CLEAN AIR NORTHEAST FLORIDA

REGIONAL COMPREHENSIVE CLIMATE ACTION PLAN

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REGIONAL CLIMATE ACTION PLAN

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Clean Air Northeast Florida Regional Comprehensive Climate Action Plan

February 2026

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The Priority Climate Action Plan lays the framework to combat climate change and its impacts in Northeast Florida by measuring, planning, and reducing greenhouse gas (GHG) emissions and related climatic impacts in the region. None of this would have been possible without the significant contributions in time, energy, and thought of many. We would like to sincerely thank the groups and individuals listed below for their support and contributions to the plan.

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ABBREVIATIONS AND ACRONYMS

ADA	Americans with Disabilities Act
ADG	Acuity Design Group
AIC	Autonomous Innovation Center
AFOLU	Agriculture, Forestry, and Other Land Use
AHJ	Authorities Having Jurisdiction
ASHRA	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
BAU	Business as Usual
BES	Beaches Energy Services
BESS	Battery Energy Storage Systems
BRIC	Building Resilient Infrastructure and Communities
BRT	Bus Rapid Transit
CAR	Climate Action Reserve
CANF	Clean Air Northeast Florida
CBO	Congregational Budget Office
CCAP	Comprehensive Climate Action Plan
CCUA	Clay County Utility Authority
CEO	Chief Executive Officer
CFPCGP	Community Food Projects Competitive Grant Program
CH_4	Methane
CID	Corridor Identification and Development
CIP	Capital Improvement Plans
CMAQ	Communities Multiscale Air Quality
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COBRA	Co-Benefit Risk Assessment
COM	Capital Operations and Management
C-PACE	Commercial Property Assessed Clean Energy
CPRG	Climate Pollution Reduction Grants
CRISI	Consolidated Rail Infrastructure Safety Improvement
CWSRF	Clean Water State Revolving Fund
DEP	Department of Environmental Protection
DER	Distributed Energy Resources
DERA	Diesel Emissions Reduction Act
DOE	Department of Energy
DOL	Department of Labor
DOT	Department of Transportation
DWSRF	Drinking Water State Revolving Fund
EAC	Epower Assist Care
EDC	Economic Department Corporation

EECBG	Energy Efficiency and Conservation Block Grants
EFCN	Environmental Finance Center Network
EMCOR	Energy and Machinery Corporation
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ESCO	Energy Service Companies
ETA	Electrical Training Alliance
EV	Electric Vehicle
FAA	Federal Aviation Administration
FAC	Florida Administrative Code
FCT	Florida Communities Trust
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FDFC	Florida Development Finance Corporation
FEMA	Federal Emergency Management Agency
FGFA	Florida Green Finance Academy
FIS	Fidelity Information Services
FPL	Florida Power and Light
FPSC	Florida Public Services Commission
FPU	Florida Public Utilities
FRDAP	Florida Recreation Development Assistance Program
FSCJ	Florida State College at Jacksonville
FSP	Federal State Partnership
GHG	Greenhouse Gases
GPS	Global Processing System
GRIP	Grid Resistance and Innovation Partnerships
GW	Gigawatts
GWP	Global Warming Potential
HC	Hydrocarbons
HEAP	Home Energy Assistance Program
HRRR	High Risk Rural Road
HVAC	Heating, Ventilation, and Air-Conditioning
IBEW	International Brotherhood of Electrical Workers
IECC	International Energy Conservation Code
IFAS	Institute of Food and Agricultural Sciences
IIJA	Infrastructure Investment and Jobs Act
IoT	Internet of Things
IRA	Inflation Reduction Act
IRP	Integrated Resource Plan
ISD	Innovate Service Development
IT	Information Technology
ITC	Investment Tax Credit

IWRP	Integrated Water Resource Plan
JAA	Jacksonville Aviation Authority
JAXPORT	Jacksonville Port Agency
JEA	Formerly Jacksonville Electric Authority
JTA	Jacksonville Transportation Agency
kWh	Kilowatts-hour
LED	Light-Emitting Diode
LEED	Leadership in Energy and Environmental Design
LDES	Long-Duration Energy Storage
LiDAR	Light Detection and Ranging
LMOP	Landfill Methane Outreach Program
LONF	Lights Out Northeast Florida
MIRR	Military Installation Readiness Review
MOU	Momentum of Understanding
MSA	Metropolitan Statistical Area
mph	Miles per hour
MW	Megawatts
N_2O	Nitrous Oxide
NEFBA	Northeast Florida Builders Association
NEFL	Northeast Florida
NEFRC	Northeast Florida Regional Council
NFWF	National Food Safety Foundation
NIFA	National Interagency Coordination Center
NFRWSP	North Florida Regional Water Supply Plan
NO_x	Nitrogen Oxides
NOAA	National Oceanic and Atmospheric Administration
OLDCC	Office of Local Defense Community Cooperation
OSPS	Optional Supplemental Power Services
PACE	Property Assessed Clean Energy
PCAP	Priority Climate Action Plan
PM	Particulate Matter
PPA	Possible Planning Areas
PSC	Public Service Commissions
PV	Photovoltaic
R_2ET	Regional Resilience Exposure tool
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
RCRA	Resource Conservation and Recovery Act
RIF	Rural Infrastructure Fund
RNG	Renewable Natural Gas
ROI	Return on Investment
RPIC	Rural Placemaking Innovation Challenge
RRAP	Regional Resiliency Action Plan

RRR	Redesign Reimagine Reinvigorate
RTP	Recreational Trails Program
SAF	Sustainable Aviation Fuel
SARE	Sustainable Agriculture Research and Education
SELF	Solar and Energy Local Fund
SHJP	St. Johns Housing Programs
SO_2	Sulfur Dioxide
SoBRA	Solar and Battery Base Rate Assessment
SS4A	Safe Streets for All
TAC	Technical Advisory Committee
TAP	Transportation Alternatives Program
TECO	Tampa Electric Company
TPO	Transportation Planning Organization
U_2C	Ultimate Urban Circulator
UNF	University of North Florida
USDA	United States Department of Agriculture
USFWS	United States Coastal Wetlands Conservation Grants
UTC	Urban Tree Canopy
VALE	Voluntary Airport Low Emissions
VAPG	Value Added Producer Grants
VCS	Verified Carbon Standard
VCTC	Voluntary Cleanup Tax Credit
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WAP	Weathering Assistance Program
WIFIA	Water Infrastructure Finnane and Innovation Act
WREP	Wetland Reserve Enhancement Partnership
WPDG	Wetlands Programs Development Grants
WTE	Waste-to-Energy

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INTRODUCTION

EXECUTIVE SUMMARY

PURPOSE

Northeast Florida is charting a path to reduce climate pollution, limit the future impacts of climate change, and build resilient and thriving communities. This Comprehensive Climate Action Plan (CCAP) outlines the region's strategy to cut greenhouse gas (GHG) emissions while strengthening the economy, protecting health, and advancing environmental welfare.

The CCAP identifies sources of GHG emissions across key sectors—transportation, commercial and residential buildings, energy, agriculture and working lands, water, waste, and industry—and sets reduction pathways through 2030 and 2050. It builds on the Priority Climate Action Plan (PCAP) submitted in 2024, expanding near-term measures into a long-term framework for deep decarbonization.

This plan also serves as the foundation for competitive grant applications under the Environmental Protection Agency (EPA)'s Climate Pollution Reduction Grants (CPRG) program and other funding opportunities, positioning Northeast Florida to attract federal, state, and private investment to accelerate implementation.

APPROACH

The CCAP is grounded in data and community input. The process included the following:

- Greenhouse Gas Inventory: making updates to the 2019 inventory to better model regional and forecast GHG reduction strategies.
- Measure Identification & Quantification: Evaluating sector-specific strategies to reduce emissions, supported by EPA tools and methodologies.
- Co-Pollutant and Benefits Analysis: Accounting for health and economic co-benefits of GHG reduction measures, especially in low-income and disadvantaged communities.
- Workforce and Economic Planning: Ensuring climate actions create high-quality jobs and expand economic opportunity.
- Interagency and Community Engagement: Coordinating across jurisdictions and meaningfully engaging stakeholders to ensure the plan reflects regional priorities.
- Resilience Integration: Aligning mitigation strategies with adaptation and resilience planning to safeguard communities against future climate impacts.

Together, these steps create a roadmap that is ambitious and achievable—moving Northeast Florida toward a cleaner, healthier, and more prosperous future.

GREENHOUSE GAS EMISSIONS INVENTORY

Northeast Florida's GHG inventory provides the foundation for this plan, identifying where emissions come from and where the region has the greatest opportunities to act. Emissions are concentrated on transportation, buildings and energy use, industry, waste, and natural systems, with water systems now included for the first time.

Recent updates improve the accuracy and usefulness of the inventory: passenger vehicle data now separates electric vehicles (EVs) from internal combustion engines, utility-specific emissions factors are applied to better reflect local electricity use, and Scope 1 and 2 emissions from the Jacksonville Aviation Authority are incorporated to align with its sustainability goals. Adding water-sector emissions further strengthens forecasting for reduction strategies.

WORKFORCE DEVELOPMENT

Achieving the region's climate and resilience goals will require a strong investment in workforce development to ensure that the skills and talent needed are available. Approximately 27,700–33,500 additional jobs will be required by 2030 across the renewable energy, building efficiency, connected communities, resilient infrastructure, and natural climate solutions. These new jobs represent a 30–35% increase over today's workforce, with critical needs in occupations such as solar PV installers, electricians, energy auditors, environmental engineers, and advanced technical trades. Without strategic workforce development, Northeast Florida risks delayed climate goal achievement, missed federal funding opportunities, and lost economic growth potential. By investing in training pipelines, certifications, and cross-sector partnerships, the region can not only meet its climate targets of reducing emissions 25% by 2030 and 50% by 2050 but also unlock several billion in economic impact and position itself as a Southeast leader in the renewable energy economy.

REGIONAL MEASURES

The regional measures identified in this plan reflect a comprehensive approach to reducing greenhouse gas emissions while building resilience across sectors. Priority actions include expanding the deployment of distributed renewable energy, improving energy efficiency in existing commercial, residential, and industrial buildings, and fostering more connected communities. The plan also advances cleaner transportation by encouraging the use of higher fuel efficiency vehicles, while promoting natural climate solutions through soil and land management practices that enhance carbon sequestration. Additional actions focus on strengthening water infrastructure and resilient stormwater management, as well as capturing and reusing methane emissions to limit harmful pollutants. Collectively, these measures are designed to achieve the region's community-wide targets of reducing Scope 1 and Scope 2 emissions 25% by 2030 and 50% by 2050, ensuring a more sustainable and resilient future.

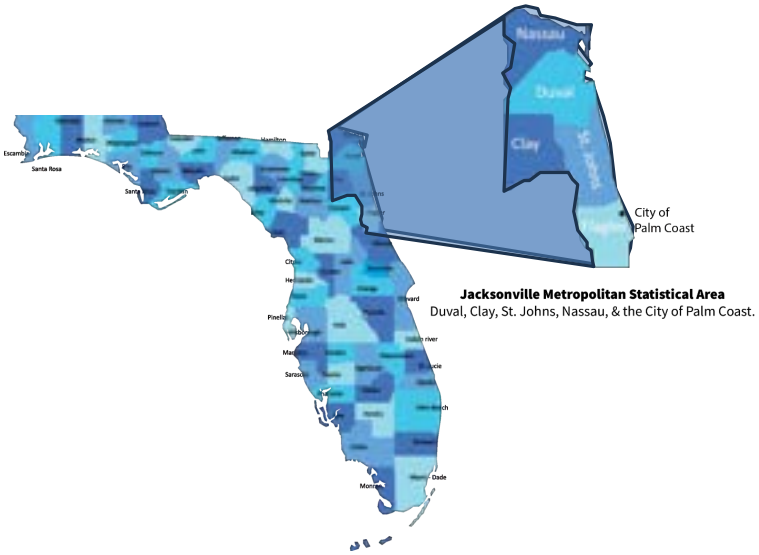
I. INTRODUCTION

NORTHEAST FLORIDA MSA REGION OVERVIEW

The Northeast Florida Metropolitan Statistical Area (MSA) is located along Florida's Atlantic coast and serves as a regional hub for commerce, transportation, and culture. With its mix of urban centers, historic communities, and natural landscapes, the region is uniquely positioned to lead climate action efforts while balancing economic growth and environmental stewardship.

CITIES AND COUNTIES WITHIN THE MSA

The Jacksonville MSA includes Duval, Clay, St. Johns, and Nassau Counties, along with the City of Palm Coast in Flagler County. Major cities include Jacksonville, St. Augustine, Palm Coast, and Atlantic Beach, each contributing to the region's diverse economy, housing, and infrastructure. Collectively, these jurisdictions represent a population of over 1.6 million people and encompass a wide range of coastal, suburban, and rural communities.



TRENDS AND REGIONAL RESILIENCE WITHIN NORTHEAST FLORIDA

Northeast Florida, including the Jacksonville MSA, is already experiencing several effects of climate change, which are expected to intensify without mitigation. These include:

NEGATIVE

SEA LEVEL RISE

Coastal areas such as Jacksonville, St. Augustine, and Palm Coast are at increasing risk of tidal flooding, storm surges, and saltwater intrusion due to sea level rise.

MORE FREQUENT AND INTENSE PRECIPITATION

The region faces higher risks of heavy rainfall events that contribute to flooding and infrastructure strain.

EXTREME TEMPERATURES

Rising average temperatures, along with heatwaves, impact public health and energy demand, particularly in vulnerable populations.

POSITIVE

FLORIDA STATE CHIEF RESILIENCE OFFICER

Appointed in 2019, the CRO coordinated statewide efforts to address sea level rise and flooding, conducted a statewide listening tour, and proposed policy tools including vulnerability assessments, building code updates, and green infrastructure investments.

RESILIENT JACKSONVILLE

In 2021, City of Jacksonville's Resilience Office launched Resilient Jacksonville, a 50-year strategy with 45 actions focused on flood resilience and heat mitigation; developed compound flood modeling tools and integrated resilience into city infrastructure and planning.

REGIONAL RESILIENCY ACTION PLAN (RRAP)

Concurrent to the release of this 2025 Comprehensive Climate Action Plan, the Northeast Florida Regional Council is releasing the Regional Resiliency Action Plan (RRAP), which creates a voluntary regional framework guiding local governments on resilience strategies and includes standardized vulnerability assessments, green infrastructure promotion, and a Regional Resilience Exposure Tool (R2ET).

COMPREHENSIVE CLIMATE ACTION PLAN

CLIMATE POLLUTION REDUCTION GRANTS (CPRG)

CPRG Overview and Purpose The CPRG program serves as a key federal initiative that enables states, municipalities, and regions to reduce GHG emissions while strengthening economic and community resilience. The program funds both planning and implementation activities that improve air quality, enhance public health, and promote long-term economic efficiency.

Research indicates that every $1 invested in resilience efforts yields approximately $13 in savings from avoided damages, reduced economic losses, and lower recovery costs. By supporting projects that modernize infrastructure and encourage innovation, the CPRG program helps communities implement practical solutions that deliver measurable economic, environmental, and social benefits.

Planning Grant Leads The planning grant for NEFL was led by the City of Jacksonville, with technical support from Hanson Professional Services and Acuity Design Group (ADG). The Northeast Florida Regional Council (NEFRC) provided regional coordination, stakeholder engagement, and intergovernmental collaboration to ensure consistency across participating jurisdictions.

This effort brought together regional partners, including Clay, St. Johns, and Nassau Counties, as well as the City of Palm Coast. Through this coordinated approach, NEFL developed the PCAP for the Jacksonville Metropolitan Statistical Area (MSA), establishing a shared foundation for long-term implementation under the CCAP.

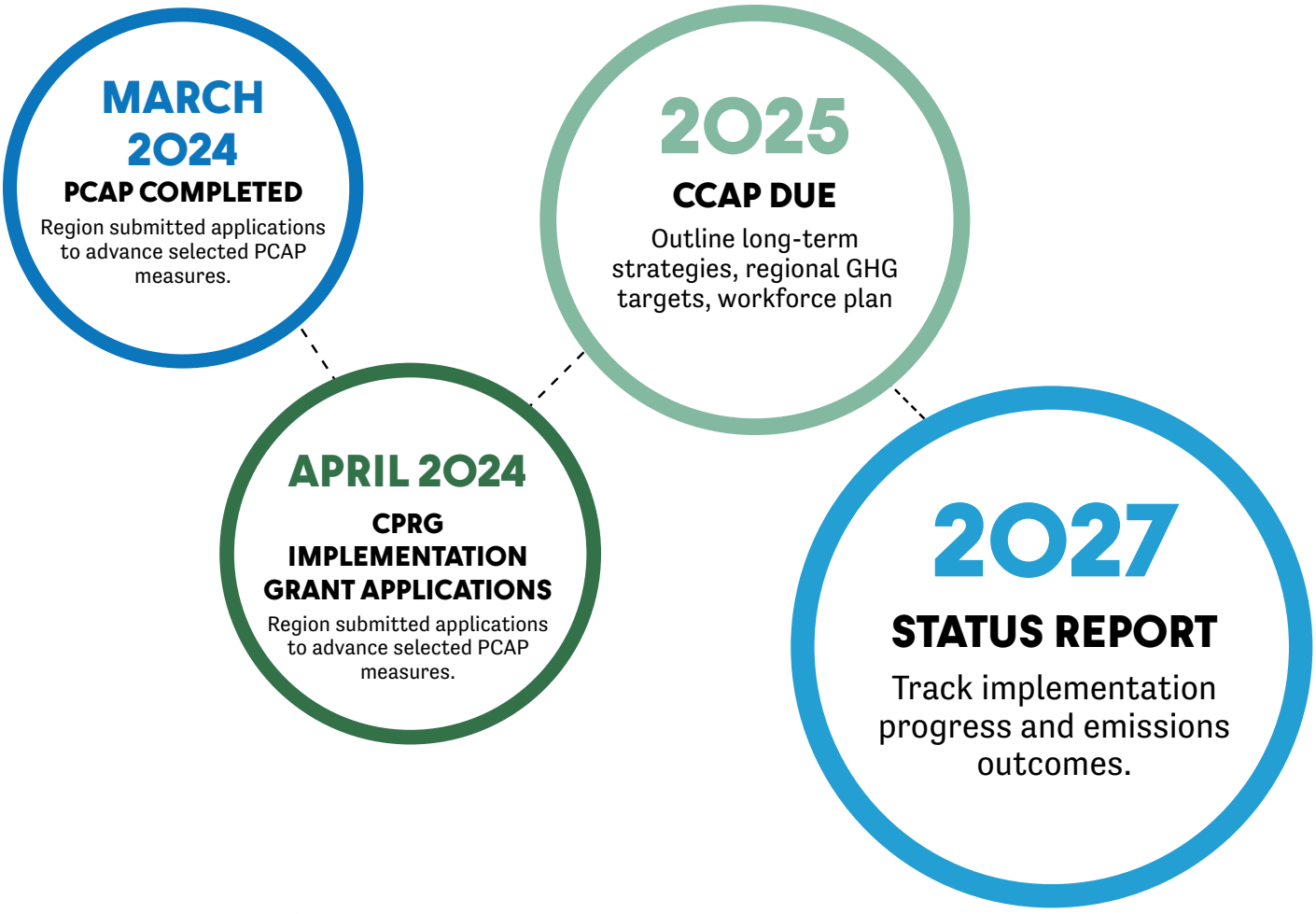
APPROACH TO CCAP DEVELOPMENT

- The CCAP for Northeast Florida builds upon the foundational work of the PCAP to outline long-term, regionally coordinated strategies for reducing greenhouse gas emissions and enhancing climate resilience.

DEVELOPMENT OVERVIEW AND METHODOLOGY

- **PCAP:** In March 2024, the Clean Air Northeast Florida PCAP served as the initial planning phase, establishing a baseline for GHG emissions and identifying high-impact, implementation-ready strategies.
- **GHG Inventory:** The GHG inventory was created using 2019 as the baseline year and followed EPA guidance for community-scale inventories. It captured emissions across key sectors, including transportation, buildings, industry, agriculture, and waste, and helped identify major sources and reduction opportunities. The inventory provided the foundation for prioritizing strategies in both the PCAP and CCAP.
- **Coordination and Outreach:** To ensure meaningful community and stakeholder engagement, Clean Air Northeast Florida coordinated interagency collaboration and facilitated regional working groups, while local governments engaged community members. Input from this outreach informed the selection of priority measures and helped tailor strategies to local needs and capacities.
- **CCAP:** The **CCAP** builds on the **PCAP** by expanding the scope to long-term, transformational 2030 and 2050 goals and targets. It incorporates further technical analysis, workforce and co-pollutant benefits, and detailed implementation pathways for selected measures. The CCAP includes a workforce and economic development plan to support a transition to more diversified energy sources across Northeast Florida.

TIMELINE APPROACH The planning process followed a phased timeline under EPA's CPRG program. The PCAP was completed in March 2024, identifying near-term, high-impact GHG reduction strategies. In April 2024, the region submitted CPRG implementation grant applications to advance selected PCAP measures. The CCAP, due in 2025, will outline long-term strategies, regional GHG targets, and a workforce plan. A status report will follow in 2027 to track implementation progress and emissions outcomes.



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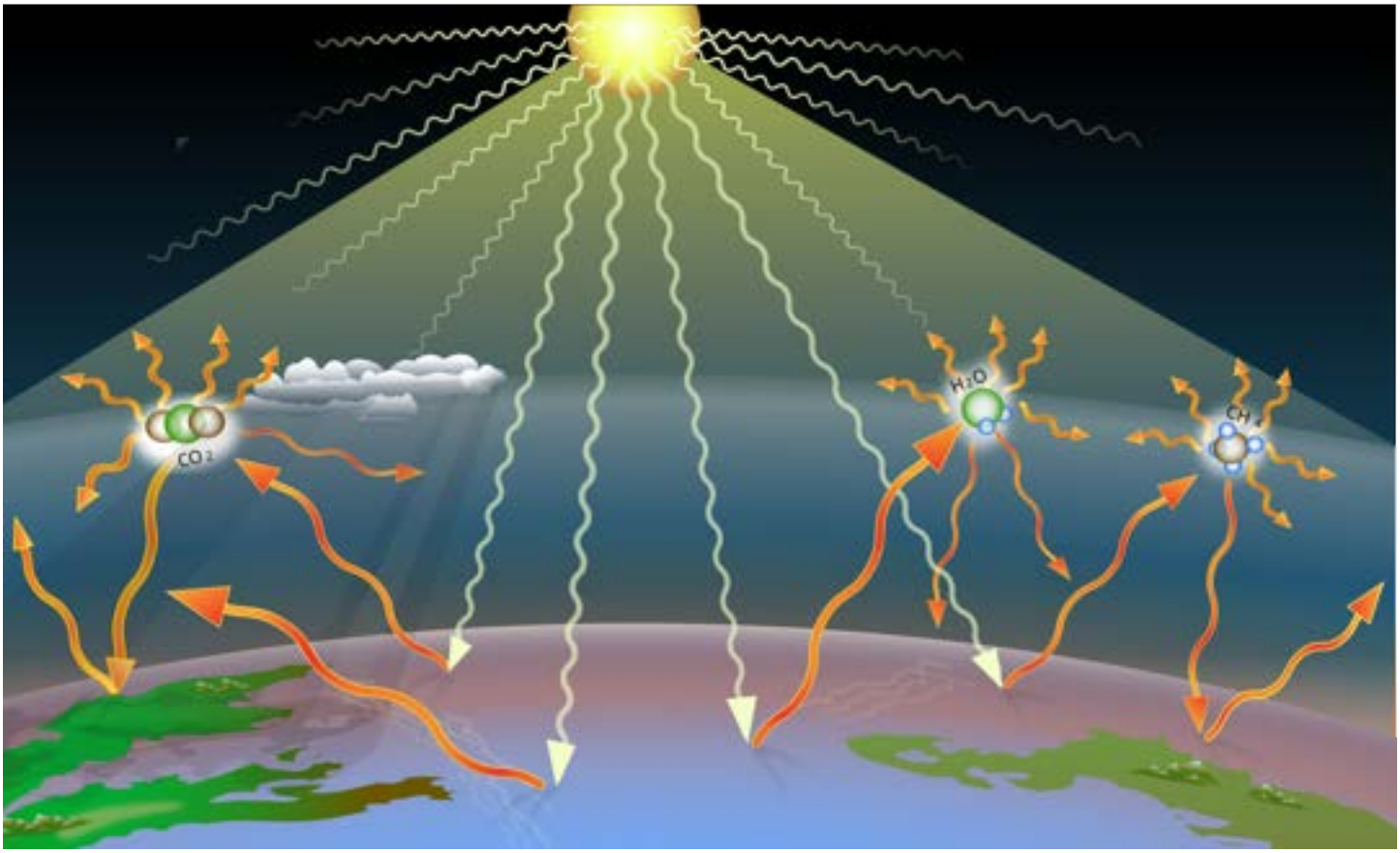
GREENHOUSE GAS EMISSIONS INVENTORY

II. GREENHOUSE GAS EMISSIONS INVENTORY AND FORECAST

CLIMATE CHANGE & GREENHOUSE GAS

- **Climate change** refers to long-term shifts in temperature, weather patterns, and natural systems caused primarily by human activities—especially the burning of fossil fuels, which increases heat-trapping greenhouse gases in the atmosphere.
- **Greenhouse Gases (GHGs)** are gases that trap heat in Earth's atmosphere, contributing to global warming. Key examples include carbon dioxide (CO_2) from fossil fuel combustion, methane (CH_4) from agriculture and waste, nitrous oxide (N_2O) from fertilizers, and fluorinated gases used in industrial processes.
- **Global Warming Potential (GWP)** is a measure of how much heat a greenhouse gas traps in the atmosphere over a specific time period (usually 100 years) compared to CO_2, which has a GWP of 1. For example, methane has a GWP more than 25 times greater than CO_2, making it more potent even in smaller quantities.



Visual representation of the greenhouse effect, the process by which certain gases in Earth's atmosphere trap heat from the sun, warming the planet.

METHODOLOGY

The inventory covers emissions from:

- Transportation: On-road vehicles, transit, freight, marine, aviation, and rail.
- Buildings and Energy Use: Residential, commercial, industrial electricity, and fuel consumption.
- Industrial Processes: Manufacturing and other industrial activities.
- Waste and Wastewater: Solid waste disposal and wastewater treatment systems.
- Agriculture, Forestry, and Land Use (AFOLU): Land management practices and natural carbon sinks.
- Water Systems: Water treatment and distribution.

MAJOR UPDATES FROM THE PCAP

- **Electric Vehicles (EVs):** Passenger vehicle emissions were disaggregated to separate EV miles traveled from internal combustion engine vehicles, improving accuracy and allowing targeted forecasting of EV adoption.
- **Jacksonville Aviation Authority (JAA):** Scope 1 and 2 emissions were incorporated to align with JAA's sustainability goals and ensure consistency with regional reporting.
- **Utility-Level Data:** Emissions from electricity consumption are now calculated using utility-specific factors, providing a more precise picture of regional energy use.
- **Water Sector:** Water-related emissions were added to support forecasting and planning of future water-sector GHG reduction strategies.

PROCESS

The region used ICLEI's ClearPath to model GHG reduction forecasts based on selected mitigation measures across transportation, energy, waste, and land-use sectors. Transportation measures were supplemented with co-pollutant reduction estimates developed using both the EPA's Community Multiscale Air Quality (CMAQ) framework and the Co-Benefits Risk Assessment (COBRA) screening tool to estimate the localized air quality and health benefits of emissions reductions.

CMAQ modeling relationships were applied to translate emissions reductions from on-road and non-road sources. Activity data—including daily vehicle miles traveled (VMT), trip length, and annual operating days—were used to calculate annual reductions in hydrocarbons (HC), carbon monoxide (CO), nitrogen oxides (NO_x), and carbon dioxide (CO_2). These reductions were modeled using emission factors from EPA MOVES and AP-42, supplemented with Jacksonville Aviation Authority (JAA) aviation fuel data for the aviation sector and regional utility-level data for stationary sources.

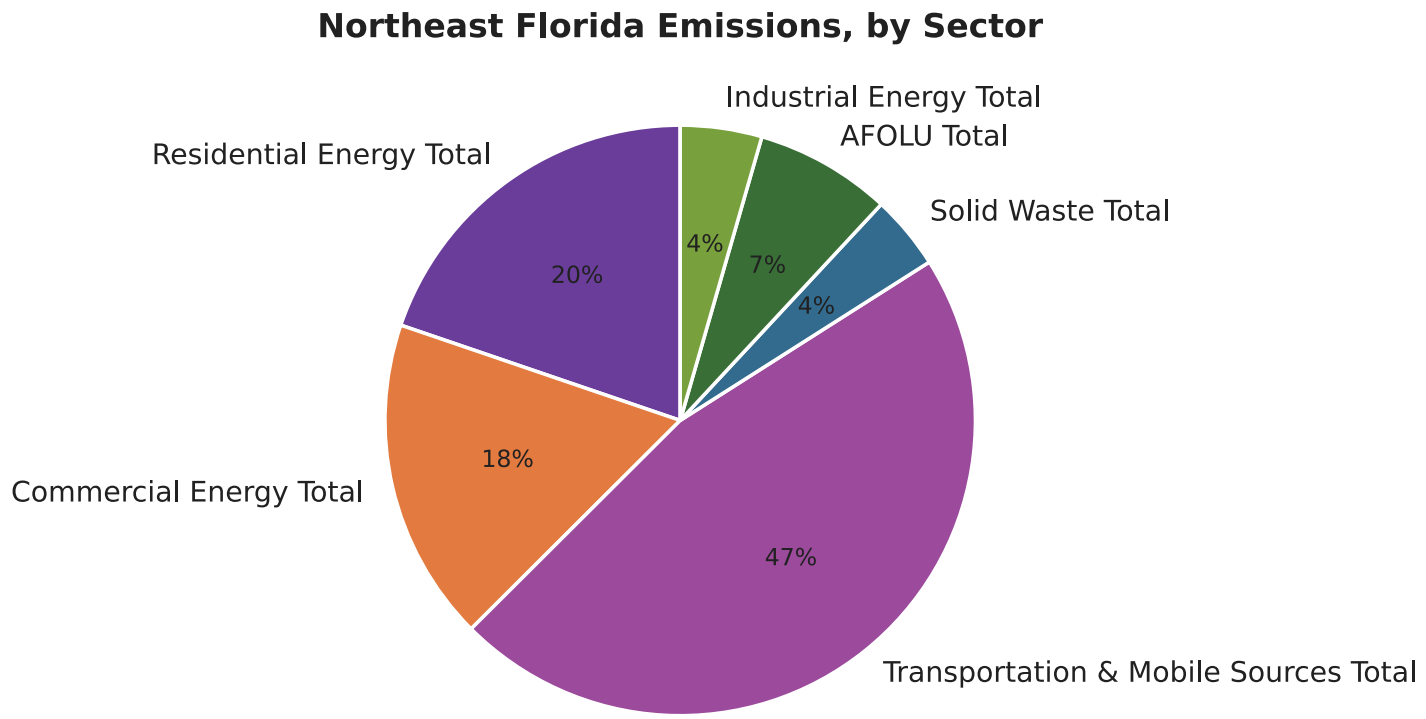
Concurrently, COBRA was used to monetize the health and social co-benefits associated with these air quality improvements, including avoided premature mortality, respiratory illness, and related healthcare costs. The COBRA tool provided county-level estimates of reductions in fine particulate matter precursors (SO_2, NO_x, VOC, and primary $PM_{2.5}$) resulting from reductions in electricity generation and fuel combustion, including measures in the transportation and energy sectors.

Results from CMAQ and COBRA were integrated to capture both physical air quality improvements and economic co-benefits, ensuring that modeled scenarios reflect quantifiable public health outcomes alongside GHG mitigation. Outreach to intergovernmental and regional partners provided localized 2019 datasets that were incorporated to maintain consistency across the CPRG baseline and ensure that the modeled results align with the EPA's standardized benefit-per-ton and emissions factor methodologies.

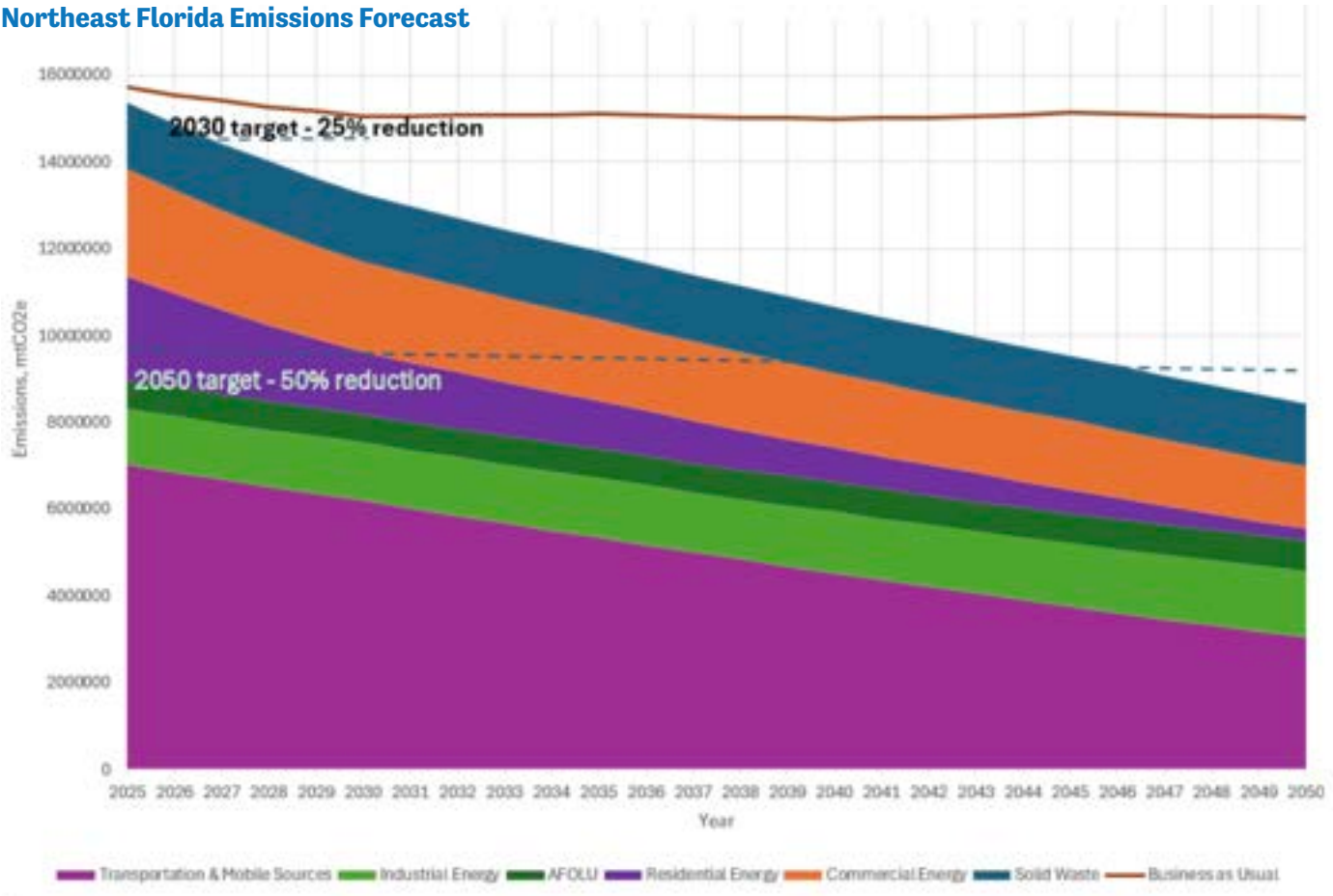
Northeast Florida GHG Inventory by Sector and Fuel Type

Sector	Fuel or Source	Usage	Usage Units	Emissions
Residential Energy	Electricity	400980	kWh	24059.0
Residential Energy	Natural Gas	2011895512	MMBtu	663664.0
Residential Energy	LPG	470594	MMBtu	29917.0
Residential Energy	Wood	217899	MMBtu	10772.0
Residential Energy	Distillate Fuel Oil No. 2	132873	MMBtu	9894.0
Residential Energy Total		32307661.99	MMBtu	3379626.0
Commercial Energy	Electricity	3972606453	MWh	2191353.0
Commercial Energy	LPG	4125302	MMBtu	262255.0
Commercial Energy	Gasoline	2339532	MMBtu	165513.0
Commercial Energy	Distillate Fuel Oil No. 2	1112207	MMBtu	82811.0
Commercial Energy	Kerosene	657	MMBtu	50.0
Commercial Energy	Propane	672826	MMBtu	41755.0
Commercial Energy	Natural Gas	5325533	MMBtu	283246.0
Commercial Energy Total		27124019.99	MMBtu	3026983.0
Transportation & Mobile Sources	Diesel	1298213541	VMT	2335231.0
Transportation & Mobile Sources	Gasoline	11644013669	VMT	4806401.0
Transportation & Mobile Sources	Electricity	51889591	VMT	2281.8
Transportation & Mobile Sources	Other	0		812036.0
Transportation & Mobile Sources		6420118834	VMT	7955949.8
Solid Waste	Waste Sent to Landfill	3713360	Tons	694274.0
Solid Waste Total				694274.0
AFOLU	Other	0		1275697.0
AFOLU Total				1275697.0
Industrial Energy	Natural Gas	9129321	MMBtu	576361.0
Industrial Energy	Residual Fuel Oil No. 6	0	MMBtu	701.0
Industrial Energy	Other	0	MMBtu	622872.0
Industrial Energy	Distillate Fuel Oil No. 2	0	MMBtu	16476.0
Industrial Energy	Propane	0	MMBtu	62.0
Industrial Energy	Other	0	MMBtu	18755.0
Industrial Energy Total		0	MMBtu	762919.0
Water & Wastewater Treatment Facilities	Electricity	98139.71	MWh	98139.71
Water & Wastewater Treatment Energy Total		98139.71	MWh	98139.71

Northeast Florida Emissions by Sector



Northeast Florida Emissions Forecast



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REGIONAL AIR POLLUTION REDUCTION MEASURES

V. REGIONAL AIR POLLUTION REDUCTION MEASURES

This section presents nine measures that address community-wide air pollution sources, with a focus on reducing Scope 1 and Scope 2 emissions. Each measure includes measurable targets and supporting actions that advance progress toward the region's climate commitments. Collectively, these actions aim to achieve a goal of 25% reduction in emissions by 2030 and a 50% reduction by 2050, improving air quality, protecting public health, and contributing to long-term community resilience.

GOALS

1. Reduce GHG emissions 25% below the 2019 NEFL baseline by 2030, reflecting near-term action and momentum toward implementation.
2. Achieve a 50% reduction in emissions below 2019 levels by 2050, supporting a long-term transition to a low-carbon, resilient regional economy.

Each measure's impact will be illustrated by sector, using the following icons. Some measures have direct impacts that will involve more than one sector.

INCREASE DEPLOYMENT OF DISTRIBUTED RENEWABLES AND CLEAN ENERGY

SECTOR: ENERGY, COMMERCIAL, RESIDENTIAL, INDUSTRIAL

TARGETS

- Encourage a transition to renewable energy to account for 20% of residential and commercial electricity demand by 2030 and 45% by 2050.
- Support the deployment of solar process heat systems in industrial facilities with the potential to avoid 12,000 metric tons of CO_2e annually by 2030, and 20,000 tCO_2e annually by 2050.
- Support clean hydrogen pilot production to offset industrial fuel use emissions, beginning with a pilot-scale deployment. This measure aims to offset 1% of annual industrial emissions by 2025, scaling to 5% by 2030 and 25% by 2050.

ACTION SUMMARY

1. Increase residential and commercial on-site solar or small wind turbines
2. Promote clean energy financing programs
3. Utilize solar industrial process heating
4. Develop and expand battery energy storage, microgrid technology, and new technology for localized, resilient clean energy flow.
5. Incentivize clean hydrogen production and use

OVERVIEW

Northeast Florida is well-positioned to expand distributed and renewable energy deployment due to its high solar potential, public utility engagement, and recent infrastructure investments. Florida Power & Light's SolarTogether program has expanded solar access with new photovoltaic centers in Clay, St. Johns, and Nassau Counties, allowing residents and businesses to subscribe to shared solar power without the capital costs of private installation[1]. In addition, JEA's 10-Year Site Plan outlines commitments to diversify the regional energy mix, expand renewable generation, and support customer-owned systems[2]. These efforts align with broader goals to enhance grid stability, manage peak demand, and encourage innovation in emerging technologies such as battery storage and microgrids.

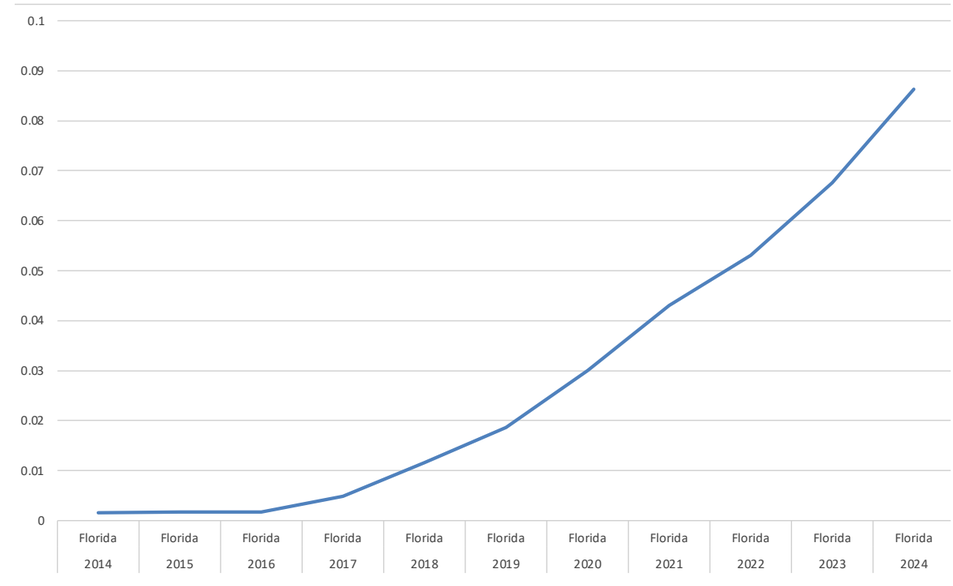
Reducing dependence on fossil fuels is essential for strengthening long-term economic resilience, energy reliability, and air quality in NEFL. Distributed energy resources (DER) offer a practical pathway toward these goals by generating power closer to where it is used, minimizing transmission losses, and supporting a more flexible and secure energy grid[3]. DER systems—such as rooftop solar installations, community-scale renewables, and on-site generation for commercial or industrial facilities—reduce strain on centralized infrastructure and promote energy diversification across the region. In Jacksonville and Duval County, Property Assessed Clean Energy (PACE) financing has been authorized for commercial properties, improving access to affordable project funding[4]. Statutory updates in 2024 further expanded the types of qualifying improvements that can be undertaken on commercial properties under the Florida PACE program[5].

Policy differences among utilities significantly shape DER adoption across the region. Florida Power & Light (FPL) currently offers full retail net metering, allowing customers who install rooftop solar to receive a one-for-one credit on their electricity bills for excess energy returned to the grid. This policy has proven effective in supporting residential solar growth and lowering barriers to customer investment in clean energy. By contrast, JEA implements a more limited net metering policy, offering reduced compensation for customer-generated solar energy which JEA asserts is in recognition of the ongoing transmission and distribution costs required to maintain a reliable electric system—costs which are share by all customers regardless of participation in rooftop solar. While this disparity reflects a policy gap, it also presents an opportunity: aligning JEA's net metering framework with best practices seen elsewhere in Florida could unlock new private-sector investment, expand clean energy access, and strengthen the region's progress toward emissions reduction targets.

Building upon these foundations, this measure seeks to incentivize on-site solar and wind systems, support industrial use of solar process heat, pilot clean hydrogen production, and expand energy storage capabilities. These initiatives will reduce regional emissions, enhance reliability during outages, and lower energy costs over time. By fostering partnerships among utilities, businesses, and local governments, NEFL can position itself as a statewide leader in clean energy innovation and workforce development while driving measurable reductions in pollution and operating costs.

1 Florida Power & Light. (n.d.) Energy My Way | SolarTogether | Residential. https://www.fpl.com/energy-my-way/solar/solartogether-res.html
2 Landaeta Gutierrez, S. & JEA. (2025). JEA 2025 ten-year site plan. https://www.floridapsc.com/pscfiles/website-files/PDF/Utilities/Electricgas/TenYearSitePlans//2025/JEA.pdf
3 U.S. Department of Energy. (2020, June 1). Distributed energy resources. Energy. https://www.energy.gov/topics/distributed-energy-resources
4 PACENation. (2023, November 30). What is PACE financing?. https://www.pacenation.org/what-is-pace/
5 Florida Senate. (2023). CS for CS for SB 770, 2nd engrossed. https://www.flsenate.gov/Session/Bill/2024/770/BillText/er/PDF

ACTION 1. INCREASE RESIDENTIAL AND COMMERCIAL ON-SITE SOLAR OR SMALL WIND TURBINES

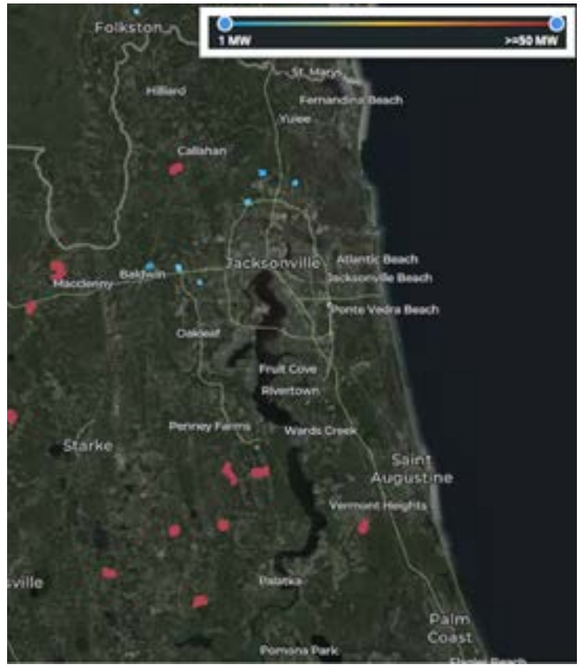


From the US Solar Photovoltaic Database, in 2024 the NEFL region has fewer than 20 solar projects with a combined capacity of 780MW.

In 2024, renewable resources supplied approximately 10% of Florida's in-state electricity generation, with solar providing nearly 90% of that total[1]. Meaning that solar energy alone accounted for about 9% of statewide net generation, positioning Florida among the top three states for installed solar capacity. In 2024 alone, renewables vastly outpaced other generation sources and collectively accounted for around 90% of the United States' newly installed capacity, and Florida leads the nation in new on-site renewable installations[2]. This growth highlights strong market potential for continued adoption as more households and businesses install their own systems. Expanding on-site solar and small wind projects represents a practical strategy to increase renewable generation while maximizing the use of existing developed space and supporting energy independence.

This initiative builds on JEA's Distributed Generation Policy and interconnection process, which allows customers to participate through net metering or "avoided-cost" crediting for excess electricity sent back to the grid[3]. The avoided-cost rate reflects the utility's cost to produce or purchase the same amount of electricity from other sources, typically lower than the retail rate, and customers receive credits accordingly. JEA also offers the SolarSmart subscription program, which enables customers without suitable properties for on-site systems to purchase solar energy generated at local JEA facilities[4].

1 U.S. Energy Information Administration. (2021, December 16). Florida - State Energy Profile Analysis. https://www.eia.gov/state/analysis.php?sid=FL
2 Bird, L., Light, A., & Goldsmith, I. (2024). State of the US clean energy transition: Recent progress, and what comes next. World Resources Institute. https://www.wri.org/insights/clean-energy-progress-united-states
3 JEA. (n.d.). Distributed generation. https://www.jea.com/distributedgeneration/
4 JEA. (n.d). SolarSmart. https://www.jea.com/solarsmart



JEA has additionally contracted for three major solar installations totaling roughly 125 MW, scheduled to come online by 2026[5]. These projects will contribute an additional ~3% to the utility's generation mix and support the goal of reaching 35% clean energy by 2030. Other Florida utilities have expanded similar opportunities. Florida Power & Light operates SolarTogether, a community solar program that allows customers to subscribe to solar power from utility-owned facilities and receive monthly bill credits. Duke Energy Florida offers the Clean Energy Connection program, which enables customers to subscribe to solar capacity blocks and benefit from production credits over time[6].

At the state level, Florida law establishes the framework that enables net metering. Section 366.91, F.S., requires utilities to develop standardized interconnection and net metering programs for customer-owned renewable energy systems, creating consistency across the state[7]. To implement this law, the Florida Public Service Commission (PSC) adopted Rule 25-6.065, F.A.C., which outlines the mechanics of net metering, including interconnection procedures and monthly crediting for excess generation (FPL, 2008)[8]. While the rule itself does not set compensation at the retail rate, in practice, Florida utilities apply monthly credits at the retail value of electricity, with any year-end surplus settled at the avoided-cost rate[9]. This consistency enables predictable project financing and supports private-sector investment in distributed energy systems.

5 JEA. (2024, May 15). JEA finalizes 35-year contracts for three solar energy sites in Jacksonville. https://www.jea.com/About/Media_Relations/2024_05_15_JEA_Finalizes_35-Year_Contracts_for_Three_Solar_Energy_Sites_in_Jacksonville/

6 Duke Energy. (2025). Clean energy connection. https://www.duke-energy.com/business/products/clean-energy-connection

7 Florida Legislature. (2025). Railroads and other regulated utilities: public utilities. Online Sunshine. https://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0300-0399/0366/Sections/0366.91.html

8 Florida Public Service Commission. (2008). Interconnection and net metering of customer-owned renewable generation. FPL. https://www.fpl.com/clean-energy/pdf/net-metering-rule.pdf?utm

9 Koski, A. (2023, March 1). What is net metering & how does it impact Floridians?. Current Home. https://www.currenthome.com/blog/what-is-net-metering-how-does-it-impact-floridians/

ACTION 2. PROMOTE CLEAN ENERGY FINANCING PROGRAMS

Public outreach campaigns, group-purchase programs, and continued coordination with utilities can further expand participation. Federal and state incentives, most notably the 30% Investment Tax Credit (ITC), continue to reduce upfront costs for homeowners and businesses. Together, these efforts can accelerate renewable deployment, improve local energy affordability, and strengthen NEFL's reputation as a competitive, innovation-driven energy market.

Access to reliable financing remains one of the most important factors in expanding clean energy adoption across NEFL. Although technology costs continue to decline, many homeowners and small businesses still face barriers to installing solar systems or completing energy efficiency upgrades. Expanding access to financing mechanisms ensures that more residents and businesses can participate in and benefit from the transition to a more efficient, cost-effective energy system.

In Florida, several programs already support property owners in implementing clean energy projects. The PACE program allows residential and commercial property owners to finance eligible improvements through a property tax assessment, repaid over time as part of their annual property tax bill[10]. The C-PACE model extends this structure to commercial, industrial, and multifamily properties, helping businesses overcome upfront cost barriers and invest in long-term efficiency[11]. Jacksonville and Duval County have authorized PACE financing for commercial projects, creating a pathway for businesses to pursue upgrades that improve building performance and reduce operating costs.

In addition to PACE programs, nonprofit organizations such as Solar United Neighbors collaborate with local governments to organize group-purchasing initiatives that reduce installation costs through economies of scale[12]. These cooperative models make solar energy more affordable while stimulating local economic activity and supporting clean energy workforce development.

NEFL can build on these existing programs by increasing regional outreach, improving awareness of available incentives, and expanding partnerships with lenders, utilities, and community organizations. By coordinating financing tools and promoting collective purchasing opportunities, the region can lower market barriers, encourage broader participation, and accelerate private investment in distributed clean energy systems.

10 PACENation. (2023, November 30). What is PACE Financing?. https://www.pacenation.org/what-is-pace/

11 US EPA. (2025, July 1). Commercial property assessed clean energy. https://www.epa.gov/statelocalenergy/commercial-property-assessed-clean-energy

12 Solar United Neighbors. (2024, August 7). Home. https://solarunitedneighbors.org/

ACTION 3: UTILIZE SOLAR INDUSTRIAL PROCESS HEATING

Solar panels installed adjacent to an industrial facility, illustrating the potential for on-site solar energy to support industrial process heating.

While solar energy is most widely used for electricity generation, many industrial operations continue to depend on fossil fuels for high-temperature heat production, one of the largest remaining sources of emissions in the manufacturing sector. Solar thermal technologies can provide a practical alternative by using concentrated solar energy to generate the heat required for industrial processes such as drying, pasteurization, or chemical processing[13]. Integrating these systems can reduce fuel costs, improve operational efficiency, and enhance energy security.

Brownfield sites offer an especially effective opportunity to implement these technologies while addressing long-standing land-use and redevelopment challenges[14]. Repurposing brownfields for PV or solar thermal installations transforms underutilized or contaminated properties into productive economic assets. Because many of these sites are located near industrial corridors, they can directly supply nearby facilities with renewable energy, reducing transmission distance and infrastructure costs.

Local, state, and federal incentives can make brownfield redevelopment for clean energy more financially feasible. The EPA Brownfields Program provides assessment, cleanup, and multipurpose grants that help prepare sites for energy projects, offsetting early-stage development costs[15]. In Florida, the Voluntary Cleanup Tax Credit (VCTC) program allocates up to $35 million in tax credits annually, covering as much as 50% of eligible cleanup expenses[16]. These incentives reduce the cost of remediation and encourage the reuse of strategically located land for solar PV and solar thermal development.

By combining industrial process heat technology with targeted site redevelopment, NEFL can simultaneously reduce operating costs, strengthen energy reliability for manufacturers, and stimulate investment in long-term industrial innovation.

13 U.S. Department of Energy. (2025, November 24). Solar-thermal power and industrial processes basics. Energy. https://www.energy.gov/eere/solar/solar-thermal-power-and-industrial-processes-basics

14 Office of Brownfields and Land Revitalization. (2024). Forecasting benefits and public returns for brownfield redevelopment: Over view and case studies on economic and fiscal impact analysis. US EPA. https://www.epa.gov/system/files/documents/2024-06/forecasting-benefits-and-public-returns-for-brownfield-redevelopment_june_2024_508c_final.pdf

15 US EPA. (2014, July 15). Types of Funding. https://www.epa.gov/brownfields/types-funding

16 Florida Department of Environmental Protection. (n.d.). Voluntary cleanup tax credit. https://floridadep.gov/waste/waste-cleanup/content/voluntary-cleanup-tax-credit

ACTION 4. DEVELOP AND EXPAND BATTERY ENERGY STORAGE, MICROGRID TECHNOLOGY, AND NEW TECHNOLOGY FOR LOCALIZED, RESILIENT CLEAN ENERGY FLOW.

NEFL can strengthen the resilience and reliability of its energy systems by advancing battery energy storage, microgrid infrastructure, and emerging technologies such as blockchain to support localized, secure, and efficient power flow. Battery storage systems capture excess electricity generated by renewable sources, such as solar or wind, during periods of high production. The stored energy can then be released during peak demand or outages, improving grid stability, reducing strain on utilities, and ensuring a consistent power supply to homes, businesses, and critical facilities[17].

Microgrids function as localized power networks that combine battery storage, distributed generation, and advanced control systems, allowing them to operate independently from the main grid when needed[18]. These systems can provide reliable electricity to essential facilities such as hospitals, emergency shelters, and water treatment plants during extreme weather events, which are increasingly common along Florida's coast. Across the state, pilot projects are already demonstrating the benefits of this approach. Tampa Electric's BlockEnergy project in the Southshore Bay neighborhood connects multiple homes into a community-scale microgrid using rooftop solar, distributed battery storage, and a neighborhood energy hub[19]. The system allows each residence to draw from and contribute to a shared pool of clean energy while remaining grid-connected under normal operations. During Hurricane Ian in 2022, when more than 2.2 million Floridians lost power, every participating residence in the BlockEnergy network maintained uninterrupted electricity, illustrating the resilience and cost-avoidance benefits of localized energy networks.

The Solar Settlement, a sustainable housing community project in Freiburg, Germany, that employs a mix of rooftop solar and battery storage to feed electricity, heating, and cooling to its residents.

17 The ultimate guide to battery energy storage systems (BESS)-blog. (2024, September 20). Alpha ESS. https://www.alphaess.com/the-ultimate-guide-to-battery-energy-storage-systems--bess-

18 Graves, G. (2025, April 16). Breaking free from the grid – Microgrids explained. Center for Community Energy. https://centerforcommunityenergy.org/breaking-free-from-the-grid-microgrids-explained/

19 Block Energy. (2025, September 11). Home. https://blockenergy.com/

Northeast Florida can expand these capabilities by identifying key microgrid and storage deployment sites, particularly near critical infrastructure, and pairing these systems with solar installations to provide both peak load reduction and emergency backup. JEA's planned solar projects already incorporate battery storage integration, and additional funding opportunities exist through FEMA's Building Resilient Infrastructure and Communities (BRIC) program and other federal energy resilience grants[20].

To complement physical infrastructure, blockchain technology can serve as a secure digital ledger for energy transactions and data management[21]. Each block of information is time-stamped, encrypted, and permanently linked to previous records, making it resistant to tampering and ideal for applications requiring transparency and traceability. In the energy sector, blockchain enables peer-to-peer energy trading, allowing customers with solar or battery systems to sell excess electricity directly to others. It can also streamline verification of renewable energy certificates, simplify billing for electric vehicle charging, and support demand-response programs that reward users for reducing consumption during peak hours.

Florida has already recognized this potential through the creation of the Florida Blockchain Task Force under the Department of Financial Services. In its 2020 final report, the task force identified blockchain's potential to improve transparency, accountability, and efficiency in utility programs and energy trading[22]. A similar approach was demonstrated by American PowerNet in Pennsylvania, which partnered with the Australian firm Powerledger in 2020 to develop a blockchain-based energy trading platform[23]. The system enabled the company's headquarters to trade excess solar energy across the grid, demonstrating the feasibility of secure, real-time clean energy exchange[24].

By adopting a similar model, NEFL can promote technological innovation while building an energy system that is flexible, reliable, and locally self-sufficient. Combined with advancements in storage and microgrid technology, blockchain-enabled systems can help the region modernize its energy infrastructure, enhance disaster resilience, and empower communities to participate directly in the clean energy economy.

20 JEA (n.d.). JEA's strategy for generating electricity. https://www.jea.com/About/Electric_Generation/Generation_Strategy/#:~:text=From%20the%20resulting%20award%20of%20those%20bids%2C%20JEA,agreements.%20Learn%20more%20about%20our%20 alternative%20energy%20sources

21 Cohen, A. (2024, December 6). The blockchain revolution in the energy market. Forbes. https://www.forbes.com/sites/arielcohen/2024/12/06/the-blockchain-revolution-in-the-energy-market/

22 DeSantis, R., Florida Department of Financial Services, Altmaier, D., Brisé, R., Ghini, C., Holloway, J., Lawson, K., Levine, B., Pollack, W., Rhodes, T., Ruderman, G., Satter, J., Suarez, M., & Wescott, R. (2019). Florida Blackchain Task Force Report. In Chapter 2019-140, Laws of Florida. https://www.myfloridacfo.com/docs-sf/cfos-executive-offices-libraries/cos-documents/bctf-final-report.pdf

23 Powerledger. (2025, April 21). What is Powerledger? A guide to blockchain-based energy solutions. https://powerledger.io/media/what-is-powerledger-a-guide-to-blockchain-based-energy-solutions/

24 Your inclusive guide to the energy transition. (n.d.). Enlit World. https://www.smart-energy.com/regional-news/north-america/american-powernet-deploys-blockchain-energy-trading-platform-with-australias-power-ledger/

ACTION 5. INCENTIVIZE CLEAN HYDROGEN PRODUCTION AND USE

Toyota Mirai hydrogen fuel cell vehicle, an example of hydrogen-powered transportation technology.

Clean hydrogen represents a promising solution for industries and transportation modes that are difficult to decarbonize, such as heavy-duty freight, industrial operations, and long-duration energy storage. Its environmental and economic value depends on how it is produced, as not all hydrogen carries the same emissions profile.

The cleanest form, known as green hydrogen, is produced through electrolysis powered by renewable or low-carbon energy sources, such as solar, wind, or biogas[25]. This process generates a fuel that emits only water vapor when used and produces little to no air pollutants. Blue hydrogen is produced from natural gas combined with carbon capture and storage (CCS) technologies that prevent most of the resulting emissions from entering the atmosphere, making it a lower-carbon but still fossil-based option. Gray hydrogen, the most common form today, is produced from natural gas without CCS and remains a significant source of GHG emissions. Because of these distinctions, hydrogen is only considered clean when generated from renewable or very low-carbon sources. When deployed in this way, it can serve as a reliable, scalable alternative to fossil fuels in sectors where electrification is less practical.

NEFL is strategically positioned to explore the transition to clean hydrogen, given its role as a major logistics hub[26]. The region's extensive transportation and distribution infrastructure, including JAXPORT's global shipping connections, the intersection of I-10 and I-95, and access to three Class I railroads, makes it a critical freight distribution center within national and international supply chains. This concentration of assets creates a strong foundation for hydrogen integration in heavy-duty trucking, port operations, and rail systems, where the technology can reduce operating costs and emissions while improving energy security.

25 Marchant, N. (2021, July 27). Grey, blue, green – The many colours of hydrogen explained. World Economic Forum. https://www.weforum.org/stories/2021/07/clean-energy-green-hydrogen/

26 Jacksonville is a global destination for business. companies including Amazon, Wayfair, BMW North America and TOTE Maritime are choosing our area as a place to grow. (n.d.). JAXUSA. https://jaxusa.org/industry/transportation-and-logistics/

Although NEFL is not yet a hydrogen producer, early investments in hydrogen-ready infrastructure can prepare the region for future market growth. Potential applications include fueling municipal truck and bus fleets, providing backup power systems, supporting industrial heat processes, and powering logistics equipment such as long-haul trucks, drayage vehicles serving JAXPORT, yard tractors, forklifts, and intermodal rail operations. These applications can lower emissions from high-intensity freight and warehouse activities while strengthening the resilience of transportation and industrial systems.

The region can also pursue opportunities to participate in U.S. Department of Energy (DOE)-funded regional hydrogen hubs, which provide technical and financial support for pilot projects and infrastructure development[27]. Florida is already advancing this field through Florida Power & Light's Cavendish NextGen Hydrogen Hub in Okeechobee County, the state's first clean hydrogen production facility. This pilot plant uses local solar power to produce hydrogen, blending 5 % hydrogen with natural gas to test fuel performance and explore cost-effective energy applications[28].

By leveraging existing logistics infrastructure, pursuing pilot-scale investments, and aligning with emerging federal and state initiatives, NEFL can position itself as a regional leader in clean hydrogen technology. This forward-looking approach supports economic diversification, enhances competitiveness, and builds the foundation for long-term participation in Florida's growing hydrogen economy.

27 U.S. Department of Energy. (n.d.) Regional clean hydrogen hubs. Energy. https://www.energy.gov/oced/regional-clean-hydrogen-hubs-0

28 Florida Power & Light. (2024). Florida Power & Light Company announces completion of clean hydrogen hub. FPL Newsroom. https://newsroom.fpl.com/Florida-Power-Light-Company-announces-completion-of-clean-hydrogen-hub

PROJECTED EMISSIONS REDUCTIONS

2025-2030 Cumulative
3,094,700 $mtCO_2e$

2025-2050 Cumulative
15,473,400 $mtCO_2e$

Total Annual Co-Pollutant Reduction by 2050

$PM_{2.5}$: 0.01 µg/m^3; 250 lbs | **O_3:** 0.04 µg/m^3; 1200 lbs

ECONOMIC IMPACT

By 2030, this measure is projected to create 3,500–4,200 jobs, primarily in occupations such as solar PV installation, electrical engineering, and electrical trades, which remain in critical demand. Direct annual wages are estimated at $210–$260 million, generating a total economic impact of $420–$520 million and annual tax revenues of $42–$52 million. The annualized investment required to support these activities is approximately $100 million. By 2050, workforce demand and total economic impact are expected to double as NEFL's solar and energy storage sectors continue to expand.

BENEFITS

The continued deployment of renewable energy systems, combined with the expansion of microgrids and battery storage, will reduce overall demand on the electrical grid and limit the need for new fossil fuel infrastructure to meet future growth[29]. This approach allows NEFL to accommodate a rising population while conserving undeveloped land and minimizing the environmental and economic costs associated with building new power generation facilities. The benefits are most pronounced when clean energy is generated on-site, avoiding the extensive land requirements of large-scale utility solar developments and preserving existing habitats that contribute to regional stability and quality of life.

Diversifying the region's energy supply also strengthens resilience by maintaining power during severe weather events, which are becoming more frequent across coastal Florida[30]. A more distributed and flexible energy system ensures continuity of service for homes, businesses, and essential facilities. At the same time, reduced reliance on volatile fossil fuel markets helps stabilize energy prices, thereby lowering utility costs for residents and businesses[31]. These savings are particularly meaningful for households experiencing high energy burdens. In Duval County alone, an estimated 49,784 residents face elevated energy costs, and increased access to distributed clean energy technologies can help relieve these financial pressures while improving overall energy affordability[32].

Clean energy systems also reduce harmful air pollutants such as nitrogen oxides and particulate matter, improving air quality and contributing to better public health outcomes by lowering the risk of respiratory and cardiovascular illness[33]. Additionally, the transition to distributed renewable energy supports sustained job creation in multiple sectors, from residential installation and skilled trades to research, manufacturing, and maintenance of advanced technologies.

29 U.S. Department of Energy. (2022). Renewable energy pillar. Energy. https://www.energy.gov/eere/renewable-energy-pillar

30 National Centers for Environmental Information. (2025). U.S. Billion-Dollar weather and climate disasters. NOAA. https://www.ncei.noaa.gov/access/billions/state-summary/FL

31 Atkinson, W. (2025, August 13). Volatility vs. affordability: Globally, renewables' cost advantage grew last year. RMI. https://rmi. affordability-not-volatility-renewables-cost-advantage-grows/.org

32 Clean Air Northeast Florida. (2023, March). Regional Priority Climate Action Plan. https://img1.wsimg.com/blobby/go/529c72fd-07d5-4b62-b13e-eaffaa7f33e3/downloads/129c4b24-b488-4ae8-b4a5-af1d7c579897/PCAP%20Document.pdf?ver=1759955498097

33 U.S. Department of Energy. (2025, January 17). Health, safety, and environmental impacts. Energy. https://www.energy.gov/eere/health-safety-and-environmental-impacts

Together, these environmental, economic, and resilience benefits position clean energy as a cornerstone of NEFL's long-term competitiveness and quality of life. As utilities integrate distributed energy into their strategic planning, they help create a more reliable, flexible, and cost-effective grid that can adapt to changing demands. JEA has set a goal of achieving 35 % clean energy by 2030 and reducing carbon emissions 80 % below 2005 levels within the same period[34]. Similarly, FPL, through its parent company NextEra Energy, targets net-zero carbon emissions by 2045[35].

Expanding distributed clean energy solutions—such as rooftop solar, battery storage, and community microgrids—will help meet these targets by reducing strain on centralized systems and enhancing local energy independence. Emerging technologies like clean hydrogen will further enable emissions reductions in hard-to-electrify sectors, including heavy industry and long-haul transportation. Collectively, these advancements will contribute to a stronger, more diversified, and sustainable regional economy.

IMPLEMENTATION AUTHORITY

Local governments play a key role in expanding distributed clean energy by managing financing programs, zoning, permitting, and supportive policies. Counties with active utility partnerships, such as Duval and St. Johns through JEA, are well-positioned to lead deployment efforts. In Clay and Nassau Counties, FPL's SolarTogether program provides an accessible model for shared solar participation. Together, these local authorities, utilities, and financing programs form the foundation for advancing cost-effective, distributed clean energy across NEFL. With a myriad of specific utility and energy-related policies in Florida, the role of the Public Service Commission as the regulatory entity for utilities, and the presence of Municipal Electric utilities and cooperatives, Florida has a complex structure of energy delivery and policy.

As a home rule state, Florida local governments effectuate local policy at the municipal and County levels. At the local level, local governments use Comprehensive Plans and their Code of Ordinances to effectuate policy. Comprehensive Plans and Codes are the vehicles by which policies are implemented at the local level.

Implementation authority for the project will generally be exercised through funding mechanisms, partnerships, and permitting with state and local regulatory authorities, consistent with the local government's Comprehensive Plan and Code. Implementation authority to facilitate land uses, transportation networks, mobility infrastructure, building efficiency, solar deployment, and other GHG reduction strategies can be encouraged or required through the Comprehensive Plan and Code. Local governments should further review those documents for opportunities to build resilience and GHG reduction strategies into policy initiatives to align outcomes.

34 JEA. (n.d.). Integrated resource planning. www.jea.com. https://www.jea.com/About/Integrated_Resource_Planning/

35 Next Era Energy. (2022). Environmental, social and governance report. https://www.investor.nexteraenergy.com/~/media/Files/N/NEE-IR/NEE_CORPORATE%20REPORT_ESG%20Update.pdf

FUNDING AVAILABILITY

Table 1: Funding availability for increased deployment of clean and renewable energy

FUNDING SOURCE	LEVEL	MATCH REQUIRED?	NOTES
Inflation Reduction Act (IRA) – Tax Credits	Federal	No	Includes ITC for solar, wind, hydrogen, and storage technologies.
DOE – State Energy Program	Federal	Yes (varies)	Supports state-led clean energy initiatives and distributed renewables.
DOE Regional Clean Hydrogen Hubs (H2Hubs)	Federal	Yes	Up to $7B for regional hydrogen ecosystems; Florida not selected yet but future rounds may apply.
IRA Clean Hydrogen Production Tax Credit (45V)	Federal	No	Up to $3/kg for clean hydrogen produced; 10-year incentive for low-emission hydrogen.
DOE Hydrogen Technology Transition Grants	Federal	Yes	Grants from $1M–$10M for hydrogen and fuel cell technologies; Florida eligible.
DOE Office of Nuclear Energy	Federal	Yes	Supports advanced reactor demonstrations, microreactors, and SMR feasibility studies.
IRA Advanced Energy Project Credit (48C)	Federal	No	30% investment tax credit for nuclear retrofits and hydrogen from nuclear energy.
OE – Grid Resilience and Innovation Partnerships (GRIP) Program	Federal	Yes (varies)	$10.5B program supporting utility-scale battery storage and backup power for critical infrastructure. Example: $28.7M awarded to Tallahassee for BESS.
Florida Solar & Energy Loan Fund (SELF)	Statewide	No	Low-interest loans for solar, battery storage, and resilience upgrades; serves NEFL counties.
Florida Green Finance Authority (FGFA)	Statewide	No upfront cost	Offers Renew PACE and C-PACE financing for residential and commercial clean energy upgrades.
Florida PACE Funding Agency	Statewide	No upfront cost	Long-term fixed-rate financing for energy-efficient and hurricane-resistant improvements.
Florida Green Energy Works	Statewide	Yes (low interest)	Loans for residential and commercial clean energy improvements with rates as low as 4%.
FPL – SolarTogether Program	State	No	Solar subscription program for renters and homeowners.
TECO Peoples Gas – RNG Tariff Program	State	Yes (PSC approved)	Cost recovery mechanism for RNG purchases above market rate.
Florida Public Service Commission (FPSC)	State	Unknown	Supports feasibility studies and recommendations for nuclear energy expansion in Florida.
Clay Electric – Net Metering for Solar PV	Local	No	Credits for excess solar generation returned to the grid.
Clay Electric – Solar Water Heater Rebate	Local	No	Up to $600 bill credit for solar water heating systems.
Duke Energy – Net Metering	Local	No	Full retail credit for excess solar energy sent to the grid.
Florida Public Utilities – Natural Gas Rebates	Local	Yes	Rebates for switching to natural gas; may support solar water heating indirectly.
FPL – Optional Supplemental Power Services (OSPS)	Local	Yes (monthly fee)	Pilot program offering backup power (generators, UPS, surge protection) with fixed monthly payments on utility bills. Tampa Electric (TECO) – Battery Storage Supports battery storage systems interconnected with TECO grid; eligible for federal tax credit. [tampaelectric.com]
Capital Planning	Local	Unknown	May support clean energy and battery storage investments
TECO Peoples Gas – Renewable Natural Gas (RNG)	Local	No	Supports RNG projects from organic waste; enables clean energy transition.
Energy Service Companies (ESCOs)	Private	No upfront cost	Performance-based contracts for solar, battery storage, and microgrid upgrades.
Green Banks (e.g., Florida Green Finance Authority)	Private	Varies	Offers low-interest loans for solar and energy upgrades.

CASE STUDY 1: FLORIDA POWER & LIGHT BATTERY ENERGY STORAGE SYSTEMS

FPL- Battery enclosures at Manatee Energy Storage Center, hailed by FPL as the world's largest solar-charged BESS when it went into operation in 2021.

FPL is advancing one of the nation's largest clean energy investments, with a $3.8 billion initiative that will directly benefit the NEFL region. Between 2026 and 2027, the utility will expand its battery energy storage systems (BESS) and solar power capacity across the state[1]. This initiative includes 2.2 gigawatts (GW) of new battery storage and 2,086 megawatts (MW) of additional solar energy generation, representing a significant step forward in Florida's energy transition.

For residents in Baker, Clay, Nassau, and St. Johns counties, this investment offers the potential for cleaner, more reliable power, particularly during extreme weather events[2]. A core strategy of the rollout involves pairing battery systems with solar farms. In 2026, FPL will install 1,419.5 MW of battery storage at 13 sites, 11 of which will integrate on-site solar generation[3]. Another 819.5 MW of battery storage is scheduled for 2027, distributed across 11 additional solar-linked locations.

While FPL will primarily deploy lithium-ion batteries, the utility is also piloting long-duration energy storage (LDES) technologies such as sodium-ion, nickel-hydride, and iron-flow systems. These alternatives can supply electricity for extended periods at lower costs, helping stabilize the grid during outages or extended cloudy weather. In hurricane-prone regions like NEFL, such resilience plays a crucial role in minimizing disruptions and maintaining power.

FPL will allocate approximately $3.24 billion for infrastructure deployment, with remaining funds covering ancillary costs. To reduce the financial burden, the company will leverage approximately $951 million in federal investment tax credits under the Inflation Reduction Act[4]. These incentives support utilities investing in renewable energy, helping accelerate large-scale transitions.

1 Florida Power & Light. (2025). Ten year power plant site plan 2025–2034. https://www.fpl.com/content/dam/fplgp/us/en/about/pdf/ten-year-site-plan.pdf
2 Florida Power & Light. (2025, April 24). External affairs service area. https://www.fpl.com/government/pdf/gov-contacts.pdf
3 Biss, M. (2025, March 13). Florida Power & Light to spend US$3.8 billion on new BESS in 2026-2027, launches LDES pilot. Energy-Storage.News. https://www.energy-storage.news/florida-power-light-to-spend-us3-8-billion-on-new-bess-in-2026-2027-launches-ldes-pilot/
4 US EPA. (2025, July 29). Summary of Inflation Reduction Act provisions related to renewable energy. https://www.epa.gov/green-power-markets/summary-inflation-reduction-act-provisions-related-renewable-energy

To fund the balance, FPL has proposed a Solar and Battery Base Rate Adjustment (SoBRA), which would increase residential bills by an average of 2.5% per year[5]. Even with this adjustment, FPL projects that customer bills will remain roughly 25% below the national average. For a local household using 1,000 kilowatt-hours (kWh) per month, the monthly bill could rise from approximately $134 today to around $142 in 2026, with small increases through 2029[6].

This investment also anticipates Florida's population growth. By 2029, FPL expects to serve 335,000 new customers statewide, with many located in fast-growing NEFL communities[7]. By scaling up renewable energy and energy storage now, the utility can meet future demand without expanding fossil fuel infrastructure. Moreover, these upgrades will strengthen grid reliability, reduce outage times, support the retirement of older, less efficient generation assets, and create higher-paying jobs across a range of sectors, providing opportunities for workers of all skill levels and education backgrounds while reducing consumer costs[8].

Residents are likely to experience the greatest direct benefits during hurricane season and during peak demand periods. Battery systems provide backup power when the grid is compromised, especially for critical facilities such as hospitals and emergency shelters. They also enhance power flow stability during hot summer months when air conditioning demand is high. Beyond environmental advantages, these systems promote a more consistent and predictable energy experience.

FPL currently operates 469 MW of battery storage and has another 522 MW under construction. Beyond 2027, the company plans to add 3,278 MW of solar capacity and 1,788 MW of battery storage between 2028 and 2030. While regulatory approvals remain pending, and changes to federal policy or market conditions may affect the rollout, FPL views this initiative as foundational to Florida's energy modernization[9].

For NEFL residents, the expansion of solar and battery storage will provide cleaner power, stronger reliability during storms, and greater stability during peak demand. At the regional level, this investment supports Florida's transition away from fossil fuels and strengthens long-term resilience against extreme weather. By implementing clean energy deployment projects, FPL positions NEFL as a central player in building a modern, reliable, and affordable energy future.

As a coastal city, Jacksonville faces ongoing risks from hurricanes, flooding, and sea level rise. Floating solar systems offer built-in adaptability: their buoyant platforms rise and fall with changing water levels, and their modular components allow for reconfiguration when needed. This resilience makes them a practical, future-ready investment for businesses and local governments seeking to strengthen infrastructure against extreme weather events.

Floating solar combines smart land use, water conservation, and energy resilience, positioning Jacksonville to lead in clean energy innovation. Advanced Green Technologies offers this opportunity to local businesses, supporting lower energy costs and enhanced infrastructure performance. With this technology, Jacksonville can increase its clean energy capacity while protecting the natural resources and infrastructure that support its long-term economic growth.

In Jacksonville, floating solar creates local benefits by lowering energy costs, conserving water resources, and improving system performance in the summer heat. More broadly, the technology strengthens resilience to flooding and severe weather risks while expanding energy production capacity without consuming additional land. By adopting this innovative solution with the support of Advanced Green Technologies, Jacksonville demonstrates leadership in sustainable economic growth and sets a model for other fast-growing coastal cities.

5 Florida Power & Light. (2025, November 20). Florida regulators approve FPL rate agreement that keeps customer bills low, meets needs of growing state. FPL Newsroom. https://newsroom.fpl.com/2025-11-20-Florida-regulators-approve-FPL-rate-agreement-that-keeps-customer-bills-low,-meets-needs-of-growing-state
6 Saunders, J. (2025, February 28). FPL proposes rate increase to keep up with growth. Jacksonville Today. https://jaxtoday.org/2025/02/28/fpl-rate-increase/#keep-reading
7 Next Era Energy. (2023). Sustainability report. https://www.fpl.com/content/dam/fplgp/us/en/environment/pdf/2023_NEE_Sustainability_Report_Final.pdf
8 Roa, C. (2023, March 22). Envisioning Florida's clean energy revolution beyond carbon. VoLo Foundation. https://volofoundation.org/news/envisioning-floridas-clean-energy-revolution-beyond-carbon/
9 Florida Power & Light Company's prehearing statement. (2025). In Florida Public Service Commission. https://www.psc.state.fl.us/library/filings/2025/06603-2025/06603-2025.pdf

Floating Solar Panels in Florida.

As Jacksonville continues to grow and prioritize resilience, Floating Solar presents a forward-looking solution that leverages the city's unique geography. With an abundance of stormwater ponds, reservoirs, and other underutilized water surfaces, Jacksonville is well-positioned to adopt this alternative energy technology. Advanced Green Technologies, a local leader in solar solutions, is working to bring Floating solar to commercial properties across the city[1].

Land development in Jacksonville is accelerating, with commercial, industrial, and residential growth increasing pressure on available real estate. Floating solar provides a strategic advantage by converting existing water bodies into clean energy assets. Stormwater retention ponds, lakes, and treatment facilities—once passive elements of the built environment—can now generate renewable electricity without competing with land needed for housing, recreation space, or economic development.

In Florida's hot climate, water conservation remains a critical concern. Floating solar arrays help reduce evaporation from water bodies, protecting freshwater resources throughout the region. This benefit supports the operations of utilities, municipalities, and businesses that depend on stormwater systems or private reservoirs. Additionally, the natural cooling effect of water helps Floating solar systems outperform traditional ground-mounted panels during Jacksonville's hot and humid summers. Improved efficiency during peak energy demand periods strengthens the case for wider deployment.

1 Advanced Green Technologies. (2025, August 15). Top commercial solar contractor in Florida. https://www.agt.com/

INCREASE ENERGY EFFICIENCY FOR EXISTING COMMERCIAL, RESIDENTIAL, AND INDUSTRIAL BUILDINGS

SECTOR: COMMERCIAL, RESIDENTIAL, INDUSTRIAL

TARGETS

- Promote strategies to reduce operational energy in all commercial and municipal buildings (new and existing) by 50% by 2030 compared to 2019 levels, while encouraging all facilities to meet or exceed the latest IECC or ASHRAE 90.1 standards, and by 2050, achieve an 80% reduction in commercial and municipal operational energy use.
- Support efforts to lower regional residential energy consumption by 25% by 2030 and 50% by 2050 through targeted energy efficiency upgrades and retrofit programs.

ACTION SUMMARY

1. Increase energy efficiency of existing city and county buildings
2. Expand energy efficiency financing and incentive programs
3. Provide free or low-cost home energy audits for residents
4. Improve exterior and interior lighting efficiency and scheduling
5. Adopt the most recent update to the IECC code

OVERVIEW

This goal aims to reduce total energy consumption and associated emissions from buildings across NEFL. Improving building efficiency represents one of the most cost-effective strategies for strengthening local economies, reducing utility expenses, and enhancing occupant comfort. Upgrading existing systems—such as insulation, lighting, HVAC equipment, and energy management controls—can significantly decrease operational costs while extending the lifespan of building assets[1].

Older commercial and residential structures often operate with outdated systems, inadequate insulation, and inefficient equipment, resulting in higher energy use and maintenance costs for property owners. According to the U.S. DOE, commercial buildings constructed before 1980 consume 25–50% more energy per square foot than those built in the last two decades. Enhancing efficiency in these properties supports economic savings, improves reliability, and aligns with evolving building codes and performance standards.

By expanding investment in building retrofits, NEFL can lower overall energy demand, reduce strain on local utilities, and create long-term economic benefits through lower operating costs and increased property value. Energy-efficient buildings also improve indoor air quality and occupant well-being, strengthening the link between resilience, productivity, and community health.

1 U.S. Department of Energy. (2024). *Reduced energy costs*. Energy. https://www.energy.gov/eere/reduced-energy-costs

ACTION 1. INCREASE ENERGY EFFICIENCY OF EXISTING CITY AND COUNTY BUILDINGS

Allen D. Nease High School in St Johns County has an Energy Star score of 91, meaning it performs better than 91% of the high schools across the US for schools that report utility data to Energy Star/EPA.

In 2009, the City of Jacksonville adopted the Green Building Ordinance to encourage sustainable development and provide incentives to the private sector[1]. The policy requires all new or newly renovated municipal buildings to achieve certification under LEED, Green Globes, or the Florida Green Building Coalition standards. Private-sector participation remains voluntary and is supported through incentives such as expedited permitting.

Other local jurisdictions have also demonstrated leadership in public building efficiency. Newly constructed county facilities in Nassau and Clay Counties are designed to meet LEED standards, and Nassau County's 2030 Comprehensive Plan reinforces this commitment through its Conservation Element, which encourages the integration of recognized green building rating systems and the use of ENERGY STAR appliances in county construction and renovation projects[2].

These initiatives have generated measurable benefits, including improved indoor air quality, reduced noise and light pollution, and expanded opportunities for skilled labor in the building trades. First Coast High School, in partnership with JEA, offers technical training opportunities that prepare students for careers in energy management and building operations[3]. JEA also operates a paid college internship program that provides students with real-world, on-the-job experience and develops valuable leadership and professional skills[4]. For adults, JEA's Skilled Crafted Training Programs provide state-certified, in-house instruction that qualifies participants as highly skilled professionals in their respective trades[5]. These programs combine paid training, career advancement opportunities, and practical experience in one of the nation's largest community-owned utilities.

Upgrading city and county facilities with modern, efficient systems will reduce fossil fuel consumption and GHG emissions, align NEFL with federal and state energy objectives, and provide long-term cost savings to taxpayers. These improvements also strengthen local workforce pipelines and support continued investment in sustainable, high-performance infrastructure.

1 *Chapter 327 - Sustainable building program.* (n.d.). Municode Codification. https://library.municode.com/fl/jacksonville/codes/code_of_ordinances?nodeId=TITVIIICOREBUCO_CH327SUBUPR_S327.103DE

2 Nassau County. (2020). *Nassau County 2030 Comprehensive Plan - Conservation Element (CS).* https://www.nassaucountyfl.com/DocumentCenter/View/20853/9--2030-Conservation-Element-Effective-8-22-20

3 Duval County Public Schools. (n.d.). *Industry sponsored programs.* https://www.duvalschools.org/o/dcps/page/industry-sponsored-programs

4 JEA. (n.d.). *College internships.* https://www.jea.com/about/careers/college_internships#:~:text=Each%20year%2C%20JEA%20proudly%20hosts%20a%20variety%20of,degree%20and%20technical%20programs%20in%20their%20chosen%20field.

5 JEA. (n.d.) *Skilled craft apprenticeship opportunities*. https://www.jea.com/about/careers/apprenticeship_program/line_maintainer/

To encourage energy-efficient building renovations, cities and counties can help overcome the initial cost barriers that often prevent property owners from implementing high-impact energy-saving measures. Establishing partnerships with green banks or revolving loan funds can provide low- or zero-interest financing for projects such as LED lighting retrofits, HVAC system upgrades, and advanced energy management controls[6].

Expanding incentive programs to include direct tax credits for efficiency improvements in public and private buildings will further support participation and investment. Local governments can also collaborate with state and federal programs, including the U.S. DOE State Energy Program and Weatherization Assistance Program, to maximize available funding for energy efficiency and renewable energy initiatives[7].

As previously noted, C-PACE financing is already authorized in Duval County and can be used to fund qualifying energy efficiency improvements in commercial buildings. Implementing these tools will make efficiency upgrades more financially viable, attract private investment, and drive economic growth while helping NEFL achieve measurable reductions in energy use and operating costs.

6 US EPA. (2018). *Clean energy finance: Green banking strategies for local governments*. https://www.epa.gov/sites/default/files/2018-10/documents/usepa_greenbankingstrategies_october_2018.pdf

7 U.S. Department of Energy. (n.d.). *Office of state and community energy programs*. Energy. https://www.energy.gov/scep/

ACTION 3. PROVIDE FREE OR LOW-COST HOME ENERGY AUDITS FOR RESIDENTS

Duke Energy is one of the many utility companies across the NEFL region that provides no-cost/low-cost energy audits to its residents.

Expanding access to free or low-cost home energy audits gives residents practical tools to identify ways to reduce energy consumption, retrofit their homes, and improve overall comfort. An energy audit provides a customized assessment of a home's performance by evaluating insulation, heating and cooling systems, appliances, lighting, and the building envelope[8]. These assessments help homeowners and renters pinpoint where energy is being lost, identify efficiency opportunities, and lower utility costs while enhancing comfort and indoor air quality. Although many programs have focused on improving efficiency in commercial and large-scale facilities, achieving meaningful regional impact also depends on reducing energy use within the residential sector.

In Duval County, approximately 49,784 residents across 15 census tracts face high energy costs, reflecting significant energy demand and aging housing stock. Increasing support for residential energy efficiency measures—such as weatherization, appliance upgrades, and access to distributed energy options like rooftop solar—can help residents reduce monthly utility expenses, strengthen home performance, and lower emissions associated with household energy use.

Several utilities in NEFL already offer free or low-cost energy audit services that provide a foundation for expanding access. Clay Electric Cooperative offers in-home surveys, rebates, and low-interest loans for efficiency improvements[9]. JEA, serving Duval and parts of St. Johns County, provides complimentary walk-through assessments of energy and water use[10]. Florida Public Utilities, which services Nassau County, conducts free home energy checkups with personalized recommendations and basic efficiency items, such as light bulbs[11]. Duke Energy, serving Flagler County, offers free online, phone, and in-home assessments, along with energy-efficiency kits and rebates[12]. Tampa Electric (TECO) provides both online and in-home audits to help customers identify energy-saving opportunities and available rebates[13]. FPL offers home energy surveys that assess insulation, lighting, and HVAC systems, as well as additional support services for qualifying households, including complimentary light bulbs and basic maintenance such as duct repair and A/C tune-ups[14]. Together, these programs demonstrate that audit services are already accessible across the region, though increased outreach is needed to ensure broader participation.

To maximize program impact, municipal governments can expand public awareness campaigns and connect residents to available audit programs, financing tools, and utility rebates to help implement recommended improvements. Coordinating with regional utilities and service providers will enhance participation, reduce energy waste, and improve household energy performance. By making home energy audits easily accessible and pairing them with available incentives, NEFL can promote cost savings, increase energy efficiency, and strengthen the region's overall resilience.

8 Esmiali, S. (2025, Augst 12). *Energy audits explained: Save energy, reduce costs, and improve efficiency.* (2025). Cbre. https://www.cbre.lu/insights/articles/energy-audits-explained

9 Clay Electric Cooperative, Inc. (2025). *Energy surveys*. https://www.clayelectric.com/energy-surveys

10 JEA. (n.d.). *Free efficiency assessments from JEA.* https://www.jea.com/Residential_Customers/Ways_to_Save/Free_Efficiency_Assessments/

11 Norris, M. (2025, October 20). *Home energy programs*. Florida Public Utilities. https://fpuc.com/energy-efficiency/free-energy-checkup/

12 Duke Energy. (n.d.). *Schedule an energy visit*. https://www.duke-energy.com/home/products/home-energy-check

13 Tampa Electric. (n.d.). *Energy audit*. https://www.tampaelectric.com/residential/saveenergy/energyaudit/

14 Florida Power & Light. (n.d.). *Onsite home energy survey*. https://www.fpl.com/save/programs/onsite-energy-survey.html

ACTION 4. IMPROVE EXTERIOR AND INTERIOR LIGHTING EFFICIENCY AND SCHEDULING

Comparison of exterior lighting designs and their impact on light pollution.

Efficient lighting, both indoors and outdoors, offers a straightforward and cost-effective way to reduce energy use and waste. Interior lighting efficiency can be improved by installing LED fixtures and occupancy sensors, and by connecting these systems to building automation platforms that adjust lighting in real time[1]. Exterior lighting can be optimized by replacing outdated fixtures with shielded, high-efficiency LEDs and using adaptive controls or smart sensors that dim or shut off lights when unnecessary. Adjusting lighting schedules ensures exterior lights operate only when needed, lowering energy use, reducing costs, and minimizing light pollution.

Due to extensive urban development, NEFL faces significant light pollution. According to the Bortle Dark-Sky Scale (Class 1–9), most urbanized areas rank near the higher end: Downtown Jacksonville averages Class 8–9, Jacksonville Beach, Atlantic Beach, and Ponte Vedra Beach range from Class 6–7.5, and St. Augustine averages Class 6–7[2]. More suburban and rural areas, such as Nassau, Clay, and inland St. Johns Counties, range between Class 4.5–6, where skies remain darker.

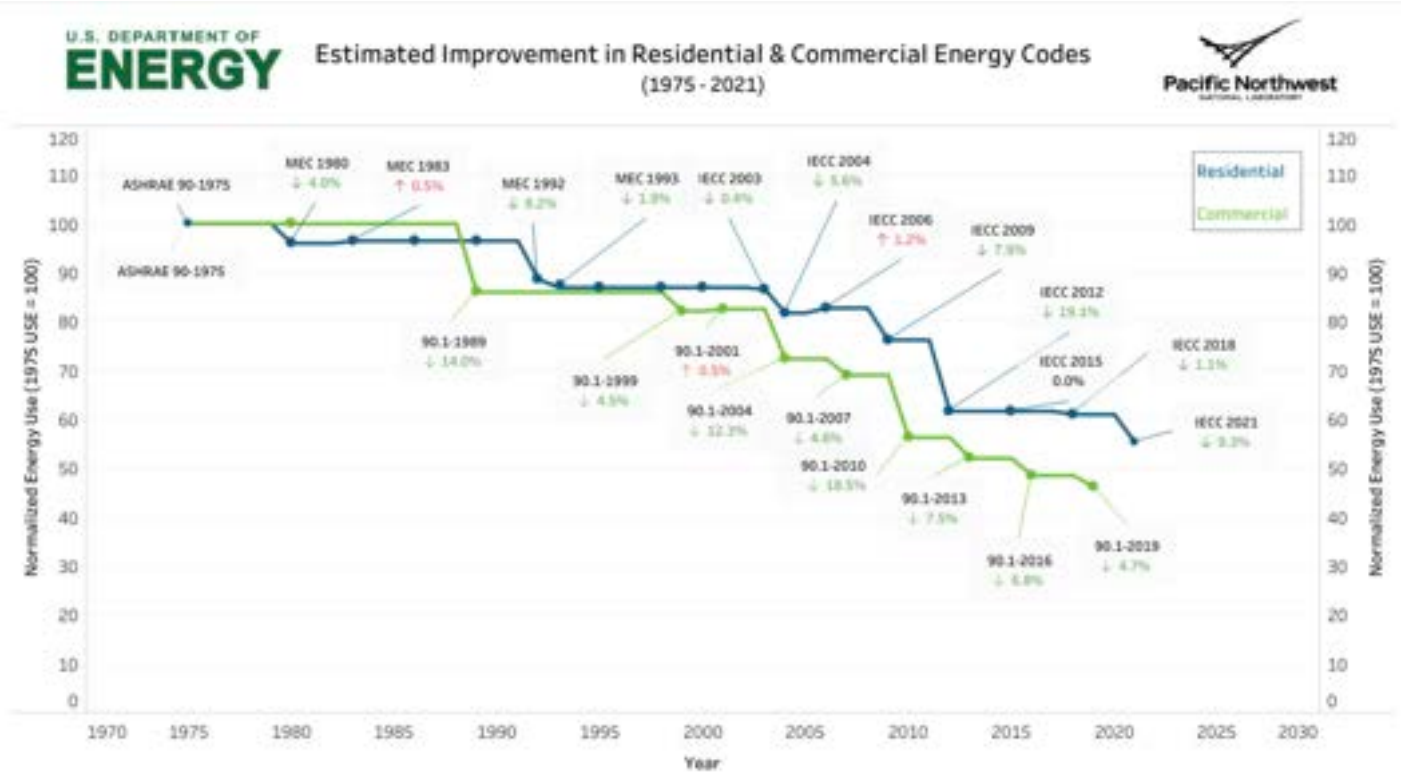
Excess artificial lighting wastes electricity, increases costs, and obscures natural night-sky visibility[3]. It can also disrupt wildlife, including migrating birds, nesting sea turtles, and nocturnal pollinators. These impacts can be reduced by installing shielded fixtures, adding dimmers or adaptive controls, and limiting nighttime operating hours.

By implementing these measures, municipalities, businesses, and property owners can cut energy costs, extend equipment lifespan, and enhance community character while improving overall energy efficiency.

1 U.S. Department of Energy. (n.d.). *Lighting choices to save you money*. Energy. https://www.energy.gov/energysaver/lighting-choices-save-you-money

2 *Light pollution map*. (n.d.). https://lightpollutionmap.app/

3 Isaacs-Thomas, B. (2021, December 16). *What too much artificial light steals from our night skies*. PBS NewsHour. https://www.pbs.org/newshour/science/what-too-much-artificial-light-steals-from-our-night-skies



U.S. Department of Energy - Energy Codes Graph

The 2023 Edition of the Florica Building Code, Energy Efficiency section, is comprised of the 2020 Florida Building Code, Energy Conservation, plus Florida Building Commission-approved modifications from the 2021 International Energy Conservation Code (IECC) and other proposals made during the 2023 code change cycle[1]. Since 2009, the state of Florida has only lagged one generation behind the most recent IECC. Each update to the IECC reflects the latest technologies, best practices, and strategies for reducing energy consumption and greenhouse gas emissions. Applying energy-efficient practices and technologies to buildings in NEFL will lead to compliance with these standards and bring the benefits that come with them. The purpose of these standards is to reduce energy consumption and GHG emissions by promoting better building practices that conserve utility resources and reduce financial costs for building owners[2].

While Florida has steadily advanced its codes in recent years, many older buildings were constructed before the widespread adoption of energy codes. Structures built before 1975 predate any national energy codes, while those constructed between 1975 and 1979 were subject only to ASHRAE/IES Standard 90-1975, a framework primarily developed for colder climates where heating demands are the priority. Recognizing the misalignment of warmer climates like Florida, where cooling is the primary concern, the state implemented its first statewide energy codes in March 1979, creating specific efficiency requirements tailored to Florida's building sector[3]. As a result, buildings constructed before 1979 are especially likely to be inefficient, and prioritizing upgrades in these structures can yield significant energy savings, emissions reductions, and long-term cost benefits.

Furthermore, adopting updated energy and building codes supports the region's goals by locking in energy savings over decades, as buildings constructed today will remain in use for generations.

1 ICC Digital Codes. (2023). *Chapter 13 energy efficiency*. Iccsafe. https://codes.iccsafe.org/content/FLBC2023P1/chapter-13-energy-efficiency

2 *Florida | Building energy codes program*. (2023, December 31). Energy Codes. https://www.energycodes.gov/status/states/florida

3 ICC Digital Codes. (2023). *Preface*. Iccsafe. https://codes.iccsafe.org/content/FLEC2023P1/preface

Effective implementation of these codes, however, depends on enforcement by local authorities having jurisdiction (AHJs). Regular training for AHJs during each code update is essential to ensure inspectors and permitting staff are familiar with new requirements and capable of applying them consistently. Strong enforcement helps close the gap between code adoption and real-world performance, guaranteeing that buildings deliver the intended efficiency outcomes. In addition, several Florida communities, including Orlando and Miami, have adopted policies that incentivize green building certification by offering expedited review or reduced permitting fees[12]. Therefore, such measures can encourage broader compliance, lower administrative burdens for builders, and accelerate the transition to high-performance building practices.

1 City of Orlando. (n.d.). *Green building incentive program*. https://www.orlando.gov/Green-Building-Incentive-Program

2 City of Miami. (n.d.). *Buildings and land use*. https://www.miami.gov/My-Government/Climate-Change-in-the-City-of-Miami/Buildings-and-Land-Use

PROJECTED EMISSIONS REDUCTIONS

2025-2030 Cumulative
517,400 $mtCO_2e$

2025-2050 Cumulative
2,587,200 $mtCO_2e$

Total Annual Co-Pollutant Reduction by 2050

$PM_{2.5}$: 0.01 µg/m^3; 170 lbs | **O_3:** 0.04 µg/m^3; 820 lbs

ECONOMIC IMPACT

This measure is projected to generate 4,200–4,490 jobs by 2030, with the highest demand among energy auditors, HVAC technicians, and electricians (critical need). Direct wages are estimated at $225–$245 million, with a total economic impact of $450–$490 million and annual tax revenue of $45–$49 million. The required annual investment is projected at $100–$120 million. By 2050, continued building retrofits and electrification are expected to sustain strong demand across these skilled trades, supporting a stable and well-trained regional workforce.

BENEFITS

Improving energy efficiency in public, commercial, and residential buildings produces broad benefits for households, local governments, utilities, and the regional economy. For residents, upgrades reduce utility costs, improve comfort, and increase home safety[4]. As workforce capacity expands, these services become more widely available, allowing more property owners to benefit from lower operating expenses and higher building performance. Public agencies also gain from reduced energy use in schools, libraries, and municipal buildings, freeing resources for essential community services. Efficiency upgrades extend equipment lifespans, reduce maintenance costs, and promote smarter use of public funds.

Utilities benefit from decreased energy demand, particularly during peak periods, helping to avoid costly infrastructure expansion and enhance grid reliability. Lighting efficiency improvements also reduce unnecessary outdoor illumination, protecting local wildlife and preserving nighttime visibility. These measures generate both economic and operational advantages while supporting new employment opportunities in energy auditing, construction, and maintenance. As demand for skilled labor grows, energy efficiency projects help build long-term workforce stability, strengthen local economies, and improve overall regional resilience.

IMPLEMENTATION AUTHORITY

Responsibility for implementing building energy efficiency improvements in NEFL is shared among county governments, municipal authorities, and local utilities. Counties and cities adopt and enforce building codes (consistent with the Florida Building Code), oversee permitting, and incorporate energy-efficiency standards into public facility construction and renovation. Local jurisdictions also manage policies and ordinances, such as Jacksonville's Green Building Ordinance, which encourage or require efficiency upgrades in municipal buildings while offering incentives for private development. Utilities play a central role by providing energy audits, rebate programs, and customer incentives that promote efficiency in residential and commercial buildings. The Florida Building Commission establishes statewide guidance by adopting updated codes aligned with IECC standards, with enforcement delegated to local authorities having jurisdiction. Local governments also have the authority to seek Technical Amendments to the Florida Building Code to facilitate certain policy goals.

4 U.S. Department of Energy. (n.d.). *Why energy efficiency matters*. Energy. https://www.energy.gov/energysaver/why-energy-efficiency-matters

FUNDING AVAILABILITY

FUNDING SOURCE	LEVEL	MATCH REQUIRED?	NOTES
DOE Weatherization Assistance Program (WAP)	Federal	No	Grants for insulation, air sealing, HVAC upgrades; administered locally by NFCAA and SJHP.
DOE State Energy Program	Federal	Yes (varies)	Supports state-led energy efficiency initiatives including audits and retrofits.
DOE Building America Retrofit Solutions Teams	Federal	No	Community-based technical support for retrofitting historic and older homes with energy-efficient technologies.
Inflation Reduction Act – HOMES & HEAR Programs	Federal/State	No	Rebates up to $14,000 for energy-efficient retrofits and electrification; launching late 2025.
SSDN Peer Learning & Technical Assistance Grants	Regional/Private	Varies	Supports development and implementation of sustainability master plans, including energy efficiency strategies.
St. Johns Housing Partnership (SJHP)	Regional	No	Weatherization and emergency repair services for low-income households in St. Johns and Clay.
NFCAA Weatherization Assistance	Regional	No	Free weatherization services for income-qualified households in Duval, Clay, Nassau, St. Johns.
Florida Green Finance Authority (FGFA)	Statewide	No upfront cost	C-PACE financing for energy-efficient retrofits in commercial and residential buildings.
FPL Energy Efficiency Rebates	State	No	Rebates up to $2,200 for HVAC, ceiling insulation, and smart home upgrades.
Florida Division of Historical Resources – Small Matching & Special Category Grants	State	Yes (25–50%)	Supports rehabilitation, restoration, and energy-related upgrades for historic buildings listed or eligible for the National Register.
Revolving Energy Funds	Local	Yes (seed funding)	Municipalities can create internal funds that reinvest savings from energy projects into future upgrades. Often part of sustainability plans.
Municipal Capital Improvement Plans (CIP)	Local	Yes (budget allocation)	Cities and counties can allocate funds for energy efficiency retrofits, audits, and upgrades through their annual or multi-year CIP budgets.
JEA Residential Rebate Program	Local	No	Rebates for attic insulation, HVAC tune-ups, smart thermostats, heat pump water heaters, and more.
General Obligation Bonds / Green Bonds	Local	Yes (voter approval or council authorization)	Cities can issue bonds to fund large-scale energy efficiency projects, especially for public buildings and infrastructure.
Clay Electric Energy Smart Rebates	Local	No	Rebates for heat pumps, solar water heaters, attic insulation, window film, and hybrid water heaters.
Florida Trust for Historic Preservation – 11 to Save Grant Fund	Private	No	Seed funding for preservation planning, structural assessments, and facility upgrades for endangered historic properties.
Energy Service Companies (ESCOs)	Private	No upfront cost	Performance-based contracts for building retrofits and lighting upgrades.

CASE STUDY 1: ST. JOHNS COUNTY ENERGY MANAGEMENT POLICY

St. Johns County has taken a proactive step to improve energy efficiency across its public infrastructure by creating an Energy Management Policy. Public buildings—including offices, community centers, and recreation facilities—represent a significant share of the county's operational energy use. By systematically addressing energy performance, the county is working to reduce emissions, lower operational costs, and strengthen municipal efficiency.

The policy was formalized after St. Johns County received a $275,490 federal Energy Efficiency and Conservation Block Grant, awarded under the U.S. DOE's Bipartisan Infrastructure Law5. The grant will fund energy-efficient renovations at the W.E. Harris Community Center, one of the county's priority facilities. While this project has not yet begun, the policy provides a framework for future retrofits and energy optimization measures, ensuring that improvements are cost-effective, data-driven, and aligned with long-term performance objectives[6].

The Energy Management Policy outlines strategies that include conducting energy audits, retrofitting building systems, adopting smart controls, and engaging staff. Energy audits establish a baseline for electricity usage and identify the most impactful improvements. Based on these results, retrofits may include LED lighting upgrades, HVAC modernization, enhanced insulation, and water-saving fixtures, all of which reduce utility costs and improve operational performance. The integration of smart building controls and automated energy management systems enables facility managers to monitor and optimize energy use in real time, reducing waste and increasing operational efficiency.

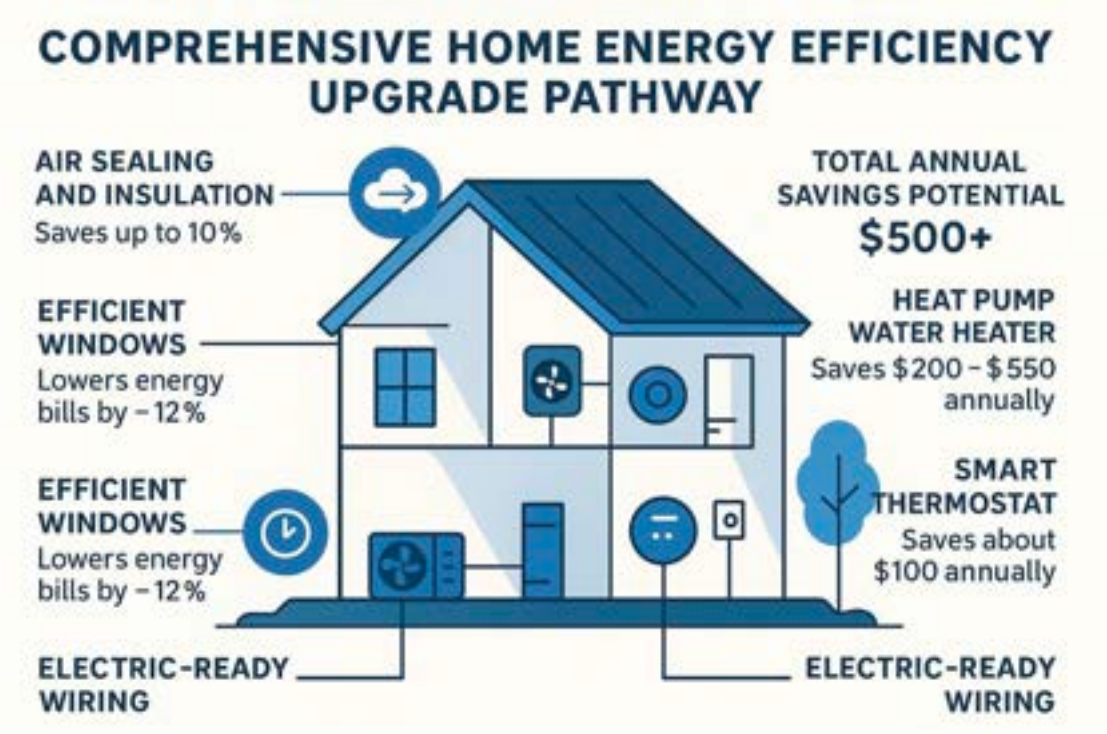
Staff engagement plays a critical role in achieving energy savings. The policy encourages training and conservation practices, such as turning off lights and equipment when not in use. Educating employees ensures new equipment is operated correctly and maintained properly, maximizing savings and extending the lifespan of county investments.

Looking ahead, St. Johns County plans to expand the Energy Management Policy to additional facilities once upgrades at the W.E. Harris Community Center are complete. Through a phased approach to retrofits and energy efficiency improvements, the county can maximize impact while minimizing costs and operational disruptions. Annual performance reporting and ongoing evaluation will allow staff to track progress, refine strategies, and demonstrate measurable results in energy and cost savings.

For St. Johns County, the Energy Management Policy will lower operating costs, improve facility performance, and engage staff in practical conservation efforts. These local gains contribute to broader goals of improved operational resilience and fiscal responsibility. By committing to systematic, cost-effective efficiency improvements, St. Johns County positions itself as a regional leader in energy management and a model for other communities to follow.

5 Board of County Commissioners St. Johns County. (2024, August 20). *Minutes of meeting*. St. Johns Clerk. https://stjohnsclerk.com/minrec/minutes/2024/082024mrbcc.pdf

6 Board of County Commissioners St. Johns County. (2024, September 17). *Resolution no. 2024-398*. St. Johns Clerk. https://stjohnsclerk.com/minrec/Resolutions/2024/RES2024-398.pdf



The Home Energy Assistance Program Weatherization and Retrofit Assistance Program (HEAP WRAP), administered by the Epower Assist Care (EAC) Network, is a key initiative in Nassau County that reduces utility costs and improves energy efficiency for residents[7]. Together, these programs address the economic and operational challenges of inefficient housing by providing financial assistance and physical home upgrades that enhance comfort, safety, and long-term performance[8].

In 2024, HEAP WRAP served more than 7,000 Nassau County residents, offering targeted support to households facing rising energy expenses. Many participants live in older homes with inefficient heating systems, poor insulation, or outdated appliances. These conditions contribute to high utility bills and increased maintenance needs. HEAP WRAP helps alleviate these pressures by combining cost relief with structural improvements that lower overall energy demand.

The HEAP program provides direct financial assistance to help eligible households pay for heating and utility bills. Once approved, participants may also receive support for essential system repairs, such as replacing inoperable furnaces or water heaters. This is particularly important during colder months, when energy demand peaks and home heating becomes a health and safety priority.

WRAP complements this support by focusing on long-term solutions. Each home enrolled in the program receives a comprehensive energy audit to identify specific areas for energy efficiency improvement. Typical services include sealing air leaks, installing insulation, repairing or replacing windows and doors, wrapping pipes and water heaters, and upgrading outdated heating systems. These improvements are tailored to each home's needs and are designed to reduce energy loss while improving comfort and indoor air quality.

7 EAC Network. (2025, January 20). *Home energy assistance program (HEAP) and weatherization referral and packaging program (WRAP).* https://eac-network.org/home-energy-assistance-program/

8 U.S. Department of Energy. (n.d.). *Maximizing home energy performance when using home energy rebates*. Energy. https://www.energy.gov/scep/slsc/home-energy-rebates-program/maximizing-home-energy-performance-when-using-home-energy

In addition to physical upgrades, HEAP WRAP includes an educational component that empowers residents with knowledge about energy-saving practices and routine home maintenance. By encouraging behavior changes that reinforce the physical improvements made during retrofits, the program helps extend the lifespan of energy investments and builds household resilience over time.

Although HEAP WRAP is still in the early stages of implementation in Nassau County, its growing participation and measurable outcomes suggest significant long-term benefits. Beyond household cost savings, the cumulative energy reductions contribute to broader emissions reduction and climate resilience goals[9].

In Nassau County, HEAP WRAP strengthens household resilience by lowering utility costs and improving living conditions. Collectively, these improvements reduce local energy demand and demonstrate how coordinated retrofit programs can advance practical, cost-effective energy solutions across the region.

9 U.S. Department of Energy. (2015, August). *National evaluations: Summary of results*. Energy. https://www.energy.gov/sites/default/files/2015/08/f25/WAP_NationalEvaluation_WxWorks_v14_blue_8%205%2015.pdf

BUILD CONNECTED COMMUNITIES

SECTOR: TRANSPORTATION; COMMERCIAL, RESIDENTIAL, AGRICULTURE, FORESTRY, AND OTHER LAND USE

TARGETS

- Encourage the addition of 5 miles of protected bike lanes per year across the region with a minimum width of 5 feet, resulting in an increase of at least 25 miles regionwide by 2030 and 125 miles by 2050.
- Promote the development of at least 40 miles of new multi-use trails for active transportation by 2030 and 100 miles by 2050.
- Support efforts to increase public transit ridership by 15% above 2019 levels by 2030 and 30% by 2050 through service enhancements and a better-connected network of routes
- Promote expanded transit service, active transportation infrastructure, and compact, mixed-use development to reduce total passenger vehicle miles traveled (VMT) in Northeast Florida by 5% from 2019 levels by 2030 and 25% by 2050.
- Prioritize infill development to encourage at least 50% of new housing units by 2030 to be located within existing urban areas or near transit corridors, increasing to at least 70% by 2050.

ACTION SUMMARY

1. Build a fast, reliable transit system and create a connected active transportation network that will be a preferred mode of transportation
2. Utilize smart city technology and big data solutions to advance mobility as a service
3. Build new housing units in transit-oriented development locations
4. Promote mixed-use development to reduce the need for long commutes
5. Increase active transportation

OVERVIEW

As the population of NEFL continues to grow, developing efficient, accessible, and connected transportation systems will be essential for sustaining regional prosperity and enhancing quality of life. With its large geographic footprint and increasing demand for mobility, the region must focus on improving how people move between neighborhoods, job centers, and surrounding communities. Expanding multimodal infrastructure and encouraging compact development will create a more resilient and economically efficient transportation network that benefits both residents and businesses.

This measure supports the creation of a complete, multimodal transportation system that integrates bus and shuttle services, passenger rail, micromobility options such as bicycles and scooters, and safe pedestrian and cycling infrastructure. A major component of this vision involves expanding the region's trail network, which not only enhances recreational opportunities but also provides practical, low-cost alternatives to automobile travel. The Northeast Florida Regional Multi-Use Trail Master Plan identifies 540 miles of proposed trails across Nassau, Clay, Duval, and St. Johns Counties[1]. While not all projects are currently funded for development, the plan illustrates the significant potential for improving non-motorized connectivity across the region. By investing in trail expansion and improving alternative transportation services, NEFL can increase access to safe, convenient travel options, particularly in areas with limited transit availability.

Equally important is managing how and where growth occurs. Directing new construction toward already developed areas helps reduce vehicle dependence, minimize infrastructure costs, and prevent outward sprawl. Compact, mixed-use development supports walkable neighborhoods, improves public health, and preserves surrounding agricultural and natural lands. Together, these patterns create more efficient communities where residents can more easily access jobs, schools, parks, and essential services without relying solely on personal vehicles.

By building connected, mixed-use communities and expanding multimodal transportation networks, NEFL can reduce emissions, strengthen economic mobility, and improve overall regional resilience. These strategies position the region to attract investment, enhance public safety, and support a transportation system that meets the needs of a growing population.

1 Atkins. (2020, May). *Northeast Florida tourism mobility study*. North Florida Transportation Planning Organization. https://northfloridatpo.com/uploads/Studies/Tourism_Mobility_Study.pdf

ACTION 1: BUILD A FAST, RELIABLE TRANSIT SYSTEM AND CREATE A CONNECTED ACTIVE TRANSPORTATION NETWORK THAT WILL BE A PREFERRED MODE OF TRANSPORTATION

From the MOVE2027 JTA 5 year strategic plan.

A high-quality public transit system is critical to reducing car dependence, improving mobility, and expanding access to jobs, education, and essential services. To become a preferred travel option, transit in NEFL must be fast, reliable, and convenient for a wider share of residents. This requires expanding high-frequency routes, reducing wait times, and improving service coverage in both urban and suburban areas. A reliable transit network not only supports daily commuting but also enhances regional economic productivity by reducing travel times and transportation costs.

School transportation represents an important component of this broader mobility framework. For many families, school drop-offs contribute to daily congestion and vehicle idling around campuses. By expanding and modernizing school bus systems, parents can view buses as a reliable, safe, and efficient option for students. The growth of school choice and magnet programs has increased travel distances for many families, requiring updated bus routes and scheduling to match current enrollment patterns. Modernizing school bus fleets and operations will require both capital investment and long-term maintenance funding, but will ultimately improve safety, reduce localized emissions, and support regional traffic management goals. Strengthening school transportation also complements public transit improvements by providing first-mile and last-mile connectivity within the broader regional network.

A cornerstone of the region's transit infrastructure is the Jacksonville Transportation Authority (JTA), whose First Coast Flyer bus rapid transit (BRT) system provides high-speed, limited-stop service and continues to expand service reliability and reach[2]. The Redesign Reimagine Reinvigorate (RRR) network optimization study further supports this effort by restructuring the existing bus network to improve efficiency and access throughout the city. Additionally, NAVI, JTA's neighborhood autonomous vehicle innovation shuttle, is transforming downtown mobility by providing flexible, zero-emission service that reduces congestion and improves accessibility.

Digital tools such as the MyJTA app enhance rider experience through real-time tracking and mobile fare payment, increasing ease of use and rider satisfaction. Together, these investments strengthen public confidence in the system, offering residents a fast, connected, and reliable alternative to personal vehicles. By expanding multimodal options and improving transit infrastructure, NEFL can create a more efficient, accessible, and sustainable transportation network that supports economic growth and quality of life across the region.

2 Jacksonville Transportation Authority. (n.d.). *Home*. https://jtafla.com/

ACTION 2: UTILIZE SMART CITY TECHNOLOGY AND BIG DATA SOLUTIONS TO ADVANCE MOBILITY AS A SERVICE

JTA'S "Street Smarts" Initiative | Statetech Magazine

Integrating smart city technologies and mobility data platforms can make NEFL's transportation system more efficient, responsive, and cost-effective. By analyzing travel patterns, real-time demand, and system performance, transit agencies can optimize schedules, reduce wait times, and allocate resources more strategically. These tools enhance service reliability while minimizing fuel consumption, maintenance costs, and traffic congestion.

One example of this innovation is seen in JTA's "Street Smarts" initiative, which incorporates fleet management, public Wi-Fi, and autonomous vehicle technology to modernize Jacksonville's transit system[3]. The First Coast Flyer rapid transit network now uses signal-priority technology to extend green lights for buses, while autonomous shuttles introduced under the Ultimate Urban Circulator (U_2C) project are transforming the city's outdated Skyway into a connected, electric transit corridor. These upgrades, supported in part by federal funding, demonstrate how smart mobility tools can enhance performance, expand access, and attract new riders across the region.

Integrated trip-planning applications and unified payment systems further enable residents to move seamlessly between modes of transportation—such as buses, shuttles, bikes, scooters, and shared rides—within a single, coordinated platform. This interoperability improves overall system efficiency, shortens travel times, and reduces the need for personal vehicle use.

3 Brereton, E. (2022, November 2). Street smarts: Jacksonville forges a high-tech future in mass transit. *State Tech Magazine*. https://statetechmagazine.com/article/2022/11/street-smarts-jacksonville-forges-high-tech-future-mass-transit

ACTION 3: BUILD NEW HOUSING UNITS IN TRANSIT-ORIENTED DEVELOPMENT LOCATIONS

Artea Southbank Opens as Jacksonville's First Transit-Oriented Development in March 2025

Concentrating new housing near existing or planned transit corridors will help limit urban sprawl, reduce vehicle miles traveled (VMT), and promote compact, efficient growth across NEFL. As the region continues to expand, directing residential development into already urbanized areas reduces infrastructure and service costs, supports economic vitality, and preserves natural and agricultural lands at the metropolitan fringe.

Encouraging higher-density housing in transit-accessible areas fosters walkable, connected neighborhoods where residents can meet daily needs—such as shopping, work, and recreation—without relying on personal vehicles. This approach maximizes the use of existing infrastructure and strengthens the business case for ongoing transit investment and modernization.

Policy tools such as zoning reforms, density bonuses, and infill development incentives can accelerate this transition by aligning land use with transportation planning. JTA's Transit-Oriented Development (TOD) Initiative demonstrates this model in action, introducing new workforce housing projects in downtown Jacksonville that expand access to housing near major transit lines. Similarly, the Artea at Southbank development, a 340-unit mixed-use project adjacent to the Kings Avenue Transit Hub, integrates residential, retail, and transit connectivity within one walkable district[4].

These projects illustrate how aligning new housing with transit infrastructure supports sustainable growth while reducing car dependence. Expanding transit-oriented development throughout NEFL will advance regional goals for climate resilience, infrastructure efficiency, and equitable access to mobility, positioning the region as a leader in smart, connected urban planning.

Directing new housing to areas near existing or planned transit services in the region will help limit sprawl and promote more compact, efficient growth. As NEFL continues to expand, focusing on residential development within already urbanized areas can help reduce VMT, lower infrastructure and service costs, and preserve natural and undeveloped land on the city's outskirts.

4 *Artea Southbank opens as Jacksonville's first transit-oriented development*. (2025, March 14). Corner Lot. https://www.cornerlotdevelopment.com/artea-southbank-opens-as-jacksonvilles-first-transit-oriented-development/

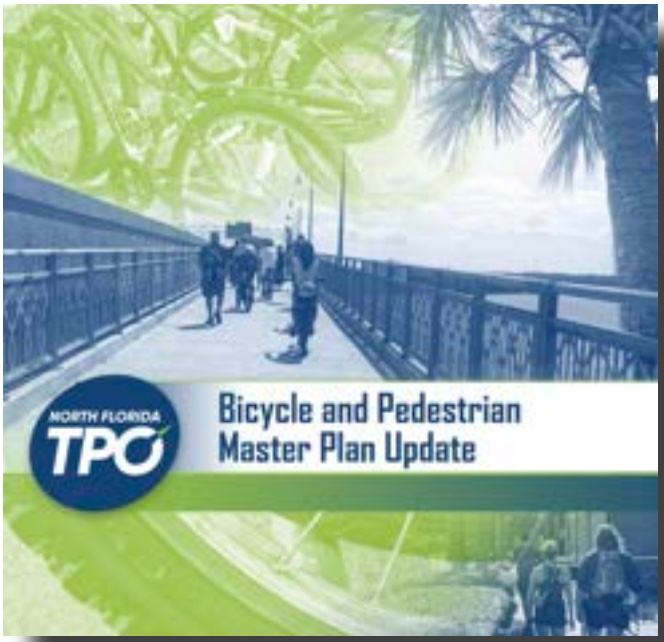
ACTION 4: PROMOTE MIXED-USE DEVELOPMENT TO REDUCE THE NEED FOR LONG COMMUTES

Encouraging mixed-use development enables residents to live, work, and shop within the same area, reducing the need for long commutes and decreasing VMT. These neighborhoods make it easier to walk, bike, or take transit for daily needs, lowering transportation costs, reducing emissions, and fostering a stronger sense of community through vibrant, active public spaces.

Promoting mixed-use zoning within already developed areas reinforces the region's goal of compact, sustainable growth. By supporting infill development and efficient land use, local governments can limit outward expansion, avoid costly new infrastructure, and preserve natural and agricultural land. This approach also benefits small businesses by increasing local foot traffic and connecting residents more closely to neighborhood services, retail, and dining[5].

Mixed-use areas are particularly valuable for households without consistent access to vehicles, as they improve connectivity to employment centers, healthcare, education, and recreation. To advance these outcomes, local jurisdictions can adopt zoning updates, flexible permitting, and targeted development incentives that encourage compact, walkable communities aligned with NEFL's long-term mobility and smart land use.

5 Veenstra, J. (2025, March 13). *5 key benefits of mixed-use buildings for businesses and developers*. Proline Building Company. https://info.plbco.com/blog/5-key-benefits-of-mixed-use-buildings-for-businesses-and-developers



The North Florida TPO regularly provides an extensive update on the comprehensive initiative aimed at enhancing safety and accessibility of bicycle and pedestrian facilities across the NEFL region.

Expanding safe, accessible options for walking, biking, and other forms of active transportation is essential to reducing emissions and improving connectivity across NEFL. The region is advancing several initiatives to promote active mobility, guided by the North Florida Bicycle and Pedestrian Master Plan, which provides a regional framework for developing a cohesive, low-emission transportation network[1]. The goal is to create a safer, more connected system that encourages residents to use active modes for everyday travel.

Planned improvements include protected and separated bike lanes, expanded multi-use trail systems, and supportive facilities—such as showers and lockers in government buildings—to make active commuting more practical for employees. The City of Jacksonville is also piloting E-bike voucher and E-bike share programs, designed to lower adoption barriers and make electric-assisted mobility a more viable option for short- and medium-distance trips.

The North Florida Bicycle and Pedestrian Master Plan envisions more than 500 miles of interconnected trails linking neighborhoods, schools, parks, and transit hubs. Its priorities include closing existing infrastructure gaps, extending shared-use paths, and improving safety through Complete Streets standards, which ensure that roadways accommodate pedestrians, cyclists, transit users, and drivers alike. This framework represents a shift from traditional car-centric planning toward a more balanced, multimodal approach that integrates all users.

Additionally, the plan recommends updating land development regulations to require bicycle and pedestrian facilities in new projects and improving the consistency of facility data and mapping across jurisdictions. Together, these strategies provide a long-term roadmap for building a healthier, safer, and more resilient transportation system that supports economic vitality and enhances quality of life throughout NEFL.

1 Atkins. (2023). *Bicycle and pedestrian master plan update*. North Florida Transportation Planning Organization. https://northfloridatpo.com/uploads/Studies/FINAL_BikePedMasterPlan.pdf

PROJECTED EMISSIONS REDUCTIONS

2025-2030 Cumulative
517,400 $mtCO_2e$

2025-2050 Cumulative
2,587,200 $mtCO_2e$

Total Annual Co-Pollutant Reduction by 2050

Hydrocarbons: 171,737 lbs

CO: 1,281,890 lbs

Nitrogen Oxides: 85,255lbs

ECONOMIC IMPACT

This measure will require 6,725–9,750 jobs by 2030, primarily employing software developers, civil engineers, and electricians (critical need). Direct wages are projected at $370–$530 million, generating a total economic impact of $740–$1,060 million and annual tax revenue of $74–$106 million. The annual investment required for technology and infrastructure is approximately $180 million. By 2050, workforce demand is expected to expand significantly with the widespread integration of Internet of Things (IoT) technologies, transit modernization, and smart infrastructure systems.

BENEFITS

Expanding safe, reliable, and accessible transportation options delivers broad benefits across public health, safety, and community wellbeing. For municipalities, investing in mixed-use and transit-oriented development conserves open space and reduces infrastructure costs. By concentrating housing, employment, and services in walkable, transit-served districts, these strategies alleviate pressure to expand into undeveloped areas, preserving natural and agricultural lands. Compact development also reduces the need for costly road, water, sewer, and utility extensions, lowering both upfront and long-term maintenance costs. Additionally, concentrating development in well-served, resilient locations strengthens emergency preparedness by improving access to essential services, accelerating power restoration, and enhancing response times after major storms. Shorter, denser utility networks are less vulnerable to outages, while clustered neighborhoods enable faster, more efficient emergency response.

Local businesses likewise benefit from these same investments, as walkable, transit-oriented districts attract foot traffic, stimulate small business growth, and drive neighborhood revitalization. Over time, these improvements strengthen local economies, increase property values, and create more connected, vibrant communities. At the regional scale, compact and efficient growth patterns relieve congestion, shorten commute times, and support economic competitiveness and overall quality of life.

Residents experience the most immediate benefits from improved transit and active transportation infrastructure. Expanding safe options for walking and biking encourages daily physical activity, lowering risks of respiratory illness, heart disease, and other chronic conditions. Enhanced transit access also reduces household transportation costs by decreasing dependence on personal vehicles, freeing income for other essential needs.

Safety remains a central concern, as Jacksonville consistently ranks among the most hazardous metro areas in the nation for pedestrians. According to Smart Growth America's Dangerous by Design 2024 report, the city ranked 15th of 101 metro areas, with an average annual pedestrian fatality rate of 3.40 deaths per 100,000 people between 2018 and 2022[1]. Children and older adults face the highest risks, with Florida recording 1.03 pediatric pedestrian deaths per 100,000 children (ages 0–18) in 2021[2]. In response, Jacksonville adopted a Vision Zero initiative, which asserts that no traffic fatalities or serious injuries are acceptable. The program prioritizes lowering speed limits, redesigning intersections, and targeting

1 *Dangerous by design 2024* (2024). Smart Growth America. https://www.smartgrowthamerica.org/knowledge-hub/resources/dangerous-by-design-2024/

2 *Pedestrian safety*. (2023, June 27). Florida Chapter of American Academy of Pediatrics. https://www.fcaap.org/posts/news/press-releases/pedestriansafety/

infrastructure investments in high-crash areas[3]. By combining safer street design with expanded transit and mobility options, Vision Zero reduces risks for the most vulnerable road users and creates safer, more inclusive streets for all residents. These efforts not only save lives but also enhance community livability and long-term regional resilience.

IMPLEMENTATION AUTHORITY

Counties and cities guide land use through zoning, permitting, and comprehensive planning, which collectively determine where and how development occurs through Comprehensive Plans and Codes. It should be noted that state law plays a significant role in the design of roads, stormwater systems to serve roads and the Florida Department of Transportation is the statewide agency that is the arbiter of that state level policy.

The Jacksonville Transportation Authority (JTA) leads regional transit expansion, including bus rapid transit (BRT) and autonomous shuttle pilots, while coordinating with local school districts to modernize student transportation systems. Regional trail planning—such as the Northeast Florida Regional Multi-Use Trail Master Plan[4]—relies on active participation from Nassau, Clay, Duval, and St. Johns Counties, supported by state and federal transportation funding as key implementation drivers.

Utility agencies and public works departments play complementary roles by integrating smart city technologies, managing right-of-way improvements, and maintaining multimodal infrastructure. Each county and city retains authority over zoning and development approvals, while JTA and partner agencies direct transit investments and coordinate implementation timelines. Together, these entities can align transportation, housing, and land use policies to reduce emissions, strengthen regional resilience, and create safer, more connected communities across NEFL.

FUNDING AVAILABILITY

FUNDING SOURCE	LEVEL	MATCH REQUIRED?	NOTES
FTA Low or No Emission Vehicle Program	Federal	Yes (typically 20%)	Supports zero-emission transit buses and infrastructure. Competitive annual funding.
DOE Clean School Bus Program	Federal	Yes (varies)	Electric and low-emission school buses.
RAISE Grants	Federal	Yes (20%)	Funds major infrastructure projects including transit, bike/pedestrian networks, TOD. Highly competitive.
Safe Streets and Roads for All (SS4A)	Federal	Yes	Supports pedestrian safety, traffic calming, and complete streets. NEFL eligible.
Transportation Alternatives Program (TAP)	Federal	Yes	Funds sidewalks, bike lanes, ADA upgrades, and Safe Routes to School. Administered via FDOT.
Recreational Trails Program (RTP)	Federal	Yes	Supports multi-use trails, including cycling. Often used for greenway expansion.
Our Town Grants (NEA)	Federal	Yes	Supports arts-based placemaking and community design. NEFL cities and nonprofits eligible.
Federal-State Partnership for Intercity Passenger Rail (FSP)	Federal	Yes	Funds capital projects to expand or improve intercity passenger rail, including new high-speed corridors.
Corridor Identification & Development (CID) Program	Federal	No (initial planning)	Planning grants to develop new or enhanced rail corridors. NEFL eligible.
CRISI Grants	Federal	Yes	Funds safety, congestion relief, and corridor development. NEFL projects eligible.
Infrastructure Investment and Jobs Act (IIJA)	Federal	Yes	$66B total for rail. NEFL can compete for discretionary grants under IIJA.

3 City of Jacksonville. (2025). *Vision zero action plan (VZAP).* https://www.jacksonville.gov/departments/planning-and-development/transportation-planning/ped-bike-planning/vision-zero-action-plan-(vzap)

4 Atkins. (2020, May). *Northeast Florida tourism mobility study*. North Florida Transportation Planning Organization. https://northfloridatpo.com/ uploads/Studies/Tourism_Mobility_Study.pdf

Amtrak Corridor Development Grants	Federal	Varies	Amtrak partners with states to expand service. NEFL corridors could be proposed via Amtrak's grants portal.
Congestion Mitigation and Air Quality (CMAQ) Program	Federal	Yes	Funds carpooling, vanpooling, and emissions-reducing transit options.
Mobility on Demand Sandbox (FTA)	Federal	Yes	Supports microtransit and shared mobility pilots.
FTA Section 5311 Formula Grants for Rural Areas	Federal	Yes (varies)	Supports capital, planning, and operating assistance for rural transit systems (<50,000 population).
EPA DERA Grants (Diesel Emissions Reduction Act)	Federal	Yes	Can fund clean transit vehicles in rural diesel-dependent areas.
USDA Rural Placemaking Innovation Challenge (RPIC)	Federal	Yes	Supports planning and technical assistance for creative placemaking in rural areas.
National RTAP Community Rides Grant Program	Federal	No	Up to $100K for rural transit partnerships, volunteer driver networks, and mobility management.
FHWA High Risk Rural Roads Program (HRRR)	Federal	Yes	Targets safety improvements on rural roads with high crash rates.
USDOT Rural Surface Transportation Grant Program	Federal	Yes	Funds highway, bridge, tunnel, and mobility management projects in rural areas.
IRS Qualified Transportation Fringe Benefit	Federal (Employer-based)	No	Allows up to $325/month pre-tax for transit passes or vanpooling. Employers must offer it
Florida Urban & Community Forestry Grants	Federal/State	Yes (50/50 match)	Supports tree planting and canopy improvements along public rights-of-way, parks, and trails.
Florida DOT SUN Trail Program	State	Yes	Funds multi-use trails statewide. Annual call for projects.
FDOT Beautification Grant Program	State	Yes	Funds landscaping and irrigation along state roads. Bike/ped paths eligible if visible from FDOT right-of-way.
Florida Communities Trust (FCT)	State	Yes	Funds land acquisition for parks, greenways, and open space. Can include bike/pedestrian infrastructure.
Florida Recreation Development Assistance Program (FRDAP)	State	Yes	Supports construction and renovation of recreational trails, including sidewalks and bike paths.
FDOT Rail System Plan	State	Varies	Guides Florida's rail investment priorities. NEFL corridors can be proposed.
Florida Shirley Conroy Rural Area Capital Assistance Grant	State	Yes	Supports vehicle purchases and capital needs for rural transit providers.
Florida Development Finance Corporation (FDFC)	State	Yes (Bond Financing)	Provided bond financing for Brightline. Could be leveraged for NEFL corridor development.
Florida Recreation Development Assistance Program (FRDAP)	State	Yes	Supports recreational trails and sidewalks in rural communities.
Florida Rural Infrastructure Fund (RIF)	State	Yes (up to 25%)	Up to 75–100% of project costs for infrastructure in designated rural areas.
FDOT Innovative Service Development (ISD) Grants	State	Yes	Supports pilot programs for carpooling, vanpooling, and other non-traditional transit.

SUN Trail Program (Florida DOT)	State	Yes	Already listed, but worth emphasizing for regional trail connectivity.
North Florida TPO Bicycle & Pedestrian Master Plan Projects	Regional	No	Includes Core to Coast Loop, Black Creek Trail, Bartram Trail, etc. Strong GHG reduction potential.
Project for Public Spaces – Placemaking Grants	Private	No	$75K–$100K for public space transformation. Includes technical assistance.
PeopleForBikes Community Grants	Private	No	Small grants for bike infrastructure and advocacy.
America Walks Community Change Grants	Private/Federal	No	Small grants for grassroots walkability projects. NEFL nonprofits eligible.
Brightline Expansion Model	Private/Public	Yes	Brightline's unsolicited proposal to FDOT for Orlando–Tampa shows PPP viability. NEFL could explore similar models
Mass Transit Account (CBP)	Employer	No	Covers train, bus, subway, ferry, and vanpool (6+ seats). Not eligible for tolls or fuel.

CASE STUDY 1: CITY OF JACKSONVILLE'S EMERALD TRAIL

The Emerald Trail Project is redefining mobility and public spaces in Jacksonville. Led by Groundwork Jacksonville, the more than 30-mile trail and greenway network will link 14 historic neighborhoods with downtown, the St. Johns River, McCoys Creek, Hogans Creek, and more than 60 community destinations—transforming how residents move through and connect with their city[1].

This transformative initiative focuses on improving infrastructure, fostering public trust, promoting health, and creating economic opportunities in historically underserved neighborhoods. Groundwork Jacksonville, formed in 2014 as part of the national Groundwork USA network, is a nonprofit in the city dedicated to environmental revitalization and redevelopment. With the Emerald Trail, it is leading the largest public-space transformation in Jacksonville's modern history.

Once completed, the Emerald Trail will connect 16 schools, 2 colleges, 3 hospitals, 21 parks, and the Jacksonville Regional Transportation Center, with another 13 schools and 17 parks located within three blocks. This deep integration into everyday life—linking housing to education, jobs, recreation, and transit—makes the Emerald Trail a model for how green infrastructure can foster community health, mobility, and resilience.

The Emerald Trail's first completed segment, the LaVilla Link, opened in 2024, spanning 1.3 miles between Brooklyn, LaVilla, and the S-Line Rail Trail. The segment includes shaded walkways, bioswales for stormwater capture, public art, native landscaping, and a restored community playground. It reflects the Trail's broader design principles: accessibility, sustainability, and identity-driven placemaking.

Each trail segment incorporates green infrastructure to address flooding, manage runoff, and improve water quality. Ecosystem restoration is especially critical along Hogans and McCoys Creeks, where trail development is paired with native habitat restoration. These combined efforts enhance storm resilience while activating public land for recreation and environmental benefit.

The Trail also improves public health by providing safe, accessible spaces for walking, cycling, and social connection. In a city where many residents face limited access to green space, the Emerald Trail addresses long-standing disparities in safe mobility and outdoor recreation.

Economically, the Emerald Trail is already supporting local business growth and job creation. More than 1,100 jobs are expected to be created across all phases of the project[2]. The Trail is also spurring trail-oriented development and neighborhood reinvestment, especially when guided by Groundwork's community-first model that seeks to minimize displacement and maximize shared benefit.

1 Groundwork Jacksonville. (n.d.). *Emerald trail*. https://www.groundworkjacksonville.org/emerald-trail/

2 Rails to Trails Conservancy. (2024, February 16). *Emerald trail system case study*. https://www.railstotrails.org/resource-library/resources/emerald-trail-system/

The project's progress has relied on a strong public-private partnership between Groundwork Jacksonville, the City of Jacksonville, and JTA. In 2021, the City of Jacksonville increased its local gas tax, allocating a portion of the new revenue toward Emerald Trail development. In 2024, the project team was awarded a record-setting $147 million federal infrastructure grant from the U.S. Department of Transportation, the largest one-time federal infrastructure award in Jacksonville's history[3]. Although the funds were later rescinded due to federal-level reversals, the grant award reflected national recognition of Jacksonville's commitment to community infrastructure and the strength of Groundwork's leadership.

Despite the change in funding status, Groundwork Jacksonville continues to move the project forward, with construction progressing on Segments 3 and 4 and additional funding actively being pursued[4]. The organization has built deep support among residents, elected officials, philanthropic funders, and national partners, making it uniquely equipped to continue advancing the Trail through a mix of federal, local, and private resources.

To ensure consistency and quality across segments, Groundwork also commissioned SCAPE Landscape Architecture to develop comprehensive Emerald Trail Design Standards. These standards, which build on the 2019 Master Plan created by PATH Foundation and KAIZEN Collaborative, unify aesthetics, safety, and sustainability across all segments—ensuring a world-class trail experience that honors Jacksonville's history and cultural identity.

Supporting the Trail's transportation goals is JaxRAX, a bike parking initiative launched in 2025[5]. Through JaxRAX, the City is installing free, secure bike racks across commercial corridors and civic spaces to reduce theft and improve access for cyclists. JaxRAX complements the Trail by supporting last-mile connections and making bike travel more practical across the city.

In Jacksonville, the Emerald Trail is enhancing mobility, restoring ecosystems, and reconnecting communities once divided by infrastructure and disinvestment. Through its leadership, Groundwork Jacksonville is setting a regional precedent for community-led resilience and investment. With continued progress, the Emerald Trail will serve as a cornerstone of a more connected, resilient, and forward-looking Jacksonville.

3 City of Jacksonville. (2024, March 13). *$147 million-dollar federal grant awarded to the emerald trail*. https://www.jacksonville.gov/welcome/news/$147-million-dollar-federal-grant-awarded-to-the-e

4 City of Jacksonville. (2025, September 25). *City officials, private leaders break ground on Hogan Street portion of Emerald Trail*. https://dia.jacksonville.gov/news/city-officials,-private-leaders-break-ground-on-hogan-street-portion-of-emerald-trail

5 Action Jax News News Staff. (2025, May 24). Jacksonville expands free bike rack program to curb theft, sidewalk clutter. *Action News Jax*. https://www.actionnewsjax.com/news/local/jacksonville-expands-free-bike-rack-program-curb-theft-sidewalk-clutter/A6HF6FTHWNCNVEJV7FIGX54ER4/

CASE STUDY 2: JTA'S NAVI AUTONOMOUS TRANSIT SYSTEM

Jacksonville is redefining the future of public transit with the launch of NAVI, the nation's first permanent autonomous bus service[1]. Developed by JTA as part of its U²C program, NAVI is a bold move toward modern, efficient, and reliable mobility. The system represents a complete reimagining of the city's aging Skyway monorail, shifting from outdated elevated tracks to street-level autonomous vehicles designed to move people more safely and flexibly.

Phase I of the program, known as the Bay Street Innovation Corridor, spans 3.5 miles from LaVilla to the sports and entertainment district near EverBank Stadium[2]. This initial deployment officially opened to the public on June 30, 2025, with service running Monday through Friday from 7 a.m. to 7 p.m. Rides are free through September, after which a $1.75 fare will be introduced.

The NAVI fleet currently consists of 14 all-electric Ford E-Transit vans retrofitted with autonomous systems developed by global AV technology company Oxa. Each vehicle is ADA accessible, fully electric, and capable of carrying up to nine passengers. Equipped with 10 cameras, 4 LiDAR sensors, 7 radars, and GPS, the shuttles navigate using a virtual rail system that allows them to operate safely in complex downtown environments at speeds up to 35 mph. Trained onboard attendants remain in each vehicle during early rollout to support safety and public confidence.

Central to the system is the newly built Autonomous Innovation Center (AIC), located in LaVilla[3]. This $41 million facility serves as the operational hub for NAVI. It includes vehicle storage, solar-powered charging stations, maintenance bays, and real-time monitoring software to track route conditions and vehicle performance. The AIC is also designed to support future expansions to surrounding neighborhoods and eventually elevated guideways as the U²C network grows.

1 Jacksonville Transportation Authority. (n.d.). *NAVI - Neighborhood autonomous vehicle innovation*. https://www.jtafla.com/transit-services/navi/

2 Jacksonville Transportation Authority. (n.d.). *U²C - Ultimate urban circulator*. https://www.jtafla.com/project-initiatives/u2c/

3 Jacksonville Transportation Authority. (n.d.). *Autonomous innovation center*. https://www.jtafla.com/transit-services/navi/autonomous-innovation-center/

Beyond mobility, NAVI is intended to drive broader regional economic growth. JTA is partnering with German AV manufacturer Holon to assemble and deploy a new fleet of larger autonomous vehicles in Jacksonville[4]. This collaboration is projected to create 150 direct jobs and up to 1,000 supply chain jobs, generating roughly $300 million in regional investment. The project thus functions as both a mobility upgrade and a local economic catalyst.

NAVI also embodies a commitment to accessibility, connectivity, and climate-resilient infrastructure. The system improves access for neighborhoods historically isolated by highways and auto-centric design. As it expands, NAVI will connect residents to jobs, entertainment, and essential services while reducing traffic congestion and lowering emissions.

The NAVI system is central to Jacksonville's effort to build connected, technology-enabled communities. By integrating smart infrastructure and workforce development, the initiative positions Jacksonville as a leader in the national mobility landscape. As expansion continues and ridership grows, NAVI may serve as a replicable model for cities seeking to modernize transit systems without expanding highway networks.

Through NAVI and the broader U²C program, JTA is helping Jacksonville deliver smarter, cleaner, and more connected transportation options. The system demonstrates the city's commitment to innovation and public service, signaling Jacksonville's ambition to lead in shaping the future of urban mobility.

4 Jacksonville Transportation Authority. (2024, September 4). *HOLON to establish autonomous shuttle manufacturing facility in Jacksonville, Florida, pioneering the future of mobility in the United States*. https://www.jtafla.com/media-center/press-release/holon-to-establish-autonomous-shuttle-manufacturing-facility-in-jacksonville-florida-pioneering-the-future-of-mobility-in-the-united-states/

ENCOURAGE THE DEPLOYMENT OF HIGHER FUEL EFFICIENCY VEHICLES

SECTOR: TRANSPORTATION, ENERGY, COMMERCIAL, RESIDENTIAL, INDUSTRIAL

TARGETS

- Promote the adoption of electric and alternative fuel passenger vehicles, aiming for a 10% increase by 2030 and 60% by 2050, while expanding fueling and charging infrastructure across all sectors, with a prioritized focus on high-emission vehicle categories.
- Encourage the transition of medium- and heavy-duty public fleets to cleaner fuels with the goal of reducing municipal fleet emissions by 10% from 2019 levels by 2030 and 60% by 2050.
- Support the development of low-emission aviation alternatives to reduce aviation-related greenhouse gas emissions by 15% by 2030, and at least 50% by 2050.

ACTION SUMMARY

1. Incentivize Passenger EV Adoption
2. Electrify Medium and Heavy-Duty Fleets across the region
3. Adopt compressed natural gas and biofuels as cleaner fuel alternatives
4. Encourage the use of Sustainable Aviation Fuel (SAF) in regional airports

OVERVIEW

As Northeast Florida continues to grow, transitioning both municipal fleets and privately owned vehicles to cleaner, more fuel-efficient alternatives is an essential strategy for reducing transportation-related emissions and improving regional air quality. In recent years, North Florida has emerged as a national leader in this area, with clean fuel use increasing by 276% and clean fuel vehicle registrations rising by 413% between 2016 and 2022[1]. As a result, Florida now ranks second nationwide in EV registrations, just behind California, according to the U.S. DOE's Alternative Fuels Data Center.[2]

Cleaner fuel technologies—including electricity, renewable diesel, biodiesel, compressed natural gas (CNG), renewable natural gas (RNG), propane, and hydrogen—offer significant reductions in greenhouse gas emissions and harmful air pollutants compared to conventional gasoline and diesel.

Municipal and public service fleets represent an immediate opportunity for cost-effective emissions reductions, as these vehicles collectively log thousands of miles each day. Transitioning these fleets to cleaner fuels can produce immediate air quality improvements and long-term fuel and maintenance savings. At the same time, expanding EV adoption among residents and private fleets through targeted incentives—such as rebates, infrastructure support, and utility programs—can accelerate community-wide progress toward cleaner mobility.

Supporting this transition, the North Florida Clean Fuels Master Plan, led by the North Florida Clean Fuels Coalition, outlines more than 100 opportunities for fleet conversion to cleaner fuels and advanced vehicle technologies[3]. The initiative provides financial, technical, and educational assistance while taking a fuel-neutral approach that recommends the most appropriate fuel source for each fleet type. In addition to vehicle deployment, the plan supports charging and fueling infrastructure development, fleet procurement updates, and staff training programs.

Complementing these regional efforts, J EA's Fleet Electrification Program provides commercial and industrial customers with customized fleet transition plans, infrastructure incentives, and technical support to accelerate electrification while lowering operational costs[4]. Although the program emphasizes electric vehicles, it operates within a broader clean fuel framework that recognizes the importance of multiple fuel pathways to meet the region's diverse transportation and industrial needs.

1 North Florida Clean Fuels. (n.d.). *Current projects - Clean fuels master plan update*. https://northfloridacleanfuels.com/studies-projects/current-projects

2 U.S. Department of Energy. (2024, September). *Alternative fuels data center: Maps and data - Electric vehicle registrations by state.* Energy. https://afdc.energy.gov/data/10962

3 North Florida Transportation Planning Organization. (2024). *Clean fuels master plan*. https://northfloridacleanfuels.com/uploads/Clean-Fuels-Master-Plan-Report_Final_240209.pdf

4 JEA. (n.d.). *Fleet electrification program*. https://www.jea.com/fleetelectrification

ACTION 1: INCENTIVIZE PASSENGER EV ADOPTION

Public electric vehicle charging station, one incentive to increase passenger EV adoption

Expanding the adoption of passenger EVs is one of the most effective strategies for reducing transportation-related emissions across NEFL. EVs offer substantial emissions reductions compared to gasoline-powered vehicles because they are more efficient at converting energy into motion and produce no tailpipe emissions. Whether motivated by environmental awareness or the desire to reduce fuel costs, more Floridians are choosing EVs, and as previously noted, Florida now ranks second nationwide in EV registrations. To sustain this growth, it will be essential to establish strong incentives and expand charging infrastructure to support widespread EV adoption. Doing so will help modernize the region's transportation system, achieve measurable reductions in emissions, and improve air quality.

It is important to acknowledge that EVs still draw electricity from a grid that relies partly on fossil fuels. Unless powered by renewable energy, their use generates some upstream emissions, shifting a portion of transportation-related impacts into the residential and commercial energy sectors. This shift is accounted for in regional modeling by assuming that 80% of added grid demand from EVs occurs through residential charging and 20% through commercial charging. Even with these upstream emissions included, EVs remain significantly cleaner than internal combustion vehicles, producing net reductions in GHG emissions overall.

Because personal vehicles represent a large share of transportation emissions in NEFL, encouraging residents to transition to EVs is critical to achieving further reductions in air pollution. Strategies to support this transition include building out public charging infrastructure in convenient locations, offering financial incentives such as point-of-sale rebates or tax credits, and developing public education campaigns to increase awareness of EV affordability, reliability, and maintenance savings. Utility-led charging initiatives, such as those authorized under Florida House Bill 1645, can further accelerate adoption by promoting home charging options and providing off-peak rate structures that make EV ownership more cost-effective. Public-private partnerships will be central to scaling deployment, ensuring that charging networks are reliable, accessible, and strategically located throughout the region.

While expanding EV ownership among residents is crucial, transitioning municipal and public service fleets is equally important for reducing emissions and setting a strong local example. City and county fleets log thousands of miles each day, making them ideal candidates for clean fuel conversion. Conducting regular fleet-sizing analyses allows municipalities to identify underused or redundant vehicles, optimize operations, and determine which units can be replaced with electric alternatives as they reach the end of service life. This process minimizes unnecessary fuel consumption and maintenance costs while providing a clear roadmap for phased electrification. By pairing careful planning with smart investment, municipalities can reduce operational costs, improve fleet performance, and demonstrate the long-term economic and environmental value of clean transportation.

LionC all-electric school bus fleet.

Medium- and heavy-duty vehicles operated by city departments, contractors, transit agencies, and commercial fleets are among the largest contributors to local fuel consumption and air pollution. Electrifying these fleets provides substantial long-term benefits, including lower fuel and maintenance costs, quieter operation, and reduced air pollution in areas most affected by traffic emissions. As technology continues to improve, fleet electrification is becoming increasingly viable for a wider range of vehicle types, offering both operational savings and measurable environmental benefits.

The City of Jacksonville is already advancing fleet electrification efforts as part of its scheduled vehicle replacement cycles, prioritizing vehicles with the highest fuel use and longest operating hours. These replacement programs are complemented by technical support from initiatives such as JEA's Fleet Electrification Program[1], which assists both public and private fleet operators with feasibility assessments, customized charging solutions, and access to available financial incentives. Where full electrification is not yet practical due to duty cycles, range requirements, or infrastructure constraints, cleaner transitional options—such as plug-in hybrid models or renewable diesel—can still yield significant emissions reductions while supporting operational continuity.

School bus electrification presents a particularly impactful opportunity to improve air quality and protect public health in NEFL, especially for children who are most vulnerable to diesel exhaust exposure. Florida has already committed to deploying at least 218 electric school buses statewide through the Volkswagen Settlement Program, with several school districts, including Broward and Glades Counties, already beginning the transition[2]. Florida currently ranks fourth in the nation for electric school bus commitments, reflecting strong statewide momentum in this sector[3]. Building on that progress, NEFL can expand electric school bus adoption through coordinated public–private partnerships with local utilities to provide charging infrastructure, technical assistance, and grid support.

Electric school buses can deliver up to 70% lower fuel and maintenance costs per mile compared to traditional diesel vehicles, creating meaningful long-term savings for school districts while reducing operational emissions[4]. By strategically prioritizing state and federal grant opportunities and partnering with utilities, manufacturers, and community organizations, the region can accelerate the replacement of aging diesel fleets, reduce energy and maintenance expenses for schools, and support a more resilient and efficient transportation network.

1 JEA. (n.d.). *Fleet electrification program*. https://www.jea.com/fleetelectrification

2 Florida Department of Environmental Protection. (2025, November 20). *DEMP - Volkswagen settlement and DERA*. https://floridadep.gov/air/air-director/content/demp-volkswagen-settlement-and-dera

3 Katz, D., Frank, L., & Simon, A. (2024, September 11). *State of electric school buses*. Environment America. https://environmentamerica.org/florida/center/resources/state-of-electric-school-buses/

4 Wang, J., Kothari, V., Werthmann, E., Jackson, E., Henderson, L., & Huntington, A. (2024). Electric school bus US market study: A resource for school districts pursuing fleet electrification. In *World Resources Institute*. https://electricschoolbusinitiative.org/sites/default/files/2024-08/Electric%20School%20Bus%20U.S.%20Market%20Study%20%28August%202024%29.pdf

Clean-burning fuels such as CNG, RNG, biodiesel, and renewable diesel provide practical, lower-emission alternatives to gasoline and conventional diesel, especially for fleet operations or equipment where electrification is not yet economically feasible. These fuels can often be adopted using existing vehicle platforms or through minor retrofits, allowing fleets to reduce emissions without the need for large-scale replacements. By offering a proven and scalable approach, these technologies serve as an effective bridge toward longer-term electrification while immediately cutting fuel-related emissions.

The North Florida Clean Fuels Master Plan, developed by the North Florida Clean Fuels Coalition, identifies more than 100 strategies to guide this transition[5]. The plan promotes fuel-neutral solutions tailored to the operational needs of each fleet and provides guidance on vehicle procurement, fueling infrastructure, and workforce training. Expanding access to alternative fueling stations, particularly in fleet-dense corridors and logistics hubs, will help accelerate adoption among public agencies, logistics providers, and service industries.

In addition to improving air quality, these fuels offer a near-term opportunity to decarbonize legacy fleets and reduce exposure to diesel exhaust while enabling smoother transitions to electrification over time. To ensure continued safety and performance, fleet conversions should be supported by routine oversight from county and state agencies, including preventive maintenance programs, quality control measures, and early leak detection protocols. Together, these strategies provide a cost-effective, reliable path toward cleaner fleet operations and a more resilient regional fuel mix.

5 North Florida Transportation Organization. (2024). *Clean fuels master plan*. https://northfloridatpo.com/uploads/Clean-Fuels-Master-Plan-Report_Final_240209.pdf

ACTION 4: ENCOURAGE THE USE OF SUSTAINABLE AVIATION FUEL (SAF) IN REGIONAL AIRPORTS

Sustainable aviation fuel advertisment at Frankfurt Airport

While full decarbonization of aviation remains a long-term goal, the adoption of sustainable aviation fuel (SAF) provides an immediate and practical opportunity to reduce emissions from airports across Northeast Florida. SAF can be blended with conventional jet fuel and used in existing aircraft without requiring modifications to engines or fueling infrastructure, allowing for seamless integration into current operations. When produced from renewable feedstocks such as used cooking oil, agricultural residues, or waste fats, SAF can reduce lifecycle greenhouse gas emissions by up to 80% compared to traditional jet fuel.

Jacksonville International Airport (JAX) and other regional airports are well-positioned to explore pilot programs in collaboration with airlines, fuel suppliers, and logistics partners to source and expand the use of SAF. These efforts can be supported through partnerships with federal and state agencies, including the Federal Aviation Administration (FAA), and the Florida Department of Agriculture and Consumer Services, which provide funding and technical support for SAF blending, storage, and procurement.

Encouraging the integration of SAF across regional airports would position Jacksonville as a forward-thinking transportation hub aligned with national aviation sustainability goals. By reducing reliance on conventional jet fuel and supporting innovation in cleaner aviation technologies, the region can strengthen its role in advancing low-emission transportation, attract industry investment, and prepare for the eventual adoption of zero-emission aircraft systems in the coming decades.

PROJECTED EMISSIONS REDUCTIONS

2025-2030 Cumulative
1,654,600 $mtCO_2e$

2025-2050 Cumulative
41,365,200 $mtCO_2e$

Total Annual Co-Pollutant Reduction by 2050

Hydrocarbons: 476,000 lbs

CO: 2,129,000 lbs

Nitrogen Oxides: 2,017,000 lbs

ECONOMIC IMPACT

This measure will generate an estimated 2,245–3,380 jobs by 2030, with the highest demand in EV maintenance technicians and fleet managers, both identified as critical-need occupations. Direct wages are projected between $120–$180 million, contributing to a total economic impact of $240–$360 million and annual tax revenue of $24–$36 million. The required annual investment is approximately $65 million. Workforce demand in vehicle electrification, maintenance, and alternative fuel systems is expected to grow steadily through 2050 as clean transportation technologies scale across both public and private sectors.

BENEFITS

Transitioning to clean fuel and electric vehicles delivers measurable health, safety, and environmental benefits across the region. By reducing harmful pollutants such as CO_2, particulate matter, and SO_2 emitted by conventional engines, these technologies improve local air quality and reduce respiratory health risks. The benefits are especially significant for children frequently exposed to diesel exhaust, as electrifying school buses eliminates emissions at bus stops and inside cabins, lowering asthma rates and reducing noise pollution in neighborhoods. Electric vehicles offer similar advantages, operating far more quietly than traditional engines and allowing transit, delivery, and service fleets to function during early or late hours with minimal disturbance. For individual drivers, EVs also offer long-term financial savings through reduced fuel and maintenance costs.

Clean fuel and electric vehicles also enhance safety for operators and maintenance staff by eliminating tailpipe emissions during idling, which enables vehicles to operate safely in enclosed or partially ventilated environments. They remove the need for diesel exhaust fluid, motor oil, and similar pollutants, reducing the risk of ground-level contamination and stormwater runoff. Collectively, these improvements create healthier conditions for workers and residents while contributing to cleaner air, soil, and waterways.

Municipalities and businesses benefit from lower fueling and maintenance costs, freeing resources for other essential operations. Electric vehicles also support energy resilience through emerging technologies such as bidirectional charging, which allows stored power in EV batteries to supply energy to buildings or the grid during outages. At scale, this capability could help sustain critical facilities—such as schools, shelters, and emergency centers—during power disruptions, while reducing grid strain during peak demand. Integrating these systems into broader energy planning will strengthen community preparedness and reliability during extreme weather and other emergencies. These outcomes advance the region's transition toward cleaner, safer, and more resilient communities for residents and visitors alike.

IMPLEMENTATION AUTHORITY

Local governments and transit agencies manage procurement policies for public fleets, school buses, and transit vehicles, giving them direct authority to determine the pace of fleet electrification and clean fuel adoption. Utilities such as JEA play a central role in supporting this transition through fleet electrification planning, charging infrastructure deployment, and financial incentive programs. The North Florida Clean Fuels Coalition coordinates regional implementation through its Clean Fuels Master Plan, which provides technical guidance, funding pathways, and best practices for both public and private fleets. Federal policy beyond the control of local or state authorities is also a factor to consider for implementation.

Airports—including JAX—work in partnership with airlines, fuel suppliers, and logistics providers to integrate sustainable aviation fuels, requiring alignment with FAA standards and state-level oversight. County and city governments, in collaboration with utilities and the Clean Fuels Coalition, hold primary authority to implement these measures by aligning fleet policies, land use planning, infrastructure investments, and public–private partnerships with the region's broader decarbonization and clean transportation goals.

FUNDING AVAILABILITY

Table of funding availability for deployment of higher efficiency vehicles.

FUNDING SOURCE	LEVEL	MATCH REQUIRED?	NOTES
Inflation Reduction Act (IRA) – EV Tax Credits (30D & 45W)	Federal	No	$7,500 for new EVs, $4,000 for used EVs, and up to $40,000 for commercial vehicles.
DOE Clean School Bus Program	Federal	Yes (varies)	Grants and rebates for electric and low-emission school buses; available to NEFL school districts.
FTA Low or No Emission Vehicle Program	Federal	Yes	Supports purchase of zero-emission transit buses and infrastructure.
FAA VALE Program	Federal	Yes	Grants for airports to reduce emissions via SAF, electric ground support equipment, and infrastructure.
FAST Grants (Inflation Reduction Act)	Federal	Yes	$291M awarded for SAF production, infrastructure, and low-emission aviation technologies.
SAF Grand Challenge – DOE/FAA/USDA	Federal	Yes	$44B in announced funding to scale SAF production to 3B gallons/year by 2030
Florida DOT EV Infrastructure Grants	State	Yes	Supports planning and deployment of EV charging stations statewide.
FPL – EV Charging Incentive Program	State	No	Rebates and technical support for installing EV chargers at commercial and public sites.
TECO Peoples Gas – CNG Fleet Incentives	Local	Yes	Incentives for fleet conversion to compressed natural gas and fueling infrastructure.
JEA – Drive Electric Program	Local	No	Rebates for residential and commercial EV chargers; supports fleet electrification planning.
Clay Electric – EV Charger Rebates	Local	No	Rebates for Level 2 home chargers; supports residential EV adoption.
Municipal Capital Improvement Plans (CIP)	Local	Yes	Cities can self-fund fleet transitions through budget allocations and cost savings.
ESCOs – Fleet Electrification Contracts	Private	No upfront cost	Performance-based contracts for fleet upgrades and EV infrastructure.
Corporate SAF Pilot Programs (e.g., Deloitte, Airbus, Delta, United)	Private	Varies	Airlines and corporations co-invest in SAF production and pilot programs.

CASE STUDY 1: JTA'S COMPRESSED NATURAL GAS (CNG) TRANSIT FLEET MODERNIZATION

To reduce emissions and modernize its public transit system, JTA has transitioned much of its fleet to CNG buses. This move supports Jacksonville's broader air quality goals and reflects a long-term commitment to cleaner, more cost-effective transportation. With $2.75 million in support from the North Florida TPO, JTA has taken a major step toward building a lower-emissions transit system that benefits both the environment and the public[6].

Before adopting CNG technology, JTA primarily operated diesel-powered buses, which contributed to urban air pollution and GHG emissions[7]. In a region shaped by automobile dependence and sprawling development, transit modernization has become a critical strategy for reducing pollution and improving public health. CNG vehicles offer a cleaner-burning fuel option, producing fewer particulates and CO_2 compared to diesel[8]. CNG also provides greater fuel-price stability due to its domestic availability, enabling transit agencies to control long-term operating costs[9].

To support the transition, JTA constructed a state-of-the-art CNG fueling station at its Myrtle Avenue Operations Campus[10]. Funded in part by the North Florida TPO and state and federal grants, the facility is one of the largest of its kind in Florida. It has the capacity to service JTA's entire CNG fleet and can also accommodate other public-sector fleets across Northeast Florida. This infrastructure investment ensures the long-term feasibility of CNG adoption while positioning Jacksonville as a regional leader in alternative fuel deployment.

The environmental and health benefits of the CNG program are especially important for Jacksonville's urban neighborhoods. Older diesel engines emit pollutants that can worsen asthma and other respiratory conditions, particularly in low-income communities and communities of color[11]. Replacing these buses with cleaner-burning CNG models reduces harmful tailpipe emissions and improves air quality across the service area. Studies show that CNG vehicles can cut CO emissions by about 75% and reduce NO_x by up to 33% compared to diesel—a meaningful shift in a city where many residents already face elevated health risks from air pollution[12].

6 North Florida Clean Fuels. (n.d.). *Infrastructure investments*. https://northfloridacleanfuels.com/studies-projects/infrastructure-investments

7 Frazier, C. (2023, April 19). *Fueling Florida's future with CNG*. HNTB. https://www.hntb.com/fueling-floridas-future-with-cng/

8 Natural Gas Vehicles for America & Solid Waste Association of North America. (2018). *Natural gas - A clean, safe and smart choice for the waste and recycling industry*. https://transportproject.org/wp-content/uploads/2018/03/Natural-Gas-A-Clean-Safe-and-Smart-Choice-for-the-Waste-Recycling-Industry.pdf

9 U.S. Department of Energy. (n.d.). *Alternative fuels data center: Natural gas vehicles.* https://afdc.energy.gov/vehicles/natural-gas

10 Jones Worley. (n.d.). *Jacksonville transportation authority Myrtle Avenue campus.* https://jonesworley.com/project/jacksonville-transportation-authority-myrtle-avenue-campus/

11 US EPA. (n.d.). *Learn about impacts of diesel exhaust and the diesel emissions reduction act.* https://www.epa.gov/dera/learn-about-impacts-diesel-exhaust-and-diesel-emissions-reduction-act

12 Barros Zárante, P. H., & Sodré, J. R. (2009). Evaluating carbon emissions reduction by use of natural gas as engine fuel. *Journal of Natural Gas Science and Engineering, 1*(6), 216–220. https://doi.org/10.1016/j.jngse.2009.11.002

In addition to environmental gains, the CNG transition delivers clear financial benefits. CNG buses offer lower per-mile fuel costs and require less maintenance than diesel models due to their cleaner combustion[13]. These savings allow JTA to invest more in rider amenities, system expansions, and emerging technologies such as electric buses. The shift to CNG has reduced the agency's operational costs and freed up capacity to innovate and plan for the future.

The success of the program would not have been possible without strong regional collaboration. The North Florida TPO's investment was instrumental in making the transition financially viable[14]. As the agency responsible for allocating federal transportation funds in the region, the TPO has prioritized projects that support cleaner, more resilient infrastructure. Its support for JTA's fleet modernization sends a strong signal that sustainable transit is a regional priority—and demonstrates how local and regional agencies can work together to achieve their goals.

JTA's CNG initiative illustrates how cities can modernize legacy transit systems while addressing public health, environmental stewardship, and fiscal priorities. By combining funding partnerships, technical innovation, and community-focused outcomes, the program offers a replicable model for other midsize metro areas navigating similar challenges. Through its investment in CNG infrastructure and fleet upgrades, Jacksonville is not only reducing transportation-related emissions but also improving daily life for thousands of transit riders—reflecting a forward-looking approach to urban mobility that prioritizes sustainability and cost-effectiveness.

13 *CNG buses explained: How they work and their advantages*. (2024, May 30). FASTECH. https://www.fastechus.com/blog/are-cng-buses-an-environmentally-friendly-option

14 North Florida Clean Fuels. (n.d.). *Natural gas*. https://northfloridacleanfuels.com/alternative-fuels/natural-gas

CASE STUDY 2: HOLON EV MANUFACTURING PLANT

Holon EV, a next-generation electric vehicle company and subsidiary of the German-based BENTELER Group, is bringing sustainable mobility manufacturing to NEFL. Founded in 2022, Holon specializes in autonomous movers, zero-emission shuttles designed for transporting people and goods efficiently, safely, and sustainably[15]. Backed by nearly 150 years of automotive manufacturing experience through its parent company, Holon combines advanced vehicle design, system integration, and scalable production strategies to meet the evolving needs of modern transit systems.

In 2025, Holon announced plans to open its first U.S.-based assembly plant in Jacksonville, Florida. This project marks a major milestone for both the company and the city. The facility, located on approximately 40 acres along Heckscher Drive and Zoo Parkway, will be the first of its kind in the state. With an expected $100 million investment, the 450,000-square-foot facility is anticipated to open in 2026[16]. It is projected to produce about 12,000 vehicles annually and create 200 new jobs in its first year, with additional workforce growth as production scales.

The Holon facility highlights how strategic public-private partnerships can accelerate alternative transportation solutions. To support the project, the Jacksonville City Council approved $7.5 million in property tax rebates to reduce upfront costs[17]. Additionally, a local incentive grant provides $1,000 per Jacksonville hire, totaling $200,000 if all initial positions are filled locally. At the state level, Florida awarded the company $8 million through the High Impact Business Performance Incentive Grant program, which supports projects that offer strong potential for economic and technological advancement[18].

This layered incentive approach reflects a growing alignment between economic development and climate action. By attracting companies like Holon EV, Jacksonville is positioning itself as a hub for advanced mobility and expanding access to high-quality jobs. The facility will also localize key components of the EV supply chain, reducing transportation emissions from long-distance shipping and supporting more efficient logistics.

15 *About HOLON*. (n.d.). Holon. https://www.driveholon.com/en/about-holon/

16 Macdonald, D. (2024, September 4). German autonomous EV maker Holon to open $100 million production facility in 2026. *Jax Daily Record*. https://www.jaxdailyrecord.com/news/2024/sep/04/german-autonomous-ev-maker-holon-to-open-100-million-production-facility-in-2026/

17 Bauerlein, D. (2025). Made in Jacksonville: Why Holon's autonomous vehicle plant is coming here. *The Florida Times-Union*. https://www.jacksonville.com/story/news/local/2024/09/05/holon-picks-jacksonville-for-autonomous-vehicle-plant/75055684007/

18 Florida Times-Union, & Bauerlein, D. (2024, September 5). Autonomous vehicle manufacturer picks Jacksonville for first-ever US plant. *First Coast News*. https://www.firstcoastnews.com/article/news/local/autonomous-vehicle-manufacturer-picks-jacksonville-for-first-ever-us-plant-holon/77-fa46dcae-88ca-40d3-9225-ba0214e9df76

Holon's production line will focus on building the Mover, a fully electric, autonomous public transit shuttle designed for short-route, high-frequency urban travel. These electric movers convert over 75 percent of grid electricity into usable power, significantly more efficient than gasoline vehicles, which average 20 to 30 percent. With no oil changes, spark plugs, or complex drive systems, they also require less maintenance over their lifespan, lowering costs for fleet operators and municipalities alike.

JTA has shown a strong interest in Holon's technology. CEO Nat Ford previewed a prototype at JTA's 2025 National Autonomous Vehicle Day Conference[19]. JTA's broader vision for autonomous public transportation, including its NAVI and U^{2}C initiatives, aligns well with Holon's products and capabilities. Future partnerships between the public and private sectors may further expand zero-emission transit options in the region.

Holon selected Jacksonville for its U.S. operations due to both strategic logistics and the city's emerging reputation as a transportation and manufacturing innovation hub[20]. By integrating international engineering expertise with a growing local workforce, the company offers a strong model for how clean vehicle production can support development, technological advancement, and economic resilience.

Holon EV's Jacksonville facility represents a significant investment in sustainable transportation and high-efficiency vehicle production. It illustrates how cities can attract clean-tech industries through targeted incentives and collaborative planning. With benefits spanning environmental impact, job creation, and long-term transit innovation, the Holon project positions Jacksonville as a leader in the transition to electric and autonomous mobility.

19 Jacksonville Transportation Authority. (2025, June 23). *JTA hosts national autonomous vehicle day conference*. https://www.jtafla.com/media-center/press-release/jta-hosts-national-autonomous-vehicle-day-conference/

20 Weber, H. (2024, April 9). HOLON to establish autonomous shuttle manufacturing facility in Jacksonville, Florida. BENTELER. https://www.benteler.com/en/press-media/latest-news/holon-to-establish-autonomous-shuttle-manufacturing-facility-in-jacksonville-florida-pioneering-the-future-of-mobility-in-the-united-states/

ADOPT SOIL AND LAND MANAGEMENT PRACTICES FOR CARBON SEQUESTRATION

SECTOR: AGRICULTURE, FORESTRY, AND OTHER LAND USE

TARGETS

- Encourage an increase in urban tree canopy coverage by 20% by 2030 and 35% by 2050, prioritizing low-canopy neighborhoods and public rights-of-way.
- Promote the protection of existing natural forest and wetland areas within the urban growth boundary to maintain 90% by 2030, with no net loss through 2050.
- Encourage at least 40% of new development projects by 2030 to meet green site design or low-impact development criteria that preserve vegetation and soil carbon pools, increasing to at least 70% by 2050.

ACTION SUMMARY

1. Plant or replant trees with the intention of increasing urban tree canopy
2. Integrate climate mitigation and adaptation into existing land development review and permitting processes to maximize the benefits of natural geographic and watershed features.
3. Create incentives for resilient and low-impact development
4. Implement nature-based solutions that increase carbon storage

OVERVIEW

Forests, wetlands, and soils across NEFL play a measurable role in capturing and storing CO^2, making them an essential part of the region's strategy to offset emissions cost-effectively. These natural systems, known as carbon sinks, absorb more CO^2 than they release and are crucial for maintaining air quality stability, soil productivity, and water quality.

In the Southern United States, private forests alone account for the majority of the nearly 494 million metric tons of CO^2 equivalent sequestered by private lands across the contiguous U.S. and coastal Alaska in 2021[1]. This means southern forests offset a substantial share of national GHG emissions simply by growing and maintaining healthy ecosystems. Within these landscapes, carbon is stored in multiple "pools," including live biomass (trees and roots), soils, dead wood, and harvested wood products. Most carbon in southern forests is held in above- and below-ground biomass, with soils and dead wood also storing significant amounts. Even after timber harvests, a large portion of carbon remains locked in wood products, extending its storage potential and helping balance regional emissions.

However, these critical carbon pools are vulnerable to land conversion. When forests are cleared for urban development, agriculture, or other uses, stored carbon is released back into the atmosphere, diminishing long-term sequestration potential. The Southern National Forest System has experienced a decline in carbon sequestration capacity from approximately 31.4 million $mtCO_2e$ in 1990 to about 25.5 million in 2021, reflecting the cumulative impact of deforestation and changing land-use pressures[2]. Protecting existing forests, restoring degraded areas, and encouraging reforestation are therefore key strategies for maintaining and enhancing the region's carbon storage potential.

Improved land and soil management also supports the local economy. Sustainable forestry, conservation easements, and soil restoration projects maintain working lands, protect property values, and reduce public costs associated with erosion, stormwater, and flood management. Voluntary incentive-based programs, such as reforestation grants, carbon credit markets, or tax deductions for conservation, allow landowners to participate in mitigation strategies while preserving agricultural and timber productivity.

This measure promotes practical, nature-based solutions that strengthen ecosystems and provide long-term economic and environmental returns. By protecting soil health, managing forests responsibly, and expanding tree canopy cover, NEFL can reduce emissions, enhance resilience to extreme weather, and support sustainable growth across urban and rural landscapes.

1 Forest Service U.S. Department of Agriculture. (2023). Greenhouse gas emissions and removals from forest land, woodlands, urban trees, and harvested wood products in the United States, 1990–2021. In *Resource Bulletin WO-101*. https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/GHG-Emissions-Removals.pdf

2 Forest Service U.S. Department of Agriculture. (2024). Greenhouse gas emissions and removals from forest land, woodlands, urban trees, and harvested wood products in the United States, 1990–2022. In *Resource Bulletin WO-102.* https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/GHG-emissions-removals-2022.pdf

ACTION 1. PLANT OR REPLANT TREES WITH THE INTENTION OF INCREASING URBAN TREE CANOPY

Through the Keep Nassau Beautiful Legacy Tree program, participants can donate planting trees and plants on private or public property in Nassau County.

Expanding NEFL's urban tree canopy (UTC) is one of the most effective strategies for increasing carbon sequestration while delivering multiple community benefits. As trees mature, they capture and store carbon in their trunks, roots, and surrounding soils, making urban forestry a practical, long-term tool for local emissions reduction. Beyond carbon storage, tree canopy helps reduce the urban heat island effect, lower ambient temperatures, and filter air pollutants, while improving stormwater absorption and neighborhood livability.

This action supports both new tree planting and preservation of mature trees, which provide the highest carbon storage and ecosystem benefits. Implementation strategies may include strengthening municipal tree protection ordinances, expanding incentives for tree retention during development, and coordinating across departments, schools, and private property owners to strategically increase canopy coverage. A leading local example is the City of Fernandina Beach, which adopted a Tree Ordinance with a no-net-loss policy and provisions to preserve native species diversity on Amelia Island—demonstrating how clear policy and consistent enforcement can sustain canopy growth over time[1].

To ensure long-term success, canopy expansion efforts should emphasize native, drought-tolerant, and wind-resistant species suited to Florida's environment. Proper selection, planting, and maintenance will reduce replacement costs, improve resilience to storms and drought, and maximize ecological and aesthetic value.

Tracking progress requires consistent data and monitoring. NEFL can build on existing canopy assessment methodologies, such as measuring overall percent UTC, identifying possible planting areas (PPA) for targeted expansion, and tracking canopy change over time to measure gains or losses[2][3]. These metrics can be further refined by council district, neighborhood, or zoning area to guide equitable investment and maximize benefits where canopy coverage is lowest and heat exposure is highest. By applying standardized, transparent assessment tools, local governments can better monitor urban forest health, prioritize planting, and direct funding toward projects that deliver the greatest environmental and economic returns.

1 City of Fernandina Beach. (n.d.). *Trees*. https://fbfl.us/367/Trees

2 Forest Service National Urban Forestry Technology and Science Delivery Team. (2019). Urban tree canopy assessment: A community's path to understanding and managing the urban forest. In *Forest Service U.S. Department of Agriculture*. https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/Urban%20Tree%20Canopy%20paper.pdf

3 *Florida Urban Tree Canopy*. (n.d.). https://florida-urban-tree-canopy-ufl.hub.arcgis.com/

ACTION 2. INTEGRATE CLIMATE MITIGATION AND ADAPTATION INTO EXISTING LAND DEVELOPMENT REVIEW AND PERMITTING PROCESSES TO MAXIMIZE THE BENEFITS OF NATURAL GEOGRAPHIC AND WATERSHED FEATURES.

Land development has a direct impact on the region's natural carbon sinks through the removal of vegetation, disturbance of soils, and alteration of hydrology. Incorporating climate mitigation and adaptation principles into NEFL's development review and permitting processes can help ensure that new growth occurs without unnecessarily releasing stored carbon or degrading ecosystem function.

This approach encourages the use of carbon-conscious design standards in rezoning and site plan approvals. Incentive-based programs—such as expedited permitting review or reduced permitting fees—can be used to reward projects that integrate carbon mitigation strategies into site design. Review criteria could include preserving existing tree cover and native vegetation, minimizing impervious surface area, and protecting wetlands, floodplains, and riparian buffers.

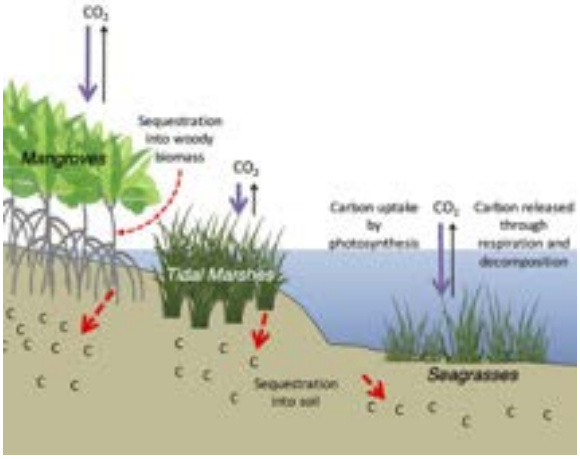
Formalizing these considerations within development codes, design guidelines, and permitting workflows will help align land use planning with long-term conservation goals. By integrating these practices into standard review procedures, local governments can promote sustainable development that protects natural carbon sinks, reduces emissions at the site level, and enhances the resilience of NEFL's communities and ecosystems.

Green Roofs, one example of low-impact development.

Green building practices and low-impact site design strategies can significantly support long-term carbon storage by preserving vegetation, maintaining healthy soils, and minimizing emissions from construction and building operations. Encouraging developers to incorporate these practices through targeted incentives can reduce the environmental footprint of new growth while enhancing community resilience.

Northeast Florida can advance this effort by adopting measures such as fast-tracked permitting, density bonuses, or tax credits for developments that integrate green infrastructure, preserve open space, and limit land disturbance. Examples include retaining on-site trees, using permeable pavement, installing green roofs, and incorporating passive cooling and shading designs. These features not only reduce emissions but also mitigate flooding, lower urban heat, and reduce long-term utility and infrastructure demandsAll new development should be coordinated with municipal, regional, and state partners, as well as local utilities, to align growth with available infrastructure and service capacity. Clear, predictable review processes paired with well-designed incentives will make it easier for developers to adopt low-impact, climate-resilient practices that strengthen the region's sustainability goals while supporting responsible economic development.

ACTION 4. IMPLEMENT NATURE-BASED SOLUTIONS THAT INCREASE CARBON STORAGE



Nassau County's Follow the Water Program educates residents on watersheds and Florida's Water resources. Mangroves, tidal marshes, and seagrasses are integral to local carbon sequestration and mitigating the future effects of climate change.

Nature-based land management practices can strengthen local economies by reducing infrastructure costs, improving water management, and extending the useful life of public assets. Techniques such as reforestation, wetland restoration, regenerative land management, and living shorelines increase the land's ability to store carbon while lowering expenses related to flood control, erosion, and stormwater maintenance.

This action supports the identification and restoration of underutilized or degraded properties that can provide long-term economic and environmental returns when properly managed. Municipal governments can collaborate with land trusts, utilities, and conservation organizations to develop restoration projects that deliver measurable benefits such as avoided storm damage, improved drainage, and higher land stability.

Establishing clear site-selection criteria, maintenance standards, and performance tracking will ensure these projects yield durable results and attract outside funding. Over time, expanding nature-based approaches will help the region reduce public works costs, protect property values, and increase resilience of essential infrastructure, while maintaining the natural systems that support local industries and communities.

PROJECTED EMISSIONS REDUCTIONS

2025-2050 Cumulative
3,094,680 $mtCO_2e$

2025-2030 Cumulative
15,473,400 $mtCO_2e$

Net Carbon Flux NEFL Undisturbed Forests:
-2,083600 $mtCO_2e$

Total Annual Co-Pollutant Reduction by 2050
$PM_{2.5}$: 0.00093µg/m^3; 178 lbs | **O_3:** 0.0071µg/m^3; 140 lbs

ECONOMIC IMPACT

By 2030, this measure is projected to generate approximately 7,338 jobs, primarily certified arborists and environmental technicians (high demand). Direct wages will total about $325 million, with a total economic impact of $650 million and annual tax revenue of roughly $65 million. The annual investment requirement is estimated at $75 million. By 2050, continued reforestation, land management, and stewardship activities will maintain steady employment levels, supporting long-term workforce stability in environmental services, public works, and land maintenance.

BENEFITS

Expanding tree canopy and restoring natural landscapes create measurable financial and public benefits. Increased canopy coverage provides shade and reduces surface temperatures, lowering cooling costs for households and commercial properties and extending the life of paved surfaces and building materials. These temperature reductions also lessen heat-related health risks for residents and workers. Trees and vegetation improve air quality by filtering pollutants and absorbing particulate matter, contributing to cleaner air and lower healthcare costs.

Preserving forested and vegetated land reduces stormwater runoff, lowering the need for expensive drainage upgrades and decreasing local flood risk. Wetlands and riparian buffers act as natural water filters, improving the efficiency of water treatment systems and reducing long-term maintenance costs. Restoring degraded lands improves soil productivity and stability, reducing erosion and helping maintain property and infrastructure integrity during major rain events.

In NEFL, wetlands and forests also underpin several key sectors of the regional economy. They support recreation, tourism, and fisheries while providing valuable ecosystem services that would otherwise require costly engineered alternatives. Maintaining these areas within the urban growth boundary, with a goal of conserving 90% of existing natural lands through 2030, helps manage infrastructure costs, preserve recreational access, and sustain the environmental quality that underpins economic growth. Protecting and maintaining these systems ensures Northeast Florida continues to benefit from productive landscapes, efficient water management, and reliable ecosystem services that enhance both economic performance and quality of life.

IMPLEMENTATION AUTHORITY

With the passage of Senate Bill 180 during the most recent legislative session, certain statutory amendments may make certain updates to local comprehensive plans and land development regulations more challenging. Section 252.422(2), Florida Statutes, now prohibits local governments located within a declared disaster area or within 100 miles of a hurricane's landfall from proposing or adopting specific measures for one year following the event. These include moratoriums on construction or reconstruction, amendments to comprehensive plans or land development regulations that are more restrictive or burdensome, and new or revised procedures that make the review, approval, or issuance of site plans, development permits, or development orders more restrictive or burdensome. The statute also allows any person to file suit against an impacted local government for declaratory or injunctive relief to enforce these provisions. However, the statute does not define what constitutes "restrictive" or "burdensome," which may create uncertainty for local governments attempting to implement new land-use or environmental management standards. Local jurisdictions should continue to monitor this legislation for clarification or amendment during the 2026 legislative session and coordinate with legal counsel to ensure that proposed policies comply with state law while maintaining progress toward local land stewardship and resilience objectives.

FUNDING AVAILABILITY

FUNDING SOURCE	LEVEL	MATCH REQUIRED?	NOTES
USDA Urban Agriculture and Innovative Production Grants	Federal	Yes	Supports soil health, carbon sequestration, and green site design through urban agriculture.
EPA Green Infrastructure Collaborative	Federal	Yes	Supports nature-based solutions and low-impact development.
USDA NRCS Environmental Quality Incentives Program (EQIP)	Federal	Yes	Provides financial and technical support for soil health, agroforestry, and sustainable land management. Enhances carbon sequestration and ecosystem health.
USDA NRCS Conservation Stewardship Program (CSP)	Federal	Yes	Supports long-term conservation practices on working lands. Incentivizes carbon-friendly land use and soil management.
Our Town Grants (NEA)	Federal	Yes	Supports arts-based placemaking and green site design. Can integrate tree canopy and nature-based solutions.
USDA Conservation Innovation Grants (CIG)	Federal	Yes	Funds innovative practices for soil carbon sequestration and land management.
EPA Smart Growth Technical Assistance	Federal	No	Provides planning support for integrating climate adaptation and mitigation into land development.
USDA Rural Placemaking Innovation Challenge (RPIC)	Federal	Yes	Supports planning and technical assistance for nature-based and low-impact development in rural areas.
USDA Community Food Projects Competitive Grant Program (CFPCGP)	Federal	Yes (1:1 match)	Supports food security, garden infrastructure, education, and workforce development.
Wetland Reserve Enhancement Partnership (WREP)	Federal	Yes	Supports restoration of wetlands on agricultural lands. Prioritizes underserved communities.
EPA Wetland Program Development Grants (WPDG)	Federal	Yes	Supports wetland protection, restoration, and monitoring.
National Coastal Wetlands Conservation Grants (USFWS)	Federal	Yes	Funds acquisition and restoration of coastal wetlands.
NOAA Sea Grant Marine Aquaculture Grant Program	Federal	Yes	Supports sustainable shellfish farming, including clams and oysters.
USDA Aquaculture Research & Extension Grants (NIFA)	Federal	Yes	Supports shellfish farming systems, including climate adaptation and carbon sequestration.

People's Garden Initiative (USDA + NFWF)	Federal/ Private	No	Funds sustainable gardens that benefit people and wildlife.
America the Beautiful Challenge Grants	Federal/ Private	Yes	Funds ecosystem restoration, including wetlands. Administered by USFWS and partners.
IFC Blue Carbon Finance Toolkit	Federal/ Private	Varies	Supports investment in mangrove, marsh, and seagrass restoration. Includes cost modeling and carbon revenue projections.
SOAR Shellfish Growers Resiliency Fund	Federal/ Private	No	Funds oyster reef restoration and aquaculture projects for ecosystem health and climate resilience.
Open Space Institute Capital Grants	Federal/ Private	Yes	Funds land acquisition or easements to enhance climate resilience and biodiversity.
Urban & Community Forestry Grants	Federal/ State	Yes (50/50 match)	Supports tree planting and canopy expansion in urban and rural areas.
Florida Resilient Florida Program	State	Yes	Funds natural infrastructure and land conservation projects that address flooding and sea level rise. Supports forest and wetland protection.
Florida Flooding and Sea Level Rise Resilience Plan	State	Yes	Provides funding for nature-based solutions and land acquisition to mitigate climate impacts.
Florida Forest Service Urban & Community Forestry Grants	State/ Federal	Yes (50/50 match)	Supports tree planting, wildfire mitigation, and urban canopy expansion. Applicable to both urban and rural land use strategies.
Viva Florida Landscape Demonstration Garden Grants	State/ Private	No	Funds native wildflower gardens in public spaces. Focus on education, pollinators, and ecological function.
Florida Department of Agriculture Specialty Crop Grants	Statewide (local access via UF/IFAS)	Yes	Supports urban and rural agriculture focused on specialty crops.
Florida Recreation Development Assistance Program (FRDAP)	State	Yes	Funds recreational trails and green infrastructure. Supports nature-based solutions and low-impact development.
Florida Communities Trust (FCT)	State	Yes	Supports land acquisition for conservation, recreation, beautification, and resilience.
Florida Department of Agriculture BMP Cost-Share Program	State	Yes	Supports best management practices for soil and water conservation.
Florida Forever Program	State	Yes	Supports acquisition and restoration of natural lands and wetlands. Prioritizes climate resilience and carbon sequestration.
FDOT Beautification Grant Program	State	Yes	Funds landscaping and irrigation along state roads. Bike/ped paths eligible if visible from FDOT right-of-way.
Florida Forest Service UCF-PPIC Program	State	No	Funds tree planting, invasive species removal, and stormwater retention improvements.
Florida Specialty Crop Block Grant Program	State	Yes	Supports edible landscaping and urban agriculture focused on specialty crops.
Florida Shellfish Aquaculture Carbon Fixation Study	State	No	Supports expansion of clam farming as a carbon sink.
Community Foundation for Northeast Florida Program Support Grants	Regional	Yes	Up to $25K for nonprofits in Duval, Clay, St. Johns, Nassau. Can support garden and food access projects.
First Coast Relief Fund	Regional	No	Emergency and resilience funding for nonprofits, including food and garden programs.
UF/IFAS Extension – Community Food Systems Support	Regional	No	Offers education and planning support for sustainable food systems and urban agriculture.
UF/IFAS Urban Forestry & Landscaping Programs	Clay, Nassau, St. Johns	No	Offers technical assistance and workshops for tree planting and Florida-Friendly Landscaping.

UF/IFAS Extension Services	Clay, Nassau, St. Johns	No	Provides education, soil testing, and support for sustainable agriculture and horticulture.
Community Foundation for Northeast Florida	Regional	Yes	Offers grants up to $25K for nonprofits supporting food access and garden projects.
Northeast Florida Regional Council Planning Grants	Regional	Varies	Can support land use planning, green infrastructure, and resilience strategies across jurisdictions.
City of Jacksonville 630-CITY Tree Planting Program	Local (Duval)	No	Residents can request trees planted on public rights-of-way. Managed by Urban Forestry Team.
UF/IFAS Duval Urban Gardening Program	Local/ State	No	Offers technical assistance, plot rentals, and help starting community gardens
Garden Club of St. Augustine Beautification Projects	St. Johns County	No	Community-led tree planting and beautification efforts.
Greenscape of Jacksonville	Local Nonprofit	No	Hosts community tree plantings, Arbor Day events, and free tree giveaways.
Jacksonville 630-CITY Tree Planting Program	Duval County (nearby)	No	Residents can request free trees planted in public rights-of-way.
Jacksonville Tree Commission Level 3 Program	Local (Duval)	No	Grants to nonprofits and community groups for tree planting on public land.
Local Environmental Trust Funds & Stormwater Utility Funds	Local	Varies	May support green space protection, reforestation, and soil management through planning or infrastructure grants.
Planting Nassau's Future – Keep Nassau Beautiful	Nassau County	No	Free tree giveaways (3-gallon trees) to residents. Includes native species like Bald Cypress and Red Maple.
Scenic Jacksonville Tree Mitigation Fund	Local (Duval)	No	Funded by development fees; supports tree planting in parks, medians, and schools.
UF/IFAS Community Garden Program	St. Johns County	Low fee	Offers 1-ha garden plots with education and support. Participants report improved health and food access.
Verra Blue Carbon Standard (VCS)	Private	No	Enables carbon credit generation for tidal wetland and shellfish restoration projects.
Oyster Carbon Project (ACRE Investment Management)	Private	No	Restores oyster reefs to generate carbon credits and improve water quality.

CASE STUDY 1: GREENSCAPE JAX URBAN TREE CANOPY

Greenscape of Jacksonville, known as Greenscape Jax, is a nonprofit organization committed to increasing tree canopy coverage across the city as a long-term strategy to enhance environmental quality, reduce air pollution, and build healthier communities[1]. Since its founding in 1975 by local residents passionate about improving Jacksonville's urban landscape, Greenscape has facilitated the planting of more than 350,000 trees. By promoting trees as a vital element of urban infrastructure, the organization directly supports soil and land management practices that increase carbon sequestration, reduce urban heat, and prevent erosion.

Greenscape's work extends beyond tree planting. The organization has become a recognized environmental leader in Jacksonville, collaborating with more than 20 corporate sponsors and over a dozen partners on local conservation and development efforts. Notable initiatives include contributions to the City of Jacksonville's Landscape Ordinance, involvement in JEA's Tree Coalition, and participation on the Keep Jacksonville Beautiful Commission[2]. Greenscape also co-designed the Urban Forestry Master Plan in partnership with Resilient Jacksonville, laying out long-term strategies to improve canopy coverage and integrate tree stewardship into city planning[3].

One of Greenscape's most impactful tools is its public engagement programming. Large-scale volunteer events like Arbor Day celebrations and the Great Tree Giveaway distribute thousands of trees annually while fostering a sense of environmental responsibility among residents. These efforts promote community ownership of urban green spaces and encourage residents to plant and maintain trees on private property, school campuses, and neighborhood rights-of-way. Greenscape also offers education and training through its Tree Keepers Program and its "Save Our Tree Canopy!" campaign, which teach basic tree maintenance, pruning techniques, and the ecological benefits of canopy preservation. This hands-on training helps residents connect land management with public health and environmental quality.

1 Greenscape of Jacksonville. (n.d.). *About us*. https://greenscapeofjax.org/about-us/

2 Florida State College at Jacksonville. (n.d.). Greenscape of Jacksonville. https://serve.fscj.edu/agency/detail/?agency_id=108714

3 City of Jacksonville Office of Resilience. (2024, November 14). *Urban forest management plan*. https://www.jacksonville.gov/departments/planning-and-development/tree-plan

In addition to outreach, Greenscape plays an active role in local policy advocacy. The organization maintains a consistent presence at Tree Commission meetings and collaborates with City Council to advance ordinances that protect and expand Jacksonville's urban forest. Through this engagement, Greenscape ensures that local planning reflects the economic and environmental value of tree canopy expansion.

Expanding tree canopy has measurable co-benefits. In dense urban environments like Jacksonville, tree loss contributes to poor air quality, stormwater runoff, and the urban heat island effect, when streets and buildings absorb and radiate heat, creating hotspots that elevate health risks. Planting trees helps intercept rainfall, shade asphalt, and remove pollutants from the air, directly improving respiratory health and reducing the risk of heat-related illness[4]. Trees also store atmospheric carbon in both their biomass and surrounding soils, making them a key tool in improving the environment.

Greenscape Jax's continued leadership demonstrates how a community-based organization can deliver tangible results by aligning local action with regional planning and economic goals. Through strong partnerships, volunteer engagement, and policy coordination, Greenscape is transforming Jacksonville's landscape—turning vacant lots, schoolyards, and city blocks into productive, resilient urban spaces that improve quality of life and reduce long-term municipal costs.

4 US EPA. (2025, May 27). Benefits of trees and vegetation. https://www.epa.gov/heatislands/benefits-trees-and-vegetation

CASE STUDY 2: ST. AUGUSTINE'S RESIDENTIAL COMPOSTING PROGRAM

The City of St. Augustine has introduced a Residential Composting Program that empowers residents to reduce household waste and improve environmental outcomes through backyard composting[5]. Led by the city's Public Works Department, the initiative provides free compost bins and step-by-step educational resources to encourage the diversion of food and yard waste from landfills. Designed to be low-cost and easy to adopt, the program promotes more sustainable household practices while reducing landfill methane emissions and improving soil health.

Food waste is one of the largest contributors to landfill volume in the United States, accounting for an estimated 24% of all landfill content in a 2018 EPA study[6]. As this waste breaks down without oxygen, it generates methane, a GHG significantly more potent than carbon dioxide[7]. By encouraging aerobic composting at home, the program helps prevent these emissions while producing a nutrient-rich soil amendment that supports gardening, landscaping, and water retention[8].

Residents living within St. Augustine city limits can apply online to receive a free compost bin along with clear guidance on what to compost—such as vegetable scraps, coffee grounds, and yard clippings—and what to avoid, including meat, dairy, and oily foods. The program also teaches participants how to maintain a healthy compost pile by balancing "green" nitrogen-rich materials with "brown" carbon-rich ones, reducing odor and avoiding pests.

The program offers both environmental and operational benefits. Diverting organic waste lowers landfill hauling costs, reduces disposal-related emissions, and lessens the strain on municipal waste systems. The resulting compost can be used by residents to replace or reduce chemical fertilizers, supporting healthier lawns and gardens. Healthier soils also retain more stormwater and help control erosion, creating a more resilient urban landscape while reducing infrastructure maintenance costs.[9].

Community engagement is central to the program's success. By pairing compost bins with accessible educational materials, the city has made composting approachable for first-time users and increased public awareness of food waste impacts. Participation fosters a stronger connection between residents and local sustainability goals, reinforcing shared responsibility for waste reduction.

Looking ahead, St. Augustine could expand this foundation by exploring neighborhood compost drop-off sites, curbside compost collection, or partnerships with schools and community gardens. These additions would make composting more accessible for residents without backyard space and create a new local supply of compost for public landscaping, tree planting, and food production projects.

5 City of St. Augustine. (2025). *Residential Composting Program*. https://www.citystaug.com/925/Residential-Composting-Program

6 US EPA. (2025, September 11). National overview: Facts and figures on materials, wastes and recycling. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials#Landfilling

7 US EPA. (2025, March 20). *Quantifying methane emissions from landfilled food waste.* https://www.epa.gov/land-research/quantifying-methane-emissions-landfilled-food-waste

8 US EPA. (2025, August 20). *Composting at home*. https://www.epa.gov/recycle/composting-home

9 US Composting Council. (n.d.). *Benefits of compost*. https://www.compostingcouncil.org/page/CompostBenefits

The St. Augustine Residential Composting Program provides a practical and replicable model for municipalities seeking to reduce waste and strengthen community participation in sustainable land management. By keeping the approach simple and cost-effective, the city is improving soil quality, cutting operational costs, and building long-term community stewardship.

STRENGTHEN WATER INFRASTRUCTURE AND RESILIENT STORMWATER MANAGEMENT

SECTOR: WATER & WASTEWATER

TARGETS

- Promote a reduction in energy consumption in water and wastewater utilities by 15% by 2030 and 30% by 2050 through process optimization and equipment upgrades.
- Increase the volume of treated wastewater that is reused for non-potable applications, with the goal of reaching 35% by 2030 and 50% by 2050
- Encourage all new developments constructed by 2030 to reduce post-development runoff volume by at least 25% compared to pre-development conditions, and all new developments constructed by 2050 to achieve at least a 50% reduction, while meeting or exceeding Florida's first-inch stormwater retention standard as a baseline requirement.
- Encourage all new residential subdivisions to incorporate dual-plumbing systems by 2030 to enable reclaimed water use for landscape irrigation, to ensure that by 2050 reclaimed water or other alternative non-potable sources are the primary supply for landscape irrigation in all subdivisions.

ACTION SUMMARY

- Integrate better stormwater management and resiliency into development and redevelopment activity
- Implement innovations in water management technology to expand water reuse, optimize the water treatment process, and improve nutrient recovery
- Expand the use of reclaimed water for non-potable use such as irrigation

OVERVIEW

Reliable water infrastructure is central to public health, economic stability, and long-term growth in NEFL. Along the state's coast, water systems face increasing strain from population growth, aging infrastructure, and the rising costs of flood and storm recovery. Strengthening stormwater and water utility systems will help local governments protect homes, businesses, and essential services while reducing operational costs and preserving the region's water supply for future generations.

Modernizing water and wastewater utilities is also a direct investment in efficiency. Water and wastewater treatment facilities are typically the largest single energy users in municipal operations, accounting for roughly 30 to 40% of local government energy consumption. Nationally, the sector represents about 2% of total U.S. energy use and contributes more than 45 million tons of emissions annually. Upgrading pumps, blowers, and treatment equipment, optimizing plant processes, and improving operational controls can reduce energy consumption by 15 to 30%, with many measures paying for themselves within a few months or years[1]. Lowering energy use not only cuts costs but also frees up public funds for other infrastructure priorities such as drainage improvements, roadway maintenance, and emergency response capacity.

These upgrades should be paired with investments in stormwater systems that reduce flood risk and protect property values. Expanding green and gray infrastructure—such as detention basins, bioswales, and upgraded drainage networks—can minimize localized flooding and storm damage. Improved stormwater management also reduces sediment and nutrient loading in waterways, helping utilities avoid costly treatment and compliance issues downstream.

Upgrading treatment technologies and recovering nutrients from wastewater can turn byproducts into useful materials for landscaping or agriculture, creating new local economic value while improving water quality.

By combining efficiency measures, infrastructure modernization, and resource recovery, municipalities can reduce long-term operating costs, improve service reliability, and safeguard essential resources. These strategies enhance fiscal stability and make local utilities more resilient to extreme weather, population growth, and supply disruptions—without placing additional burdens on ratepayers.

1 *US EPA. (2025, June 9). Energy efficiency for water utilities. https://www.epa.gov/sustainable-water-infrastructure/energy-efficiency-water-utilities?utm*

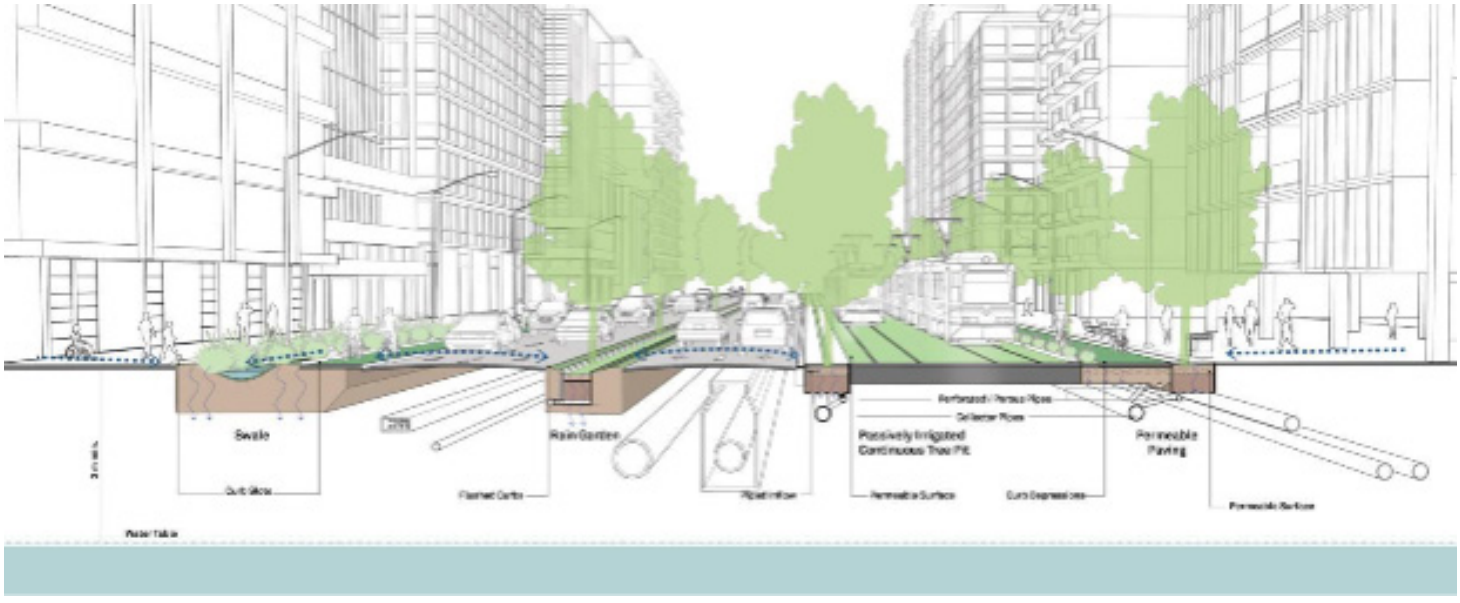
ACTION 1. INTEGRATE BETTER STORMWATER MANAGEMENT AND RESILIENCY INTO DEVELOPMENT AND REDEVELOPMENT ACTIVITY

Encouraging the use of advanced stormwater management strategies in new and redeveloped sites can significantly reduce flooding, protect property, and improve long-term water quality. Voluntary best practices—such as bioswales, retention ponds, green roofs, and permeable pavement—help filter pollutants and manage runoff during heavy rain events. These approaches are especially important in NEFL, where low-lying terrain and frequent storms increase the risk of localized flooding and damage to infrastructure.

Incorporating nature-based drainage systems can also lower public maintenance costs and extend the lifespan of existing stormwater infrastructure by reducing the strain on pipes, pumps, and treatment systems. Where feasible, preserving floodplains and wetlands within site design further reduces flood risk and supports natural filtration functions that benefit both residents and businesses.

Local governments can incentivize resilient stormwater practices through measures such as reduced permitting fees, expedited review processes, or density bonuses for developments that voluntarily integrate flood mitigation or green infrastructure elements. Municipalities may also encourage developers to utilize available data from local vulnerability assessments or stormwater master plans to identify cost-effective resilience measures tailored to their specific sites.

Any updates to development codes or permitting processes should remain voluntary and incentive-based, consistent with Senate Bill 180, which limits new or more restrictive requirements following major storm events. By adopting this incentive-driven approach, communities can enhance resilience, safeguard private investment, and mitigate future recovery costs without imposing additional regulatory burdens.



In 2018, City Council approved a living shoreline project at the Jacksonville Zoo to restore the shoreline with nature based materials including indigenous plantings, soil bags, oyster gabions, and reef balls.

ACTION 2. IMPLEMENT INNOVATIONS IN WATER MANAGEMENT TECHNOLOGY TO EXPAND WATER REUSE, OPTIMIZE THE WATER TREATMENT PROCESS, AND IMPROVE NUTRIENT RECOVERY

Adopting new water management technologies can help utilities reduce operating costs, recover valuable resources, and improve service reliability. Modern treatment systems are increasingly designed not only for sanitation but also for resource recovery—capturing nutrients, heat, and energy that would otherwise be wasted. Technologies such as membrane bioreactors, anaerobic digesters, and nutrient recovery systems allow utilities to extract phosphorus, nitrogen, and methane from wastewater, lowering treatment costs and creating potential revenue streams.

Local governments and utilities can incentivize innovation through pilot projects and voluntary partnerships that test new technologies on a smaller scale before broader implementation. Conducting full life-cycle cost analyses and pairing projects with workforce training ensures utilities avoid excessive operations and maintenance expenses while building local technical expertise.

Operational improvements such as automated monitoring, advanced leak detection, and digital process controls can also deliver measurable savings. These upgrades help utilities detect inefficiencies early, reduce chemical and energy use, and maintain compliance with water quality standards at lower cost. In regions like NEFL, where nutrient runoff and aging infrastructure strain water systems, these cost-effective innovations strengthen reliability, conserve resources, and limit future rate increases for customers.

ACTION 3: EXPAND THE USE OF RECLAIMED WATER FOR NON-POTABLE USE SUCH AS IRRIGATION

Expanding the use of reclaimed water for irrigation, industrial cooling, and other non-potable applications offers a cost-effective way to conserve potable water supplies and reduce energy use tied to groundwater pumping. In NEFL, where aquifer withdrawals can contribute to rising treatment costs and long-term saltwater intrusion risks, reclaimed water provides a reliable and economically practical alternative.

Utilities such as JEA already distribute reclaimed water to thousands of customers, demonstrating the feasibility of large-scale reuse systems[1]. Continued investment in reclaimed water infrastructure, supported by public-private partnerships and incentive-based programs, can further expand access to neighborhoods, commercial centers, and industrial users.

Local governments may encourage or incentivize developers to incorporate dual-plumbing systems in new projects where feasible, allowing reclaimed water to be used safely for irrigation, toilet flushing, or similar purposes without mixing with potable supplies. Retrofitting existing properties can also be supported through voluntary rebate or cost-share programs, helping residents and businesses offset installation costs.

Reusing water locally reduces strain on municipal supply systems, lowers long-term operational expenses, and improves regional water security. Over time, these investments pay dividends by reducing utility costs, stabilizing water rates, and extending the lifespan of existing water infrastructure, strengthening both economic and environmental resilience across the region.

1 *JEA. (n.d.). Reclaimed water. (n.d.). https://www.jea.com/about/wastewater/reclaimed_water/*

PROJECTED EMISSIONS REDUCTIONS

2025-2030 Cumulative
418,900 $mtCO_2e$

2025-2050 Cumulative
3,184,800 $mtCO_2e$

Total Annual Co-Pollutant Reduction by 2050

$PM_{2.5}$: 0.00017 $\mu g/m^3$; 3 lbs | **O_3:** 0.00085 $\mu g/m^3$; 16 lbs

ECONOMIC IMPACT

By 2030, this measure will support an estimated 3,035 jobs, primarily among water treatment operators, plumbers, and construction technicians—all essential trades in high local demand. Direct wages are projected at $130 million per year, generating a total economic impact of $260 million and approximately $26 million in annual tax revenue. The required annual investment is estimated at $55 million, with strong returns through avoided infrastructure damage, lower maintenance expenses, and improved system efficiency. As communities continue upgrading water and wastewater systems through 2050, the demand for skilled labor in maintenance, construction, and utilities will remain steady, supporting long-term employment and regional economic stability.

BENEFITS

Investing in stronger water infrastructure and modern stormwater management provides broad economic and community benefits, including reduced property damage and maintenance costs, as well as improved public safety and local quality of life. Upgraded drainage systems help protect neighborhoods from flooding, safeguarding homes, roads, and utilities while reducing the financial burden on both residents and local governments. Green infrastructure features—such as rain gardens, bioswales, and tree plantings—add visual and economic value to communities by improving curb appeal, shading streets, and supporting higher property values. Cleaner, well-managed waterways also sustain recreation and tourism activities such as boating, fishing, and waterfront dining, which contribute to local revenue and job creation.

For municipalities and utilities, these improvements lower long-term operating costs by reducing energy use at treatment facilities, limiting storm damage repairs, and extending the lifespan of infrastructure. Modernized water systems also create new economic opportunities through water reuse and nutrient recovery. Reuse programs allow reclaimed water to be safely used for irrigation or industrial purposes, reducing demand for expensive freshwater supplies. Similarly, nutrient recovery technologies capture nitrogen and phosphorus from treatment byproducts and repurpose them for agricultural use, cutting fertilizer costs and keeping valuable resources within the local economy.

These efforts also provide benefits to the workforce and businesses. Infrastructure upgrades generate skilled jobs in engineering, construction, and operations, while reliable stormwater systems reduce costly business interruptions after major storms. The combined effect is a more efficient and resilient local economy, one that protects public assets, reduces recurring expenses, and supports long-term growth through strategic investment in water management.

IMPLEMENTATION AUTHORITY

Agencies such as JEA and the regional water management districts lead water supply, wastewater treatment, and reclaimed water distribution efforts across NEFL. As such there are multiple layers of state and local law that dictate how water supply, treatment and distribution are implemented. Integrated water resource management may be challenging due to regulatory coordination that needs to occur, but should be encouraged.

Local governments can encourage improved stormwater management and dual-plumbing systems through voluntary design standards, incentives, and infrastructure grants. Utilities are responsible for optimizing treatment processes, expanding reclaimed water networks, and advancing aquifer re-injection projects that protect long-term supply. The Florida Department of Environmental Protection provides oversight and guidance, while federal agencies such as the EPA offer funding and technical assistance to support modernization and resilience planning.

FUNDING AVAILABILITY

FUNDING SOURCE	LEVEL	MATCH REQUIRED?	NOTES
Water Infrastructure Finance and Innovation Act (WIFIA)	Federal	Yes	Long-term, low-cost loans for large-scale water reuse and decentralized infrastructure.
Sewer Overflow and Stormwater Reuse Municipal Grants	Federal	Yes	Funds CSO/SSO and stormwater reuse projects. Prioritizes rural and distressed communities.
EPA Nutrients/HABs Grant	Federal	Yes	Supports nutrient recovery technologies and emerging treatment innovations.
Large-Scale Water Recycling Program (Bureau of Reclamation)	Federal	Yes (25%)	Supports projects over $500M total cost for water reuse infrastructure.
WaterSMART Water Recycling & Efficiency Grants	Federal	Yes (50/50)	Supports water reuse and efficiency projects in municipalities and utilities.
EPA Green Infrastructure Technical Assistance	Federal	No	Helps communities plan and apply for green stormwater infrastructure funding.
EPA WaterTA Technical Assistance Program	Federal	No	Assists underserved communities with SRF applications for decentralized systems.
USDA Water & Waste Disposal Loan & Grant Program	Federal	Yes	Loans and grants for water, wastewater, and stormwater systems in rural areas.
USDA Rural Decentralized Water Systems Grant Program	Federal	Yes (10%)	Funds nonprofits to create revolving loan funds for household water and wastewater systems.
USDA Emergency Community Water Assistance Grants (ECWAG)	Federal	No	Up to $1M for communities facing water emergencies.
USDA Technical Assistance & Training (TAT) Grants	Federal	No	Supports nonprofits providing technical assistance for rural water systems.
HUD Community Development Block Grants (CDBG)	Federal	Varies	Can fund water infrastructure in small cities and counties.
Build America Bureau Rural & Tribal Assistance Pilot Program	Federal	No	Provides legal, technical, and financial advisors for infrastructure planning.
National Blue Ribbon Commission for Onsite Water Systems	Federal/Local	Varies	Supports decentralized non-potable reuse systems and policy development.
Innovative Nutrient and Sediment Reduction Grants (NFWF)	Federal/Private	Yes	Funds nutrient pollution reduction through innovative technologies and nature-based solutions.
Environmental Finance Center Network (EFCN)	Federal/Private	No	Offers technical assistance for water infrastructure and financing.
Clean Water State Revolving Fund (CWSRF)	Federal/State	Yes	Low-interest loans for water quality infrastructure, including energy-efficient upgrades in wastewater and stormwater systems.
Drinking Water State Revolving Fund (DWSRF)	Federal/State	Yes	Supports projects that replace potable water with non-potable sources.
Florida DEP Innovative Technology Grants	State	Yes	Supports nutrient reduction and water reuse innovations.
Florida DEP Nonpoint Source Management Grants	State	Yes	Supports stormwater treatment and watershed restoration.
Florida Springs Restoration Grant Program	State	Yes	Funds stormwater treatment and hydrologic restoration projects.
Resilient Florida Program	State	Yes	Planning and implementation grants for flooding and sea level rise resilience.
Alternative Water Supply Grants (FDEP)	State	Yes	Funds reclaimed water, aquifer recharge, and dual plumbing systems.

Florida Commerce Community Planning Technical Assistance Grants	State	No	Supports rural governments with planning and resilience strategies.
Jacksonville Reuse of Reclaimed Water Program	Local	No	Ordinance supports reclaimed water infrastructure expansion.
Municipal Stormwater Utility Funds	Local	Varies	Can support green infrastructure, retention upgrades, and dual plumbing systems.
JEA Integrated Water Resources Plan	Local/Regional	Varies	Includes reclaimed water expansion and dual plumbing strategies.
ESCO Partnerships	Private	No upfront cost	Energy Service Companies finance water reuse, nutrient recovery, and decentralized treatment upgrades with repayment via savings.
Green Banks & Impact Investors	Private	Varies	May fund water infrastructure projects with measurable climate and community benefits.

CASE STUDY 1: CLAY COUNTY'S PROJECT QUENCH

Clay County, one of the fastest-growing areas in NEFL, has experienced rising demand on its water systemsdue to rapid development and population increases. To address these challenges, the Clay County Utility Authority (CCUA) launched Project Quench, a water reuse and treatment initiative focused on optimizing water management, reducing nutrient pollution, and improving long-term supply reliability[1].

Previously, wastewater was discharged into surface waters or used for spray irrigation, methods that met regulatory standards but offered limited environmental or economic benefit. With excess nitrogen and phosphorus contributing to algal blooms and water quality issues in the St. Johns River, Project Quench was created to reduce nutrient discharge and expand beneficial reuse of reclaimed water[2].

The project focuses on three main goals: expanding reclaimed water access, improving treatment efficiency, and recovering nutrients for reuse. CCUA is upgrading its reclaimed water distribution network to serve residential, commercial, and agricultural customers across the county. By shifting irrigation demands to reclaimed sources, the program reduces pressure on the Floridan Aquifer, supporting regional water conservation efforts[3].

To increase treatment effectiveness, Project Quench incorporates several filtering strategies, including ozonation, biofiltration, ultrafiltration, granular activated carbon, UV disinfection, and chlorination to ensure the water is clean and safe for residents. Moreover, Project Quench contributes to improved water quality in the St. Johns River and surrounding waterways by reducing nutrient runoff and limiting pollution from treated effluent. Reclaimed water use also reduces the need for potable groundwater in irrigation, protecting the health of aquifers and freshwater springs[4].

Project Quench illustrates how smaller utilities can successfully implement advanced water management technologies through strategic partnerships and sound financial planning. The initiative demonstrates a cost-effective approach to improving water efficiency, protecting aquifers, and extending the lifespan of local infrastructure. By combining reclaimed water expansion, treatment upgrades, and nutrient recovery, Clay County has established a practical model for regional utilities seeking to enhance operational performance and secure water resources for future growth.

1 *Clay County. (2025). Project quench. https://www.ccuaprojectquench.com/*
2 *St. Johns Riverkeeper. (2019, July 17). Our issues. https://stjohnsriverkeeper.org/about-us/our-issues/*
3 *Clay County: Project Quench. (2026). Water360. https://water360.com.au/case-study/draft-clay-county-project-quench/*
4 *Reclaimed water. (2025, June 26). SJRWMD. https://www.sjrwmd.com/water-supply/reclaimed/#1490983196847-27202fd9-a341*

CASE STUDY 2: STATE RD 207 RECLAIMED WATER FACILITY PROJECT

St. Johns County has experienced rapid population growth in recent decades, placing increasing pressure on the region's water systems. Like many parts of NEFL, the county relies heavily on the Floridan Aquifer, which is a critical drinking water source now stressed by widespread withdrawals for residential, commercial, and agricultural use. In response, St. Johns County has prioritized reclaimed water as a way to reduce potable water demand, especially for non-drinking uses like landscape and recreational irrigation.

The State Road 207 Reclaimed Water Facility is one of the county's flagship infrastructure projects to support long-term water conservation and preserve regional aquifer levels. Rather than discharging treated wastewater into local waterways, this facility treats and redirects effluent into a reclaimed water distribution system that supplies homes, golf courses, schools, and other non-potable users along the 207 corridor[5]. This system provides an alternative to groundwater withdrawals while maintaining the irrigation needs of fast-growing suburban developments.

The facility uses a combination of secondary and tertiary treatment technologies to remove solids, nutrients, and pathogens, meeting Florida Department of Environmental Protection standards for safe reuse. While not intended for drinking, the reclaimed water is suitable for irrigation, pond replenishment, and certain agricultural uses, offering residents and developers a reliable and cost-effective alternative to groundwater.

In addition to environmental gains, the project delivers measurable cost savings. Reclaimed water reduces strain on potable water systems, delays the need for costly capacity expansions, and lowers household utility bills. It also provides a drought-resistant supply, increasing reliability during dry periods and improving resilience to future water availability challenges[6].

The success of the State Road 207 project reflects strong inter-agency collaboration. St. Johns County partnered with the St. Johns River Water Management District to secure funding and technical expertise, aligning local infrastructure upgrades with regional conservation priorities. As the county continues to grow, plans are underway to expand the reclaimed water network beyond the 207 corridor. The project demonstrates how local investment in efficient water infrastructure can balance economic growth with resource conservation, supporting both long-term water security and fiscal sustainability for the region.

5 *St. Johns County. (2025, May 30). State Road 207 water reclamation facility construction progressing. https://www.sjcfl.us/state-road-207-water-reclamation-facility-construction-progressing/*

6 *US EPA. (2025, March 25). Drought resilience and water conservation. https://www.epa.gov/water-research/drought-resilience-and-water-conservation*

DIVERT ORGANIC WASTE, FOOD WASTE, AND RECYCLABLES FROM LANDFILLS

SECTOR: SOLID WASTE

TARGETS

- Encourage diversion of at least 10% of organic waste from landfills by 2030 and 40% by 2050.
- Increase diversion of recyclable materials to achieve a 30% recycling rate by 2030 and 60% by 2050.

ACTION SUMMARY

1. Divert waste from landfills by expanding composting services
2. Establish and expand residential and commercial food waste diversion programs
3. Develop or expand local recycling and reuse through infrastructure investments and equipment purchases.

OVERVIEW

Reducing the amount of organic material and recyclables sent to landfills is one of the most practical ways for NEFL to lower waste management costs, extend landfill capacity, and improve air quality. Organic materials like food scraps, yard trimmings, and paper products produce methane—a potent air contaminant—when they decompose without oxygen in landfills. Nationally, 30% to 40% of all food produced in the U.S. is lost or wasted, showing the magnitude of this issue before waste even reaches disposal sites. In NEFL, organics make up a significant portion of the municipal waste stream, meaning local diversion efforts can deliver substantial economic and environmental benefits.

Diverting organics and recyclables from landfills reduces the cost burden on local governments, saves taxpayer dollars by delaying the need for new landfill expansions, and creates opportunities for local industries built around composting, material recovery, and recycling. These initiatives can also reduce utility and transportation costs by shortening hauling distances and turning waste into usable products like compost, bioenergy, and recycled materials. By treating waste as a resource, communities can strengthen their local economies and enhance the efficiency of public services.

Recent examples, such as Jacksonville's 2023 commercial food waste composting pilot, show that there is strong momentum toward modernizing local waste systems[1]. However, infrastructure remains limited and unevenly distributed. To address this, the region can prioritize investment in composting facilities, anaerobic digestion, food recovery programs, and recycling centers, while pairing these efforts with targeted education campaigns. These campaigns can help residents, schools, and businesses understand proper sorting practices and the value of reducing waste at the source.

The EPA's Wasted Food Scale provides a practical framework for guiding these efforts, emphasizing that the highest-value strategies are preventing waste and redistributing edible food. Intermediate strategies—such as feeding animals, composting, or producing energy from organic waste—should follow, with disposal as a last resort[2]. By aligning regional waste policy with this hierarchy, NEFL can recover more value from materials, reduce disposal fees, and improve the efficiency of local waste systems.

Adopting a circular economy approach, one that keeps resources in use for as long as possible, will further enhance these gains. Leveraging Florida DEP and EPA technical assistance can help municipalities identify funding, design pilot projects, and establish consistent data tracking[3] [4]. With coordinated planning, the region can turn waste reduction into an engine for economic growth and operational savings, while reducing landfill dependence and improving environmental performance.

1 Holthaus, H. (2023, January 27). Pilot program will test composting in Riverside and Avondale. Jacksonville Today. https://jaxtoday.org/2023/01/27/pilot-program-will-test-composing-in-riverside-and-avondale/

2 US EPA. (2025, September 25). Wasted food scale. https://www.epa.gov/sustainable-management-food/wasted-food-scale

3 Florida Department of Environmental Protection. (2024, June 3). Recycling grants and loans. https://floridadep.gov/waste/waste-reduction/content/recycling-grants-and-loans

4 US EPA. (2025, September 11). Solid waste infrastructure for recycling grants for states and territories. https://www.epa.gov/infrastructure/solid-waste-infrastructure-recycling-grants-states-and-territories

ACTION 1. DIVERT WASTE FROM LANDFILLS BY EXPANDING COMPOSTING SERVICES

Composting is one of the most cost-effective and practical methods to reduce landfill waste while lowering methane emissions. In Jacksonville, the city's pilot composting partnership with Sunshine Organics & Compost showed that large-scale organics recycling is both feasible and economically beneficial[1]. The program, which began with commercial participants, converts food waste, yard trimmings, and other organic materials into nutrient-rich compost and biochar, creating marketable soil products while reducing disposal volumes and transportation costs.

Expanding composting services across Jacksonville and NEFL will require investment in infrastructure, logistics, and outreach. This includes expanding bin distribution for households and businesses, identifying new drop-off and processing sites, and establishing clear c ontracting frameworks that make participation affordable for local organizations. Partnerships with private operators such as Compost Jax, Apple Rabbit Compost, and emerging regional cooperatives can help scale operations efficiently while creating local jobs in collection and processing.

Smaller-scale approaches—such as neighborhood collection hubs, school composting programs, and municipal partnerships with community gardens—can complement centralized facilities and increase public participation. To ensure long-term success, cities should focus on consistent public education, clear labeling and sorting guidelines, and incentive programs such as reduced waste fees for participants. By expanding composting access and normalizing participation, Northeast Florida can reduce landfill demand, lower operational costs, and support both soil restoration and local economic development.

1 Jacksonville City Council. (2023, January 24). Ordinance 2022-907-E. https://jaxcityc.legistar.com/LegislationDetail.aspx?ID=5962634&GUID=75A3A7C4-E934-4813-A48C-F88347BA39EF&G=5C328780-15E9-4A99-A06C-56338DCE410E

Feeding Northeast Florida rescues food that would normally go to waste, and distributes nutritious groceries through their network pantries to neighbors struggling with food insecurity.

Food waste is one of the most preventable contributors to landfill costs and methane emissions, offering Northeast Florida a practical opportunity to improve efficiency while supporting local food security. Expanding food recovery and diversion programs can redirect edible surplus to those in need and convert inedible waste into valuable resources. Residential food scrap collection, particularly in neighborhoods without access to composting or donation services, would significantly reduce organic material entering the waste stream. At the same time, targeted programs for restaurants, grocery stores, schools, and institutional kitchens can expand participation in food donation efforts, aligning with the EPA's Food Recovery Hierarchy that prioritizes waste prevention and redistribution over disposal.

Florida's existing state and federal tax deductions for food donations provide an additional incentive, especially for farmers and food producers who regularly generate surpluses that may otherwise go to waste due to market or cosmetic standards[1]. For organic material that cannot be donated, anaerobic digestion offers an efficient, revenue-generating solution. Anaerobic digestion facilities convert food waste into renewable energy and a nutrient-rich byproduct that can be used for landscaping or agriculture. Municipal governments can work with regional utilities, private haulers, or wastewater treatment plants to assess co-digestion opportunities, reducing waste volume while offsetting energy and fertilizer costs.

While regulatory tools such as food waste separation requirements or phased landfill diversion goals could be explored in the long term, early emphasis should remain on voluntary participation, incentives, and public-private collaboration. Pilot projects that track collection rates, cost savings, and energy recovery outcomes will be critical for demonstrating feasibility and building momentum. By pairing education, financial incentives, and infrastructure investments, Northeast Florida can reduce landfill loads, lower disposal expenses, and create new value streams from materials previously considered waste.

1 Florida Department of Agriculture and Consumer Services. (2020). Food Donations - A Farmer's Guide Tax Deductions . https://ccmedia.fdacs.gov/content/download/84633/file/FRP-FOOD-DONATION-Farmers-Guide-2020.pdf

ACTION 3. INFRASTRUCTURE INVESTMENTS AND EQUIPMENT PURCHASES

Although Jacksonville provides citywide curbside recycling, challenges such as contamination, inconsistent participation, and limited processing capacity continue to reduce program efficiency. The city's "Feet on the Street" initiative, a community-based education and feedback program, has already proven effective in improving results, helping reduce contamination by as much as 57% and increasing the collection of quality recyclables by 27% in participating neighborhoods1. Expanding this program throughout NEFL would strengthen recycling outcomes across residential, multi-family, and commercial sectors, improving both participation and material quality.

Upgrading recycling infrastructure is also critical to achieving long-term efficiency and cost savings. Strategic investments could include expanding or modernizing the materials recovery facility to handle higher volumes and a wider range of materials, purchasing updated collection equipment, and improving service access for apartments, businesses, and rural communities. Additionally, pilot programs for electronics, textiles, and household goods recycling would help divert valuable materials that often end up in landfills.

Public-private partnerships offer a practical way to expand local reuse opportunities. Collaborations with businesses, nonprofits, and repair organizations can create drop-off or "fix-it" centers where residents can donate, lend, repurpose, or repair items instead of discarding them. These local reuse and recycling networks—tool or gear libraries, repair cafes, washing and collection hubs, and more—not only extend product lifespans but also provide alternatives to buying new and create small-business and workforce development opportunities in refurbishment, logistics, and materials management.

By pairing infrastructure upgrades with community education, regional materials exchange, and business partnerships, NEFL can build a recycling and reuse system that reduces disposal costs, conserves raw materials, and supports a stronger circular economy that benefits residents and local industries alike.

1 City of Jacksonville. (2023, April 21). City & the recycling partnership launch campaign to dramatically improve curbside residential recycling. https://www.jacksonville.gov/welcome/news/city-the-recycling-partnership-launch-campaign-to

PROJECTED EMISSIONS REDUCTIONS

2025-2030 Cumulative
92,500 $mtCO_2e$

2025-2050 Cumulative
47,400$mtCO_2e$

Total Annual Co-Pollutant Reduction by 2050

$PM_{2.5}$: 0.011 µg/m^3; 200 lbs | **O_3:** 0.0068 µg/m^3; 1200 lbs

ECONOMIC IMPACT

This measure will create 155–233 jobs by 2030, primarily recycling coordinators and equipment operators (medium need). Direct wages are projected at $10–$13 million, with a total economic impact of $20–$27 million and annual tax revenue of $2–$3 million. The annual investment required is approximately $10 million, and as diversion targets and recycling programs expand, additional job growth is expected through 2050.

BENEFITS

Expanding composting, recycling, and food recovery programs provides measurable economic and operational benefits. Diverting organic waste reduces methane generation, lowering long-term landfill management costs while producing compost that supports local agriculture, landscaping, and soil restoration. Recycling extends the lifespan of existing landfills, conserves resources, and reduces the need for costly new disposal sites. It also cuts manufacturing energy use by reintroducing materials such as aluminum, glass, and plastics into production cycles.

Waste diversion supports local economic development by creating steady employment in collection, sorting, processing, and facility operations. Cleaner recycling streams improve material resale value, generating new municipal revenue and strengthening local recycling markets. Composting and reuse industries further boost the economy through the sale of locally made soil products and by supporting businesses that rely on affordable, sustainable materials.

Socially, food recovery initiatives provide clear community value by redirecting edible surplus to food banks and reducing food insecurity. Reducing landfill volume also limits odors and truck traffic, improving neighborhood livability. By turning waste into a resource, the region can lower disposal costs, strengthen local supply chains, and build a more efficient and economical materials management system.

IMPLEMENTATION AUTHORITY

In NEFL, municipal and county governments hold primary responsibility for implementing and managing solid waste systems, including programs that divert organic waste, food waste, and recyclables from landfills. These governments oversee waste collection contracts, adopt recycling and composting policies, and regulate land use decisions that affect infrastructure siting and development. Regional agencies and private partners can support implementation by coordinating across jurisdictions, testing scalable technologies, and aligning efforts with state and federal waste reduction programs.

Transitioning from a disposal-based system to one centered on diversion and resource recovery will require moderate to high effort. Key actions include updating solid waste plans and ordinances, expanding composting and recycling facilities, and strengthening partnerships with private haulers. Public education and outreach will be crucial to enhancing participation and reducing contamination rates. Administrative capacity should also be enhanced to track diversion progress and maintain consistent service delivery.

Successful implementation will rely on local governments' ability to lead with clear policies and sustained coordination, supported by technical and financial assistance from the Florida FDEP, the EPA, and regional partners.

FUNDING AVAILABILITY

FUNDING SOURCE	LEVEL	MATCH REQUIRED?	NOTES
EPA Recycling Education and Outreach Grant	Federal	No	Supports composting education, food waste reduction, and market expansion for compost. Deadline: Dec 20, 2024.
USDA Composting and Food Waste Reduction Cooperative Agreements	Federal	No	Supports multi-partner composting and food waste diversion projects.
USDA Value-Added Producer Grants (VAPG)	Federal	No	Supports composting and recycling tied to agricultural production.
Southern SARE (Sustainable Agriculture Research and Education) Grants	Federal	No	Supports composting and circular economy research in agricultural communities.
Clean Water State Revolving Fund (CWSRF)	Federal	No	Low-interest loans for water quality infrastructure, including composting and energy-efficient wastewater systems.
EPA Water Infrastructure Finance and Innovation Act (WIFIA)	Federal	No	Long-term loans for significant water and wastewater infrastructure projects.
USDA Farm to School Grants	Federal	Yes	Supports school gardens, composting, and nutrition education. https://farmtoschoolfl.com
USDA Rural Development Solid Waste Management Grants	Federal	Yes	Supports small governments in improving waste management and composting infrastructure.
Community Development Block Grants (CDBG)	Federal	Yes	Can be used for waste diversion infrastructure in underserved communities.
Florida DEP Small County Consolidated Grants	State	Yes	For counties under 110,000 population; supports recycling education and infrastructure.
Florida Recycling Loan Program	State	Yes	Low-interest loans for recycling businesses and infrastructure development.
Florida Community Waste Reduction Grants	State	Yes	Supports composting, recycling, and education efforts for schools, nonprofits, and local governments.
ReFED Catalytic Grant Fund	Private/Philanthropic	No	Offers $50K–$250K grants for food waste recycling, methane reduction, and circular economy innovations. https://www.wastedive.com
Climate Action Reserve (CAR)	Private/North America	No	Offers Climate Reserve Tonnes (CRTs) for verified landfill diversion projects including composting, anaerobic digestion, and methane capture. Recognized in Florida and used by waste management facilities.
Verra – Verified Carbon Standard (VCS)	Private/International	No	Supports composting, biochar, methane capture, and recycling projects. Projects must meet rigorous standards to earn Verified Carbon Units (VCUs). Widely used in Florida for landfill diversion and waste-to-energy projects.
Verra – Plastic Waste Reduction Standard	Private/International	No	Supports plastic waste collection and recycling projects. Generates Plastic Credits for verified projects. Applicable to Florida facilities aiming to reduce plastic waste.
Institute for Local Self-Reliance Community Composter Grant	Private	No	Offers up to $100K for community-scale composting infrastructure.
Closed Loop Partners Composting Consortium	Private	No	Supports infrastructure for compostable packaging and food scraps.
The Recycling Partnership Grants	Private	Varies	Supports recycling access, education, and infrastructure improvements.
Whole Kids Foundation School Garden Grants	Private	No	Supports school gardens and composting programs.
Captain Planet Foundation Grants	Private	No	Supports K–12 sustainability and composting projects.

Environmental Non-Profits & Community Organizations	Private	No	May offer grants or technical assistance for composting and recycling initiatives.
The Solutions Project Environmental Education Grants	Private	No	Supports environmental justice, sustainability education, and circular economy initiatives for schools and nonprofits.
Grain Ecosystem – Biochar Carbon Credit Platform	Private	No	Supports biochar projects through carbon credit certification, equipment matching, and investor connections. Active in Florida, including the Wellington Biochar Project.

CASE STUDY 1: APPLE RABBIT COMPOST

Apple Rabbit Compost is a community composting service that supports urban core neighborhoods, like Riverside, Avondale, Murry Hill, San Marco, and Springfield near downtown Jacksonville1. The organization offers residential and commercial pickup services that divert organic materials—such as food scraps, coffee grounds, and culled produce—from local landfills. These efforts directly support NEFL's waste reduction and resource recovery goals by reducing methane emissions, promoting the use of circular materials, and supporting local agriculture.

Through its weekly subscription service, Apple Rabbit offers residents and businesses a simple, affordable alternative to traditional disposal. Subscribers receive a clean bucket each week for food scraps, which is collected and replaced on a regular schedule. In addition to curbside service, customers can drop off food scraps every Saturday at the Riverside Arts Market. All collected materials are composted locally, and the finished compost is shared with the community through customer returns, farm partnerships, and community gardens. Local farmers participate at no cost, supported by partnerships with Terrawise Homes and the Riverside Arts Market.

The organization's model delivers clear environmental and economic benefits. By diverting food waste from landfills, Apple Rabbit reduces methane generation, a greenhouse gas more than 25 times stronger than CO2. According to the EPA, food waste accounts for nearly one-quarter of landfill volume nationwide, making this diversion a meaningful local contribution2. Composting also produces nutrient-rich soil that improves crop yields, lowers fertilizer costs, and enhances soil moisture retention, providing long-term value to local growers.

Apple Rabbit strengthens the local food system by closing the loop between residents and producers. Compost created through the program supports small farms and community gardens that provide food for local markets and neighborhood distribution. Educational workshops, composting demonstrations, and support for zero-waste events, such as festivals and weddings, further raise awareness about food waste and encourage community participation.

To expand regional capacity, Apple Rabbit is exploring partnerships with Florida's largest biochar facility to integrate biochar, a carbon-rich material that enhances soil health and carbon retention, into local compost production. This collaboration could enable larger-scale composting and create new opportunities for regional waste diversion.

Apple Rabbit Compost illustrates how small businesses and community organizations can drive measurable progress in waste reduction and local sustainability. By combining service delivery, education, and innovation, the organization provides a replicable model for building stronger, more resource-efficient communities across NEFL.

1 Apple Rabbit Compost. (n.d.). Residential. https://www.applerabbitcompost.org/residential
2 US EPA. (2025, March 20). Quantifying methane emissions from landfilled food waste. https://www.epa.gov/land-research/quantifying-methane-emissions-landfilled-food-waste

CASE STUDY 2: GOODWILL INDUSTRIES OF NORTH FLORIDA

Goodwill Industries of North Florida plays a central role in advancing waste reduction and workforce development across the region. Through its network of donation centers and retail thrift stores, the organization diverts textiles and household goods from landfills while providing job training, employment services, and affordable retail options for residents. This model reduces waste, lowers disposal costs, and reinvests revenue into programs that strengthen the local workforce.

Textile waste is one of the fastest-growing components of the national waste stream. According to the EPA, Americans discard over 11 million tons of textiles each year, most of which ends up in landfills. Natural fibers generate methane as they decompose, while synthetic materials like polyester persist in the environment for decades1. Goodwill's reuse and resale model offers a scalable solution. Residents across NEFL donate gently used clothing, shoes, furniture, and household goods, which are sorted and resold at nonprofit thrift stores. Items that cannot be sold are often redirected for recycling, repurposing, or bulk resale, helping keep large volumes of material out of landfills.

In NEFL, this system diverts thousands of pounds of material each year. These efforts help reduce the environmental impacts of waste, conserve natural resources, and cut emissions associated with the production and transport of new goods. By extending the life of existing products, Goodwill's model promotes more sustainable consumption patterns and contributes to building a circular economy at the local level.

In addition to its environmental benefits, Goodwill's model delivers significant social and economic value. Proceeds from thrift store sales fund job training and placement programs for residents facing barriers to employment—including veterans, individuals with disabilities, and people reentering the workforce. These programs help participants gain skills, secure stable employment, and increase long-term economic self-sufficiency. By linking waste diversion with workforce development, Goodwill helps create a more inclusive and resilient local economy.

1 US EPA. (2025 ,October 23). Textiles: Material-specific data. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/textiles-material-specific-data

Goodwill also contributes to household affordability by providing quality goods at low cost. Residents can access clothing, furniture, and everyday items at prices that support financial stability while encouraging reuse. For donors, the process offers a convenient, rewarding way to give back—reducing landfill waste while supporting community-based services.

As NEFL continues to expand, sustainable consumption and reuse programs will become increasingly important for managing growth. Goodwill Industries of North Florida demonstrates how an established nonprofit can combine environmental stewardship with social impact. Through its integrated reuse network, Goodwill helps reduce landfill demand, conserve resources, and invest directly in people and communities.

CAPTURE AND REUSE METHANE (CH4) EMISSIONS

SECTORS: SOLID WASTE, ENERGY, WATER AND WASTEWATER, INDUSTRY, AGRICULTURE, FORESTRY, AND OTHER LAND USE

TARGETS

- Support the improvements of gas collection systems to capture at least 10% of CH4 emissions from active landfills by 2030 and 30% by 2050 through improved gas collection systems.
- Install anaerobic digestion facilities to process at least 10% of the region's organic waste by 2030 and 40% by 2050.
- Encourage the region to upgrade at least 10% of collected biogas into RNG by 2030 for use in local heating, power generation, or transportation, and 30% by 2050.

ACTION SUMMARY

- CH4 capture and utilization, such as anaerobic digestion and/or biogas upgrading
- Sustainable biosolids management such as composting, land application, and biochar production
- Co-location of water and wastewater with landfills to be used for methane capture and process energy opportunities
- Establish waste-to-energy facilities to reduce CH4 emissions from landfills while producing renewable energy.

OVERVIEW

CH_4 is one of the most potent GHGs, with a global warming potential 28 to 34 times higher than CO_2 over a 100-year period, and 84 times higher over a 20-year period. It is produced in both urban and rural settings through the decomposition of organic materials in landfills, wastewater treatment systems, and agricultural operations. Reducing CH_4 emissions represents one of the most cost-effective strategies for lowering overall emissions and improving air quality.

The first and most efficient way to reduce CH_4 is to divert organic materials—such as food waste, yard debris, and agricultural residues—away from landfills, directing them instead to composting, food recovery, or energy-producing systems. For organic waste that cannot be diverted, CH_4 capture and reuse technologies offer a practical way to reduce emissions while generating local, renewable energy.

Technologies such as anaerobic digestion, landfill gas recovery, and biogas upgrading convert methane into usable RNG or electricity. This gas can then power municipal fleets, support industrial operations, or feed into local utilities—reducing dependence on fossil fuels while supporting energy diversification. These systems also allow local governments to reduce regulatory risk, meet state and federal air quality standards, and extend the lifespan of existing landfills and wastewater facilities.

For municipalities, methane capture offers clear economic advantages. Recovering gas from existing waste streams turns a liability into a resource, offsetting fuel and power costs. Partnerships between public agencies, utilities, and private developers can attract federal funding and private investment, particularly through programs such as the Methane Emissions Reduction Program under the Inflation Reduction Act, which supports monitoring, capture, and beneficial reuse projects.[1].

By advancing CH_4 recovery across solid waste, wastewater, and agricultural sectors, NEFL can strengthen energy reliability, reduce emissions, and generate revenue from waste streams that would otherwise be lost. This integrated approach links waste management, public infrastructure, and energy planning to create more efficient and resilient community systems.

1 The Biden Whitehouse Administration. (2023). Accelerating progress: Delivering on the U.S. methane emissions reduction action plan. https://bidenwhitehouse.archives.gov/wp-content/uploads/2023/12/Methane-Action-Plan-2023-Topper.pdf

ACTION 1. CH4 CAPTURE AND UTILIZATION, SUCH AS ANAEROBIC DIGESTION AND/OR BIOGAS UPGRADING

Capturing and reusing CH_4 through anaerobic digestion and biogas upgrading offers an efficient, market-driven solution that reduces emissions while generating renewable energy and lowering operational costs. Anaerobic digestion processes organic materials—such as food waste, manure, and biosolids—into biogas, a mix of CH_4 and CO_2. When cleaned and upgraded, this gas becomes RNG suitable for use in heating, electricity generation, or transportation. RNG directly offsets fossil fuel use and provides an energy source that can be produced locally. Nationally, adoption of these technologies has expanded rapidly: in 2019, only 17% of captured biogas was converted into RNG, but by the end of 2024, that share had risen to 40%, showing growing commercial viability and long-term economic potential[1].

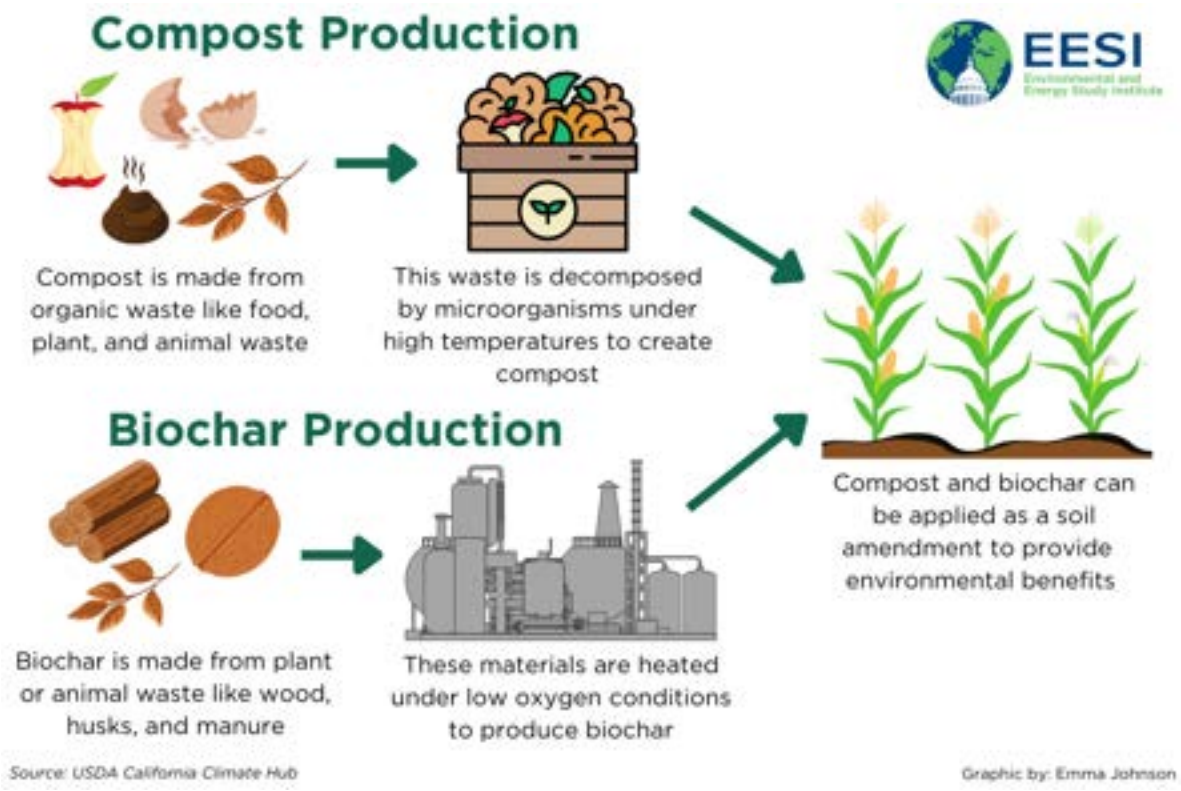
For NEFL, investing in anaerobic digestion and biogas upgrading aligns with both environmental and fiscal goals. Converting CH_4 into usable energy reduces the burden on landfills and wastewater facilities while turning waste streams into revenue-generating assets. Partnerships with utilities, private developers, and agricultural operators can further support these efforts by sharing costs and technical expertise. Programs such as the Methane Emissions Reduction Program, funded through the Inflation Reduction Act, provide grants and technical assistance to help local governments and private entities implement these systems[2].

To ensure lasting benefits, projects should include strong monitoring and leak detection protocols to minimize fugitive emissions and maintain system efficiency. County and state agencies can provide oversight and coordinate with developers to ensure compliance with performance standards and public safety requirements. Through coordinated investment, effective oversight, and targeted incentives, anaerobic digestion and methane recovery projects can help the region transform waste management into a reliable source of clean, local energy.

1 Bailey, M. (2025, July 30). ABC's data digest LITE July 2025: Primary end-use of biogas. American Biogas Council. https://americanbiogascouncil.org/abcs-data-digest-lite-july-2025-primary-end-use-of-biogas/

2 US EPA. (2023, January 20). Methane emissions reduction program. https://www.epa.gov/inflation-reduction-act/methane-emissions-reduction-program

ACTION 2. SUSTAINABLE BIOSOLIDS MANAGEMENT SUCH AS COMPOSTING, LAND APPLICATION, AND BIOCHAR PRODUCTION



Sustainable biosolids management offers an opportunity to reduce emissions, recover valuable nutrients, and enhance local soil health. When properly treated and reused, biosolids can serve as a renewable resource rather than a waste product—helping municipalities lower disposal costs while improving soil productivity.

Composting transforms biosolids into nutrient-rich soil amendments that enhance soil structure, fertility, and water retention. This process supports local landscaping, agriculture, and land restoration projects while reducing methane emissions that would otherwise result from landfill disposal. Land application of treated biosolids safely returns essential nutrients such as nitrogen and phosphorus to agricultural soils, reducing dependence on synthetic fertilizers and improving long-term soil health.

Biochar production represents a particularly promising innovation. By heating biosolids under low-oxygen conditions, carbon is locked into a stable form that can persist in soils for decades or longer. Biochar enhances soil fertility and moisture retention, providing a reliable method for long-term carbon sequestration.

By investing in biosolids composting, land application programs, and biochar facilities, local governments and utilities can establish a closed-loop system that recycles nutrients, supports agricultural production, and reduces emissions associated with waste management. These efforts also align with resource recovery goals under existing water and energy programs, positioning NEFL to benefit from both environmental and economic returns.

ACTION 3. CO-LOCATION OF WATER AND WASTEWATER WITH LANDFILLS TO BE USED FOR METHANE CAPTURE AND PROCESS ENERGY OPPORTUNITIES

Co-locating water and wastewater treatment facilities with landfills allows for the integration of waste and energy systems, creating efficiencies that reduce costs, improve energy recovery, and lower emissions. By managing methane and biosolids jointly, local governments can optimize land use and transform waste management into a reliable source of process energy.

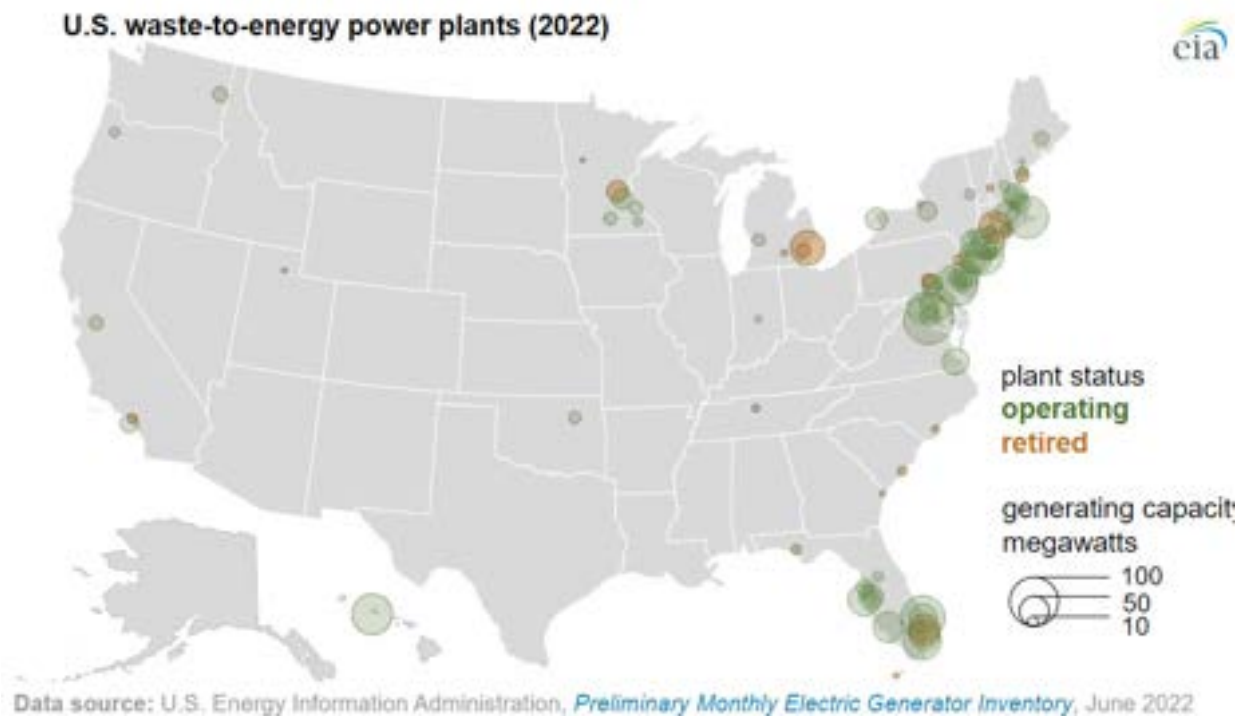
Successful examples already exist across the U.S. At Newby Island in San José, California, landfill operations are located adjacent to the regional wastewater treatment plant, enabling shared infrastructure for biosolids processing and CH_4 capture[1]. This approach reduces transportation costs, supports nutrient cycling, and uses landfill gas to power facility operations. Similarly, Philadelphia's Northeast Water Pollution Control Plant captures biogas from sludge digestion and uses it in a combined heat and power (CHP) system that provides most of the facility's energy needs, significantly lowering fossil fuel use and operational expenses[2].

For NEFL, co-location presents a cost-effective opportunity to align solid waste, wastewater, and energy planning. Captured methane from landfills could power treatment plant operations, offsetting reliance on grid electricity or natural gas while reducing GHG emissions. Additional benefits include shared infrastructure, fewer truck trips and associated emissions, and more efficient permitting and land development processes.

1 Newby Island Resource Recovery Park. (n.d.). Republic Services. https://www.republicservices.com/municipality/newby-island

2 Philadelphia Water Department. (n.d.). Biogas cogeneration facility. https://water.phila.gov/wp-content/uploads/files/Biogas.pd

ACTION 4. ESTABLISH WASTE-TO-ENERGY FACILITIES TO REDUCE CH4 EMISSIONS FROM LANDFILLS WHILE PRODUCING RENEWABLE ENERGY.



Waste-to-energy (WTE) facilities convert non-recyclable waste into electricity, heat, or renewable natural gas, offering a practical solution for reducing methane emissions from landfills while producing reliable local energy. By processing waste in controlled environments equipped with advanced emissions technology, these facilities can lower overall air pollution and extend landfill lifespan, creating both environmental and economic value.

A strong example of this approach is the RNG project developed by TECO Peoples Gas in partnership with Alliance Dairy in Florida[1]. The project captures CH4 from dairy manure, refines it into pipeline-quality gas, and delivers it through existing infrastructure, eliminating the need for new pipelines or energy systems. This demonstrates how agricultural and industrial operations can integrate WTE strategies to create new revenue streams, reduce emissions, and support local energy production.

For NEFL, WTE systems could offer a long-term solution for managing non-recyclable and non-compostable materials, while also contributing to regional energy reliability. These projects can help offset fossil fuel use, stabilize utility costs, and improve waste management efficiency. Future WTE facilities should prioritize modern technologies such as high-efficiency combustion, gasification, or pyrolysis, all of which maximize energy recovery and minimize residual waste.

To ensure public trust and environmental protection, new WTE initiatives should include robust community engagement, transparent reporting, and oversight from environmental and health agencies. With proper planning and safeguards, WTE development can transform a local waste challenge into a sustainable energy opportunity—reducing CH4 emissions, supporting industry, and improving long-term regional resilience.

1 Schorsch, P. (2023, May 14). From poop to power, TECO Peoples Gas leads the way in renewable natural gas production. Florida Politics. https://floridapolitics.com/archives/611996-from-poop-to-power-teco-peoples-gas-leads-the-way-in-renewable-natural-gas-production/

PROJECTED EMISSIONS REDUCTIONS

2025-2030 Cumulative
1,218,750 $mtCO_2e$

2025-2050 Cumulative
6,475,630 $mtCO_2e$

Average Annual RNG Potential
1,559,625 MMbtu/year

Total Annual Co-Pollutant Reduction by 2050
$PM_{2.5}$: 0.0017 µg/m^3; 30 lbs | **O_3:** 0.032 µg/m^3; 590 lbs

ECONOMIC IMPACT

By 2030, this measure is projected to generate 511–827 jobs, primarily for chemical engineers, gas plant operators, and maintenance technicians (medium demand). Direct annual wages are estimated at $37–$55 million, with a total economic impact of $74–$110 million and tax revenue of $7–$11 million per year. The annual investment required for CH_4 recovery and reuse projects is approximately $22 million. As advanced capture technologies and RNG systems expand through 2050, employment opportunities in construction, engineering, and energy system management are expected to increase steadily.

BENEFITS

Capturing and reusing CH4 creates broad economic, environmental, and public health benefits. For residents, these projects reduce odors and harmful emissions from landfills, wastewater treatment plants, and agricultural sites, leading to cleaner air and safer communities. Locally produced RNG can enhance energy reliability, offering a renewable backup for heating, power generation, and transportation during grid disruptions. Municipalities and utilities benefit from lower operational costs, improved energy efficiency, and potential revenue generation by selling excess gas to the grid or using it to offset facility energy use.

CH4 recovery projects also provide skilled employment opportunities across waste management, agriculture, and energy sectors while reducing long-term maintenance and compliance costs. For businesses, these projects open new revenue streams through energy production and carbon credit programs, supporting both competitiveness and cost control. By improving infrastructure performance and cutting uncontrolled emissions, CH4 capture enhances operational efficiency, public health, and local resilience—creating a practical, economically grounded pathway toward cleaner and more efficient energy use in NEFL.

IMPLEMENTATION AUTHORITY

Methane capture and reuse in NEFL relies on coordinated federal, state, and local actions. Federally, the EPA regulates landfill gas and solid waste under the Clean Air Act and RCRA, while the Inflation Reduction Act's Methane Emissions Reduction Program offers funding and technical support for anaerobic digestion, biogas recovery, and RNG projects. At the state level, the Florida DEP oversees landfill and wastewater permitting and ensures compliance with solid waste and renewable energy regulations that guide project siting and system integration.

Locally, counties and municipalities manage solid waste, wastewater utilities, and energy planning, giving them direct control over methane recovery projects. They can encourage the development of gas collection systems at landfills, facilitate the integration of RNG into utility operations, and promote the co-location of facilities through zoning and permitting incentives. Partnerships among local governments, utilities, landfill operators, and agricultural producers will be key to financing, building, and maintaining CH4 recovery systems. Together, these layers of authority allow NEFL to reduce emissions, expand renewable energy production, and enhance the efficiency and reliability of regional waste and energy infrastructure.

FUNDING AVAILABILITY

FUNDING SOURCE	LEVEL	MATCH REQUIRED?	NOTES
USDA Value-Added Producer Grants (VAPG)	Federal	Yes	Supports anaerobic digestion and biogas upgrading as value-added agricultural products.
USDA Rural Development Solid Waste Management Grants	Federal	Yes	Supports small governments in improving waste management and composting infrastructure.
USDA Farm to School Grants	Federal	Yes	Supports school gardens, composting, and nutrition education.
Community Development Block Grants (CDBG)	Federal	Yes	Can fund waste diversion infrastructure in underserved areas.
EPA Water Infrastructure Finance and Innovation Act (WIFIA)	Federal	No	Long-term loans for significant water and wastewater infrastructure projects.
NREL Waste-to-Energy Technical Assistance	Federal	No	Free support for planning and implementing WTE projects.
EPA LMOP (Landfill Methane Outreach Program)	Federal	No	Technical assistance and incentive links for landfill gas-to-energy projects.
Clean Water State Revolving Fund (CWSRF)	Federal/State	No	Low-interest loans for water quality infrastructure, including energy-efficient wastewater systems.
Florida DEP Small County Consolidated Grants	State	Yes	Supports recycling education and infrastructure in counties under 110,000 population.
Florida Recycling Loan Program	State	Yes	Low-interest loans for recycling businesses and infrastructure development.
Florida Biosolids Grant Program (F.S. 403.0674)	State	Yes (waived for rural areas)	Funds Class AA biosolids conversion and alternatives to land application.
Florida Water Quality Improvement Grants	State	Yes	Supports wastewater treatment upgrades, nutrient recovery, and stormwater improvements.
Florida Innovative Technology for Harmful Algal Blooms	State	Yes	Supports nutrient capture technologies in water treatment systems.
Florida Municipal Solid Waste-to-Energy Program (SB 1764)	State	Yes	Incentive grants for municipally-owned WTE facilities.
North Florida Regional Water Supply Plan (NFRWSP)	Regional	Yes	Cooperative funding for water resource development and nutrient recovery.
JEA Greenland Water Reclamation Facility	Local	No	$148M facility with biological nutrient removal and reclaimed water production.
JEA Integrated Water Resources Plan (IWRP)	Local	No	Long-term strategy for potable reuse, nutrient recovery, and alternative water supply across Duval, Nassau, St. Johns, and Clay.
Palm Coast Utility Infrastructure Investment Plan	Local	Yes	Upgrades to wastewater treatment and water supply systems.
St. Johns County Infrastructure Delivery Team	Local	Varies	Oversees $450M in water, wastewater, and stormwater projects.
Clay County Utility Authority – SJRWMD Cost Recovery Charge	Local/Regional	Yes	Participates in Black Creek Water Resource Development Project for aquifer recharge and nutrient recovery.
Captain Planet Foundation Grants	Private	No	Supports K–12 sustainability and composting projects.
Closed Loop Partners Composting Consortium	Private	No	Supports infrastructure for compostable packaging and food scraps.
TECO Peoples Gas RNG Program	Private	No	Supports methane capture and RNG production from manure and landfill gas.

The Solutions Project Environmental Education Grants	Private	No	Supports sustainability education and circular economy initiatives for underserved communities.
Whole Kids Foundation School Garden Grants	Private	No	Supports school gardens and composting programs.
Verra – Plastic Waste Reduction Standard	Private/ International	No	Supports plastic waste collection and recycling projects.
Verra – Verified Carbon Standard (VCS)	Private/ International	No	Certifies methane capture, anaerobic digestion, and biogas upgrading projects for carbon credits.
Climate Action Reserve (CAR)	Private/North America	No	Offers carbon credits for verified landfill diversion and methane capture projects.
ReFED Catalytic Grant Fund	Private/ Philanthropic	No	$50K–$250K grants for food waste recycling, methane reduction, and circular economy innovations.

CASE STUDY 1: TRAIL RIDGE LANDFILL CH4 CAPTURE SYSTEM

Located in Baldwin on the western edge of Duval County, Trail Ridge Landfill is the largest landfill in NEFL and a central part of the region's evolving approach to resource recovery and clean energy[1]. Operated in partnership with the City of Jacksonville, Trail Ridge serves as the primary solid waste disposal site for Duval County, exemplifying how environmental challenges, such as methane emissions, can be transformed into opportunities for energy production and operational efficiency.

CH4 is a powerful GHG, more than 25 times as effective as CO_2 at trapping heat in the atmosphere[2]. As organic waste decomposes in landfills, it produces CH_4 that, if left unchecked, can contribute significantly to reducing local air quality. Recognizing these risks, Jacksonville's community-owned utility, JEA, partnered with the landfill operator to install a gas collection system that captures CH4 emissions directly from the landfill. Rather than allowing the gas to escape into the atmosphere, it is piped to an energy recovery facility on-site, where it is refined and used to fuel engines or turbines that generate electricity.

The electricity produced through this process is distributed into Jacksonville's energy grid, providing a steady source of renewable energy for residents and businesses. This model reduces harmful emissions, offsets fossil fuel use, and contributes to a more diverse and resilient local energy supply[3]. This project supports NEFL's broader energy and emissions reduction goals, demonstrating how existing infrastructure can be upgraded to deliver long-term economic and environmental value.

From an operational perspective, methane capture systems are designed to comply with rigorous environmental standards, including federal guidelines set by the EPA. These systems mitigate the risks of leaks, odors, and pollutants, while ensuring that the generated energy meets safety and quality standards. The project also brings economic and operational benefits: generating energy from landfill gas helps offset utility costs, reduces dependence on volatile fuel markets, and maximizes the value of what would otherwise be a waste byproduct.

Trail Ridge also illustrates the importance of community transparency and education. WTE initiatives can face skepticism due to public concerns about pollution or health impacts. By openly communicating the project's benefits—reduced emissions, renewable energy production, and adherence to environmental standards—JEA and the City of Jacksonville have strengthened public confidence in waste-to-energy projects.

The Trail Ridge CH_4 capture system provides a replicable model for other municipalities seeking to reduce landfill emissions while enhancing energy reliability. As the region continues to grow, integrated waste and energy strategies like this will play an increasingly important role in supporting economic stability and environmental stewardship across NEFL.

1 Services in the Jacksonville, Florida Area. (n.d.). WM. https://www.wm.com/us/en/location/fl/jacksonville
2 US EPA. (2025, January 16). Overview of greenhouse gases. https://www.epa.gov/ghgemissions/overview-greenhouse-gases
3 US EPA. (2017, June 26). Landfill gas energy. https://www.epa.gov/statelocalenergy/landfill-gas-energy

CASE STUDY 2: ALLIANCE DIARIES

Located in Trenton, Florida, Alliance Dairies is a leader in agricultural CH4 reduction efforts through RNG production[4]. The farm, which manages over 6,000 dairy cows, uses anaerobic digestion to convert methane from manure into a renewable energy source. Because CH4 is such a potent GHG, its capture and reuse represent an effective way to reduce emissions associated with dairy production while creating economic value.

The process begins with manure collected through a water-flush system that separates solids from liquids. The liquid manure is directed into an anaerobic digester, where it decomposes in an oxygen-free environment and produces CH4-rich biogas. While this gas was historically used to generate on-site electricity, impurities often reduced efficiency and increased maintenance costs.

To enhance performance and expand energy output, Alliance Dairies partnered with TECO Peoples Gas to construct an RNG facility at the farm[5]. The upgraded system uses advanced purification technologies to remove impurities such as CO2, hydrogen sulfide, and moisture, producing RNG that meets pipeline standards. The resulting gas can be used for heating, electricity generation, or vehicle fuel, reducing reliance on fossil fuels while improving operational flexibility and long-term cost efficiency.

The new facility processes manure from roughly 6,500 cows, generating about 105,000 MMBtu of RNG per year, enough energy to power more than 4,400 homes annually[6]. By capturing CH4 that would otherwise escape into the atmosphere, the project not only mitigates emissions but also creates a reliable, renewable energy source that contributes to Florida's energy goals.

Though anaerobic digesters remain relatively rare on U.S. dairy farms due to high upfront costs, Alliance Dairies' collaboration with TECO demonstrates how public-private partnerships can make such projects financially viable. Enhanced gas quality and lower maintenance requirements have improved energy consistency while extending equipment lifespan, allowing the farm to maximize both environmental and economic returns.

Beyond energy production, the project improves nutrient management by turning waste into valuable resources, supporting soil health and reducing runoff impacts. Alliance Dairies' success illustrates how agricultural innovation can align profitability with sustainability, offering a replicable model for other large-scale farms. Through continued investment in technology and partnership, the farm is setting a precedent for how Florida's dairy industry can contribute to a more efficient and resilient energy future.

4 Alliance Dairies. (n.d.). https://www.alliancedairies.com/

5 Alliance Dairies. (2021). Sustainability. https://www.alliancedairies.com/sustainability

6 Serfass, P. (2021, June 18). Peoples Gas, Alliance Dairies partner to bring Florida RNG. American Biogas Council. https://americanbiogascouncil.org/peoples-gas-alliance-dairies-partner-to-bring-florida-rng/

OTHER COMMUNITY RECOMMENDED MEASURES

TARGETS

- By 2030, cities within the Jacksonville MSA will adopt updated municipal water and electricity resource plans that include explicit sustainability and emissions reduction targets, with at least three measurable performance indicators (such as percentage of renewable energy, water reuse, and total GHG reduction) included in annual public reporting.
- By 2030, establish a voluntary sustainable supply chain program and a benchmarking/disclosure policy for large commercial, industrial, and multifamily buildings, engaging at least 25% of major suppliers and 30% of local building owners in sustainability commitments.
- By 2030, recruit and train 100 “Community Change Champions” representing neighborhoods across the region and implement climate education programs in 100% of local K–12 schools and at least five community centers, reaching a minimum of 5,000 residents annually through direct engagement.
- By 2030, transition at least 50% of city-sponsored events and attractions to zero-waste or low-carbon models, reducing waste generation and event-related emissions.
- By 2030, partner with at least 50 local employers to implement remote and hybrid work arrangements, provide training on effective management practices, and achieve a 15% reduction in commuter-related emissions from 2019 levels.

ACTION SUMMARY

1. Incorporate sustainability, resilience, and emissions reduction goals within municipal and integrated water and electricity resource plans, strategic visions, and future planning for intergovernmental partners in Northeast Florida.
2. Promote the development of sustainable supply chains, reducing emissions from production to distribution by working closely with suppliers who adhere to environmentally friendly practices
3. Create a corps of community change champions to facilitate conversations, education, and action for sustainability in a direct citizen approach and throughout all neighborhoods
4. Develop and implement environmental stewardship education programs in K-12 schools and communities to raise awareness and inspire action
5. Launch Community Campaigns to Transition Local Events and Attractions to Zero-Waste and Low-Carbon Models
6. Incentivize green and resilient building and development standards
7. Prioritize fully remote and hybrid work arrangements. Educate organizations on effective remote work management practices to ensure employee engagement.

OVERVIEW

Beyond the core strategies presented in this CCAP, residents, business leaders, and community organizations proposed several additional measures to reduce greenhouse gas emissions and improve local resilience. While some of these initiatives may not yet be fully measurable or ready for implementation across all jurisdictions, they reflect strong community priorities and alignment with the region's broader goals for sustainability, public health, and economic vitality. These recommendations underscore a shared interest in expanding collaboration between local governments, private industry, and civic groups to accelerate progress toward a cleaner, more resilient NEFL.

Community feedback emphasized the importance of transparency, education, and participation in sustainability planning. Residents expressed strong support for expanding access to renewable energy, improving resource management, increasing environmental education in schools, and creating pathways for community members to lead change at the neighborhood level. Businesses and institutional partners also identified opportunities to reduce emissions through improved efficiency, sustainable supply chains, and hybrid work policies that reduce daily commuting.

Collectively, these recommendations underscore a regional commitment to making sustainability an inclusive and accessible endeavor. By incorporating measurable goals for education, resource management, waste reduction, and workplace flexibility, municipalities can advance practical steps that strengthen both community resilience and local economies.

ACTION 1. INCORPORATE SUSTAINABILITY, RESILIENCE, AND EMISSIONS REDUCTION GOALS WITHIN MUNICIPAL AND INTEGRATED WATER AND ELECTRICITY RESOURCE PLANS, STRATEGIC VISIONS, AND FUTURE PLANNING FOR INTERGOVERNMENTAL PARTNERS IN NORTHEAST FLORIDA.

Integrating sustainability, efficiency, and emissions reduction goals into municipal and regional resource plans is essential for long-term reliability and cost savings. These strategies improve infrastructure performance, reduce operational expenses, and help local governments align with broader environmental and resilience objectives[1].

Across NEFL, utilities are already advancing this work. Beaches Energy Services (BES) is developing a Capital Operations and Maintenance (COM) Plan to prioritize efficient resource use in future infrastructure projects, ensuring that energy and water investments deliver lasting community benefits[2]. Similarly, JEA's 2023 IRP outlines measurable targets, including an 80% reduction in carbon emissions since 2005, a 35% clean energy share in its power mix, and the expansion of energy efficiency programs to support electrification across homes, businesses, and transportation.[3]

By incorporating clear metrics into integrated resource plans and making results publicly available, utilities and municipalities can demonstrate accountability while strengthening public confidence. These planning processes also help stabilize long-term energy costs, attract investment, and reduce exposure to fossil fuel price fluctuations. In doing so, they lay the foundation for a more efficient, resilient, and affordable energy and water future for NEFL.

1 Chris. (n.d.). Why a sustainability plan is important. Play It Green. https://playitgreen.com/why-a-sustainability-plan-is-important/

2 Beaches Energy Services. (2025). Looking ahead in 2025 – Letter from the director. https://beachesenergy.com/about-us/news/looking-ahead-2025-letter-director

3 JEA. (2023). 2023 electric generation integrated resource plan. https://www.jea.com/About/JEA_2023_Electric_Integrated_Resource_Plan/

ACTION 2. PROMOTE THE DEVELOPMENT OF SUSTAINABLE SUPPLY CHAINS, REDUCING EMISSIONS FROM PRODUCTION TO DISTRIBUTION BY WORKING CLOSELY WITH SUPPLIERS WHO ADHERE TO ENVIRONMENTALLY FRIENDLY PRACTICES

Encouraging collaboration with suppliers that adopt responsible production and distribution practices strengthens supply chain efficiency and reduces emissions across industries. Partnering with local producers that emphasize waste reduction, efficient logistics, and responsible sourcing helps lower operational costs while supporting the region's broader sustainability goals. For instance, agricultural producers in St. Johns County who use organic methods and local delivery services employing electric or hybrid vehicles demonstrate how sustainable operations can improve soil health and reduce transportation-related emissions.

Businesses can also benefit by engaging with suppliers that adopt resource recovery and recycling programs or achieve verified sustainability certifications through organizations like Green Circle Certified[4]. In Jacksonville, companies such as Swire Coca-Cola have introduced lighter packaging materials and optimized delivery routes, cutting both fuel consumption and emissions[5].

Building stronger networks with suppliers that prioritize efficiency, circular resource use, and cleaner technologies enables NEFL businesses to reduce pollution, increase operational stability, and remain competitive in an economy that increasingly values sustainability and long-term cost savings.

4 Third-party certification for sustainability claims. (n.d.). Green Circle Certified. https://www.greencirclecertified.com/

5 Choice, P. (2025). Product: Product choice, sourcing. Swire Coca-Cola. https://www.swirecocacola.com/en/Sustainability/Product.html

ACTION 3. CREATE A CORPS OF COMMUNITY CHANGE CHAMPIONS TO FACILITATE CONVERSATIONS, EDUCATION, AND ACTION FOR SUSTAINABILITY IN A DIRECT CITIZEN APPROACH AND THROUGHOUT ALL NEIGHBORHOODS

Creating a corps of community change champions empowers residents to take ownership of sustainability initiatives in their neighborhoods. These individuals serve as trusted local leaders who help bridge the gap between policy and practice through workshops, peer-to-peer training, and outreach events. By sharing practical tools and information about energy efficiency, waste reduction, and sustainable landscaping, they make sustainability approachable and actionable for residents.

Change champions can also connect communities with local programs and resources—such as home energy audits, composting initiatives, and tree-planting events—while encouraging broader participation in regional projects. Acting as liaisons between neighborhoods, local governments, and partner organizations, they ensure that diverse perspectives are represented in local planning and that solutions reflect community needs.

This decentralized, citizen-led model fosters public trust and enhances civic engagement, laying the groundwork for long-term environmental stewardship. A coordinated network of change champions across NEFL would help make sustainability more inclusive, visible, and achievable at the neighborhood level while fostering stronger connections between residents and the institutions that serve them.

ACTION 4. DEVELOP AND IMPLEMENT ENVIRONMENTAL STEWARDSHIP EDUCATION PROGRAMS IN K-12 SCHOOLS AND COMMUNITIES TO RAISE AWARENESS AND INSPIRE ACTION

COJ Minecraft Education Challenge to redesign Jacksonville's downtown held at the WJCT Soundstage on May 20, 2025.

Integrating sustainability and environmental literacy into K–12 education and community learning fosters long-term awareness, civic engagement, and responsible decision-making. Schools can incorporate sustainability concepts into science, civics, and project-based learning in ways that emphasize problem-solving and stewardship.

Student clubs such as Beaches Go Green at local high schools demonstrate the impact of experiential education through activities like beach cleanups, waste reduction campaigns, and conservation projects[6]. These initiatives not only promote environmental awareness but also strengthen leadership and collaboration skills. Partnerships with local organizations can further enhance classroom learning by providing guest speakers, field experiences, and community-based research opportunities.

Parents and community members can extend these lessons beyond the classroom through projects such as school gardens, composting programs, or sustainability fairs that encourage hands-on participation. This shared approach creates meaningful engagement across generations while embedding environmental responsibility into daily life.

By making sustainability education accessible, relevant, and community-centered, NEFL can equip students with the knowledge and skills to address future environmental challenges while fostering a culture of informed, proactive citizenship.

6 Beaches Go Green. (2025). Welcome to Zscaler directory authentication. https://beachesgogreen.org/programs__trashed/school-clubs/

ACTION 5. LAUNCH COMMUNITY CAMPAIGNS TO TRANSITION LOCAL EVENTS AND ATTRACTIONS TO ZERO-WASTE AND LOW-CARBON MODELS

Transforming public events into zero-waste and low-carbon models provides a visible and practical way to demonstrate environmental leadership while engaging residents in everyday sustainability. Festivals, markets, and sporting events often produce large volumes of waste and emissions, yet they also offer powerful opportunities to showcase solutions that conserve resources and reduce costs.

Effective strategies include placing well-labeled recycling and composting stations, offering reusable service ware, and working with vendors to minimize packaging and source materials locally. Encouraging local food and beverage suppliers not only supports the regional economy but also helps reduce transportation-related emissions.

Energy efficiency upgrades—such as switching to LED lighting, limiting generator use, and exploring temporary solar arrays—can further lower operating costs while reducing the event's carbon footprint. These measures often improve venue efficiency long after the event concludes.

Strong public outreach ensures success. Campaigns that engage schools, local businesses, and neighborhood associations help build community buy-in and spread awareness. Recognizing vendors and participants who meet zero-waste or low-carbon criteria reinforces commitment and encourages replication.

ACTION 6. INCENTIVIZE GREEN AND RESILIENT BUILDING AND DEVELOPMENT STANDARDS

By leading these visible, community-centered efforts, NEFL can reduce waste generation, lower energy use, and create a model for sustainable event management that blends environmental responsibility with economic practicality.

Encouraging sustainable building practices supports long-term economic stability, energy efficiency, and community resilience. By incentivizing developers, architects, and property owners to integrate high-performance design features, local governments can lower operational costs, reduce infrastructure strain, and create healthier, more durable buildings.

Sustainable construction strategies can incorporate features such as energy-efficient lighting and HVAC systems, green roofs, daylighting, and the use of locally sourced materials. These improvements not only cut utility costs but also improve comfort and indoor air quality for occupants. Local examples, such as The Greenhouse Bar in Jacksonville, demonstrate how plant-forward and biophilic design can combine visual appeal with energy savings and environmental benefits, while helping build public interest in sustainable development[7].

Resilient design elements further strengthen communities against natural hazards. This can include the use of flood-resistant materials, rainwater harvesting systems, solar panels, and permeable surfaces that reduce runoff and manage heat. Such upgrades can extend the lifespan of buildings and reduce recovery costs after severe weather events.

To encourage adoption, municipalities can provide financial or procedural incentives—such as expedited permitting, reduced fees, or tax abatements—for projects that meet recognized green or resilient building standards. These tools make sustainable construction more accessible and cost-effective for developers.

By advancing voluntary standards and rewarding innovation, NEFL can promote development that is not only environmentally sound but also economically practical and better equipped to withstand future challenges.

7 The Greenhouse & Bar. (n.d.). Home. https://www.thegreenhousebar.com/

ACTION 7. PRIORITIZE FULLY REMOTE AND HYBRID WORK ARRANGEMENTS. EDUCATE ORGANIZATIONS ON EFFECTIVE REMOTE WORK MANAGEMENT PRACTICES TO ENSURE EMPLOYEE ENGAGEMENT.

Expanding remote and hybrid work options provides a cost-effective way to reduce transportation emissions, alleviate traffic congestion, and enhance workforce flexibility across NEFL. Many employers are already transitioning toward hybrid systems that balance remote productivity with in-person collaboration. Companies like FIS Global in Jacksonville have demonstrated how flexible scheduling can reduce commute-related emissions, attract diverse talent, and increase employee satisfaction and retention.

To make these arrangements successful, employers should prioritize training in remote work management and digital collaboration. Local institutions such as the University of North Florida offer workshops and toolkits that help managers maintain engagement, accountability, and communication in virtual settings[8]. Clear performance expectations, structured meeting schedules, and regular check-ins can help teams stay connected and productive.

Encouraging remote work also delivers measurable economic and environmental benefits. Reducing daily commuting cuts fuel use and emissions, while smaller physical office footprints lower energy costs and infrastructure needs. These savings can be reinvested into workforce development or sustainability initiatives.

By promoting flexible work structures and equipping organizations with the tools to manage them effectively, NEFL can strengthen both its economic competitiveness and its regional sustainability goals, demonstrating that operational efficiency and environmental responsibility can go hand in hand.

ECONOMIC IMPACT

Unlike infrastructure-focused measures requiring technical specialization in water, energy, and transportation sectors, community measures emphasize education, planning, sustainability compliance, corporate innovation, and community engagement—creating diverse employment pathways across K-12 schools, municipal governments, nonprofits, and private sector organizations. Assuming the five targets are achieved by 2030, the efforts are projected to create 240-390 direct jobs and 160-235 indirect and induced positions. Direct annual wages are estimated at $10-17 million, generating a total economic impact of $50-$75 million. Wage distribution ranges from entry-level community champions ($35,000-50,000) through sustainability planners and corporate officers ($75,000-150,000), with an average wage of $43,846 across all occupations, creating middle-class employment opportunities across education and skill levels.[9]

BENEFITS

Community-led sustainability measures deliver economic, environmental, and social benefits across all parts of NEFL, from dense urban neighborhoods to rural communities. These strategies enhance quality of life, bolster local economies, and contribute to the region's long-term stability and competitiveness.

Expanding sustainability education in K–12 schools and community programs builds awareness and practical skills that prepare future workers for emerging industries in energy, construction, and technology. Empowering residents through "change champion" networks encourages local problem-solving and civic participation, ensuring that sustainability efforts reflect community priorities.

Promoting sustainable supply chains and zero-waste events reduces material waste and energy use while keeping dollars circulating within the local economy. These efforts support industries central to NEFL's identity—agriculture, logistics, tourism, and manufacturing—by improving efficiency and lowering operating costs.

Incentivizing resilient and efficient building practices enhances safety, lowers long-term utility expenses, and supports workforce housing goals. Energy-efficient and biophilic design elements help manage heat, reduce flooding, and improve indoor air quality, making communities more livable and economically competitive.

Encouraging remote and hybrid work arrangements reduces commuting costs and vehicle emissions, easing congestion along key corridors and expanding job access for residents across the region.

Collectively, these actions promote stronger local economies, reduce pollution, and improve public health. By investing in education, workforce development, and practical infrastructure improvements, NEFL can achieve measurable progress toward a more resilient, efficient, and economically vibrant future.

9 JAXUSA. (2023). Northeast Florida - The future is now. https://jaxusa.org/the-future-is-now-nefl/

CASE STUDY 1: LIGHTS OUT NORTHEAST FLORIDA

Lights Out Northeast Florida (LONF) is part of a broader 25-year national movement focused on protecting migratory birds from the harmful effects of artificial light. The initiative began in Chicago, where a city-wide study revealed that nighttime light pollution was a leading cause of bird collisions and disorientation[10]. Migratory birds, many of which travel at night, rely on celestial cues for navigation. Artificial lighting in urban areas creates disorientation, causing birds to waste energy, arrive at destinations at the wrong time, or collide with buildings[11]. This exhaustion makes them more susceptible to predators and environmental stressors.

With Jacksonville located directly along the Atlantic Flyway, the region plays a critical role in supporting safe bird migration. In response, a local partnership formed among the Jacksonville Zoo and Gardens, the Duval Audubon Society, and the St. Johns Regional Audubon Society to bring Lights Out programming to NEFL[12]. Twice a year, 3.5 billion birds pass through the region during spring and fall migrations, and most travel at night. Artificial light creates an illusion of extended daylight, throwing off biological clocks and migration timing[13]. This can result in birds arriving at breeding or feeding grounds before food or shelter is available, endangering their survival.

The decline in bird populations has far-reaching consequences. Birds play a vital role in maintaining healthy ecosystems by dispersing seeds, pollinating plants, controlling pest populations, and fertilizing soils[14]. Species such as barn swallows consume dozens of insects per hour, helping reduce the need for chemical pesticides[15].

10 Lights Out Chicago. (n.d.). Chicago bird alliance. https://chicagobirdalliance.org/lights-out-chicago
11 Fellows, V. (2023, May 4). Threats to birds: Collisions - Nighttime lighting. U.S. Fish & Wildlife Service. https://www.fws.gov/story/threats-birds-collisions-nighttime-lighting
12 Bailey-White, C. (2025). Lights out Northeast Florida. Duval Audubon. https://duvalaudubon.org/index.php/2015-07-13-17-02-27/lights-out
13 Fraenkel, A. (2022, October 6). The growing effects of light pollution on migratory birds. United Nations. https://www.un.org/en/un-chronicle/growing-effects-light-pollution-migratory-birds
14 Law, J. (2019, January 4). Why we need birds (far more than they need us). Bird Life International. https://www.birdlife.org/news/2019/01/04/why-we-need-birds-far-more-than-they-need-us/
15 Quinn, N. (2022, June 29). Schlitz Audubon Nature Center. Schlitz Audubon. https://www.schlitzaudubon.org/2022/06/29/bird-profile-barn-swallow-schlitz-audubon-nature-center/

Others, like vultures, provide essential clean-up services by consuming carrion and reducing the spread of disease[16]. In an interview, Elizabeth Filippelli, Co-Lead of LONF, highlighted how birds have helped restore wildfire-damaged landscapes in California by spreading seeds and reestablishing plant life in affected areas.

Artificial lighting also poses risks to human health. Studies have shown that exposure to artificial light at night disrupts circadian rhythms, leading to sleep disorders, obesity, depression, and even increased risk of chronic illness[17]. Blue light wavelengths, especially from LEDs, interfere with melatonin production—critical for regulating sleep, supporting the immune system, and maintaining metabolic health[18].

The Lights Out initiative encourages residents, businesses, and building managers to turn off unnecessary lighting during peak migration months. In Jacksonville, this message is spreading. Local organizations and community leaders are recognizing that reducing nighttime lighting not only protects wildlife but also cuts energy costs and lowers greenhouse gas emissions[19]. Businesses and schools are starting to take notice, and some, like the Jacksonville Jaguars, have expressed interest in participating. The team met with the LONF team to explore bird-safe window designs and ultimately agreed to turn off lights at Daily's Place from 11 p.m. to 6 a.m. during non-event nights in migration season[20].

Through these collective efforts, LONF is transforming community awareness into tangible environmental action. By protecting migratory birds, improving public health, and reducing energy use, the initiative demonstrates how small, coordinated changes can produce lasting regional benefits.

16 Why we need vultures. (n.d.). Vulture Conservation Foundation. https://4vultures.org/life-aegypius-return/the-cinereous-vulture/why-we-need-vultures/

17 DarkSky. (2024, September 11). Light pollution affects human health. DarkSky International. https://darksky.org/resources/what-is-light-pollution/effects/human-health/

18 Harvard Health Publishing. (2024, July 24). Blue light has a dark side. https://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side

19 (Day)Lighting the way to greener and healthier buildings. (n.d.). World Green Building Council. https://worldgbc.org/article/daylighting-the-way-to-greener-and-healthier-buildings/

20 Wilcox, Z. (2025, March 13). Jacksonville mayor announces "Lights Out Nights" to protect migrating birds. First Coast News. https://www.firstcoastnews.com/article/news/local/jacksonville-lights-out-nights-to-protect-migrating-birds/77-b961bee4-4ed3-4c4c-b0c8-107e96fd0d31

CASE STUDY 2: NORTHEAST FLORIDA'S MILITARY INSTALLATION READINESS REVIEW

The Northeast Florida Military Installation Readiness Review (MIRR) is an 18-month regional planning initiative led by the Northeast Florida Regional Council (NEFRC) in partnership with the Department of Defense's Office of Local Defense Community Cooperation (OLDCC) and the Florida DEP's Resilient Florida Program21. Designed to identify and mitigate risks beyond the boundaries of military installations, the MIRR takes a multi-hazard approach to address the vulnerabilities of critical shared infrastructure that supports both military operations and the surrounding communities across NEFL.

The region is home to four major military installations: Naval Station Mayport, Naval Air Station Jacksonville, Marine Corps Support Facility Blount Island, and the Camp Blanding Joint Training Center, all of which play a vital role in national security and the local economy. These bases face growing threats from flooding, shoreline erosion, extreme heat, wildfires, storm surge, and aging infrastructure[22]. The MIRR process emphasizes that military readiness is directly influenced by conditions outside the fence line, including the resilience of transportation networks, utilities, housing, and other critical systems.

The project formally launched in March 2025 with a regional kickoff event that convened over 60 stakeholders, including elected officials, installation commanders, engineers, and resilience professionals23. The technical consulting firm Jacobs Solutions Inc. was selected to lead the vulnerability assessment and infrastructure modeling components of the project. The planning process is structured into three phases: identification and assessment of risks (Phase 1), modeling of mission-related impacts (Phase 2), and development of adaptation strategies and implementation plans (Phase 3). Completion is expected by September 2026.

Workshops hosted at each installation during Summer 2025 enabled the project team to gather installation-specific insights and ground-truth emerging findings[24]. Stakeholders identified a range of mission-critical risks, including traffic congestion near base entrances, aging stormwater and utility systems, housing shortages for service members, and vulnerabilities to extreme weather events. A key deliverable submitted in mid-2025 included a Unified Resilience Assessment Standard, which outlines shared priorities between military and community stakeholders and serves as a framework for regional resilience planning. A complementary technical memorandum detailed a set of decision-support tools designed to model risk exposure, evaluate climate scenarios, and prioritize infrastructure investments.

The project is guided by a dual-committee structure. A Steering Committee, composed of elected officials, base leadership, and agency representatives, ensures strategic alignment, while a Technical Advisory Committee (TAC) of planners, engineers, and subject matter experts provides input on modeling assumptions and implementation strategies[25]. Coordination with local governments, utilities, and regional planning agencies is ongoing, with a focus on securing funding for priority projects and integrating resilience into long-range infrastructure planning.

The MIRR also incorporates feedback from broader regional initiatives, including the Resilient First Coast Collaborative, which supports coordination on housing, education access, flood mitigation, and supply chain continuity. Together, these efforts aim to identify solutions that enhance military mission assurance while delivering co-benefits to surrounding communities.

As Northeast Florida continues to grow and face escalating environmental challenges, the MIRR represents a model for how regional planning can bridge defense readiness and civilian resilience. By addressing shared vulnerabilities through collaboration, the project advances a unified approach to safeguarding both military operations and community stability.

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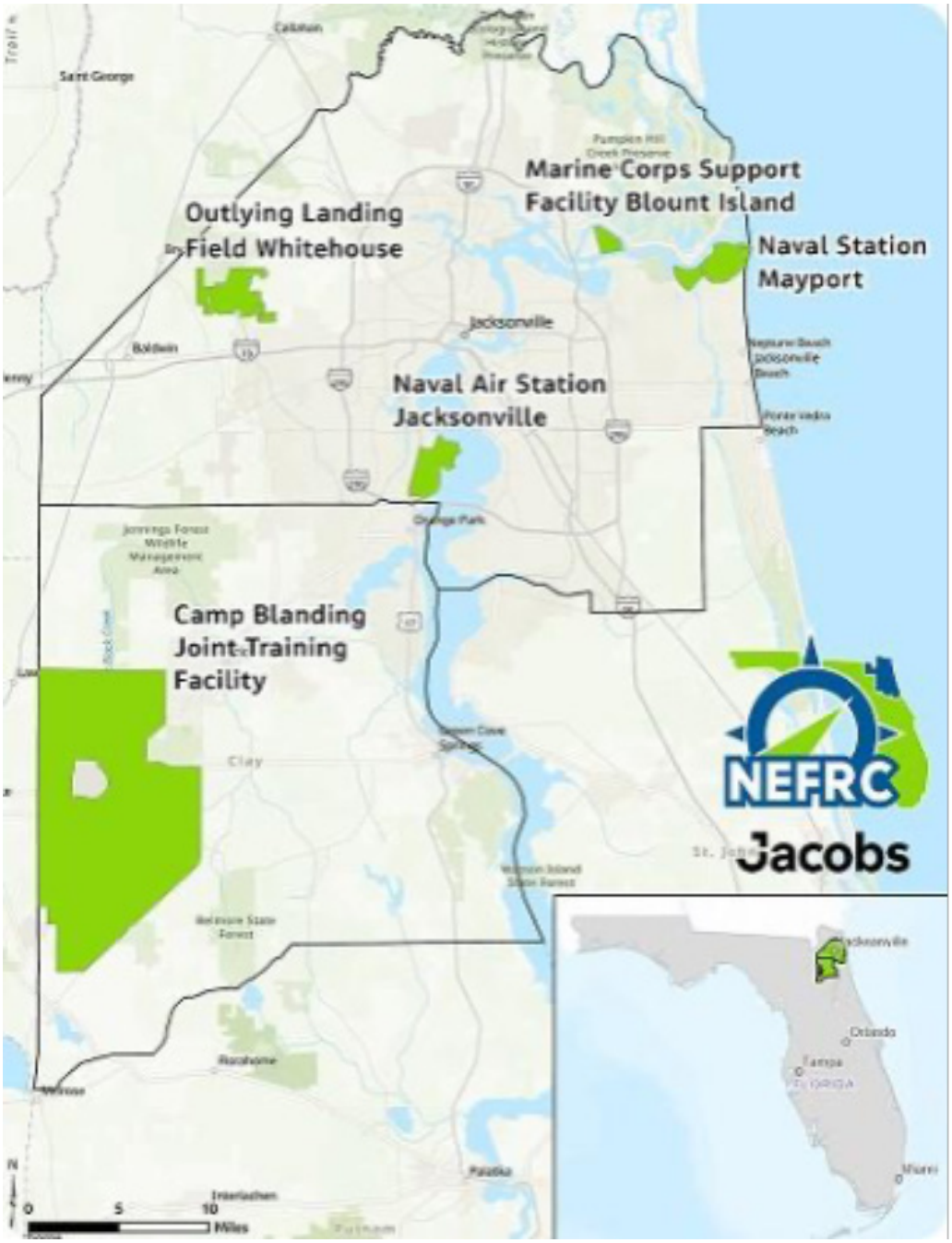
21 Northeast Florida Regional Council. (2025). MIRR. https://www.nefrc.org/mirr

22 American Security Project. (2021, August 25). Risks - Military base resilience. Military Base Resilience. https://militarybaseresilience.org/risks/

23 Northeast Florida Regional Council, & Woody, K. (2025, April 25). NEFRC's MIRR kickoff event launches innovative vision to safeguard Northeast Florida's military and community infrastructure [Press release]. https://www.nefrc.org/sites/default/files/mirr/NEFRC%20MIRR%20Kick-off%20PR_0.pdf

24 Northeast Florida Regional Council. (2025). MIRR: Naval Air Station Jacksonville Installation Visit and Stakeholder Workshop. (2025). https://www.nefrc.org/news/mirr-naval-air-station-jacksonville-installation-visit-and-stakeholder-workshop

25 Northeast Florida Regional Council. (2025). Northeast Florida Regional Council Military Installation Readiness Review. https://www.nefrc.org/sites/default/files/mirr/NEFRC_MIRR_September2025_SteeringCommittee_Presentation.pdf


Outlying Landing Field Whitehouse
Marine Corps Support Facility Blount Island
Naval Station Mayport
Naval Air Station Jacksonville
Camp Blanding Joint Training Facility
Jacksonville
Baldwin
Orange Park
Clay
Starke
Raiford
Palatka
Interlachen
Putnam
0 5 10 Miles
NEFRC
Jacobs
Orlando
Tampa
Miami

WORKFORCE PLANNING ANALYSIS

NEFL is positioned to become a regional leader in clean economy workforce development, driving significant job creation while advancing clean air and energy goals. The workforce analysis within this CCAP projects that by 2030, NEFL will require an additional 27,700 to 33,300 skilled workers across eight key measures—marking more than a 30% expansion of the current workforce and between 55,000 and 70,000 workers by 2050. With 62,300 workers already employed in climate-related sectors, NEFL has a solid foundation to build upon[1].

Key workforce needs include specialized roles such as solar photovoltaic installers, electricians with clean energy expertise, energy auditors, environmental engineers, and electric vehicle maintenance technicians. Addressing these shortages will require focused investment in training and career development. By strategically allocating nearly $4 billion by 2030 through partnerships among public agencies, private industry, and educational institutions, NEFL could generate over $12 billion in economic impact, add nearly $400 million annually in tax revenue, and ensure continued wage growth across the region.

The regional workforce plan emphasizes collaboration among local governments, employers, trade organizations, and educational institutions to strengthen technical training and certification pathways. Mobile training units, trade apprenticeships, and veteran transition programs will help ensure that new job opportunities are accessible across the six-county area.

NEFL's coordinated approach to workforce development not only closes critical labor gaps but also promotes a clean energy economy rooted in economic growth, environmental progress, and public well-being. With consistent investment and cooperation, NEFL can emerge as a leading hub for industry innovation and workforce excellence by 2030.

1 Note: This summary does not include the workforce analysis for community targets.

KEY REGIONAL FINDINGS

NEFL'S TRANSITION TO A CLEAN ECONOMY WILL REQUIRE APPROXIMATELY:

- 27,700–33,500 new jobs by 2030 and 55,000-70,000 by 2050 across all eight measures and specifically energy, building efficiency, connected communities, resilient infrastructure, and natural environmental solutions.
- 30–35% increase over the current regional workforce.
- Critical workforce shortages in occupations such as solar PV installers, electricians, energy auditors, environmental engineers, and advanced technical trades.
- Strong current regional foundation requiring targeted upskilling and strategic workforce development.

ECONOMIC IMPACT

- NEFL has a sizable workforce base, but meeting future goals will require greater specialization and coordinated retraining efforts.
- 62,330 current workers in climate-related occupations, representing 7.0% of the regional labor force.
- $4 billion regional investment by 2030 will generate $12 billion in total economic impact with an average economic multiplier of 3.04:1 across all measures
- Expected $395.5 million in annual tax revenue

STRATEGIC IMPORTANCE

- Without coordinated workforce planning, NEFL risks delays in achieving clean air and energy goals, reduced access to federal and state funding, and lost opportunities for long-term economic growth.
- Investment in training pipelines, certification programs, and cross-sector partnerships is essential to meet workforce demand and strengthen regional competitiveness.
- These efforts will unlock significant economic impact, sustain growth momentum, and position NEFL as a southeast leader and major job generator in the emerging clean energy economy.

To evaluate the potential economic impacts of implementing climate measures, this analysis uses publicly available labor and wage data from the 2023 and 2024 U.S. Bureau of Labor Statistics and EMSI[2,3,4]. The methodology includes estimating job creation and wage effects based on projected investments and employment multipliers across relevant sectors. These inputs are aligned with EPA's Climate Pollution Reduction Grants (CPRG) Workforce Planning Analysis framework, which emphasizes job parity, quality, and alignment with regional labor market conditions[5,6,7,8,9,10,11]

MEASURES & WORKFORCE NEEDED

MEASURE NUMBER & TITLE	2030 JOBS NEEDED	2050 JOBS NEEDED	KEY OCCUPATIONS	PRIORITY LEVEL
M1 | Distributed Renewables Clean Energy	3,500-4,200	14,620	Solar PV Installers, Electrical Engineers,Electricians	Critical
M2 | Building Energy Efficiency	4,200-4,490	8,500	Energy Auditors, HVAC Technicians, Electricians	Critical
M3 | Connected Communities	6,725-9,750	6,500	Software Developers, Civil Engineers, Electricians	Critical
M4 | Higher Fuel Efficiency Vehicles	2,245-3,380	5,000	EV Technicians & Fleet Operations Managers	High
M5 | Soil Land Carbon Sequestration	7,338	15,800	Certified Arborists & Environmental Technicians	High
M6 | Water Infrastructure Stormwater	3,035	5,100	Water Treatment Operators & Plumbers	High
M7 | Methane Capture Reuse	511-827	1,200	Chemical Engineers & Gas Plant Operators	Medium
M8 | Organic Waste Diversion	155-233	1,680	Recycling Coordinators & Heavy Equipment Operators	Medium
LOWER TOTAL ESTIMATE:	**27,709**	**58,400**		

The economic impact analysis estimates that a $4 billion regional investment by 2030 will generate $12 billion in total economic output, based on an average economic multiplier of 3.04 across all measures. This projection was derived using the U.S. Bureau of Economic Analysis's Regional Input–Output Modeling System (RIMS-II), the National Renewable Energy Laboratory's Jobs and Economic Development Impact (JEDI) models, and supplemental assumptions from IMPLAN and the U.S. Department of Energy's 2025 U.S. Energy & Employment Report (USEER). These tools and models assess direct, indirect, and induced impacts of climate-related investments by evaluating industry-specific multipliers, regional purchasing patterns, and employment shifts tied to decarbonization initiatives.[12]

2 National Renewable Energy Laboratory. Jobs and Economic Development Impact (JEDI) Models (factsheet/overview). NREL/FS-6A20-87769, 2024. https://docs.nrel.gov/docs/fy24osti/87769.pdf.
3 U.S. Department of Energy, Office of Policy. 2025 U.S. Energy & Employment Report (USEER). Washington, DC, 2025. https://www.energy.gov/policy/2025-us-energy-employment-report-useer.
4 National Renewable Energy Laboratory. Jobs and Economic Development Impact (JEDI) Models. Updated April 21, 2025. https://www.nrel.gov/analysis/jedi.
5 https://www.bls.gov/oes/2023/may/oes_27260.htm
6 https://www.bls.gov/oes/2023/may/oes_19660.htm
7 https://www.bls.gov/oes/2024/may/oessrcma.htm
8 https://www.bls.gov/oes/2024/may/fl_counties.htm
9 https://www.bls.gov/cew/data.htm
10 https://www.bls.gov/lau/
11 https://www.energy.gov/policy/2025-us-energy-employment-report-useer
12 Bureau of Economic Analysis. Regional Input–Output Modeling System (RIMS II) User's Guide. Washington, DC: U.S. Department of Commerce, 2012 (updated online 2018). https://www.bea.gov/resources/methodologies/RIMSII-user-guide.

2030 WORKFORCE DISTRIBUTION

To estimate the annual tax revenue generated by regional climate investments, the analysis first developed a detailed spend profile by measure, separating capital expenditures (capex) from operations and maintenance (O&M), and mapped these categories to input-output (I-O) sectors. Conservative, literature-based output multipliers and localized purchase assumptions were applied to calculate total economic output, drawing from IMPLAN's SAM framework and economic modeling conventions. These outputs were then translated into estimated public tax revenues using government-published revenue factors. NREL sources were central to this step, providing cost assumptions and investment profiles from the Annual Technology Baseline (ATB) for utility-scale solar PV, battery storage, and distributed wind; ComStock and ResStock modeling for residential and commercial energy profiles; and market assessments for installed system costs and microgrid deployment. These datasets informed both capital allocation and sector-specific tax yield estimates.[13,14,15,16,17,18,19,20,21,22]. These outputs were then converted into estimated tax revenues using published government revenue factors from sources including IMPLAN, the National Renewable Energy Laboratory (NREL), and the U.S. Census Bureau. State-specific tax structures and rates—particularly for Florida—were incorporated using data from the Florida Department of Revenue and national tax data benchmarks[23,24,25]. This approach ensures that both direct and induced tax effects are captured in alignment with Florida's fiscal framework[26,27,28].

13 U.S. Department of Energy, Solar Energy Technologies Office. "Solar Photovoltaic System Cost Benchmarks." https://www.energy.gov/eere/solar/solar-photovoltaic-system-cost-benchmarks

14 National Renewable Energy Laboratory. U.S. Solar Photovoltaic System and Energy Storage Cost Benchmarks(latest). Golden, CO: NREL, 2023–2024. https://docs.nrel.gov/docs/fy23osti/87303.pdf

15 National Renewable Energy Laboratory. "Utility-Scale PV" (ATB 2024) "Utility-Scale Battery Storage" (ATB 2024) "Residential/Commercial Battery Storage" (ATB 2024)... "Distributed Wind" (ATB 2024). https://atb.nrel.gov/electricity/2024

16 NREL/DOE Building Technologies Office. ComStock Reference Documentation, 2025 Release 1. 2025. https://nrel.github.io/ComStock.github.io/assets/files/comstock_reference_documentation_2025_1.pdf

17 NREL/DOE Building Technologies Office. ResStock Technical Reference Documentation v3.3. 2025. https://docs.nrel.gov/docs/fy25osti/91621.pdf.

18 National Renewable Energy Laboratory. "Solar Installed System Cost Analysis." https://www.nrel.gov/solar/market-research-analysis/solar-installed-system-cost.

19 National Renewable Energy Laboratory. Cost Projections for Utility-Scale Battery Storage: 2025 Update. Golden, CO: NREL, 2025. https://docs.nrel.gov/docs/fy25osti/93281.pdf.

20 National Renewable Energy Laboratory. Phase I Microgrid Cost Study: Data Collection and Analysis of Microgrid Costs in the United States. 2019. https://docs.nrel.gov/docs/fy19osti/67821.pdf.

21 Pacific Northwest National Laboratory. Distributed Wind Market Report: 2024 Edition. 2024. https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-36057.pdf.

22 National Renewable Energy Laboratory. Jobs and Economic Development Impact (JEDI) Models (factsheet). 2024. https://docs.nrel.gov/docs/fy24osti/87769.pdf.

23 U.S. Census Bureau. "Quarterly Summary of State & Local Tax Revenue (QTAX): Methodology." 2025. https://www.census.gov/programs-surveys/qtax/technical-documentation/methodology.html

24 U.S. Census Bureau. "Quarterly Summary of State & Local Government Tax Revenue (QTAX)." Data Portal, 2025. https://www.census.gov/programs-surveys/qtax.html

25 Florida Department of Revenue. "Florida Sales and Use Tax." Accessed October 16, 2025. https://floridarevenue.com/taxes/taxesfees/pages/sales_tax.aspx

26 May 2019 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates Jacksonville, FL" U.S. Bureau of Labor Statistics, March 31, 2020, https://www.bls.gov/oes/2019/may/oes_27260.htm

27 "May 2023 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates Jacksonville, FL" U.S. Bureau of Labor Statistics, April 3, 2024, https://www.bls.gov/oes/2023/may/oes_27260.htm

28 "Florida Employment Trends By Occupation" O*NET Online, August, 26, 2025 https://www.onetonline.org/link/localtrends/47-2111.00?st=FL

NEFL WORKFORCE LANDSCAPE

Total Population: 1.78 million residents (Florida's 4th-largest metro economy)

Labor Force: 890,186 workers (2025 estimate)

Educational Pipeline Sources

University of North Florida: Engineering and environmental programs

Florida State College at Jacksonville: Technical certification programs

Military Transition Pipeline (3,000 annually)

- Naval Air Station Jacksonville
- Naval Station Mayport
- Coast Guard operations

Primary Sources (75% of workforce):

- Existing construction and trades workers (49,500 regional employment)
- Military transitioning personnel (3,000+ annually from local installations)

- Naval Air Station Jacksonville
- Naval Station Mayport
- Coast Guard operations

Primary Sources (75% of workforce):

- Existing construction and trades workers (49,500 regional employment)
- Military transitioning personnel (3,000+ annually from local installations)
- Current energy/utilities workers (12,400 regional employment)

Secondary Sources (20% of workforce)

- Interstate workforce mobility from Georgia, Alabama, and Central Florida
- Career changers from declining industries
- Underemployed and

Existing Industry Workforce (65,000+ workers)

- Construction and electrical trades: 35,000 workers
- Manufacturing and logistics: 28,000 workers
- Energy and utilities: 8,500 workers
- Environmental services: 3,500 workers

LABOR MARKET AREA

The Jacksonville MSA includes the Jacksonville–St. Marys–Palatka Combined Statistical Area, encompassing Nassau, Duval, Clay, and St. Johns Counties, along with the City of Palm Coast in Flagler County[29]. This five-county region forms Florida's fourth-largest metropolitan economy, with a total population of approximately 1.78 million residents, a labor force of 890,186 workers, and 45k–50k employees currently working in sectors tied to the above measures[30,31].

REGIONAL WORKFORCE CHARACTERISTICS

Northeast Florida's regional workforce is anchored by Duval County, which serves as the employment and industry hub with 573,000 workers and the largest concentration of skilled trades. Duval is also home to major universities and utility headquarters, and it is projected to need 15,000–18,000 additional workers by 2030—accounting for approximately 54% of the region's total projected workforce demand. St. Johns County adds 128,000 workers to the region, noted for its strong engineering and technical expertise[32,33]. Its economy is innovation-driven and bolstered by a highly educated population, supporting an estimated 4,500–5,500 new positions by 2030. Clay County contributes 89,000 workers, maintaining robust construction and technical training pipelines through local colleges and is expected to require 3,500–4,200 new jobs. Nassau County, with 42,000 workers, brings industrial and maritime experience that aligns well with the region's port, logistics, and renewable energy sectors. It is forecasted to need 2,200–2,800 additional workers. Flagler County rounds out the regional labor force with 24,000 workers, offering specialized capacity in coastal resilience and construction support, and is projected to demand 1,800–2,200 new jobs by 2030. Collectively, these counties compose a balanced and complementary labor market centered on Duval's urban core and reinforced by surrounding counties' strengths in engineering, construction, maritime logistics, and environmental resource management.[34]

COUNTY	2023 POP	2023 LABOR FORCE	2030 JOB NEEDS	KEY INDUSTRIES	WORKFORCE ADVANTAGES
Duval	996,000	573,000	15-18k (54%)	Financial services, logistics, healthcare	Largest workforce pool, established training infrastructure, utility headquarters
St. Johns	280,000	128,000	4,500–5,500	Tourism, construction, professional services	Highest education levels, rapid growth, high environmental consciousness
Clay	230,000	89,000	3,500–4,200	Government, manufacturing, construction	Strong trades programs, workforce mobility
Nassau	94,000	42,000	2,200–2,800	Port activities, paper/ pulp, tourism	Industrial expertise, cross-border workforce
Flagler	125,000	54,000	1,800–2,200	Construction, tourism, retirement services	Growing market, available workforce

29 U.S. Bureau of Labor Statistics. "Jacksonville MSA Data." United States Department of Labor, accessed September 2025. https://www.bls.gov/eag/eag.fl_jacksonville_msa.htm.

30 Florida Department of Economic Opportunity. "Workforce Statistics and Labor Market Information." Accessed September 2025. https://floridajobs.org/workforce-statistics/labor-market-information.

31 CareerSource Northeast Florida. "Regional Workforce Analysis." Accessed September 2025. https://careersourcenortheastflorida.com.

32 JEA. "About Careers." Accessed September 2025. https://www.jea.com/about/careers.

33 University of North Florida. "Programs." Accessed September 2025. https://www.unf.edu.

34 Northeast Florida Regional Council. "Economic Development." Accessed September 2025. https://www.nefrc.org/economic-development.

WORKFORCE NEEDS BY MEASURE AND INDUSTRY ALIGNMENT

SECTOR	PRIMARY INDUSTRIES (NAICS)	KEY OCCUPATIONS	2030 NEED	CRITICAL SKILLS REQUIRED
Electric Power	Utilities (221), Solar Installation (238210)	Electricians, Solar Installers, Power Plant Operators	8,500	Solar PV systems, grid integration, electrical safety
Buildings	Construction (236), HVAC Contractors (238220)	HVAC Techs, Construction Laborers, Energy Auditors	7,200	Energy efficiency, building automation, green building
Transportation	Transit Systems (485), Data Processing (518)	Software Developers, Transportation Planners, Fleet Managers	4,800	Smart city systems, fleet electrification, data analytics
Natural & Working Lands	Landscape Services (561730), Environmental Services (541620)	Landscaping Workers, Environmental Scientists, Arborists	3,400	Carbon sequestration, native plants, ecosystem restoration
Waste & Materials Mgmt	Waste Treatment (562), Materials Recovery (562920)	Equipment Operators, Environmental Technicians, Drivers	2,900	Waste processing, composting, recycling technology
Industry	Manufacturing (31-33), Chemical Plants (325)	Industrial Mechanics, Chemical Engineers, Process Operators	1,000	Process optimization, hydrogen systems, clean manufacturing

WORKFORCE NEEDS BY INDUSTRIES AND OCCUPATIONS[35]

Current employment data, as of 2024, was gathered from the Bureau of Labor Statistics (BLS) Occupational Employment and Wage Statistics (OEWS) program, with occupations classified using Standard Occupational Classification (SOC) codes[36,37]. Regional median wages were also sourced from BLS OEWS data. Job quality scores were developed based on U.S. Department of Labor "Good Jobs Principles[38,39]." Future workforce needs for 2030 were projected using IMPLAN economic modeling, BLS employment projections, and measure-specific analysis (e.g., investment levels, worker-to-project ratios, technology timelines)[40,41]. Each climate measure was mapped to North American Industry Classification System (NAICS) codes[42]. Historical employment trends were analyzed using BLS Quarterly Census of Employment and Wages (QCEW) data[43]. The analysis integrated workforce projections with economic impact modeling to estimate economic multipliers, tax revenue, and total county-level impact[44,45].

35 U.S. Bureau of Labor Statistics. "Occupational Employment and Wage Statistics (OEWS)." May 2024. https://www.bls.gov/oes/.U.S. Bureau of Labor Statistics. "May 2024 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates - Jacksonville, FL MSA." Accessed October 2025. https://www.bls.gov/oes/current/oes_31080.htm.

36 U.S. Bureau of Labor Statistics. "Technical Notes for May 2024 OEWS Estimates." February 3, 2025. https://www.bls.gov/oes/current/oes_tec.htm.

37 U.S. Bureau of Labor Statistics. "Standard Occupational Classification (SOC) System." Accessed October 2025. https://www.bls.gov/soc/.

38 U.S. Department of Commerce and U.S. Department of Labor. "Good Jobs Summit Principles Factsheet." April 2022. https://www.commerce.gov/sites/default/files/2022-04/Good-Jobs-Summit-Principles-Factsheet.pdf.

39 U.S. Department of Labor. Good Jobs Roadmap. 2024. https://www.dol.gov/sites/dolgov/files/goodjobs/Good-Jobs-Roadmap.pdf.

40 U.S. Bureau of Labor Statistics. "Employment Projections: Occupational Projections Data." Accessed October 2025. https://www.bls.gov/emp/data/occupational-data.htm

41 Florida Department of Economic Opportunity. "Florida Employment Projections by Occupation." Accessed October 2025. Accessed via Projections Central https://projectionscentral.org/.

42 U.S. Census Bureau. "North American Industry Classification System (NAICS)." Accessed October 2025. https://www.census.gov/naics/.

43 U.S. Bureau of Labor Statistics. "Quarterly Census of Employment and Wages (QCEW)." Accessed October 2025. https://www.bls.gov/cew/.

44 Florida Department of Economic Opportunity. "Workforce Statistics and Labor Market Information." https://floridajobs.org/workforce-statistics/labor-market-information.

45 CareerSource Northeast Florida. "Regional Workforce Analysis."https://careersourcenortheastflorida.com.Northeast Florida Regional Council. "Economic Development Data." https://www.nefrc.org/economic-development.

PRIORITIZED OCCUPATIONS TABLE BY JOB QUALITY & REGIONAL NEED

Based on good job quality criteria and implementation criticality across all measures:

RANK	OCCUPATION	SOC CODE	CPRG SECTORS	2024 REGIONAL WORKERS	2030 NEED	JOB QUALITY SCORE	MEDIAN WAGE (NE FL)
1	Electricians	47-2111	All	9,800	+12,200	9.2/10	$50,120
2	HVAC Mechanics & Installers	49-9021	Buildings / Industry	8,100	+10,650	9.0/10	$52,220
3	Construction Laborers	47-2061	All	12,000	+8,500	7.8/10	$41,280
4	Environmental Engineers	17-2081	All	380	+485	9.5/10	$82,500
5	Solar Panel Installers	47-2231	Electric Power	750	+2,850	8.5/10	$55,740
6	Software Developers	15-1252	Transportation	17,730	+1,200	8.8/10	$79,940
7	Civil Engineers	17-2051	Transportation/ Buildings	2,800	+945	9.1/10	$87,680
8	Plumbers / Pipefitters	47-2152	Buildings / Industry	6,200	+1,850	8.0/10	$49,280
9	Heavy Truck Drivers	53-3032	Transportation/ Waste	1,240	+1,640	7.2/10	$48,200
10	Data Scientists / Analysts	15-2051	Transportation	980	+785	8.9/10	$89,450

WORKFORCE SUPPLY

The workforce supply analysis followed EPA's CPRG Workforce Planning Analysis Reference guidance, which requires grantees to assess current workforce characteristics including employment levels, demographics, educational attainment, wage competitiveness, skills gaps, and geographic distribution. The methodology integrates quantitative employment data with qualitative assessments of workforce readiness and capacity. Regional wage competitiveness was assessed by comparing Jacksonville MSA median wages to national median wages for identical occupations using BLS OEWS data[46,47]. Wage gaps were calculated as percentage differences between regional and national medians for priority occupations[48,49,50]. Skills gap assessments were developed through qualitative and quantitative analysis combining Industry Stakeholder Consultation, CareerSource Northeast Florida Analysis, and Comparison of Current vs. Required Skills analysis comparing current workforce skills (as indicated by certifications, training completions, and employer feedback) against skills required for climate-related occupations as defined by O*NET and industry standards[51,52,53,54,55]. BAU projections assumed baseline regional growth rates without climate-specific investments, while investment scenarios modeled job creation resulting from the $4 billion climate investment through 2030.

CHARACTERISTICS AND SUPPLY OF THE 2023 WORKFORCE

Northeast Florida (NEFL) currently employs over 62,000 workers in sectors directly aligned with the measures outlined in the Comprehensive Climate Action Plan (CCAP). This workforce spans a range of critical industries and reflects both regional strengths and strategic opportunities for investment and development.

46 U.S. Census Bureau. "American Community Survey 5-Year Estimates, 2019-2023: Educational Attainment and Employment Status for Jacksonville MSA." Accessed October 2025; "American Community Survey (ACS): Educational Attainment for Workers 25 Years and Older, Jacksonville MSA." 2019-2023. Accessed October 2025. https://www.census.gov/

47 U.S. Bureau of Labor Statistics. "Occupational Employment and Wage Statistics: May 2024 National Occupational Employment and Wage Estimates." Accessed October 2025 ; "Employment Projections: Occupational Projections Data, 2023-2033." Accessed August 27, 2025; "Current Population Survey (CPS): Demographic Characteristics of the Labor Force." Accessed October 2025;"Measures of Education and Training: Educational Attainment Data from the American Community Survey." Accessed August 27, 2025; "Occupational Employment and Wage Statistics: May 2024 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates - Jacksonville, FL MSA." Accessed October 2025; "Quarterly Census of Employment and Wages (QCEW): Jacksonville MSA, 2019-2024." Accessed October 2025. https://www.bls.gov/.

48 U.S. Bureau of Labor Statistics. "Local Area Unemployment Statistics (LAUS)." Accessed October 2025. https://www.bls.gov/lau/.

49 U.S. Bureau of Labor Statistics. "Occupational Employment and Wage Statistics (OEWS), Jacksonville MSA." May 2024. Accessed October 2025. https://www.bls.gov/oes/current/oes_31080.htm.

50 Florida Department of Economic Opportunity. "Local Area Unemployment Statistics (LAUS): County Labor Force Estimates for Northeast Florida." Accessed October 2025. https://floridajobs.org/workforce-statistics/labor-market-information.

51 CareerSource Northeast Florida. "Regional Workforce Skills Gap Analysis and Employer Survey Results." 2024-2025. Accessed October 2025; WIOA Annual Statewide Performance Report 2022-2023. November 30, 2023; "Veteran Services and Military Transition Data for Northeast Florida." 2024-2025. Accessed October 2025. https://careersourceflorida.com.

52 University of North Florida. "Engineering and Environmental Programs Enrollment Data." Accessed October 2025. https://www.unf.edu.

53 Florida State College at Jacksonville. "Technical Certification Programs and Enrollment." Accessed October 2025. https://www.fscj.edu.

54 St. Johns River State College. "Career and Technical Education Programs." Accessed October 2025. https://www.sjrstate.edu.

55 Florida Department of Education. "Career and Technical Education Data and Reporting." Accessed October 2025. https://www.fldoe.org/academics/career-adult-edu/.

NEFL WORKFORCE CAPACITY

A wage competitiveness analysis reveals that average regional wages fall between 4.8% and 14.7% below national averages across many priority occupations. However, specialized clean energy roles command notable wage premiums of 15% to 25%, indicating strong market value for advanced skills. Foundational trades, particularly in electrical work and engineering, offer relatively competitive wages and serve as a stable base for future workforce transitions.

In terms of skill sets, NEFL's workforce shows notable strengths in traditional construction, electrical systems, and mechanical aptitude. However, critical gaps exist in areas essential to clean energy transitions, including specialized technical certifications, advanced technology integration, and environmental compliance knowledge. Addressing these gaps will be essential to meet future CCAP-driven demand.

The region's workforce is aging, with an average age of 43.2 years and nearly 28% of workers eligible for retirement within the next decade. Gender representation remains uneven, with 72% male and 28% female participation. Educational attainment is diverse: 45% of workers hold a high school diploma, 35% have some college or a certificate, and 20% possess a bachelor's degree or higher. The racial and ethnic composition of the workforce includes 58% White, 28% Black or African American, 10% Hispanic or Latino, and 4% from other backgrounds.

Geographically, Duval County serves as the employment center, accounting for 57% of the regional workforce. St. Johns County follows with 18%, while Clay County contributes 12%. Nassau County accounts for 7% of the workforce, and both Baker and Flagler Counties each contribute 3%. This distribution reflects a concentrated labor base in the urban core, with meaningful contributions from surrounding areas that enhance the region's diversity and capacity.

Historical and Projected Job Trends

OCCUPATION	HISTORICAL GROWTH (2019-2024)	BAU PROJECTED GROWTH	WITH INVESTMENT GROWTH
Solar Installers	18.5% annually	12.8% annually	35.2% annually
EV Technicians	24.1% annually	15.6% annually	42.3% annually
Energy Auditors	8.5% annually	2.5% annually	6.8% annually
Electricians	2.8% annually	2.2% annually	6.5% annually
Environmental Engineers	3.5% annually	4.2% annually	8.9% annually

Current Capacity by Priority Occupation

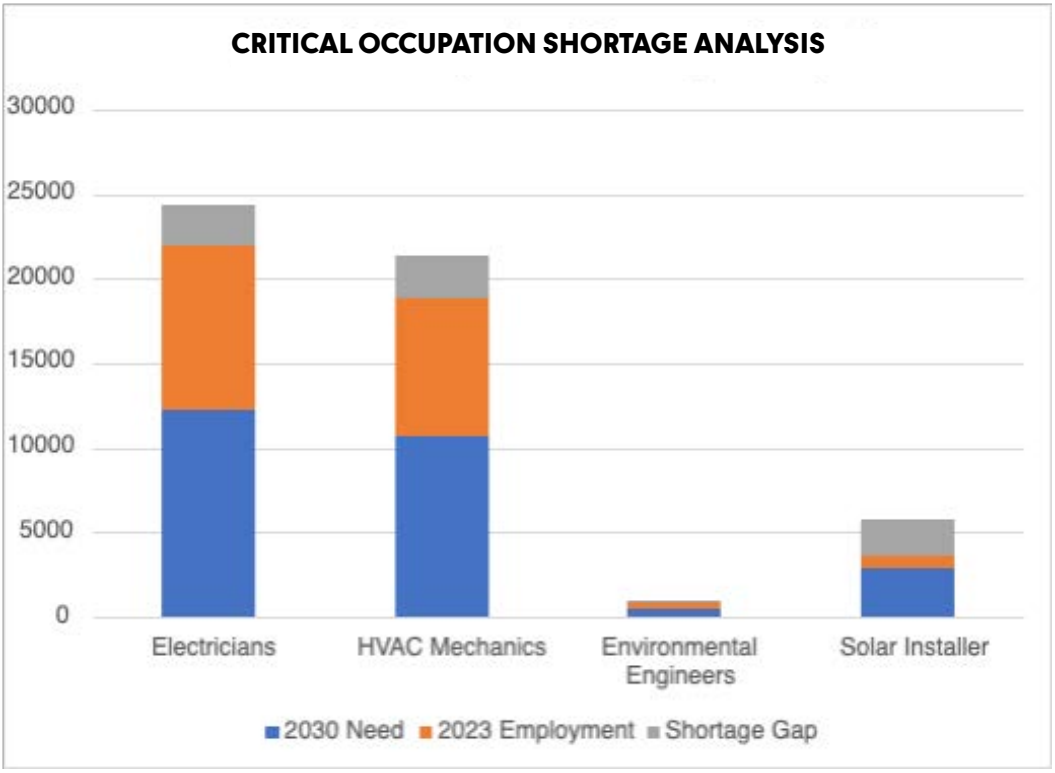
OCCUPATION CATEGORY	2023 EMPLOYMENT	CAPACITY UTILIZATION	SKILLS GAP LEVEL	WAGE COMPETITIVENESS
Skilled Trades	45,200	82%	Medium	8-15% below national average
Environmental / Technical	12,400	75%	High	5-12% below national average
Professional / Engineering	8,900	88%	Critical	10-20% below national average
Transportation / Logistics	15,500	70%	Medium	Near national average
General Labor	2,735	65%	Low	5-10% below national average

CRITICAL WORKFORCE SHORTAGES

The region faces significant shortages in specialized occupations by 2030:

- Electricians with clean energy specialization: 2,500–3,500 shortage
- Environmental engineers: 400–600 shortage
- Energy auditors and efficiency specialists: 850–1,200 shortage
- Software developers with energy systems expertise: 800–1,000 shortage
- Certified arborists and land management specialists: 520–750 shortage

Contributing factors include an aging workforce with 30–40% of current workers eligible for retirement by 2035, rapid technology evolution requiring continuous education, wage competition from other sectors, limited specialized training infrastructure, and geographic access challenges in rural counties.



Investing in workforce development pays off. For every $1 invested in workforce development per this plan, there is an average of $3.20 in total economic impact. This section presents data and graphs illustrating the positive return on investment.

DIRECT JOB CREATION BY COUNTY (2030 PROJECTIONS)

County	Direct Jobs Created	Direct Annual Wages	Total Economic Impact	Tax Revenue Generated
Duval	16,680	$892M	$1.68B	$168M
St. Johns	4,445	$267M	$503M	$50M
Clay	3,340	$178M	$335M	$34M
Nassau	1,890	$95M	$179M	$18M
Flagler	1,555	$78M	$147M	$15M
TOTAL	28,800	$1.55B	$2.92B	$292M

Combined regional economic modeling, authoritative government datasets, sectoral job projections, and EPA best practices. The approach integrated input-output analysis using IMPLAN modeling framework, business-as-usual (BAU) scenarios, and workforce gap estimates to calculate job creation, economic multipliers, and sector- and county-level impacts[56]. IMPLAN economic modeling enables calculation of economic multipliers (total regional impact per dollar invested), incorporating direct, indirect, and induced effects[57]. Multiplier values (typically 2.5:1–3.8:1 -- construction, clean energy, and workforce investments in Southeastern states range from 2.5:1 to over 3.5:1 depending on sector and project scale and benchmarks in the EPA and DOE literature suggest that clean economy workforce investment in the Southeast delivers multipliers averaging 2.8:1 to 3.5:1) were generated by compiling input-output tables that model inter-industry relationships and consumption patterns in Northeast Florida[58,59,60]. This allowed the estimation of total jobs, labor income, GDP, and tax revenues driven by the investment. Tax revenue estimates and wage outputs were derived as functions of modeled payroll, indirect, and induced economic gains, and local/regional tax bases as implemented in IMPLAN or regionally accepted formulas. Tax revenue estimates and wage outputs were derived as functions of modeled payroll, indirect, and induced economic gains, and local/regional tax bases as implemented in IMPLAN or regionally accepted formulas. BAU scenarios use historical regional BLS and local data to project job outcomes and economic benefits if no new climate/workforce investment is made[61,62]. The investment scenario runs the same IMPLAN model with climate plan investments included for comparative impact results.

56 United States Census Bureau. “Educational Attainment.” June 12, 2025. https://www.census.gov/topics/education/educational-attainment.html

57 University of Wisconsin Center for Cooperatives Research on the Economic Impact of Cooperatives. “IMPLAN Methodology.” Accessed September 2025. https://reic.uwcc.wisc.edu/implan/

58 CareerSource Northeast Florida. “Regional Workforce Analysis and Skills Gap Assessment.” 2024-2025. https://careersourcenortheastflorida.com.

59 CareerSource Florida. WIOA Annual Statewide Performance Report 2022-2023. November 30, 2023. https://careersourceflorida.com/wp-content/uploads/2023/12/2022-23-WIOA-Annual-Performance-Report.pdf

60 Florida Department of Economic Opportunity. “Workforce Statistics and Labor Market Information.” Accessed October 2025. https://floridajobs.org/workforce-statistics/labor-market-information.

61 U.S. Bureau of Labor Statistics. “Occupational Employment and Wage Statistics (OEWS), Jacksonville MSA.” May 2024; “ Occupational Employment and Wage Statistics (OEWS) Technical Notes for May 2024 OEWS Estimates.” May 2024; “Employment Projections.” August 28, 2025; U.S. Bureau of Labor Statistics. “Quarterly Census of Employment and Wages (QCEW), 2019-2024.” Accessed October 2025. https://www.bls.gov.

62 Butler County, PA. “Better utilizing investments to leverage development.” May 2020. https://www.butlercountypa.gov/DocumentCenter/View/1544/IMPLAN---Economic-Impact-Justification-PDF

2030 ECONOMIC IMPACT ANALYSIS

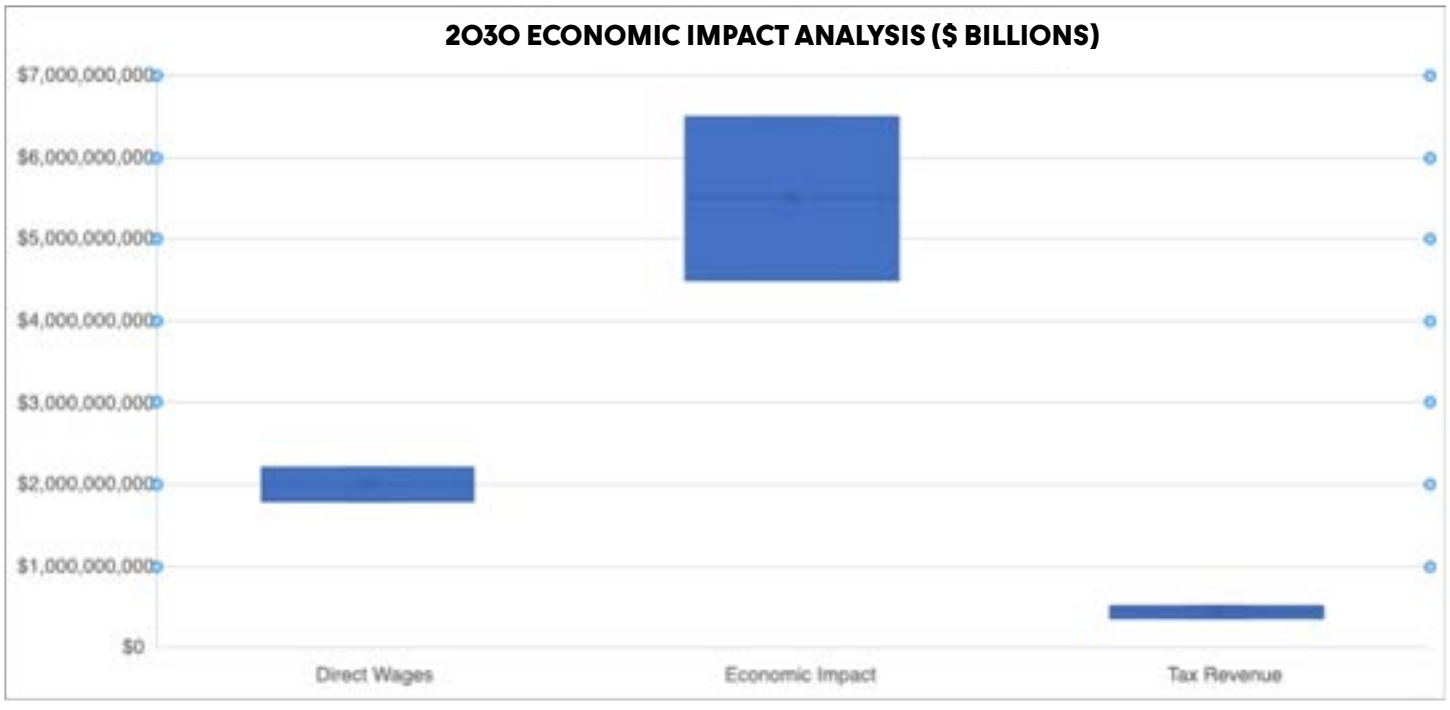
A projected regional investment of $4.0 billion by 2030 is expected to unlock transformative economic returns across Northeast Florida. This infusion of capital is anticipated to generate a total economic impact of $12.0 billion by 2030, equating to $4.5–6.5 billion in annual economic activity. The average economic multiplier across all sectors stands at 3.04:1—well above the national benchmark of 2.5:1—underscoring the high-yield potential of targeted climate and workforce investments. Annual tax revenues are projected to range from $380 to $520 million, while direct wages could total between $1.8 and $2.2 billion annually, creating a significant boost in household income and local spending power.

2030 FUTURE POSITIONS WORKFORCE EDUCATION

Sector-specific returns highlight particularly strong investment performance in clean energy, with an estimated return of $3.80 for every dollar invested. Transportation follows with a $3.10 return per dollar, while building efficiency and environmental measures yield returns of $2.85 and $2.65, respectively. When isolating workforce development alone, the return on investment is equally compelling: for every $1 invested, there is an immediate $1.00 in direct wages and activity, $1.20 in supplier and vendor engagement, and $1.30 in induced consumer spending—amounting to a $3.50 total ROI over a 10-year horizon.

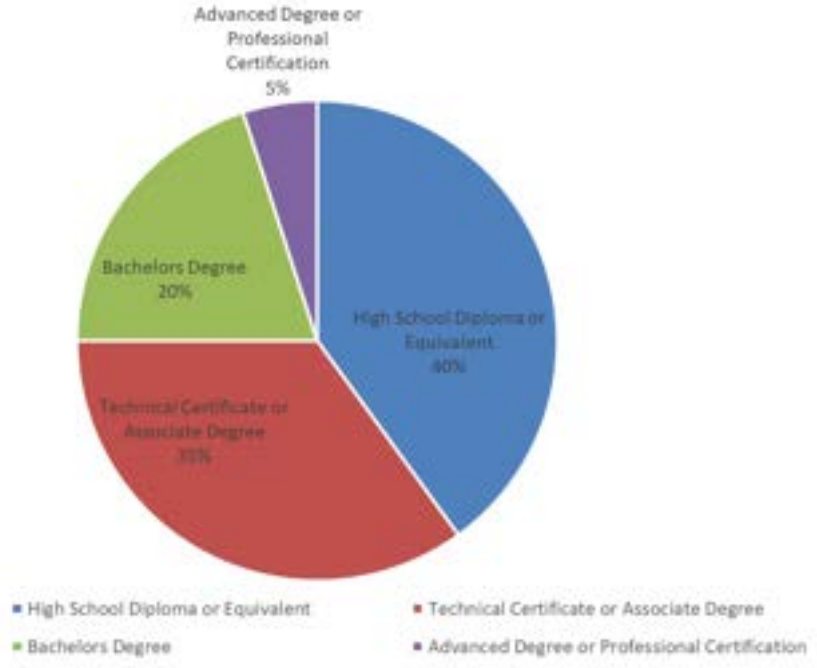
Looking further ahead, the cumulative impact of these investments is projected to reach $41.4 billion in economic benefits by 2050, illustrating the enduring value of workforce development as a cornerstone of the region's climate and economic resilience strategy.

The workforce required to realize these gains spans a wide range of educational backgrounds. Approximately 40% of future positions—about 11,120 jobs—will be accessible to individuals with a high school diploma or equivalent. An additional 35% (9,730 jobs) will require a technical certificate or associate degree, while 20% (5,560 jobs) will call for a bachelor's degree. The remaining 5% (1,390 jobs) are expected to demand advanced degrees or professional certifications, reinforcing the need for diverse and inclusive training pipelines.



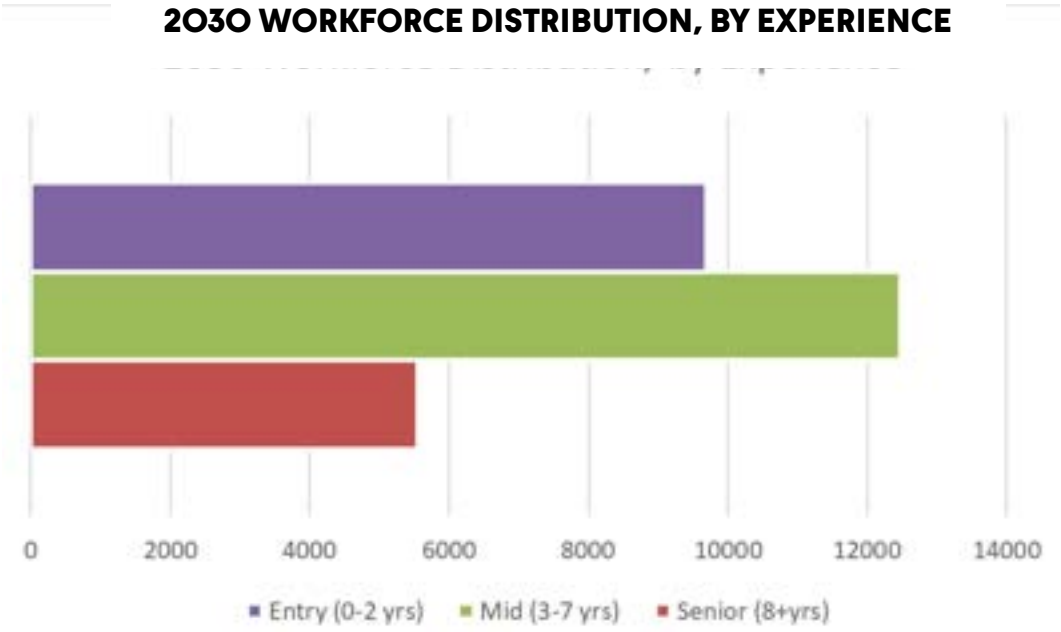
COUNTY LEVEL IMPACT BY 2030

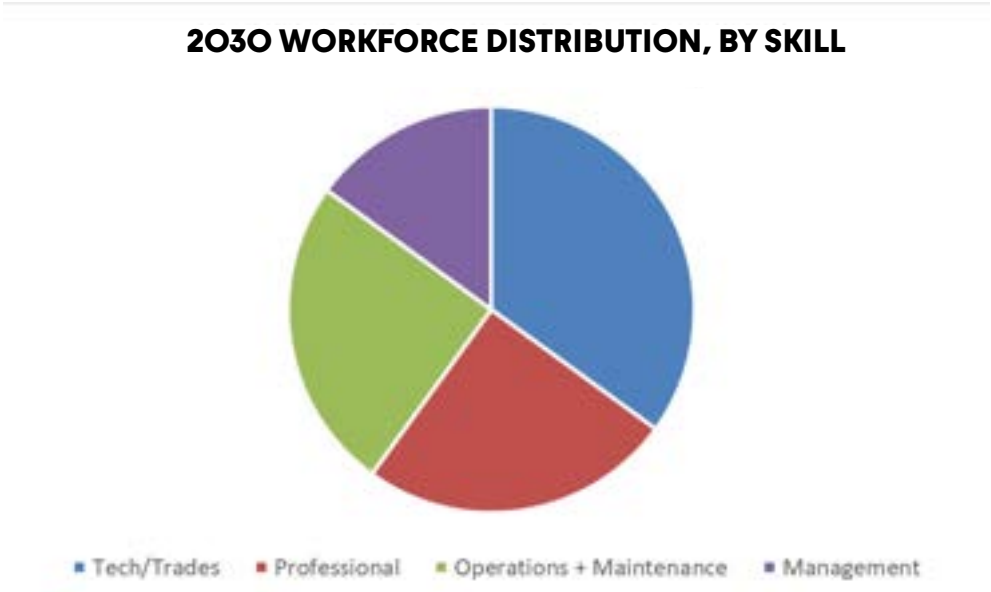
2030 FUTURE POSITIONS WORKFORCE EDUCATION PROFILE



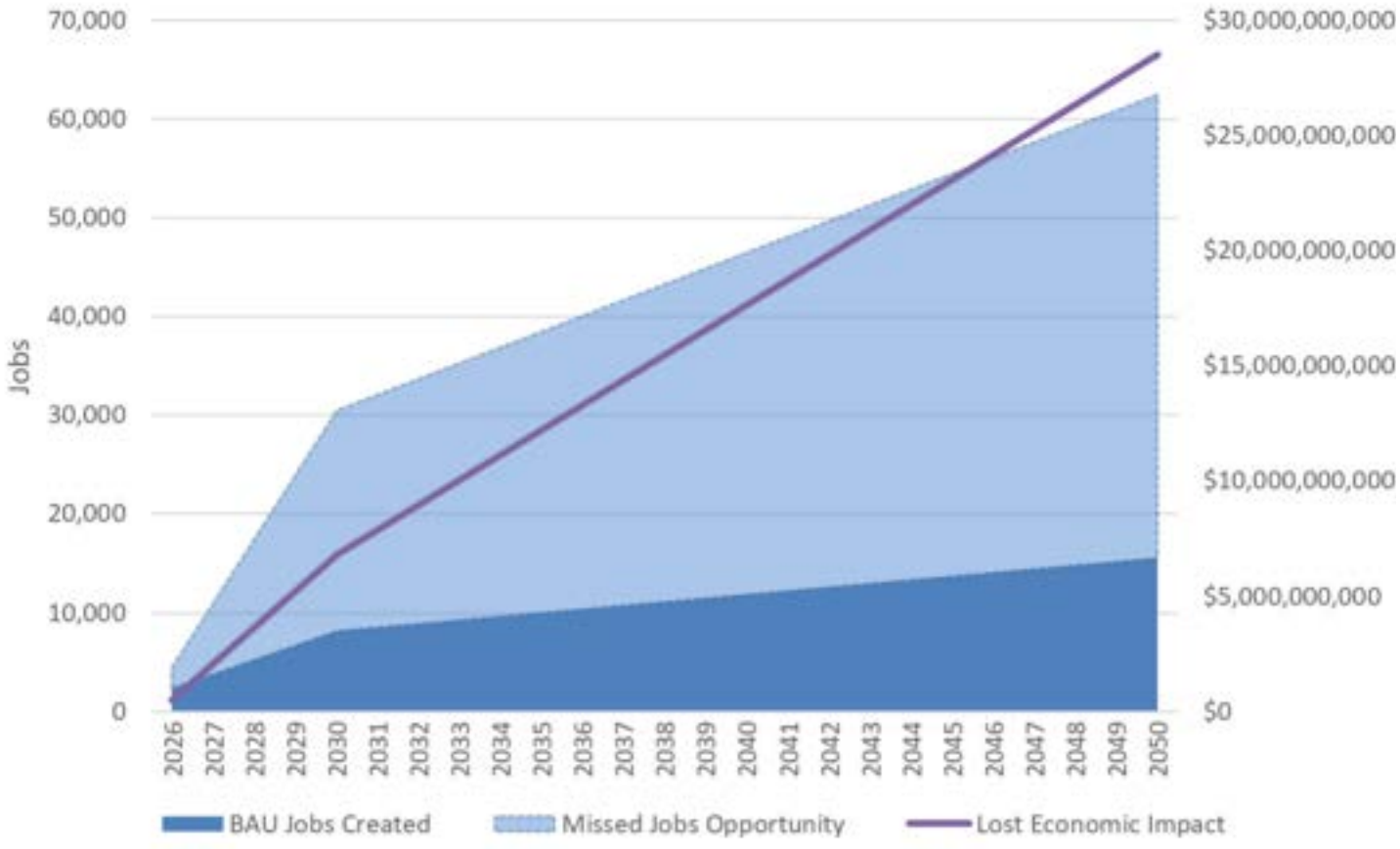
SKILL LEVEL REQUIREMENTS

The regional clean air workforce development strategy is designed not only to drive economic growth but also to create tangible opportunities for Northeast Florida (NEFL) residents across all experience levels. Approximately 35% of the projected jobs will be accessible to entry-level workers with less than two years of experience, opening doors for recent graduates, career changers, and those re-entering the workforce. A majority—45%—will cater to mid-level professionals with 3 to 7 years of experience, providing strong advancement pathways for NEFL's existing workforce to grow their careers in future-focused industries. Senior-level roles, which make up 20% of the positions, will leverage the expertise of experienced workers, ensuring that institutional knowledge remains a valuable asset. This tiered job distribution supports economic inclusion, allowing residents from diverse backgrounds and career stages to benefit directly from the region's clean energy transition and climate resilience investments.





MISSED OPPORTUNITIES WITHOUT STRATEGIC INVESTMENT



BUSINESS AS USUAL (BAU) SCENARIO

Without a bold and strategic investment in workforce development, NEFL stands to lose far more than just potential job growth: it risks falling behind entirely. By 2030, the region could miss out on creating 22,300 jobs and forfeit $6.8 billion in economic impact compared to a scenario with targeted investment in rapidly advancing sectors.

The long-term consequences could be even more severe: NEFL may face a 10- to 15-year delay in reaching its climate and economic goals, a decline in its ability to attract new industries, and the loss of homegrown talent to better-prepared regions. As the table below illustrates, the cost of inaction compounds over time—by 2050, the region could forgo 47,000 jobs and nearly $28.5 billion in economic output.

POTENTIAL CHANGES, SHORTAGES, AND CHALLENGES[63]

By 2030, NEFL is expected to face significant workforce shortages across multiple roles critical to energy, infrastructure, and environmental sectors. Electricians trained in modern energy technologies will face the most significant deficit, with a shortfall of 2,500–3,500 workers, creating a major gap in the skilled labor needed to support ongoing infrastructure projects. Environmental engineers will remain in high demand, with an estimated shortage of 400–600 professionals for planning, design, and systems implementation. The region will also need an additional 850–1,200 energy auditors and efficiency specialists to meet building performance goals, alongside 800–1,000 software developers with experience in energy and infrastructure systems. Furthermore, certified arborists and land management specialists are projected to be undersupplied by 520–750 workers, impacting regional restoration and land stewardship efforts.

This is based on a layered research approach combining quantitative analysis, regional labor market projections, consultations with industry and education partners, and benchmarking against national and state datasets[64,65,66]. Projected job needs per occupation (e.g., 2,500–3,500 electricians, 400–600 environmental engineers) were calculated by evaluating regional implementation targets for each of eight climate action measures, then mapping these to SOC codes using BLS Occupational Employment and Wage Statistics (OEWS) and state projections. These were validated with EPA's CPRG guidance for climate workforce planning. For gap analysis for each key occupation, the current regional workforce (from BLS, Florida Department of Economic Opportunity, and CareerSource Northeast Florida) was compared to jobs needed to fulfill all 2030 scenario measures, identifying numeric shortages. Trend analysis used BLS QCEW and OEWS were used to track historic annual growth by occupation (2019–2024). Business-as-usual (BAU) projections and scenario (investment) projections were calculated by extending trends (linear/exponential as appropriate), then modeling the delta with and without climate-specific investments. [Example: Solar installer growth (historic: 18.5% annually; with investment: 35.2%), environmental engineers (historic: 3.5%; with investment: 8.9%]. Aging workforce was calculated as a percent of existing workers eligible for retirement using occupation age data available from CPS/ACS and regional sources. Education & training shortages were attributed to both a lack of specialized local programs and the time required to scale (e.g., HVAC heat pump specialists require "12–18 months" of targeted upskilling) and supported by local college enrollment and graduation data. Wage competition used regional/national wage comparisons and noted poaching of talent by other industries; indexed to BLS regional wage reports. For identifying contributing factors, integrated industry input (employer surveys via CareerSource Northeast Florida, union training bodies), technical college partnership feedback, and trends in tech integration (rise of AI, digital infrastructure, IoT/job hybridization) were considered to forecast evolving job needs. For rural workforce barriers, geographic access challenges and retention issues were identified via regional workforce board focus groups and rural county statistics. For partnership data, anything published or provided by educational institutions, labor organizations, utilities, and economic development agencies were used.

63

64 U.S. Bureau of Labor Statistics. "Occupational Employment and Wage Statistics (OEWS), Jacksonville MSA." May 2024. Accessed October 2025. https://www.bls.gov/oes/current/oes_31080.htm.

65 Florida Department of Economic Opportunity. "Workforce Statistics and Labor Market Information." Accessed October 2025. https://floridajobs.org/workforce-statistics/labor-market-information

66 U.S. Bureau of Labor Statistics. "Employment Projections: Occupational Data." Accessed October 2025. https://www.bls.gov/emp/data/occupational-data.htm.

CRITICAL SHORTAGES (IMMEDIATE ACTION REQUIRED - 2026-2027)

OCCUPATION	CURRENT SHORTAGE	CONTRIBUTING FACTORS	RECOMMENDED SOLUTIONS
Electricians (Solar/EV)	2,400 positions	Limited specialized training, aging workforce	Expand IBEW apprenticeships, manufacturer partnerships
HVAC Heat Pump Specialists	1,850 positions	Technology transition, skills gap	Create specialized training programs with utilities
Environmental Engineers	185 positions	Limited local programs, wage gaps	University partnerships, compensation incentives
Software Developers (Energy)	650 positions	Competition from other sectors	Industry-specific training, retention programs

Several factors contribute to these emerging shortages. A key driver is an aging workforce, with 30%–40% of current workers in these trades expected to reach retirement age by 2035, creating an urgent need for new entrants. Technological advancement also plays a role, requiring ongoing education and upskilling to maintain competitiveness in rapidly evolving industries. Wage competition from other sectors continues to divert skilled labor, while limited training infrastructure restricts opportunities for specialization. Finally, rural areas within NEFL face added challenges due to transportation barriers and smaller educational pipelines, making it more difficult to attract and retain qualified candidates across energy and infrastructure roles. Underlying all these trends is the transformative impact of new technologies. Artificial intelligence and automation are being integrated into every sector of the workforce, streamlining processes and boosting productivity. The management of critical infrastructure increasingly relies on digital twins and IoT systems, which require specialized technical skills. Advancements in materials science and manufacturing have introduced novel job requirements in construction, production, and systems maintenance. Finally, as smart infrastructure expands, there is a growing need for robust cybersecurity measures, further increasing demand for specialized IT professionals to secure new digital deployments.

HIGH PRIORITY SHORTAGES (2027-2030)

OCCUPATION CATEGORY	SHORTAGE LEVEL	TRAINING TIMELINE	INVESTMENT REQUIRED
Green Construction Trades	3,200 positions	12-18 months	$8.5M
Transportation Technicians	1,100 positions	15-24 months	$4.2M
Environmental Specialists	850 positions	18-30 months	$3.8M
Energy Efficiency Auditors	420 positions	9-15 months	$2.1M

WORKFORCE DEVELOPMENT GOALS

2030 PRIMARY OBJECTIVE

To achieve the 2030 targets outlined in the Clean Air Northeast Florida Climate Action Plan, the Jacksonville MSA must deploy approximately 28,000 workers across all eight climate action measures, with an 85% job placement rate. In parallel, attracting skilled talent and effectively upskilling the existing workforce will require maintaining competitive compensation, necessitating a 25% increase in average wages above current regional levels.

TARGETS

By 2030, Northeast Florida aims to achieve the following workforce development targets to ensure equitable, high-quality job growth aligned with the above workforce development goals:

- 95% of priority workers earn industry-recognized credentials.
- 100% of new positions meet U.S. Department of Labor Good Jobs Principles.
- Strengthen regional participation by ensuring opportunities reach all parts of NEFL.
- Achieve an 85% completion rate across all training and apprenticeship programs.
- Secure a 90% employer satisfaction rate for program graduates.

2050 LONG-TERM VISION

Establish NEFL as the Southeast's leading hub for clean economy workforce development, maintaining a pipeline of 62,500 certified workers with wages within 5% of national averages. The region will serve as a model for workforce innovation through:

- A 90% retention rate among trained workers.
- 400–500 annual graduates from technical and vocational programs.
- A thriving regional innovation ecosystem producing 25+ patents each year.
- A self-sustaining training network supported by long-term partnerships among industry, education, and government.

PRIORITIZED IMPLEMENTATION TIMELINE

PHASE	TIMELINE	FOCUS AREAS	INVESTMENT
Foundation	2026-2027	Basic training expansion, partnerships	$25.2M
Scale-Up	2027-2030	Advanced programs, specializations	$34.1M
Excellence	2030-2050	Innovation, regional leadership	$30.0M

KEY PARTNERS TO ADDRESS SHORTAGES AND TRAINING NEEDS

Meeting Northeast Florida's climate and workforce goals will require a highly coordinated, multi-sector approach. No single institution or agency can address the region's workforce challenges alone.

It is essential for all stakeholders—educational institutions, labor organizations, industry leaders, government agencies, and community partners—to come to the table with shared urgency, resources, and commitment. Each partner plays a distinct yet interconnected role in ensuring that job training, reskilling, and talent development efforts are aligned with real-time labor market demands and long-term climate action strategies.

The following partnership matrix outlines the diverse landscape of engaged entities, highlighting current roles, partnership status, and priority actions. It serves as both a snapshot of existing collaboration and a call to expand and deepen engagement. Achieving an equitable and resilient workforce transition will depend on how effectively these partnerships can scale apprenticeship pipelines, build regional training infrastructure, and align public and private resources toward shared economic and environmental outcomes.

PARTNER CATEGORY	KEY ORGANIZATIONS	PARTNERSHIP STATUS	ROLE	PRIORITY ACTIONS
Educational Institutions	UNF, FSCJ, St. Johns River State College, K-12	Existing	Research & advanced training; Technical certification programs; Regional satellite programs; Primary training delivery	Establish Climate Workforce Center of Excellence; Expand capacity to 3,000 annual graduates; Launch specialized certificate programs
Labor Organizations	IBEW Local 177, Sheet Metal Local 435, Operating Engineers 487; Plumbers & Pipefitters Local 234	Existing	Apprenticeship programs, standards	Add clean energy tracks, increase capacity
Government Agencies	CareerSource NEFL, City of Jacksonville, County governments	Existing	Funding, coordination, policy	Lead regional training consortium
Utility Companies	JEA, Clay Electric, FPL, Florida Public Utilities, Beaches Energy	Existing	Industry expertise, job placement	Training partnerships, equipment access
Private Sector	Miller Electric, NEFBA, Construction contractors	Existing	Employer engagement, OJT	Apprenticeship sponsorship, skills validation
Economic Development	JAX USA, County EDCs, Regional councils, NEFRC	Existing	Business attraction, funding	Workforce marketing, grant coordination
Community Organizations	Workforce boards, Community colleges, CBOs	Mixed	Recruitment, support services	Expand outreach, provide wraparound services
Military	Naval Air Station Jacksonville, Mayport, Kings Bay	Existing	Veteran workforce transition	Technical skills transfer programs
State Agencies				
	DEP, FDACS	Mixed	Funding, expertise	Share best practices, economic impact case studies
Federal Agencies	DOL, DOE, EPA, DOT	Needed	Funding, technical assistance	Grant applications, best practice sharing

WORKFORCE SOLUTIONS

There are many ways to address the foreseen workforce shortages and challenges. Below are three specific solutions and some proven national programs that could be customized locally.

PROPOSED REGIONAL PROGRAMS

Regional Clean Energy Workforce Academy: A proposed shared facility across UNF, FSCJ, and industry partners will provide an integrated curriculum combining multiple clean energy disciplines. The academy will serve 3,000 students annually by 2030 across all priority occupations with stackable credentials. Phase 1 operations begin in 2027 with full capacity by 2029, requiring $15 million facility investment and $3.2 million annual operations.

Mobile Training Laboratory Network: Coverage across all five counties through rotating 4-week programs will provide portable solar, EV charging, and energy efficiency laboratories. The network will serve 400 additional graduates annually, with the first unit operational in 2026 and full network deployment by 2027, requiring $2.4 million equipment investment and $800,000 annual operations.

Military Transition Specialization Program : Partnership with Naval Air Station Jacksonville and regional veterans' organizations will focus on technical skills transition to clean energy occupations. The program will serve 300 veterans annually with pilot implementation in 2025 and full program launch in 2026, requiring $1.8 million program development investment.

PROVEN NATIONAL MODELS ADAPTED FOR NORTHEAST FLORIDA

LOS ANGELES UTILITY PRE-CRAFT TRAINEE PROGRAM MODEL (FLYER)

For the Los Angeles Utility Pre-Craft Trainee Program model, NEFL can implement a robust pre-apprenticeship "earn-and-learn" approach, in partnership with JEA and other regional utilities. This would involve offering paid on-the-job training to entry-level candidates, cultivating a pipeline of electricians, lineworkers, and technicians skilled in clean energy utility operations. The application would target both high school graduates and career switchers, ensuring access to high-demand utility careers. With a capacity to train 250 trainees annually across multiple partner utilities, this program is scheduled to launch in 2026 and reach full operation by 2027. An initial investment of $3.2 million would cover program setup, equipment, and the hiring of initial instructors, followed by $1.8 million per year to fund ongoing operations, wages, and curriculum updates. The result would be a directly employable, diverse workforce ready to advance regional energy objectives.

COLORADO CLEAN ENERGY PROGRAM (WEBSITE)

Adapting the Colorado Clean Energy Program for NEFL would require close multi-agency coordination to deliver stackable credentials and multi-technology skills. Regional partners—including community colleges, workforce boards, and local industry—would design and offer integrated training in traditional trades, building energy efficiency, renewables, storage, and grid modernization. The primary focus would be blending core trade skills with the latest clean technology practices, providing opportunities for both new entrants and incumbent workers to upskill. This program's development would begin in 2025, with pilot courses rolling out in 2026 and full integration by 2027. An estimated investment of $4.5 million over three years would be needed for curriculum design, equipment, and faculty training, creating a sustainable foundation for continuous workforce growth and adaptation.

NEW JERSEY CLEAN ENERGY JOBS (WEBSITE)

For the New Jersey Clean Energy Jobs model, the NEFL application would involve creating a partnership between regional utilities (including JEA), local governments, and the state workforce board to coordinate clean energy job pipelines. The focus would be on launch-ready "good jobs" in solar, efficiency, advanced grid, and clean transportation, with strong pathways to employment for underrepresented and transitioning workers. The timeline would include a pilot rollout in 2026, followed by regional scaling from 2027 onward, coordinated with local training partners and industry needs. An investment of $4-6 million over three years would be required for initial workforce development, with additional leveraged investments from utility and private sector partners to ensure placement services, job quality, and candidate support.

NEW YORK GREEN JOBS-GREEN NEW YORK (WEBPAGE)

For the New York Green Jobs-Green New York model, NEFL could build a mechanism for statewide coordination with local implementation partners—including city and county governments, nonprofits, and technical schools. The main components would be large-scale training in residential and commercial energy efficiency retrofits and job placement services aligned with local contractors and utilities. The focus would be on providing career entry points and opportunities for advancement in fast-growing fields of efficiency and electrification, benefiting both urban and rural job seekers. The program timeline would see adaptation planning and stakeholder engagement in 2025, followed by a pilot launch and full-scale deployment by 2026. The targeted investment would be $2.8 million for adaptation costs, with additional ongoing funding from utility and public-private partners to ensure job placement and measurable outcomes for local employment.

GRID ALTERNATIVES APPROACH (WEBSITE):

For the GRID Alternatives approach, NEFL's application could center on neighborhood- and community-based training tied directly to hands-on clean energy project installation and operation. The focus would be workforce inclusion through partnerships with nonprofit and community-based organizations targeting disadvantaged and rural communities, often underrepresented in technical trades. The timeline would include community engagement and curriculum development in 2025, the first training cohort and project launches by 2026, and ongoing annual project cycles thereafter. Investment needs are estimated at $1.5-2.5 million for program start-up, with ongoing annual costs of $750,000-$1 million, supported by a combination of foundation grants, utility investments, and federal /State workforce grants. Direct project-based learning, job placement, and wraparound services would be key features.

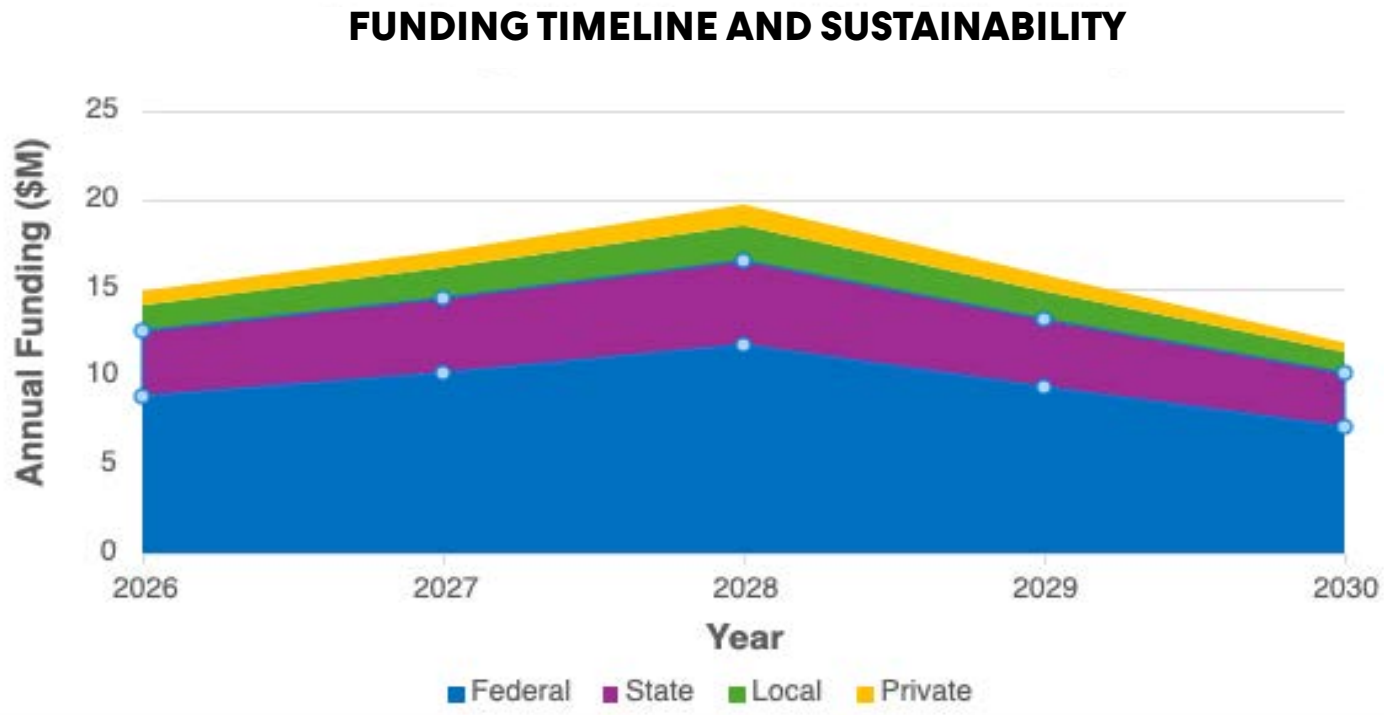
These models would leverage successful components from proven programs, adapted for NEFL's specific workforce needs, demographics, and existing partnership frameworks.

INNOVATIVE FUNDING MECHANISMS

To support the scale and sustainability of climate workforce initiatives, Northeast Florida can pursue several innovative funding mechanisms. One approach involves establishing a Regional Workforce Development District, potentially funded through small utility bill assessments that provide consistent, community-driven financial support. Social Impact Bonds present another option, leveraging private capital for workforce programs in exchange for returns tied to performance outcomes, such as job placement or certification rates. Additionally, Public-Private Training Partnerships offer a way to co-invest in training facilities, equipment, and instructional programs, reducing the financial burden on any one entity. Finally, Industry Consortium Models enable multiple employers within the same sector to jointly fund and operate training programs, promoting cost-efficiency and talent pipeline alignment across shared needs. Together, these mechanisms can diversify funding streams and reduce reliance on short-term grants or public appropriations.

FUNDING TIMELINE AND SUSTAINABILITY

YEAR	FEDERAL	STATE	LOCAL	PRIVATE	TOTAL ANNUAL
2026	$8.9M	$3.7M	$1.5M	$0.7M	$14.8M
2027	$10.2M	$4.2M	$1.8M	$0.9M	$17.1M
2028	$11.8M	$4.8M	$2.0M	$1.1M	$19.7M
2029	$9.4M	$3.9M	$1.6M	$0.9M	$15.8M
2030	$7.2M	$3.0M	$1.2M	$0.6M	$12.0M



There are several potential funding resources from federal, state, and local sources. Below is a fairly comprehensive yet not exhaustive list of potential support opportunities that are subject to change at any time.

FEDERAL FUNDING SOURCES ($350-450M)

Department of Education: One Big Beautiful Bill Workforce Pell Grants (July 2026)
Department of Labor: $45-65M workforce development coordination

- Workforce Innovation and Opportunity Act
- Industry-Driven Skills Training Fund
- Apprenticeship Building America Grants

Department of Energy Programs: $85-125M clean energy workforce training

- State-Based Home Energy Efficiency Contractor Training
- Grid Resilience and Innovation Partnerships
- Clean Hydrogen Manufacturing Initiative

EPA Environmental Justice: $25-40M underserved community programs
Department of Transportation: $75-100M transportation workforce development
I**nfrastructure Investment and Jobs Act:** $120-170M various workforce components

STATE OF FLORIDA FUNDING ($75-125M):

Florida Department of Education: $20-35M career and technical education

- Career and Technical Education Funding
- Workforce Development Grants

Enterprise Florida Programs: $15-25M workforce attraction initiatives

- Job Growth Grant Fund

Florida Department of Economic Opportunity

- Quick Response Training Program: $6.2M
- Incumbent Worker Training Program: $3.8M

Environmental and Infrastructure: $15-25M specialty programs

LOCAL AND REGIONAL FUNDING ($45-75M)

Regional Workforce Board: $15-25M CareerSource NEFL allocations
Municipal Partnerships: $12-20M Jacksonville and regional cities

- City of Jacksonville Economic Development Fund
- County Economic Development Funds (combined)

Utility Investments: $8-15M JEA and regional utilities

- JEA Workforce Investment: $1.5M
- Regional Cooperatives: $1.4M

Economic Development: $10-15M chambers and development organizations

PRIVATE SECTOR INVESTMENT ($80-150M)

Industry Training Partnerships: $40-70M major employer cost-sharing
Equipment and Facility Donations: $20-35M training infrastructure
Foundation Grants: $10-20M workforce and environmental foundations
Equipment Manufacturer Support: $10-25M training equipment and expertise
Employer Consortiums

- Construction Industry Training: $2.1M
- Technology Company Partnerships: $1.2M
- Equipment Manufacturing Support: $1.2M

SUSTAINABILITY STRATEGY:

Northeast Florida's sustainability strategy for clean economy workforce development is designed to secure long-term impact and independence from short-term funding cycles. By 2030, the region aims to transition toward employer-sponsored training programs, allowing industries to take direct ownership of their talent pipelines. In parallel, the development of fee-for-service training programs will enable the region to export its expertise, generating revenue while supporting peer regions. A portion of proceeds from sustainability-related economic development will seed an endowment fund to support future workforce needs. Additionally, establishing a permanent funding mechanism through a regional workforce levy will provide predictable, scalable financing that can grow with the region's ambitions.

- Transition to employer-sponsored training by 2030
- Develop fee-for-service training programs for export
- Create an endowment fund from economic development proceeds
- Establish permanent funding through regional workforce levy

NEFL has a genuine and significant opportunity to be a strong, proactive workforce leader while achieving aggressive clean air goals. The region's success depends on coordinated action across eight critical measures, which require approximately 27,800 new workers by 2030 and $89.3 million in strategic workforce investment.

NEFL is uniquely positioned to become a national model for proactive, clean energy-aligned workforce leadership. With an estimated 27,800 new workers needed by 2030 and a strategic investment of $89.3 million, success hinges on coordinated action across eight key climate measures. The urgency is clear: 2026 marks the critical launch point for foundational efforts that will define the region's trajectory. Immediate actions include establishing the Northeast Florida Clean Economy Workforce Consortium, securing initial state and federal funding commitments, launching targeted training programs in high-demand occupations, formalizing partnerships with educational institutions and industry leaders, and deploying mobile training units to serve rural communities.

The metrics for success are ambitious yet achievable. By 2030, the region targets the creation of 27,800 quality jobs, yielding over $12 billion in regional economic benefit. Key occupations are expected to reach national wage parity, and training programs will aim for a 90% job placement rate—setting a new standard for excellence. Most importantly, NEFL aspires to be recognized as the Southeast's clean economy workforce hub, leading the way in how workforce development can drive both environmental sustainability and economic resilience.

The path forward demands urgency, vision, and alignment—but the potential rewards for the region's residents, industries, and environment are transformative. NEFL can show the nation how strategic workforce investment fuels equitable growth and climate leadership.

IMMEDIATE ACTIONS REQUIRED (2026)

- Establish Northeast Florida Clean Economy Workforce Consortium
- Secure initial federal and state funding commitments
- Launch foundation training programs in highest-priority occupations
- Formalize partnerships with key educational and industry stakeholders
- Begin mobile training unit deployment for rural counties

SUCCESS INDICATORS

The pathway to success requires immediate, coordinated action, but the economic and environmental returns justify the investment. NEFL can lead the nation in demonstrating how strategic workforce development enables both environmental resilience and economic prosperity.

JOB CREATION

27,800 QUALITY JOBS BY 2030

WAGE GROWTH

ACHIEVEMENT OF NATIONAL WAGE PARITY ACROSS KEY OCCUPATIONS

REGIONAL LEADERSHIP

RECOGNITION AS SOUTHEAST CLEAN ECONOMY WORKFORCE HUB

TRAINING EXCELLENCE

90% JOB PLACEMENT RATE FOR PROGRAM GRADUATES

ECONOMIC IMPACT

$12B IN TOTAL REGIONAL ECONOMIC BENEFIT BY 2030

CASE STUDY 1: MILLER ELECTRIC BUILDING WORKFORCE PIPELINES FOR CLEAN ECONOMY

Founded in Jacksonville in 1928, Miller Electric Company exemplifies how a long-standing local business can evolve to meet modern energy and workforce needs[1][2]. Now employing more than 5,000 people across 20 offices, the company has become a national leader in technical innovation across sectors such as healthcare, data centers, EV infrastructure, and distributed renewable energy. Its 2025 acquisition by EMCOR Group, while keeping local leadership in place, has expanded access to capital for workforce training and technology investment[3]. This partnership has strengthened Miller Electric's ability to develop skilled labor pipelines that directly support NEFL's transition toward a more efficient and resilient energy economy[4].

Workforce development is central to Miller Electric's success. The company operates a multi-tiered training model that offers both entry-level opportunities and advanced professional pathways. The Trade Professional Academy is a paid, five-week introductory program designed for individuals with no prior electrical experience[5]. Participants earn key safety certifications, including OSHA-10, receive hands-on technical instruction, and are placed into full-time positions upon graduation. Since its launch, more than 350 individuals have completed the program, reflecting Miller's emphasis on accessibility and long-term career stability. Beyond entry-level preparation, the company's four-year Electrical Training Alliance Apprenticeship, developed in partnership with the Electrical Training Alliance of Jacksonville and IBEW Local 177, offers a debt-free education combining full-time work with classroom instruction[6][7]. Apprentices earn competitive wages and benefits and frequently surpass regional wage averages upon completion. Over 80 percent of Miller's trade workforce has advanced through this program, contributing to exceptional employee retention and skill consistency.

1 "Apprenticeships Work for Business: Miller Electric Testimonial," YouTube, 2023. https://youtu.be/bfzle2seLGw.
2 "Miller Electric's acquisition promises growth and workforce investment." CareerSource Northeast Florida, 2025. https://careersourcenortheastflorida.com/miller-electrics-acquisition-promises-growth-and-workforce-investment/.
3 "EMCOR Group, Inc. Announces Agreement To Acquire Miller Electric Company," EMCOR Group Press Release, January 2025. https://emcorgroup.com/investor-relations/press-releases/2025-news/emcor-group-inc-release.
4 "Making Our Mark: Miller Electric's Impact on Jacksonville's Parks," Miller Electric Company, 2025. https://www.mecojax.com/news/making-our-mark-miller-electrics-impact-jacksonvilles-parks.
5 "From Zero Experience to Well-Paying Career—Miller Electric's 4-Week Trade," LinkedIn Pulse, 2025. https://www.linkedin.com/pulse/from-zero-experience-well-paying-careermiller-4-week-trade-timmons-kgcme.
6 "Electrical Training Apprenticeship Overview | Miller Electric Company," YouTube, 2021. https://www.youtube.com/watch?v=X6wDqIT4EAM.
7 "Powering Today's High-Tech Welding Workforce – Miller Electric," TechEd Podcast, 2025. https://techedpodcast.com/lambert/.

To address emerging needs in distributed energy and microgrid systems, Miller Electric also launched the EMERGE Advanced Energy Program in partnership with the University of North Florida and JEA[8]. Supported by a $445,000 National Academies grant, the program provides specialized instruction to apprentices, engineering students, and high school graduates in technologies that are not yet part of standard training pathways. This initiative directly responds to regional workforce gaps and positions NEFL as a leader in clean and distributed energy innovation.

Miller Electric's workforce model also prioritizes community partnerships and inclusive access to opportunity. The company collaborates with Operation New Hope's Ready4Work program to provide employment and training opportunities for individuals reentering the workforce[9]. It also maintains active outreach to middle and high schools across NEFL, introducing students to skilled trades and helping strengthen local recruitment pipelines. These partnerships not only expand economic mobility but also reinforce the company's role in building a sustainable and homegrown workforce.

With EMCOR's expanded resources and Miller Electric's proven apprenticeship-centered model, the company is well-positioned to meet the region's growing demand for skilled electricians, technicians, and engineers by 2030. Its strategy—focused on local hiring, accessible and debt-free education, and strong collaboration between industry, education, and government—demonstrates how NEFL can build a robust and adaptable workforce. Through continued investment in training and innovation, Miller Electric provides a blueprint for aligning workforce growth with regional energy and infrastructure goals, ensuring that economic progress and technical excellence advance together.

8 "UNF, JEA and Miller Electric partner on workforce development in Jacksonville." University of North Florida Newsroom, August 2025. https://www.unf.edu/newsroom/2025/08/EMERGE.html.

9 "Second Chance Supporter – Miller Electric," Operation New Hope, 2022. https://operationnewhope.org/second-chance-supporter-miller-electric/.

COORDINATION AND OUTREACH

The creation of the CCAP was shaped by a structured and transparent outreach process designed to build trust, encourage collaboration, and ensure balanced participation across NEFL. Stakeholders included representatives from NEFRC, municipal governments, utilities, private industry, advocacy groups, and local residents. The outreach approach emphasized accessibility and open communication, working to remove linguistic and institutional barriers so that feedback could reflect the priorities of the full region.

OUTREACH PLAN

From August through December 2024, monthly roundtables provided a consistent venue for gathering input and refining plan priorities. These sessions brought together government officials, technical experts, and community partners to discuss measure design and regional coordination. Jacksonville MSA leads organized quarterly interagency meetings to align efforts among local governments, while the Clean Air Northeast Florida (CANF) Roundtable convened twice per year to promote collaboration, share updates, and ensure consistency with state and federal guidance. This tiered structure established a continuous feedback loop that connected local planning with broader policy frameworks and kept stakeholders engaged throughout plan development.

CHALLENGES AND STRATEGIES

One of the key challenges was developing a cohesive plan without direct implementation authority across all jurisdictions. Differing local priorities, timelines, and capacities made regional coordination complex. Additionally, changing federal policies and funding programs introduced uncertainty into long-term planning. To navigate these issues, the planning team emphasized a results-driven and economically grounded approach. By framing CCAP actions around workforce growth, energy efficiency, and cost savings, the plan positioned environmental and infrastructure goals as drivers of regional competitiveness rather than regulatory requirements. This pragmatic framing strengthened stakeholder buy-in, improved intergovernmental alignment, and ensured the CCAP remains relevant and actionable under a range of future policy conditions.

2024

Roundtable Meetings
August 29 | September 30
October 22 | November 18
December 4

MSA Officers Meetings:
February 8 | March 14
April 4 | May 15
June 12| July 17
August 7 | November 20

2025

Roundtable Meetings:
May 15 | October 9

MSA Officers Meetings:
February 27 | May 21
August 20 | November 19

2026

Roundtable Meeting
May 2026

MSA Officers Meeting
September 2026

2027

Roundtable Meeting
May 2027

MSA Officers Meeting
September 2027

CONCLUSION

NEFL is already witnessing the early signs of environmental change—higher tides reaching farther inland, stronger storms testing infrastructure, and occasional sunny-day flooding disrupting coastal roads. These events serve as reminders of what lies ahead if the region does not prepare. Projections suggest that by 2050, global temperatures may rise about 1.5 °C (2.7 °F) above preindustrial levels, with sea levels increasing by roughly one foot. For NEFL, this could mean that king tides and heavy rain events become more frequent and severe, placing added strain on homes, businesses, and public systems.

The good news is that action taken now can make a measurable difference. Every investment in resilient infrastructure, energy efficiency, and land management reduces future risks and strengthens the foundation for a stable regional economy. Cities across NEFL are already improving stormwater systems, updating development standards, and protecting natural buffers that absorb floodwaters. Each of these steps reduces future damage costs, enhances public safety, and creates skilled jobs while attracting new investment.

The path forward is challenging but full of opportunity. Acting early allows NEFL to control its trajectory—avoiding the most costly outcomes while building a stronger, more adaptable region. The difference between delayed action and decisive investment is not just in avoiding risk, but in creating lasting value: healthier communities, reliable infrastructure, and long-term economic growth.

NEFL's success will depend on collective effort—from local governments and utilities to businesses, institutions, and residents. Together, these partners can achieve a 50% emissions reduction target by 2050 while preserving the region's distinctive character and quality of life. The science is clear, but so is the opportunity: through coordinated, sustained action, NEFL can turn today's challenges into tomorrow's competitive advantage, ensuring a resilient and thriving future for generations to come.

St. Augustine issued more than five king tide flooding advisories in 2025, underscoring the city's exposure to nuisance flooding even in a year without named storm impacts.

Scan For Digital Report
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SCAN ME

Cover Photo Credit: Nina Nicolay

Clean Air Northeast Florida Regional Comprehensive Climate Action Plan

February 2026