Solid Waste Authority of Broward County

Task 13: Regional Solid Waste and Recycling Master Plan

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GLOSSARY

A

Afforestation: Planting trees to create new forests on previously non-forested land.
Agroforestry: Integrating trees and shrubs into agricultural systems.
Air Quality: The condition of the air based on pollutant levels.
Alternative Energy: Renewable energy sources like wind, solar, and geothermal.
Alternative Fuels: Non-petroleum-based fuels, like biofuels and hydrogen.
Anaerobic Digestion: Breaking down organic waste without oxygen to create biogas.
Aquaponics: A system combining fish farming with plant cultivation.

B

Biodegradable: Substances that can naturally decompose without harming the environment.
Biodiversity: The variety of life in a specific habitat or ecosystem.
Biofuel: Fuel derived from organic materials like plants or animal waste.
Biogas: A renewable gas produced from organic materials decomposing anaerobically.

C

Carbon Capture and Storage: Technology to capture and store CO_2 emissions.
Carbon Footprint: The total greenhouse gases produced directly and indirectly.
Carbon Neutrality: Balancing emitted and removed CO_2 to achieve net-zero emissions.
Carbon Reduction: Decreasing CO_2 emissions to mitigate climate change.
Circular Economy: An economic system focused on reusing, recycling, and reducing waste.
Circular Supply Chain: A supply chain designed to keep resources circulating.
Clean Energy: Energy from sources that release little to no pollutants.
Climate Change: Long-term changes in temperature and weather patterns due to human activities.
Closed-Loop System: A process where waste is reused in production, creating minimal waste.
Compostable: Materials that can break down in composting systems.
Composting: Decomposing organic waste to create nutrient-rich soil.

D

Decarbonization: Reducing carbon emissions across various sectors to combat climate change.
Deforestation: The clearing of trees, often for agriculture or development.
Downcycling: Recycling waste into products of lesser quality.

E

Ecological Footprint: The measure of human demand on Earth's ecosystems.
Ecosystem Services: Benefits humans derive from healthy ecosystems, like pollination.
Ecosystem: A community of interacting organisms and their physical environment.
Emissions: Pollutants released into the atmosphere from various sources.
Environmental Impact: The effect of human activities on the natural world.
Environmental Justice: Fair treatment of all people regarding environmental policies.
E-waste: Discarded electronic devices and components.
Extended Producer Responsibility: Policies holding producers accountable for post-consumer waste.

F

Fair Trade: Trade that ensures ethical treatment of workers and environmental care.
Flaring: Burning off excess gases, often from oil extraction.
Food Miles: The distance food travels from production to consumer.
Fossil Fuels: Nonrenewable energy sources like coal, oil, and natural gas.

G

Geothermal Energy: Renewable energy derived from Earth's internal heat.
Green Building: Construction practices focused on reducing environmental impact.
Green Infrastructure: Natural systems for managing stormwater and improving urban areas.
Greenhouse Gas: Gases that trap heat in the atmosphere, contributing to global warming.
Greenwashing: Misleading claims about the environmental benefits of a product or company.
Greywater: Wastewater from sinks, showers, and laundry that can be reused.

H

Habitat: The natural environment where a species lives.
Heavy Metals: Toxic elements, like lead, that can accumulate in the environment.
Hydropower: Renewable energy generated from flowing water.

I

Industrial Ecology: Studying industrial systems to minimize waste and resource use.
Invasive Species: Non-native species that disrupt local ecosystems.

L

Landfill: A site for waste disposal where trash is buried.
Life Cycle Assessment: Analyzing the environmental impacts of a product from creation to disposal.

M

Marine Debris: Litter, primarily plastic, that pollutes marine environments.
Methane: A potent greenhouse gas often emitted from landfills and agricultural activities.
Microplastics: Small plastic particles that pollute ecosystems.
Monoculture: Cultivating a single crop over a large area, which can harm biodiversity.

N

Natural Capital: The world's stocks of natural resources.
Natural Resources: Materials from Earth, like minerals and forests, used by humans.
Net Zero: Achieving a balance between greenhouse gas emissions and removals.
Nonrenewable Resources: Resources like coal that are finite and cannot be replenished.

O

Ocean Acidification: The reduction in ocean pH due to increased CO_2.
Offsetting: Compensating for emissions by reducing or sequestering carbon elsewhere.
Organic Agriculture: Farming without synthetic chemicals to protect biodiversity.

Organic Waste: Biodegradable waste like food scraps and yard trimmings.
Organics: Biodegradable materials, like food and yard trash.

P

Permaculture: A sustainable land management approach that mimics natural ecosystems.
Photovoltaic Cells: Devices that convert sunlight directly into electricity.
Pollinator: Animals like bees that help plants reproduce.
Pollution: Contaminants introduced into the environment that harm ecosystems.
Population Density: The number of people per unit area, impacting resources.
Post-Consumer Waste: Waste generated after a product has been used by consumers.
Precycling: Making purchasing decisions to avoid waste before it's generated.
Pyrolysis: Thermally decomposing organic material in the absence of oxygen.

R

Reclaimed Water: Treated wastewater used for purposes other than drinking.
Recycling: Reprocessing waste into new products to conserve resources.
Regenerative Agriculture: Farming that aims to restore soil and biodiversity.
Renewable Energy: Energy sources that are naturally replenishing, like wind and solar.
Resilience: The ability of systems to recover from environmental stress.
Resource Efficiency: Using resources wisely to reduce environmental impact.

S

Salinization: The buildup of salts in soil, often from improper irrigation.
Single-Use Plastics: Plastics designed for one-time use, often harmful to the environment.
Smart Grid: An energy network that uses digital technology for efficient distribution.
Soil Health: The ability of soil to support plant and animal productivity.
Solid Waste: Discarded materials from homes, businesses, and industries that require disposal or recycling.
Sustainability: Meeting present needs without compromising the needs of future generations.
Sustainable Agriculture: Farming practices that protect ecosystems.

U

Upcycling: Transforming waste into products of higher quality or value.
Urban Heat Island: Urban areas that are warmer due to human activities.

V

Vermiculture: Using worms to decompose organic waste into compost.
Volatile Organic Compounds: Chemicals that vaporize and harm air quality.

W

Waste Audit: Analyzing the amount and types of waste produced.
Waste Hierarchy: Ranking waste management options by environmental impact.
Waste Minimization: Strategies to reduce the amount of waste produced.
Waste-to-Energy: Converting waste materials into energy.
Water Conservation: Strategies to use water more efficiently.

Wildlife Corridor: A protected path that allows wildlife to move between habitats.
Wind Energy: Energy derived from the movement of wind to generate electricity.

X

Xeriscaping: Landscaping to reduce the need for irrigation.

Y

Yard Trash: vegetative matter from landscaping and yard maintenance.

Z

Zero Waste: An aspirational philosophy where resources are conserved by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.

ACRONYMS

A

ACC: Air Cooled Condenser
ACOE: Army Corps of Engineers
AD: Anaerobic Digestion
ADC: Alternative Daily Cover
AI: Artificial Intelligence
AMR: Autonomous Mobile Robots
AMV: Average Market Value
APC: Air pollution control
ASL: Automated Side Loader
ASP: Aerated Static Pile
AVL: Automated Vehicle Location
AVR: Automatic Voltage Regulator

B

BACT: Best Available Control Technology
BSE: Bovine Spongiform Encephalopathy
BMSD: Broward Municipal Services District
BW: Bulky Waste

C

CAAA: Clear Air Act Amendments
CASP: Covered Aerated Static Piles
CEMS: Continuous Emissions Monitoring System
CESQG: Conditionally exempt small quantity generator
CCA: Chromated Arsenicals
CCTV: Closed Circuit Television

C&D: Construction and Demolition
CFR: Code of Federal Regulations
CHP: Combined heat and power
CI-ICE: Compression Ignition Internal Combustion Engines
CMMS: Computerized maintenance management systems
CMSW: Commercial Municipal Solid Waste
CNG: Compressed Natural Gas
COSH: Council for Occupational Safety and Health
CPI: Consumer Price Index

D

DAC: Direct air capture
DARM: Division of Air Resource Management
DOE: Department of Energy
DOR: Department of Revenue
DOT: Department of Transportation
DSR: Dual-Stream Recycling

E

EHS: Environmental, health, and safety
EJ: Environmental justice
ENVIROS: Environmental Inquiry and Resource System
EPA: United States Environmental Protection Agency
EPR: Extended Producer Responsibility
EREF: Environmental Research and Education Foundation
EV: Electric vehicles

F

F.A.C.: Florida Administrative Code
FEC: Florida East Coast Railway
FDA: Federal Drug Administration
FDEP: Florida Department of Environmental Protection
FDOT: Florida Department of Transportation
FLM: Federal Land Manager
FOG: Fats, oils, and grease
FoTS: Feet on the Street
F.S.: Florida Statues

G

GHG: Greenhouse gas
GIS: Geographic Information System
GPS: Global Positioning System

H

HAP: Hazardous air pollutants
HHW: Household Hazardous Waste

HMR: Hazardous Materials Regulations

I

ICI: Industrial, Commercial, or Institutional
ICTF: Intermodal Container Transfer Facility
ILA: Interlocal Agreement
IoT: Internet of Things
ITC: Investment Tax Credits

L

LCFS: Low Carbon Fuel Standards
LEED: Leadership in Energy and Environmental Design
LLC: Limited Liability Company
LNG: Liquified natural gas
LQGs: Large Quantity Generators

M

MBT: Mechanical biological treatment
MC/SS: Master Composter/Sustainability Steward
MMBtu: Metric Million British Thermal Unit
MOU: Memorandum of Understanding
MRF: Material Recovery Facility
MSW: Municipal Solid Waste
MW: Megawatts
MWC: Municipal Waste Combustor
MWh: Megawatt hours
MWP: Mixed Waste Processing

N

NAAQS: National Ambient Air Quality Standards
NESHAP: National Emission Standards for Hazardous Air Pollutants
NIMBY: "Not in My Backyard"
NIR: Near-infrared
NGVD: National Geodetic Vertical Datum
NNSR: Nonattainment New Source Review
NPDWR: National Primary Drinking Water Regulation
NRWWTP: North Regional Wastewater Treatment Plant
NSR: New Source Review
NSPS: New Source Performance Standards

O

OCC: Old corrugated containers
O&M: Operations and maintenance
OTM: Other Test Method

P

PAYT: Pay-as-You-Throw
PET: Polyethylene terephthalate
PFAM: Population Forecast and Allocation Model
PFAS: Per- and Polyfluoroalkyl Substances
POTW: Publicly Owned Treatment Works
PPI-SW: Producer Price Index for Solid Waste Collection, Series ID: PCU562111562111
PPP: Public-Private Partnerships
PPSA: Power Plant Siting Act
PSC: Public Service Commission
PSD: Prevention of Significant Deterioration
PV: Photovoltaic
PVC: Polyvinyl chloride

R

R2: Responsible Recycling
RBAC: Recycling Business Assistance Center
RCRA: Resource Conservation and Recovery Act
RDF: Refuse derived fuel
RED: Resilient Environment Department
REL: Rear-End Loader
RFID: Radio Frequency Identification
RFP: Request for Proposal
RFQ: Request for Quote
RFS: Renewable Fuel Standards
RICE: Reciprocating internal combustion engines
RIN: Renewable Identification Numbers
RMC: Remote Monitoring and Control
RMPF: Recovered Materials Processing Facility
RMSW: Residential Municipal Solid Waste
RNG: Renewable Natural Gas
RRF: Resource Recovery Facility
RSA: Revenue sufficiency analysis
RSM: Recovered screened materials
RSW: Raw shredded green waste
R&T: Recycling and Transfer

S

SCR: Selective catalytic reduction
SEM: Surface Emission Monitoring
SFRTA: South Florida Regional Transportation Authority
SHPA: Swine Health Protection Act
SI-ICE: Spark Ignition Internal Combustion Engines
SQGs: Small Quantity Generators
SS: Single-Stream
SSO: Sanitary Sewer Overflow
SSR: Source-Separated Recyclables
SSR: Single-Stream Recycling

SWA: Solid Waste Authority
SWANA: Solid Waste Association of North America
SWRS: Solid Waste and Recycling Services
SWWG: Solid Waste Working Group

T

TAC: Technical Advisory Committee
TDLAS: Tunable Diode Laser Absorption Spectroscopy
TPD: Tons per Day
TPH: Tons per Hour
TPY: Tons per Year
TRP: The Recycling Partnership

U

UAS: Unmanned aircraft system
UAVs: Unmanned aerial vehicles
UROs: Universal Recycling Ordinances
USDA: United States Department of Agriculture

V

VOC: Volatile organic compounds
VSQGs: Very Small Quantity Generators

W

WARM: Waste Reduction Model
WCF: Waste Connections of Florida
WM: Waste Management
WTE: Waste-to-Energy
WWTP: Wastewater Treatment Plant

Y

YT: Yard Trash

Z

ZBA: Zoning Board of Appeals
ZBB: Zero-Based Budgeting
ZWIA: Zero Waste International Alliance

1.0 EXECUTIVE DIRECTOR'S STATEMENT

1.1 SHAPING BROWARD'S WASTE FUTURE: A UNIFIED PATH TOWARD ZERO WASTE

Broward County stands at a pivotal moment in its environmental and public service evolution. As one of the most populous and diverse counties in the State of Florida, we are both uniquely challenged and uniquely positioned to lead in the transition to a more sustainable, efficient, and equitable solid waste and recycling system. This *Regional Solid Waste and Recycling Master Plan* (Master Plan) is not merely a strategic roadmap—it is a bold declaration of our collective intent to rethink how we value, manage, and ultimately reduce waste across all 31 municipalities, with 28 having already committed, along with Broward County, through our new Interlocal Agreement.

The creation of the Solid Waste and Recyclable Materials Processing Authority of Broward County is a testament to the foresight and leadership of our elected officials and community stakeholders. After more than a decade of fragmentation, the formation of the Authority reestablishes a much-needed regional governance framework—one that allows us to leverage economies of scale, coordinate investments in new infrastructure, harmonize policies, and speak with a unified voice when facing statewide and national policy challenges.

Historically, Broward County has embraced innovation, from early investments in recycling programs to public-private partnerships in disposal and processing. But those successes, while important, are no longer sufficient. Today's waste challenges are far more complex and far-reaching. Climate change, supply chain instability, the rising cost of disposal, community concerns about equity and environmental justice, and an urgent need to reduce greenhouse gas emissions all compel us to act decisively. Landfill space is finite, and reliance on outdated practices can no longer sustain our growing population and economy.

This Master Plan, developed in collaboration with expert consultants, technical advisors, and local stakeholders, reflects a comprehensive, data-driven vision for the next 40 years. It is centered around a singular but transformative and aspirational goal: **Zero Waste to Landfill**. Achieving that goal will require more than new technology or facilities. It requires a cultural shift toward minimizing waste at the source, maximizing beneficial reuse and recycling, and fundamentally rethinking how materials move through our economy — from product design to end-of-life — in order to maximize beneficial reuse while minimizing the amount of waste requiring disposal.

To that end, this Master Plan outlines strategic actions across several key areas:

- **Reducing waste generation** through education, procurement reform, and incentives for circular economy practices.
- **Expanding recovery and recycling** with source-separated organics, construction and demolition (C&D) recovery programs, and mandatory recycling ordinances.
- **Strengthening infrastructure** by optimizing existing assets while identifying new facility needs for transferring, processing, and disposal over the long term.

- **Improving governance and financial sustainability** via flow control mechanisms, assessment models, and regional policy harmonization.

- **Promoting environmental equity** to ensure that historically burdened communities benefit from cleaner operations, improved access to services, and meaningful participation in decision-making.

Public outreach and stakeholder engagement were central to the development of this plan. Community feedback, environmental justice considerations, and an emphasis on multilingual, inclusive education efforts are embedded throughout the recommendations. We recognize that lasting transformation requires trust, transparency, and long-term collaboration across all sectors—government, private industry, non-profits, schools, and residents.

We also acknowledge that technology alone will not solve these challenges. Behavioral change — across households, businesses, and institutions — is essential. The system we envision empowers every resident and visitor to participate meaningfully, supported by consistent messaging, accessible services, and a commitment to continuous improvement.

This Master Plan is a living document. It will be updated regularly to reflect emerging trends, legislative changes, technological advancements, and lessons learned through implementation. But its foundational principles — environmental stewardship, operational excellence, regional cooperation, and public accountability — are enduring.

On behalf of the Solid Waste Authority's Executive Committee, staff, and consultant team, I extend sincere gratitude to the many individuals and organizations who contributed their time, ideas, and passion to this effort. Your input has made this plan stronger, more grounded in community values, and more responsive to the challenges ahead.

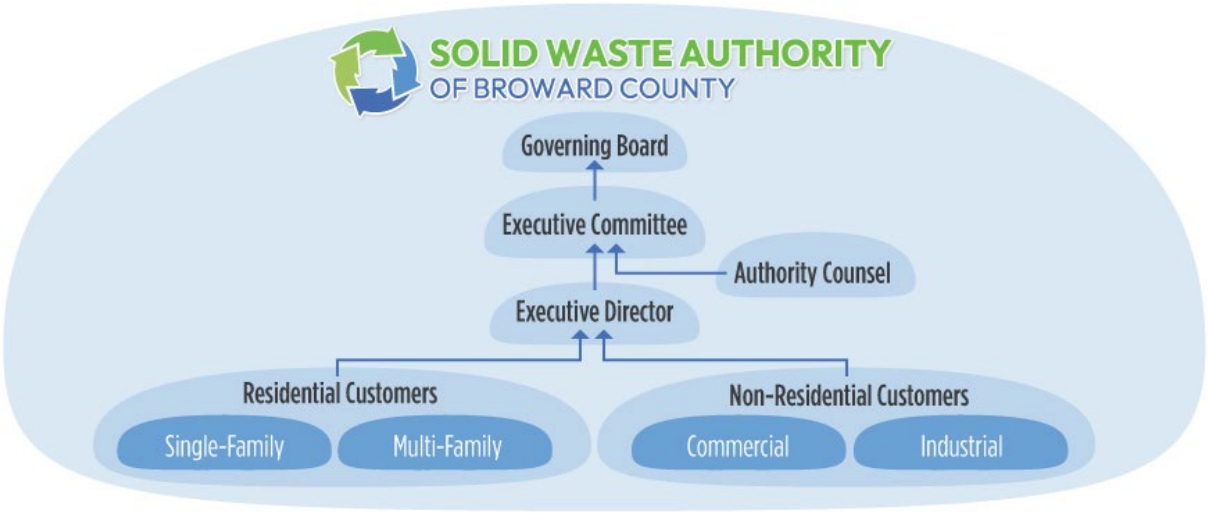
I invite you not only to read this Master Plan but to engage with it. The path to Zero Waste is ambitious, but it is attainable. Together, we can build a solid waste and recycling system that is cleaner, smarter, and more just — for today and for generations to come.

Sincerely,
Samuel A. May
Executive Director
Solid Waste and Recyclable Materials Processing Authority of Broward County

2.0 OVERVIEW

The Solid Waste Disposal and Recyclable Materials Processing Authority of Broward County, Florida (Authority) is a newly constituted independent and separate legal entity created pursuant to, and consistent with, Sections 163.01, 403.706(11), (12), (15), and (19), and 403.713, Florida Statutes, through the *Interlocal Agreement for Solid Waste Disposal and Recyclable Materials Processing Authority of Broward County, Florida* (ILA) executed by and among Broward County (County) and numerous municipalities in the County. **Figure 1** presents the organizational structure of the Authority.

Figure 1. Authority Organizational Structure



As prescribed in the ILA (see **Appendix A**), the Governing Board is comprised of an appointed elected official from each ILA Member, and the Executive Committee is comprised of 11 elected officials who also serve on the Governing Board. One (1) member of the Executive Committee represents the County; five (5) members represent the large municipalities; three (3) members represent the medium municipalities; and two (2) members represent the small municipalities. The duties and powers of the Governing Board and Executive Committee are also specified in the ILA.

Consistent with the ILA, the Authority must adopt a Regional Solid Waste and Recycling Master Plan (Master Plan). The Master Plan is a comprehensive strategic document that outlines how the Authority can manage its solid waste from generation to disposal. The purpose of the Master Plan is to provide the Authority with detailed recommendations concerning policies, operations, and facilities needed to create a regional solid waste and recycling system (System) that is environmentally sustainable, transparent, innovative, and economically efficient in its approach to reduction, reuse, recycling, and disposal of the waste generated across the County. It is important to note that the Master Plan is a "living document" that should be revisited and updated periodically to maintain alignment between the Authority and its various stakeholders.

3.0 APPROACH

This Master Plan serves as a strategic framework to guide the development of services, programs, and facilities needed to efficiently and effectively manage the solid waste generated within the County. This Master Plan reflects the analyses and subject-specific White Papers developed by the SCS Engineers Team, which includes Arcadis I.S., Inc., Resource Recycling Systems, and Mercury, since engaged by the Authority in May 2024. Each deliverable is referenced in this Plan and included as an appendix. This Master Plan is intended to be a living document developed in accordance with the Project Framework Summary attached as **Appendix B**. The recommended policies, services, programs, and facilities are envisioned to be carried out via a tactical plan that addresses the preferred procurement and implementation approach. It is anticipated that the Master Plan will be revisited over the planning horizon and adjusted based on the progress made as well as the changes needed to meet the needs of the Authority as they evolve.

The Master Plan was crafted using a Zero Waste lens to develop a clear pathway to meet or exceed the 75% recycling goal established by the State of Florida via House Bill 7135. This involved identifying and evaluating options to maximize the beneficial use of waste stream components while minimizing waste stream components that have no beneficial use. Transparency has been at the forefront of this approach, requiring continuous engagement to provide a local lens through which solutions are evaluated for their suitability, both to the community and to the geographic uniqueness of the Authority and County at large. To facilitate public engagement and enhance transparency, the Authority created a website (https://browardswa.org/) to support the development of the Master Plan.

3.1 ZERO WASTE LENS

Many communities across the United States[1] recognize that we are a wasteful, "throwaway"[2] society that engages in excess consumption and is quick to discard resources. We miss the societal and economic opportunities offered by the flow of resources and waste, including jobs and valuable materials. Zero Waste principles promote a shift from the current take-make-waste system[3] to a mindset that results in a lifestyle change of minimizing waste generation at the source, encouraging the highest and best use of recirculated materials, and promoting a circular, closed-loop system of production and consumption.

The Zero Waste International Alliance (ZWIA) defines Zero Waste as "the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health."[4] While Zero Waste is the aspirational goal, solid waste and energy recovery facilities such as waste-to-energy (WTE) facilities and landfills play an important role at the bottom of the hierarchy. Both the United States Environmental Protection Agency (EPA) and

[1] Austin, TX; Baltimore, MD; Hawai'i County, HI; Boston, MA; Boulder, CO; Fort Collins, CO; Chula Vista, CA; Dallas, TX; Delaware County, PA; Los Angeles, CA; Missoula, MT; Montgomery County, MD; Oakland, CA; Oceanside, CA; Palo Alto, CA; San Diego, CA; Washington, DC; King County, WA; Fresno, CA; the State of Connecticut; Middletown, CT; San Francisco, CA; Oakland, CA; Alameda, CA; Pasadena, CA; Ashville, NC; San Jose, CA; Guam; the Commonwealth of the Northern Mariana Islands and many other U.S. and international agencies

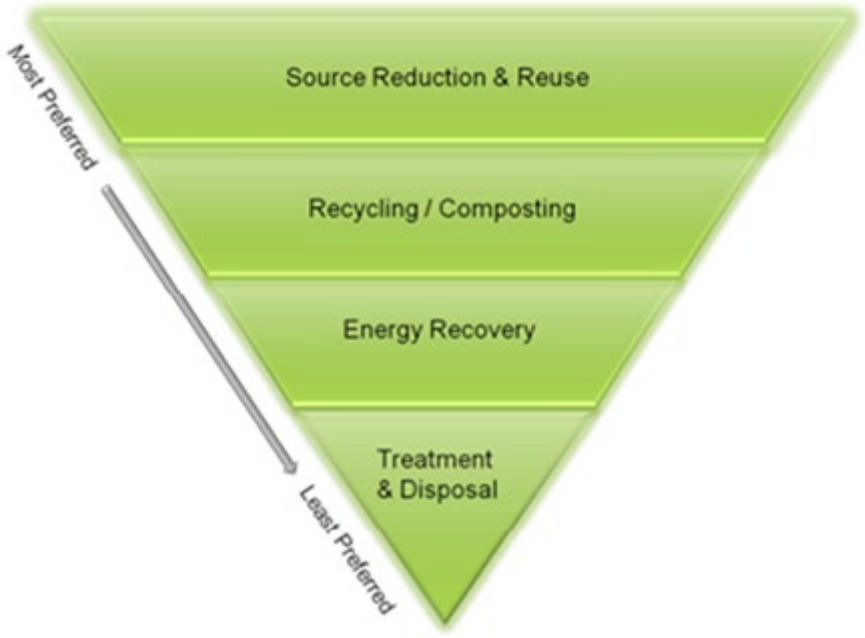
[2] RoadtoZeroWasteReport_FINAL.pdf

[3] Circular economy principles: Eliminate waste and pollution

[4] Zero Waste Definition - Zero Waste International Alliance

ZWIA's Waste Management Hierarchies prioritize source reduction, reuse, recycling, and composting above volume reduction via WTE and ultimately landfill disposal, as presented in **Figure 2.**

Figure 2. EPA Waste Management Hierarchy[5]



It is important to note that recycling and beneficial use of waste stream components are not incompatible with WTE; rather, WTE can extract value via metals recovery, energy production, and reduce the volume of waste stream components that are not otherwise beneficially used thereby saving finite landfill capacity.

3.2 MINIMIZE WASTE GENERATION

An important step on the journey to Zero Waste is to start at the source, i.e., minimize waste generation. ZWIA cites three overarching goals necessary to shift from linear resource use to sustainable, circular resource management: producer responsibility, community responsibility, and political responsibility. Producer responsibility related to industrial production and design lies at the front end, community responsibility (i.e., consumption, use, and disposal) lies at the back end, and political responsibility involves bringing the two together[6].

As ZWIA insightfully notes, both individual and collective behaviors must align for a Zero Waste goal to be effective. The Recycling Partnership's 2021 white paper, *Start at the Cart™: Key Concepts of Influencing Recycling Behaviors to Drive a Circular Economy,* asserts that "people are peopley, meaning, our brains and behaviors are both complex and often at odds with each other," and

[5] https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy
[6] Zero Waste Community Principles - Zero Waste International Alliance

concludes that those who are most successful at making and maintaining good choices incorporate those choices into their daily habits and patterns[7]. The lifestyle changes necessary to move closer to a Zero Waste goal involve making conscious choices at every stage, from selecting a product to usage and proper disposal.

Minimizing waste generation is a mission and mindset that an entire community must adopt to be effective; it can only take place over a long period of time and must become self-enforcing. Behaviors for each segment of the population and each institution (e.g., private, public, commercial, industrial, religious) evolve and become aligned through shared values of thriftiness, environmental stewardship, and commitment. Examples of supportive behaviors include:

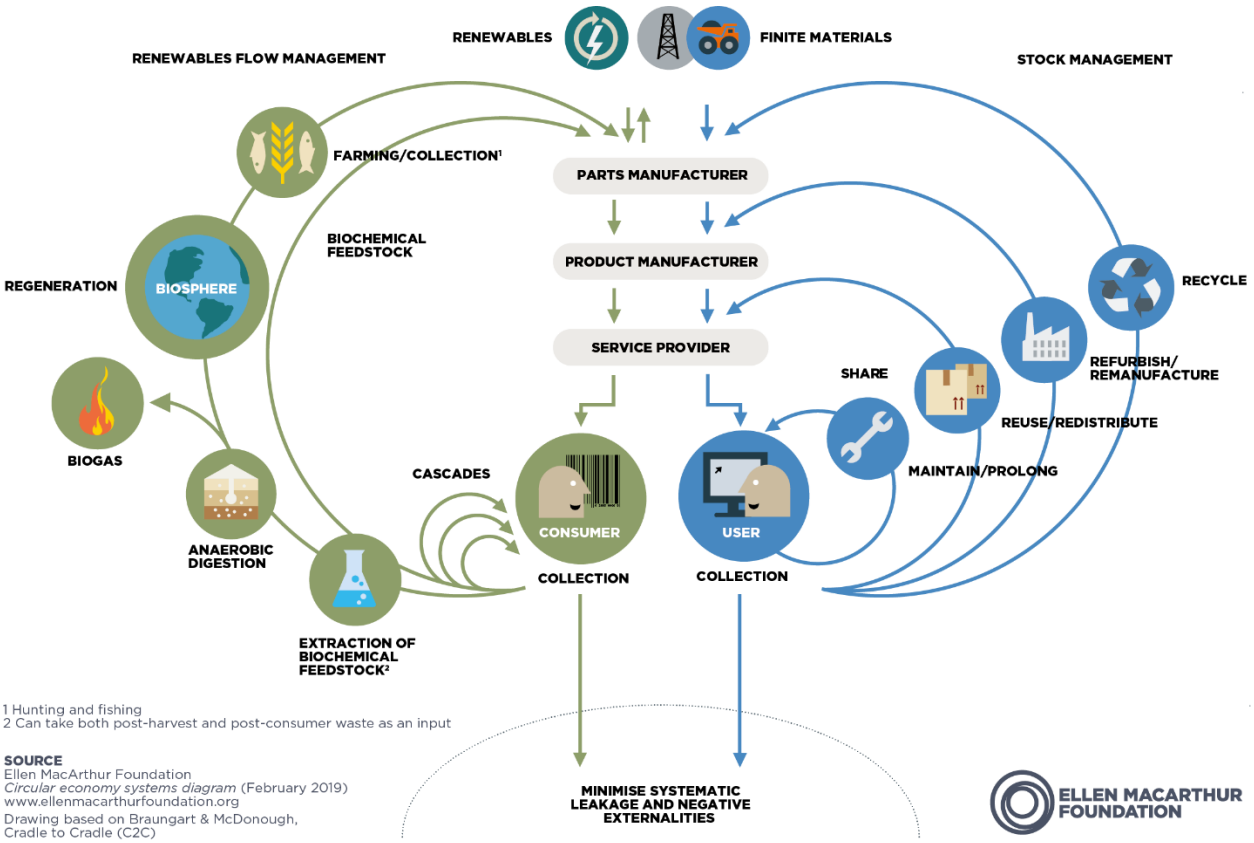
- Setting Zero Waste metrics which are accountable and reviewed regularly, with progress being celebrated
- Reducing consumption of materials
  - Go fully paperless and give preference in procurement processes to digital alternatives
  - Utilize permanent or backhauled reuseable containers (i.e., durable grocery bags)
- Reusing or re-selling materials, items, and tools after initial use
- Repurposing items no longer used for their original intent
- Repairing instead of replacing
- Buying used instead of new materials for the same functions
- Recycling
- Buying recycled content or recycled products; for example, institute procurement policy incentives for recycled content and products vs. virgin content products
- Using bulk instead of packaged products
- Organizing and participating in community swaps (e.g., flea markets, swap meets, waste exchanges)
- Organizing secondary markets for blemished and overstocked food

[7] Influencing-Recycling-Behaviors-Whitepaper-Recycling-Partnership.pdf

3.3 MAXIMIZE THE BENEFICIAL USE OF SOLID WASTE RESOURCES

Maximizing the beneficial use of generated waste is captured in the Ellen MacArthur Foundation's circular economy diagram, commonly known as the butterfly diagram (**Figure 3),** which illustrates two key cycles in the continuous flow of materials in a circular economy: the technical cycle and the biological cycle.

Figure 3. Butterfly Diagram: Visualizing the Circular Economy



Products and materials that are used rather than consumed in the technical cycle (on the right-hand side) are kept in circulation through sharing, reusing, repairing, refurbishing, remanufacturing, and recycling. Inner loops such as sharing, maintaining, and reusing capture the most value as keeping a product whole retains more of its embedded value. Recycling – transforming a product or component into its basic materials – is the final step in the technical cycle. Though the time and energy invested in making a recycled product is lost, the value of the materials is retained as they are recirculated into the economy once more[8].

The biological cycle (on the left-hand side) illustrates the process by which products that are consumed, such as food, can biodegrade and safely return to the earth. Regeneration is at the heart of the biological cycle, shifting the focus from doing less harm to the environment to actively

[8] The *technical* cycle of the butterfly diagram

improving it. Recovering materials embedded in organic waste through anaerobic digestion or composting and using food by-products to make other materials for a variety of applications are ways to beneficially recirculate organic matter through the biological cycle[9].

Key to maximizing the beneficial use of waste stream components is robust public engagement, education, and building trust that includes communicating the "who, what, where, when, and how" of resource stewardship and rational for behavior change. This includes clarifying set-out requirements for solid waste, recyclable materials, yard trash, bulk waste as well as opportunities to manage household hazardous waste, electronics, and other waste stream components that can best be managed upstream from disposal. Starting with these basics creates the conditions to enhance the resource management program in the future. For example, after establishing a yard trash processing facility, expand the services to include other clean organics (e.g., food waste).

[9] The *biological* cycle of the butterfly diagram

4.0 GUIDING PRINCIPLES

An initial step for developing the Master Plan was the establishment of Guiding Principles to serve as the framework to conduct the analysis and ultimately to assure that the resulting recommendations are aligned with the values and priorities of the Authority. Essentially, the Guiding Principles frame the pathway from the current state through the 40-year planning horizon, providing clarity in terms of the Authority's starting point and its direction going forward. The Guiding Principles are presented in no particular order below, with the exception of controlling your solid waste destiny, which was prioritized above all by the Executive Committee:

- Control Your Solid Waste Management Destiny – developing the services, programs, and facilities such that the Authority takes responsibility for managing the solid waste generated in the County and the outcomes of the decisions.

- Zero Waste Focus – taking a "whole system" approach to services, programs, and facilities to minimize consumption and the associated waste generation and to maximize beneficial reuse and recycling.

- Environmental Compliance – managing the impacts to the air, soil, water, and wildlife as well as "quality of life" impacts to the community such as aesthetics, odor, noise, and traffic.

- Management Compliance – satisfying the applicable growth management requirements for solid waste concurrency.

- Long-term Disposal Solution – achieving a reliable disposal approach over the 40-year planning horizon.

- Commercially-Proven Technologies – technology that has been designed, constructed, and operated/implemented in the United States on a commercial scale (not a pilot plant or research facility) for at least one year in a reliable and consistent manner. The capacity of the technology is appropriate to manage the quantity of material typically produced, and products of the processing have been marketed effectively.

- Operational Excellence – optimizing the operations of the Authority's solid waste management assets as well as the programs that will be administered by the Authority.

- Harmonization of Services County-wide – aligning the services, programs, and facilities to provide unified services across the Authority.

- Best Value Service – developing services, programs, and facilities that reflect local and regional conditions and appropriately balancing the value with the cost and with key policies.

5.0 KEY POLICIES CONSIDERED

Acting in concert with the Guiding Principles, the following Key Policies also provide clarity in terms of the Authority's strategic direction. The key policy considerations embraced by the Executive Committee are presented below in no particular order. Refer to the Key Policy Survey Presentation in **Appendix C** for additional details.

- The Master Plan assumes a 40-year planning horizon and considers the time associated with implementation of the recommended services, programs, and facilities.

- The Authority wants to consider options to dispose of waste outside of the County and is looking for partnerships with other units of government where appropriate.

- The Authority wants to maximize the use of existing infrastructure within Broward County.

- Technologies that are not commercially proven should be excluded from consideration. Technology maturity should be monitored to provide maximum flexibility over the planning horizon.

- Because of geography, natural disasters can have a dramatic impact on facility use, particularly private sites; therefore, the Master Plan need not align with the County's individual Disaster Debris Management Plans.

- The Authority will strive for cost-effective and efficient delivery of solid waste and recycling services and has the ability to enact an annual assessment to provide funding, with rates needing to reflect the cost of services in the local waste market

- The minimum distance from solid waste facilities to residential properties has evolved. Initially, the Executive Committee suggested a minimum distance of one mile from residential property. However, due to the build-out of the County, this distance was not feasible and was decreased to half a mile, then to a quarter mile for certain facility types. The number of possible sites decreased as privately-owned parcels were eliminated in favor of County and municipally-owned sites.

- In alignment with the Authority's equity and inclusivity goals, environmental justice considerations to apply to the development of the Master Plan generally emphasize equitable outcomes for all communities, particularly those historically affected by environmental challenges.

- The Authority is encouraged to consider mandatory residential and commercial recycling. Initial steps that can be taken immediately include focusing on yard trash, which sets the stage for processing for beneficial use, and commercial C&D debris recycling.

6.0 ESSENTIAL TAKE-AWAYS

Through the development of the White Papers referenced herein, several themes emerged that are essential to the successful implementation of the Master Plan. Each essential theme is discussed further in the following sections.

6.1 BEHAVIOR CHANGE

One way to create behavior change is by developing a robust communications infrastructure based on **access**, **knowledge**, and **engagement.** This is key to changing the paradigm from a culture of consumption to a culture of minimizing waste and maximizing the beneficial use of waste stream components to reduce the amount of waste requiring disposal.

Access refers to whether recycling bins are readily available or if residents must walk or drive to drop off centers. Access is critical to the success of any recycling or zero waste program. It ensures that each resident, employee, or visitor can conveniently recycle or reuse end-of-life materials as easily as throwing them away. It is vital that everyone, regardless of ethnicity, primary language, or socioeconomic status have the same access to these programs and that the instructions they receive to participate in the programs are in their language of choice.

Knowledge refers to conveying the information people need to make decisions about what, when, and how to recycle. As part of developing our understanding of residential waste generator perceptions, a recycling survey was developed and deployed in early 2025. The survey considered property type, property ownership, income, and age. Key findings were:

- 86% of the respondents have separate solid waste and recycling carts
- 87% of the respondents receive recycling information from their municipality or County
- 43% of the respondents prefer receiving recycling information via email
- 43% of respondents trust that recyclable items that are placed in recycling carts get recycled
- 94% of respondents indicated that they recycle according to guidelines
- 59% place yard trash at the curb for collection

A summary presentation from the residential survey is included in **Appendix D**.

Engagement involves an individual's values, beliefs, attitudes, and identity, as well as the social dynamics and norms within their household, workplace, and community. It is not enough just to "tell" residents or businesses what they need to know. A fully optimized recycling collection and processing system cannot reach its full potential without effective education, outreach, and community engagement. Further, a trusted messenger is vital to a successful behavior change campaign.

A key component of the knowledge phase is determining the key motivations of the target audiences. Then, during the engagement phase, prompts for behavior change can be created based on those motivations. Using the last Census as a guide for Broward County, it is likely that the focus audiences for the research phase should be English, Spanish, and Haitian Creole speakers between the ages of 18 and 40 and 65 and over, both single-family home residents (rent and own) and multifamily home residents (rent and own) with a high school education and above. During the research phase, barriers to behavior change (recycling and recycling the right items) can be determined and then addressed during the education and engagement phases. To determine similar factors from

businesses and institutions, a key tactic would include creating an electronic survey and sending a postcard describing the goals with a link to the survey. Some sort of motivation, such as drawing for a gift card, often is needed to encourage businesses to complete the survey. In addition, providing businesses and institutions with the information they need to comply with local ordinances and regulations is a crucial step. The County can thus influence businesses and institutions to change behaviors, and then key players within those locations will influence their employees in a domino effect of information and influence.

An initial interactive Public Workshop was convened in September 2024 to introduce the Master Plan and solicit feedback from a range of stakeholders, including elected officials, staff, and public stakeholders. One of the themes of the Workshop was that "there is no 'away' for garbage"— a reminder that all waste has consequences, and how we manage it affects the environment and the health of our communities. Key takeaways from the Broward County Solid Waste Management Public Workshop are presented in **Appendix E**.

6.2 ECONOMIES OF SCALE

A driving force for establishing the Authority was the notion that the benefits of working together exceed those of operating independently. For context, the decision not to extend the original Resource Recovery System in 2013 was based in part on the belief that the "free market" would enable competition and that each of the former member communities would benefit in terms of cost and service. While some benefits were realized in the short-term, the desired benefits have not been sustained over the longer term.

In order to fully realize the opportunities presented by the establishment of the Authority, it is critically important to leverage economies of scale to manage the collective waste stream. This is best accomplished via a concept known as flow control, which is the ability to direct where solid waste and recyclables generated within a jurisdiction must be transported, processed, or disposed. The primary objectives of flow control include:

- Ensuring adequate and reliable waste volume to support public or designated private facilities (e.g., landfills, waste-to-energy plants, material recovery facilities).
- Maintaining environmental standards, such as higher recycling or diversion rates.
- Providing fiscal stability for solid waste infrastructure which often relies on minimum tonnage or stable tipping fees.

Flow control can be established through three primary mechanisms: regulatory (i.e., ordinance), contractual, and economic. While each mechanism has unique legal, operational, and financial implications, the recommended approach entails the following:

- A hybrid approach that combines both ordinance-based and contractual flow control to leverage the strengths of each. For instance, a County ordinance could outline a broad requirement to use designated facilities, while interlocal agreements define specific terms for each municipality, including put-or-pay clauses or cost-sharing formulas.

- Allow for phased implementation to enable the alignment of new ordinances or interlocal agreements with existing contract expirations in order to reduce disruption to municipal budgets and operations.

- Provide economic incentives, such as favorable tipping fees or rebates, to encourage early adopters and mitigate the political or economic challenges of mandated flow control as well as performance-based incentives for municipalities or haulers that meet or exceed recycling/diversion targets.

- Adopt clear enforcement mechanisms and utilize staff to oversee inspections, tonnage tracking, and penalty enforcement.

- Standardize data reporting requirements for all municipalities and private haulers to ensure transparency.

6.3 LEVERAGE EXISTING INFRASTRUCTURE

As detailed in the Task 2 White Paper, there is currently adequate infrastructure within the County to meet current solid waste management needs. It is important to note that the analysis presented in the Task 4 White Paper identified the need for a wide range of new facilities over the planning horizon. However, this conclusion was based largely on an "academic approach" to identifying the infrastructure needed to reach the target recycling goal given the increased volume of waste to be managed by 2045. In the short-term, it is recommended that the Authority leverage the existing infrastructure while targeting waste streams that can be beneficially used immediately (e.g., traditional recyclable materials, yard trash, C&D debris). This approach, along with a focus on robust public engagement and education to maximize waste minimization and "recycling right" are expected to result in a higher recycling rate in the short-term, while further infrastructure needs are evaluated.

6.4 HARMONIZATION OF SERVICES

Harmonizing services is defined as building service consistency across the ILA communities in terms of how solid waste and recyclable materials are collected (i.e., set out at the curb), where materials are processed, and how information is developed and disseminated. It is critically important that education, outreach, and messaging are carefully coordinated to ensure consistency across the Authority.

7.0 HISTORY/BACKGROUND

In the 1980s, a partnership known as the Resource Recovery System was formed among the County, most municipalities within the County, and the private sector. The purpose of this partnership, which was bound by an Interlocal Agreement (ILA), was to develop a state-of-the-art solid waste management system, and the result was, indeed, a cost-effective, sustainable, and environmentally safe solid waste management system. As the ILA expiration date drew near, the County convened a Solid Waste Visioning Summit in 2006, also known as the Trash Summit, during which County stakeholders developed a policy framework to manage uncertainty; they also began considering the best solution based on value and cost, governance and implementation, flexibility, control and environmental stewardship. However, the ILA Cities and the County allowed the ILA to expire in 2013, granting each former member autonomy in solid waste management

Following the expiration of the ILA, concerns arose surrounding the formation of solid waste monopolies. This led the County and several cities to reopen the dialogue, develop a new vision for the future of solid waste management across Broward County, and identify a means to achieve that vision.

Ultimately, these events led to the formation of a Solid Waste Working Group and the commissioning of studies by both Arcadis and SCS Engineers that would serve to detail how a 75% County-wide recycling goal may be reached, and other solid waste disposal issues identified by the Solid Waste Working Group. An ILA creating the Solid Waste and Recyclable Materials Processing Authority of Broward County was executed thereafter in 2023. The preparation of this Master Plan resulted from the Authority's Request for Proposal for Consulting Services.

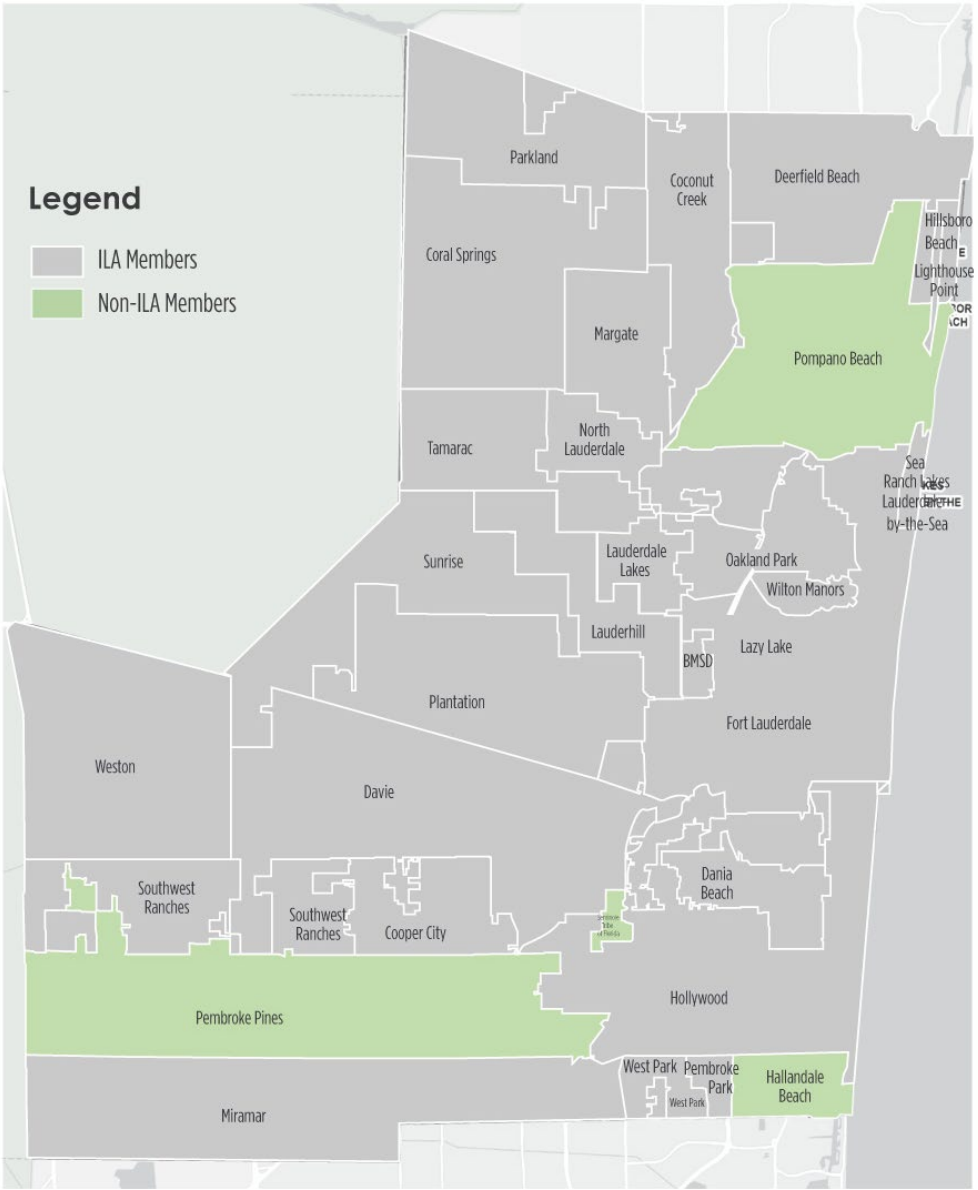
8.0 EXISTING SOLID WASTE SYSTEM

There are existing public, municipal, and private solid waste processing and disposal facilities located throughout Broward County. The subsections below provide an overview of ILA and non-ILA Members and an overview of the existing solid waste infrastructure.

8.1 ILA MEMBERS

Of the 31 municipalities in Broward County, 28 municipalities and the County executed the ILA and agreed to participate in the Authority. **Figure 4** is a map of the ILA and non-ILA Members.

Figure 4. County Map of ILA and Non-ILA Members



8.2 EXISTING FACILITIES

There are several County-owned, municipal-owned, and privately-owned solid waste processing and disposal facilities located within Broward County. The general location of each facility is noted in **Figure 5**, and **Table 1** lists each facility name, ownership, and waste stream materials accepted for processing and/or disposal.

Figure 5. Existing Solid Waste Management Facilities in Broward County

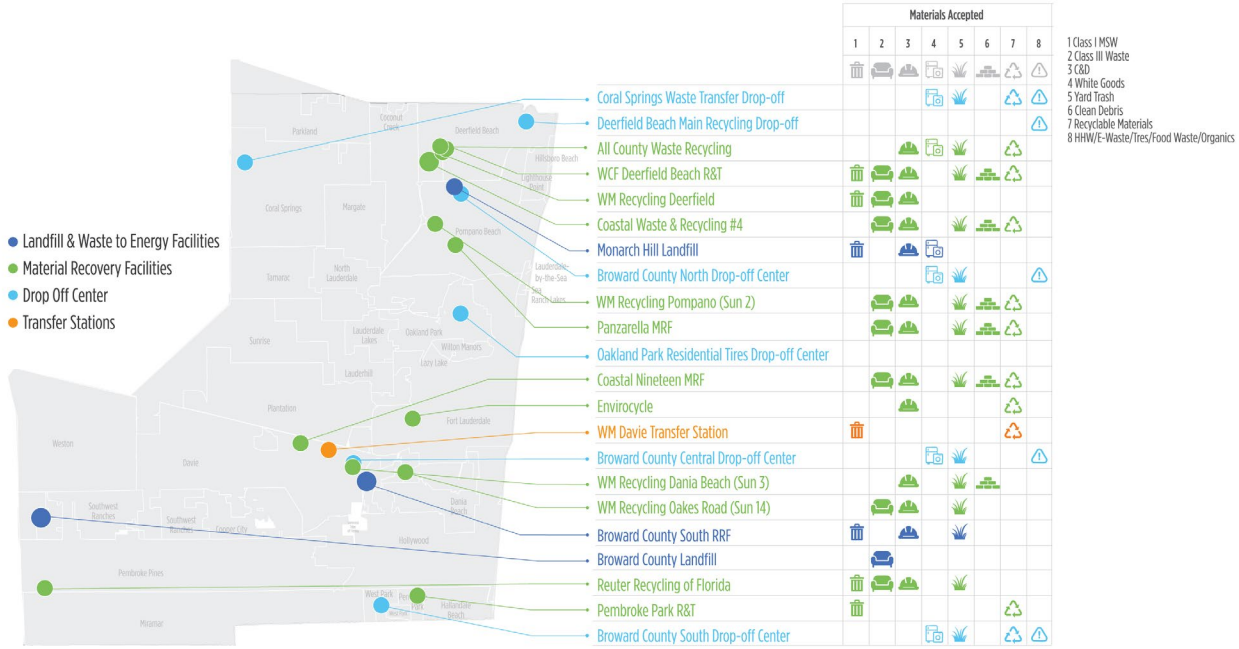


Table 1. Municipal, County, and Privately Owned and Operated Solid Waste Facilities in Broward County

Facility Type	Facility Name	Owner/Operator	Location	Materials Accepted
Landfill	Broward County Landfill	Broward County	7101 SW 205th Avenue Southwest Ranches, FL 33332	Class III
Landfill	Monarch Hill Landfill	WM	2700 Wiles Road Pompano Beach, FL 33073	MSW; C&D; White Goods
WTE	Broward County South RRF	WIN Waste Innovations	4400 South State Road 7 Fort Lauderdale, FL 33314	MSW; Yard Trash; C&D

Facility Type	Facility Name	Owner/Operator	Location	Materials Accepted
SS RMPF	Reuter Recycling of Florida (aka WM Pembroke Pines Single Stream)	WM	20701 Pembroke Road Pembroke Pines, FL 33029	Class I; Class III; C&D; Yard Trash; Recyclables
SS RMPF	Pembroke Park R&T	Waste Connections of Florida	1899 SW 31st Avenue Pembroke Park, FL 33009	Class I; Recyclables
C&D RMPF	WM Recycling Oakes Road (Sun 14)	WM	3250 SW 50th Avenue Davie, FL 33314	C&D; Class III; Yard Trash
C&D RMPF	All County Waste Recycling	All County Waste Recycling Inc	1810 SW 42nd Way Deerfield Beach, FL 33442	C&D; Yard Trash; White Goods; Recovered Materials
C&D RMPF and RMPF	WCF Deerfield Beach R&T	Waste Connections of Florida	1751 SW 43rd Terrace Deerfield Beach, FL 33442	Class I; Class III; C&D; Yard Trash; Clean Debris; Recovered Materials
C&D RMPF and RMPF	WM Recycling Deerfield	WM	1750 SW 43rd Terrace Deerfield Beach, FL 33442	Class I; Class III; C&D
C&D RMPF and RMPF	Coastal Nineteen MRF	Coastal Waste & Recycling of Florida	7061 SW 22nd Court Davie, FL 33317	C&D; Yard Trash; Class III; Clean Debris; Recovered Materials
C&D RMPF and RMPF	Panzarella MRF	Panzarella MRF LLC	1601 SW 3rd Street Pompano Beach, FL 33069	C&D; Yard Trash; Class III; Clean Debris; Recovered Materials
C&D RMPF and RMPF	Coastal Waste & Recycling #4	Coastal Waste & Recycling of Florida	1840 NW 33rd Street Pompano Beach, FL 33064	C&D; Yard Trash; Class III; Clean Debris; Recovered Materials
C&D RMPF and RMPF	Envirocycle	Envirocycle, Inc.	849 SW 21st Terrace Fort Lauderdale, FL 33312	C&D; Recovered Materials

Facility Type	Facility Name	Owner/Operator	Location	Materials Accepted
C&D RMPF and RMPF	WM Recycling Pompano (Sun 2)	WM	2281 NW 16th Street Pompano Beach, FL 33069	C&D; Yard Trash; Class III; Clean Debris; Recovered Materials
C&D RMPF and RMPF	WM Recycling Dania Beach (Sun 3)	WM	3251 SW 26th Terrace Fort Lauderdale, FL 33312	C&D; Yard Trash; Clean Debris
Transfer Station	WM Davie Transfer Station	WM	2380 College Avenue Davie, FL 33317	Class I; Recovered Materials
Recycling Drop-Off Center	Broward County North Drop-Off Center	Broward County	2780 N Powerline Road Pompano Beach, FL 33073	Yard Trash; White Goods; HHW; E-Waste; Tires
Recycling Drop-Off Center	Broward County Central Drop-Off Center	Broward County	5490 Reese Road Davie, FL 33314	Yard Trash; White Goods; HHW; E-Waste; Tires
Recycling Drop-Off Center	Broward County South Drop-Off Center	Broward County	5601 W Hallandale Beach Boulevard Pembroke Park, FL 33023	Yard Trash; White Goods; HHW; E-Waste; Tires
Recycling Drop-Off Center	Deerfield Beach Main Recycling Drop-Off	City of Deerfield Beach	401 SW 4th Street Deerfield Beach, FL 33441	Recyclables; Food Waste; Certain HHW Materials
Recycling Drop-Off Center	Coral Springs Waste Transfer Drop-Off	City of Coral Springs	12600 Wiles Road Coral Springs, FL 33076	Organics for Composting; White Goods; Recyclables; Yard Trash
Recycling Drop-Off Center	City of Plantation Recycling Drop-Off Center	City of Plantation	750 NW 91st Avenue Plantation, FL33324	Yard Trash

8.3 DATA SOURCES

Existing studies and other sources of information that served as reference material in the development of this Master Plan are detailed in the Task 2 White Paper, which is presented in **Appendix F.**

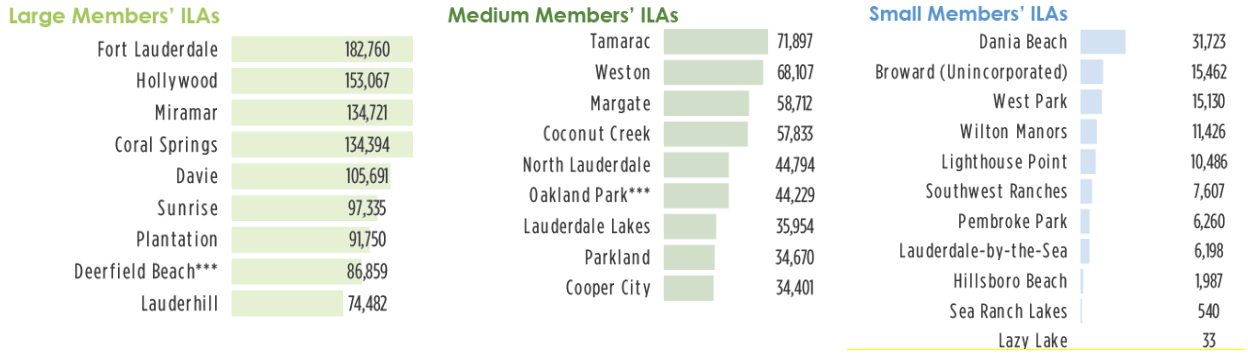
8.4 POPULATION, WASTE GENERATION, AND WASTE COMPOSITION PROJECTIONS AND ESTIMATES

As a starting point, the SCS Team used population and waste composition data to project waste generation by material type over the planning horizon along with the specific attributes of each ILA Member to develop the baseline conditions for this Master Plan; each element is summarized below.

8.4.1 Population

The generation of solid waste in a given community is determined primarily by its population. Therefore, population and growth rate projections were estimated for each ILA Member community by utilizing the most recent US Census year, 2020, referred to as the "Calibration Year". The population projections and growth rates after 2020 are based on the 2023 Broward County and Municipal Population Forecast and Allocation Model (PFAM)[10], published by the Broward County Planning and Development Management Division. Growth rates were then adjusted for each ILA Member for each year of the model from 2020 to 2045 to match (as closely as possible) the population values published in the 2023 PFAM. **Figure 6** presents the population of each ILA Member.

Figure 6. ILA Member Population



8.4.2 Waste Generation

The waste generation estimate over the planning period is based on County data provided in the Florida Department of Environmental Protection (FDEP) reports titled *2020 MSW Collected and Recycled by Generator Type By Descending Population*[11] and *2020 Total Tons of MSW Materials Collected and Recycled In Florida By Descending Population*[12]. This data includes total population (as reported by the US Census Bureau) and the total tons of single-family, multi-family, and commercial MSW collected. Waste generation closely correlates with population, and the waste generation rate for a given municipality is commonly reported in tons per capita, per year. The calculated per capita generation rate is used to estimate the total waste generated per year. The generation rate is projected using a trendline of the past five years of per capita growth, with three

[10] Broward County and Municipal Population Forecast and Allocation Model (PFAM) 2017
[11] 2020 MSW Collected and Recycled by Generator Type
[12] 2020 Municipal Solid Waste Collected & Recycled

options: 1) Low, which is the trendline rate of less 0.75%; 2) Medium, which is a continuation of the trendline rate; and 3) High, which is the trendline rate of +0.75%. The Medium per capita growth rate was used for the initial mass balance model calculations.

The waste generation rate is different for single-family residents, multi-family residents, and commercial employees and customers, so a further refinement of the population estimates for those waste fractions was needed. For this purpose, the ILA Member data in the model includes an estimate of single family and multifamily housing units in 2020 taken from the Broward County Affordable Housing Needs Assessment[13]. From this data, both the number of single- and multi-family housing units and the average number of residents per unit can be estimated, allowing for an estimate of the population of single-family and multi-family residents. Combining these refined population estimates with the FDEP MSW tonnage data, the per capita waste generation rate ratio for each housing unit type was calculated for 2020, which is the portion of the County-wide per-capita generation rate represented by residents of each housing type.

This ratio was then multiplied by the total per capita generation rate to derive the direct waste generation rate, which was recalculated as the model year (and County-wide waste generation rate) changes. The commercial waste generation rate ratio was similarly calculated from the commercial tons reported in the FDEP report titled *2020 MSW Collected and Recycled By Generator Type*[14] less the C&D tonnage reported in the FDEP report titled *2020 Total Tons of MSW Materials Collected and Recycled In Florida*[15], divided by the 2020 population estimate for Broward County from the US Census Bureau. This ratio was then multiplied by the total per capita generation rate to derive the direct waste generation rate, which was recalculated as the model year (and County-wide waste generation rate) changes. The following sections provide additional insights into the waste stream components and their application to the Master Plan.

8.4.3 Waste Composition

To estimate the waste composition for each ILA Member, the model uses the four waste fractions presented in the *Broward County 2023 Waste Characterization Study Final Report*[16], which are defined as follows:

- Source-Separated Recyclables (SSR) – this includes clean recyclables collected from curbside residential collection and multi-family and commercial recycling containers.
- Residential MSW (RMSW) – MSW from single-family residences.
- Commercial MSW (CMSW) – MSW from multifamily and commercial properties.
- Construction and Demolition Waste and White Goods (C&D/BW) – includes wastes from the construction and demolition of structures (e.g., roofing shingles, wood, concrete, drywall), as well as White Goods (e.g., furniture, mattresses).

During a waste characterization study performed as part of a separate engagement with Broward County, SCS Engineers conducted sampling and determined the materials composition of each of

[13] Broward County Affordable Housing Needs Assessment, September 2022
[14] 2020 MSW Collected and Recycled by Generator Type
[15] 2020 Municipal Solid Waste Collected & Recycled
[16] Microsoft Word - Broward County Waste Composition Study Final Report_V6

these four waste fractions. The percentages of each waste fraction were then calculated for each ILA Member, as follows:

- **SSR** - The SSR percentage depends on access to and participation in recycling. Access is determined by the availability of residential curbside recycling service and requirements for commercial recycling (which includes multi-family residential housing). Participation is estimated using an assumed set-out rate for single-family residential, multi-family residential, and commercial properties. From this data, the recycling tons for single-family residential, multi-family residential, and commercial properties were calculated, then divided by the total tons for the ILA Member municipality to result in the waste fraction percentage.

- **RMSW** – The RMSW percentage was calculated by multiplying the total single-family population by the single-family generation rate to get the residential MSW tons generated, deducting the recycling (SSR) tonnage, and then divided by the total tons for the ILA Member municipality to result in the waste fraction percentage.

- **CMSW** – The CMSW percentage was calculated by adding the multi-family MSW tons generated (product of the total multi-family population and the multi-family generation rate) and the commercial MSW tons generated (product of the total population and the commercial generation rate), then deducted the calculated recycling (SSR) tonnage for multi-family and commercial. The result was then divided by the total tons for the ILA Member municipality to derive the waste fraction percentage.

- **C&D/BW** – The C&D/BW percentage is simply the remaining waste fraction, calculated as 100% minus the sum of the three waste fractions calculated above.

The total tons calculated for each ILA Member municipality were then multiplied by the calculated waste fractions above, resulting in the total tonnage for each waste fraction. Those tons were then multiplied by the material composition percentages to derive the total tons of each material type in each waste fraction.

8.5 SOLID WASTE MASS BALANCE MODEL

To understand the solid waste processing and disposal needs of the Authority, a Solid Waste Mass Balance Model (Model) was developed based on the population and waste generation projections and the waste composition estimates described above. **Figures 7 and 8** present the estimated current tonnage of waste generated by municipality and current estimated waste flows, and **Figures 9 and 10** present projected waste generation by municipality and estimated waste flows in 2065. The Model estimated the tonnage of solid waste and recyclable materials generated within the County for ILA and non-ILA members, and passing through existing public, municipal, and private solid waste infrastructure in the County as well as out-of-County solid waste infrastructure. The estimates encompass four (4) key phases: Generation, Collection, Transfer/Routing, and Diversion/Disposal. After verifying the mass balance, the model advances year by year, incorporating growth rates and other factors to predict when receiving facilities will reach capacity and require expansion, or when re-routing of waste to alternative sites will be required.

Figure 7. Broward County Estimated Waste Generation by Municipality (2025)

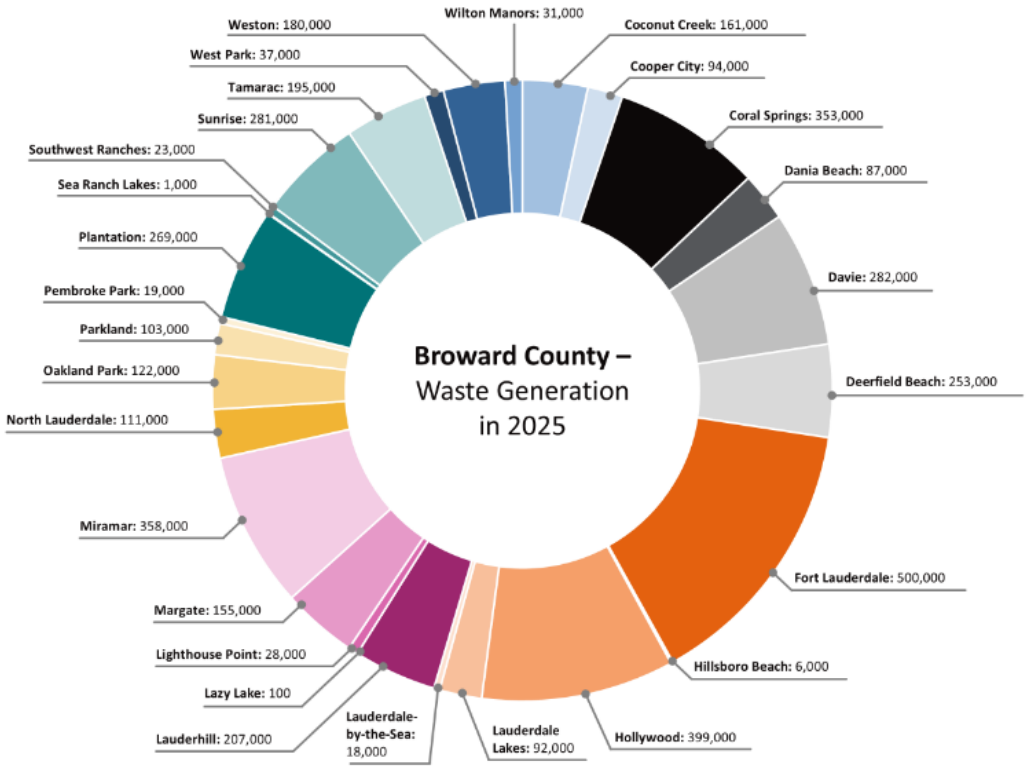


Figure 8. Broward County 2025 Estimated Tonnage of Waste Flows

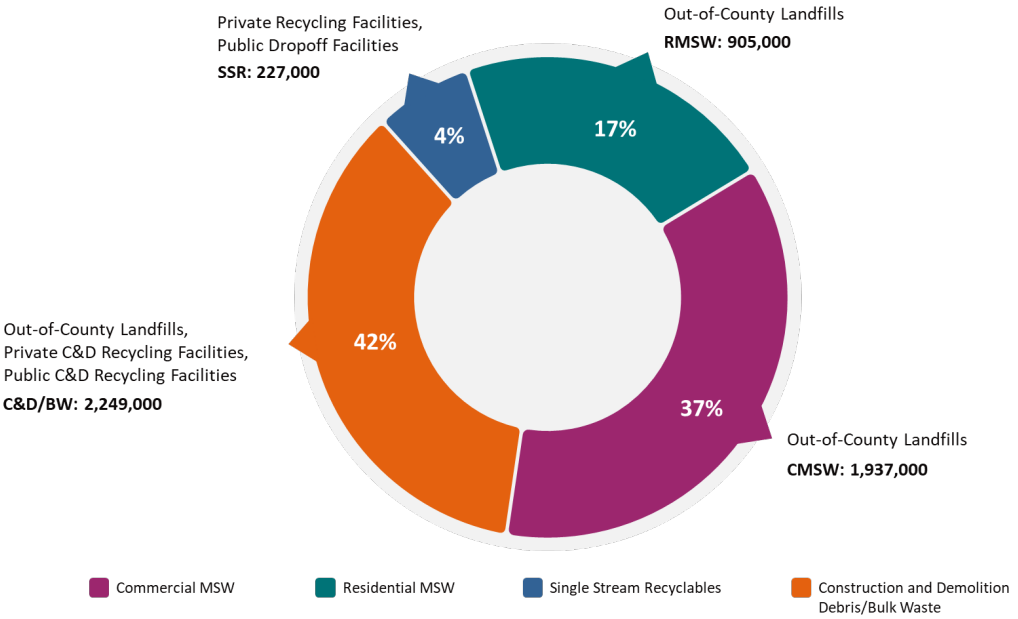


Figure 9. Broward County Estimated Waste Generation by Municipality (2065)

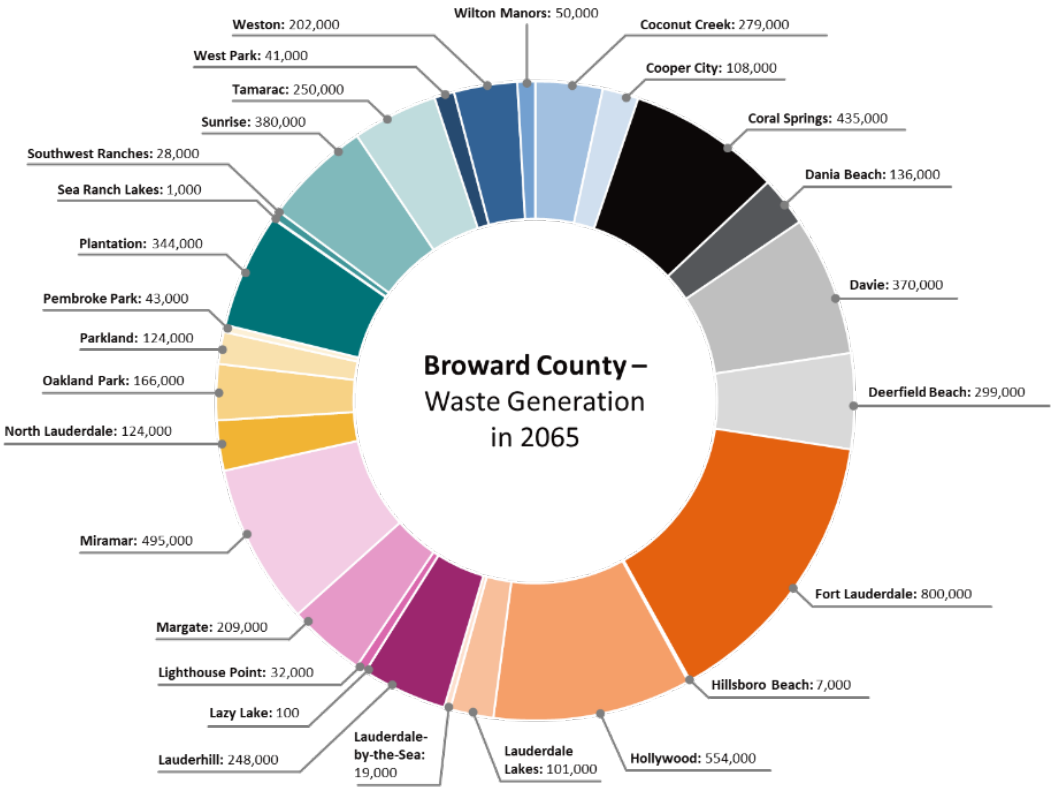
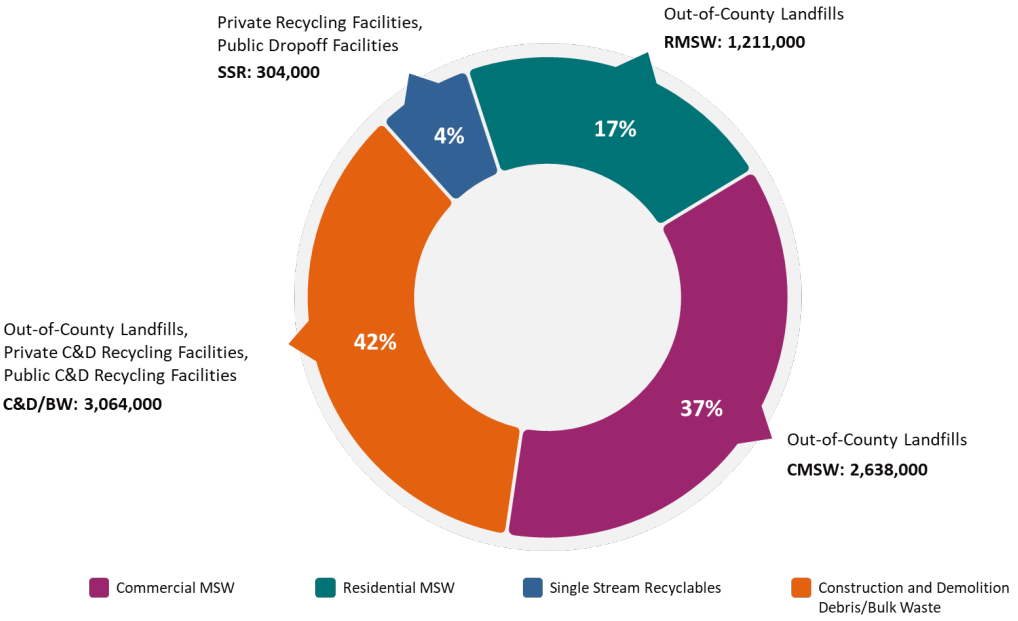


Figure 10. Broward County Estimated Waste Flows, 40-year Planning Horizon (Tons in 2065)



9.0 REGULATORY AND POLICY FRAMEWORK

The SCS Team reviewed applicable ordinances, statutes, rules, regulations, and goals at the Federal, state, and local levels related to solid waste management and recycling and prepared the Task 5 White Paper, which is presented in **Appendix G**.

One of the key challenges facing local government is *preemption*, which restricts local governments from enacting certain laws that would otherwise be allowed under Home Rule[17]. For example, Chapter 403.7033 F.A.C., restricts local governments from regulating auxiliary containers and disposable plastic bags and wrappings. However, it is important to note that government property and government sponsored events are excluded from this preemption law. Some local governments have banned some single-use plastics on their property and at their events. For example, in 2022 Broward County banned Styrofoam on government property and at County sponsored events. This creates an opportunity for local government to lead by example. In addition, a variety of legislative and programmatic options were identified during the development of this Master Plan and are presented as options to advance Zero Waste initiatives are summarized below in **Table 2**.

Table 2. Legislation and Programs Addressing Zero Waste Goals

Legislation or Program	Details	Additional Notes or Examples
Material Bans	Typical items targeted include single-use plastics, plastic straws, polystyrene foam, and plastic bags. Material Bans are impactful in reducing non-recyclable or non-compostable material from the waste stream.	Florida State Law currently prohibits local municipalities from banning certain materials, such as plastic bags, polystyrene foam, etc. Consider intensive and coordinated lobbying efforts at the State level aimed at revising the rules regarding solid waste management-related preemption.
Disposal Bans	Managed at the state level primarily, typical items targeted include cardboard, tires, electronic waste, wood and yard trash, household hazardous waste, and paints. These bans attempt to increase diversion by prohibiting disposal of items with high recycling value or which may have more sensitive environmental impacts.	Florida formerly mandated the processing of wood and yard trash materials, but this mandate was overturned in 2010.
Diversion or Zero Waste Mandates	These mandates are most easily applied to lower tier government bodies as they can be held accountable for reaching proposed goal(s) and can justify spending on the means to reach those goal(s).	

[17] http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=0100-0199/0163/Sections/0163.410.html

Legislation or Program	Details	Additional Notes or Examples
Extended Producer Responsibility (EPR)	EPR policies put financial responsibility for a product's end-of-life on the producers rather than the ratepayers or taxpayers. Despite the complexities of designing the regulations and setting rates, these can be impactful by incentivizing manufacturers and product users.	A deposit return system (i.e., bottle bill) for beverage containers is an example of EPR, where product manufacturers must pay a system fee for the recycling of certain containers. EPR is best accomplished at the Federal or state level.
Public-Private Partnerships (PPP)	PPPs can be an impactful way to develop the infrastructure necessary to improve beneficial use of waste stream components.	
Contractor Performance Incentives	Contracts with operators can be designed so that financial incentives exist for better performance.	San Jose, California's contracts with waste haulers allow for tiered higher rates to be paid to the hauler for higher diversion rates as well as incentives to minimize contamination.
Pay-as-You-Throw (PAYT)	PAYT is a type of incentive structure that encourages waste generators to limit the amount of waste they set out.	The City of Plantation employs PAYT.
Product Certification	A concept being explored by some municipalities is adhering to a certification standard for products created by recycling or organics processors.	Examples include PAS 100, a standard used in the UK for compost, and a standard for biogas to be used as RNG in pipelines.
Government Purchasing Programs	Local governments can enact policies and legislation related to procurement practices to assist in the development of secondary markets for certain recycled materials.	If executed properly, these programs can create the demand for recycled materials, one of the most difficult recycling challenges to overcome.

10.0 FINANCIAL FRAMEWORK

The ILA was designed to streamline and enhance waste management and recycling services by fostering regional collaboration among the County and its municipalities. By unifying waste and recycling management services, the ILA enables the Authority to enhance its negotiating power to secure better contracts and terms, ultimately benefiting the municipalities economically through a more efficient, cost-effective, and sustainable waste management system. The primary goals are to reduce costs for the ILA Members through economies of scale and more efficient operations, leading to more predictable and stable waste management expenses. The ILA contemplates significant investments, either through facility development and ownership or service agreements, to achieve higher recycling rates and lower long-term disposal costs. Additionally, the Authority established by the ILA has the authority to impose special assessments to finance its operations and capital improvements, contributing to economic stability.

10.1 FLOW CONTROL OPTIONS

Flow control enables local governments to direct where solid waste and recyclables generated within their jurisdiction must be transported, processed, or disposed. The benefits of flow control include:

- Ensuring adequate and reliable waste volume to support public or designated private facilities (e.g., material recovery facilities, C&D processing facilities, WTE, landfills).
- Maintaining environmental standards, such as higher recycling or diversion rates.
- Providing fiscal stability for solid waste infrastructure, which often relies on minimum tonnage or stable tipping fees.

There are three primary mechanisms for flow control: regulatory, contractual, and economic. Regulatory flow control is accomplished by enacting an ordinance requiring that waste and recyclables generated within a jurisdiction be delivered to specified facilities. Contractual flow control is established through an interlocal agreement or franchise agreement that directs waste streams to a designated facility or facilities. Economic flow control influences waste generator behavior or collection service providers through tipping fees, rebates, or other financial instruments. Based on the analysis conducted during the development of this Master Plan, a hybrid approach is recommended to address the nuances between the residential and commercial sectors, whereby a County ordinance could outline a broad requirement to use designated facilities, while interlocal agreements or other legal mechanisms in a form determined by the Authority would define specific terms for each municipality, including put-or-pay clauses or cost-sharing formulas. The implementation could be phased in to align new ordinances or ILAs with existing contract expirations, reducing disruption to municipal budgets and operations.

10.2 BUDGETING APPROACH

Government budgeting is the process by which public authorities allocate financial resources to meet societal needs, execute policies, and achieve economic objectives. The primary purpose of government budgeting is to allocate resources efficiently to address public needs while maintaining fiscal responsibility. It involves forecasting revenues, estimating expenditures, and aligning spending priorities to deliver public services efficiently and equitably. The budget serves as a key policy document, reflecting a government's fiscal strategy and priorities for a specific period, usually a fiscal year.

The government budgeting process is typically organized into several key steps with the goal to assure consistency and cost effectiveness. The first step is planning and proposal, during which individual government agencies assess their needs and submit funding requests aligned with their goals, objectives, and broader fiscal strategies. Once the proposals are consolidated, the budget is submitted to the legislative body for approval. During this phase, the proposed budget undergoes debates and potential modifications to address concerns and priorities raised by legislators. After legislative approval, the budget moves to the implementation phase. At this stage, funds are allocated to the relevant programs and services. The final step in the process is monitoring and evaluation. This involves tracking expenditures and ensuring that funds are used efficiently to meet the intended objectives. Audits and performance evaluations are conducted to maintain accountability and to identify areas for improvement in future budgets.

Based on the analysis conducted under the Task 3 White Paper (attached as **Appendix H**), a zero-based budgeting approach is recommended as it offers a practical and transparent approach for the Authority to manage the financial complexities of building and operating new facilities. By justifying every expense and aligning spending with strategic goals, zero-based budgeting will enable the Authority to anticipate and plan for cost increases while maintaining financial sustainability. When combined with long-term forecasting and performance monitoring, zero-based budgeting can ensure that the authority remains agile and effective in delivering waste management services to meet the needs of the ILA Members.

10.3 LEVERAGING ECONOMIES OF SCALE

Economically, the ILA was designed to streamline and enhance waste management and recycling services by fostering regional collaboration among the county and its municipalities. The primary goals were to reduce costs for ILA Members through economies of scale and more efficient operations, leading to more predictable and stable waste management expenses.

10.4 LEVERAGING EXISTING INFRASTRUCTURE

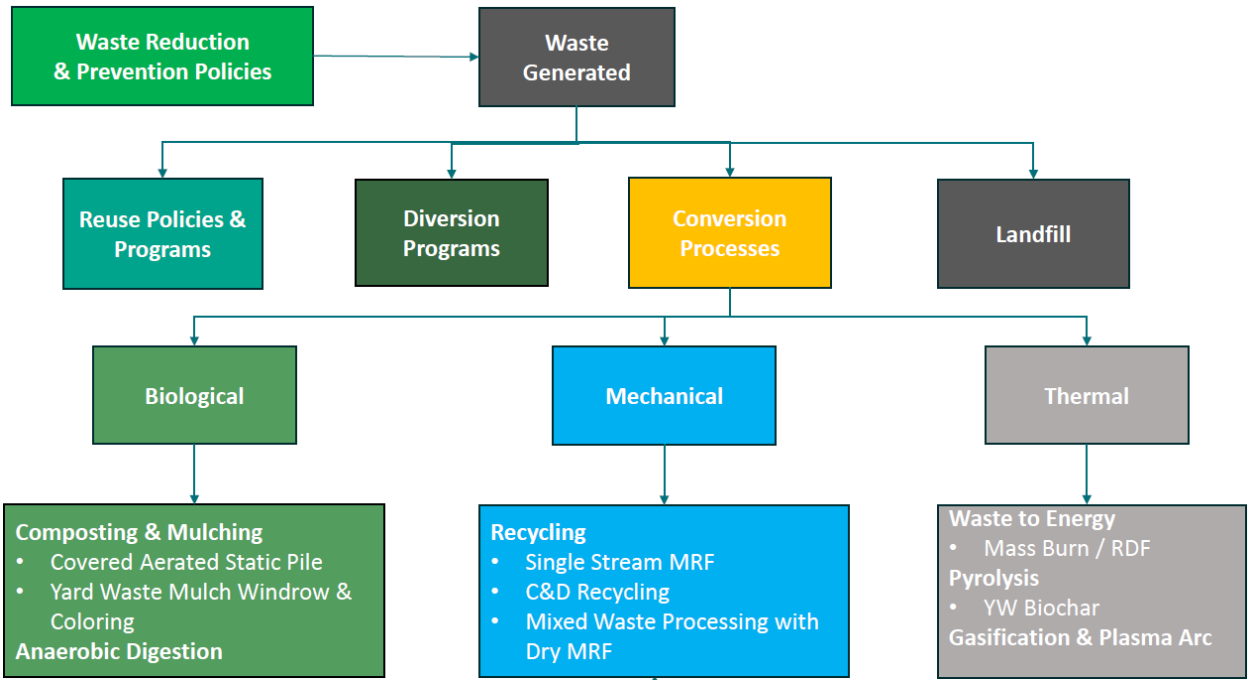
As presented in **Figure 5** above, Broward County has an extensive network of existing solid waste management infrastructure, including publicly-owned citizen drop-off sites, a private recycling facility, several private construction and demolition debris recycling facilities, private transfer stations, a private WTE facility, a County landfill, and a private landfill. This infrastructure meets some of the solid waste management needs of today and is projected to do so for the foreseeable future. However, as the System is further developed, it is critically important that the Authority be prepared to invest in new facilities and/or services to meet the solid waste management needs over the planning horizon. These needs are further discussed below.

11.0 FUTURE NEEDS ASSESSMENT

The Task 4 White Paper was prepared to identify critical information necessary to help the Authority make informed decisions about which types of facilities, policies, and programs should be prioritized in the Master Plan. The Task 4 White Paper is attached as **Appendix I** for reference. Five planning scenarios (Scenarios) were developed to offer potential pathways to meet the Authority's 75% waste diversion goal by 2045. The Scenarios are not intended to be a prescriptive to-do list, but rather to demonstrate the future scale and scope of processing infrastructure and programming needed to meet the Authority's ambitious waste diversion target. This assessment was driven by the Authority's Guiding Principles detailed in **Section 4** above.

The planning Scenarios were developed to provide a range of approaches that could meet the Authority's future needs, with each Scenario having different tradeoffs regarding ease of implementation, cost of service, and overall impact. The Scenarios were informed by a review of municipal best practices and a comprehensive assessment of all available waste processing technologies, including emerging and innovative approaches, as presented below in **Figure 11**.

Figure 11. Overview of Available Waste Approaches and Technologies Analyzed



The planning Scenarios helped determine:

- The volume and composition of waste to be managed now and in the future,
- The best way to segregate the waste stream to enable efficient recycling,
- The types and combinations of processing technologies best suited to increase recycling rates from the targeted waste streams,
- The relative size, capacity, cost, and recycling impact of different material recovery facilities that will increase recycling rates,
- The collection strategies, supporting policies, and public outreach programs needed to complement processing infrastructure to ensure a more sustainable materials management system.

11.1 WASTE GENERATION MODEL

The Scenarios were also informed by population and waste growth trends, presented in **Table 3.** These trends were determined as part of the Model that estimated the tonnage and composition of solid waste and recyclable materials expected to be generated within the County over the planning horizon. The best available data was used to consider the flow of waste through the Authority's solid waste system and out-of-County disposal facilities, encompassing four (4) key phases: generation, collection, transfer/routing, and diversion/disposal.

Table 3. Broward County Population and Waste Generation Over the 40-Year Planning Horizon

Year	2025	2030	2035	2040	2045	2065
Broward County Population Projection	2,020,000	2,090,000	2,140,000	2,190,000	2,230,000	2,402,000
Waste Tonnage Projection	5,320,000	5,690,000	6,000,000	6,260,000	6,500,000	7,200,000

The Model guided the development of the Scenarios that forecast future waste management facility needs, based on the tonnage of waste material required to be managed now and in the future. The Broward County 2023 Waste Characterization Study (attached as **Appendix J**) found that 78% of the County's residential waste stream, 76% of the commercial waste stream, and 80% of the C&D/Bulk Waste stream is recyclable, compostable, or potentially divertible.

11.2 WASTE MANAGEMENT SCENARIO PLANNING OVERVIEW

To meet the Authority's solid waste management and processing capacity requirements over the next 40 years, the Scenarios, summarized and presented in **Figure 12** below, were developed to model different combinations of waste processing technologies to project the estimated recycling rates that could be achieved, the associated development and operating costs, and the ease of implementation.

Figure 12. Scenarios Overview

	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
Projected Diversion Rate	62%	79%	83%	51%	73%
Tons Left to Send to Landfill in 2045	2,700,000	1,600,000	1,300,000	3,300,000	2,100,000
New Facilities					
Transfer Stations	3	3	3	3	3
Landfills	1	1	1	1	1
Single-Stream MRFs	2	2	2	0	2
Reuter's Recycling	1	1	1	0	1
MWPF + AD + Fiber	0	0	0	0	3
WTE	0	1	1	0	0
Anaerobic Digestion	0	0	0	3	0
DRY MRFs	0	0	0	6	0
Organics Processing Campus	2	2	2	2	2
Mulch	2	2	2	2	2
CASP Zone	0	1	10	0	10
Biochar	1	1	1	1	1
Existing Facilities					
Drop-Off Centers	8	8	8	8	8
C & D Recovery facilities	2	2	2	2	2

These Scenarios demonstrate that the pursuit of incrementally higher recycling rates leads to substantially higher costs and increased difficulty of implementation. The Scenarios were informed by a comprehensive review of existing and emerging future waste processing technologies implemented across North America and other developed nations, as detailed in the Task 9 White Paper. The Scenarios were screened to assess the relative public health and environmental impacts and the associated environmental justice implications. They also took into consideration comparable municipal solid waste systems, and unique characteristics of the County including geographic constraints, limited land availability, permitting processes at the local and state levels, and the anticipated regulatory framework for stricter segregation of waste streams at the source across residential, commercial, and industrial sectors. **Table 4** below presents the results of this screening process for each Scenario.

Table 4. Scenarios and Goals: Cost and Other Impacts

Scenario	Recycling (Cost)	Reuse (Cost)	Diversion (Cost)	Zero Waste Strategies (Cost)	Market Risks (Cost)	Environmental Impacts, Health and Safety (Cost)	Cost Efficiency
A	Low	Low	Medium	Low	Low	Medium	High
B	High	High	High	Medium	High	High	Medium
C	High	High	High	Medium	High	High	Medium
D	Medium	Medium	Medium	High	Medium	High	Low
E	High	High	High	Medium	High	High	Low

Following the development of the Scenarios and presentation to the Executive Committee, consensus was achieved and **Scenario A was selected as the most practical, cost-effective, and quickest path forward to begin building the Authority's new solid waste system** while still providing the necessary flexibility for the Authority to adapt and pursue more progressive waste diversion investments over time as the system matures and evolves. For a detailed review of each planning Scenario, including descriptions of the respective technologies, facilities, and cost estimates, refer to the Task 4 White Paper.

Scenario A includes the first critical steps needed for the Authority to be successful — restoring and expanding single-stream recycling access, improving waste diversion opportunities through the harmonization of services and separation of material streams, targeting single-stream recycling and yard trash programs that are easiest to implement while yielding the largest recycling gains, investing in supporting infrastructure and complimentary public education, and ensuring long-term disposal security. While Scenario A calls for the development of several facilities, as noted above in Figure 12, in the short term, the Authority has made the policy decision to leverage the use of existing infrastructure and phase in new infrastructure investments over time, as the needs of the Authority evolve.

Broward County's distinctive characteristics limit the potential for solid waste diversion during the first few years of the planning horizon, necessitating a practical and phased approach to planning. Additionally, the integration of open market collection systems within the Authority presents challenges to full participation. It is therefore important to acknowledge that (1) all planning Scenarios identified the need for continued use of the South Broward RRF for waste volume reduction; and (2) that additional landfill capacity will be necessary over the planning horizon to manage residual materials, provide added resilience from future debris generating disaster events, and ensure operational stability. Due to the volume of waste projected to be generated in the future, the limited siting opportunities within Broward County, and the growing disposal needs of adjacent counties, the Task 4 White Paper noted that it is imperative for the Authority to actively procure additional disposal capacity within or outside the County as a critical part of its long-term resiliency strategy.

11.3 FACILITY SITING

While Scenario A and maximizing use of existing infrastructure within Broward County is the preferred starting point, consideration was also given to siting new facilities. A preliminary desktop facility siting analysis was conducted for the potential development of the facilities identified in all Scenarios featured in the Task 6 White Paper. Exclusionary screening criteria were developed for each facility type, including minimum site acreage, setback from residential zoning, access to major roadways, and ownership by a municipal government entity. **Table 5** summarizes the criteria used to assess the feasibility of potential sites and denotes facilities specifically recommended by Scenario A. Each of the potential sites must undergo a detailed siting analysis that considers geotechnical subsurface conditions, environmental permitting, design analysis, constructability, etc. While the available public land and the identified existing sites have limitations, the Authority should remain engaged and aware of potential opportunities to acquire land in the future.

Table 5. Siting Criteria Summary

Technology	Capacity Needed Per Facility (TPY)[1]	Minimum Site Area for Individual Facilities (Ac)[2]	Offset from Residential Zoning (mile(s))	Parcel Ownership	Zoning	Transportation – Travel Time to Major Road	Proximity to Airport	Number of Facilities Required by Scenario A
SS RMPF	250,000	20	0.25	Must be County or municipally owned	Vacant, Industrial, Commercial, and Agricultural	Exclude properties more than five miles from a Collector or Arterial Road	N/A	2
Mulch Facility	175,500	10	0.25					2
Biochar	30,000	2	0.5					1
Organics Processing Campus	380,000	10	1.0					2
Aerobic Digester	160,000	7	0.25					N/A
C&D RMPF	450,000	15	0.5					2
Dry MRF	160,000	15	0.25					N/A
MWP (Fiber Extraction, AD & MRF)	330,000	30	0.5					N/A
Public Drop-Off Recycling Center	12,000	0.5	NA					8
Transfer Station	1,240,000	15	0.25					3
WTE[3]	1,000,000	30	0.5				>4 miles	N/A
Landfill	3,400,000	640	1.0				>4 miles	1

1. The modeled functional capacities from the Task 4 White Paper for each type of solid waste facility were estimated based on the requirements to meet the Authority's 2045 diversion goals, based upon modeled waste volumes anticipated.
2. Minimum site acreage shown is for the minimum functional facility footprint that could accommodate the capacity required to meet long-term Authority objectives and does not include appurtenant scales, access and egress roads, local zoning requirements, setbacks, vegetation, fencing, stormwater, etc., which would be determined during a fatal flaw analysis.
3. Scenario A assumes that the existing permitted disposal capacity at the South Broward RRF will continue to be used; however, it does not contemplate a new WTE facility.

11.3.1 Identification of Sites – Exclusionary Criteria

To identify the availability of potential sites for the development of future solid waste, recycling, and diversion facilities within the County, a desktop evaluation utilizing Geographic Information Systems (GIS) was conducted, which applied the exclusionary criteria detailed in the Task 6 White Paper (see **Appendix K**). Only County and municipally owned parcels were considered for this exercise.

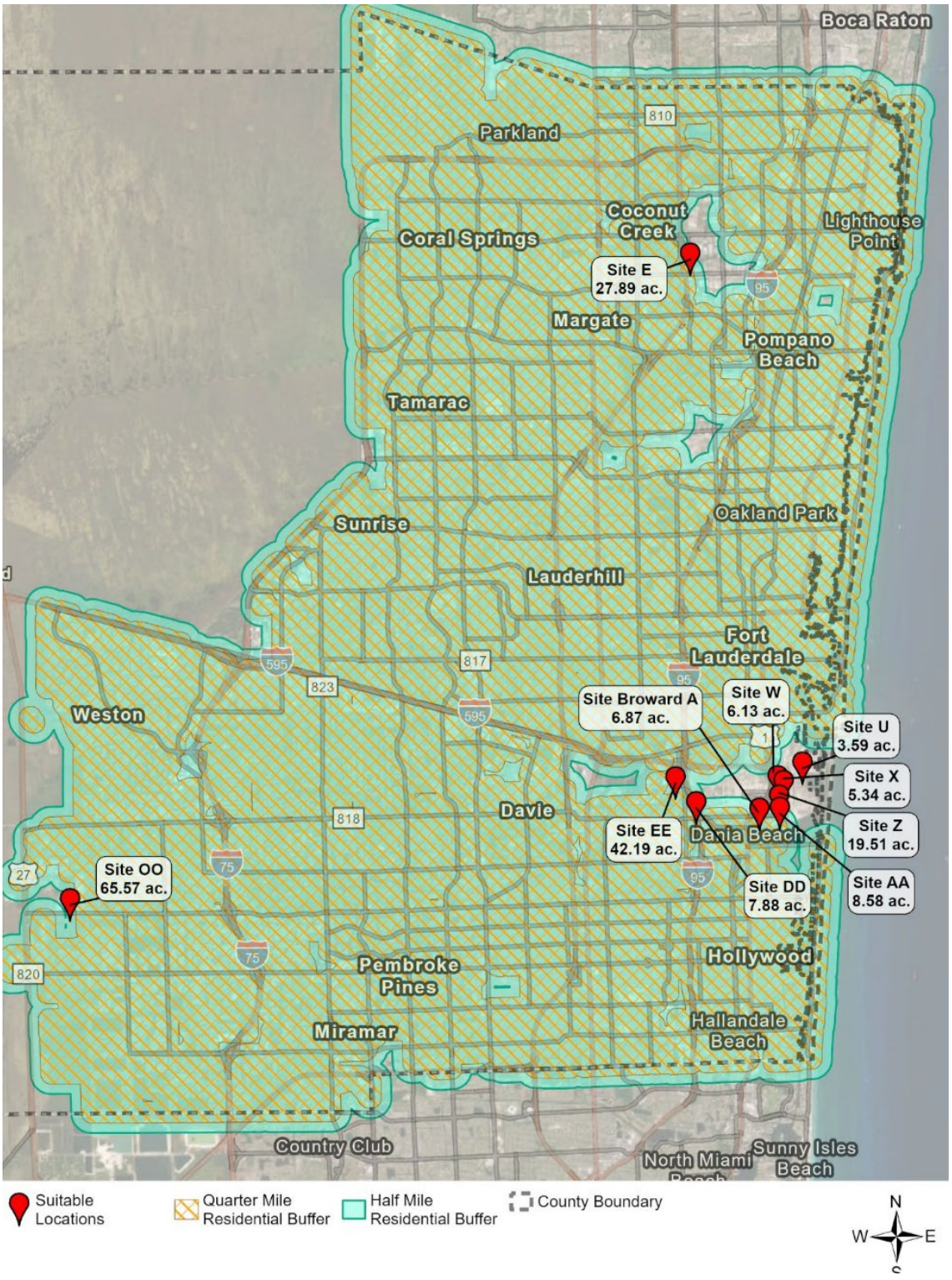
The desktop GIS analysis identified 132 individual County or municipally owned parcels. Broward County provided a listing of 80 additional parcels for consideration, of which 32 were included in the original evaluation. These parcels were grouped into 49 potential sites, which were each assigned a letter site identifier. Once the GIS data and siting criteria associated with each proposed facility type were considered and evaluated for each of the 49 potential sites, many were excluded from further evaluation. Ultimately nine (9) potential sites were identified that could potentially accommodate development of a SS RMPF, Scenario A - Organics Processing Campus (Mulch Facility and Biochar Pyrolysis), Mulch Facility, C&D RMPF, Public Drop-Off Recycling Center, and Transfer Station. Due to the residential zoning offset and minimum site acreage requirement, County or municipally-owned sites were not identified for the development of a WTE Facility or Landfill. However, it should be noted that on July 18, 2025, the Executive Committee made the policy decision that any future WTE Facility would be considered only if it were co-located in close proximity to the South Broward RRF. The South Broward RRF site did not meet the original exclusionary criteria, as it is less than one mile from residential communities.

Table 6 summarizes the acreage of each of the nine sites and notes the Scenario A facility type(s) that could be developed at each site. The sites are also shown on **Figure 13** below.

Table 6. Summary of Potential Sites

Site Identifier	Ownership	Location	Site Size (Acreage)	Scenario A Facility Types
AA	Unincorporated Broward County	East of Ft. Lauderdale International Airport, South of I-595	8.58	Public Drop-Off Recycling Center
DD	Unincorporated Broward County	West of Ft. Lauderdale International Airport, South of I-595	7.88	Public Drop-Off Recycling Center
E (Includes the Alpha 250 Parcel)	City of Pompano Beach	East of the FL Turnpike, South of Sample Road	27.89	SS RMPF, Mulch Facility, Public Drop-Off Recycling Center, Transfer Station
EE	Unincorporated Broward County	West of I-95, South of I-595	42.19	SS RMPF, Mulch Facility, Public Drop-Off Recycling Center, Transfer Station
W	Unincorporated Broward County	East of Ft. Lauderdale International Airport, East of NW 7th Ave	6.13	Public Drop-Off Recycling Center
OO	Unincorporated Broward County	East of I-75, North of Sheridan Street	65.57	SS RMPF, Mulch Facility, Public Drop-Off Recycling Center, Transfer Station
U	City of Hollywood	Southwest of Port Everglades, South of Eller Dr.	3.59	Public Drop-Off Recycling Center
Z	Unincorporated Broward County	East of Ft. Lauderdale International Airport, East of NW 7th Ave	19.51	SS RMPF, Mulch Facility, Organics Processing Campus – Scenario A (Much and Biochar Pyrolysis Facilities), C&D RMPF. Public Drop-Off Recycling Center, Transfer Station
Broward A	Unincorporated Broward County	South of Ft. Lauderdale International Airport, North of NE 10th St	6.87	Public Drop-Off Recycling Center

Figure 13. Location of County and Municipally Owned Sites within Broward County that Meet Screening Criteria



When planning for the development of future Authority-owned facilities, consideration should be given to the ability to activate the infrastructure to also serve as an educational resource to further enhance public awareness and support for the role the facility plays in the community. Such facilities should also promote environmental stewardship through thoughtful design of the built environment. An exploration of such an approach is addressed in the Task 10 White Paper (attached as **Appendix L**). One positive way to engage the community is through passive learning centers. Living laboratories, interactive exhibits, wetlands, and trails are all examples of learning centers that have been successfully incorporated into waste management facilities, fostering environmental awareness and promoting sustainability. The pursuit of LEED certification or similar green building certifications can help ensure optimal energy and water efficiency within the facility operation and highlight the use of waste reduction principles and recycled content within the construction process. Educational signage and public tours of the facilities can provide impactful learning opportunities for students and community groups. For example, both Pinellas County and the Solid Waste Authority of Palm Beach County have robust public outreach programs that provide facility tours. Ensuring adequate buffers and protection of natural areas also helps to minimize disruption to adjacent properties.

11.3.2 Alpha 250 Site

In addition to evaluating other County or municipal owned sites, the Alpha 250 Site was evaluated to determine if any of the solid waste processing facilities identified in the Scenarios could be developed at this location. There are three limiting factors affecting the facility type and size that could be developed at the Alpha 250 Site, including the residential setback from zoning, a Plat Amendment that limits industrial facility development to 342,000 square feet (sf) or approximately 7.85 acres, and the types of facilities included in the City of Pompano Beach Zoning Waste Related Uses listing.

The Plat Amendment allows for additional industrial density square footage, not to exceed 20% of the permitted industrial density, and is dependent on the actual industrial density square footage developed at parcels subject to the Plat Amendment. However, this can only be determined through a formal Zoning Letter request, which would be conducted should the Authority pursue a more detailed siting analysis for the Alpha 250 Site. Therefore, the evaluation of the North Alpha 250 Site is based on the currently known 342,000 sf industrial density limitation.

The Alpha 250 Site is located within the City of Pompano Beach and falls within the City's zoning jurisdiction. The Alpha 250 Site is zoned General Industrial Planned Industrial Overlay (I-1/PCI). Approved uses for this designation are defined in Appendix A to the Overlay: Consolidated Use Table of the City of Pompano Beach's Zoning Code. Waste-related uses are allowed in areas designated General Industrial as a special exception and require approval from the City of Pompano Beach Zoning Board of Appeals (ZBA). The following Scenario A facility types are allowed at the Alpha 250 Site (with special exceptions): Mulch Facility, C&D RMPF, and Transfer Station. The City of Pompano Beach Consolidated Use Table does not include a description of RMPF or Public Drop Off Recycling Centers in its listing of Waste Related Uses. If the Authority would like the City of Pompano Beach to consider development of these types of waste processing facilities, discussions with the ZBA should be held. Thus, the Authority would be unable to utilize Alpha 250 for these types of waste processing facilities due to the site constraints and absent approvals from the City of Pompano Beach.

Figure 14. North Alpha 250 Setback and Buildable Area

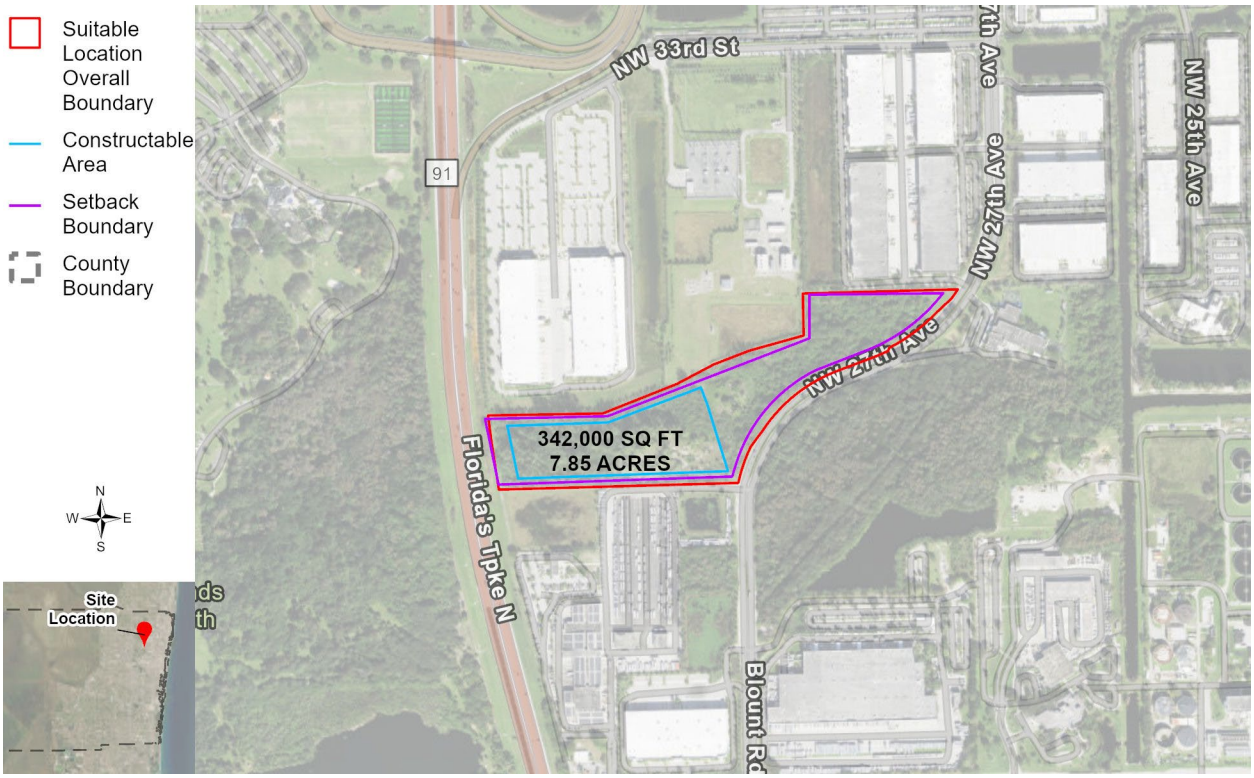


Table 7 summarizes the Scenario A facility types, capacity, and corresponding minimum acreage requirements defined in the Task 4 White Paper and compares available acreage for development, waste-related uses allowed by the City of Pompano Beach, and the minimum setback to residential zoning. This comparison determined that none of the facilities identified in Scenario A could be constructed at the Alpha 250 Site based on the facility capacity noted, minimum acreage requirements, and zoning concurrence.

Table 7. North Alpha 250 Scenario A Suitable Facilities

Facility Type	Capacity	Minimum Acreage Required Based on Capacity	Available Acreage of Alpha 250 North	City of Pompano Beach Zoning Compliant	Minimum Setback to Residential Zoning	North Alpha 250 Ability to Accommodate Proposed Facilities
SS RMPF	250,000	20	7.85	No	0.25 miles	No[1]
Mulch Facility	175,000	10	7.85	Yes	0.25 miles	No
C&D RMPF	450,000	15	7.85	Yes	0.50 miles	No
Organics Processing Campus – Scenario A (Co-Located	380,000	18	7.85	No	0.5 miles	No

Facility Type	Capacity	Minimum Acreage Required Based on Capacity	Available Acreage of Alpha 250 North	City of Pompano Beach Zoning Compliant	Minimum Setback to Residential Zoning	North Alpha 250 Ability to Accommodate Proposed Facilities
Much and Biochar Pyrolysis Facilities)						
Public Drop-Off Recycling Center	12,000	0.5	7.85	No	Not Applicable	No[1]
Transfer Station	1,240,000	15	7.85	Yes	0.25 miles	No
Landfill	3,400,000	640	7.85	No	1-mile	No

1. Discussions required with City of Pompano Beach Planning and Zoning to confirm if it would consider a special exception or an amendment to Appendix A: Consolidated Use Table of its Zoning Code to include the definition associated with a RMPF and Public Drop Off Recycling Center in its list of allowed waste-related uses.

12.0 INNOVATIVE FUTURE TECHNOLOGIES

Broward County and the Authority face increasing waste generation, shifting consumption patterns, staffing considerations, land scarcity, decreasing long-term cost-effective disposal capacity, concerns about GHG emissions from the solid waste system, and intensifying environmental challenges as a result of rapid urbanization. These co-enforcing trends necessitate the need for innovative solutions that increase diversion, enhance efficiency, reduce costs, decrease emissions, and foster environmental stewardship. To help provide solutions to these common urban growth issues, a dizzying array of quickly evolving, cutting-edge technologies is transforming the solid waste management landscape. On multiple fronts, vetting and implementation of these systems should begin in the short term and continue over the planning horizon for increasing recovery rates, optimizing costs, streamlining operations, reducing dangerous and repetitive jobs, and lowering environmental impacts.

To be effective, the Authority must prioritize a more automated and connected management system to commence immediately as a top priority. Led by AI, industrial and public processes are undergoing a revolution as significant as the preceding industrial and digital/computer revolutions of the last two centuries. For instance, the benefits of availing AI technologies as a top priority will provide vast opportunities for the productive and cost-effective development of services and assets and offer a platform for increased engagement with residents. Table 11 in Section 15 – Recommendations outlines critical initial elements needed for this approach, their strategies and tactics, and the current priority and time frame.

12.1 TECHNOLOGY PLANNING FRAMEWORK

The Authority should use the following criteria as a technology planning framework to procure technologies that:

- Are low risk and proven to lead to high diversion rates; for instance, best practices for waste reduction and reuse.
- Are practical, competitive, and cost effective, and can be tailored to the Authority's unique geographic and demographic profile, including its coastal location and interconnectivity with neighboring counties.
- Implement continuous improvement – a preference for data-driven accountable metrics that automate repetitive, duplicative, and mistake-prone tasks.
- Provide long-term and sustainable processing, monitoring, communicating, and safety enhancing methods which prioritize and promote operational efficiency and environmental stewardship.

For waste system elements that may be managed by the Authority and ILA Members, most, if not all, key processes (e.g., collection, processing and disposal, procurement capabilities, compliance) could benefit from new technologies and would help drive and optimize Authority business processes. Examples include:

- Providing updated, real-time waste compositions on a continuous basis, either by collection container monitors or through AI recognition technology during processing.

- Integrating smart phone, solid waste customer platforms that are compatible with all other key parts of the management system, including collection schedules, special events, storm response, contamination monitoring, service disruption and missed pickup coordination, service provider communications, etc. These same platforms can also provide interactive billing capabilities and automated customer service functions, with features such as additional service ordering, accident reporting, up charging for exceeding service boundaries, personalized customer education, and feedback on recycling participation and performance.

- Using autonomous and safe vehicles which are appropriate now for some segments of solid waste collection and disposal system, such as 'Wall-E'- type beach and park litter robot patrols and small institutional trash container collection systems (hospitals, campuses, hotels). These systems can also utilize smart bin technology that senses when a container is full and sends the automated collection vehicle to service it. In addition, use of autonomous vehicles in management of sites where waste is processed or disposed in such applications as water sprinkler trucks, windrow turners, security-monitoring vehicles, and landfill compactors, is being field tested and deployed today.

- Monitoring autonomous collection systems which are now in public road testing worldwide and are being developed to service larger segments of solid waste customers in the future (both residential and commercial). Considering the exploding market for autonomous cab and jitney services in large U.S. cities and given driver shortages and system disruptions from other human factors, autonomous vehicles are likely to be implemented more widely in the short term, provided they are as safe, or safer, than human drivers. Implementation will occur first in applications such as transfer station transfer long hauling; second in lower traffic commercial pick-up systems during off hours; and finally in regular residential collection systems.

- Real time monitoring and due diligence for the ILA Member solid waste collection service systems (GPS, stops recorded with date and time stamp, current position, weight-recording alternatives, daily tonnage accumulators at each processing and disposal location, etc.).

- Automated remote scale systems with time monitoring and management to avoid queues and costly manual mistakes.

The opportunities above are examples of the evolving array of technologies Authority members should consider implementing (see the Task 9 White Paper attached as **Appendix M** for more detail). Given the overwhelming number of choices, the Authority should organize to meet its planning framework in the short term. A managed approach will allow quick control and reduce reactive decisions in procuring new technology. It also will allow precise measurement and accountability and pave the way for performance improvement through metrics, leading to improved total costs and a more predictive return on investment. From this foundation, stakeholders will gain actionable options for solid waste collection, processing, recovery, and disposal which have measurable standards and outcomes, and can be geared toward the highest recovery.

The Authority should use the Planning Framework to achieve the best outcomes in the long term. For instance, solid waste system autonomous processes have become readily available in the last decade that are a major trend in the environmental industry. They can significantly reduce costs and

are being implemented rapidly through the supply chain. They are fueled by the new capabilities of AI, blockchain technologies, the Internet of Things, and Web 3.0. architecture. There are also newer, abundant, and very attractive tools and complementary technologies and processes that will be available in three to five years or less. They are also driven by these same developments and will require the new connectivity to be effective and should be complementary to its implementation. Table 11 in Section 15 – Recommendations outlines critical initial elements needed for this approach, their strategies and tactics, and the current priority and time frame.

12.2 HIGH DIVERSION AND EFFICIENT WASTE MANAGEMENT TECHNOLOGIES

Initially, the Authority will likely remain reliant on the existing infrastructure, while also allowing waste to be transported out-of-County by private service providers to private disposal options. However, there is an appropriate near-term option that relates to managing yard trash and eventually food waste and presents an opportunity to increase diversion rates. Processing can be accomplished initially via mulching/composting with a relatively low investment level, with the processing approach enhanced in the future as required to meet the needs of the Authority. To meet the 75% state diversion goal, a top priority for the Authority should be to isolate, capture, and process streams of organic material that ILA Members are now collecting as part of the solid waste stream and may collect separately in the future. Focusing on organics is the fastest way to increase diversion and has shown the greatest promise among new technologies. In addition, organics technologies are scaling throughout the U.S. and achieving operational resilience.

As a preliminary action, the Authority is encouraged to conduct a yard trash end market assessment and develop an appropriate action plan to create viable end markets for yard trash or develop a procurement approach that would require a contracted vendor to identify secure end markets for processed yard trash. It should be noted that the Broward County Landfill currently has limited need for use of yard trash as alternative daily cover and reports that it currently has excess cover materials. Table 11 outlines critical initial elements needed for this approach, their strategies and tactics, and the current priority and time frame.

Though not recommended initially due to the risk and cost, the Authority should continue monitoring advanced high volume waste technologies such as those presented in the Task 9 White Paper.

13.0 EDUCATION AND OUTREACH PROGRAM

As previously described above and detailed in the Task 8 White Paper (attached as **Appendix N**), behavior change is foundational to meeting the Authority's waste reduction and recycling goals. For diversion efforts to succeed, the public must take ownership of waste generation and be empowered to reduce waste and recycle more. Community members and visitors need access to the waste reduction and recycling services identified in this Plan, knowledge about how to reduce their waste and recycle correctly, and engagement to help them make informed and accurate disposal decisions about an ever-changing array of waste materials they generate as they live, work, and play across Broward County. As packaging design, recycling innovations, and materials management programs continue to evolve at a faster pace, the Authority needs a robust communications and outreach infrastructure to complement the collections and processing systems. This will help bridge the gap, encourage people to adapt to ongoing changes, and make learning about recycling more accessible, engaging, and rewarding.

Without consistent information, feedback on recycling habits, or a clear resource for answers, people often question the legitimacy of recycling programs and/or create their own recycling methods. For example, the Authority's residential recycling survey conducted in 2025, found that only 43% of respondents trust that recyclable items placed in their recycling carts actually get recycled. Without accurate, timely information, people's recycling assumptions are often based on misconceptions or outdated knowledge, leading to decreased participation and unintentional mistakes. This contributes to contamination of as much as 25% of collected recyclables, which can no longer be processed, as reported by USEPA. This highlights the need for the Authority to invest in developing a communications and outreach program to cut through confusion and become the "trusted voice" to deliver accurate and timely communications to drive desired behavior.

Participation, contamination, and material yield metrics for recycling programs can be improved significantly by investing in the following education and outreach initiatives:

- **Uniformity Across Programs:** Establishing consistency in program design and operations.
- **Targeted Educational Messaging:** Utilizing Community-Based Social Marketing (CBSM) techniques to reach and influence diverse populations effectively.
- **Enhanced Compliance Measures/Enforcement:** Strengthening policies to reduce contamination and ensure compliance.

Ensuring uniformity across programs will be one of the largest contributors to success as it provides the access needed to enable participation. The Master Plan recommends that the Authority retain and expand its current single stream recycling program due to the significant direct cost savings compared to a dual stream system and other related net savings identified in the Task 4 White Paper. Aligning recycling services across ILA Members should also provide for a conforming list of targeted curbside recyclables which is essential to communicating the list of acceptable items, thus reducing contamination and maximizing material recovery. The Master Plan also recommends requiring weekly curbside collection of source separated yard trash to enable targeting the material for beneficial uses. Both core weekly curbside collection services are the two largest materials streams in which residents can actively participate in order to increase recycling rates. In addition to these two critical focus areas, **Table 11** outlines critical initial elements needed for this approach, their strategies and tactics, and the current priority and time frame. The Task 8 White Paper also provides more detail and relevant case studies.

14.0 CHALLENGES AND OPPORTUNITIES

Tasks 4 through 9 explored and provided a physical roadmap for diversion. However, for success in implementing some or all of the processing and disposal functions of Scenario A, the Authority will first be required to build a lasting foundation before it invests its own capital and resources to meet the 75% recycling goal. There are lessons from existing municipal solid waste systems with higher recovery in North America (from places as diverse as Florida's Lee and Palm Beach Counties; the province of British Columbia, Canada; Hennepin County, MN; California's high regulatory environment; Phoenix, AZ; and several New Jersey, New York, and Texas municipalities) that began to build greater diversion over decades-long periods through phased foundational steps. These steps then allowed later development of the physical assets, whether public or private, required to meet the volume demand. Successful high diversion communities further recognized the practical tradeoffs that must be made in order to increase local waste authority fidelity and span of control so they could make necessary changes while keeping diverse stakeholders engaged and supportive. This included immediate steps towards solving ever-present potential conflicts and the tradeoffs they represent, with solutions acceptable for stakeholders in their diverse communities. Among the most important of these are:

- Where (land availability, feasibility, community acceptance) and when (cost, volume, competition) to build new solid waste facilities.

- What kind of collection systems must be phased in over the long term to obtain a cost-optimized scale to achieve the highest rates of recovery, whether or not the Authority actually operates those collection systems; and how to implement a phased homogenization of solid waste-segmented materials streams to provide the key Authority leverage point of large volumes for lower costs that members want.

- Immediately begin defining and implementing general policies, contractual agreements with Authority members, collaboration agreements with non-members for regional scale, and supporting local member statutes that will be needed.

- How to plan, procure, and execute an effective communications strategy utilizing a shared high-technology platform, from customer apps to real time system operations, in order to assure widespread and necessary access across the supply chain for common Authority-wide messages; for instance, coordination of material stream composition requirements, anti-contamination programs, special collection programs, and storm response. This also allows the underpinnings of the Authority's mission to be shared through continuing updates on progress towards common goals, metrics, performance, changes in schedule, responses to storms, and general management.

- How to, over time, move towards material stream, collection system, diversion, disposal and other service harmonization whenever possible for economies of scale.

In addition, based on the 2023 FDEP Solid Waste Management Report, the County had a 39% recycling rate for C&D. Based on the opportunity to manage this waste stream component better, the SCS Team evaluated options to manage C&D. These are presented in the Task 17 Construction & Demolition Debris Management Options White Paper attached as **Appendix O**.

15.0 SCENARIO A PLAN

15.1 EXPECTED OUTCOMES

Scenario A envisions strengthening the Authority's status quo by implementing thoughtful incremental improvements that can be managed by the Authority more easily as it works to build its institutional abilities while also minimizing disruption to the existing solid waste services provided by the ILA cities. It outlines waste processing approaches that can be executed more quickly to deliver the biggest impact for the least cost, and it will form the cornerstone of the Authority's future waste processing needs while providing flexibility to allow more aggressive policies and infrastructure investments in the future as the Authority matures. Complimentary ordinances, policies, and outreach initiatives will be necessary to require waste segregation that will enable the Authority to direct material to appropriate facilities. In addition (and depending on the procurement approach employed by the Authority to develop new processing facilities), further consideration of local, state, and Federal legislation and local land use must be considered. **Table 8** presents the waste tonnage needing to be managed in 2045 and the projected diversion impact from Scenario A.

Table 8. Scenario A Recovery Tonnages Summary – Estimated Outcome in 2045

Scenario A	Estimated Outcome in 2045
Incoming Tons to New Recovery Facilities	3,800,000
Recovered Tons	3,300,000
Residue Tons	500,000
Traditional Recycling %	54%
Adjusted Recycling % with WTE and Landfill Credits	62%
GHG Benefit (MTCO2e)	1,500,000

Achieving Scenario A outcomes depends on five critical assumptions: (1) enhancing curbside diversion services to all single family residences (i.e., single stream recycling and clean yard trash collection) by all ILA Members; (2) achieving a high capture rate of recyclables from all non-participating waste stream generators (i.e., multi-family, commercial/industrial, away from home generation); (3) effective integration of private service providers to help achieve the goals of this Plan; (4) available funds to build, operate and maintain the extensive network of forecasted facilities; and (5) continued growth in population and waste generation over the planning horizon. Scenario A outcomes also depend on technological trends and outcomes which may change priorities, potentially at a rapid pace. Due to these challenges and constraints, Scenario A should be adopted and vocalized by Authority leaders as a best-case scenario with challenges to overcome.

15.2 FACILITIES OVERVIEW

Scenario A identified material recovery and waste processing facilities that utilize proven technologies to increase recycling rates, and which can be considered for future development by the Authority. It should be noted that Scenario A does not advocate for each facility to be developed, but rather identifies the scale and scope of processing facilities that would be needed to manage future waste volumes in 2045 in order to reach the 75% recycling goal. Before investing in developing Authority owned facilities, the initial focus should be on maximizing use of existing infrastructure for the most cost effective and quickest impact. Only when the use of existing infrastructure is not

available or impractical due to excessive hauling distances, or pricing is uncompetitive should the Authority then explore developing Authority owned facilities. It should be further noted that the Master Plan does not advocate for a new WTE facility, rather it contemplates using the existing facility. While not considered in the analysis, it should be noted that the existing facility may have the potential to install an additional combustion unit, which would increase processing capacity for the benefit of the Authority.

Scenario A provides the best estimate for what a future solid waste management system may look like. The actual tons of waste will be impacted by population growth, commercial development, private sector waste processing infrastructure, development of new facilities, the maintenance of existing facilities, or the lack thereof, and the degree of success in influencing behavior changes over the planning horizon, in addition to a myriad of other factors, including the trend towards greater implementation of extended producer responsibility frameworks, the continued evolution of packaging design, and the pending impact of transformational technology in the form of AI, etc. Twenty years is a long time, and each decision along the way will need to be based on the then-current realities of the solid waste system and local market conditions.

Table 9 presents the recommended program components and facilities envisioned by Scenario A.

Table 9. Overview of Scenario A

Scenario	Programs	Additional Facility Needs and Capacity of Each Facility - Tons Per Year (TPY)	Target Diversion Rate Increase
A	• Restore Recycling Services to 20% of Broward County • Add segregated Curbside Yard Trash (YT) Collection • Add Food Waste (FW) Drop-Off Events • Add Permanent Household Hazardous Waste (HHW)/ Electronics/Recycling Drop-Off Sites • Add reduction, reuse, and diversion programs and policies.	• Two (2) Single- Stream Material Recovery Facilities (250,000 TPY each) • Two (2) New Organics Processing Sites with: Two (2) Mulch/ Colorizing Operations (175,000 TPY each) and One (1) New Biochar Pyrolysis operation (30,000k TPY) • Two (2) C&D Recovery Facilities (450,000 TPY each) • Eight (8) Permanent Drop-Off Centers (2,400 TPY each) • Three (3) Transfer Stations (North, South, Central Broward County) • One (1) Landfill	+25 percentage points to 62%

15.2.1 Scenario A – Processing Facilities

15.2.1.1 Municipal Solid Waste

Currently, MSW is hauled either directly to the South Broward Resource Recovery Facility (RRF) or to transfer stations throughout the County, including Waste Management (WM) Davie, WM Deerfield, and Waste Connections Pembroke Park. MSW is then sent to landfills including Broward County

Landfill, J.E.D Landfill, Medley Landfill, Okeechobee Landfill, Desoto Recycling & Disposal, and the Monarch Hill Landfill. Ash from the South Broward RRF is then disposed at the South Broward Ash Monofill.

Scenario A recommends the construction of three transfer stations to supplement the existing private transfer stations in the market in order to support the efficient flow of material to disposal facilities. Ideally, the transfer stations would be located strategically within the County (e.g., northern, central, southern). Scenario A assumes that the existing permitted disposal capacity at the South Broward RRF will continue to be used. It should be noted that WIN Waste Solutions, Inc. (WIN Waste) recently announced the pending sale of the South Broward RRF, and as such, new contract terms and conditions with a new owner/operator may be required for continued use of this disposal capacity. In addition, Scenario A contemplates the development of a new landfill while recognizing that existing landfill capacity may continue to be utilized in the future. However, consistent with the Authority's direction to "control its solid waste management destiny", the SCS Team has assumed that a new landfill, or an existing landfill with capacity that can be secured by the Authority, will be required. An increasingly viable option is to utilize rail hauling to direct waste to a regional landfill.

15.2.1.2 Single-Stream Recycling

Currently, the Authority's ILA members process their SSR at WM's Reuter Facility, with processing fees ranging from $90 to $200 per ton depending on each community's respective contract provisions and how those contracts handle recycling commodity revenue sharing. The Authority should ensure that future recycling processing contracts thoroughly contemplate the value of the recycling commodities sold to market and include provisions whereby the commodity revenues are shared between the MRF operator and the Authority to align incentives to reduce inbound contamination and produce high-quality outbound materials that can be readily marketed. WM is constructing a new, state-of-the-art, 127,000 square-foot RMPF adjacent to the Reuter Facility. This $80+ million RMPF will have a processing capacity of 66 Tons Per Hour (TPH), equivalent to 260,000 TPY, and is referred to as the WM Recycling South Florida (WM South Florida Facility). While the region's current SS processing capacity theoretically is sufficient for 2023 tons, Scenario A includes the development of two additional SS RMPFs to manage the additional volume of inbound tons projected to be generated in 2045. See the Task 4 White Paper for an expanded discussion of the SS RMPF, options, costs, and timeline.

15.2.1.3 Organics Processing Campus

Scenario A includes two Organics Processing Facility campuses with the ability to scale operations to meet additional processing capacity needs. Under this scenario, the facilities will process yard trash via two Mulch/Colorization operations and one Biochar Pyrolysis operation.

The mulching process will involve grinding yard trash, removing contaminants, and stockpiling materials in windrows for further decomposition and processing. To address challenges in the regional market for mulch and soil amendments, incorporating a colorization process is recommended to enhance product marketability and increase revenue potential.

Additionally, the pyrolysis of yard trash—particularly fibrous materials which are slower to decompose such as palm fronds and trimmings—can provide operational flexibility for organics processing. This also creates market opportunities for biochar, a valuable end product with various applications in agriculture, landscaping, and environmental remediation.

15.2.1.4 Construction & Demolition RMPF

Current C&D processing facilities appear to have sufficient capacity to handle the existing tonnage under existing market conditions. However, it should be noted that the WM Monarch Hill Landfill is used to dispose of C&D components that are not segregated for recycling and sale to the secondary market. Further, as tonnage increases and new policies or market developments enhance materials recovery and marketability, additional facilities are anticipated to be required to meet the growing demand.

To address these future needs, assuming that adequate secondary markets exist, it is recommended to establish up to two strategically located C&D RMPF facilities to expand the region's C&D processing capacity. Each facility should be designed to process up to 450,000 TPY (equivalent to 100 TPH) to accommodate the estimated 850,000 TPY of C&D materials requiring processing. These facilities may be publicly or privately owned and operated, depending on regional needs and stakeholder preferences.

15.2.1.5 Drop-Off Centers for Hard-to-Recycle Materials

Permanent Drop-Off Centers. To strengthen recovery efforts, all five scenarios include the development of eight recycling drop-off centers. Each of these permanent facilities will consist of two distinct areas:

1. One gated and staffed area, operating up to two days per week, dedicated to the collection of HHW and electronics.

2. A second, publicly accessible area, open 24/7, for the drop-off of SS recyclables and textiles.

Each site should allocate a minimum of approximately 0.25 to 0.5 acres of operational space for material handling and storage. Materials will be collected using various container types, including roll-off containers, Gaylord boxes (large, corrugated cardboard boxes designed for bulky or irregularly shaped items), and metal donation bins. To support efficient operations, each site should be equipped with two shipping containers designated for the storage of HHW, paint, and electronic waste. Additional site requirements include one electric pallet jack and four roll-off containers.

Although illegal dumping and scavenging are common concerns at public drop-off sites, there are many examples of successful 24/7 drop-off facilities across the United States. The added accessibility and convenience of these facilities, especially to those without curbside recycling access, outweighs the effort to keep the facilities clean and well maintained. A few examples of jurisdictions with 24/7 drop-off facilities include:

- Pinellas County, Florida
- Dunedin, Florida
- Bradenton, Florida
- Cincinnati and several other jurisdictions in Ohio
- Emmet County, Michigan
- Alexandria, Virginia

Municipalities use a variety of strategies to mitigate illegal dumping and scavenging concerns at 24/7 public drop-off facilities, with each community needing to be flexible to adapt to local behaviors and be responsive to differences between individual facility locations. Common strategies include:

- Placing drop-off sites in busier locations with more people around helps to serve as a deterrent to bad behavior. Some communities co-locate drop-off sites at existing solid waste facilities, sheriffs' offices, fire stations, and public parks where municipal staff can more quickly help identify illegal dumping and alert the appropriate solid waste staff to respond.

- Well-placed signage and site lighting are essential.

- Closed Circuit Television (CCTV) cameras are recommended for monitoring and deterring illegal dumping.

- Some communities place fencing and gates around their facilities and require a driver's license to be scanned before entry or, alternatively they require patrons to register with the municipality and obtain a unique membership code to enter to be granted site access.

- Some municipalities engage community groups to help monitor and promote sites, similar to adopt-a-road or community garden programs, as a means of fostering community pride in the facility and support to keep it clean.

- Other jurisdictions partner with law enforcement and/or code enforcement agencies to make periodic stops at the facilities or ramp up their presence when illegal dumping or scavenging is occurring to serve as an additional deterrent. Code Enforcement departments are often willing to investigate the illegally dumped materials to see if there is any identifying information that can lead to a suspect with a follow-up warning visit to alleged perpetrators.

- Communities can also leverage their service delivery contracts to include contract provisions that require contracted recycling or HHW collection staff to make efforts to clean the sites when they service containers and/or report litter, illegal dumping, or suspicious activity. Other jurisdictions include contract line items to have a means of paying a contractor to respond quickly to remove illegal dumping on a per incident basis in the event municipal staff are not available.

In all instances, a quick response to remove illegal dumping is the best practice and is essential to reducing additional illegal dumping. Data shows that litter attracts more litter based on people's perceptions of a specific place and how well it is maintained, whether a public park, parking garage, or recycling drop-off facility.

15.2.1.6 Waste-to-Energy

Scenario A assumes that the existing permitted disposal capacity at the South Broward RRF will continue to be used. A new WTE facility is not contemplated. Note that WIN Waste recently sold this facility to FCC Environmental Services, and as such, future contract terms and conditions with a new owner/operator may be required for continued use of this disposal capacity. Given the sensitivities

surrounding the use of WTE, the Executive Committee directed the SCS Team to prepare a White Paper providing a consolidated reference guide of published resources, reports, and studies regarding the health impacts which may be associated with WTE, which is presented in **Appendix P**. On July 18, 2025, the Executive Committee clarified that any future new WTE facility would only be considered if it were co-located in close proximity to the South Broward RRF. It should be noted that the South Broward RRF site and surrounding parcels were not evaluated as part of the Master Plan siting analysis. Therefore, based on this policy direction from the Executive Committee, it is recommended that the South Broward RRF campus and adjacent parcels of land be evaluated for additional WTE capacity feasibility at some point in the future. If the Authority considers to further explore the role that WTE can play as part of an integrated and sustainable solid waste management program, it may consider establishing a WTE sub-committee to the Executive Committee, which can serve to keep the Authority engaged with the new owner of the South Broward RRF to ensure processing Broward County tons remains the priority at this facility as opposed to processing out of County tons, while also ensuring members of the committee stay informed about relevant future changes in the WTE industry given its role as a MSW management facility during the planning horizon.

15.2.2 Scenario A - Outcomes

Scenario A aims to strengthen the Authority's status quo by updating the recycling and organics recovery program through establishing additional infrastructure and negotiating access to existing capacity at the SSR Reuter Facility. **Table 10** presents the diversion facilities and capacity required, capital cost, operating cost, and summary of processing fees under Scenario A.

Table 10. Scenario A - New Diversion Facilities and Capacity, and Estimated Costs and Fees in 2025 Dollars

Description	Qty	Capacity (TPY/Facility)	CapEx/ Facility	Annual OpEx/ Facility	Processing Fee ($/Ton)	Aggregated ($/Ton/Facility)
SS RMPF	2	250,000	$72M	$14M	$89	$35
Yard Trash Mulch Facility	2	175,000	$5M	$1.8M	$14	($32)
Biochar Pyrolysis	1	30,000	$10M	$700k	$57	$13
C&D RMPFs	2	450,000	$41M	$19M	$50	$60
Public Drop-Off Centers	8	12,000	$140k	$1M	$86	$86
Transfer Stations	3	890,000	$47M	$31M	$87	$27
Landfill	1	3M	$880M	$229M	$91	$41

15.3 DIVERSION OPPORTUNITIES

Meeting the Authority's diversion goals demands a major shift in behavior and operations to manage waste upstream, at the point of generation, before materials become commingled and thus more costly to recover. Harmonizing collection and processing approaches that maximize the source

separation of waste materials into more homogenous waste streams better enables materials to be recycled. Ensuring uniformity across diversion programs establishes consistency in program design and operations, allows for more efficient management of waste streams, and enables more impactful educational messaging that will work to change behaviors towards adopting waste reduction and recycling participation habits. Increasing public awareness of and participation in the uniform waste diversion services provided will lead to cleaner source separated waste streams that are more easily and cost-effectively targeted for recycling.

After a comprehensive analysis, it is recommended that the Authority utilize single-stream recycling collection as the preferred approach to curbside recycling. Single-stream recycling offers significant cost savings compared to dual-stream recycling as further detailed in the Task 4 White Paper. Expanding the service to residents who do not currently have access is one of the best immediate diversion opportunities.

Scenario A identified the need to require residential yard trash to be collected separately at the curb to enable processing into mulch and biochar. It envisions a colorization process to treat the mulch derived from yard trash processing as a means of increasing the marketability and revenue associated with the final mulch product. The market for mulch and soil amendments in Broward County is limited. Estimates using the Mulch & Soil Council methodology suggest a total market size of approximately 74,000 TPY for mulch and 33,000 TPY for soil amendments such as compost and topsoil. However, recycled organic waste-based mulch and compost face competition from traditional wood mulch and premium organic compost products. Additionally, the high concentration of palm material in regional yard trash poses challenges to degradation during processing, thus the utilization of pyrolysis processing to produce biochar is recommended to help address this concern.

To address these challenges and improve the viability of organics processing by the Authority, several additional strategies are recommended:

- **Biochar Pyrolysis Unit:** Incorporating a pyrolysis unit to process hard-to-decompose organic material, such as palm waste, into biochar. Biochar offers additional market opportunities and supports soil health initiatives.

- **Colorizing Process:** Adding a colorizing step to enhance the aesthetic appeal of recycled mulch products and increase market competitiveness.

- **Trained Salesforce:** Employing a highly trained salesforce to promote end products effectively, ensuring market penetration and customer education.

By implementing these measures, the Authority can develop a more robust and sustainable organics processing system that addresses existing challenges and maximizes resource recovery.

The policies described below represent the initial recommendations, based on findings from the various White Papers developed throughout the planning process, and informed from years of specialized solid waste and recycling consulting experience. The recommended policies were developed to achieve a step-by-step progression of activities necessary to implement the goals of the Authority in the short, mid, and long term.

Achieving the goal of 75% diversion will be challenging and will require long-term commitment and funding to continuously educate the public about consumption practices, waste generation,

consequences of today's continued disposal practices, trade-offs in taxes and fees, and lifestyle choices to change the established habits of a culture of throwaway conveniences.

Table 11 presents critical elements, strategy and tactics, and the priority and timeframe related to policies and regulations, innovative technologies adoption, organics management, and education and outreach that are recommended to support the development and deployment of Scenario A.

Table 11. Recommended Critical Elements, Strategy and Tactics, and Priority and Timeframe

POLICIES AND REGULATIONS		
Recommended Element	**Strategies and Tactics**	**Priority/Time Frame**
Harmonize minimum curbside waste collection standards	• In collaboration with ILA Members and legal counsel, begin the process of drafting an Authority approved procurement template for collections and processing services to be used by ILA Members as existing agreements begin to expire, with the intent to align curbside services to a minimum of one MSW, one single stream recycling, and one yard trash collection per week: o Implement and enforce a uniform requirement in franchise agreements and service contracts to collect and report data on tonnages collected, material types, waste composition, contamination rates and other information determined to be useful to ILA Members and the Authority. This data will provide valuable information for use in making improvements to the solid waste system and adjusting public education, outreach or solid waste management practices as needed across the Authority; o Develop underlying foundational policies including mandatory residential recycling, utilization of advanced mobile customer and service provider interfaces to improve communication, increase home recycling access, and procurement terms which ensure competitiveness for processing facilities and operating contracts; o Execute longer-term franchise agreements for residential collection contracts because responsibility for the waste transfers to the service provider after collection in exchange for geographical exclusivity and so does managing that waste for meeting the goals of the Authority. Require lower GHG-producing collection vehicles, truck monitoring of contamination in real time, and safe efficient behaviors on-route. Franchise agreements have been shown to be effective ways to increase landfill diversion on the West Coast and are prevalent there for that reason; and o Evaluate dividing the County into several franchise residential collection zones that would each be serviced by a single vendor. The franchise zones would be competitively bid, and no collection vendor would serve more than two zones to stimulate competitive pricing. This would leverage the economies of scale for collections and help reduce costs burdened by the public. Similar franchise zones have been successfully implemented in other Florida counties (e.g., Duval and Hillsborough) and would be a consideration after the Authority is established. • Require waste to be source-separated at the curb. • Require a minimum of 1 MSW, 1 recycling, and 1 yard trash collection per week (note: municipalities may provide higher levels of service if desired). • Work with ILA Members to develop curbside setout parameters: o MSW; o SS Recycling; and o Yard trash. • Develop model language for ILA Members to codify via ordinances to ensure their respective Code Enforcement departments can enforce common standards. • Develop communication pieces to inform residents about any changes to curbside services. • Develop model contract language for ILA Members to use when procuring new collection contracts.	High/Immediate Adoption
Expand single-stream recycling access	• Ensure all single-family homes with four units or less are provided once-a-week curbside recycling collection service. • Begin to harmonize the list of acceptable recyclable materials. • Expand recycling to multi-family properties. • Expand access to recycling in public spaces. • Develop a mandate to require recycling by commercial and industrial entities.	High/Immediate Adoption
Require yard trash to be recycled	• Ensure all single-family homes with four units or less are provided once-a-week curbside yard trash collection service. • Establish collection zones that can be competitively bid to procure a private sector solution to provide yard trash processing. Note this approach will be quickest to implement and if it does not generate enough additional recycling an Authority owned organics processing facility can be pursued. • Mandate the use of recycled yard trash recovered from local diversion programs to be used at municipal facilities.	High/Immediate Adoption
Enact a mandatory C&D recycling ordinance	• Require C&D recycling prior to landfill disposal. • Applicable to various construction and demolition projects, including residential and commercial construction exceeding certain values, alterations, and roofing projects that involve the removal of old roofing materials. • Modify the building permit system requiring that material weight recycled be estimated and calculated as part of the permit application, and the permittee would be required to provide receipts for the weight of material recycled (minimum what was calculated in the permit application) to close the permit and receive a Certificate of Occupancy. • Incentivize deconstruction over demolition. • Incorporate a fee structure aligned with the type and scope of each project.	High/Immediate Adoption

Develop additional residential drop-off centers for hard-to-recycle and hazardous materials	• Create a capital improvement plan to fund the development of new drop-off facilities. • Promote drop-off centers as convenient recycling options for multi-family residents who do not have access to curbside recycling. • Utilize drop-off centers as outreach posts to engage with residents. • Procure service delivery contracts to ensure proper management of received materials (e.g. batteries, used oil, scrap metals, white goods, household hazardous waste). • Focus on fostering waste reduction via developing reuse opportunities that may be best co-located at drop off sites. Examples include Sarasota County's Re-Uz-It Shop (https://www.scgov.net/government/solid-waste/the-re-uz-it-shop) or Hillsborough County's award winning partnership with Goodwill Industries to have donation stations at drop-off sites (https://baynews9.com/fl/tampa/news/2023/05/03/trash-or-reuse--pilot-program-turns-discarded-items-into-donations).	High/Short-Term
Enact a mandatory commercial recycling ordinance	• Develop non-exclusive commercial collection franchises which likewise require haulers to carry out actions to meet Authority goals, include the provision of accessible reporting data on collection containers weights and services utilizing County interfaces in real time, and could be coordinated to utilize County-certified recycling facilities.	High/Short-Term
Begin to develop food waste collection	• Select which of the three strategies identified in Scenario A, or a combination of them, is the best fit for ILA Members to start targeting food waste: o Establish food waste drop-off at special events; o Install food waste drop-off sites to be co-located at municipal facilities (i.e. recycling drop-off centers, libraries, senior centers, etc.); and o Establish curbside food scrap collection. • Procure a contract with a permitted facility capable of processing food waste,	Medium/Short-Term
Implement supporting policies and actions	• In collaboration with ILA Members, explore implementation of low-cost waste reduction programs such as supporting backyard composting as a means of reducing food waste entering the collection system (as has been implemented by the City of Tampa) and/or establish strategic partnerships with aligned organizations such as the donation collection program established by Hillsborough County and Goodwill Industries Suncoast to increase material reuse at their drop-off facilities. • Mandate recycling at all municipally owned facilities to lead by example, • Consider partnering with the State and perhaps the Federal Small Business Administration (SBA) to offer grants and/or low-interest loans to stimulate the development of recycling businesses in Broward County. • Consider intensive and coordinated lobbying efforts at the State level aimed at revising the rules related to preemption and food waste. Currently, local governments cannot ban the sale and use of single-use products within their municipal boundaries. Additionally, food waste is currently regulated as solid waste in Florida, both of which are highly restrictive and a significant limiting factor for the reduction in single-use items as well as the development of large-scale food waste diversion programs. • Note policy formation will be an ongoing effort given the staff time, public education, and implementation timelines required of each. It's recommended to only focus on each major policy enactment one at a time.	High/Short-Term to Mid-Term
If WTE is considered, establish a WTE Sub-Committee from ILA member communities to research and provide recommendations on overarching strategies, technologies to pursue, and schedule of implementation.	• Consider establishing a WTE Sub-Committee to the Executive Committee, if warranted. Consider initiating and defining the scope for an evaluation of the South Broward RRF Campus and adjacent properties in order to explore the feasibility of expanding WTE capacity at the Campus.	Medium/ Mid- to Long Term
EDUCATION AND OUTREACH AND COMMUNICATION PLAN		
Recommended Element	**Strategies and Tactics**	**Priority/Time Frame**
Invest in developing a sustained communications and outreach program	• Dedicate sufficient funding to engage with residents frequently to drive and support behavior change. • A strong investment is necessary to ensure people are well-informed and motivated to recycle. This strong investment can boost a recycling rate beyond levels that could be achieved with infrastructure improvements alone. Research in various U.S. communities conducted by The Recycling Partnership, a national nonprofit that is the gold standard on recycling education, found that combining access to recycling with comprehensive education not only improves and maintains high recycling rates but also results in cleaner materials. • Develop and execute a comprehensive communications, education, and outreach implementation plan that will identify how to best prioritize outreach efforts. • Ensure all ILA Members begin to use common terminology, slogans, and Authority branding to harmonize public knowledge of recycling services including how to participate correctly. • Partner with the ILA Members and key community stakeholders, such as Broward County Schools and the Florida Panthers, etc., to reach target audiences in multiple ways via a trusted source in the community to reinforce the Authority as the go to "trusted voice" for recycling related information and guidance as described in the Task 8 White Paper. • Continue to utilize surveys and focus groups to better identify obstacles to behavior change, communication preferences, motivation factors, and better help tailor educational materials to meet customer needs.	High/Immediate Adoption & Ongoing

Become the trusted voice to deliver waste and recycling related information	• Build public trust through transparency and education. • Develop a new webpage to serve as the education hub landing page used by all ILA Members when marketing programs and in media engagements. This is needed to position the Authority as the trusted source of the most updated and accurate information on proper recycling and disposal. See www.TampaBayRecycles.org and www.CentralFloridaRecycles.org as examples of how web traffic can be focused on one webpage and then direct visitors back to their respective ILA Member websites for customer service related information until the Authority's capabilities increase over time.	High/Immediate Adoption & Ongoing
Partner with a wide range of stakeholders to increase engagement with their networks	• Reach out to special interest groups, homeowner associations, retailers, schools, sports organizations, business organizations, local media personalities, museums, religious and service-oriented organizations. • A trusted messenger is vital to a behavior change campaign. A message can be 100% on point, but if it does not come from someone trusted by the audience, the message may not be absorbed, and the behavior may not change. • Partner with the ILA Members and key community stakeholders, such as Broward County Schools and the Florida Panthers, etc., to reach target audiences in multiple ways via a trusted source in the community to reinforce the Authority as the go to "trusted voice" for recycling related information and guidance as described in the Task 8 White Paper. See example of how Hillsborough County, FL partnered with the Tampa Bay Lightning on an anti-litter campaign: https://hcfl.gov/residents/property-owners-and-renters/trash-and-recycling/anti-litter-campaign. • Partner with sister departments and agencies within the ILA Members to crowdsource the dissemination of key outreach materials on proper recycling as part of their normal outreach efforts. For example, collaborating with water conservation teams, parks and recreation departments, and other environmentally adjacent staff to have recycling do's and don'ts lists on their respective outreach tables to help reach larger audiences. • Utilize partnerships to find innovative ways to reach people, such as recycling art contests in local schools. For example, see the City of Tampa's program where they have an annual poetry and art contest where the winning poetry is displayed at public parks and artwork gets wrapped on recycling collection trucks which are then seen performing collection on routes throughout the community (https://www.tampa.gov/solid-waste/3rs-art-contest-winners).	High/Short-Term Adoption & Ongoing
Communicate with the community in multiple ways via a combination of approaches	• Utilizing a combination of communication approaches is important to reach people where they are, such as utility bill inserts, direct mailers, media interviews, webpages, cart hangers, social media, outreach events, neighborhood or business newsletters, advertising, etc. • A recommended best practice is to send a mailer to residents three times a year that they can hang on their refrigerator or prominent place to confirm their collection days and what materials are and aren't supposed to be recycled. • Sending a postcard that specifically focuses on the top contaminant in the recycling program is another best practice. • Use technology to reach people on their smart phones via traditional social media channels (i.e., Facebook, X (formerly Twitter), Tik Tok, Instagram, etc.) and the use of apps. • Actively pursue earned media attention, such as frequent interviews on local TV and radio, to promote key messaging which is often more effective at driving engagement at no cost except for staff interview preparation. • Consider paid advertising, but primarily when promoting a targeted educational campaign and when data driven. Social media advertising can be cost-effective to reach target audiences.	High/Short-Term Adoption & Ongoing
Utilize existing and emerging technology to better engage with residents	• WasteWizard or comparable search widgets can be inserted into the Authority's outreach landing page and enable people to search on how to properly recycle or dispose of items. These tools can provide valuable data to guide developing targeted messaging around best practices for managing the most searched items. • Use smartphone apps to send out messaging regarding collection schedules, focused educational campaigns, special collections, etc. • It's vital to use data to verify results, such as reporting on web traffic visits to web pages and correlating what drove the increased engagement. For example, Hillsborough County, FL found that local TV news interviews greatly increased web traffic to recycling guidance vs paid advertising. • Continuously monitor and adopt emerging technology described in Section 12 above and the Task 9 White Paper, such as the use of cameras on collection vehicles to identify contamination at the source and automate notices to the perpetrating households. • Consider how the various technologies can complement each other and be further integrated into the communications and business infrastructure to provide a seamless user experience, useful data, and real-time feedback on operations.	High/Short-Term Adoption & Ongoing
Develop additional residential drop-off centers for hard-to-recycle and hazardous materials	• Utilize drop-off facilities to engage with the public via signage and outreach tabling events. • Use the sites to gather feedback from residents via in person surveys. • Use the sites to conduct media interviews as local news outlets prefer live action shots with visuals readily available to attract viewers.	High/Short-Term Adoption & Ongoing
Set clear, achievable milestones and develop uniform reporting	• You can't manage what you can't measure and therefore the Authority must work collaboratively with the ILA Members to develop key reporting metrics and to standardize the data being collected and reported over time. • Celebrate success when key goals are achieved or milestones occur such as when local businesses implement new recycling programs.	High/Short-Term Adoption & Ongoing
Leverage Future Authority Facilities as Outreach Hubs	• Consider incorporating educational centers, passive learning opportunities, and enhanced preservation of natural areas when planning to develop future facilities. • Utilizing public infrastructure to serve as an educational resource can further enhance public awareness and support for the role the facility plays in the community, with such facilities also being able to promote environmental stewardship through thoughtful design.	Low/Long-term Consideration

	• Living laboratories, interactive exhibits, wetlands, and trails are all examples of learning centers that have been successfully incorporated into waste management facilities, fostering environmental awareness and promoting sustainability. • The pursuit of LEED certification or similar green building certifications can help ensure optimal energy and water efficiency within the facility operation and highlight the use of waste reduction principles and recycled content within the construction process. • Educational signage and hosting public tours of the facilities can provide impactful learning opportunities for students and community groups. Both Pinellas County, FL and the Solid Waste Authority of Palm Beach County have robust public outreach programs that provide tours of their facilities. • Ensuring adequate buffers and protection of natural areas also helps to minimize disruption to adjacent properties.	
INNOVATIVE TECHNOLOGIES ADOPTION		
Recommended Element	**Strategies and Tactics**	**Priority/Time Frame**
Adoption of a preference for autonomous processes and continuous improvement utilizing AI, blockchain, Web 3.0, and Internet of Things (IoT)	• Including appropriate focus in procurement policies and related requirements and execution plans.	High/Immediate Adoption
Management System which maximizes cross-platform compatibility and connectivity	• Data accessibility and Integration of all ILA Members (e.g., contracts, permits, costs, systems). • Platform-wide harmonized goals and metrics for success. • Uniform messages to/from all members and member platforms for solid waste services and specifications. • Reporting systems. • Uniform minimum service levels. • Customer communications. • Vendor communications. • Customer services. • Real time physical and cost measurement. • Real time feedback. • Billing platform interface. • Automated updated waste characterization. • All assets and supply chain players utilize the same tools which talk to each other.	High/Short-Term
Develop overarching Strategies for new technology implementation within Authority Control Familiarize the Authority and ILA Members with available choices for each prioritized technology component	• Analyze and develop list of most important system components with the biggest impacts to meet Authority goals and guiding principles. • Establish current performance baseline within Authority footprint, and potential impacts from utilization. • Provide analysis on how New Technologies will meet the goals of the Planning Framework. • Prioritize based on cost savings including CAPEX, system improvement magnitude, and increased management span capabilities for the Authority and ILA Members. • Explore functionality, cross connectivity, and cost options. • Include baseline Safety and data security requirements. • Procurement searches for qualified providers of the most important technologies with the appropriate guarantees with the lowest costs.	High/Short-Term
Establish robust Technology Needs Committee (TNC) from ILA Members to (among other functions, see below) research and provide recommendations on overarching strategies, technologies to pursue, and schedule of implementation	• Establish authority of TNC. • Analyze and decide upon breadth of a baseline Enterprise-wide connected system: o Member Terminal, websites, and common APP platforms; and o Cell Phone Based Employee and customer system. • Adoption of supportive tools and systems (e.g., drones, GPS, apps, real time traffic reports, services disruption prediction) which support enterprise.	High/Short- to Medium-Term
Common network of tools	• Specific communication technologies – allow all ILA Members access to the same data at the same time – and the authority can continue to harmonize systems from that start point. • Enterprise system: o Member Terminal and common App platforms; o Cell Phone Based Employee and customer system; and o Adoption of supportive tools and systems (based on data security, compatibility, connectivity, uniformity, and transparency).	Medium/Medium-Term

ORGANICS MANAGEMENT STRATEGIES		
Recommended Element	**Strategies and Tactics**	**Priority/Time Frame**
Guidance to all ILA Member to specify clean yard trash separation requirements and delivery to either a specified public or private processing facility for processing.	• Organize a clean source separated yard trash stream for potential processing through initial minimum collection requirements for preferred mulching. • Establish go-forward committee for Organics implementation and timeline for actions.	High/Short-Term
Develop requirements and regulatory underpinnings for Yard Trash processing for commercial waste haulers, ILA Member projects where clean land debris is generated, homeowner associations, etc.	• Review Procurement practices and laws. • Review best practice regulatory structures in the state. • Develop Authority wide statutory requirements for clean yard trash and newly separated food waste programs and move towards adoption. • Develop model contract language for implementation including guidance of yard trash destinations for processing (public or private).	High/Short-Term
Develop Procurement Program to catalog qualifications, capabilities, technologies and specifications for private sector and public sector solutions which make the most economic sense while meeting goals of the Authority.	• Begin procurement research on organics recovery from solid waste through RFIs and RFQs. • Expand to processing options within or outside the County which include Authority Certification. • Begin qualification process for advanced food waste/clean organics processing options. • Begin procurement research on Biochar volume/mass reduction. • Begin procurement research on advanced mixed organics processing.	High/Short- to Medium-Term
Work with ILA Members and Authority committees on separated food waste options for collections; first, on a demonstration basis within participating jurisdictions, then more broadly.	• Research and present findings on successful case studies for both residential and commercial food waste programs, including costs, actual diversion outcomes and issues (i.e., loss of BTUs for WTE, container odor, vermin). • RFI on private provider food waste capabilities for collection (TBD with cooperation ILA Members utilizing a uniform approach) and processing capabilities leading to potential scoping of private services. • RFI on equipment provider technologies available and recovery guarantees leading to RFQ and potential equipment bundles should the Authority seek to build out this capacity.	Medium/Medium-Term

16.0 IMPLEMENTATION PLAN AND TIMELINE

This Master Plan serves as the strategic roadmap for the Authority to realize its goals, including developing an integrated and sustainable System that will enable the Authority to meet or exceed the State's 75% recycling goal.

16.1 RECOMMENDED TIMELINE

Achieving the 75% recycling goal will be challenging and will require the Authority to deliver countywide, reliable, and environmentally responsible solid waste services through phased implementation. Each phase pairs capital and operating needs with a funding mechanism that can effectively fund the system given the timeline and barriers to implementation. The Task 7 White Paper (attached as **Appendix Q**) details a preliminary implementation plan and timeline; and the Detailed Financial Plan (**Appendix R**) establishes a framework for funding regional solid waste management operations, addresses the Authority's statutory obligations under the ILA. The implementation plan is reflected in **Figure 15**, which illustrates the sequencing of Authority formation and long-term infrastructure development across the implementation phases.

Figure 15. Phased Implementation Framework Detailed Financial Plan

16.2 IMPLEMENTATION PLAN

Based on financial modeling, **Table 12** below presents the recommended cost per ton funding structure for FY 2027 through FY 2033 that will be applied to residential customers. The table presents the anticipated cost per ton and indicates the primary funding mechanism in each fiscal year as the Authority transitions from Phase II (tipping fee surcharge) to Phase III (non-ad valorem assessment). Specific assessment amounts will be determined through detailed assessment development studies and policy decisions by the Authority's Governing Board.

Table 12. Recommended Phase Implementation Plan

Fiscal Year	Cost per Ton	Funding Mechanism
FY 2027	--	Member Contribution
FY 2028	$ 2.00	Surcharge
FY 2029	$ 2.10	Surcharge
FY 2030	$ 2.27	Surcharge/Non-Ad Valorem Assessment
FY 2031	$ 2.45	Non-Ad Valorem Assessment
FY 2032	$ 2.65	Non-Ad Valorem Assessment
FY 2033	$ 2.86	Non-Ad Valorem Assessment

This fee schedule reflects a transition from tipping fee surcharges in Phase II (FY 2028-FY 2030) to non-ad valorem assessments beginning in Phase III (FY 2031 onward), with a one-year overlap period (FY 2030-FY 2031) allowing for gradual implementation and system testing. Annual revenue adjustments begin with moderate increases during the Phase II period (5.00% in FY 2029, 8.00% until FY 2033) to reach full cost recovery. Starting in FY 2034, the Authority is projected to require a minimum annual revenue adjustment of 1.50% to maintain financial stability. However, the Authority will adopt an annual revenue adjustment using the Producer Price Index for Solid Waste Collection (PPI-SW), Series ID: PCU562111562111 to escalate the Maximum Service Rates, which reflects industry-specific cost escalation for solid waste collection, reported on a non-seasonally adjusted basis.

These annual adjustments are intended to ensure revenues keep pace with inflation and rising operating costs. Based on the most recent 10-year historical trend, the PPI-SW has increased at an average annual rate of approximately 4.59%.

Table 13 presents the estimated tonnage and corresponding surcharge contributions for each ILA member, broken out by residential and non-residential generators. These estimates are based on 2024 baseline tonnage data, with projections for 2028 reflecting anticipated growth and associated financial obligations. The surcharge for 2028 will be established based on the Authority's projected budget, including added capital and operational costs.

Table 13. Surcharge by Municipality

ILA Members	DATA YEAR			
	2026 Population	2026 Contribution	2027 Population	2027 Contribution
Broward Municipal Services District	17,233	$20,831	15,655	$18,458
Coconut Creek	57,702	$69,751	64,084	$75,559
Cooper City	35,024	$42,337	35,965	$42,405
Coral Springs	135,191	$163,420	135,156	$159,358
Dania Beach	33,746	$40,792	35,066	$41,345
Davie	107,410	$129,838	107,802	$127,106
Deerfield Beach	87,402	$105,652	98,758	$116,442
Fort Lauderdale	189,583	$229,170	194,442	$229,260
Hillsboro Beach	1,971	$2,383	2,288	$2,698
Hollywood	155,038	$187,411	153,274	$180,720
Lauderdale Lakes	36,659	$44,314	34,895	$41,144
Lauderdale-by-the-Sea	6,181	$7,472	6,729	$7,934
Lauderhill	74,751	$90,360	79,712	$93,986
Lazy Lake	33	$40	20	$24
Lighthouse Point	10,462	$12,647	10,666	$12,576
Margate	58,544	$70,768	58,858	$69,398
Miramar	139,500	$168,629	137,530	$162,157
North Lauderdale	44,853	$54,219	42,166	$49,717
Oakland Park	46,039	$55,652	46,515	$54,845
Parkland	38,342	$46,348	39,752	$46,871
Pembroke Park	6,105	$7,380	7,060	$8,324
Plantation	98,431	$118,984	103,767	$122,349
Sea Ranch Lakes	535	$647	289	$340
Southwest Ranches	7,796	$9,424	8,459	$9,974
Sunrise	97,899	$118,341	107,986	$127,323
Tamarac	73,130	$88,400	74,371	$87,688
West Park	15,218	$18,396	14,167	$16,704
Weston	68,249	$82,500	68,230	$80,448
Wilton Manors	11,495	$13,895	12,591	$14,845
TOTALS	**1,654,522**	**$2,000,000**	**1,696,255**	**$2,000,000**

In addition, during Phase I, the Authority intends to prepare and issue solicitations to secure binding prices for yard trash and recyclable materials processing, and disposal (including waste-to-energy) fees (i.e., tipping fees) for each ton of waste received. For planning purposes, and to align with Article 24 of the Facilities Amendment, **Table 14** presents the established Maximum Service Charges. This maximum cost can be used for planning, and greater clarity can be gained by developing and issuing solicitations for materials processing and disposal.

Table 14. Materials Processing Maximum Service Charge

Material Type	Estimated Tipping Fee Cost Range [4] (per ton)
Recyclable Materials [1]	$110.00
Yard Trash (for Disposal)	$52.56
Yard Trash (for Beneficial Use)	$80.00
Solid Waste Disposal (Class I Waste) [2]	$57.49
Solid Waste Disposal (Class III Waste) [3]	$52.56

NOTES:

1. Does not reflect a cost offset based on the Average Market Value of the recyclable materials sold to market.
2. "Class I Waste" means solid waste that is not hazardous waste, and that is not prohibited from disposal in a lined landfill under rule 62-701.300, F.A.C.
3. "Class III Waste" means yard trash, construction and demolition debris, processed tires, asbestos, carpet, cardboard, paper, glass, plastic, furniture other than appliances, or other materials approved by the Department, that are not expected to produce leachate that poses a threat to public health or the environment.
4. Maximum service charges as of October 1, 2025. These charges will escalate on an annual basis in accordance with the established annual revenue adjustment, at a maximum, that aligns with the PPI-SW, which reflects industry-specific cost escalation for solid waste collection, reported on a non-seasonally adjusted basis.

Through flow control and economies of scale, the Authority will secure binding competitive rates that are expected to be lower than those currently paid under existing contracts. The pricing achieved through a competitive procurement process is anticipated to serve as a cost offset against the rates currently paid by ILA members under their current collection agreements.

As the Authority matures and its operational framework becomes more established, it will also be necessary to align the collection agreements across ILA member municipalities. Currently, these agreements vary in structure and terms across the membership. Standardizing and harmonizing these agreements over time will be essential to ensuring consistent service delivery, equitable cost allocation, and the administrative efficiency required to manage the Authority as a unified entity.

This implementation plan will provide the Authority with a clear roadmap to fulfill its mission of developing and implementing a long-term, environmentally sustainable, transparent, innovative, and economically efficient plan for waste disposal, reduction, recycling, and reuse in Broward County.