Recycling in Florida

Karen Moore
Division of Waste Management
Florida Department of Environmental Protection

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FLORIDA'S RECYCLING GOALS

SECTION 403.706, FLORIDA STATUTES

- Established the 75% recycling goal for municipal solid waste by 2020.
- Directed all counties to report their recycling progress annually.
- Directed counties, over 100,000 population, to develop a plan if the county does not achieve the interim recycling goal.
- Directed the state to identify additional programs or statutory changes if the interim recycling goals are not met, e.g., Florida and 2020's 75% recycling report.

IMPLICATIONS OF THE 75% RECYCLING GOAL

Methodology change to include heavier materials, i.e., construction and demolition debris.

More recyclable material included in programs; i.e., single stream recycling.

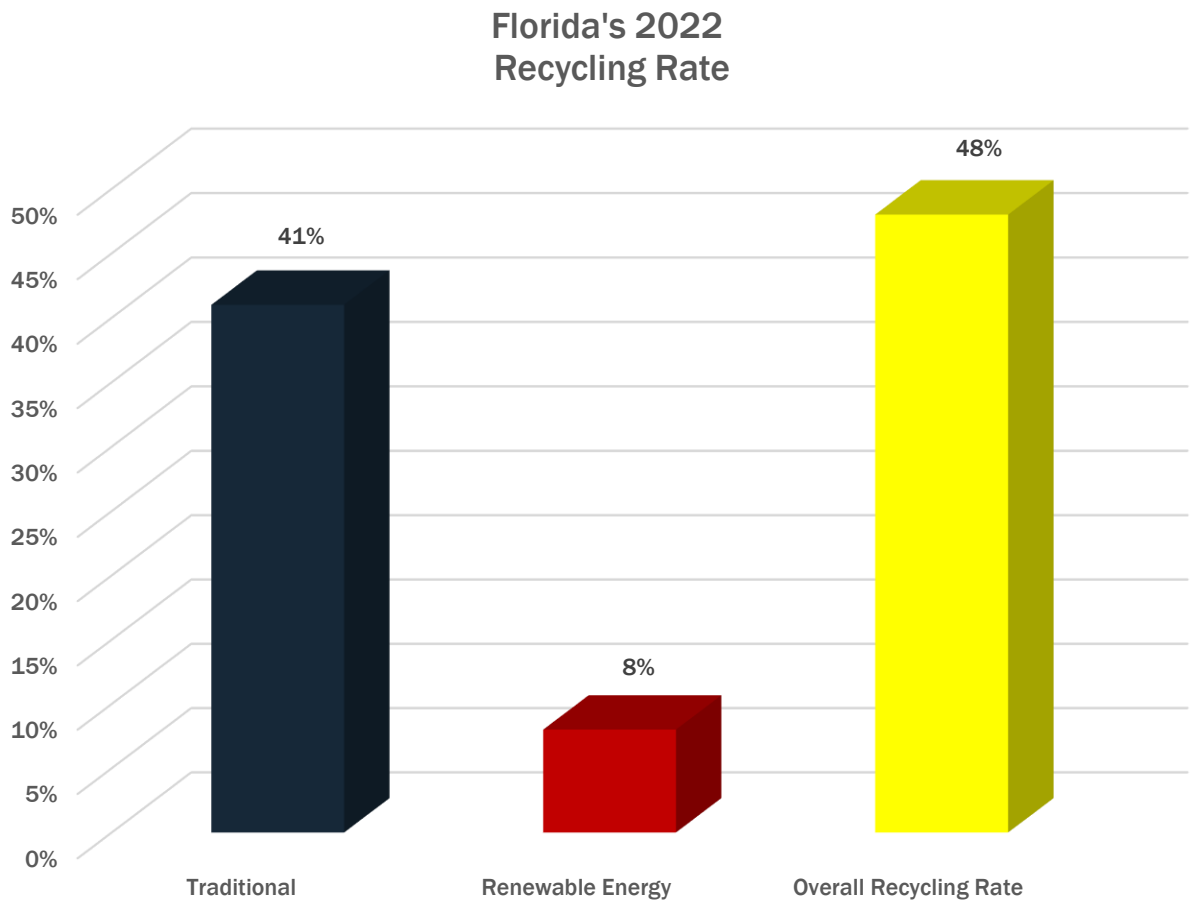
Additional recycling credits:

- Renewable energy (WTE, Landfill Gas).
- Landfill cover.

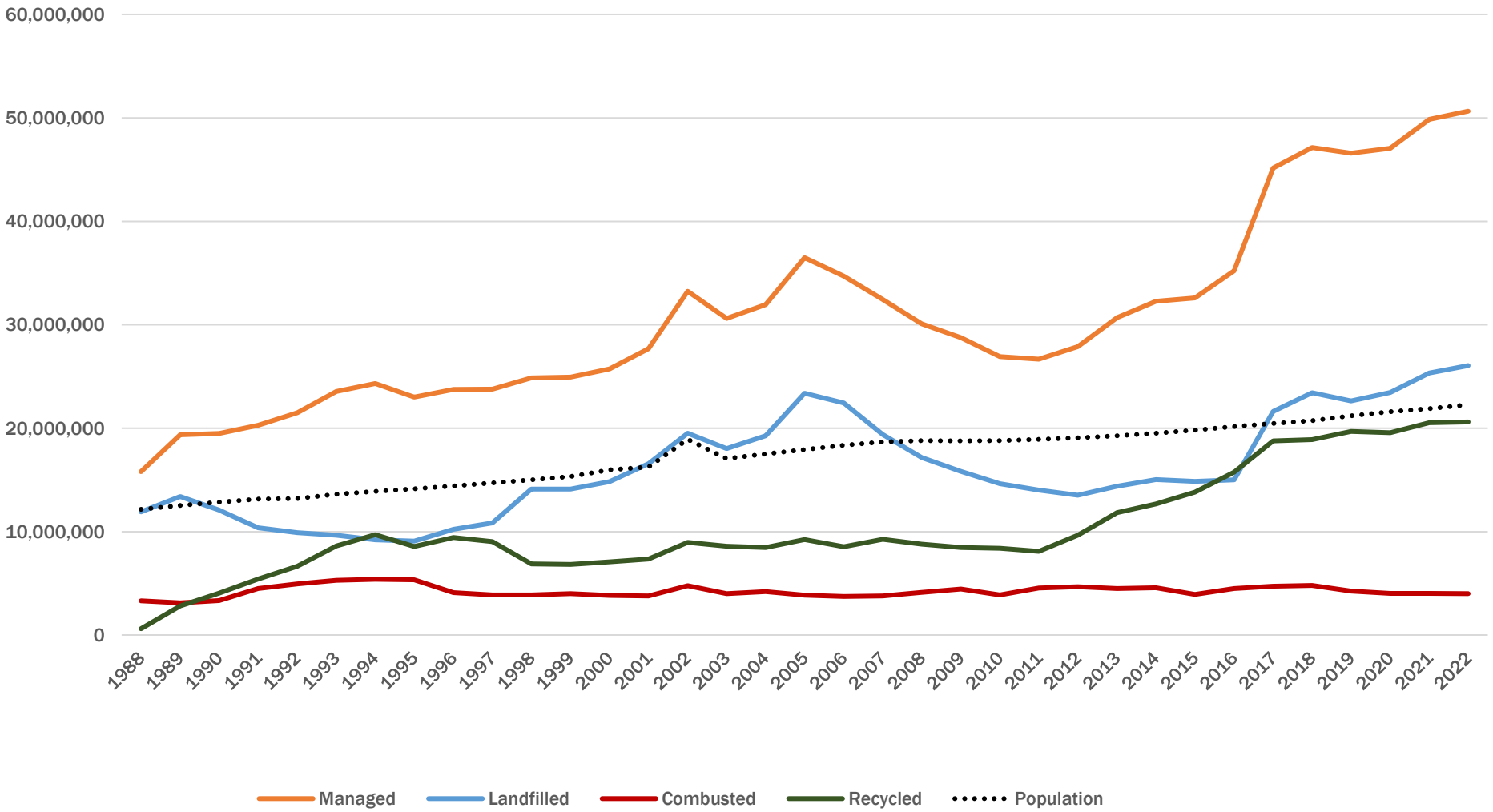
FLORIDA'S RECYCLING RATE

The statewide overall recycling rate, including renewable energy recycling credits, decreased from 49% (2021) to 48% (2022).

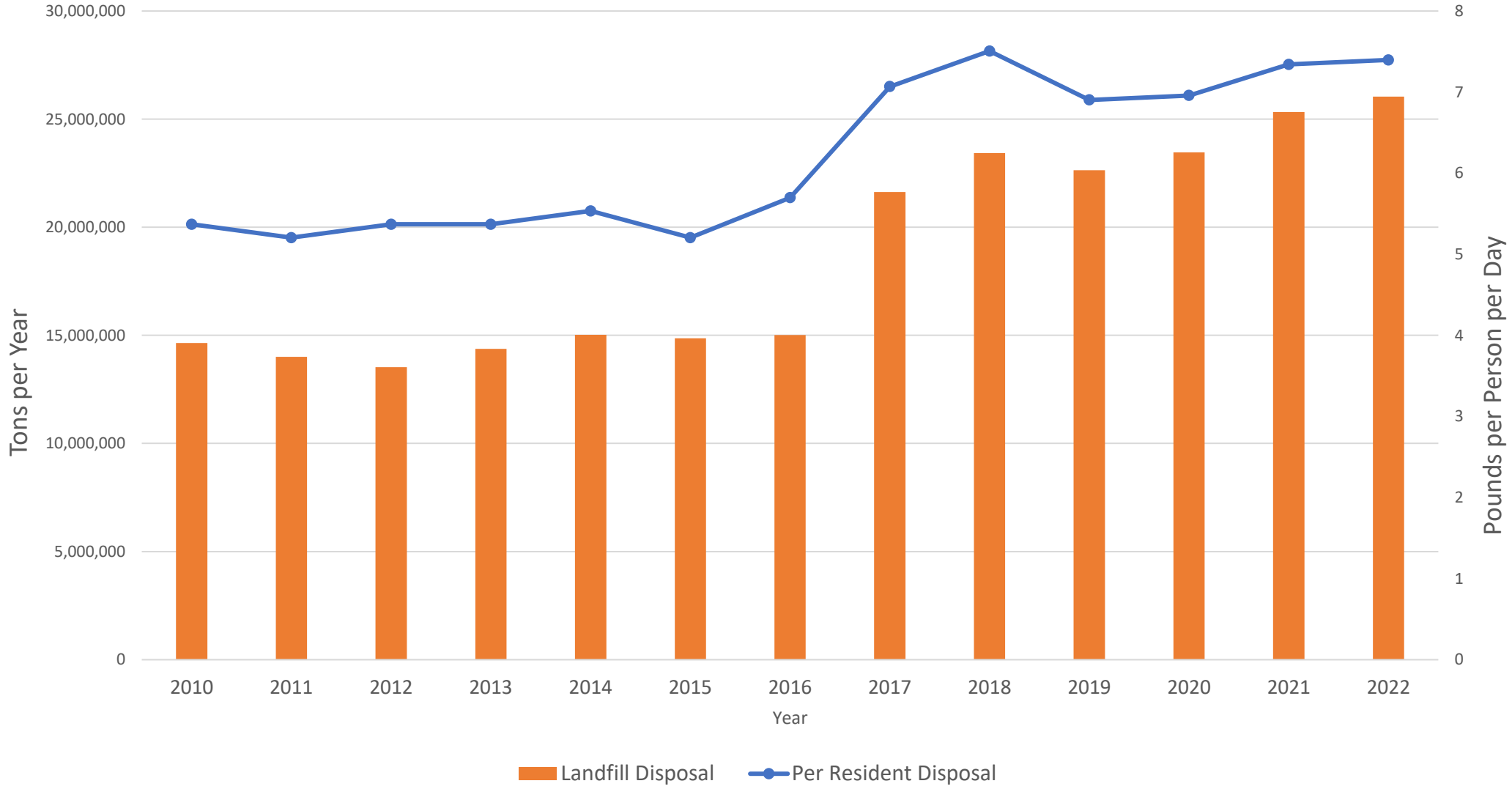
The statewide traditional recycling rate, excluding renewable energy recycling credits, did not change from 2021 to 2022 and remains at 41%.



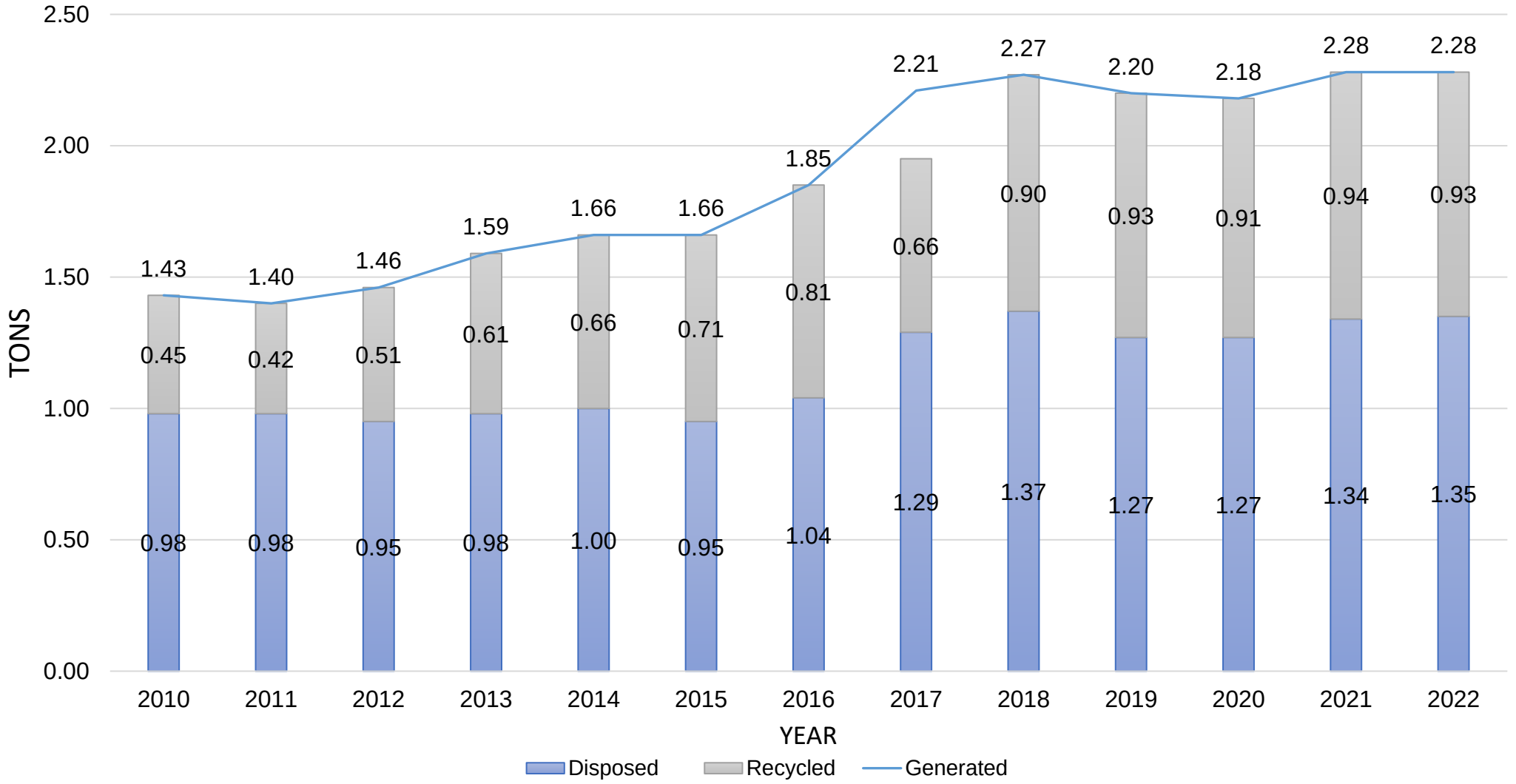
SOLID WASTE MANAGEMENT IN FLORIDA 1988-2022



FLORIDA'S PER RESIDENT DISPOSAL AND TOTAL DISPOSAL 2010 TO 2022



FLORIDA'S MUNICIPAL SOLID WASTE RECYCLING AND DISPOSAL PER CAPITA



CLASS I LANDFILL CAPACITY

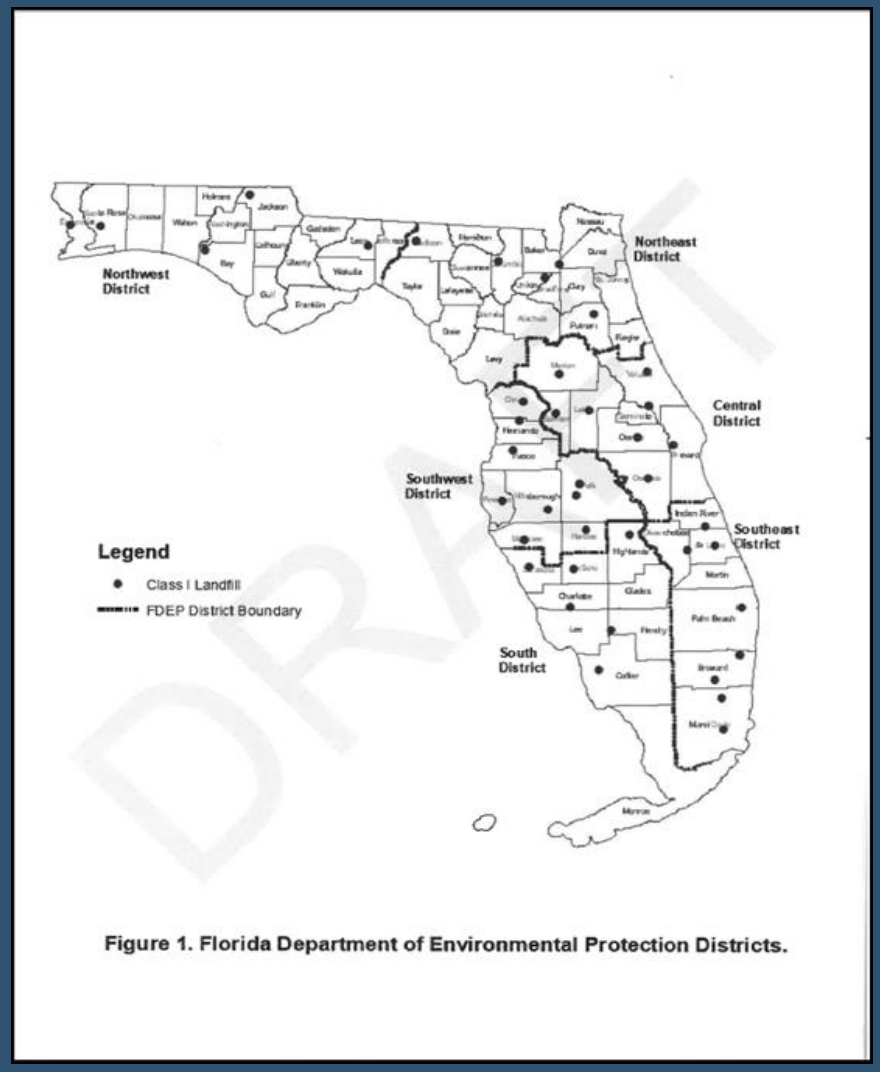


Figure 1. Florida Department of Environmental Protection Districts.

Statewide Class I Landfill Capacity by District

The FDEP is comprised of six districts. Each district is characterized by different populations, number of disposal facilities, capacities, and estimated remaining life estimates. The stated remaining capacity is based on the permitted capacity for each facility within a district. Refer to the table below which summarizes the featured information for each district.

District	Number of Class I Landfills	Permitted Remaining Capacity, CY	Disposal Volume, CY/year	Remaining Life[1], years
Central	8	112,000,000	6.900,000	16
Northeast	5	69,000,000	2,000,000	35
Northwest	4	44,000,000	1,900,000	23
South	6	24,000,000	1,300,000	18
Southeast	8	139,000,000	5,800,000	24
Southwest	9	69,000,000	4,200,000	16

[1] As of June 2021.

Source: Compilation of individual facility data presented in annual remaining life/capacity estimate reports. Refer to the summary tables for each district for a listing of the facilities and associated capacities and disposal volumes that comprise the total values presented in this table. (Note: Values are rounded).

WASTE & RECYCLING CAPACITY

Capacity

1. Natural Disasters
   - Hurricanes.
   - Floods.
2. Tourism
   - Visit Florida estimated over 137 million visitors in 2022.
   - Florida has 22 million residents.
   - How much waste is tourism contributing?
3. Population Growth
   - Development.

GRANTS

EPA Grants – Solid Waste Infrastructure for Recycling (SWIFR) Grants for States and Territories

- Non-Competitive Grants to support long-term recycling planning and data collection.

- Funding to be used for:
  - Capacity Analysis.
  - Away from Home Waste and Recycling Study.
  - Update WasteCalc.

STATUS OF DIVISION OF WASTE MANAGEMENT RULES

Rule #	Rule Title	Current Schedule	Purpose of Rule Making
62-701.804	Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments	• Effective June 9, 2022	• Adopt federal rules for management of Coal Combustion Residuals
62-701.805	Coal Combustion Residuals Facility Permitting Requirements and Procedures	• Effective August 16, 2022	• Establish permitting requirements and procedures consistent with the requirements in 62-701.804.
62-701.900	Forms	• Effective August 16, 2022	• Establish CCR permit application form consistent with 62-701.805.
62-705	Grease Waste Removal and Disposal	• 1st workshop was March 22, 2023 • Anticipating a 2nd workshop – late summer or early fall	• Directed by the legislature, Section 403.0741 F.S.

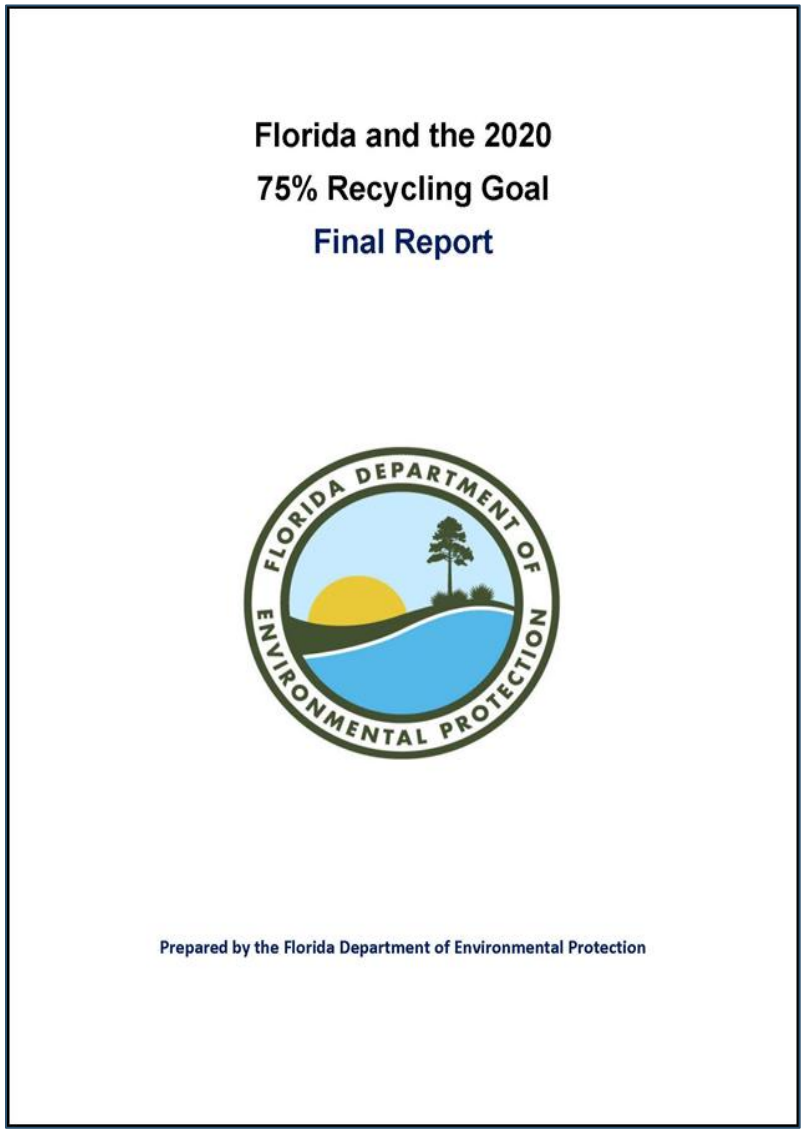
STATUS OF DIVISION OF WASTE MANAGEMENT RULES

Rule #	Rule Title	Current Schedule	Purpose of Rule Making
62-709	Criteria for Organics Processing and Recycling Facilities	• Draft rule in review at program level • Target for Notice of Rule Development this summer	• Clarify and update site management requirements for SOPFs and compost facilities.
62-710	Used Oil Management	• Rule workshop held December 12, 2022 • Addressing comments from regulated community on draft rule • Target date to submit NOPR package to leadership-July 2023	• Clarify use of transporter requirements. • Provide container requirements. • Clarify reporting and record keeping. • Clarify management of used oil filters. • Clarify that generators must use currently registered used oil transporters.
62-730	Hazardous Waste	• Fast track is complete Effective April 21, 2023 • Notification changes target date to submit NOPR package to leadership – July 2023	• Fast track adoption of federal rules on Canada Specific Hazardous Waste Import-Export Recovery and Disposal operation codes. • Changes to notification form concurrent with 62-710 and 62-737.
62-737	Management of Spent Mercury-Containing Lamps and Devices Destined for Recycling	• Notification changes. Target date to submit NOPR package to leadership – July 2023	• Changes to notification form concurrent with 62-710 and 62-730.

STATUS OF DIVISION OF WASTE MANAGEMENT RULES

Rule #	Rule Title	Current Schedule	Purpose of Rule Making
62-761	Underground Storage Tank Systems	• JAPC provided comments on 4/24/2023 • Certification Package filed with Department of State on June 5 • The Rule Chapter amendments will be effective on June 25	• Updated reference guidelines. • Provided clarifying language throughout. • Allowing one year for day tanks to come into compliance. • Annual testing timely if within the month the test is due. • New requirement – annual visual inspection of ASTs.
62-762	Aboveground Storage Tank Systems	• JAPC provided comments on 4/24/2023 • Certification Package filed with Department of State on June 5. The Rule Chapter amendments will be effective on June 25	• Updated reference guidelines. • Provided clarifying language throughout. • Allowing one year for day tanks to come into compliance. • Annual testing timely if within the month the test is due. • New requirement – annual visual inspection of ASTs.

FUTURE RECYCLING CONSIDERATIONS


Florida and the 2020
75% Recycling Goal
Final Report

Prepared by the Florida Department of Environmental Protection

RECYCLING GOAL FINAL REPORT
https://floridadep.gov/waste/permitting-compliance-assistance/documents/75-recycling-goal-final-report

FUTURE RECYCLING CONSIDERATIONS

Convene a technical assistance group to develop a comprehensive waste reduction and recycling plan.

1. Identify recycling goals using both sustainable materials management and waste diversion concepts.

2. Propose a three-year plan to implement:
    - Recycling materials market development.
    - Recycling education and outreach.
    - Local government recycling assistance.

3. Propose statutory language to implement the revised recycling goals and strategies.

FUTURE CHALLENGES - EMERGING WASTE STREAMS

Solar Panels

- Estimated number of PV panels in service for 2023 – 25.6 million.
- Solar panels are not considered electronic devices or universal waste in Florida.
  - Solar panel wastes could include heavy metals.
  - Older silicon panels can be hazardous due to lead solder.
- Limited recycling markets.

FUTURE CHALLENGES - EMERGING WASTE STREAMS

Electronic Waste

- https://floridadep.gov/waste/permitting-compliance-assistance/content/electronics-waste
- Discarded electronic devices are regulated under state and federal law.
  - Chapter 403, F.S.
  - Chapter 62-730, F.A.C.
- A hazardous waste determination must be made when disposing of these wastes.
  - Often contain heavy metals.
  - Household users are exempt.
- Estimated seven “certified” electronic recyclers in FL.
  - R2.
  - E-Stewards.
- Limited recycling markets.

FUTURE CHALLENGES - EMERGING WASTE STREAMS

Electric Vehicle Lithium-Ion Batteries

- USEPA clarified that most lithium-ion batteries are likely hazardous waste at end-of-life.
- DEP classifies EV batteries as hazardous waste and must be managed and transported as such.
- Considered to be Ignitable (D001) and Reactive (D003) and may be a fire hazard if severally damaged.
- EV batteries may be managed under RCRA's streamlined Universal Waste Rule.
- EV batteries removed at a business such as a dealership, scrap yard or auto repair facility are not household hazardous waste.
- 49 CFR Subchapter C covers the transportation of hazardous materials regulation requirements for lithium batteries.

OTHER EMERGING WASTE STREAMS

Electric Vehicle Lithium-Ion Batteries

- EV batteries can be recycled to conserve resources and reduce the need to mine critical minerals such as cobalt and lithium.
- The manufacturing and recycling opportunities for EV batteries is expected to grow significantly over the next several years to meet the growing demand for EV powered vehicles.
- The Bipartisan Infrastructure Law of 2021 directed EPA to develop BMPs for the collection and management of batteries for recycling.

FUTURE OF RECYCLING

Advanced/Chemical Recycling – Section 403.703, Florida Statutes

- Recycling - means any **process** by which solid waste, or materials that would otherwise become solid waste, are collected, separated, or **processed** and reused or returned to use in the form of raw materials or intermediate or final products. **Such raw materials or intermediate or final products include, but are not limited to, crude oil, fuels, and fuel substitutes.**

- Processing - means any technique designed to change the physical, **chemical**, or biological character or composition of any solid waste so as to render it safe for transport; amenable to recovery, storage, or **recycling**; safe for disposal; or reduced in volume or concentration.

FUTURE OF RECYCLING

Examples of Chemical Recycling

- Gasification – post-use polymers are heated and converted to synthesis gas in an oxygen-deficient atmosphere, and then converted to crude oil, fuels, or chemical feedstocks.
- Pyrolysis - process through which post-use polymers are heated in the absence of oxygen until melted and thermally decomposed, and then cooled, condensed, and converted to any of the following:
- (a) Crude oil, diesel, gasoline, home heating oil, or another fuel.
- (b) Feedstocks.
- (c) Diesel and gasoline blendstocks.
- (d) Chemicals, waxes, or lubricants.
- (e) Other raw materials or intermediate or final products.

THANK YOU

Karen Moore
Waste Reduction, Recycling & Registration Program
Environmental Administrator
Karen.S.Moore@FloridaDEP.gov
850-245-8864

For more information on recycling in Florida, visit:
FloridaDEP.gov/waste/waste-reduction/content/recycling