a strong legislative strategy and our local policy must share in the broader vision of our State's resilience efforts to forge a pathway for the future of Florida as a whole." - *Mayor Jerry Demings*.

To implement this vision, we are implementing internal policies and undertaking measures to reduce/avoid greenhouse gas (GHG) emissions, prepare for the impacts of climate change, increase access to sustainable energy, and track progress toward these objectives through partnerships such as ICLEI and LEED for Cities and Communities. The targets and actions for mitigation/low emission development must be quantified and consistent with or exceed relevant national unconditional commitments defined through the United Nations Framework Convention on Climate Change (UNFCCC). We continue to explore adequate staff resources and institutional arrangements through community partners. We are working to establish governance processes, municipal structures and budget allocations to deliver on this commitment and secure continuity.

As part of our regional collaboration and enhanced strategic priorities around sustainability and resilience, we are establishing mechanisms in order to regularly report on local and regional indicators and targets. A forthcoming update to the community-wide sustainability plan will achieve the following:

- A community-scale GHG emission inventory, following the recommended guidance;
- An assessment of climate risks and vulnerabilities;
- The targets and action plans should be in line with National Adaptation Plans, where these exist;
- Ambitious, measurable and time-bound target(s) to reduce/avoid GHG emissions;
- Ambitious climate change adaptation vision and goals, based on quantified scientific evidence when possible, to increase local resilience to climate change;
- An ambitious and just goal to improve access to secure, sustainable and affordable energy;
- A formally adopted plan(s) addressing climate change mitigation/low emission development, climate resilience and adaptation, and access to sustainable energy;
- Establish mitigation targets and/or adaptation goals by sectors included in the GHG inventory;
- Identify synergies, tradeoffs, and co-benefits of mitigation and adaptation actions;
- Future goals and plans must be consistent with the principles around energy access and urban sustainability embodied in the Sustainable Development Goals.

[1] Special Report on Global Warming, Intergovernmental Panel on Climate Change (IPCC).

[2] Florida Division of Emergency Management, 2013

BUILDINGS & INFRASTRUCTURE

Focus-Area Scope:

This section separates into two parts for Orange County existing buildings and new construction Capital Projects. Our internal team and External Committee members feel that a minimum set of specifications and standards must be applicable to all projects regardless of scope to be in alignment with a variety of the Action Plan goals. *Infrastructure is defined as water treatment plants, stormwater ponds, lift stations, water reclamation facilities, roadways, and parking lots. Buildings are defined to be more than 2,000 sq.ft.

Why This Is Important:

Buildings and infrastructure account for large portions of global energy consumption (40%), air pollution (both during construction and operation), GHG emissions, and a significant amount of water use. Orange County spends approximately $46.9 million annually in energy costs alone. Controlling costs, creating savings, and hedging against future cost impacts have never been more important.

What We Will Achieve:

Orange County will reduce environmental impacts and optimize operations by leading by example to design, build, and maintain buildings and infrastructure that are healthy, green, and that positively impact the community, occupants, and visitors. Additional expectations are to:

- Focus on driving fiscal, functional, and environmental performance over a facility's lifecycle.
- Increase buildings and infrastructure resilience to shocks and risks from social, economic, and climate-related threats.
- Reduce the number of people affected by disasters, including water-related disasters and substantially decrease the resulting direct economic losses, with a focus on protecting vulnerable communities.

Transition Team Report Recommendation(s) Addressed:

Lead by example through Green Buildings and Green Infrastructure.

Adopt a Sustainable and Smart Growth Vision.

GOAL 4:

BEGINNING IN FY21, COUNTY-FUNDED BUILDINGS AND INFRASTRUCTURE WILL MEET NEW HIGH-PERFORMANCE AND GREEN BUILDING STANDARDS

GOAL 5:

ALIGN ENERGY MANAGEMENT STRATEGIES ACROSS COUNTY DEPARTMENTS TO REDUCE 30% OF BUILDING AND INFRASTRUCTURE ENERGY USE BY 2025

GOAL 6:

REDUCE RISKS FOR COUNTY SERVICES AND INFRASTRUCTURE BASED ON REGIONAL RESILIENCE INDICATORS AND UPDATED MITIGATION PLANS

4 LEED-CERTIFIED BUILDINGS
as of 2020

21 BUILDINGS NATIONALLY
ASSESSED, scoring 50+ in ENERGY STAR

168

OF 432 COUNTY BUILDINGS are being benchmarked and tracked in a centralized dashboard called EnergyCAP to assess building performance.

History and Baseline Status:

In 2007, the Orange County BCC adopted the first of its kind Climate Change Plan which outlined a goal to adopt policies that encourage all County-sponsored or financially supported projects to utilize green building practices. Orange County operates 432 facilities, four energy intensive water treatment facilities, and hundreds of distributed infrastructures across 1,000 square miles. As of the summer of 2020, Orange County has collected energy usage for all buildings, water treatment plants, wastewater facilities, pump stations, and lift stations. With our distributed construction and facility management departments, Orange County has identified a variety of opportunities to collaborate and focus on wellness, risk mitigation, cost-savings, and positive impacts of our buildings and infrastructure.

SUMMARY OF GOALS

GOAL	METRIC	BASELINE (YEAR)	GOAL TARGET (YEAR)
GOAL 4: Beginning in FY21, County-funded buildings and infrastructure will meet new high-performance and green building standards.	# of buildings meeting green building standards # of buildings meeting high-performance standards	2019 - 4 LEED certified buildings; 21 out of 48 buildings in EnergyStar with 50+ score	Ongoing for Capital Projects
GOAL 5: Align energy management strategies across County departments to reduce 30% of building and infrastructure energy use by 2025.	Million British Thermal Units (MMBTUs)	2019 - 2,381,846 MMBTUs, $44.7 million	2025 - 30% Decrease: 142,911 MMBTUs/yr $2.68 million/yr (Total decrease 714,554 MMBTUs with $13.4 M savings)
GOAL 6: Reduce risks for County services and infrastructure based on regional resilience indicators and updated mitigation plans.	% of assets meeting resilience criteria	2020 - Utilities assets are on a five-year CIP repair program and have completed a needs assessment. Other departments need to follow.	2025 - 100% of assets achieve redundancy and resilience criteria

GOAL 4: BEGINNING IN FY21, COUNTY-FUNDED BUILDINGS AND INFRASTRUCTURE WILL MEET NEW HIGH-PERFORMANCE AND GREEN BUILDING STANDARDS

Overview:

Orange County will design, build and maintain buildings, facilities, plants and infrastructure that positively impacts our environment and sustains the health, safety, and equity of occupants and visitors. The County's priority is to drive fiscal, functional and environmental performance over a facility's lifecycle with the ultimate goal of being resilient to shocks and risks from social, economic and climate-related threats. Rather than focusing on third party certification, this goal operationalizes and aligns internal design and construction processes to become more sustainable with international standards. This goal builds the foundation of minimum requirements for all types of County-funded projects.

Benefits to the County:

A clear set of expectations and requirements will drive lifecycle cost savings, reduce risks and deliver a higher quality product from designers, contractors, and engineers to benefit the wellness of occupants and visitors. A streamlined and collaborative process for design, engineering, construction, and maintenance will optimize staff time and lower the utilization of third party consulting billable hours. Effective January 1, 2021, projects at 30% design or prior will be evaluated for cost implications to include new CIP sustainability requirements.

Benefits to Community:

Building County assets and facilities throughout the community will be most successful and equitable if they account for risks and vulnerabilities to the community members during the conceptual design phase through construction. The community will benefit from the increased life-cycle of public assets while experiencing increased comfort and air quality at our community facilities. The community will also benefit by focusing on building economic development and inclusion of local contractors, supplies, and youth.

Fiscal Impacts:

New construction projects may see up to 1.5% total cost increase, but can achieve up to 30% lifecycle cost savings. Existing building retrofits and maintenance projects should be expedited and prioritized based on a calculated internal rate of return of three years or less within current budget levels. Cost savings estimates or lifecycle costing will be required in budget requests for maintenance or CIP projects. Consultants can provide this as part of the engineering assessment if applicable. For FY21 projects, staff is to solicit cost-saving estimates for projects that are in the pipeline and shall be evaluated prior to bidding and proposal review.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Create a minimum standard of performance and sustainability as part of Orange County's Owner Project Requirements (OPR) and design criteria for projects in design and construction. See Appendix A for criteria to be added.	**FY21**	**Lead:** County Administration **Support:** Capital Project Teams, Engineering Teams, Facilities Management, Fire Facilities, Procurement, Consultant Support	No additional funding required
Achieve revisions and alignment of design and construction development standards for all County renovations and construction, including Public Works Standard Scope of Services, FDOT Design Manual, Orange County Utilities Standards and Construction Specifications Manual, OCCC Design Standards, and OC Capital Projects Design and Construction Guidelines. See Appendix A for criteria to be added.	**FY21**	**Lead:** County Administration **Support:** Capital Project Teams, Engineering Teams, Facilities Management, Fire Facilities, Procurement, Consultant Support	Consulting fees

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Develop shared resources to plan efficiently across departments. This will reduce duplication of services, replace aging infrastructure, streamline processes, and improve financial and long-range planning.	**FY21**	**Lead:** County Administration **Support:** Capital Project Teams, Engineering Teams, Facilities Management, Fire Facilities, Procurement, Consultant Support	No additional funding required
Expand cross-departmental GIS layers to assist with project management tracking and document management.	**FY21-25**	**Lead:** GIS **Support:** Capital Project Teams, Engineering Teams, Facilities Management, Fire Facilities, Procurement.	No additional funding required
Expand project management reporting opportunities and e-Builder licenses across County departments.	**FY21-25**	**Lead:** County Administration **Support:** Procurement, ISS	$105,000 for 60 licenses
Create an internal cross-departmental task force to identify internal opportunities for streamlining, cost savings, and strategic alignment of staff and consultant support. Alternative funding mechanisms are to be explored and prioritized for all mechanical and electrical projects by staff or design team.	**FY21-22**	**Lead:** County Administration **Support:** GIS, Capital Project Teams, Engineering Teams, Facilities Management, Fire Facilities, Procurement, Utilities Planning Group	No additional funding required
Train several cross-departmental staff to become LEED Accredited Professionals, Certified Energy Managers, True Waste Advisors, and FitWell Ambassadors.	**FY21-23**	**Lead:** County Administration **Support:** Building Safety, Planning, GIS, Capital Project Teams, Engineering Teams, Facilities Management, Fire Facilities, Procurement, Utilities Planning Group	$800 per employee

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ORANGE COUNTY BUILDINGS

The adjacent chart shows the previously certified Orange County buildings, as well as two newer buildings planned to follow specific certification standards. This list should continue to grow as high performance standards are incorporated into the planning and design guidelines for new constructions and major renovations beginning in FY21. Additionally, the list may potentially grow with the review of recently completed buildings and applicable performance standards that meet certifications. Lastly, in assessing ENERGY STAR certification for our buildings over 10,000 sq. ft., close to 160,000 sq.ft. of office space achieves a score of 75 or more.

MEDICAL EXAMINER'S OFFICE
2010 CERTIFIED
LEEDV2.2 BD+C GOLD
40,000 sq. ft.

FIRE STATION 35
2011 CERTIFIED
LEEDV2.2 BD+C Certified
10,000 sq. ft.

SHERIFF'S SECTOR 2 OFFICE
2012 CERTIFIED
LEEDV2.2 BD+C SILVER
25,000 sq. ft.

ORANGE COUNTY CONVENTION CENTER N/S Building
2013 and 2018 CERTIFIED
LEEDV3 O+M GOLD
3,000,000 sq. ft.

UTILITIES EAST BUILDING
IN PROGRESS
Green Globes
122,500 sq. ft.

ORANGE COUNTY CONVENTION CENTER N/S Building
IN PROGRESS
LEEDV4 BD+C GOLD
930,000 sq. ft.

GOAL 5: ALIGN ENERGY MANAGEMENT STRATEGIES ACROSS COUNTY DEPARTMENTS TO REDUCE 30% OF BUILDING AND INFRASTRUCTURE ENERGY USE BY 2025

Overview:

This goal targets procedural improvements and project retrofits in order to decrease consumption of energy, predominantly from electricity but also including natural gas and propane, while balancing growth and expansion of our facilities and infrastructure portfolio.

Benefits to the County:

A clear set of energy conservation goals, contractual expectations, and requirements will drive cost savings and reduce risks from designers, contractors, engineers, and internal staff. Energy use is a significant part of our budget and environmental footprint. As Orange County works to transition to clean and renewable energy, the most cost-effective course of action is to first drive efficiency.

Benefits to Community:

The community will benefit from efficiency savings and enhanced facilities by reporting of cost savings to the County's budget. The County can stimulate job creation and economic recovery for contracting work.

Fiscal Impacts:

Achieving this goal would generate $8.8 million in utility bill savings. Existing building retrofits and maintenance projects should be expedited and prioritized based on a calculated internal rate of return of less than three years within current budget levels.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Complete ASHRAE Building EQ profiles for the top five buildings of highest opportunity. Complete a County-wide energy and water use baseline for 432 facilities. Enter and monitor energy and water data for all buildings and plants in the County-wide EnergyCAP reporting software. Upload the County's ENERGY STAR Portfolio Manager annually for rating and reporting purposes to external programs.	**FY21**	**Lead:** Facilities **Support:** Utilities, Public Works, Capital Project Teams, Fire, Parks & Recreation, Procurement, Convention Center	No additional funding required
Pursue an organizational re-structure and funding strategy to create a cross-departmental Energy Management Team or a centralized Energy Manager under Administration and Fiscal & Operational Support.	**FY21**	**Lead:** County Administration **Support:** Human Resources, Fiscal & Operational Support	Existing position. No additional funding required
Establish a procedure and process to pursue OUC and Duke Energy water- and energy-rebate opportunities with a goal of $100,000 per year custom incentives and $300,000 per year on prescriptive incentives. Electric, Water, and Gas utility water conservation and energy efficiency rebate program specifications shall be utilized in all designs and replacement specifications unless deemed not cost effective by the County's Energy Management Team.	**FY21**	**Lead:** Energy Management Team **Support:** Fiscal & Operational Support, Capital Project Teams, Facilities, Office of Management & Budget, Comptroller	No additional funding required
Streamline data collection and bill payments for utility accounts County-wide. Identify efficiencies in billing procedures, appropriate metering, rate reviews, bill errors and other cost recovery strategies.	**FY21-23**	**Lead:** County Administration **Support:** Fiscal & Operational Support, Office of Management & Budget, Comptroller	No additional funding required
Create "Conservation" Units/Accounts containing energy and water savings and rebates realized to be allocated back to the respective department. Itemize energy and water conservation projects as part of each department's annual budgeted process to show past projects and anticipated savings for the next fiscal year.	**FY21-25**	**Lead:** Office of Management & Budget **Support:** Fiscal & Operational Support, Comptroller	No additional funding required
Conduct an energy analysis walk-through at facilities scoring below average energy/water performance scores to create a one- to three-year Facility Improvement Plan that identifies low- and no-cost saving opportunities and capital projects. Utilize the General Services Administration Sustainable Facility Checklist and EnergyCAP to track progress.	**FY21-26**	**Lead:** Energy Management Team **Support:** Facilities Teams, Capital Project Teams	Phase 1 Pilot: 30 Facilities at $150,000 Fee

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

SUMMARY OF SHORT-TERM ACTIONS

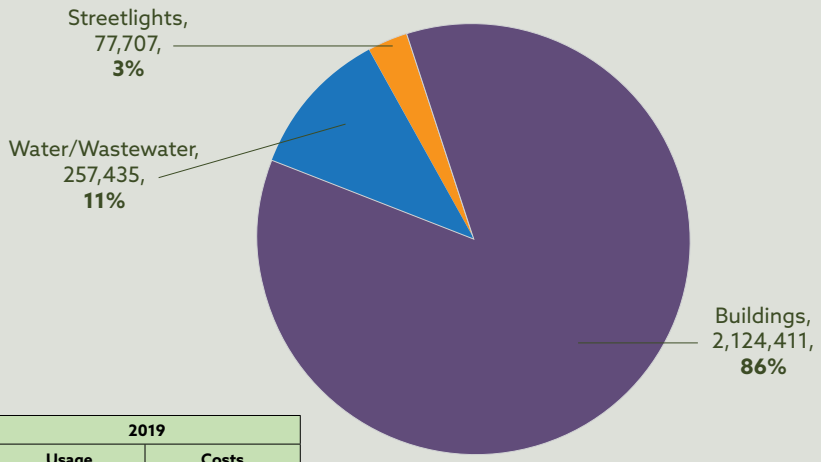
SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Develop and implement a comprehensive energy management plan, aligning with ISO 50001 Energy Management standards. Update the plan on annual basis during the budgeting process. Align the existing five-year capital improvement plans to capture and prioritize energy and water savings.	**FY22-25**	**Lead:** Energy Management Team **Support:** Facilities, Consultant Support.	In Coordination with ISO waste management consultant.

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

The chart shows the total energy usage and costs in 2015 by usage area. Because of its larger consumption, "Buildings" is highlighted to show the breakout of electricity, natural gas, and propane. The energy consumption for water/wastewater is 97% electricity to operate the facilities and buildings necessary to provide potable water and process wastewater for Orange County Utilities (OCU) customers. Streetlights is 100% electricity, with more than 80% owned and operated by Duke Energy. Looking at the usage by area and fuel type allows the assessment of opportunities to reduce and/or offset usage. The tables below include the costs associated with each fuel type and usage.

2019 TOTAL ENERGY CONSUMPTION AND COSTS

2,459,553 MMBTU, $46.9 M



Energy Breakout	2015		2019	
	Usage	Costs	Usage	Costs
Total Electricity* (kWh)	**457,139,400**	**$41,993,588.06**	**455,523,508**	**$43,822,690.16**
Buildings	318,251,700	$29,206,929.42	359,897,894	$34,623,529.08
Streetlights	35,863,321	$3,381,850.21	22,768,003	$2,190,276.45
Water/Wastewater	103,024,379	$9,404,808.43	72,857,611	$7,008,884.63
Total Natural Gas (therms)	**7,340,669**	**$2,356,354.75**	**9,016,026**	**$2,993,320.53**
Buildings	7,232,212	$2,321,540.05	8,928,291	$2,964,192.45
Water/Wastewater	108,457	$34,814.70	87,735	$29,128.09
Total Propane (gallons)	**54,464**	**$88,231.96**	**35,467**	**$67,741.02**
Buildings	**54,464**	$88,231.96	35,467	$67,741.02

BUILDINGS BREAKOUT
Electricity = **57.8%**
Natural Gas = **42.0%**
Propane = **0.2%**

* electricity usage and total bill charges from Duke Energy, OUC, and Winter Park Utilities.

	County Operations Utility Costs per Unit by Vendor				
Source	**2015**	**2016**	**2017**	**2018**	**2019**
"Natural Gas TECO (therms)"	$0.321	$0.321	$0.321	$0.346	$0.342
"Propane Ferrellgas & Amerigas (gallons)"	$1.910	$1.910	$1.890	$1.890	$1.890
Electricity Duke (kWh)	$0.097	$0.097	$0.097	$0.104	$0.109
Electricity OUC (kWh)	$0.084	$0.084	$0.084	$0.083	$0.081
Electricity Winter Park (kWh)	$0.105	$0.105	$0.105	$0.105	$0.105

GOAL 6: REDUCE RISKS FOR COUNTY SERVICES AND INFRASTRUCTURE BASED ON REGIONAL RESILIENCE INDICATORS AND UPDATED MITIGATION PLANS

Overview:

Currently, the County's facilities and infrastructure-have a variety of level of needs in order to address risks, vulnerabilities and inefficiencies. This goal focuses on having a consistent set of emergency response plans, redundancy of critical assets, and continuity plans across departments. This will enable our assets, programs, and operations to be more resilient against economic- and climate-related hazards.

Benefits to the County:

This goal will assist with short-term and long-term resilience planning to level the departments on a unified investment strategy to improve continuity of quality public services.

Benefits to Community:

Reduce risks and vulnerabilities for critical and major services that our community relies on. Marginalized populations with less access to alternative options or financial mobility tend to be on the frontline of failures or suspension of services.

Fiscal Impacts:

There will be significant costs to these improvements that have been identified as vulnerable or high risk such as flooding mitigation, water supply delivery, and facility hardening. Federal and local grants need to be coordinated to augment and drive strategic planning. Cost sharing and alternative means of funding should be explored to offset or compliment current budget forecast. Facility assessment can be conducted per existing contracts/consultants or build a team of in-house staff capable of conducting.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Amend the scope of Orange County's facility condition-assessment contracts and in-house preventative maintenance activities to include checklist items related to weather-related risks, infrastructure resilience, energy/ water efficiency, building envelope, roof, waterproofing, flooding, coatings and glazing, basic indoor air quality, pollution prevention, flood mitigation, safety and hazards.	**FY21-25**	**Lead:** Procurement **Support:** Utilities, Public Works, Capital Project Teams, Facilities, Convention Center	Currently budgeted Facility Condition Assessments at $0.10/ square foot
Using the facility condition-assessment checklist items defined above, prioritize assessments at existing facilities and infrastructure that have been defined as "critical" and "major" facilities. Utilize a variety of risk assessment online tools including the CREAT Risk Assessment Application for Water Utilities.	**FY21-22**	**Lead:** Facilities Management **Support:** Facilities Teams, Capital Project Teams	No additional funding required
Create a comprehensive five-year Buildings & Infrastructure Resilience Plan to complete facility hardening and risk mitigation projects across County facilities. Coordinate funding of these improvements through the "Improvement Fund," facility hardening and infrastructure grants, maintenance budgets and respective CIP budgets. The plan should follow the priorities and strategies set forth by FEMA's Building Resilient Infrastructure and Communities Program and the East Central Florida Regional Planning Council Regional Resilience Plan.	**FY22**	**Lead:** Facilities Teams **Support:** Risk Management, Emergency Management, Capital Project Teams, Consultant Support	$150,000 in consulting fees
Identify critical services and functions of County departments to update the emergency-management plans, disaster-management procedures, and continuity plans to take an all-hazard and threat approach. Conduct planning, preparation, and recovery scenarios that focus on future strategies to sustain programs that are essential community services and programs.	**FY21-25**	**Lead:** Emergency Management **Support:** Risk Management, Human Resources, Facilities Teams, ISS	$150,000 in consulting fees or grant in partnership with ECFRPC or UCF

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Create a formal training and capacity-building program to provide staff workforce development through technical training and cross-departmental coordination focused on high-performance design and operations, sustainable procurement, green building, innovation, resilience planning and risk mitigation.	FY21-23	**Lead:** **Support:** Human Resources, Facilities Teams	No additional funding required

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Below is a summary of buildings and infrastructure currently identified as 'critical' during declared emergencies. These buildings and facilities are prioritized by level, with 75 level 1 – the highest priority requiring no drop in service, 25 level 2 – providing basic operational support, and eight level 3 – ensuring operation of existing residential youth services.

106 CRITICAL BUILDINGS & FACILITIES

8 SHELTERS AND GYMS

7 RADIO COMMUNICATIONS

18 OPERATIONAL BUILDINGS FOR SUPPORT STAFF

18 COMMUNITY SERVICES - ANIMAL, MEDICAL, HEALTH, AND SHERIFF

10 YOUTH - LIVING QUARTERS, DINING HALL, AND HURRICANE SHELTER

14 FAMILY SERVICES

17 CORRECTIONS

815 PUMP STATIONS FOR WATER/ WASTEWATER SERVICES

FIVE-YEAR HORIZON: Key Strategies and Initiatives for 2025

- Identify opportunities to certify existing buildings on a green building or wellness rating system.
- Develop a consistent process of engagement with community stakeholders that focuses on vulnerable populations to understand these needs and also allows certification through established frameworks such as the SEED Evaluator or Enterprise Green Communities.
- The internal staff team agreed that the Envision certification program is the most comprehensive referenced standard to be considered for future infrastructure projects.
- Develop pilot program alongside the forthcoming development of the General Services Administration's guidance on Embodied Carbon guidance and materials selection during the construction specification process.
- Develop a plan towards a decarbonization goal of the existing and future buildings stock through energy efficiency and renewable energy planning.
- Explore utility grid interactive technologies alongside energy storage and onsite energy production technologies.
- Introduce key wellness-design standards and certifications into new and existing buildings.

INFRASTRUCTURE RESILIENCE IN ACTION

Orange County believes clean and safe water is essential. If water infrastructure fails, it creates a domino effect across the economy and threatens our environment and public health. One-fifth of the U.S. economy—agriculture, healthcare, manufacturing, and electricity—would grind to a halt without a reliable and clean supply of water. According to the American Society of Civil Engineers, a water main breaks every two minutes in the United States. Additionally, the Society estimates the country must spend at least $1.2 trillion over the next 20 years to reduce the vulnerabilities of our drinking water and wastewater systems. Orange County is focused on increasing the resiliency of critical facilities that serve local communities while also achieving economic development over a five-year capital plan to reduce our region's climate vulnerabilities:

- The Florida Department of Economic Development has $75 million available for local governments through the Rebuild Florida Critical Facility Hardening Program (CFHP). The funds are allocated through the U.S. Housing and Urban Development's newly created Community Development Block Grant (CDBG) – Mitigation Program formed in response to the 2016 to 2017 presidentially declared disasters.
- Orange County has applied for $4.2 million to fund four projects including:
    1. Eastern Regional Water Supply Facility Remote Wellfield Building Rehabilitation,
    2. Eastern Regional Water Supply Facility Roof Replacement,
    3. Southern Regional Water Supply Facility Infrastructure Hardening Project, and
    4. Hunter's Creek Water Supply Facility Infrastructure Hardening Project.
- Extra stormwater runoff can cause a number of environmental issues. For example, increased rainfall can wash excess fertilizers, environmental pollutants, pet waste, and even human waste from water reclamation systems that have been overwhelmed by the additional load of stormwater (McMahan, 2006) into nearby bodies of water and create unhealthy aquatic environments, including algae blooms.
- Floodwaters may cause public health problems through drinking water contamination and water-borne illness from chemical and waste storage facilities, water reclamation facilities, landfills, and other environmental pollutants

Orange County continues to develop an economic recovery plan during the COVID-19 pandemic and economic disaster. We believe that investing in our water and wastewater infrastructure is a smart and sustainable strategy towards economic recovery while building up communities so they can all thrive. Nationwide, closing the water infrastructure investment gap would create more than 1.5 million American jobs, more than the entire employed workforce in 20 states. It would generate more than $260 billion in economic activity annually, which exceeds the gross domestic product generated by 28 states.

WATER USE & QUALITY

Focus-Area Scope:

This section is intended to focus on activities and processes to manage water consumption, surface water quality, stormwater, and water supply across all County resources from Public Works, Utilities, and Facilities.

Why This Is Important:

Water is a finite resource that is vital to human life. Orange County protects and manages regional water sources such as springs, lakes, rivers, wetlands, and potable water sources. The County is responsible to reduce vulnerabilities, prevent pollution, maintain quality, and prioritize efficiency for all water in the most cost-effective and sustainable way. Population growth and resulting demand of freshwater increases the strain on limited water resources, requiring the County to enact policies, educate, and implement sustainable measures to protect these water resources.

What We Will Achieve:

Orange County desires to adopt the "One Water" integrated management campaign that many local governments have embraced. Orange County can begin leading by example through vertically aligning our priorities across our departments and disciplines to increase collaboration to achieve the goals. Orange County will begin this journey by assessing our portfolio to ensure consistent best practices are implemented throughout County facilities for water conservation, optimizing stormwater management, and innovating ways to sustain our water supply. The County will also update contract requirements and design engineering projects to include comprehensive nationally accepted standards by the Federal Emergency Management Association (FEMA), American Water Works Association (AWWA), Institute for Sustainable Communities (ISC), and the Environmental Protection Agency (EPA).

Transition Team Report Recommendation(s) Addressed:

Lead by example through Green Buildings and Green Infrastructure.

Conserve Water and improve Water Quality through Low Impact Development (LID) and Florida-Friendly landscaping.

GOAL 7:

PROTECT WATER QUALITY THROUGH INNOVATIVE TECHNOLOGY AND INTEGRATED WATER MANAGEMENT AUDITS AT COUNTY FACILITIES

GOAL 8:

REDUCE WATER USE 25% ACROSS COUNTY FACILITIES BY 2030 THROUGH WATER REUSE AND EQUIPMENT EFFICIENCIES

GOAL 9:

DEVELOP CLEAN AND SAFE ACCESS TO ALTERNATE WATER SUPPLY TO MEET FUTURE DEMAND

PROCESS MORE THAN 30,000 samples from 600+ surface water bodies annually

MAINTAIN MORE THAN 1,900 retention ponds

TEST DRINKING WATER QUALITY with more than 350,000 EPA-certified analyses

History and Baseline Status:

Orange County has incredible potential to elevate a water resource management platform on an international scale. Several key items outlined within the goals and actions of this section will position the County to show incredible leadership in this space as a water utility provider, regulatory agency, and asset owner. With the development of an overall baseline of needs and performance metrics, the County can prioritize water as a valuable resource, continuously act to protect it, and innovate future water supply needs for the state.

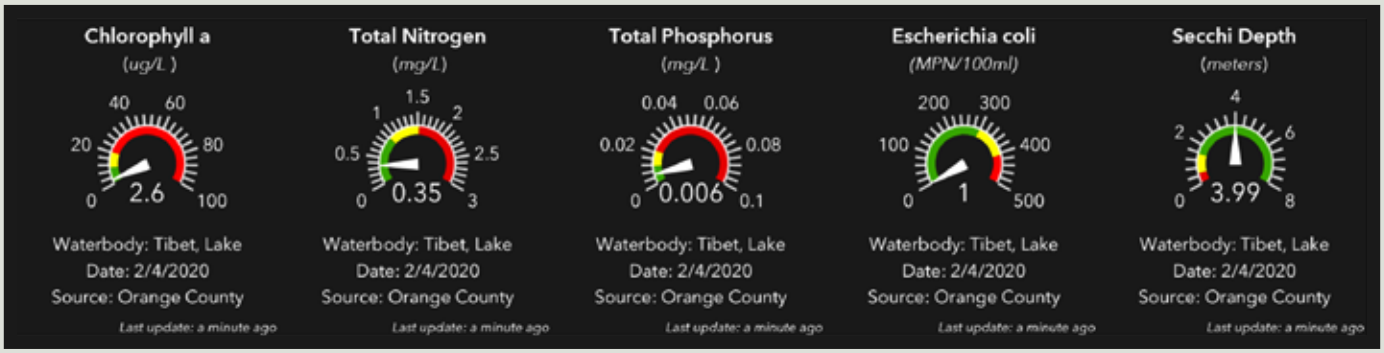
SUMMARY OF GOALS

GOAL	METRIC	BASELINE (YEAR)	GOAL TARGET (YEAR)
GOAL 7: Protect water quality through innovative technology and integrated water management audits at County facilities	Metric 2021 - New goal.	2021 - New goal.	100% assessed facilities by 2022
GOAL 8: Reduce water use 25% across County facilities by 2030 through water reuse and equipment efficiencies	Total consumption across facilities (kGals)	2019 - 389,318 kGals total consumption	2030 - 25% Decrease: 19,466 kgals/yr = $44,577/yr savings Total: 97,329 kgals = $223K savings
GOAL 9: Develop clean and safe access to alternate water supply to meet future demand	Total water supplied annually to OCU customers (Billion Gallons) Calculated gal/day/person	2019 - 23.4 billion gallons supplied to OCU customers* (*Estimated at 550,000) 11.55 gal/day/person	2030 - 31 billion gallons supplied to OCU customers

Project Highlight

Orange County Water-Quality Dashboard

This dashboard reviews the most current water-quality data for lakes throughout the County. It displays exceedances in five parameters using Class III criteria from Florida Administrative Code 62-302 to provide a snapshot of how a waterbody is doing. The parameters are Chlorophyll a corrected, Total Nitrogen, Total Phosphorus, Escherichia coli, and Secchi Depth. The colors on the dials represent the current state of the water quality based on the last data point reported. This dashboard is accessible on the Orange County Water Atlas webpage at **https://www.orange.wateratlas.usf.edu/**



GOAL 7: PROTECT WATER QUALITY THROUGH INNOVATIVE TECHNOLOGY AND INTEGRATED WATER MANAGEMENT AUDITS AT COUNTY FACILITIES

Overview:

Upon a 2020 baseline review across county facilities, wastewater and stormwater management, pollution prevention, and landscape irrigation occur at different levels and through a variety of methods. In FY21, the county will embark on a series of facility assessments, as well as a Comprehensive Stormwater infrastructure Plan to identify opportunities for improvements to our infrastructure and natural water bodies. The goal will be to eliminate any current or future potential for onsite pollutant sources such as runoff and septic tanks across County facilities.

Benefits to the County:

Implementation of the actions identified will assist in reducing risks and impacts to County landscapes, infrastructure, groundwater, and neighboring water bodies. An enhanced focus around green infrastructure planning, budgeting and technology deployment will also reduce maintenance costs and align with various regulatory programs through the National Pollutant Discharge Elimination System (NPDES) and Florida's Total Maximum Daily Loads (TMDLs).

Benefits to Community:

Water body and groundwater quality is affected by pollution from multiple sources in the built environment and industrial processes. Monitoring water quality and minimizing these impacts will result in a reduction of potential health and infrastructure hazards, providing equitable and safe access to water throughout the County.

Fiscal Impacts:

Eliminating pollutants and threats to water bodies and groundwater are part of a preventative cost avoidance strategy for mitigation or repair projects that can affect the County in the future. This activity is planned to be completed as an internal action through training of key staff, capital improvements and maintenance, and contract modifications for affiliated contractors and consultants.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Conduct on-site water facility assessments and implement no-cost best management practices and compliance checks at County facilities to reduce pollutant load.	FY21	**Lead:** Facilities Teams **Support:** Environmental Protection, Public Works, Utilities, Consultant Support	Phase 1: 30 facilities - $150,000 Consultant fee
Identify the respective department/division budget for water quality improvement projects that are identified by an assessment. Implement the projects through CIP or maintenance while maintaining EPD as a technical resource.	FY21-25	**Lead:** County Administration **Support:** Utilities, Environmental Protection, Capital Project Teams, Risk Management	Costs vary per project due to severity up to $1M per project
Complete a Comprehensive Stormwater Infrastructure Plan (CSIP) to identify specific basin requirements, impairments and erosion control. Complete an inventory in GIS. Implement a Stormwater Inventory & Maintenance Data Management System (SIMMS).	FY21-25	**Lead:** Public Works **Support:** Environmental Protection, Public Works, Capital Project Teams.	Estimated $6.4M total + $200k for SIMMS Study. Estimated: $1M FY21 and $1.35M/yr
Identify and approve Low Impact Design strategies that benefit the County's system and make additions to design requirements.	FY21	**Lead:** Public Works **Support:** Environmental Protection, Public Works, Capital Project Teams	Currently budgeted consultant $250,000

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SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Evaluate and deploy new technology integration in surface water bodies and stormwater ponds to include quality, inspection, monitoring and flow control. Build and deploy an automated field device sensor network.	**FY21-30**	**Lead:** Public Works **Support:** ISS, Environmental Protection	Currently budgeted phase 1 pilot at 10 facilities - $250,000 ($25K per site.) Digital lake level and monitoring kits- $80,000 – ($8K/per site)
Create a Capital Improvement Plan to retrofit septic systems at County facilities where practical by 2030. The County has 74 County (11/2020) properties with septic systems. Retrofit with alternatives and options that include, but are not limited to: composting and advanced treatment facilities, centralized wastewater service connection or onsite-water reuse systems. New County-funded septic-system projects shall have groundwater vulnerability design standards. An environmental impact review by EPD is necessary at design phase.	**FY21-30**	**Lead:** County Administration **Support:** Environmental Protection, Utilities, Capital Project Teams, Facilities Teams, Public Works	Estimated: $3.63M Total by 2030 $402,625 per year

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GOAL 8: REDUCE WATER USE 25% ACROSS COUNTY FACILITIES BY 2030 THROUGH WATER REUSE AND EQUIPMENT EFFICIENCIES

Overview:

Orange County will implement consistent and innovative strategies to drive conservation of potable water and water reuse transitions across its facilities and plants to ensure sustainability of this vital resource.

Benefits to the County:

Increasing water efficiency and conservation will save funds, operational expenses, and lead by example.

Benefits to Community:

A total of 92% of Florida's population depends on groundwater for drinking water. Conserving and reusing our water resources will provide sustained and equitable benefits for the community.

Fiscal Impacts:

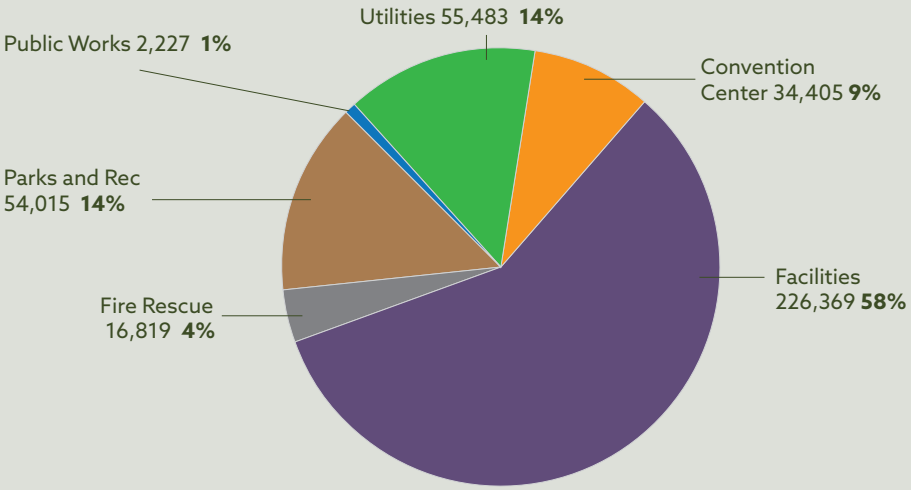
Product specifications and design process will be updated in order to achieve cost neutral options. Investments in retrofit projects will be identified based on a rapid return on investment (three years or less) and utilize the generated savings to offset the cost of future projects.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Develop scope and assess costs for existing buildings, identify and replace 100% of plumbing fixtures that are pre-1993 to reduce water use by 15 %.	**FY21-30**	**Lead:** Facilities Management **Support:** Capital Project Teams, Facilities Teams	Project cost to be developed during study.
Review design guidelines to specify EPA WaterSense labeled products for replacements to include toilets, faucets, irrigation, and other plumbing fixtures.	**FY21-23**	**Lead:** County Administration **Support:** Capital Project Teams, Facilities Teams	No additional funding required
Use 95% Florida-Friendly and drought-tolerant plantings on all new installations and specify upon replacement (95% by area or plant count). Specify weather and soil-based irrigation controllers on all new installations and upon replacement. Sports field soil moisture sensors are exempt, but must have centralized control or timers.	**FY21**	**Lead:** Utilities **Support:** Capital Project Teams, Facilities Teams, IFAS	Phase 1: 15 Existing Facilities, $180,000 total. New facilities budget 5% increase in irrigation budget
Ensure all County facilities have sub-metered monitoring and leak detection sensors by 2025. Utilize a phased approach with chilled water, process water, central water plants, leak detection, and building irrigation.	**FY22-25**	**Lead:** Energy Management Team **Support:** Capital Project Teams, Facilities Teams, IFAS, Utilities	Phase 1: 15 facilities, $65,000 total
Install on-site water reuse systems, rainwater harvesting systems, or connect to reclaimed water for the purposes of irrigation 100% of County facilities by 2030.	**FY23-30**	**Lead:** Energy Management Team **Support:** Capital Project Teams, Facilities Teams, IFAS, Utilities	Costs vary per site conditions. Further study needed to asses phase out plan with $10,000 per site
Reuse 100% of wastewater through 2030 and expand the use of reclaimed-water infrastructure with seasonal storage and backup supply. Explore community-wide opportunities to expand uses such as commercial building hydronic applications and other industrial processes.	**FY23-30**	**Lead:** Utilities **Support:** Facilities, Capital Project Teams	Currently budgeted initiatives

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

TOTAL BUILDING WATER USAGE FOR 2019 = 389,318 KGALS



The water usage captured in this chart includes potable water used within buildings and facilities as well as for irrigation of our properties. However, it does not include reclaimed water. Future water usage assessment will breakout potable indoor water, potable irrigation, and reclaimed irrigation.

GOAL 9: DEVELOP CLEAN AND SAFE ACCESS TO ALTERNATE WATER SUPPLY TO MEET FUTURE DEMAND

Overview:

Florida's aquifer system is extremely vulnerable to pollution because it is close to the land surface in many areas. Activities such as construction, agriculture, and transportation increase risk to groundwater and the aquifer system. This goal aligns our strategic planning initiatives across County facilities and infrastructure to innovate alternatives as the regional water demands grow and become more vulnerable.

Benefits to the County:

Increasing water efficiency and conservation will save funds and operational expenses, as well as lead by example. Increasing facility efficiencies and monitoring will provide real-time feedback and analytics to better manage resources.

Benefits to Community:

A total of 92% of Florida's population depends on groundwater for drinking water. Conserving and reusing our water resources will provide sustained and equitable benefits for the community.

Fiscal Impacts:

Completing a County-wide groundwater vulnerability study will help uncover and forecast for future hard costs and social costs. Orange County will continue to work with neighboring municipalities to develop regional plans and construct water supply projects.

SUMMARY OF ACTIONS

PROPOSED ACTION	TIMEFRAME	TEAM	FISCAL IMPACT*
Collaborate on regional plans with neighboring municipalities to develop alternate water supply projects. Prioritize automation and smart device readiness for new specifications.	**FY21-30**	**Lead:** Utilities **Support:** Utilities, Environmental Protection, External Partners	Current Budgeted Activity
Complete a County-wide groundwater vulnerability study by 2025 and begin implementing priority projects by 2026. Develop plan to retain permitted groundwater allocation and potable water in an environmentally responsible manner by 2030.	**FY21-25**	**Lead:** Utilities **Support:** Environmental Protection, Public Works	Current Budgeted Activity
Identify and specify sensor technology needs for wastewater, water treatment, lift stations, and drainage facilities to increase facility efficiencies and monitoring. Coordination with internal data policy, smart device readiness, centralized SCADA or field device monitoring software.	**FY21-30**	**Lead:** Facilities Teams **Support:** Utilities, Public Works, Capital Project Teams, ISS	Currently budget phase 1 Pilot at 10 Facilities - $80,000 ($8k per site)

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

METRIC	BASELINE	ENERGY USED
Gallons of water supplied annually to OCU customers	2019 23.4 Billion gallons	2019 46,342,482 kWh
Gallons of wastewater processed annually by OCU for customers – 100% goes to reclaimed water	2019 22.9 Billion gallons	2019 98,271,880 kWh

FIVE-YEAR HORIZON: Key Strategies and Initiatives for 2025

- Align FL DEP stormwater strength and weakness reports with risk and vulnerabilities reports County-wide.
- Create "Resilience Manager" in Public Works Department and Wastewater Department.
- Expand septic-to-sewer options for residents and businesses to ensure equitable access. Explore on-bill financing, Ad-valorem Tax, SELF loan program and PACE assessments as financial tools.
- Ensure Clean Air and Clean Water a resonating theme for the Future Land Use planning process.
- Develop options and pricing strategies to partner with private sector to help lessen the cost of stormwater, water and wastewater infrastructure, maintenance and delivery.
- For Orange County Utilities Customers: Explore Advanced Metering Infrastructure(AMI) water metering deployment for highest consumers of potable water.

MOBILITY & FLEET

Focus-Area Scope:

This section sets a clear strategy to transition our fleet to alternative fuels and electric vehicles while enhancing technology infrastructure throughout key transportation corridors that improve safety, and connectivity, and real time diagnostics.

Why This Is Important:

In order to build a community of the future that is connected, safe, and efficient, the County strategy will focus on improvements in technology, vehicle, bicycle, and pedestrian safety, and fuel efficiency. Reducing fuel consumption will produce positive results for the County's operating budget, sustainability goals, and air quality in our community. Strategic technology deployment in our traffic engineering systems will increase infrastructure resilience, technology readiness, and vehicle, bicycle and pedestrian safety.

What We Will Achieve:

With global vehicle markets changing, Orange County would like to begin a strategic transition to alternative fuel, hybrid, and electric vehicles across the County's fleet while collaborating to drastically increase access in our community. The County will also enable future-ready infrastructure to enhance traffic engineering, vehicle, bicycle and pedestrian safety, and preparation for connected vehicles and smart transit.

Transition Team Report Recommendation(s) Addressed:

Adopt a Sustainable and Smart Growth Vision.

Address Regional Multimodal Transportation by refocusing Orange County's transportation planning toward enhancing transit use through the Smart Growth Vision.

GOAL 10:

OPTIMIZE VEHICLE FLEET PERFORMANCE THROUGH ONBOARD TECHNOLOGY AND A 50% REDUCTION OF PETROLEUM-BASED FUEL BY 2030

GOAL 11:

DEPLOY EV-READY INFRASTRUCTURE AND CONVERT 100% OF LIGHT-DUTY COUNTY FLEET TO ELECTRIC OR ALTERNATIVE BY 2030

SUB GOAL: DEPLOY ELECTRIC VEHICLE CHARGING INFRASTRUCTURE AT 25 COUNTY FACILITIES BY 2025

GOAL 12:

IMPROVE VEHICLE, BICYCLE, AND PEDESTRIAN ROADWAY SAFETY, RESILIENCE, AND INTEROPERABILITY THROUGH TRAFFIC TECHNOLOGY RETROFITS AT 300 INTERSECTIONS BY 2025

VEHICLE FLEET FUEL USAGE accounts for 6.7% of the GHG emissions for County Operations.

OVER 500 ELECTRIC VEHICLE PUBLIC CHARGING STATIONS. 36 are installed throughout Orange County facilities as of Summer, 2020.

COUNTY MAINTAINS 590+ traffic signals and 300+ miles of road, hosting 1.64 billion vehicle trips per year.

History and Baseline Status:

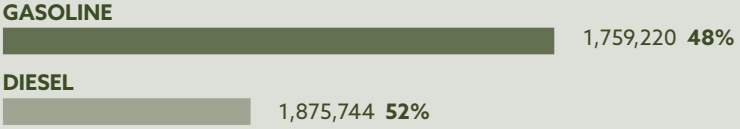
In 2019, Orange County's 4,900 on-road vehicles consumed 5.3 million gallons of fuel at a cost of $10.6 million. The average fleet fuel economy is approximately 18.2 miles per gallon. Vehicular fuel consumption accounts for 6.7% of the GHG emissions by County operations. The current traffic engineering program has potential to be enhanced through a focus on vehicle, bicycle and pedestrian safety, and resilience alongside statewide and national initiatives.

SUMMARY OF GOALS

GOAL	METRIC	BASELINE (YEAR)	GOAL TARGET (YEAR)
GOAL 10: Optimize vehicle fleet performance through onboard technology and a 50% reduction of petroleum-based fuel by 2030	petroleum-based fuel saved (gallons)	2019 - 3,634,964 gallons	50% Decrease: 181,748 gallons/yr = $363,496 savings/yr Total: 1,817,482 gallons and $3,634,964
GOAL 11: Deploy EV-ready infrastructure and convert 100% of light-duty County fleet to electric or alternative by 2030 **Sub Goal:** Deploy electric vehicle charging infrastructure at 25 County facilities by 2025	# of EV charging stations on County Property # of EV charging stations Community-wide # of vehicles transitioned to alternative fuel annually	2019 - 40 charging stations on County property and 499 Community-wide 2019 – 2 vehicles transitioned to electric	2025 – 65 stations on County property and 524 (or more) Community-wide 2030 – 662 vehicles transitioned to electric or alternative
GOAL 12: Improve vehicle, bicycle, and pedestrian roadway safety, resilience, and interoperability through traffic technology retrofits at 300 intersections by 2025	# of retrofit intersections	2020 – New Goal.	2025 - 300 retrofits

2019 TOTAL FUEL= 3,634,964 GALLONS, $7.3 M

Breakout by Fuel Type



**Includes Fire, Sheriff, Landfill and all BCC-owned Fleet*

GOAL 10: OPTIMIZE VEHICLE FLEET PERFORMANCE THROUGH ONBOARD TECHNOLOGY AND A 50% REDUCTION OF PETROLEUM-BASED FUEL BY 2030

Overview:

At present, fossil fuel use is extensive throughout County operations. Progress continues to be made in the global market with technology and product shifts while implementation of local vehicle electrification and alternative fueling initiatives are accelerating. This goal builds the County's 4-Step Fuel Efficiency Strategy;

1. Optimization of Operations and Procurement,
2. Onboard Vehicle Technology,
3. Procurement of Hybrid & Electric Vehicles, and
4. Conversion to alternative fuels like biodiesel and CNG.

Benefits to the County:

Transitions of the County fleet vehicles have a variety of benefits including increasing the safety and comfort of our drivers, decreasing overall life cycle asset costs, and reduction of fuel and maintenance costs. Reducing fuel consumption will produce positive impacts for lowering the County's GHG emissions.

Benefits to Community:

Reduced tail pipe emissions creates healthier air quality and lessens respiratory illnesses.

Fiscal Impacts:

For the Derive Vehicle Optimization Project, staff has modeled a potential reduction of 166,873 gallons/yr. equating to approximately $33,746 savings/yr. Achieving the goal will result in a savings of $337,460 in fuel expenditures. Future investments in traffic engineering devices, retrofits, and new vehicle charging infrastructure incurred. The County will seek grants, leasing, and alternative funding options in order to supplement these projects.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Deploy Derive Vehicle Optimization Technology to 600 Vehicles. Derive Technology provides vehicle speed management, RPMs and tailors shift points for more conservative driving resulting and fuel reductions of 6%. Pilot additional onboard vehicle technologies such as auxiliary power units and others to enhance internal sensor and automation network.	**FY21-22**	**Lead:** Administrative Services **Support:** Fleet Teams, Procurement, Consultant Support	$350,000 across two years ($58,000 fuel savings per year)
Conduct a Fuel & Fleet Optimization Analysis to include fuel conversions, cost analysis, leasing, and right sizing. Evaluate Vehicle Requirements Utilization Committee (VRUC) role in re-assigning vehicles that are underutilized or deemed unnecessary to other departments of the County. VRUC should govern the performance and safety requirements and specifications of the vehicles approved to be purchased throughout the County.	**FY21**	**Lead:** Fleet Managers at Utilities, Fire, Administrative Services **Support:** Fleet teams, County Attorney, Procurement	$65,000 Consultant Support
Identify CNG / Bio Diesel / Propane fuel transition & fueling infrastructure projects, by the end of 2021 to position Orange County for funding from DEERA, DOT, EPA, FDOT, and other grant funding opportunities. Update bi-annually.	**FY21-22**	**Lead:** County Administration **Support:** Fleet Teams, Utilities, Procurement, County Attorney	Potential grant matches
Employee Commuting Reduce employee single-occupant commutes and optimize work-related travel. Develop employee-assistance programs that encourage the use of public transit, bicycle, carpooling, vanpooling, telecommuting, and work from home policies.	**FY22**	**Lead:** County Administration **Support:** HR, ISS, Transportation Planning	Pilot estimated at $75,000 targeting 1,500 employees.

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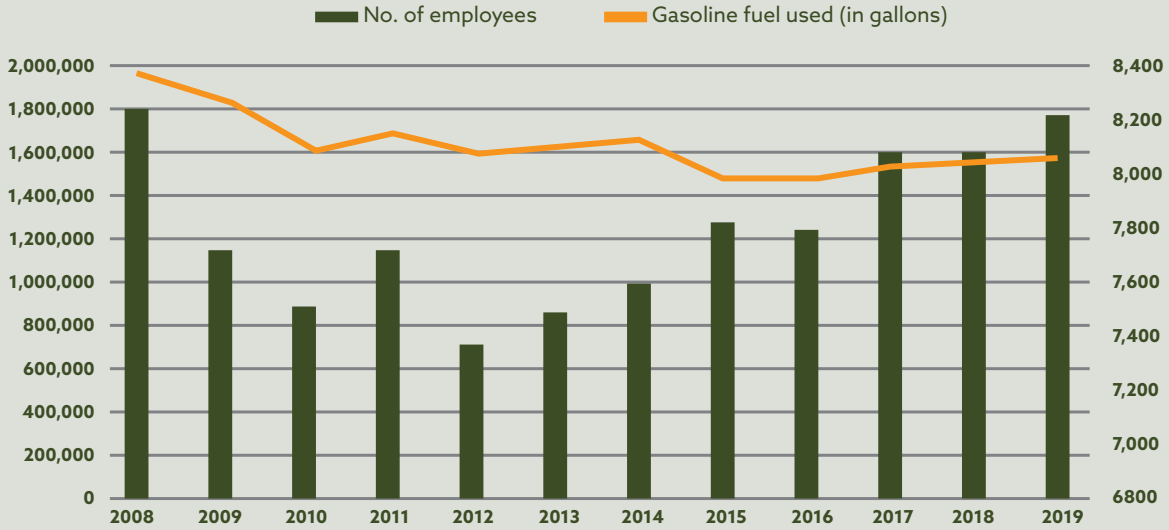
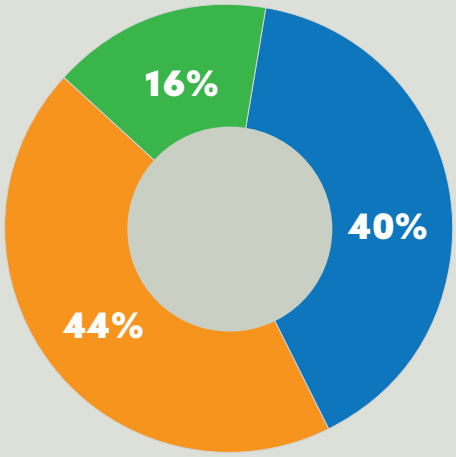
EMPLOYEE COMMUTE*: ANNUAL GASOLINE USAGE



*Estimated based on 49 weeks, 25 miles per day, 5 days per week. More realistic estimates of miles per day will be evaluated. Additionally, due to COVID-19, a successful work-from-home program was launched in March 2020, where 2,638 employees telecommuted daily. The effects of this program on fuel usage and vehicle emissions will be assessed in early 2021.

2019 TOTAL FLEET = 5,411 VEHICLES

Breakout by fuel type and department



Passenger Cars/Marine
Landfill **0.0%**
Fire **2.2%**
BCC **1.7%**
Sheriff **12.4%**

Light Trucks
Landfill **1.0%**
Fire **1.2%**
BCC **17.7%**
Sheriff **23.9%**

Heavy Duty Vehicles
Landfill **1.0%**
Fire **3.6%**
BCC **34.9%**
Sheriff **0.4%**

GOAL 11: DEPLOY EV-READY INFRASTRUCTURE AND CONVERT 100% OF LIGHT-DUTY COUNTY FLEET TO ELECTRIC OR ALTERNATIVE BY 2030

SUB GOAL: DEPLOY ELECTRIC VEHICLE CHARGING INFRASTRUCTURE AT 25 COUNTY FACILITIES BY 2025

Overview:

Increasing our electric vehicle charging infrastructure (EVCI) will accommodate the transition to electric vehicles within the County fleet and provide increased charging infrastructure access for the public.

Benefits to the County:

Installation of charging infrastructure throughout the County allows for a more aggressive transition to EVs within the fleet. Increased costs of these vehicles will be offset by reduced fuel and maintenance costs over the lifecycle of the vehicle.

Benefits to Community:

Increased charging infrastructure enables the community to consider electric vehicles as a viable transportation option without the barriers of distance or time between charging and access during emergency evacuations.

Fiscal Impacts:

Estimate $8,000 for Level 2 and $15, 000 for Level 3 purchase options. Lease options would increase electricity usage costs along with a monthly fee.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Develop templates for purchase orders and leased equipment to expedite EVCI installation for a County facility or rented office.	**FY21**	**Lead:** Administrative Services **Support:** Procurement, County Attorney, County Administration, Real Estate Management, Facilities Management	No additional funding required
Ensure all County building and parking lot electrical design CIP projects comply with "EV Ready" building code guidelines that ensure capacity for future installations.	**FY21**	**Lead:** County Administration **Support:** Capital Project Team, Fleet Management, Facilities Management	Additional per project
Identify existing needs and CIP improvements to install Level 2 and Level 3 charging stations at 14 existing fueling stations.	**FY21-22**	**Lead:** Capital Project Teams **Support:** Fleet Management, Facilities Management	Estimate $8,000 for Level 2 and $15,000 for Level 3 purchase options. Estimated total $140,000 for 14 stations
Plan and coordinate key areas to install EV/AV/CV infrastructure with FDOT, City of Orlando, Metroplan, Lynx, OUC, and the State of Florida's SB 7018: Essential State Infrastructure Plan. Pursue funding opportunities for mobility hubs and charging infrastructure county-wide.	**FY21-25**	**Lead:** Transportation Planning **Support:** County Administration	No additional funding required
Install Level 2 and Level 3 EVCI at the following potential candidate sites: County Courthouse, Ocoee Story Road Fueling Station, OCCC Destination Lynx Lot, Utilities Easterly Plant, Fleet, Sheriff Headquarters, Public Works Headquarters, President's Drive, Young Pine Solid Waste Administration Building, Utilities Conserv II, Fire Station 68, and Fire Station 44.	**FY21-25**	**Lead:** Fleet & Facilities Teams **Support:** Capital Project Team, Fleet Management, Facilities Management, Transportation Planning	Estimate $8,000 for Level 2 and $15,000 for Level 3 purchase options. Estimated total $270,000 for 25 stations

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SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Commit 100% of new light-duty 4-cylinder sedans and SUVs to be EV or hybrid on purchases in FY21 budget and beyond. (662) **1.** Update VRUC Strategic Plan Procurement standards and policies to reflect, fuel efficiency, onboard technology, field monitoring readiness, and total cost of ownership calculation as part of the justification and request submittal process. **2.** Accommodate vehicle leasing and alternative procurement options by end of December 2020. **3.** Identify vehicles that are prime for replacement due to maintenance cost, fuel efficiency, and operability. (FY20) **4.** For future technology deployment, identify Semi-trucks, Box Trucks, and Delivery Vehicles with two years remaining life to pilot.	**FY21-30**	**Lead:** County Administration **Support:** Procurement, County Attorney, Fleet Teams, Office Management & Budget	662 Vehicles $4.3M Premium over 10 years. Phase out program modeled: 66 vehicles/yr at $430K premium/yr Saving $88,943 fuel costs/yr and 44,471 gallons/yr

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GOAL 12: IMPROVE VEHICLE, BICYCLE, AND PEDESTRIAN ROADWAY SAFETY, RESILIENCE, AND INTEROPERABILITY THROUGH TRAFFIC TECHNOLOGY RETROFITS AT 300 INTERSECTIONS BY 2025

Overview:

Safety and roadway improvements remain an ongoing priority throughout the County. During this conversion, the County will strategically prioritize intersections for a suite of technology upgrades to enhance resilience and connectivity that include:

1. UPS Battery backup upgrades that have highest failure rates, grid outages and are deemed essential,
2. Advanced Transportation Controllers for Connected Vehicle Readiness,
3. ADA Retrofits sidewalk and sensors, and
4. Markings, signage, and lighting targeted towards pedestrian safety and wayfinding.

Benefits to the County:

These improvements will reduce risks, real-time monitoring, diagnostics and equipment redundancy. Reduced maintenance and replacement costs will also be realized. The County will be able to showcase public safety technology deployment and pilot new paths in smart government infrastructure.

Benefits to Community:

Enhanced safety and accessibility measures at intersections to achieve vehicle, bicycle, and pedestrian safety and connectivity goals.

Fiscal Impacts:

This is a phased intersection program that will be subject to grants, new revenue services, and public-private partnerships. Funding partnerships with FDOT, MetroPlan, municipalities, private entities, and planning agencies will be a key action item to make this program successful. Existing Public Works funding and equipment will be leveraged to help with goal achievement. Funding increases will be presented as the projects are proposed or where a grant match is required.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Perform an alignment of engineering and procurement standards to meet the goals and priorities of Resilience Planning particularly following the Florida Department of Transportation Infrastructure Resilience Initiative. Focus on interoperability and fleet optimization and human health, equity, access, and safety.	**FY21-22**	**Lead:** Public Works **Support:** Transportation Planning, County Administration	No additional funding required
Prioritize intersections for a suite of technology and system upgrades per intersection including furnish and install (F/I) of equipment as follows: 1. UPS Battery backup upgrades that have highest failure rates, grid outages and are deemed essential, 2. Advanced Transportation Controllers for Connected Vehicle Readiness, 3. ADA Retrofits sidewalk and sensors, including curb ramps and pedestrian detection, and 4. Markings & signage targeted towards safety and wayfinding. F/I special emphasis crosswalks on major intersection arterials on all four approaches and F/I internally illuminated signs on all four approaches.	**FY21-25**	**Lead:** Public Works **Support:** Transportation Planning, County Administration	300 Intersections – Estimated Total $21M by 2025
Identify opportunities to include field device sensors and monitoring into existing traffic projects above such as off-grid solar installations to assist with battery recharging, solar lighting for ADA and safety, air quality monitoring, LIDAR sensors, computer vision sensors, including curb ramps and pedestrian detection, and concrete embedded tech.	**FY21-25**	**Lead:** Public Works **Support:** Transportation Planning, County Administration	Costs will vary according to the footprint of intersection, between $25,000 and $50,000 per intersection. Total intersections to be determined during study.

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SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Prioritize traffic signal mast arm conversions with an enhancement from two to three signals to enhance safety and resilience traffic signals in time of storms and high winds. Identify telecommunication enhancements and digital infrastructure readiness during retrofit projects.	**FY21-25**	**Lead:** Public Works **Support:** Transportation Planning, County Administration	Cost per intersection is $250,000 Total intersections to be determined during study.
Re-assign an internal team member at Public Works that is planning, designing, constructing, and maintaining roadway infrastructure in consideration of Federal Highway Administration, FDOT, and other best practices in resilience.	**FY21**	**Lead:** Public Works **Support:** Transportation Planning, County Administration	No additional funding required.

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Project Highlight

LWV LEAGUE OF WOMEN VOTERS® OF FLORIDA

"A significant portion of the carbon dioxide emissions in this state are produced by the transportation sector; Electric vehicles can help reduce these emissions, thereby helping to reduce the impact of climate change on this state. The use of electric vehicles for non-local driving requires adequate, reliable charging stations to address electric vehicle battery range limitations;" – State of Florida SB 7018 excerpt passed March 2020. **Orange County recently received an A rating by the League of Women Voter's 2020 Electric Vehicle Summer Report Card.**

FIVE-YEAR HORIZON: Key Strategies and Initiatives for 2025

- Collaborate to establish an Electric Vehicle Purchasing Collaborative for Heavy-Duty Trucks and equipment.
- Energy Storage at EV mobility sites for grid resilience in times of outage.
- Coordinate connected/autonomous/electric vehicle planning initiatives with Metro Plan Orlando, Florida Department of Transportation, and Central Florida Expressway Authority.
- Integrate real-time monitoring at intersections with artificial intelligence to enhance pedestrian safety and crime prevention.

SUPPLY CHAIN & MATERIALS MANAGEMENT

Focus-Area Scope:

This section is divided into three parts covering: 1) County procurement of supplies, materials, and services; 2) efficient management of County's operations to reduce waste and promote waste reduction and beneficial end-of-life material use; and 3) operation of the County's recycling and waste management systems and facilities.

Why This Is Important:

Responsible production and consumption have been at the forefront of many shifts in major consumer product brands, the hospitality industry, and local governments. Orange County is well situated to help influence the manufacturing and goods markets by ensuring vendors and products are socially equitable, environmentally responsible, and part of the circular economy vision. Managing our community's waste is an increasing expense and priority with depleting traditional solutions and relaxed state and federal requirements.

What We Will Achieve:

The County purchases millions of dollars of goods and services throughout the year. As a big customer in the local marketplace the County is in a position to influence supply chain shifts to sustainable procurement. A sustainable procurement and resource management program for paper, computers, cleaning supplies, along with many other products and professional and maintenance services will help reduce the amount of purchases made, increase efficient use of products, and promote ways to extend the life of the County operated landfill.

Transition Team Report Recommendation Addressed:

Reduce solid waste to extend current life of the landfill through education and improved methods.

GOAL 13:

IMPLEMENT A SUSTAINABLE PROCUREMENT PROGRAM WITH SUPPLIER METRICS BY 2023

GOAL 14:

INCREASE WASTE DIVERSION RATES TO 70% BY 2030 AT COUNTY FACILITIES

SUB GOAL: INCREASE WASTE DIVERSION RATES TO 30% BY 2025 AT COUNTY FACILITIES

GOAL 15:

DECREASE THE PER CUSTOMER LANDFILL DISPOSAL TONNAGE 15% BY 2025

CONSTRUCTION & DEMOLITION RECYCLING RATE increased to 57% in 2019

MORE THAN 43,000 HOUSEHOLDS have been educated with our Residential Recycling Tagging Program. 240 new recycling bins distributed throughout County facilities.

APPROVED A NEW POLICY IN 2020 for County-owned properties to reduce the use of single-use products and plastic bags.

History and Baseline Status:

The County has had several initiatives and pilot programs for procurement and supply chain coordination and seeks to build from and formalize these successful outcomes county-wide. Additionally, waste diversion and recycling have been a key focus for Orange County operations in past years. The waste baseline and diversion rate reflect a variety of procedures, contractors, and needs across departments. However, the goals in this section are targeted to create clear baselines and find cost-saving efficiencies in the short-term in order to set more comprehensive goals in the future.

SUMMARY OF GOALS

GOAL	METRIC	BASELINE (YEAR)	GOAL TARGET (YEAR)
GOAL 13: Implement a sustainable procurement program with supplier metrics by 2023	Supplier metrics received for % of contracts	2021- No Baseline	2023 – 100%
GOAL 14: Increase waste diversion rates to 70% by 2030 at County facilities **SUB GOAL:** Increase waste diversion rates to 30% by 2025 at County facilities	Diversion Rate (%) Total Waste from County facilities annually (tons) Total Waste diverted from County facilities annually (tons)	2019- 5.8% Diversion Rate: Estimated 26,469 total tons and 1,529 recycled tons	Interim 2025 – 30% diversion = 7,940 tons 2030 – 70% diversion = 18,528 tons
GOAL 15: Decrease the per customer landfill disposal tonnage 15% by 2025	Per customer disposal (tons)	2019 - 1.24 tons per customer	2025 – 15% decrease = 1.04 tons per customer

GOAL 13: IMPLEMENT A SUSTAINABLE PROCUREMENT PROGRAM WITH SUPPLIER METRICS BY 2023

Overview:

Orange County has few contracts containing measurable sustainability requirements or standards. Through a survey of suppliers, as the contracts go to bid or purchases are being planned, the County will enhance purchasing practices with a focus on more sustainable products and services and reduced impacts to the environment. A secondary focus of the goal is to ensure effective data collection from suppliers with ease of access and processing for our staff.

Benefits to the County:

Reducing product purchases and coordinating to purchase bulk sustainable products can reduce County costs while becoming a leader in best practices. Implementing these practices will allow for continued operations without sacrificing quality and availability and will lessen the impact to future generations.

Benefits to Community:

The County is positioned to influence local markets through the purchase of sustainable products, making these products more accessible and affordable for others. Cost savings on products and services can be optimized to serve public programs and initiatives. There is economic development value to bringing new products, services, and industries to the area. The U.S. Small Business Association and the U.S. Department of Labor report that for every $100 spent at local businesses, $68 will stay in the community.

Fiscal Impacts:

The supplier survey will not incur direct costs, but will require staff hours for implementation, the use of existing tools and the potential for additional tools developed by staff. Staff resources will be required for the initial data collection of paper purchases, cleaning supplies, and electronics, but will result in a cost equivalent alternative product.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Draft changes to Administrative Regulations 9.01.09 Recycled Products, 9.01.03 Single Use Products, 9.02 MWOB Policies, 2.07.01 Uniform Stationary Requirements, 8.13 Energy Conservation.	**FY21**	**Lead:** County Administration **Support:** Procurement, Capital Project Teams, Facilities Teams.	No additional funding required
Create language to be included in County Procurement Standards with methods for tracking sustainability performance metrics.	**FY21**	**Lead:** Procurement & County Administration **Support:** Environmental Protection, Convention Center	No additional funding required
Revise the procurement project intake to include either general Countywide targets or specific department targets for each of the supplier sustainability metrics. Compose and include a supportive provision in all new and renewed contracts and boilerplates, subject to concurrence from the County Attorney's Office. Revise and include the requirement for sustainable procurement criteria in the Orange County Procurement Procedures Manual.	**FY21**	**Lead:** County Administration **Support:** County Administration, Environmental Protection, Convention Center	No additional funding required
Define a baseline of top 10 consumable product categories by total spend for current compliance with Sustainable Procurement criteria.	**FY21-22**	**Lead:** Procurement **Support:** Environmental Protection	No additional funding required
Conduct supplier survey for 100% of contracts and suppliers. Integrate into pre-qualification forms. Prioritize goal setting and transition for top 10 consumable product categories by total spend.	**FY23**	**Lead:** Procurement **Support:** Environmental Protection	No additional funding required
Create a centralized data repository to support the collection and evaluation of supplier sustainability metrics for use by the users to ensure adequate contract administration.	**FY21-23**	**Lead:** Procurement & County Administration **Support:** County Administration, Environmental Protection, Comptroller	No additional funding required
Integrate new supplier sustainable procurement guidance into vendor orientation, procurement meetings, new hire training and existing employee training.	**FY21-25**	**Lead:** Procurement & County Administration **Support:** Environmental Protection, Convention Center	No additional funding required

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GOAL 14: INCREASE WASTE DIVERSION RATES TO 70% BY 2030 AT COUNTY FACILITIES

SUB GOAL: INCREASE WASTE DIVERSION RATES TO 30% BY 2025 AT COUNTY FACILITIES

Overview:

Across County operations, waste and recycling collection occurs in a variety of methods and with different waste haulers. Contamination of the recycling stream occurs among our facilities, however, successful efforts at Corrections, OCCC, EPD, and Utilities can be replicated to achieve improved recycling.

Benefits to the County:

Optimizing our collection and diversion programs would increase cost savings among contracts and provide opportunities to educate the community. While paper and cardboard remain one of the easiest materials to recycle and support our waste diversion goals, reducing purchasing will have a bigger impact on our overall sustainable materials management plan and waste reduction efforts.

Benefits to Community:

Extending the life of the County-operated landfill from 2040 to 2050 would be a unifying goal for the County's materials management initiatives as it manages the waste of employees, residents, and visitors.

Fiscal Impacts:

The County has adequate staff resources to begin an aggressive diversion campaign with minimal costs for internal recycling bins. Additional direct costs would result from the installation of new monitoring or collection technologies and additional collection contracts for materials not currently recycled. Cost savings can be realized at renewal or rebids of the contracts, as well as in right-sizing of dumpsters and updated pick-up schedules.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Provide standardized side-by-side waste/recycling bins and standard signage to 100% of occupied facilities and properties.	**FY21-22**	**Lead:** Facilities Teams **Support:** County Administration, Utilities	Estimated 150 additional bins. Total $25,000
Implement paperless initiative or opt-out procedures for key County departments and staff. **1.** Define opt-in and opt-out opportunities and procedures for the priority departments with high paper usage volume. **2.** Review existing Administrative Regulations to identify changes and compliance tracking to ensure the purchase of products with recycled content. **3.** Establish a baseline for total paper purchased in FY20. **4.** Identify bulk purchase opportunities and procurement coordination that is a cost-benefit across departments and divisions, to minimize purchases and shipping costs.	**FY-23**	**Lead:** Procurement **Support:** County Administration	No additional funding required
Track compliance and reporting of Administrative Regulation 09.01.03 Single Use Products for County purchases.	**Ongoing**	**Lead:** Procurement **Support:** County Administration	No additional funding required
Expand the Orange County Convention Center ISO 14001 Environmental Management System training program to all applicable County departments that will focus on materials management. The program will include robust training, work instructions and procedures for employee and contractors, regular inspections and regular tracking and monitoring.	**FY23-25**	**Lead:** County Administration **Support:** OCCC, Utilities, Environmental Protection, HR	Consultant $190,000
Identify a cross-departmental team to inventory the various high-volume waste streams and streamline disposal, collection and recycling programs for those materials. Perform waste audits and composition studies. Identify opportunities for logistic improvements, contract cost savings, and bundling services. Identify opportunities to decrease packaging and shipping costs.	**FY21-22**	**Lead:** County Administration **Support:** Facilities Management, Environmental Protection, Procurement, Utilities	Phase 1: 30 facilities at $45,000 one-time expense
Implement a construction and demolition diversion program with local material recovery facilities or the Orange County landfill. Implement diversion goals goals for all County CIP projects, and drive economic development.	**FY21**	**Lead:** Capital Project Teams **Support:** Facilities Teams, Environmental Protection, Procurement, Utilities, County Administration	In coordination with SMMP development in current budget
Conduct a food-waste reduction and collection pilot program at Corrections, History Center and Great Oaks Village.	**FY21-22**	**Lead:** County Administration **Support:** Facilities Management, Environmental Protection	$5,200/yr new budget request item

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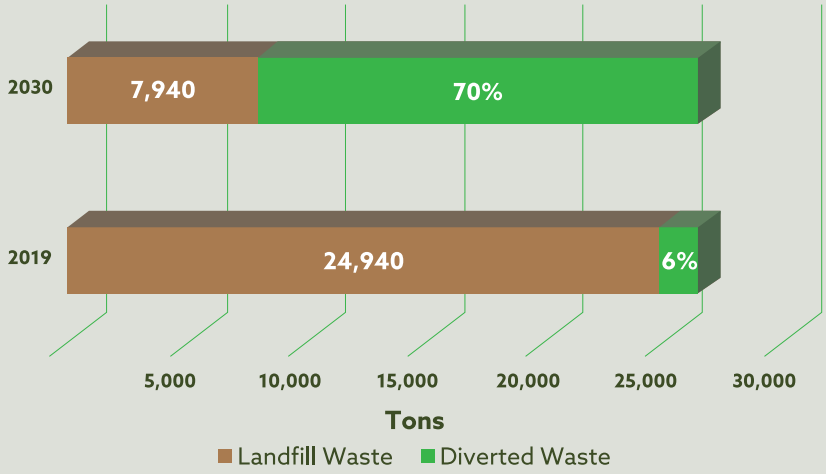
County Operations Waste

2019 Baseline - 2030 Target



	2019	2030
Landfilled Waste	24,940	7,940
Diverted Waste	1,529	18,528

COUNTY OPERATIONS WASTE BASELINE 2019

Department	Total	Landfill	Recycling	Diversion	Costs
Convention Center	7,341	6,695	646	9%	$598,763
Facilities Management	12,659	12,107	552	4%	$460,849
Fire and Rescue	557	421	136	24%	$86,611
Parks and Recreation	4,398	4,265	133	3%	$161,116
Public Works	447	432	15	3%	$16,565
Utilities	1,067	1,020	47	4%	$37,711
Grand Total	**26,469**	**24,940**	**1,529**	**6%**	**$1,361,615**

Establishing a waste baseline with waste composition analysis is one of the first actions in this section. Estimates were generated using containers sizes, pickup frequency, and volume and weight factors of a 2 yard container at 303.1 lbs.

GOAL 15: DECREASE THE PER CUSTOMER LANDFILL DISPOSAL TONNAGE 15% BY 2025

Overview:

This goal builds on the County's current outreach and recycling quality improvement program for residential curbside customers. Additionally, to positively impact broader, community-wide end-of-life materials management systems, Orange County is working to develop an update to its current Solid Waste Management Plan and a new holistic Sustainable Materials Management Plan (SMMP). The SMMP will evaluate short-term strategies and long-term solutions for materials reduction and diversion, possibly including byproduct utilization, materials recovery, and remanufacturing, and any other innovative disposal, recycling, and reuse options.

Benefits to the County:

Optimizing our collection and diversion programs would lead to enhanced public participation and leadership in material recovery potentially unlocking economic development potential. The County can encourage new recycling and reuse markets, develop new technologies and potentially generate power or valuable by-products which can be utilized in local systems. The County will seek partnerships with local emerging technology industries and education providers.

Benefits to Community:

Protect and enhance our current quality of life with better waste management practices and encourage long-run local reuse of end-of-life materials.

Fiscal Impacts:

The County has adequate equipment and staff resources to address current levels of service and near-term improvements in the recycling program. The funding needs and sources required to support enhanced diversion facilities and recycling systems will need to be identified in the development of the SMMP. Cost savings can be realized at renewal or rebids of the contracts.

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Proceed with the solicitation of a public-private partnership for a new Materials Recovery Facility (MRF) contract by 2022.	**FY22**	**Lead:** Solid Waste **Support:** Procurement	$110,000 - Currently Budgeted Activity
The County will improve the Materials Recovery Facility (MRF) contract, continue the Recycling Quality Improvement Program (RQIP), and treat the contamination in the recycling stream. These actions will improve the residential curbside collection program, per customer annual disposal tonnage.	**FY23**	**Lead:** Solid Waste **Support:** County Administration, Environmental Protection	No additional funding required
Develop a Sustainable Materials Management Plan (SMMP) by 2023 with Utilities' short-term strategies and long-term solutions to effectively address end-of-life materials management by Orange County. The plan will explore alternative disposal methods such as waste-to-energy, byproduct utilization, materials recovery, remanufacturing that may have revenue and economic development potential.	**FY21-23**	**Lead:** Solid Waste **Support:** County Administration, Environmental Protection, Water Reclamation, Convention Center	$1,000,000 for SMMP development over FY21 and FY22 – already in budget
Perform an inventory of privately-owned recycling, reuse, and diverted-materials end-user resources outside of the Solid Waste Management Division's operational control. Develop partnerships to decentralized waste streams from County facilities and public facilities. Quantify the cost impacts and potential benefits of utilizing privately held recovered material processing facilities to divert waste. This cost-benefit analysis will qualify project funding potential and future public-private partnership opportunities.	**FY23-25**	**Lead:** Solid Waste and Environmental Protection **Support:** County Administration, Water Reclamation, Convention Center	In coordination with SMMP development
Collaborate on a project assisting in the development of a regional anaerobic digester facility to address regional food waste with an emphasis on large producers such as OCCC and Corrections.	**FY21-22**	**Lead:** County Administration **Support:** Convention Center, Corrections, Environmental Protection, Utilities	$120,000 Consultant Support
Include pilot enhancements to Orange County Landfill's composting and mulching program, including food waste. Require County-funded landscaping contracts to utilize County mulch or compost when available.	**FY21-23**	**Lead:** County Administration **Support:** : Solid Waste, Procurement, Capital Project Teams, Facilities Teams, Parks & Recreation, Public Works, Environmental Protection	Costs to be evaluated with SMMP consultant budget

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ORANGE COUNTY RECYCLED WASTE
Per Customer Per Year

2020
420 pounds

→

2025
820 pounds

COMMUNITY WASTE DIVERSION IMPROVEMENTS

Current Waste Processing	Implementation Solutions	Target 2025 Waste Processing
Household Waste - 100% landfilled	Sustainable Materials Management Plan	Household Waste – 99% landfilled - 1% reused
Uncontaminated Recycled Materials– 4%	Resident Education & Tagging Program Development of new Material Recycling Facility	Uncontaminated Recycled Materials – 70%
Yard Waste – 100% reused	Mulching & Composting Program	Yard Waste – 100% reused
Food Waste – 100% landfilled	Composting Program	Food Waste – 90% landfilled – 10% composted

Project Highlight

From December 2019 through March 2020, approximately 43,000 households were provided a focused, curbside education program through Orange County's recycling quality improvement program. With "Oops" and "Great Job" tags placed on recycling carts over several weeks, residents in designated focus areas were informed if the recyclables in their cart were acceptable. Educating residents through this program caused the acceptance rate of collected loads in the focus areas to improve from five percent in the first week to 74 percent by the final week.

Orange County residents are encouraged to THINK 5 when recycling by including plastic, metal and glass containers, and cardboard and paper in recycling carts.

THINK 5
ORANGE COUNTY RECYCLING DONE RIGHT

FIVE-YEAR HORIZON: Key Strategies and Initiatives for 2025

- Pilot grease collection program to create biogas at the Southwest Water Reclamation Facility. Coordinate with grease drop off at Orange County Landfill and Porter Transfer Station.
- Identify funding and program logistics to deploy a backyard composting program for unincorporated Orange County residents through University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS).
- Coordinate with the City of Orlando, Orange County Convention Center and Second Harvest on the Food Rescue initiative through the Natural Resources Defense Council.
- Pursue grant funding to create workforce development and local jobs in the waste recovery, remanufacturing of waste materials, anaerobic digestion and composting services.

TREES & LANDS

Focus-Area Scope:

This section focuses on enhancing regional green space and natural lands, and the minimization of environmental, climate, and water impacts on County-owned and -managed lands. This includes all trees, parks, green space, wetlands, and un-developed properties owned and managed by the BCC through our Real Estate Management Division. This section also focuses on resource-based land purchases for habitat protection and will align with the County's public Smart Growth Strategy, Orange Code, and Vision 2050 updates.

Why This Is Important:

Green space is an important part of our County facilities for the health and well-being of occupants, visitors, and wildlife. Green space can increase a person's mental well-being after spending only 90 minutes outdoors. The stormwater and carbon sequestration benefits are also of great value.

What We Will Achieve:

The County will align a comprehensive strategy around tree planting, protection of green space, and land acquisition. The strategy will prioritize a variety of key drivers including increasing universal access to safe, inclusive, and accessible green and public spaces, with attention to the specific needs for women and children, older persons, and persons with disabilities.

Transition Team Report Recommendation(s) Addressed:

Adopt a Sustainable and Smart Growth Vision.

Lead by example through Green Buildings and Green Infrastructure.

Cultivate a Local Food Economy through promotion and reducing regulatory barriers.

GOAL 16:

PRESERVE AN ADDITIONAL 23,000 ACRES OF ENVIRONMENTALLY SENSITIVE LANDS AND INCREASE COUNTY NATURAL LAND ASSETS BY 2030

GOAL 17:

PROTECT AND ENHANCE TREE CANOPY AND WILDLIFE HABITATS ON COUNTY PROPERTIES

1 ECO-TOURISM CENTER in development 14 public natural lands + 1 nature center + 106 parks + 13 equestrian trails + 3 campgrounds

3,000 TREES PER YEAR are planted throughout County properties and roadways.

~5200 TREES WERE GIVEN TO RESIDENTS across the County from 2015-2019 with a 92% survival rate.

History and Baseline Status:

Orange County plants approximately 3,000 trees per year throughout a variety of divisions and purposes. The County's Tree Replacement Trust Fund generates approximately $243,000 per year. Additionally, Orange County owns thousands of acres of land. The following list outlines the land responsibilities based on 2020 data:

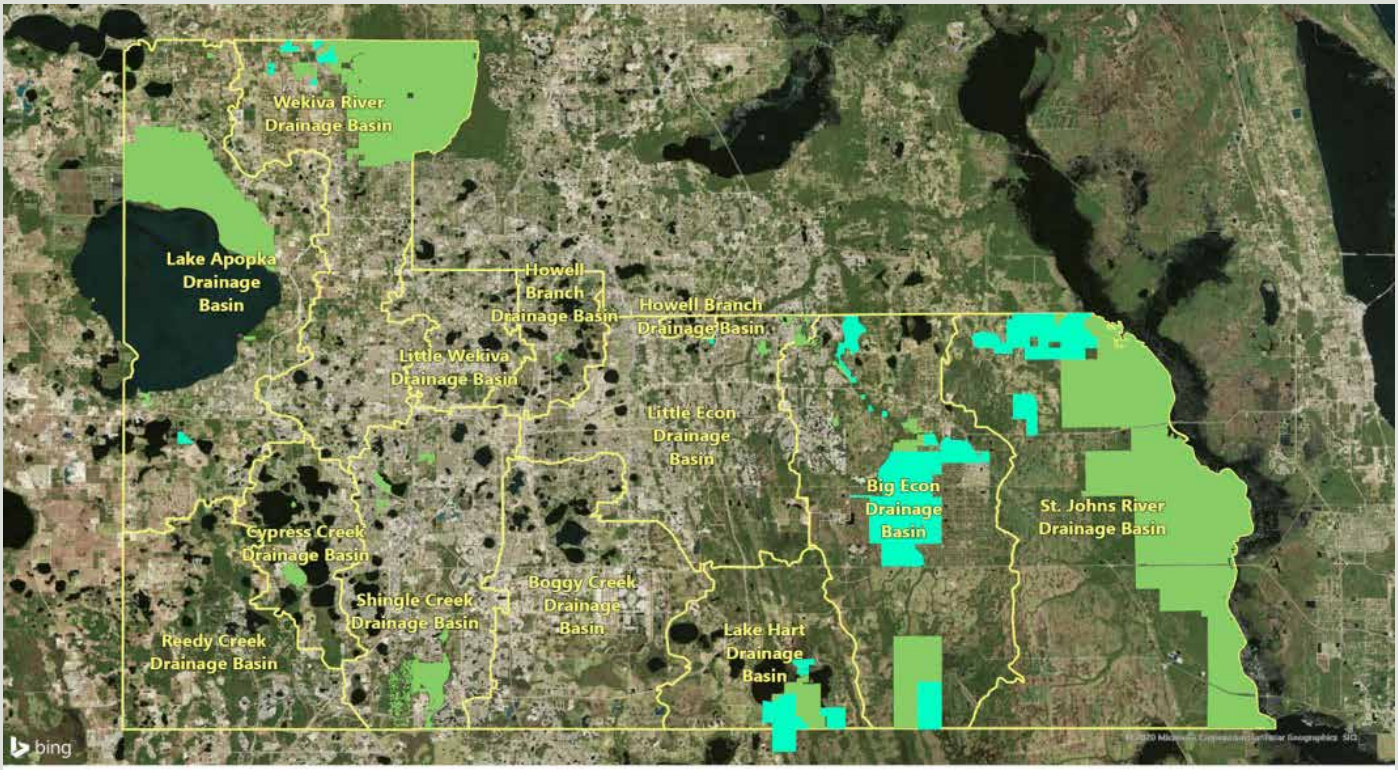
- Parks and Recreation manages 13,046 resource-based acres and 1,743 activity-based acres
- Facilities Division maintains buildings and associated properties that occupy 12,755 acres
- Utilities Department's water resources and solid waste operations span 10,091 acres

SUMMARY OF GOALS

GOAL	METRIC	BASELINE (YEAR)	TARGET (YEAR)
GOAL 16: Preserve an additional 23,000 acres of environmentally sensitive lands and increase County natural land assets by 2030	Natural land assets (acres)	2019 - 23,000 acres GreenPLACE properties	2030 – 46,000 acres of natural land assets
GOAL 17: Protect and enhance tree canopy and wildlife habitats on County properties	Tree canopy coverage across County properties (% of total acreage)	2020 - Baseline Under Development. Countywide Average is 27.5% (2016).	2025 – at least 30%

Orange County boundary contains 27,141 of contiguous acres that are preserved for wildlife habitat and to mitigate species loss.

- St. Johns River Water Management District
- South Florida Water Management District
- Trust for Internal Improvement Fund
- Florida Communities Trust
- Florida Fish and Wildlife Conservation Commission
- Florida Department of Transportation
- National Oceanic and Atmospheric Agency
- Osceola County
- Lake County



GOAL 16: PRESERVE AN ADDITIONAL 23,000 ACRES OF ENVIRONMENTALLY SENSITIVE LANDS AND INCREASE COUNTY NATURAL LAND ASSETS BY 2030

Overview:

This goal was developed to showcase the leadership and commitment of Mayor Demings and the Board of County Commissioners to identify and prioritize a strategy to increase acreage of preserved lands, nature-based recreation and expansion of environmentally sensitive lands across the County through our GreenPLACE program. As an urban County, land preservation is scarce and important as the County grows services and ensures access to nature and green space.

Benefits to the County:

A strategic plan focused on lands management is desired for the County to identify conservation potential and development opportunities for new facilities, preserved lands, energy generation, public services, and land leases. Implementation of this goal would showcase commitment in our region and peer counties in the nation. Orange County continues to grow and a land acquisition and management program including key wildlife corridors, along with a Smart Growth strategy is important for the protection of our natural resources. The preservation of greenspace is critical to community health and wellness as well as preservation of native species and natural wildlife habitats.

Benefits to Community:

Orange County's GreenPLACE properties are open to the public and provide opportunities to enjoy nature through passive recreation. In addition to environmentally sensitive lands, Orange County will dedicate internal resources focused on developing nature based recreation opportunities through acquisition and re-development of pocket parks, public-private land partnerships, brownfields, and urban wildlife habitats that offer residents access and touch points with nature.

Fiscal Impacts:

Land acquisition for environmentally sensitive lands (23,000 acres) is estimated at $435 million.

SUMMARY OF SHORT-TERMS ACTIONS

SHORT-TERMS ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Track ongoing compliance with and conduct training for Administrative Regulation 11.07.02 stating applicable Orange County-funded development or improvement projects including roadways that require wetland mitigation use the TM/Econ Phase IV Mitigation Bank. Address the revision of Administrative Regulation 11.07.01.	**FY21-30**	**Lead:** Environmental Protection **Support:** Capital Project Teams, Procurement, County Administration	No Additional Costs
Implement $1 million CIP to enhance amenities at GreenPLACE properties. Identify additional funding needs and projects for a five-year timeline.	**FY21**	**Lead:** Environmental Protection **Support:** Capital Project Teams, Procurement, County Administration	Currently budgeted activity
Identify a long-term funding strategy for the GreenPLACE environmentally sensitive lands program.	**FY21-22**	**Lead:** Environmental Protection **Support:** County Administration, Real Estate Management, County Attorney	Estimated $435M by 2030
Expand strategic partnerships with public, private, land trusts, and non-profit partners to preserve natural lands.	**FY21-25**	**Lead:** County Administration **Support:** Environmental Protection, Public Works, Real Estate Management, County Attorney, Parks and Recreation, Utilities	No additional funding
Determine the need to acquire additional lands to meet watershed protection goals. Acquire lands that include watershed protections for downstream receiving waters that are impaired. Align Parks development strategy to include lands with areas that buffer lakes/rivers.	**FY21-22**	**Lead:** Real Estate Management **Support:** Environmental Protection, Parks and Recreation, Utilities, County Attorney	No additional funding

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

SUMMARY OF SHORT-TERMS ACTIONS

SHORT-TERMS ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Evaluate County-owned properties to identify multi-use opportunities that can increase the per capita access to green space. Identify County-owned lands in order to enhance community services, such as pocket parks, urban wildlife habitats, shared agriculture, community gardens, solar PV system installation, mobility hubs, resilience hubs and temporary housing structures.	**FY21-25**	**Lead:** Real Estate Management **Support:** County Attorney, County Administration, Parks and Recreation	Evaluate under-utilized lands
Create a cross-departmental Food Systems Team to collaborate on a Regional Food & Agriculture Resilience Plan and reduce regulatory barriers.	**FY21-22**	**Lead:** County Administration **Support:** Zoning, Planning, IFAS, GIS, Neighborhood Services.	Grant funded through 2022. No additional funding
Contract an environmental economist to evaluate the monetary value of our natural assets for resilience, sustainability, and quality of life value to our residents, businesses and visitors.	**FY22-25**	**Lead:** County Administration **Support:** Planning, County Administration, Environmental Protection Division	$175,000 Consultant Support

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

GOAL 17: PROTECT AND ENHANCE TREE CANOPY AND WILDLIFE HABITATS ON COUNTY PROPERTIES

Overview:

Peer counties and cities use tree canopy cover as a comparative metric to measure a variety of sustainability practices such as land development guidelines, street design, heat island effects, building codes, tree planting strategy, and tree preservation programs. This goal was created to help benchmark against others as well as trigger a variety of protection, planning, design, and planting projects.

Benefits to the County:

Strategically increasing and preserving tree canopy can lessen the burden on our stormwater infrastructure, landscaping needs and the need for building shade structures. Leading by example on our projects and developments will be necessary as Orange County strives to expand community programs and policy.

Benefits to Community:

Strategic alignment among Orange County staff, municipalities, and neighboring counties will help coordinate a variety of efforts and projects to reduce stormwater runoff, improve hurricane resilience, lessen heat island effects, increase property values, encourage wildlife habitat, and enhance neighborhood character.

Fiscal Impacts:

Costs will vary per project to assess the existing tree canopy and evaluate protection or removal. Tree-planting activities will be included into the landscaping line of the construction budget and can be offset by the current Tree Replacement Fund revenue and additional grant funding. Additional actions in this goal are procedural changes that do not have a fiscal impact.

SUMMARY OF SHORT-TERM ACTIONS

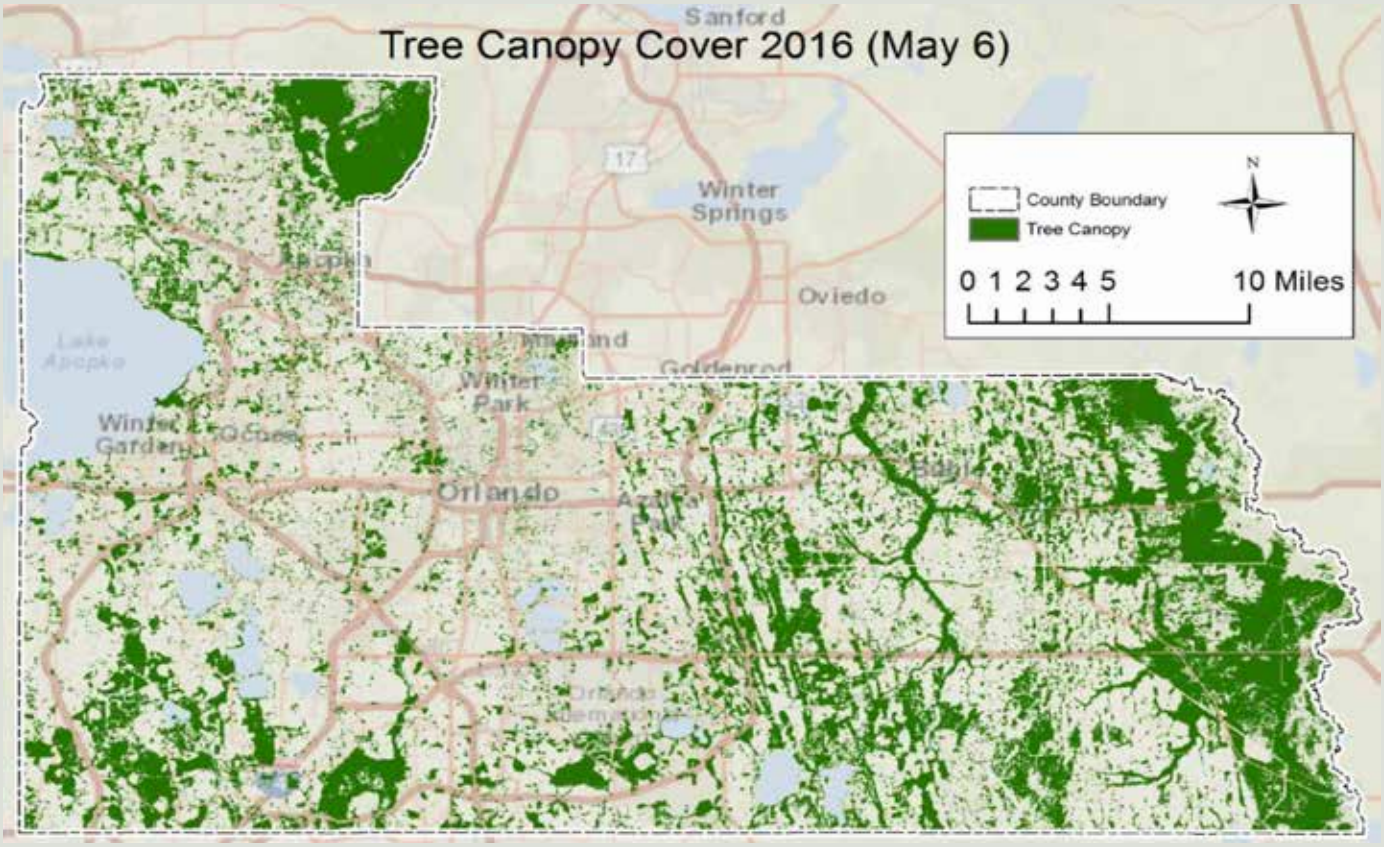
SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Maintain a cross-departmental Tree Team to oversee tree protection programs and policies.	FY21-25	**Lead:** Planning and Development Services **Support:** Planning, Zoning, Development Services, IFAS, Public Works, Utilities, Environmental Protection, GIS, Capital Project Teams, and Parks and Recreation	No additional funding
Create a standardized list of Right Tree, Right Place for County projects to include diversity criteria and points allocation to meet stormwater and carbon mitigation goals. Identify contracts for landscaping, tree planting and grounds maintenance that require scope and specification updates to meet goal.	FY21	**Lead:** Environmental Protection **Support:** Procurement, Public Works, Capital Project Teams, Parks & Recreation, UF/IFAS	No additional funding
For County-owned new construction or site development projects, create an inventory of trees that documents a pre-determined criteria including but not limited to location, species, diameter at 4.5 feet above ground, health, and critical root zone.	FY21	**Lead:** Planning and Development Services **Support:** Real Estate Management, GIS, Parks and Recreation, Environmental Protection	Costs vary per project. $3,500 per acre
Complete an aerial County-wide tree canopy inventory utilizing the OCPA false color infrared imagery study by 2021 and repeat analysis every five years. Coordinate with Google EIE Urban Tree Canopy mapping. Target filling gaps and determining location, quantity, species, and age of trees. Identify opportunities for public engagement to crowdsource a public tree inventory to help collect and update data similar to Orange County's storm drain labeling program.	FY21	**Lead:** Environmental Protection **Support:** Real Estate Management, GIS, Parks and Recreation, Environmental Protection, UF/IFAS	Currently budgeted expense every 10 years, via Property Appraiser (OCPA)

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*

SUMMARY OF SHORT-TERM ACTIONS

SHORT-TERM ACTIONS	TIMEFRAME	TEAM	FISCAL IMPACT*
Update the County's Design and Construction Guidelines to reflect nature-based resilience solutions per FEMA's guidance document (Building Community Resilience With Nature-Based Solutions) and forthcoming Public Works low-impact development standards.	**FY21**	**Lead:** County Administration **Support:** Capital Project Teams, Environmental Protection, Procurement, Public Works	No additional funding
Plant a minimum of 10,000 Florida-Friendly trees by the end of FY23 through current and enhanced programs. Create a shared GIS layer of trails, parks, and natural lands to identify shade deficient areas. Prioritize health and wellness benefits while providing equitable access to trees and green space in deficient areas.	**FY21-24**	**Lead:** County Administration **Support:** Real Estate Management, GIS, Parks and Recreation, Environmental Protection, IFAS, Neighborhood Services, Public Works	$1M Annually: No additional funding

**Fiscal impacts identified are estimates intended for forecasting purposes and do not reflect budget approval from the Board of County Commissioners. Actual fiscal impact analysis will be calculated for each action during implementation planning and presented for approval as required.*



Project Highlight

Regional Food Resilience Plan

As a result of the COVID-19 pandemic, Feeding America has reported that Central Florida will see a 46% increase of hunger and food insecurity. In response to the crisis, Orange County and the East Central Florida Regional Resilience Collaborative will be launching a local food initiative which will create a regional Food Resilience Plan in conjunction with reducing regulatory barriers to promote development of fresh local foods, community gardens. The location and prioritization of projects to enhance food access, fresh food production, and tree planting is paramount and must be done equitably. The City of Orlando was recently awarded a technical assistance "Food Matters" grant from the Natural Resources Defense Council (NRDC) to comprehensively work to address food waste reduction while addressing food gaps and insecurities in local communities.

FIVE-YEAR HORIZON: Key Strategies and Initiatives for 2025

- Align residential development and commercial development tree protection and planting goals with County Goals.
- Identify a strategy for the incorporation of and increasing county funded projects and private development of brownfields or designated Opportunity Zones.
- Alignment of the Orange County Resilience Index Analysis study with the approach for combining environmental and demographic indicators through EPA's EJSCREEN tool.
- Enhance regional coordination to further green and blue infrastructure projects.
- Align future plans with a 10-Minute Walk goal within urban areas of the County to help influence County real estate selection and planning.
- Increase access to walking trails around current and future County facilities.
- Enhance regional grant and funding pursuits of State, Federal and private funding for protection of wildlife corridors, natural resources and enhancement of green infrastructure, biodiversity.
- Develop a regionally coordinated nature-based carbon offset, air quality and sequestration strategy. Complete a carbon sequestration analysis of County-owned properties. Identify acquisition opportunities for specific natural lands that provide a buffer for climate related threats including stormwater retention and reduction of heat island effects.
- Identify opportunities and amend design guidelines to create design and retrofit options in order to enhance access to nature in urban properties or properties that are limited on space. Design considerations for green walls, pocket parks, gardens, and rooftop gardens.
- Engage residents in crowd sourcing tree inventories and wildlife habitats through Orange County's GIS app or a third-party software.
- As part of the Regional Food & Agriculture Resilience Plan, develop a local food system strategy to create a local food economy and enhance quality of life.

APPENDIX A

Buildings and Infrastructure Design Criteria Information

Goal 4 states that County-funded buildings and infrastructure will meet new high-performance and green building standards. To begin this transition, Orange County is revising County-wide Owner Project Requirements (OPR) and design criteria to reflect several new high performance and sustainability requirements. Starting December 1, 2020, all applicable County-wide capital projects and maintenance projects that are in 30% design phase or prior will be adjusted to include a new set of sustainability and performance standards. Projects that are passed 30% design will be assessed on a case-by-case basis and will identify what cost implications or change orders will be necessary to include the following minimum standards.

1. The County will prioritize scheduling and approval of projects that have a payback period of three years or less. Staff are to include cost savings estimates or lifecycle costing in budget requests for maintenance or CIP projects. Consultants can provide this as part of the engineering assessment if applicable. For FY21 projects, staff is to solicit cost-saving estimates for projects that are in the pipeline and shall be evaluated prior to bidding and proposal review.
2. For new construction projects or major renovations, project teams shall submit a Statement of Compliance with the principles, metrics and specifications in the U.S. Department of Energy's Guiding Principles for Sustainable Federal Buildings to County Administration. Projects may choose to design and/or certify a project using a third-party certification. The U.S. Green Building Council's LEED Certification, Institute for Sustainable Infrastructure's Envision Certification, ENERGY STAR, or Florida Green Building Coalition (for residential building projects) are preferred.
3. For new construction projects or major renovations, project teams shall submit a statement of compliance with the American Institute of Architects (AIA) Guides for Equitable Practice, LEED Social Equity Credits, Envision Credit QL 3.1 Advance Equity and Social Justice or an equivalent internally developed scorecard approved by County Administration.
4. For new construction projects or major renovations and related replacements, project teams shall submit a statement of compliance to address Health and Safety protocols for building design based on the Center for Disease Control COVID-19 Business and Workplaces guidance, Global Bio-Risk Advisory Council (GBAC) STAR Facility Accreditation and ASHRAE's Pandemic Response considerations for HVAC systems in design and in operation.
5. For new construction building projects, projects shall add energy performance building criteria to achieve an Energy Use Intensity (EUI) Requirement of 25 or less and a building envelope air leakage rate (infiltration and exfiltration) maximum of 0.25 CFM/SF. For existing building modifications, replacements, or renovations, staff or designers shall provide cost savings estimates for electrical, mechanical and structural elements that will achieve high-performance criteria. For horizontal project modifications, replacements, or renovations, staff or designers shall provide cost-savings estimates for electrical, mechanical and structural elements that will achieve high performance criteria.
6. Non-regularly occupied critical infrastructure and facilities such as lift stations, traffic lights, and pump stations, under 2,000 SF shall be designed to be capable of installing a gas generator, energy storage system, uninterruptible power supply, solar photovoltaic and a later time.
7. In multi-purpose and complex facilities, staff and designers shall identify whether or not the full facility is considered critical. Critical components essential to facility's functionality should be protected to a higher standard even if the facility itself is non-critical. Critical components should be evaluated on the basis of if the facility is expected to be fully operational during extreme weather or if it is expected to quickly resume operations after an event.
8. Rebates and incentives offered through Duke Energy, TECO and Orlando Utility Commission will be utilized in all design and replacement specifications unless deemed not cost effective by the County's Energy Manager.
9. Alternative funding mechanisms are to be explored and prioritized for all mechanical and electrical projects by staff or design team.
10. Electrical upgrades or site modification to an existing building shall determine the applicability of compliance with Orange County's electric vehicle readiness policy. Proposed projects shall be reviewed by the Sustainability & Resilience Team in in conjunction with the County's electric vehicle transition plan.

APPENDIX B

Glossary of terminology used in this section

GreenPLACE – Land acquisition and management program focused on protecting key wildlife corridors and key habitat that are contiguous stands of natural plant communities with the potential to support healthy and diverse populations of plants and animals. Some properties are open to the public and these are intended to provide opportunities to enjoy nature through passive recreation.

Orange County Comprehensive Policy Plan classifies and measures recreation sites as either activity-based, resource-based, a combination of the two or habitat parkland. It is noted that parkland can contain activity-based, resource-based and habitat parklands. These terms are defined as follows.

- **Activity-based parkland** – consists of predominately user-oriented facilities that are located within or adjacent to population centers. User-based activities may include tennis, golf, baseball/softball, football/soccer, shuffleboard, basketball, volleyball, paved trails, playgrounds, indoor recreation and swimming/leisure pools/water recreation.
- **Resource-based parkland** – provides access to natural and historic resources. Recreation activities are considered to be passive-in-nature and include historic tours, interpretation, nature observation, fishing, lake swimming, camping, and picnicking. Even though some of these activities may have man-made facilities such as nature trails, boat ramps, picnic tables, and campground hookups, these are secondary to natural resources required for each activity.
- **Habitat parkland** – includes park and recreation facilities that provide habitat and wildlife areas that are unlikely to be developed for more intense uses. In addition, because in most cases habitat land is not accessible to the public, it is excluded from the inventory and the impact fee calculations.
- **Pocket Parks** are the smallest park type and are typically less than two-acres in size. These parks do not contain parking areas as they are considered "walk-to"parks in nature. Site amenities are limited in these parks. Example: Beeman Park
- **Neighborhood Parks** are small parks ranging from two to 19 acres (but typically about five acres) in size with a one-half mile service area. On-street parking or a few off-street parking spaces are provided, but as these parks are intended for use by those in a one-mile radius, they are generally considered "walk-to" parks. A typical neighborhood park contains amenities such as, but not limited to: playgrounds, small picnic pavilions, benches, bike racks, paved walkways, basketball courts, dog parks, exercise stations, benches and open field space. Example: Summerport Neighborhood Park
- **Community Parks** are larger parks that serve a three-mile radius. These parks range from 20 to 149 acres, but are generally around 50 acres in size. Many community parks are staffed, but this is not a requirement. Multiple modes of transportation to these parks are encouraged, but ample parking is provided as they are considered "drive-to" parks. These parks may contain sports fields, playgrounds, large picnic pavilions, splash pads, gyms or recreation centers. Example: Barnett Park
- **District Parks** are large parks, 150-500 acres, that usually contain vast areas of environmental lands or undeveloped passive park land and have a County-wide service area. Example: Kelly Park
- **Regional parks** are primarily large resource-based parks more than 500 acres in size with protected environmental lands. These parks attract visitors beyond County lines. Example: Hal Scott Preserve
- **Specialty Parks** (to include multi-use trails) are designed for predominantly one activity and serve the entire County. They can range in size depending on the intended use. Examples: Clarcona Horse Park, Marks Street Senior Center, Lake Down Boat Ramp, West Orange Trail