

City of Palm Bay Sustainability Action Plan

2021



The City of
Palm Bay
Florida

Table of Contents

Introduction 2

About the City 2

 About the Board..... 3

 About Sustainability..... 4

Goals of Action Plan 5

 Primary Goals of the Plan 5

Message from the Mayor **Error! Bookmark not defined.**

Natural Environment (Land and Water Systems) 6

Built Environment (Energy and Buildings) 8

Transportation and Mobility 14

Innovative Waste Management 18

Education and Public Engagement 21

Introduction

About the City

The City of Palm Bay was incorporated in 1960 and celebrated its 60th anniversary in 2020. The City is a Council-City Manager form of government, with a Mayor, Deputy Mayor, and three Council members elected at large on a non-partisan basis. The City Manager serves as the chief administrative officer for all activities related to the operations of the City. Palm Bay is the largest municipality in Brevard County and the second largest in central Florida; behind Orlando, covering 88 square miles and including a population of 122,391 as of March 2020. The City is approximately 44 % developed with 2,301 business establishments and an estimated 51,997 households. The City continues to experience positive economic growth with a surge of development interest in multi-family and commercial mixed-use development. The City is surrounded by natural beauty and abundant opportunities for outdoor recreation. We are fortunate to have both the Indian River Lagoon and Turkey Creek Sanctuary to the east, the St. Johns River and Three Forks Marsh Conservation Area to the west, and many acres of natural land preserved in the southern part of the City through the Environmentally Endangered Lands program.

In recent years, the City has taken a variety of initiatives with a focus on sustainability. In 2009, the City was certified as a “Green Local Government” by the Florida Green Building Coalition. In 2010 the City’s first Community Gardening program at the Nemo Community Garden was established. Also, in 2010, the Palm Bay Utilities Department (PBUD) took the lead in working with other City departments to develop the first Sustainability Master Plan. PBUD had established itself as a leader in sustainability when in 2008 it became the first public or private utility in Florida to achieve ISO 14001 Environmental Management System certification for both water and wastewater treatment facilities. The focus in the 2010 Sustainability Master Plan was primarily an inward look at municipal operations and infrastructure, specifically the categories of Environment, Buildings and Facilities, Utilities, Transportation, Waste Management, and Procurement. The City also completed its first Greenhouse Gas Inventory survey. The three-story City Hall Annex building completed in 2011 was LEED-certified.

In 2018 the City entered an energy performance contracting agreement with Honeywell International Inc. The upgrades and retrofits were completed in mid-2019 and included lighting upgrades, water conservation and building envelope improvements, cool roof retrofit, optimizations/replacements of chilled water systems and air handling units and building automation systems and programmable thermostats. Also, in 2019, the City joined Florida Power & Light’s (FPL) Solar Together program to promote large-scale solar use and approved the conversion of FPL streetlights to LED.

About the Board

The City of Palm Bay created its first Sustainability Advisory Board in 2018. The purpose and intent of the Board is to advise and assist the City Council, City Manager, and City staff in matters relating to pollution reduction, water quality initiatives, community education and involvement, and assessing local climate risk. The duties and responsibilities of the Board as approved by City Council include but are not limited to:

- Identify and make recommendations to the City Council concerning affordable strategies associated with conservation, renewable energy, and energy efficiency.
- Develop an environmental Sustainability Plan for city operations with a goal of achieving one hundred percent (100%) clean energy by 2035 in city operations.
- Develop an assessment plan to track activities and implementation of the city's environmental Sustainability Plan. Provide an annual report to the City Council on activities and implementation of the plan.
- Review ordinances and policies that have an environmental impact on the city and make recommendations to the City Council. Such topics may include, but are not limited to, standards for recycling, environmental standards, preservation and landscape design, and floodplain management.

Initiatives of the Board may include:

- Research, identify, and recommend to the public affordable strategies associated with conservation, renewable energy, and energy efficiency.
- Research and recommend to the public financial initiatives and resources that are available to offset costs associated with renewable energy initiatives.
- Recognize the efforts of others who contribute to the beautification, environmental protection, and enhancement of the city.

After the 7-member Board was created in 2018, the City experienced some difficulty reaching quorum. In September 2019, the Board had enough members to achieve quorum again, so work began anew. City staff, along with Sustainability Interns from Florida Tech, have all been working with the Board to develop the City's first Sustainability Action Plan; the five Elements found in this document were a result of the Board's discussion and therefore include:

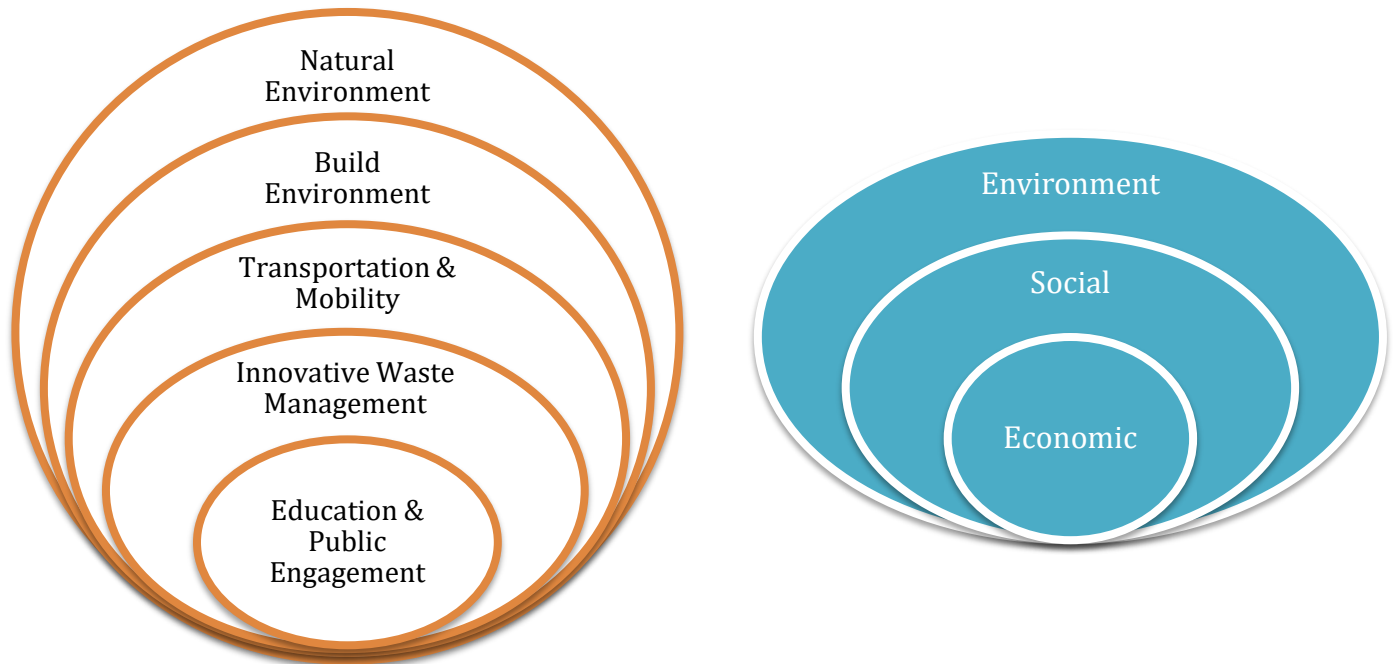
- Natural Environment (Land and Water Systems)
- Built Environment (Energy and Buildings)
- Transportation and Mobility
- Innovative Waste Management
- Education and Public Engagement

Unlike the 2010 Sustainability Master Plan, this new Sustainability Action Plan presents a broad focus on the City and incorporates elements of focus on what we can do as individual residents, as a community, and as a municipal operation.

About Sustainability

Defining sustainability as a means of meeting the needs of current generations, without compromising the ability of future generations to meet their own needs. The goal is to guide greener alternatives to three major areas: economic, social and environmental presences; otherwise known as the “triple bottom line.” While each to their own, the triple bottom line should be perceived as a balanced system, working together, one influenced by the other. Cities are their own systems with economic, social, and environmental capital assets.

This Action Plan is structured in a similar manner to the triple bottom line in respect to the elements (shown below).



We can apply sustainable concepts to the prosperity and rapid development of Palm Bay. Preparing for both known and unknown challenges in our community’s resiliency efforts. In our collective stage of awareness, the terms sustainability and resiliency are booming across many industries. Thinking green and practicing efficient and equitable environmental actions are becoming the forefront of businesses. However, sustainability does not solely pertain to the natural world. Managing our resources, energy use and production of waste are a few of the ideologies that can be implemented to areas within, connected to and separate from the natural environment. It is important that we continue to foster this emerging concept into our community. By optimizing our current standard of resiliency, implementing the innovative resources available in our very own community, we can combat climate change and best prepare for the future of our city.

Goals of Action Plan

In our Plan, each broad element is defined with specific goals, and within each goal are recommended objectives for the City, local businesses, and the community. These may be specific to municipal or business operations, individual citizen or community-wide actions, or all the above.

It is the intention of the City staff and the Sustainability Advisory Board that the Plan be reviewed at least annually to consider how to implement the Plan for the duration of that year.

Primary Goals of the Plan

- Provide a foundation for and guidance regarding the sustainability and resiliency efforts of the City of Palm Bay operations.
- Establish goals and measure progress in each of the five Elements of the Sustainability Action Plan.
- Update the City's Greenhouse Gas (GHG) Emissions Inventory and establish a recurring schedule for keeping the inventory up to date. A GHG Inventory will enable the City to identify and measure where our emissions come from, and then develop effective reduction strategies and goals. Many of the goals included in this document have the potential to positively impact our emissions levels.
- Educate to promote awareness and action by City employees, those in the business community, individual residents, and the community.
- As the Plan is developed and updated, include measurable indicators to be used to evaluate and quantify our success and impact.

Natural Environment (Land and Water Systems)

Environmental sustainability is defined as responsible interaction with the environment to avoid depletion or degradation of natural resources and allow for long-term environmental quality. Land and water systems encompass all terrestrial and aquatic environments around and within a city that must interact and deal with human intervention and stressors. These systems are highly interconnected, with a change in one having the potential to greatly affect the others.

Goals:

1. To protect natural resources by increasing the use of reclaimed water in city and residential properties, create wildlife corridors and reduce water consumption.
2. To expand, protect, and restore publicly owned natural land, to lead by example, and to incentivize the protection of natural areas on private lands.
3. To manage and protect groundwater and surface water bodies.

Goal 1. To protect natural resources by increasing the use of reclaimed water in city and residential properties, create wildlife corridors and reduce water consumption.

City Government objectives:

- A. Install waterless composting toilets on natural landscapes as approved and used by the National Park Service.
- B. Retrofit existing retention/detention ponds with 10-15 ft native plants border to filter pollutants.
- C. Incorporate the planning of wildlife corridors in city development.
 - a. For example: treating canals as such wildlife corridors
- D. Expand capture of storm water through use of rain barrels by partnering with the Marine Resources Council (MRC) and Indian River Lagoon (IRL) organizations. Hold educational events to provide low-cost materials and free workshops for citizens to do the same.
- E. Promote the use of reusable water bottles by installing hydration stations.

Local Business objectives:

- A. Promote the use of reusable water bottles by installing hydration stations.
- B. Identify opportunities based on cost and benefit in improving water quality, habitat and hydrology to convert retention ponds to wetlands or marshes.
- C. Provide vending machines with reusable water bottles.

Community objectives:

- A. Encourage the use of low flow showerheads and automated sinks and toilets.
- B. Increase the percentage of gross potable water.
- C. Increase awareness of per capita water consumption in Palm Bay homes.

- D. Educate homeowners on how to capture stormwater in native plant rain gardens.

Goal 2. To expand, protect, and restore publicly owned natural land, to lead by example, and to incentivize the protection of natural areas on private lands.

City Government objectives:

- A. Replace maintenance heavy turf grass with native plants on median strips, by canals, and around public facilities. Identify Florida Friendly landscaping through signage. Invite private sponsorship of median strip plantings through adoption programs.
- B. Expand natural areas in public parks by replacing turf grass and replanting with trees, understory shrubs and groundcovers to create habitat. Include pathways for recreational opportunities. Prioritize parks near schools to partner with and educate students on the benefits of the natural environment.
- C. Look for land that could qualify for protection under the Florida Forever program. Seek to partner with The Nature Conservancy and the Audubon Society to expand the size of protected tracts of land by purchasing adjacent parcels.
- D. Educate city employees on the care of native plants.
 - a. For example: when pruning palms on public lands, the Sabal or Cabbage Palm is not to be pruned, though dead fronds may be removed.
- E. Identify City-owned property suitable for planting large trees generally undesired on small residential properties.
 - a. For example: where there are retention ponds or low lying seasonally wet areas, consider planting native Pond Cypress or Bald Cypress.
- F. Improve awareness of invasive species through public events and campaigns.
 - a. For example: partner with Keep Brevard Beautiful (KBB) to remove invasive plants on public lands with recognition awards for success in the greatest number of participants and in the largest area cleared.

Local Business objectives:

- A. Explore potential areas for ecotourism. Identify locations that could generate revenue if restored and promoted.

Community objectives:

- A. Acknowledge Florida Friendly Landscaping by homeowners through awards for things such as biggest percent of native plant area, greatest number of trees per dwelling, and capture of stormwater.
- B. Increase tree planting on private land where applicable and safe to do so.
- C. Replacement of turf grass under the canopy of larger trees with understory trees, shrubs, and groundcovers, which stabilizes the largest trees during high wind and rain events.

Goal 3. Recharge aquifers by managing and protecting groundwater and surface bodies of water.

City Government objectives:

- A. Educate and incentivize homeowners to capture storm water in native plant rain gardens.
 - a. For example: Partner with local nonprofits to create a rain garden on suitable public land (low lying or near downspout) including signage.
 - b. For example: Reduce storm water bills if homeowners or HOA communities meet city established criteria in capturing stormwater in rain gardens as is fiscally feasible. Encourage rain catching systems.
- B. Eliminate use of fertilizer on public lands by using organic sources like fish or animal waste. Discourage use of fertilizers on private lands through continuing educational efforts.
- C. Identify and convert a public park suitable for xeriscaping.
- D. Install signage for public education and awareness.
- E. Work with residents to provide opportunities and incentives to switch from septic tanks to city sewer and from wells to city water.
- F. Educate residents on proper care and management of their septic and sewer system.

Local Business objectives:

- A. Set new standards for construction and development to manage stormwater on site using planned wetlands and marshes rather than retention ponds.
- B. Reduce mowing and filter pollutants; replace turf grass around retention ponds with native plant borders.

Community objectives:

- A. Convert from septic tank to city sewer where available.
- B. Be aware of hazardous chemicals that should not be flushed or released in septic, sewer or storm drains by testing the water quality and installing a stormwater treatment infrastructure to improve the water quality where necessary.
- C. Refrain from the use of fertilizers on private land.

Built Environment (Energy and Buildings)

A sustainable building, or green building is an outcome of a design philosophy which focuses on increasing the efficiency of resource use — energy, water, and materials — while reducing building impacts on human health and the environment during the building's life cycle, through better sites, design, construction, operation, maintenance, and removal. Though green (“living”) building is interpreted in many ways, a common view is that they should be designed and operated to reduce the overall impact of the built environment on human health and the natural environment by (a) Efficiently using energy, water, and other resources, (b) Protecting occupant health and improving employee productivity, and (c) Reducing waste, pollution and environmental degradation.

Goals:

1. Reduce energy consumption and greenhouse gas emissions.
2. Invest in clean, renewable energy.
3. Align city planning with sustainability and resiliency goals.

Goal 1. Reduce energy consumption and greenhouse gas emissions

City Government Objectives:

- A. Lead by example by reducing local government greenhouse gas emissions and minimizing energy and water use in local government facilities and specified local infrastructure.
- B. Work with state, regional and local partners to support building sector-wide shifts toward energy efficient practices and fossil fuel-free building systems and programs.
- C. Advocate for federal and state policies to achieve carbon neutrality by 2035 with focus on buildings.
- D. Identify city owned buildings in need of improvement in energy and water consumption through benchmarking. Require quarterly/annual reports to optimize investments.
- E. Invest in energy efficiency and renewable energy generation in municipal buildings.
- F. Create a green building zoning requirement and set a net zero carbon standard for construction of new municipal buildings.
- G. Adopt a net zero carbon standard for affordable housing, ensure that sustainable homes are durable, have low life cycle cost and low energy cost burden.
- H. Develop a carbon emissions performance standard to decarbonize existing large buildings.
- I. Foster partnerships between schools and industry to expand green workforce by designing and building solar and decarbonization projects at schools.
- J. Revise the energy code for new, sustainable, and renovated buildings to reflect the emerging technologies on the market.
- K. Support community renewable energy generation in the residential sector by encouraging solar co-ops or other on-site production.
- L. Take advantage of the energy audits provided by local utility companies.

Local Business Objectives:

- A. Create a Green Team to implement low-cost behavior-based operational programs that minimize energy use in operations.
- B. Educates employees on habits that are easy to change such as energy-wasting habits.
 - a. For example: Leaving lights on, electronics plugged in, etc.

- b. For example: Adjust policies to eliminate purchase of single-use items and move to green cleaning practices.
- C. Investigate and implement best strategies to minimize urban heat islands, optimize carbon sequestration, and promote water retention (e.g., green roof, bioswales, urban tree canopy, vegetative parking).
- D. Take advantage of the energy audits provided by local utility companies to prioritize investments in energy efficiency strategies.
- E. Incentivize employees to volunteer for local community carbon reduction projects.
- F. Where all feasible improvements have been achieved, consider carbon offset through financial support of environmental restoration at local parks or conservation lands.

Community Objectives:

- A. Be aware of the carbon footprint within your household. Determine major impacts and work to reduce those impacts.

Goal 2. Invest in clean, renewable energy

City Government Objectives:

- A. Commit to becoming a Solsmart designated community by dedicating staff members to improve solar market conditions, making it faster, easier, and more affordable for the City of Palm Bay’s residents and businesses to install solar energy systems.
- B. Create an online permitting checklist, increasing transparency for community members and solar installers.
- C. Review local zoning codes and identify restrictions that intentionally or unintentionally prohibit residential solar development.
- D. Frequently host community “solarize” campaigns, allowing residents to benefit from group discounts and affordable solar financing.
- E. Encourage low-to-moderate income participation in community solar initiatives via Solar and Energy Loan Fund (SELF).
- F. Support Property Assessed Clean Energy (PACE) financing for eligible properties.
- G. Educate community members and facilitate outreach to help them better understand the opportunities and benefits of integrating Photovoltaic (PV) and electric vehicles (EVs).
- H. Create a combined PV and EV Information Clearing house.
 - a. For example: This includes available financing and incentive opportunities, ways to calculate cost savings, list of local installers, consumer protection resources, planning considerations, zoning and permitting information.
- I. Encourage electric utilities to partner with local government, unlocking the potential of solar energy.

- J. Promote on-site energy generation (e.g., ground source heat pumps or other district clean energy source, or on-site solar generation).
- K. Advocate for stronger state and federal financial incentives for solar energy, ambitious renewable electricity standards, strong net metering and interconnection standards, and comprehensive solar rights policies.
- L. Advocate for stronger state and federal financial incentives for solar energy, ambitious renewable electricity standards, strong net metering and interconnection standards, and comprehensive solar rights policies.

Local Business Objectives:

- A. Enroll in FP&L's Commercial Demand Reduction (CDR) load management program reducing system peak demand during capacity shortfalls or system emergencies. CDR helps delay the need for expensive, new power plants.
- B. Understand your businesses environmental impact and create feasible financial goals for renewable energy usage.

Community Objectives:

- A. Request and participate in Solar Co-ops. Co-op members leverage bulk-purchasing power to get discounted pricing and quality installation, while still signing individual contracts that ensure the right system for their home.
- B. Take advantage of net metering programs. Utility customers who generate their own solar electricity to feed some of the energy they do not use back to the grid.
- C. Investigate replacing older hot water heaters with passive heat exchange systems (that cool the air in attic or garage while pre-heating the water) or solar photovoltaic water heater systems.

Goal 3. Low Impact, Sustainable, and Resilient City Planning

City Government Objectives:

- A. Develop a "Low Impact" program for public and private development to increase efficiency in the use of water, energy & building materials, including guidelines for pollinator friendly landscaping.
- B. Write policy to incentivize best practices in the design, construction and operation of green buildings as exemplified by LEED or equivalent rating system.
- C. Develop a green building (energy efficiency, water conservation, construction materials, landscaping, etc.) program that help City staff guide new commercial and public construction.
- D. Generate a schedule for upgrading, repurposing, or retiring of government buildings prioritizing by operational needs and return on investment.
- E. Set new minimum standards for building codes that bring the City closer to LEED (or green guideline program) ideals. Re-examine codes periodically to incorporate proven new technologies.
- F. Encourage environmentally sustainable rehabilitation of previously developed sites with the goal of providing stable economic benefits to the community.

- Incentivize infill development that creates pedestrian-friendly communities and prioritizes brownfield and greyfield locations.
- G. Re-use and redevelopment of both public and private lands and buildings.
 - H. Create more public space through rehabilitation or re-purposing of public land. Promote family-friendly "pocket parks" with rain catchment systems in densely developed areas. Encourage integration of recreational areas in the design of new developments.
 - I. Design and create pedestrian scaled, mixed- use development that has safe spaces for walking, bicycling and use of alternative vehicles and access to public transit.
 - J. Work toward having a tax base supported by equal land use--residential and commercial. Consider walking distance to local goods and services in future development.
 - K. Demonstrate sustainability on all public projects to motivate the community to follow in the City's footsteps.
 - L. Create project management teams within City agencies to support and encourage developers and builders to work toward environmentally friendly outcomes. Project Management Teams should be very knowledgeable about City regulations and approval processes, plus know about sustainable design, building and development practices.
 - M. Reduce light pollution in municipal buildings through low-level shielded light fixtures that produce long wavelength LED lighting.
 - N. Survey how many residences use solar panels and water conservation techniques such as low flow faucets. This will give the City a baseline from which to grow green-building techniques post sustainability plan.
 - O. Improve opportunities for physical activities through sidewalk, signage, safe routes, lighting and bike paths.
 - P. Providing incentives for better natural resource management for new construction and redevelopment, thereby reducing wasted spaces, vacancies, and derelict buildings or spaces.
 - Q. Develop guidelines for developers and committees to follow when creating and reviewing plans to reinvent old big box, strip malls and other commercial developments with similar low density uses to better use the land and surrounding parking lots.
 - R. Rewrite requirements for new parking lots to be multi-purpose spaces, with an area reserved for high density (traditional) parking, an area for charging stations, and an "overflow" area with permeable pavers, rain catchment gardens, and tree-lined pedestrian walkways. This area could include shaded open space for potential mixed-use as a picnic (employee break) area, pop-up retail stalls, exhibit area or other as needed. Encourage solar canopies and plan for eventuality of autonomous vehicle--ease of entrance/exit and safe drop off location. Use Complete Street or similar strategies for parking lot design for storm-water management and pedestrian safety.

Local Business Objectives:

- A. Adapt existing parking lots to be multi-purpose spaces, with an area reserved for high density (traditional) parking, an area for charging stations, and an "overflow" area with permeable pavers, rain catchment gardens, and tree-lined pedestrian walkways. This area could include shaded open space for potential mixed-use as a picnic (employee break) area, pop-up retail stalls, exhibit area or other as needed. Encourage solar canopies and plan for eventuality of autonomous vehicle--ease of entrance/exit and safe drop off location.
- B. Use Complete Street or similar strategies for parking lot design for storm-water management and pedestrian safety.
 - a. For example: Create an innovative barrier between vehicles and pedestrians that catches stormwater to utilize in gardens, accessible to the public.
- C. Investigate partnerships with FPL for on-site energy generation and storage for uninterrupted service during outages.

Transportation and Mobility

Sustainable transportation is the capacity to support the mobility needs of a society in a manner that is the least damaging to the environment and does not impair the mobility needs of future generations.

Goals:

1. Invest in smart technology to understand and better manage traffic and to expand sustainable infrastructure.
2. Design and/or plan for multimodal transportation systems to efficiently meet the needs of citizens so all may travel safely for local and regional needs.
3. Reduce negative impacts of existing transportation infrastructure.

Goal 1. Invest in smart technology to understand and better manage traffic and to expand sustainable infrastructure

City Government objectives

- A. Install smart LED streetlights with sensors to count traffic, measure air quality, noise level, visibility or other (flooding on roadways) to gather data to make region specific plans.
- B. Using traffic flow data, install adaptive signal control systems which are better able to respond to traffic conditions, and to sense and clear paths for emergency vehicles.
- C. Work to understand and mitigate causes of problematic incidents at high traffic intersections.
- D. Work with schools to ensure all students have access to safe and sustainable transportation outside of privately owned vehicles.
- E. Research student interaction with the nearby community to foster ease of access without need for a privately owned vehicle. Create safe pedestrian/cyclist routes linking campus and community.
- F. Replace aging City owned vehicles with electric alternative vehicles.
- G. Commit to being a leader in the state of Florida in the installation of electric vehicle charging stations at all city buildings, facilities, and parks, and using solar canopies to provide renewable energy for electric vehicle charging when applicable.

Local Business objectives

- A. Start a dialogue with employees to send a clear message supportive of carpooling and use of public transportation. Learn how and how far employees are commuting.
- B. Consider employer sponsored apps to facilitate carpooling

- and connect employees.
- C. Survey/poll employees to know percent using public transportation.
- D. Empower employees to seek out ways to reduce traffic, such as increasing use of public transportation by sponsoring bus passes, providing flexible work hours, and increasing remote work opportunities.
- E. Where business-owned vehicles are in use, replace over time with electric vehicles.
- F. Examine potential of solar-powered systems for charging of electric vehicles on private or public networks. Anticipate greater interest in and use of electric vehicles.

Community objectives

- A. Download apps for the safest/best route dependent on mode of travel.
- B. Use an app to determine estimated travel time, location of congested areas, and alternate routes.
- C. Commit to avoiding idling vehicles (when it is safe to do so) while in line to pick up children at school or picking up pre-ordered goods/takeout/groceries.
- D. Investigate alternative fuel vehicles, such as electric vehicles, to see if feasible for your family's needs.

Goal 2. Design and/or plan for multimodal transportation systems to efficiently meet the needs of all citizens

City Government objectives

- A. Survey local business, community, and government leaders about their T&M related concerns, hopes, and vision for our City. Reach out to large employers in the region for their input.
- B. Investigate information and communications technologies to connect people with real-time information.
 - a. For example: alerts if the destination parking lot is at capacity, arrival time of next bus/other public transportation, rideshare and bike-share availability, EV charging locations and availability, rerouting for road closure, safest route for pedestrians, etc.
- C. Consider the potential of self-driving electric vehicles for on-demand transport of elderly, physically challenged persons, or to connect remote (off-route) areas to public transportation.
- D. Select and designate optimal location for Park-and-Rideshare parking lots for carpooling commuters.
- E. Identify City Right of Ways that could significantly shorten walking/bicycling distances if repurposed for public use. Make sidewalks more user friendly by planting trees for shade.
- F. For existing roadways, create designated lanes for bicyclists with a Jersey barrier or similar. For new roadways, plan and design a green

- space to separate vehicles from cyclists.
- G. Examine means of linking school campuses with community for cyclists and pedestrians. Ideally, this would be a shaded green corridor perhaps adjacent to existing roadways.
 - H. Consider the potential of publicly owned bicycles available for use using smartphones or other devices to track use and location.
 - I. Concentrate development in compact, human-scaled, walkable centers and neighborhoods that connect to public transit, offer diverse uses and services.
 - J. Work with Brevard County to expand availability of public transportation services.

Local Business objectives

- A. Create a safe, secured, and covered area for employees who are using non-conventional vehicles (such as bicycles) or for employees who are carpooling (such as a “pick up and drop off” location)
- B. Consider installing a charging station for electric vehicles, perhaps powered by solar canopy.
- C. Anticipate the increasing use of autonomous vehicles. Understand the benefits and limitations of autonomous vehicles, for instance no driver distraction/fatigue vs optical systems with limited range and/or discernment. Consider needed accommodations, particularly in parking lots and loading docks, for instance clear sight lines and distinct lane markings.
- D. Where additional parking is absolutely necessary, build multi story parking garages with green roofs and walls that capture air pollutants and particulate matter, capture and use rainwater, produce oxygen, promote biodiversity, reduce noise and reverberation levels, and provide insulation. Design with accommodations for diverse modes of transportation, including pedestrian and wheelchair user safety.

Community objectives

- A. Be aware of pedestrians and bicyclists. Share the road; watch for people on scooters, skateboards, and in wheelchairs.
- B. Be considerate and alert in neighborhoods where children, pets, or wildlife might be on the road.
- C. Know your neighborhood and the nearby parks, businesses and services. Drive less and support our local economy.

Goal 3. Reduce negative impacts of existing transportation infrastructure

City Government objectives

- A. To reduce noise and air pollution, design and plant narrow green space adjacent to railroads and major roadways. Include tall and small trees, shrubs, and groundcover plants to absorb CO₂, capture and filter stormwater, and create buffer zones. Where City owned

land is not adequate or available, reach out to landowners to discern interest in funding a buffer zone on private land.

- B. Where median strips allow, replace turf grass with native grasses, wildflowers, shrubs and small trees. Divert and capture stormwater in the median strip greenspace.
- C. To reduce vehicle miles traveled, create awareness of locally available goods, services and recreational opportunities through public awareness campaigns.

Local Business objectives

- A. Explore more environmentally friendly parking areas.
- B. Reduce parking areas to create walking paths around building(s) for employee health and wellness. To optimize health benefits, line paths with native trees, shrubs and groundcovers for low maintenance green space.
- C. Collaborate with nearby businesses to link and create longer paths with the goal of linking business districts to residential areas.

Community objectives

- A. Embrace locally available goods, services and recreational opportunities to drive less

Innovative Waste Management

Waste management refers to the practice of collecting, transporting, processing or disposing of, managing and monitoring various waste materials. It is important to observe sustainability in this aspect so that every bit of waste can be managed in an efficient manner, reducing the use of landfills.

Goals:

1. Decrease amount of waste generated by increasing use of reusable, compostable and electronic resources.
2. Increase recycling rates among city government, individuals and businesses.

Goal 1. Decrease amount of waste generated by increasing use of reusable, compostable and electronic resources

City government objectives:

- A. Eliminate single use plastics in city facilities and city sponsored events.
 - a. For example: City events use only compostable materials for packaging, utensils and straws. Or the sole use of reusable materials in break rooms, offices, etc.
- B. Utilize e-resources in city government including non-print minutes for our board, electronic signups for parks and recreation, utilities, etc.
- C. All city properties should have water bottle refilling stations to reduce the use of plastic water bottles.
 - a. For example: an innovative method to reduce plastic bottle use is through incentivized reverse vending (IRV). It is a convenient way to deposit bottles and claim deposit refunds. This allows all plastic bottles at a site to be properly recycled to prevent bottles from going straight to landfills.
- D. Create city composting programs in designated areas for residential use and educational purposes.
 - a. For example: identify public schools with space for onsite composting of site-produced organic matter and use the Brevard Sustainability Working Group composting program.
- E. Create city composting sites usable by all residents and local businesses, to create compost fertilizer for city properties using yard waste and food waste.
 - a. Follow a composting structure similar to the water barrel program.
- F. Ensure equitable access to waste management and recycling programs for all residents and businesses.
- G. Implement a pay per use program for waste that financially incentivizes individuals to produce less trash. (Less trash produced = Less cost)
- H. Educate and incentivize residents on composting at their own homes.

- a. For example: pay as you throw rates should encourage people to compost their organics to avoid putting them in the trash. Or follow composting structure similar to water barrel program
- I. Explore and implement “pay as you throw” rates.
- J. Explore ways to incentivize or ordinances to require composting of food waste in schools, businesses, restaurants and grocery stores.
- K. Provide opportunity to residents, through special events, to dispose of items that cannot be disposed of through traditional trash pickup.

Local business objectives:

- A. Reduce/eliminate single use plastics.
 - a. This can include, but is not limited to, Styrofoam cups and packages, napkins, and plastic films.
- B. Encourage customers to partake in sustainable best practices such as reusable grocery bags or avoiding single use silverware.

Community objectives:

- A. Participate in at-home composting to reduce waste.
- B. Reduce single use plastic consumption. For example, shop for products with minimal packaging.

Goal 2. Increase recycling rates among city government, individuals and businesses

City government objectives:

- A. Increase recycling containers at all city facilities including offices and at all parks and recreation facilities.
- B. Include recycling containers at all city sponsored events.
- C. Improvements recycling specific materials that cannot be put into the single stream system.
 - a. This can include but is not limited to batteries, electronics, lightbulbs, tires, engine oil, ink, aluminum, etc.
- D. City government/staff annual “report card” on contamination of recycling streams.
- E. Implement Recycling One Stop.

Local Business Objectives:

- A. Actively participate in recycling assessment in order to establish efficient routes that continue to seek sustainable and equitable recycling practices.
- B. Work together as a community to create more access points to recycle products not able to go into the single stream.
- C. Understand the downstream impact of your product line.

Community Objectives:

- A. Participate in Recycling One Stops. Know where to recycle non-single stream products.

- B. Know what is categorized as recyclable through the single stream, information accessible on the city website.
- C. Participate in recycling initiatives provided by the city, local businesses, schools, etc.

Education and Public Engagement

Successful implementation of this Plan depends on more than just municipal government support. This Plan can have the greatest impact when the entire community is committed to collective action. The residents and business entities within the City of Palm Bay will have a significant impact on the capacity for innovative sustainability actions in our City. Beyond residents and businesses, there are also a wide range of educational institutions that can also play a role in moving the Plan forward.

One of the biggest barriers to action is a lack of understanding on how our choices today affect the Plan Elements of Natural Environment, Built Environment, Transportation & Mobility, and Innovative Waste Management, both now and in the future. By focusing efforts on educational awareness, the City can provide community members the information they need to support change. The following objectives create opportunities to educate the community, encourage smart practices, and foster participation to promote more sustainable municipal, residential, and business practices.

Goals:

1. Collaborate and partner with schools, community leaders, businesses, and other organizations with similar missions to create opportunities for education and engagement.
2. Provide engagement opportunities with sustainability initiatives as outlined in our previous elements.
3. Update Palm Bay branding to emphasize sustainability goals.
4. Emphasize areas of opportunity and of concern unique to Palm Bay.

Goal 1. Collaborate and partner with schools, community leaders, businesses, and other organizations with similar missions to create opportunities for education and engagement.

- A. Increase social media presence across multiple platforms to accommodate for a larger audience (Instagram, Twitter, Facebook etc.) Implement social media campaigns focused on promoting sustainability using the city's existing social media platforms.
- B. Support and provide education to schools looking to create sustainable programs and classrooms.
 - a. For example: school gardens, rain barrels, composting, environmental clubs, etc.

Goal 2. Provide engagement opportunities with sustainability initiatives as outlined in our previous elements.

- A. Increase awareness and stewardship of sustainable concepts through community outreach, educational outreach, involvement of schools and participation of city leadership.
 - a. For example: participation in civil affairs and improve access to community amenities and quality public education.
- B. Support and provide educational opportunities to schools looking to create sustainable programs and classroom experiences.
- C. Host an annual sustainability fair that promotes local co-ops, sustainable organizations, solar panel installers, farmers, etc.
- D. Host monthly events
 - a. For example: events focused on trash pickup, planting a tree, or partnering with organizations who are already hosting those events.

Goal 3. Update Palm Bay branding to emphasize sustainability goals.

- A. Promote sustainability in the city's online presence, to include webpages, social media accounts, logos, etc.
- B. Promote residents and businesses who are living sustainably.
- C. Engage in sustainability focused marketing to attract new residents.

Goal 4. Emphasize areas of opportunity and of concern unique to Palm Bay.

- A. Identify challenges in Palm Bay and surrounding areas; provide opportunities to residents to manage risk and engage in resolutions.
- B. Explore unique points of interest and/or beauty within Palm Bay and surrounding areas and develop initiatives to promote community enthusiasm for sustainability.
- C. Participate in recycling initiatives and special waste collection events provided by the city, local businesses, schools, etc.