

# **ENHANCING FLORIDA'S RECYCLING PROGRAMS**

**FDEP Agreement Number: SWIFR1**

## **Deliverable 1 Waste Management System Capacity Analysis May 2025**

Submitted to

State of Florida Department of Environmental Protection  
2600 Blairstone Road, Tallahassee FL 32399

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## **ABBREVIATIONS**

BEBR	Bureau of Economic and Business Research
CCA	Chromated Copper Arsenate
CD	Central District
CDD	Construction and Demolition Debris
CFR	Code of Federal Regulations
CY	Cubic Yards
C&D	Construction and Demolition
DDMS	Disaster Debris Management Sites
ECHO	Enforcement and Compliance History Online
EPA	Environmental Protection Agency
F.A.C	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FL	Florida
F.S.	Florida Statutes
FY	Fiscal Year
HHV	Higher Heating Value
HHW	Household Hazardous Waste
HR	Hour
LBs	Pounds
LF	Landfill
MMBtu	Metric Million British Thermal Unit
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
MW	Megawatt
NA	Not Applicable
SWMR	Solid Waste Management Report

## **EXECUTIVE SUMMARY**

### **Introduction**

Florida's Solid Waste Infrastructure for Recycling (SWIFR) grant aims to identify opportunities to improve solid waste management and increase resource recovery to align with state and national recycling goals. As such, the Florida Department of Environmental Protection (FDEP) has collaborated with researchers at the University of Florida, Florida Polytechnic University, and Florida Atlantic University to study the capacity of Florida's infrastructure for solid waste management and resource recovery. Included in the analysis are disposal facilities (e.g., landfills, ash monofills, yard trash disposal facilities) and processing facilities (e.g., waste-to-energy facilities, materials recovery facilities, and source separated organics processing facilities).

The study relies on publicly reported data, conversations with facility operators, and an analysis of historic disposal and recycling trends to estimate the capacity of the current system, while also predicting the need for future infrastructure investments to accommodate Florida's growing population. The remaining airspace in disposal facilities and the annual material throughput in processing facilities are both estimated as part of this study. Since the method to evaluate capacity relies on a synthesis of publicly reported data and conversations with facility operators, it is understood that the analysis carries a degree of uncertainty. Further, while historic trends were used to estimate future capacity consumption, they may not account for unforeseeable events which influence waste generation (e.g., global pandemic, natural disaster) or disposal (e.g., loss of infrastructure).

### **Class I Landfills**

Class I landfills are designated for the disposal of non-hazardous solid wastes originating from domestic, commercial, industrial, and institutional sources. There are 39 such facilities which have active permits and can accept waste, and approximately 20.9 million tons were disposed of in Class I landfills state-wide in 2023. As of January 1<sup>st</sup>, 2025, it is estimated that the state's Class I landfills have the capacity to accept approximately 470.2 million tons of waste within the currently permitted airspace. About one-third of the permitted airspace has already been constructed, with Florida estimated to have approximately 164.1 million tons of constructed Class I landfill capacity remaining as of January 1<sup>st</sup>, 2025.

### **Waste-to-Energy Facilities**

Florida has nine active waste-to-energy facilities which process waste for disposal and produce electricity to power homes and businesses. While these nine facilities are designed to process approximately 6 million tons of waste per year, actual processing throughput in the plants is practically limited by operational considerations such as the heating value of waste and downtime for maintenance. Conversations with facility operators have revealed that the true operating capacity of the plants is closer to 5.5

million tons per year. For reference, approximately 20.9 million tons of waste were disposed of in Class I landfills in 2023, so approximately four times as much waste was disposed of in Class I landfills as can be processed in the state's waste-to-energy facilities. The study found that there is limited ability to expand processing capacity within the state's existing facilities, so siting and construction of new infrastructure will be needed to increase waste-to-energy capacity in Florida.

## **Waste-to-Energy Ash Monofills**

Waste-to-energy facilities generate ash residue as a by-product of solid waste combustion, and this material can be disposed of either in Class I landfills or waste-to-energy ash monofills. Florida has four waste-to-energy ash monofills that are active and can accept ash residue, with each facility serving as a disposal area for the accompanying waste-to-energy facility. As of January 1<sup>st</sup>, 2025, it is estimated that the four waste-to-energy facilities have the capacity to accept approximately 7.3 million tons of ash residue in the currently permitted airspace. Of the 7.3 million tons of remaining capacity, approximately 5.7 million tons of capacity have already been constructed.

## **Class III Landfills**

Class III landfills are designated for the acceptance of Class III waste, which includes material such as yard trash, construction and demolition debris, and furniture that are not expected to produce leachate that threatens public health or the environment. There are 22 Class III landfills which are active and accept waste from the public, and approximately 4.7 million tons were disposed of in Class III landfills state-wide in 2023. As of January 1<sup>st</sup>, 2025, it is estimated that the 22 Class III landfills have the capacity to accept approximately 77.0 million tons of waste within the currently permitted airspace. About one-fifth of the permitted airspace has already been constructed, with Florida estimated to have approximately 13.2 million tons of constructed Class III landfill capacity remaining as of January 1<sup>st</sup>, 2025.

## **Construction and Demolition (C&D) Debris Disposal Facilities**

C&D debris disposal facilities are designated for the disposal of inert, non-putrescible materials originating from the construction and demolition of structures, such as concrete, wood, drywall, and asphalt. Florida has 63 C&D debris disposal facilities, many of which are privately owned and operated. As of 2024, it is estimated that these 63 facilities have the capacity to accept approximately 51 million tons of C&D debris within the currently constructed airspace. Between 2018 and 2023, C&D debris disposal facilities accepted approximately 5 million tons of waste annually, with the range fluctuating between 4.5 and 5.2 million tons/year.

## **C&D Materials Recovery Facility (MRF)**

C&D MRFs recycle materials originating from construction, demolition, and renovation activities. These facilities employ activities such as sorting, crushing, grinding, and processing materials into forms that can be reused in new construction projects or recycled into new products. Florida has 38 C&D MRFs with active permits, and these facilities recycled approximately 1.2 million tons of material in 2023. Conversations with facility operators have revealed that C&D MRFs with mechanical processing lines are generally not operating at full capacity, with typical estimates placing current throughput at around 70–75% of their total capability. Despite constraints from difficult-to-market materials, competition with landfill disposal, and contamination from lack of source separation, operators expressed confidence that their facilities could scale up throughput with relatively modest changes—such as cleaner incoming material, stronger demand for recovered commodities, or incremental operational adjustments like expanded shifts

### **Class I and III MRFs**

Florida has 39 actively permitted Class I and III MRFs, which are designated for the extraction of recyclable materials from solid waste. It is estimated that Florida's Class I and III MRFs have the capacity to accept and process over 7 million tons of waste annually. However, 24 facilities reported recycled C&D debris tonnages in 2023, totaling approximately 1.2 million tons. This represents 17% of the combined average annual processing capacity reported by facilities included in the analysis and suggests that these facilities have the physical and operational potential to process more material than is currently being recovered.

## **Recovered Materials Processing Facilities (RMPFs)**

RMPFs are designed to process recyclable materials that have already been recovered from the waste stream, such as paper, plastics, metals, and glass. For materials commonly found in the curbside residential and commercial recycling streams, it is estimated that RMPFs recovered and recycled approximately 2.3 million tons in 2023. Conversations with 16 single and dual stream recycling operators revealed that these facilities have a combined operational capacity to accept approximately 1.4 million tons of materials per year. Operators in Central and South Florida noted that facilities in these regions are generally operating at capacity, and that expansion of existing plants or investment in new infrastructure are necessary to accommodate an increased volume of recyclables in Florida.

## **Yard Trash Disposal Facilities**

Yard trash disposal facilities are designated for the off-site disposal of yard trash and land clearing debris. Disposal generally consists of placement in a pit or pile where the organic fraction is allowed to decompose naturally. There are 111 yard trash disposal facilities in Florida, 85 of which are located within the FDEP Northwest District. The

concentration of facilities in the Northwest District indicates that there may be opportunities to improve resource recovery for yard trash in this region of the state, since yard trash and land clearing debris undergo little or no processing prior to disposal.

## **Source Separated Organics Processing Facilities (SOPFs)**

SOPFs are facilities which process and remove organic waste (e.g., yard trash, manure, vegetative waste) from the site for beneficial use (e.g., landfill cover, fuel, mulch, compost), off-site disposal, or transfer to a different processing facility. There are 293 facilities in Florida which have an active SOPF permit or registration, with yard trash being the primary waste managed at these facilities. In 2023, SOPFs received an estimated 3.4 million tons of waste, and beneficial use was the most common method of removing material from each site. It is estimated that the material managed by SOPFs will exceed 3.5 million tons annually by 2030 and 4 million tons annually by 2045, based on median population projections in Florida.

## **Household Hazardous Waste Collection Facilities**

HHW collection programs are designed to manage common household materials that exhibit hazardous characteristics such as ignitability, corrosivity, reactivity, or toxicity. All 67 counties in Florida offer residents access to HHW services either through permanent collection centers or scheduled mobile collection events. It is estimated that approximately ten thousand tons of HHW were received at Florida's county-level collection centers in 2023. Conversations with facility operators have revealed that most facilities have sufficient capacity to manage incoming HHW, however, a few facilities that are currently operating at or near capacity are exploring expansion options.

## **Used Oil Recycling**

Used oil recycling facilities serve to collect, store, and process used oil for reuse, including re-refining into lubricants, processing into fuel oils, or other forms of beneficial recovery. There are 18 used oil recycling facilities in Florida, which are estimated to have capacity to manage over 196.8 million gallons of used oil annually. Therefore, even if all the transported used oil were processed in-state, Florida's estimated total processing capacity would still be sufficient to manage the entire volume. Synthesis of available data and operator feedback reveals that Florida's used oil recycling system appears to have physical capacity to manage existing and even increased volumes of material.

## **Disposal and Processing Capacity Summarized**

The tables below display the display the disposal and processing capacity within Florida's solid waste management system. For disposal facilities, it is important to note that the scope of this analysis includes the constructed and permitted capacity remaining in each facility as of January 1<sup>st</sup>, 2025. Many of the sites in the state have

land surrounding their existing disposal area which could potentially be permitted for disposal in the future. Therefore, permitting and construction of new disposal areas are expected to continue in the future, and this report indicates areas where upcoming infrastructure investments are likely to be made. Among processing facilities, waste-to-energy facilities and single and dual stream RMPFs are currently operating at capacity. So, to increase the quantity of material combusted or recycling in these facilities, investments will be needed to expand existing facilities or construct new infrastructure.

Disposal Facility	Remaining Permitted Capacity (tons)	Remaining Constructed Capacity (tons)
Class I Landfill	470.2 M	164.1 M
Waste-to-Energy Ash Monofill	7.3 M	5.8 M
Class III Landfill	77.0 M	13.2 M
C&D Debris Disposal Facility	----	51.3 M
Yard Trash Disposal Facility	----	----

Processing Facility	Annual Processing Capacity	Operating at Capacity?
Waste-to-Energy Facility	5.5 M tons/year	Y
C&D MRF	> 5 M tons/year	N
Class I and III MRF	> 7 M tons/year	N
Single and Dual Stream RMPFs	1.4 M tons/year	Y
SOPFs	3.4 M tons in 2023	N
HHW Collection Facilities	10.2 K tons in 2023	N
Used Oil	> 196 M gal/year	N

# 1 INTRODUCTION

## 1.1 Project Description

Florida's Solid Waste Infrastructure for Recycling (SWIFR) project is a statewide initiative aimed at evaluating and strengthening the resilience of Florida's solid waste management system. Led by the Florida Department of Environmental Protection (FDEP) in collaboration with the University of Florida, Florida Polytechnic University, and Florida Atlantic University, this effort aligns with the state and national policy goals to improve waste capacity, recycling efficiency and infrastructure resilience. A cornerstone of this effort is the Statewide Capacity Study, which evaluates the existing capacity of Florida's facilities for solid waste management and resource recovery, including landfills, waste-to-energy (WTE) facilities, material recovery facilities (MRFs), yard trash disposal facilities, source-separated organics processing facilities (SOPFs), used oil recycling facilities, and household hazardous waste (HHW) programs. A list of facilities actively permitted by FDEP is included in **Figure 1-1**, with the facilities of interest for this study highlighted yellow. By examining these systems, the study aims to determine the state's ability to manage current and future waste streams while identifying capacity shortfalls and opportunities for infrastructure development.

Filter By		SHOW ONLY ACTIVE SITES							▼	Filter	Clear
CLASS CODE	CLASS DESCRIPTION	CD	NED	NWD	SD	SED	SWD	TOTAL			
100	CLASS I LANDFILL	8	5	5	7	8	9	42			
300	CLASS III LANDFILL	10	7	6	2	4	5	34			
310	YARD TRASH DISPOSAL FACILITY	2	9	87	8	1	5	112			
330	SOURCE-SEPARATED ORGANICS PROC. FAC. (SOPF)	65	45	28	45	49	57	289			
420	WTE ASH MONOFILL	0	0	1	1	2	1	5			
421	COAL ASH MONOFILL	1	3	3	0	0	3	10			
500	OTHER DISPOSAL/PROCESSING FACILITY	0	5	3	0	0	0	8			
540	CONSTRUCTION/DEMOLITION DEBRIS DISPOSAL	13	12	18	4	5	11	63			
545	MATERIAL RECOVERY FACILITY - C & D	6	5	0	6	24	4	45			
595	UNAUTHORIZED DISPOSAL/PROCESSING-COMPLAINT	0	1	0	0	0	0	1			
600	TREATMENT FACILITY	0	0	0	0	0	1	1			
610	SOLID WASTE COMBUSTOR	0	0	0	1	0	0	1			
632	SOIL TREATMENT	0	0	0	1	0	1	2			
700	VOLUME REDUCTION/SHREDDER	0	0	0	0	2	0	2			
705	CONTAINER TO CONTAINER OPERATION	1	2	7	3	3	5	21			
710	WASTE TIRE PROCESSING FACILITY	12	4	1	3	13	12	45			
722	WASTE TIRE MOBILE PROCESSOR	0	1	0	0	2	1	4			
740	COMPOSTING FACILITY	1	1	1	0	1	0	4			
749	OTHER ORGANICS COMPOSTING FACILITY	0	0	0	0	1	0	1			
750	TRANSFER STATION	20	14	11	17	28	15	105			
751	WASTE TIRE COLLECTION CENTER	13	16	9	5	6	7	56			
754	WASTE TIRE COLLECTOR	143	54	55	71	126	314	763			
810	MATERIAL RECOVERY FACILITY - CLASS I & III	5	1	3	9	7	14	39			
811	USED OIL RECYCLING	3	0	1	0	9	5	18			
820	WASTE TO ENERGY FACILITY	1	0	0	1	4	4	10			
821	ENERGY RECOVERY	0	0	0	0	1	0	1			
900	RECOVERED MATERIALS PROCESSING FACILITY (RMPF)	68	34	33	38	98	73	344			
910	DISASTER DEBRIS MANAGEMENT SITE	99	102	2	54	12	129	398			
ALL	Total of Sites	471	321	274	276	406	676	2424			

**Figure 1-1:** List of actively permitted facilities from the FDEP Solid Waste Universe as of March 17<sup>th</sup>, 2025; facilities highlighted yellow are included in the scope of the Statewide Capacity Study

A key component of this initiative is the regulatory and policy framework that guides waste management in Florida. State statutes, such as Florida Statute (F.S.) 403.705, establish requirements for local governments to ensure adequate waste disposal and recycling programs. Additionally, Florida Administrative Code (F.A.C.) Chapter 62-701 sets permitting and operational standards for solid waste management facilities, ensuring compliance with state environmental goals. These regulations align with national initiatives such as the U.S. Environmental Protection Agency's (EPA) National Recycling Goal of achieving a 50% recycling rate by 2030, as well as broader federal efforts to transition toward a Circular Economy through investments in recycling infrastructure. By leveraging these frameworks, the SWIFR project supports both state and federal objectives in sustainable materials management.

The Statewide Capacity Study is guided by fundamental research questions and objectives, with **Table 1-1** outlining the scope of work tasks. At its core, the study asks: What is the existing capacity of Florida's waste management and recycling facilities, and how will that capacity accommodate projected growth in population and waste generation? In pursuit of this, the study quantifies:

- **Current disposal capacity** – How much constructed and permitted airspace remains in Florida's landfills, C&D debris disposal facilities, and yard trash disposal facilities? This includes an inventory of remaining disposal area volume (in cubic yards or tons), providing a snapshot of how much more waste can be disposed of with today's infrastructure.
- **Current recovery throughput** – How much material can Florida's recycling facilities handle per year compared to the quantity of recyclable or recoverable materials generated? This covers the processing capacity of MRFs (for single and dual stream recyclables, C&D materials, etc.), as well as waste-to-energy facilities, SOPFs, and HHW collection facilities.
- **Future capacity needs** – Given population growth, economic development, and trends in waste generation, when might Florida's existing landfill capacity be exhausted? Will recycling and recovery facilities be sufficient to manage the expected volume of recyclables in the future? By projecting waste generation and comparing it to facility capacities, the study aims to forecast when and where capacity shortfalls could occur if no changes are made.

Ultimately, the Capacity Study is not just an assessment - it is a roadmap for the future of Florida's waste and recycling infrastructure. The findings will inform state and local officials as they plan for facility expansions, regulatory updates, and strategic investments in waste management. By ensuring that Florida has the necessary infrastructure to support sustainable waste management, this study plays a critical role in advancing the state's environmental and economic goals while improving opportunities for resource recovery.

**Table 1-1: Scope of work for the Statewide Capacity Study**

Activity	Scope of Work
1.1	Create a Quality Assurance Project Plan (QAPP) for all data collection and then compile solid waste and recycling data from existing state permits and compliance documents, information maintained by local governments, and contacts with facility operators.
1.2	Estimate the mixed MSW, mixed CDD, single stream recyclables, dual stream recyclables, yard waste, household hazardous waste (HHW), electronic waste, and food waste generation and disposition current and projected for the state.
1.3	Identify the designed maximum capacity of each existing facility (including the potential additional capacity associated with planned facility expansions) and the current capacity consumed.
1.4	Estimate the service area size associated with a facility by identifying the commercial and residential generators that utilize the facility for solid waste management.
1.5	Compile in a dataset the remaining lifetime capacity of all waste management and recycling infrastructure facilities and modify the facility information reported for the 6,200 operating facilities in the Geospatial Open Data Florida Solid Waste Facilities dataset. The dataset was last updated in December 2017; facilities constructed and operated after will be incorporated in the dataset.
1.6	Estimate potential natural disasters (e.g., hurricanes) debris generation and evaluate the existing system's resilience (e.g., existence of backup facilities, overflow plans, resources needed for efficient management, maximizing use of reuse and recycling infrastructure) to the unexpected stress of influxes of waste.

## 1.2 Data Quality and Limitations

To achieve the objectives of the capacity study, the analysis employs a data-driven methodological approach, integrating information from facility permits, compliance reports, and conversations with facility operators. Florida's Solid Waste Universe database serves as a foundational data source, offering insights into facility capacity, utilization rates, and operational status. However, recognizing that some critical data points are not captured within this database, the study also directly engages facility operators to verify existing information and gather additional details whenever available. By incorporating firsthand insights from operators, the study ensures a more accurate and comprehensive assessment of Florida's disposal and recycling infrastructure. Additionally, modeling techniques are applied to project waste generation scenarios and evaluate the resilience of the state's solid waste management system under various conditions. However, the remaining capacities noted in the report are likely to be impacted by any natural disasters (i.e., hurricanes) which produce an influx of debris into Florida's solid waste management system.

Since the analysis relies on a synthesis of publicly available data and information reported by facility operators, it is understood that there is some degree of uncertainty associated with the capacity estimate. Further, projecting waste generation and disposal practices, as well as remaining facility capacity, into the future is based on the best available data and historical trends. However, forecasting methods may not be able to accurately predict future trends or account for unforeseeable events that influence

waste generation (e.g., a global pandemic) or management (e.g., sudden loss of infrastructure).

To minimize uncertainty and improve accuracy in the capacity analysis, multiple data sources (e.g., permit applications, inspection reports, annual quantity reports, site life estimates) were reviewed for consistency. Then, several attempts were made to contact operators at all facilities in the report to verify and complete the capacity information gathered for the analysis. Operators were engaged via phone call, email, virtual meetings, and conferences to participate in the study and facilitate the share of information. Some facilities (e.g., Class I and III landfills, waste-to-energy facilities, recovered materials processing facilities) had a better response rate from operators than others (e.g., yard trash disposal facilities, C&D debris disposal facilities). To minimize uncertainty in waste and capacity projections, multiple growth scenarios were evaluated as part of the analysis.

### **1.3 Report Structure and Outline**

A separate section has been dedicated for every solid waste management facility included in this capacity study, with each section structured to function as a stand-alone document. Therefore, an individual interested in the capacity of a single facility type (e.g., Class I landfills) would be able to reference the dedicated section rather than read through the report in its entirety. Each facility's section follows the same outline, beginning with a *Background* to provide the facility description and context, as well as a *General Overview and Approach* to the method employed for the analysis. The detailed *Methods* and any large data tables employed in the analysis were written into a corresponding *Appendix* for each section.

Where sufficient data was available, the *Results* describe the state-wide capacity, followed by the regional capacity for each FDEP District. This is the case for Class I and III landfills, C&D debris disposal facilities, and recovered materials processing facilities (RPMFs). However, WTE facilities and ash monofills had so few facilities throughout the state that a detailed description of each facility's capacity followed the state-wide analysis because there were not enough data points to aggregate district-wide capacity. Finally, the *Results* for the remaining facilities (i.e., C&D MRFs, Class I and III MRFs, yard trash disposal facilities, SOPFs, HHW facilities, and used oil facilities) only include a statewide analysis because conversations with facility operators revealed that waste management practices and capacity had little variation between regions and that generalizations could be made on a state-wide basis.

## 2 CLASS I LANDFILLS

### 2.1 Background

A Class I landfill is an FDEP designation for an EPA Subtitle D landfill, which is a lined solid waste containment facility permitted to receive non-hazardous solid waste. Solid waste is defined in 62-701.200(107), F.A.C. to include a range of discarded materials originating from domestic, commercial, industrial, and institutional sources. As of April 2025, Florida has 39 permitted Class I landfills which have active permits and can accept waste, including both publicly owned and privately owned facilities. Class I landfills primarily serve as a disposal area for mixed municipal solid waste (MSW) originating in homes and businesses, since there are facilities in the state designed to accept other source-separated waste streams (e.g., construction and demolition debris disposal facilities, biosolids composting facilities, ash monofills).

Excerpt of definition in 62-701.200(107), F.A.C.:

*(107) "Solid waste" means: sludge that is not regulated under the federal Clean Water Act or Clean Air Act, as well as sludge from a waste treatment works, water supply treatment plant, or air pollution control facility; or garbage, rubbish, refuse, special waste, or other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations...*

Per 62-701.500(13)(c), F.A.C., operators or owners of Class I landfills are required to report annually to FDEP the remaining life and capacity (in cubic yards) of landfill airspace for both permitted and constructed areas. There are no formatting or annual reporting date requirements for this information, so the method used to estimate remaining airspace varies among the landfills.

Definition in 62-701.500(13)(c), F.A.C.:

*(13) Recordkeeping. In addition to records and reporting required by other sections of this chapter, the landfill owner or operator shall:*  
*...(c) Maintain an annual estimate of the remaining life and capacity in cubic yards of the existing, constructed landfill and an annual estimate of the life and capacity in cubic yards of other permitted areas not yet constructed. The estimate shall be made and reported annually to the Department.*

Typically, landfill operators conduct annual topographic surveys of the landfill and compare the surveyed elevations to the permitted final landfill elevations to determine the remaining airspace. The date of the airspace estimate therefore depends on the date that the topographic survey is conducted, which varies between facilities. For example, one facility may conduct the topographic survey at the beginning of the calendar year, while another may time the survey to coincide with the beginning of the fiscal year. Operators will combine knowledge of the remaining airspace with information on the annual accepted tonnages, per capita waste generation, population of the service area, density of compacted waste, or airspace consumed between

topographic surveys to predict the years of life remaining for permitted and constructed areas.

## 2.2 General Overview and Approach

Since there is not a standardized format or reporting date for site life estimates, a method was developed to normalize capacity information and allow for comparison in Class I landfills throughout the state. First, information related to capacity, annual waste acceptance, and future landfill expansions were obtained from permitting and reporting information stored on the FDEP Solid Waste Universe (which links to OCULUS) ([https://fdep.dep.state.fl.us/www\\_wacs/Reports/SW\\_Facility\\_Count.asp](https://fdep.dep.state.fl.us/www_wacs/Reports/SW_Facility_Count.asp)). Then, facility operators were contacted to verify the following information: (1) 2023 tons disposed in the Class I landfill, (2) remaining capacity of permitted and constructed airspace, (3) maximum design capacity of permitted airspace (i.e., the sum of permitted capacity consumed and remaining), and (4) the airspace utilization factor for the landfill. The airspace utilization factor is the mass of solid waste that is disposed of in a cubic yard of airspace and is measured as the mass of waste (from scale house records) received over a time interval divided by the volume of airspace consumed in the same interval (from topographic surveys).

Facility operators were also asked about plans for future Class I site expansions beyond the currently permitted airspace (i.e., maximum site life capacity). The general method for normalizing the capacity estimates is depicted graphically in **Figure 2-1**. **Table 2-1** includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis. For the full method used in the analysis, please refer to **Appendix A, Section 1.1.1**.



**Figure 2-1:** Flow chart of general method used to analyze Class I landfill capacity

**Table 2-1:** Summary of data sources and method used to analyze Class I landfill capacity

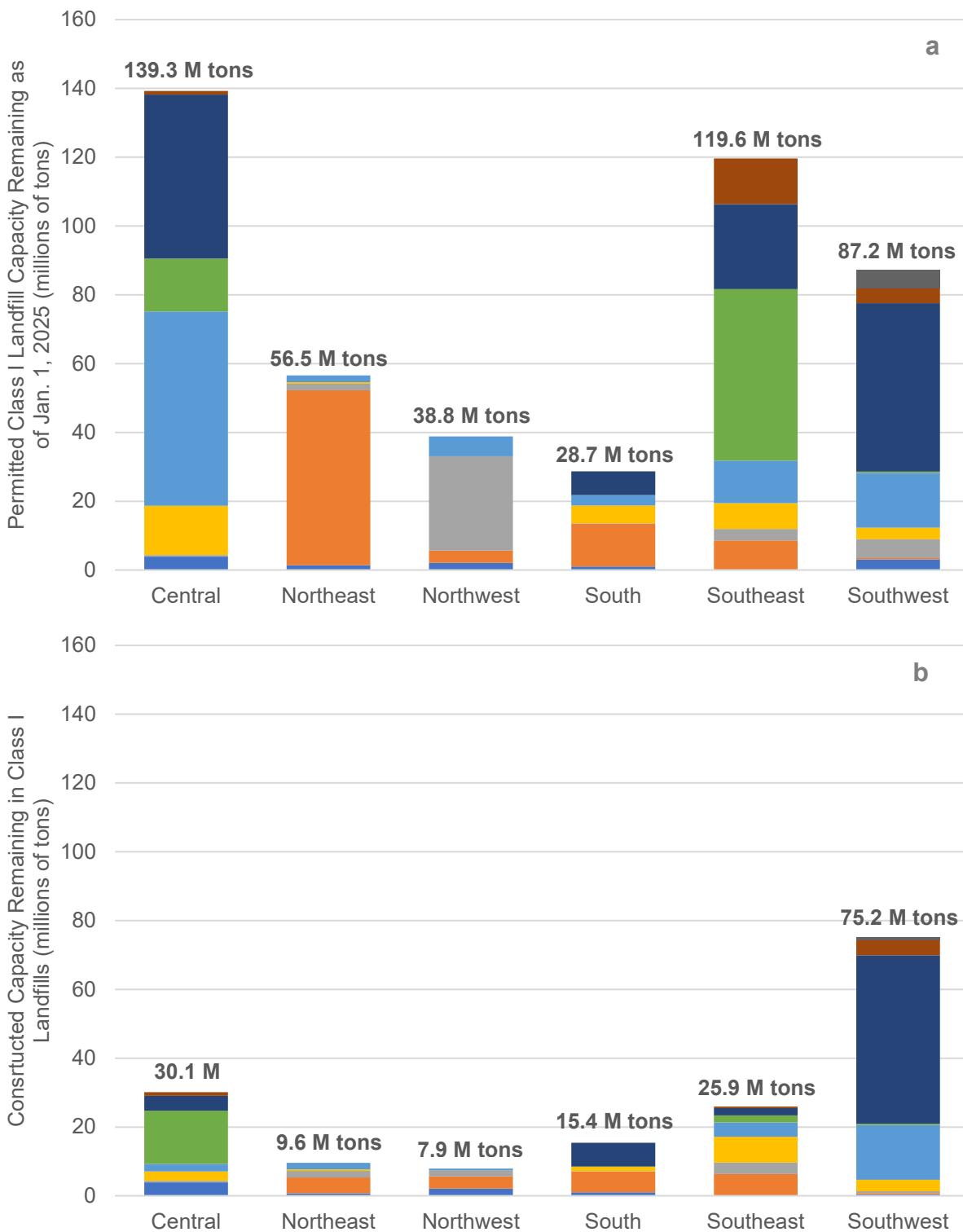
Parameter	Description
Number of active facilities included in the analysis	39
Related reporting requirements	<ul style="list-style-type: none"> <li>• <b>Annual site life estimates:</b> 62-701.500(13)(c), F.A.C.</li> <li>• <b>Annual solid waste quantity reports:</b> 62-701.500(4)(b), F.A.C.</li> <li>• <b>Annual solid waste reports:</b> 403.706(7), F.S.</li> </ul>
Typical capacity measurement approach	<ol style="list-style-type: none"> <li>1) Use airspace utilization factor to convert remaining volume estimate (cy) to remaining mass estimate (tons).</li> <li>2) Normalize remaining capacity estimate for each facility to a single date (January 1<sup>st</sup>, 2025).</li> <li>3) Use the annual increase in waste disposed of in each FDEP District to predict how long the current capacity is expected to last.</li> <li>4) Use the annual solid waste quantity reports to estimate the service area of each landfill.</li> </ol>
Data sources used in methods	<p><b>Annual site life estimates:</b> Remaining permitted and constructed capacity; airspace utilization factor</p> <p><b>Annual solid waste quantity reports:</b> Tons of waste disposed of in each landfill by county of origin</p> <p><b>Annual solid waste reports:</b> Population and generator sectors within each county</p> <p><b>Permit applications:</b> Current operating footprint and potential for future expansions at each landfill</p> <p><b>Correspondence with facility operators:</b> Verification of information gathered from reports and permits; potential for future landfill expansions</p>

## 2.3 Results and Discussion

### 2.3.1 State-wide

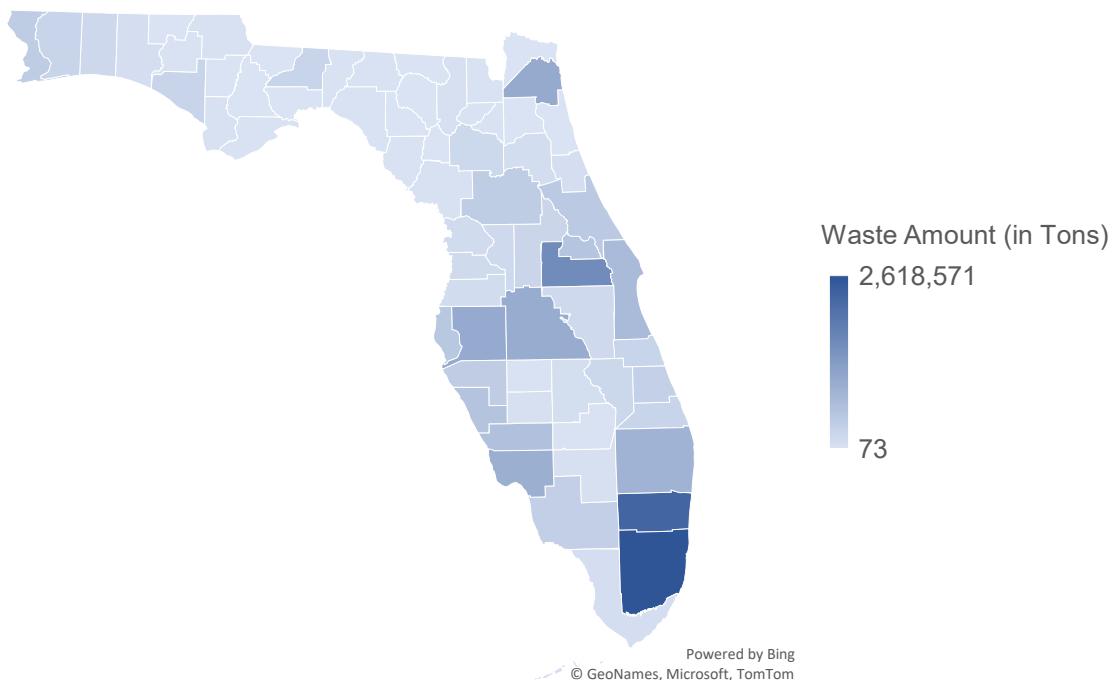
Across the 39 Class I landfills included in this analysis, Florida has an estimated 470.2 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025. Approximately one third of this permitted capacity (approximately 164.1 million tons) has already been constructed. Approximately 20.9 million tons of waste were disposed of in Class III landfills in 2023. **Figure 2-2a** and **Figure 2-2b** show the permitted and constructed capacity, respectively, remaining in each FDEP District.

**Figure 2-2a** shows that most of the state's currently permitted capacity comes from less than ten landfills. However, **Figure 2-2b** shows that there are two landfills whose constructed capacity far outweigh the others in the state. These two landfills – the Seminole County Osceola Road Landfill and the Pinellas County Bridgeway Acres Landfill – are both slurry wall landfills which do not need to construct individual lined cells in the disposal area. Therefore, their permitted capacity is the same as the constructed capacity.



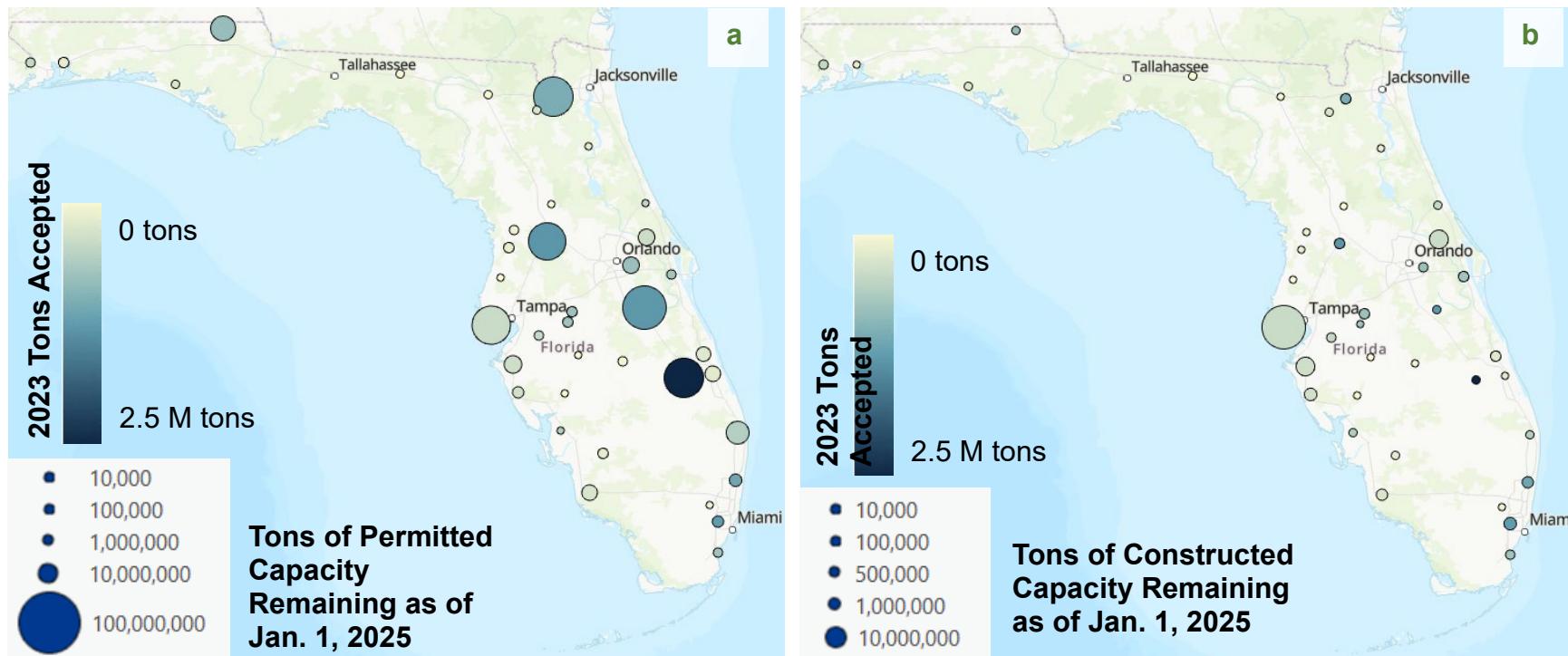
**Figure 2-2:** a) Permitted and b) Constructed capacity remaining in Florida's Class I landfills as of January 1<sup>st</sup>, 2025 by FDEP District; the colors in the figure represent a different landfill in each district

**Figure 2-3** shows the county of origin for waste sent to Class I landfills in Florida during calendar year 2023. Miami-Dade and Broward Counties sent the most waste to Class I landfills; these counties have large populations and limited incineration capacity for the management of Class I waste. The North Broward Resource Recovery Facility became inactive in 2016 and was demolished in early 2024, and the Miami-Dade waste-to-energy facility was destroyed in a fire in 2023. The loss of incineration capacity from these two facilities causes more waste to be sent to landfills. Other areas with a large quantity of waste sent to Class I landfills include the Gulf Coast region (between Hillsborough and Lee Counties), Central Florida (especially around Orange County), and Northeast Florida (near Jacksonville).



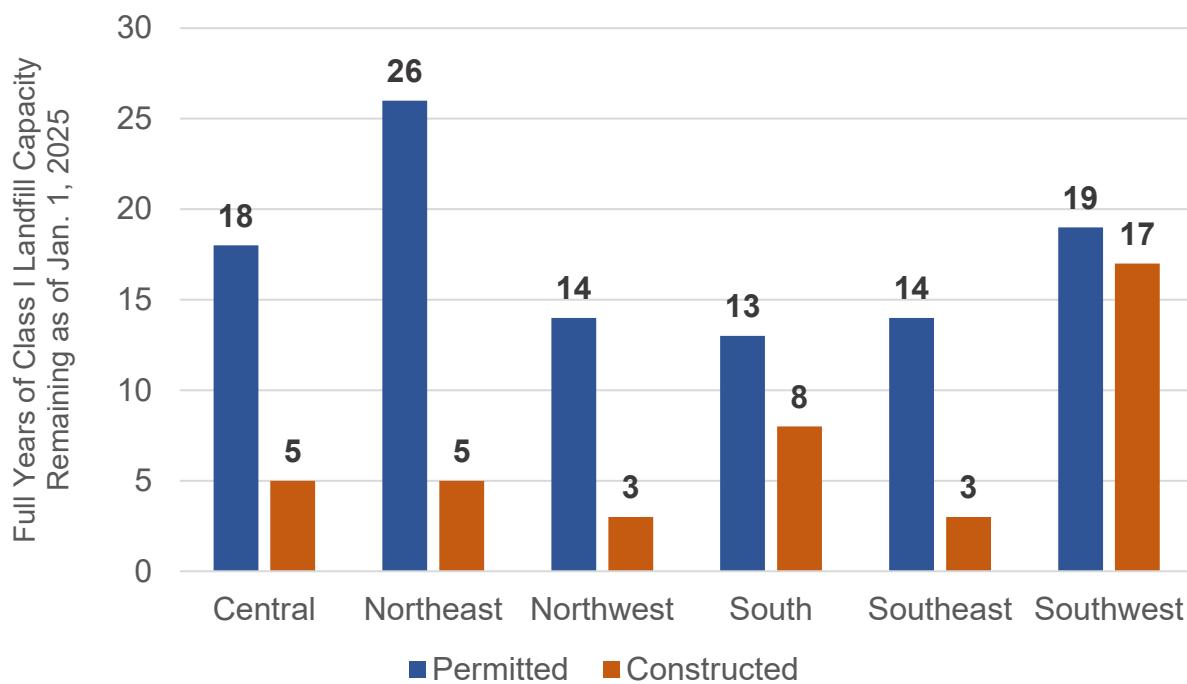
**Figure 2-3:** Origin of waste, by county, sent to Class I landfills in 2023; data were obtained from the 2023 annual solid waste quantity reports

The remaining permitted and constructed capacity of each Class I landfill in the state is shown on the maps in **Figure 2-4**. Each dot represents a different Class I landfill, with the size of the dot scaled to show the tons of permitted or constructed capacity remaining in each facility as of January 1<sup>st</sup>, 2025. The color of the dot represents the tons of waste accepted by each facility in calendar year 2023, with the darker dots representing facilities which accepted the most waste. The darkest dot on the map is the Okeechobee Landfill, which accepted more than 2 million tons of waste in 2023. Small dark dots on the map would therefore represent facilities where permitting and construction of new cells may be needed in the future, since they accept a large amount of waste annually but have relatively little capacity remaining.



**Figure 2-4:** a) Permitted and b) constructed capacity remaining in Florida's Class I landfill as of January 1<sup>st</sup>, 2025; the size of the dot corresponds to the tons of capacity remaining and the color of the dot corresponds to the tons of waste accepted in 2023 (note that the scale differs between maps a and b)

The years of Class I landfill capacity remaining in each FDEP District were estimated using the 2023 calendar year tonnages (with the exception of 2022 tonnages in the South District), the average annual increase in waste disposed of in Class I landfills, and the remaining permitted and constructed capacity. **Appendix A, Section 1.1.3** outlines the method for determining the average annual increase in waste sent to Class I landfills in each FDEP District. This estimate is shown in **Figure 2-5** for each FDEP District. The constructed capacity in the state is expected to last as few as three years in the Northwest and Southeast Districts, and as much as 17 years in the Southwest District. However, most of the constructed capacity in the Southwest District resides in the Pinellas County Bridgeway Acres slurry wall landfill, which has the same permitted and constructed capacity as described above. The remaining permitted capacity in the state ranges between 13 years in the South District and 26 years in the Northeast District (where the City of Jacksonville Trail Ridge Landfill contributes the most to the overall permitted capacity in the district).



**Figure 2-5:** Full years of permitted and constructed capacity remaining in the Class I landfills in each FDEP District as of January 1st, 2025; projections are based on 2023 Class I landfill tonnages (with the exception of 2022 tonnages in the South District) and a five-year average annual increase in waste sent to Class I landfills in each district

It is important to note that the scope of this analysis includes the constructed and permitted capacity remaining in each district as of January 1<sup>st</sup>, 2025. Many of the sites in the state have land surrounding their existing disposal area which could potentially be permitted for disposal in the future, and a description of the total site life for each of these facilities is detailed in the following sections. Therefore, permitting and construction of new Class I landfill cells are expected to continue in the future, and this report indicates areas where upcoming infrastructure investments are likely to be made.

### *2.3.2 Central District*

#### **a. Introduction**

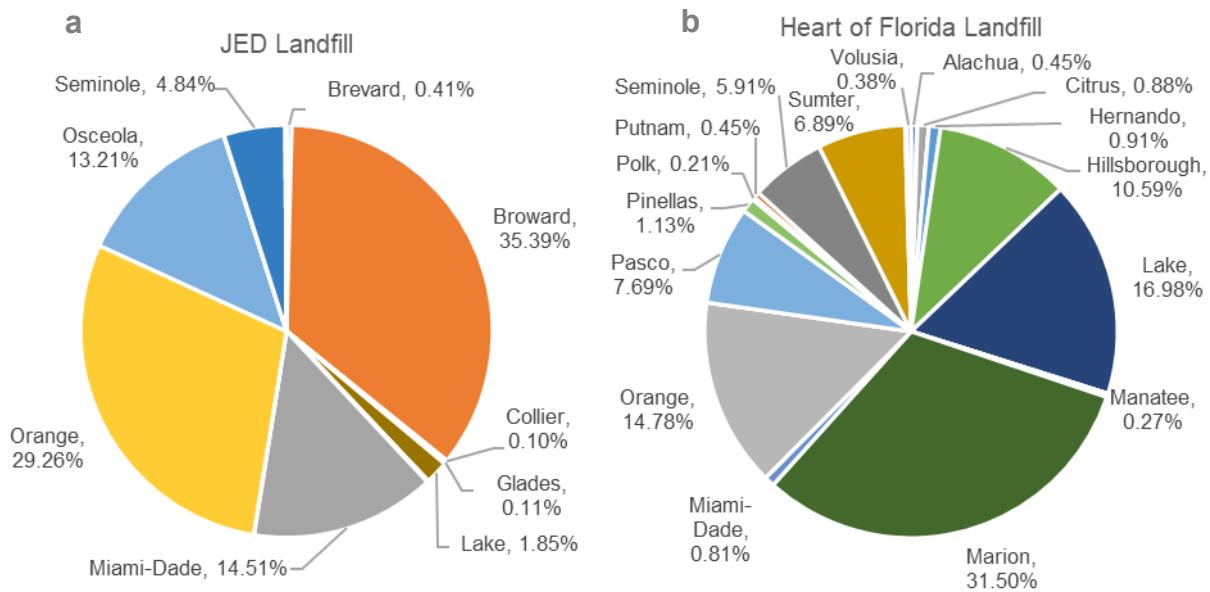
There are seven Class I landfills in the FDEP Central District that have active permits and can accept waste. These include the publicly owned Brevard County Central Landfill, Marion County Baseline Landfill, Orange County Landfill, Seminole County Osceola Road Landfill, and the Volusia County Tomoka Farms Road Landfill. The privately owned JED and Heart of Florida Landfills are also included in the Central District. Beginning in 2019, Marion County diverted all waste from the Baseline Landfill to the Heart of Florida landfill. However, at the time of writing this report, Marion County is in the process of evaluating future waste disposal alternatives - one of which includes continuing use of and expanding the Baseline Landfill. So, the constructed and permitted capacity of the Baseline Landfill is included in the analysis.

#### **b. District population and facility service area**

An estimated 4.6 million people live in the FDEP Central District, with county-based population growth projected to be between 0.60% and 1.64% annually, per the University of Florida (UF) Bureau of Economics and Business Research (BEBR) median population projections from 2025 to 2050. These population statistics are shown in **Table 2-2**. The Brevard County Central Landfill, Marion County Baseline Landfill, and Seminole County Osceola Road Landfill only accepted waste from within their own counties in 2023. The Volusia County Tomoka Farms Road Landfill primarily accepted waste from within Volusia County (~95%), but also some waste from Flagler County (~5%) in 2023. JED and Heart of Florida are large privately owned landfills that are centrally located in the state and accept waste from throughout Florida. The county of origin for waste accepted by the JED and Heart of Florida Landfills are shown in **Figure 2-6** below. Most waste accepted by the JED landfill originates in Broward, Orange, Miami-Dade, and Osceola Counties. Most waste accepted by the Heart of Florida Landfill originates in Marion, Lake, Orange, and Hillsborough Counties. The service area of each landfill, by county, population, and generator type, is shown in **Table 2-3**.

**Table 2-2:** Population of the FDEP Central District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Brevard	640,773	0.62%
Lake	414,749	1.21%
Marion	403,966	0.80%
Orange	1,492,951	0.95%
Osceola	439,225	1.64%
Seminole	486,839	0.58%
Sumter	155,318	1.64%
Volusia	572,815	0.60%



**Figure 2-6:** Mass of waste accepted by county of origin in the a) JED and b) Heart of Florida Landfills

**Table 2-3:** Service area of each Class I landfill in the Central District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Brevard Central LF	Brevard	640,773	11,144	223,469	68,781
Baseline LF	Marion	403,966	9,772	47,052	110,886
Orange County LF	Orange	1,492,951	60,687	337,878	72,972
J.E.D.	Entire State	22,609,411	705,014	6,608,519	3,015,048
Osceola Rd LF	Seminole	486,839	34,460	136,776	41,958
Heart of Florida	Entire State	22,609,411	705,014	6,608,519	3,015,048
Tomoka Farms Rd LF	Volusia and Flagler	703,571	13,384	233,297	34,911

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix A Section 1.1.2**, it is estimated that the Central District has approximately 139.3 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 30.1 million tons of this capacity has already been constructed. In 2023, the Class I landfills in the Central District received a total of 5.1 million tons of waste.

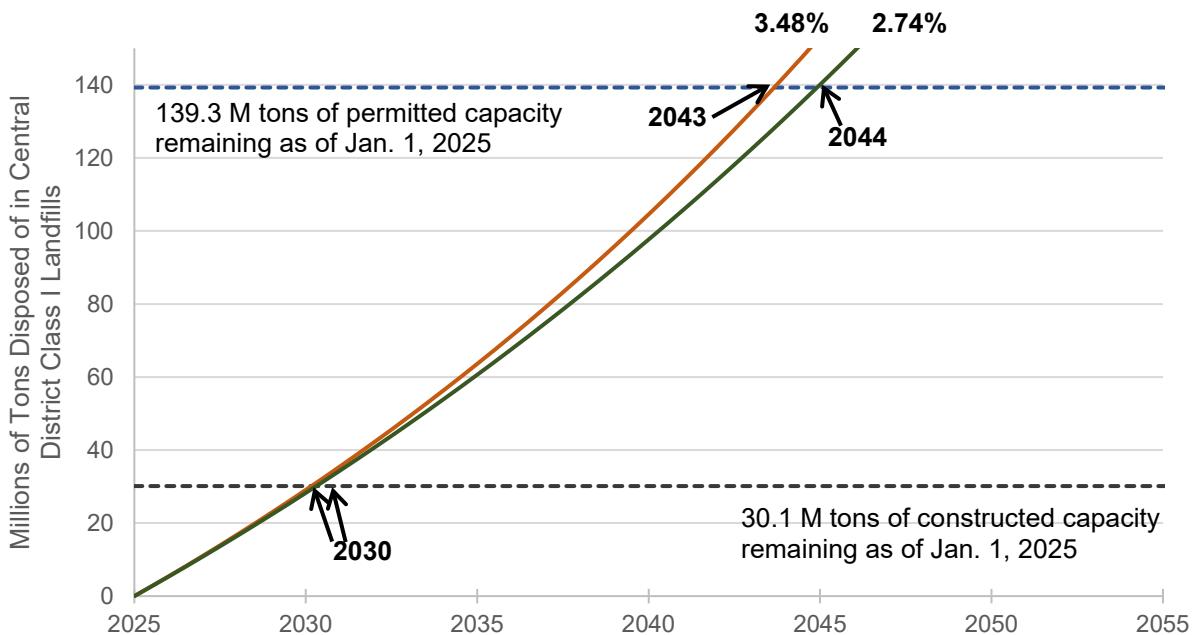
**Table 2-4** shows the normalized remaining capacity and tons of waste accepted in 2023 by each of the Class I landfills in the Central District. **Appendix A, Table 1-2** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators. Seminole County's Osceola Road Landfill has the same constructed and permitted capacity remaining (around 14.5 million tons as of January 1, 2025) because operations are ongoing within the original footprint of the slurry wall landfill.

**Table 2-4:** Tons of waste disposed of in 2023 and normalized remaining capacity estimate for each Class I landfill in the Central District; 2023 tonnages were obtained from FDEP annual solid waste reports

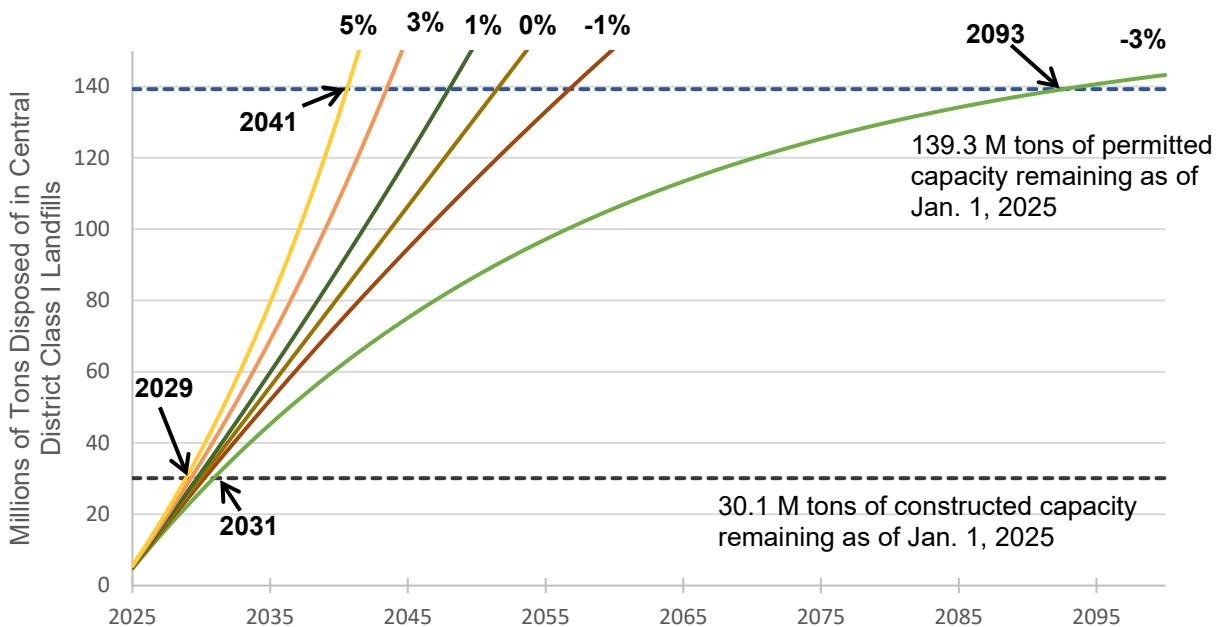
Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
Brevard Central LF	727,065	3,927,785	3,927,785
Baseline LF	0	456,594	456,594
Orange County LF	800,440	14,298,735	2,711,842
J.E.D.	1,315,543	56,434,294	2,167,045
Osceola Rd LF	414,781	15,454,854	15,454,854
Heart of Florida	1,339,989	47,635,752	4,356,297
Tomoka Farms Rd LF	470,046	1,059,779	1,059,779
<b>Total</b>	<b>5,067,864</b>	<b>139,267,793</b>	<b>30,134,195</b>

The five-year average annual increase (2018-2023) in waste received by Class I landfills in the Central District is approximately 3.48%, while the median annual increase (2018-2023) is approximately 2.74%. Using both the average and median annual growth rates, it is expected that the currently constructed capacity in the Central District will last until calendar year 2030. The currently permitted capacity is expected to last until 2043 using the average annual increase in waste disposal, or until 2044 using the median annual increase in waste disposal. See **Figure 2-7** and **Appendix A, Table 1-3**.

**Figure 2-8** shows the estimated timeline for when the currently constructed and permitted capacity in the Central District's Class I Landfills will be fully utilized under different disposal growth scenarios.



**Figure 2-7:** The currently constructed capacity in FDEP Central District Class I landfills is expected to be sufficient to accommodate Central District solid waste through 2030 using both the average and median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate Central District solid waste through 2044 using the average annual increase in disposal, and through 2043 using the median annual increase in disposal.



**Figure 2-8:** Under a range of different growth scenarios, the currently constructed capacity in the Central District is expected to be sufficient to accommodate disposal through 2031 using a -3% growth rate, or through 2029 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2093 using a -3% growth rate, or through 2041 using a 5% growth rate.

**d. Future expansions beyond the currently permitted and constructed airspace**

This section includes an analysis of the constructed and permitted capacity as of January 1<sup>st</sup>, 2025. However, several of the facilities in the Central District have planned capacity expansions in the coming years. Brevard County submitted a permit application in July 2024 for the construction of Cells 3-5 at the Brevard Central Disposal Facility, which is expected to add 16.5 million cy of permitted capacity. As previously mentioned, Marion County is currently exploring future disposal alternatives, several of which include continued use of and expansion of the Baseline Landfill. These expansion options may involve reconfiguring existing cells, expanding within the landfill footprint, and expanding onto adjacent property; however, no final decision has been made. In March of 2025, Orange County received an intermediate permit modification to increase the side slopes from 4:1 to 3:1 in Class I disposal areas which have yet to be constructed. Volusia County is currently in the process of designing a ~217-acre expansion at the Tomoka Farms Road Landfill, but no permit application has been submitted yet.

***2.3.3 Northeast District***

**a. Introduction**

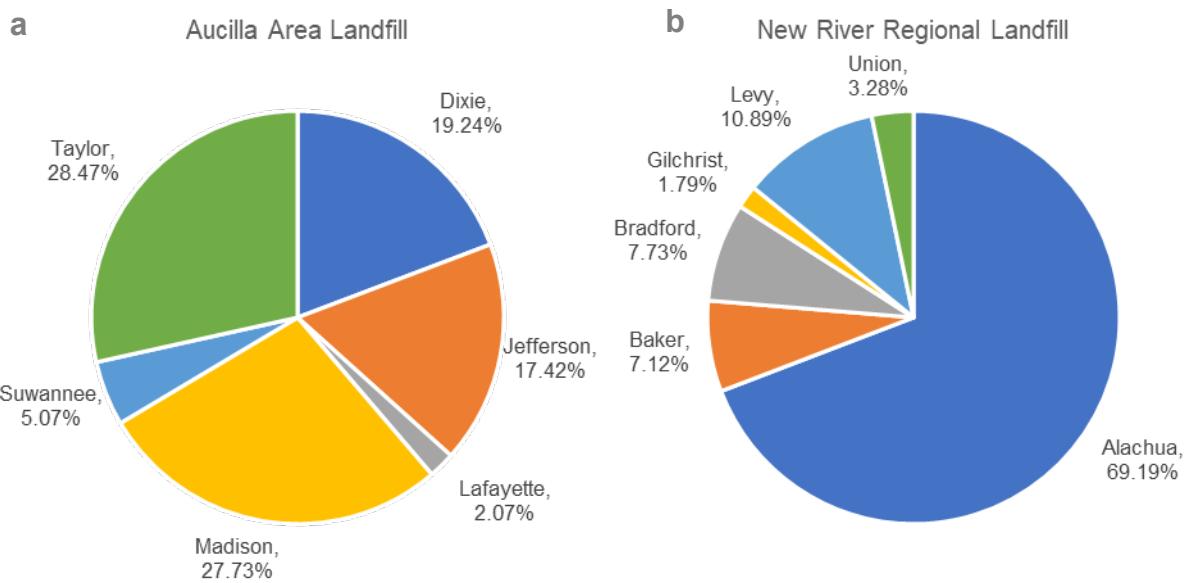
There are five Class I landfills in the FDEP Northeast District that have active permits and can accept waste. These include the Columbia County Winfield Solid Waste Facility, the City of Jacksonville Trail Ridge Landfill, the Aucilla Area Solid Waste Facility, the Putnam County Central Landfill, and the New River Regional Landfill. All these facilities are publicly owned, and two of them – the Aucilla Area Solid Waste Facility and New River Regional Landfill – serve as Class I disposal areas for regional solid waste authorities that were established to serve multiple counties.

**b. District population and facility service area**

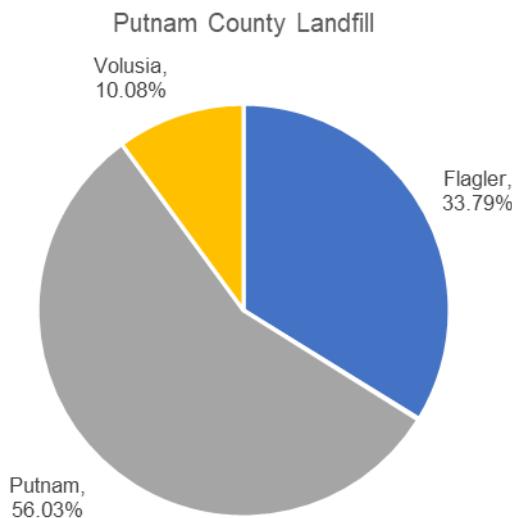
An estimated 2.5 million people live in the FDEP Northeast District, with county-based population growth projected to be between 0.08% and 1.61% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 2-5**. Approximately 99% of the waste accepted by the Winfield Solid Waste Facility in 2023 came from Columbia County, with the other 1% coming from Hamilton County. Most of the waste accepted by the Trail Ridge Landfill came from Duval County, with other minor amounts coming from the surrounding Baker, Bradford, Clay, Nassau, and St. Johns Counties. Since the Aucilla Area Landfill and New River Regional Landfill both serve as disposal areas for regional solid waste authorities, they accept waste from multiple counties, as shown in **Figure 2-9**. The Aucilla Area Landfill serves Dixie, Jefferson, Lafayette, Madison, Suwannee, and Taylor Counties. The New River Regional Landfill serves Alachua, Baker, Bradford, Gilchrist, Levy, and Union Counties. The Putnam County Landfill also serves multiple counties, with accepted waste originating from Flagler, Putnam, and Volusia Counties. The service area of each landfill, by county, population, and generator type, is shown in **Table 2-6**.

**Table 2-5:** Population of the FDEP Northeast District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Alachua	285,994	0.57%
Baker	27,323	0.64%
Bradford	25,290	0.27%
Clay	231,042	0.76%
Columbia	72,191	0.38%
Dixie	17,271	0.35%
Duval	1,051,278	0.70%
Flagler	130,756	1.27%
Gilchrist	19,123	0.66%
Hamilton	13,671	0.20%
Lafayette	8,074	0.29%
Levy	45,283	0.53%
Madison	18,698	0.08%
Nassau	100,763	1.17%
Putnam	75,906	0.12%
St. Johns	315,209	1.61%
Suwannee	45,448	0.35%
Taylor	21,686	0.20%
Union	11,783	0.46%



c



**Figure 2-9:** Mass of waste accepted by county of origin in the a) Aucilla Area, b) New River Regional, and c) Putnam County Landfills

**Table 2-6:** Service area of each Class I landfill in the Northeast District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Winfield Solid Waste Facility	Columbia	72,191	1,171	27,815	72
Trail Ridge LF	Duval	1,051,278	27,467	306,024	116,459
Aucilla Area Solid Waste Facility	Dixie, Jefferson, Lafayette, Madison, Suwannee, Taylor	126,579	1,682	54,360	1,825
Putnam County Central LF	Flagler, Putnam, Volusia	779,477	14,694	267,270	35,318
New River Regional LF	Alachua, Baker, Bradford, Gilchrist, Levy, Union	414,796	12,682	127,355	50,175

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix A, Section 1.1.2**, it is estimated that the Northeast District has approximately 56.5 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 9.6 million tons of this capacity has been constructed. In 2023, the Class I landfills in the Northeast District received a total of 1.7 million tons of waste. **Table 2-7** shows the normalized remaining capacity and tons of waste accepted in 2023 by each of the Class I landfills in the Northeast District.

**Appendix A, Table 1-4** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

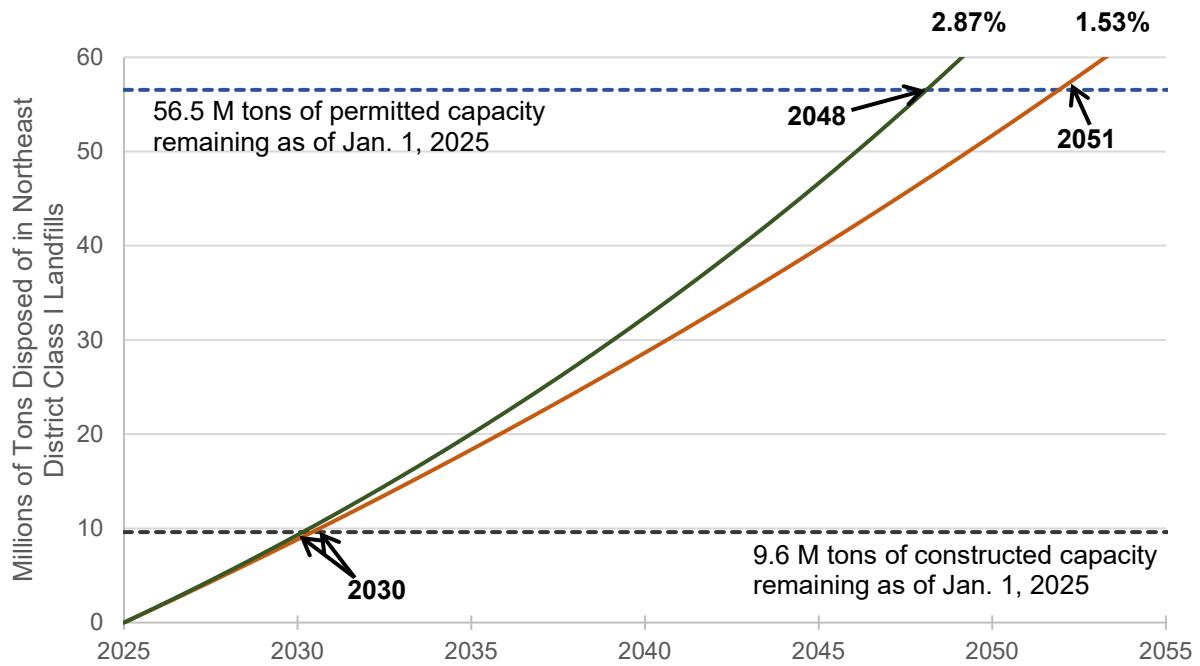
The five-year average annual increase (2018-2023) in waste received by Class I landfills in the Northeast District is approximately 1.53%, while the median annual increase (2018-2023) is approximately 2.87%. Using both the average and median annual growth rates, it is expected that the currently constructed capacity in the Northeast District will last until calendar year 2030. The currently permitted capacity is expected to last until 2051 using the average annual increase in waste disposal, or until 2048 using the median annual increase in waste disposal. See **Figure 2-10** and **Appendix A, Table 1-5**. **Figure 2-11** shows the estimated timeline for when the currently constructed and permitted capacity in the Northeast District's Class I Landfills will be fully utilized under different disposal growth scenarios.

**Table 2-7:** Tons of waste disposed of in 2023 and normalized remaining capacity estimate for each Class I landfill in the Northeast District; 2023 tonnages were obtained from FDEP annual solid waste reports

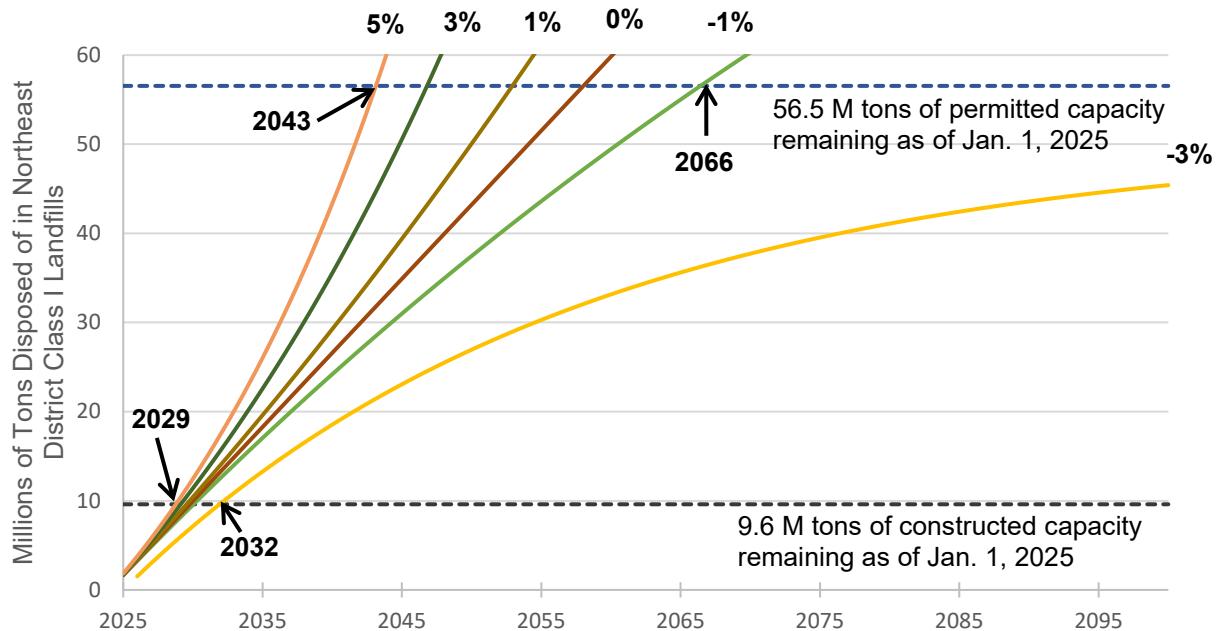
Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1, 2025 (tons)
Winfield Solid Waste Facility	61,485	1,424,767	729,382
Trail Ridge LF	1,047,222	50,815,062	4,570,212
Aucilla Area Solid Waste Facility	60,647	1,936,106	1,936,106
Putnam County Central LF	199,126	463,884	463,884
New River Regional LF	293,489	1,906,047	1,906,047
<b>Total</b>	<b>1,661,969</b>	<b>56,545,866</b>	<b>9,605,631</b>

### d. Future expansions beyond the currently permitted and constructed airspace

Unlike the Central District, there have not been any permit applications submitted within the last year to expand capacity at the Class I landfills in the Northeast District. There is room for future disposal activities on the existing sites though, as described in **Appendix A, Table 1-4**.



**Figure 2-10:** The currently constructed capacity in FDEP Northeast District Class I landfills is expected to be sufficient to accommodate Northeast District solid waste through 2030 using both the average and median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate Northeast District solid waste through 2051 using the average annual increase in disposal, and until 2048 using the median annual increase in disposal.



**Figure 2-11:** Under a range of different growth scenarios, the currently constructed capacity in the Northeast District is expected to be sufficient to accommodate disposal through 2032 using a -3% growth rate and 2029 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2065 using a -1% growth rate, or through 2044 using a 5% growth rate.

## *2.3.4 Northwest District*

### **a. Introduction**

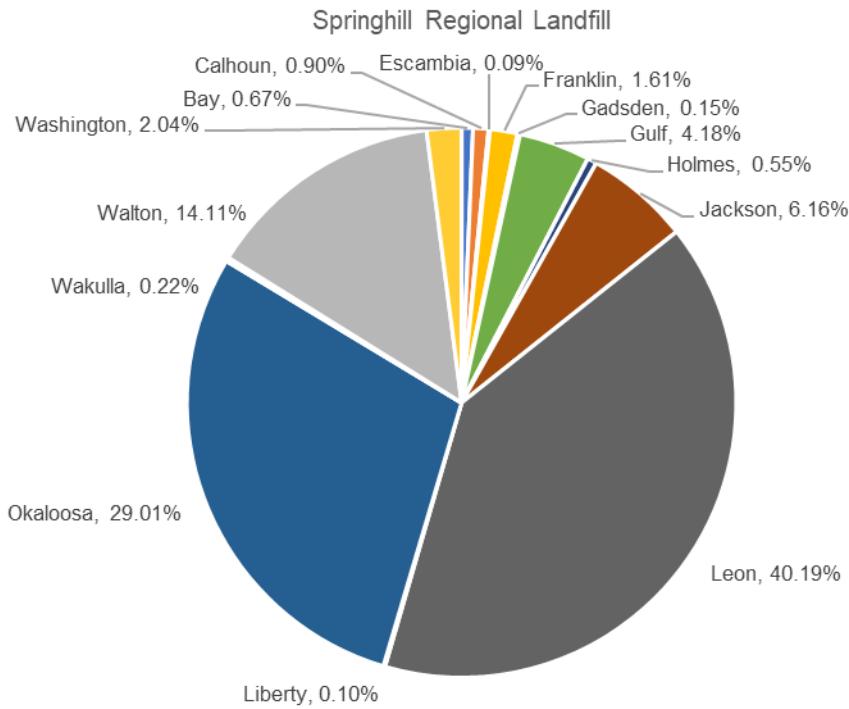
There are four Class I landfills in the FDEP Northwest District that have active permits and can accept waste. These include the publicly owned Bay County Steelfield Road Landfill, the Escambia County Perdido Landfill, and the Santa Rosa County Central Landfill, as well as the privately owned Springhill Regional Landfill.

### **b. District population and facility service area**

An estimated 1.6 million people live in the FDEP Northeast District, with county-based population growth projected to be between 0.05% and 1.36% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 2-8**. Most of the waste (~98) accepted by the Steelfield Road Landfill in 2023 originated in Bay County, with minor amounts coming from other counties in Northwest Florida. Similarly, most of the waste (~96%) accepted by the Santa Rosa Central Landfill originated in Santa Rosa County, with about 2% each coming from Escambia and Okaloosa Counties. All waste accepted by the Perdido Landfill came from Escambia County. The Springhill Regional Landfill serves Northwest Florida, with the proportion of waste coming from each county shown in **Figure 2-12**. The service area of each landfill, by county, population, and generator type, is shown in **Table 2-9**.

**Table 2-8:** Population of the FDEP Northwest District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Bay	187,545	0.50%
Calhoun	13,816	0.17%
Escambia	333,452	0.42%
Franklin	12,971	0.59%
Gadsden	44,421	0.05%
Gulf	16,323	0.55%
Holmes	19,910	0.14%
Jackson	48,982	0.08%
Jefferson	15,402	0.23%
Leon	301,724	0.45%
Liberty	7,977	0.20%
Okaloosa	219,260	0.56%
Santa Rosa	202,772	1.03%
Wakulla	36,168	0.82%
Walton	83,342	1.36%
Washington	25,497	0.34%



**Figure 2-12:** Mass of waste accepted by county of origin at the Springhill Regional Landfill

**Table 2-9:** Service area of each Class I landfill in the Northwest District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Steelfield Road LF	Bay	187,545	6,964	50,712	20,788
Perdido LF	Escambia	333,452	23,542	121,375	29,859
Springhill Regional LF	Northwest Florida - Bay, Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Okaloosa, Santa Rosa, Wakulla, Walton, Washington	1,569,562	65,912	531,718	117,357
Santa Rosa Central LF	Santa Rosa	202,772	3,916	76,784	8,918

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix A, Section 1.1.2** it is estimated that the Northwest District has approximately 38.8 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 7.9 million tons of this capacity has already been constructed. In 2023, the Class I landfills in the Northwest District received a total of 1.8 million tons of waste. **Table 2-10** shows the normalized remaining capacity and tons of waste accepted in 2023 by each of the Class I landfills in the Northwest District.

**Appendix A, Table 1-6** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

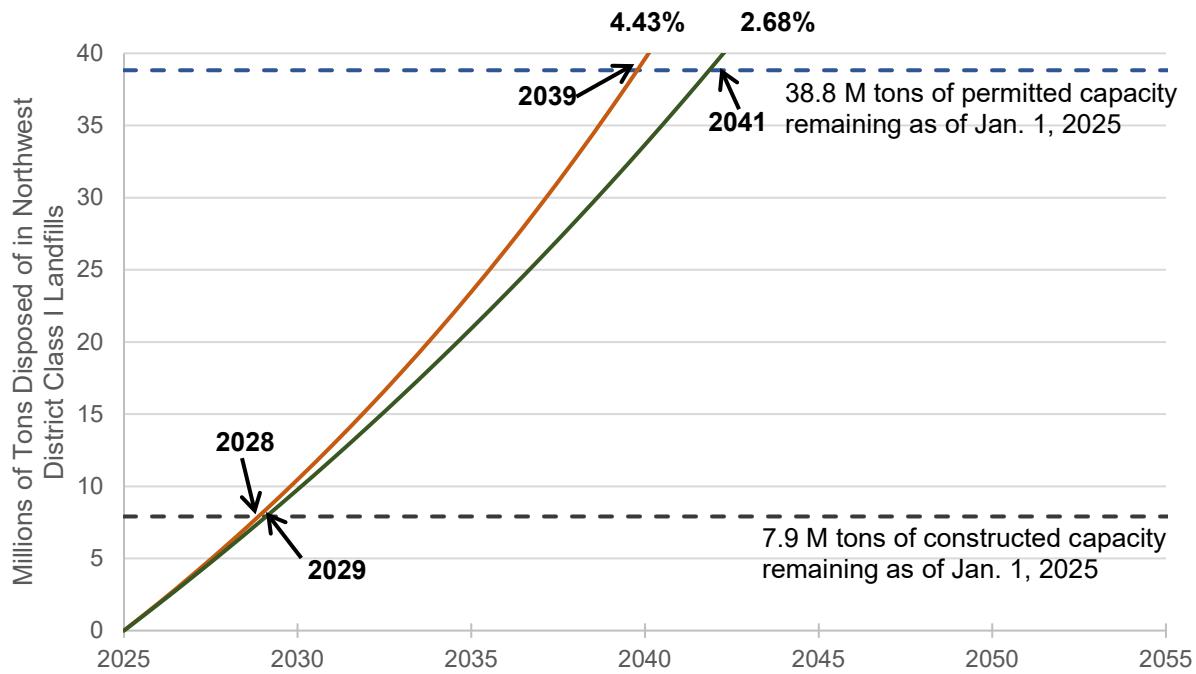
**Table 2-10:** Tons of waste disposed of in 2023 and normalized remaining capacity estimate for each Class I landfill in the Northwest District; 2023 tonnages were obtained from FDEP annual solid waste reports

Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
Steelfield Road LF	264,268	2,055,148	2,055,148
Perdido LF	472,255	3,549,857	3,549,857
Springhill Regional LF	826,295	27,481,502	1,825,972
Santa Rosa Central LF	194,448	5,740,530	475,920
<b>Total</b>	<b>1,757,265</b>	<b>38,827,037</b>	<b>7,906,896</b>

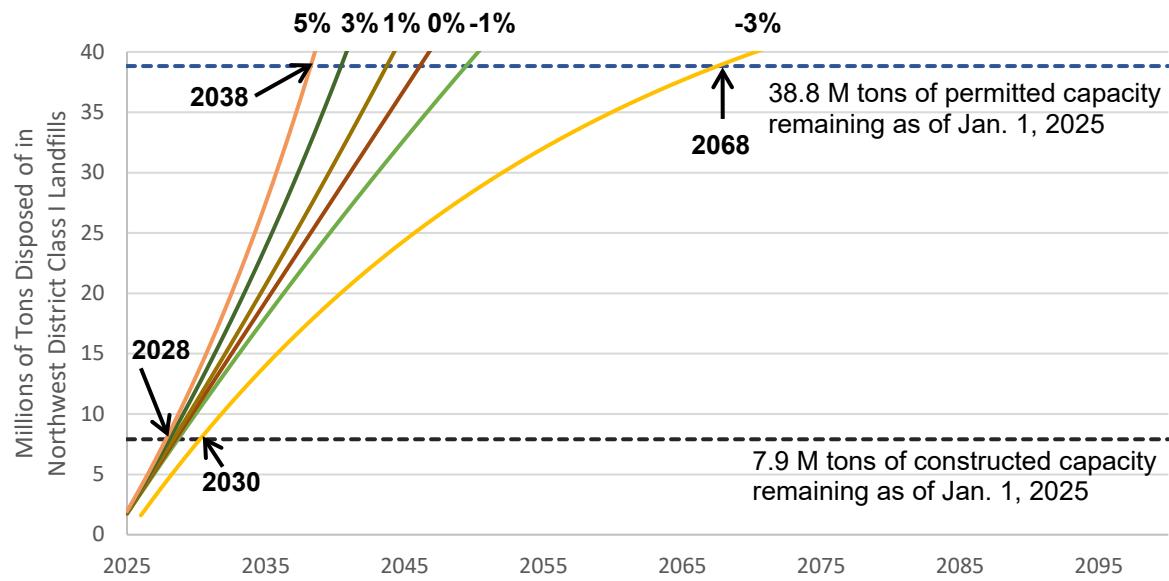
The five-year average annual increase (2018-2023) in waste received by Class I landfills in the Northwest District is approximately 4.43%, while the median annual increase (2018-2023) is approximately 2.68%. Using the average annual growth rate, it is expected that the currently constructed capacity in the Northwest District will last until calendar year 2028 and the permitted capacity will last until 2039. Using the median annual growth rate, the currently constructed capacity is expected to last until 2029, and the permitted capacity is expected to last until 2041. See **Figure 2-13** and **Appendix A, Table 1-7**. **Figure 2-13** shows the estimated timeline for when the currently constructed and permitted capacity in the Northwest District's Class I Landfills will be fully utilized under different disposal growth scenarios.

### d. Future expansions beyond the currently permitted and constructed airspace

This section includes an analysis of the constructed and permitted capacity as of January 1<sup>st</sup>, 2025. However, the Springhill Regional Landfill submitted notification to FDEP on August 6<sup>th</sup>, 2024, that construction has begun on Cell 10. No landfills have submitted permit applications within the last year that are expected to influence Class I landfill capacity in the Northwest District.



**Figure 2-13:** The currently constructed capacity in FDEP Northwest District Class I landfills is expected to be sufficient to accommodate Northwest District solid waste through 2028 using the average annual growth in waste disposal projections and through 2029 using the median annual growth rate. The currently permitted capacity is expected to be sufficient to accommodate Northwest District solid waste through 3039 using the average annual increase in disposal, and through 2041 using the median annual increase in disposal.



**Figure 2-14:** Under a range of different growth scenarios, the currently constructed capacity in the Northwest District is expected to be sufficient to accommodate disposal through 2030 using a -3% growth rate, or through 2028 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2038 using a -3% growth rate, or through 2068 using a 5% growth rate.

### *2.3.5 South District*

#### **a. Introduction**

There are six Class I landfills in the FDEP South District that have active permits and can accept waste. These include the Charlotte County Zemel Road Landfill, the Collier County Naples Landfill, the DeSoto County Landfill, the Lee/Hendry Regional Solid Waste Disposal Facility, the Highlands County Landfill, and the Sarasota Central County Solid Waste Disposal Complex. All these facilities are publicly owned. The South District also includes the Lee County Gulf Coast Landfill, which was temporarily re-opened in 2023 to accept debris generated by Hurricane Ian. However, Lee County submitted a permit application to FDEP in April 2024 for the closure of the Gulf Coast Landfill, so the facility is not included in the airspace estimates for this report.

#### **b. District population and facility service area**

An estimated 2.1 million people live in the FDEP South District, with county-based population growth projected to be between 0.13% and 1.08% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 2-11**. In 2023, the Charlotte County Zemel Road Landfill primarily accepted waste from within Charlotte County (~92%), though some waste (~8%) came from the neighboring Lee County. The Collier County Naples Landfill, DeSoto County Landfill, Highlands County Landfill, and Sarasota Central County Solid Waste Disposal Complex all accepted waste from within their respective counties exclusively. Approximately 77% of the waste accepted by the Class I landfill at the Lee/Hendry County Regional Solid Waste Disposal Facility came from Lee County while the remaining 23% came from Hendry County. The service area of each landfill, by county, population, and generator type, is shown in **Table 2-12**.

**Table 2-11:** Population of the FDEP South District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Charlotte	204,126	0.86%
Collier	399,464	0.83%
Desoto	34,974	0.18%
Highlands	104,385	0.33%
Hendry	40,895	0.41%
Glades	12,591	0.13%
Lee	800,864	1.08%
Sarasota	464,223	0.77%

**Table 2-12:** Service area of each Class I landfill in the Northwest District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Charlotte County Zemel Rd LF	Charlotte	204,126	14,284	95,581	21,522
Collier County Naples LF	Collier	399,464	4,661	141,683	107,913
DeSoto County LF	DeSoto	34,974	522	15,830	12,340
Lee/Hendry Disposal Facility*	Lee and Hendry	841,759	17,553	307,540	84,109
Highlands County LF	Highlands	104,385	9,486	47,255	7,212
Sarasota Central LF	Sarasota	464,223	26,097	174,316	92,003

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix A, Section 1.1.2**, it is estimated that the South District has approximately 28.7 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 15.4 million tons of this capacity has already been constructed. Hurricane Ian made landfall as a Category 4 hurricane in Lee County, Florida on September 28<sup>th</sup>, 2022, generating massive amounts of debris in the FDEP South District counties. As such, when projecting airspace consumption for the normalization method described in **Appendix A, Section 1.1.2**, 2022 calendar year tonnages were used for the South District so as not to overestimate the amount of waste disposed of in the Class I landfills during a typical year. In 2022, the Class I landfills in the South District received a total of 1.4 million tons of waste; the same facilities received 1.6 million tons of waste in 2023. There was a 14.5% increase in waste disposed of in the South District Class I landfills between 2022 and 2023, so 2022 data were used in the analysis.

**Table 2-13** shows the normalized remaining capacity and tons of waste accepted in 2022 by each of the Class I landfills in the South District. **Appendix A, Table 2-8** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

**Table 2-13:** Tons of waste disposed of in 2022 and normalized remaining capacity estimate for each Class I landfill in the South District; 2022 tonnages were obtained from FDEP annual solid waste reports

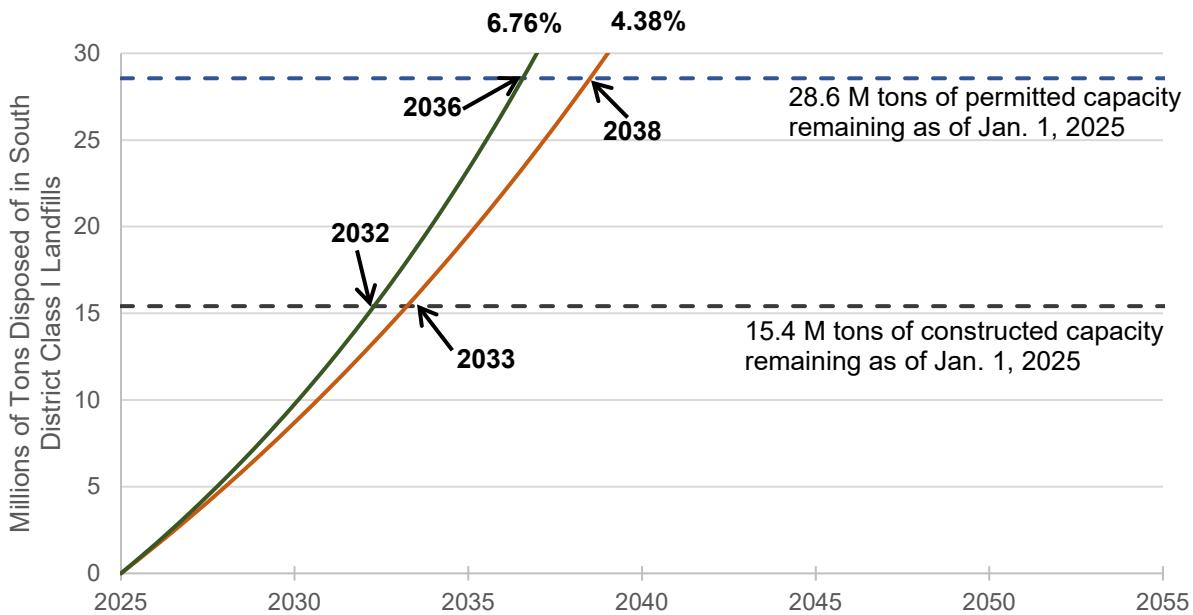
Facility	Tons Disposed of in Class I LF 2022	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
Charlotte County Zemel Rd LF	410,416	1,007,789	1,007,789
Collier County Naples LF	298,307	12,424,857	5,969,773
DeSoto County LF	44,776	177,216	177,216
Lee/Hendry Disposal Facility*	197,495	5,113,569	1,336,269
Highlands County LF	97,537	3,091,524	27,425
Sarasota Central LF	354,295	6,868,033	6,868,033
<b>Total</b>	<b>1,402,825</b>	<b>28,682,988</b>	<b>15,386,505</b>

\*The 2022 landfill tonnages from the annual solid waste report exclude ash residue because it is assumed that this waste is sent to the ash monofill rather than the Class I landfill.

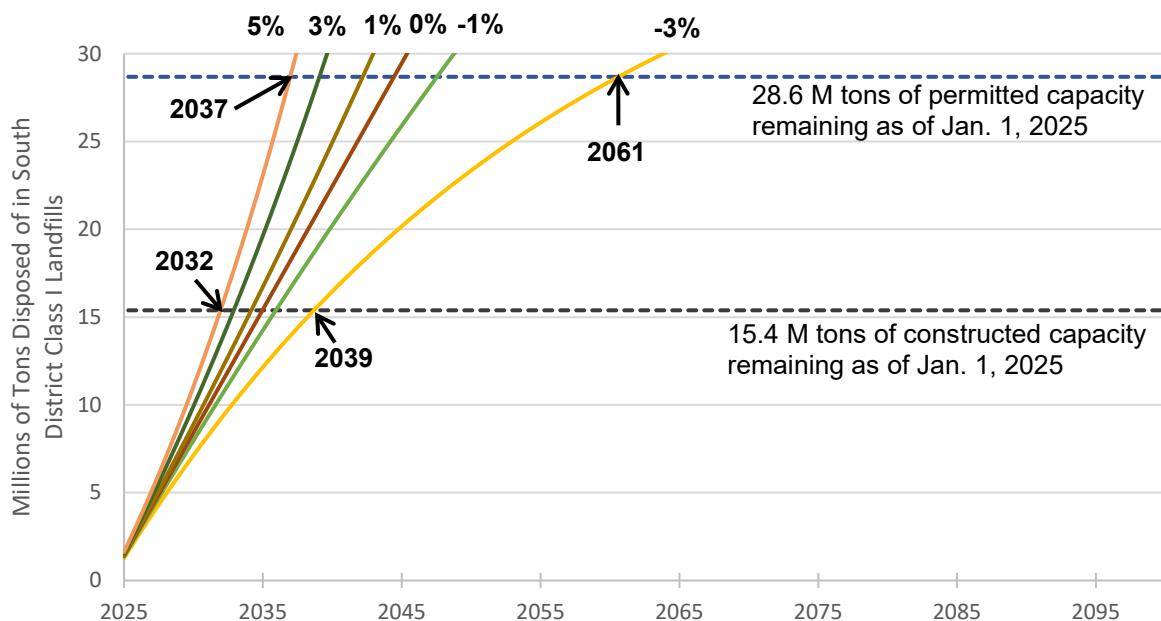
The five-year average annual increase (2018-2023) in waste received by Class I landfills in the South District is approximately 4.38%, while the median annual increase (2018-2023) is approximately 6.76%. Using the average annual growth rate, it is expected that the currently constructed capacity in the South District will last until calendar year 2033 and the permitted capacity will last until 2038. Using the median annual growth rate, the currently constructed capacity is expected to last until 2032, and the permitted capacity is expected to last until 2036. See **Figure 2-15** and **Appendix A**, **Table 2-9**. **Figure 2-16** shows the estimated timeline for when the currently constructed and permitted capacity in the South District's Class I Landfills will be fully utilized under different disposal growth scenarios.

#### d. Future expansions beyond the currently permitted and constructed airspace

Like the Northeast District, there have not been any permit applications submitted within the last year to expand capacity at the Class I landfills in the South District. There is room for future disposal activities on the existing sites though, as described in **Appendix A, Table 2-8**.



**Figure 2-15:** The currently constructed capacity in FDEP South District Class I landfills is expected to be sufficient to accommodate South District solid waste through 2033 using the average annual growth in waste disposal projections and through 2032 using the median annual growth rate. The currently permitted capacity is expected to be sufficient to accommodate South District solid waste through 2038 using the average annual increase in disposal, and until 2036 using the median annual increase in disposal.



**Figure 2-16:** Under a range of different growth scenarios, the currently constructed capacity in the South District is expected to be sufficient to accommodate disposal through 2039 using a -3% growth rate, or through 2032 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2061 using a -3% growth rate, or through 2037 using a 5% growth rate.

## *2.3.6 Southeast District*

### **a. Introduction**

There are eight Class I landfills in the FDEP Southeast District which have active permits and can accept waste. These include the publicly owned Broward County Landfill, South Dade Landfill, Indian River County Landfill, Palm Beach County Solid Waste Authority Landfill, and St. Lucie County Landfill. The Southeast District also contains the privately owned Monarch Hill, Medley, and Okeechobee Landfills. The Southeast District has the greatest waste-to-energy capacity of any region in the state, so many of the Class I landfills in the district have a high airspace utilization factor due, in part, to the acceptance of ash residue. Further, while the Broward County Landfill is permitted as a Class I landfill, the facility is currently only accepting Class III waste for disposal.

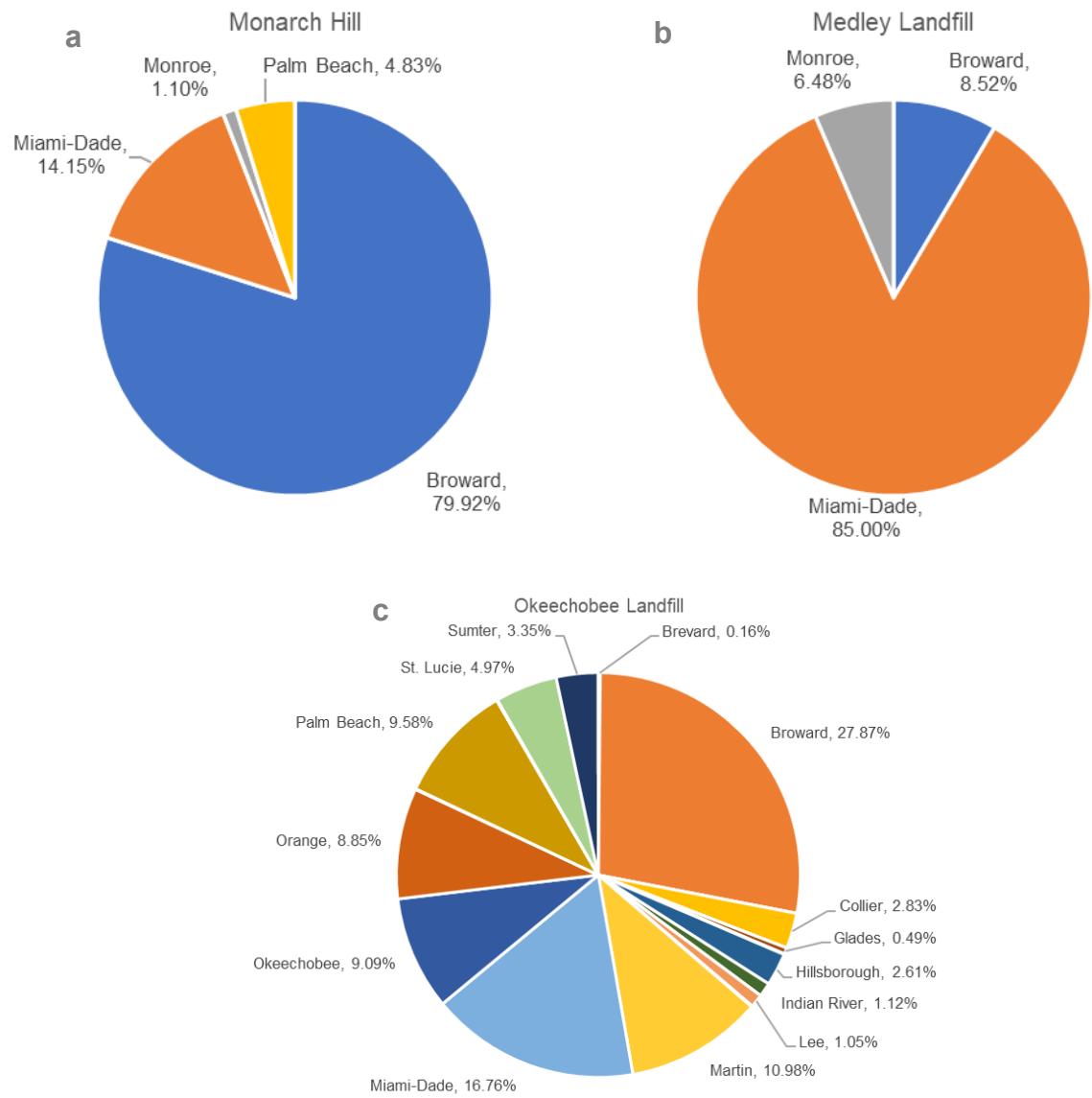
### **b. District population and facility service area**

The FDEP Southeast District has the largest population of any region in the state, with an estimated 7.1 million inhabitants and county-based population growth projected to be between 0.12% and 1.12% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 2-14**. In 2023, the Broward County Landfill, South Dade Landfill, Indian River County Landfill, Palm Beach County Solid Waste Authority Landfill, and St. Lucie County Landfill each received waste from within their own respective counties.

While the Monarch Hill and Medley Landfills primarily accept waste from Southeast Florida, the Okeechobee Landfill accepts waste from all over the state, as seen in **Figure 2-17**. In 2023, Monarch Hill Landfill primarily received waste from Broward (~80%) and Miami-Dade (~14%) Counties, as well as smaller amounts of waste from Palm Beach and Monroe Counties. Medley Landfill primarily accepted waste from Miami-Dade County (~85%) and smaller amounts of waste from Broward and Monroe Counties. Most waste accepted at the Okeechobee Landfill originated in Broward, Martin, Miami-Dade, Okeechobee, Orange, and Palm Beach Counties. The service area of each landfill, by county, population, and generator type, is shown in **Table 2-15**.

**Table 2-14:** Population of the FDEP South District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Broward	1,973,579	0.45%
Indian River	167,781	0.78%
Martin	162,847	0.50%
Miami-Dade	2,768,954	0.48%
Monroe	84,509	0.15%
Okeechobee	39,591	0.12%
Palm Beach	1,532,718	0.57%
St. Lucie	368,628	1.12%



**Figure 2-17:** Mass of waste accepted by county of origin in the a) Medley, b) Monarch Hill, and c) Okeechobee Landfills

**Table 2-15:** Service area of each Class I landfill in the Southeast District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Broward County LF	Broward	1,973,579	30,533	349,006	486,545
Monarch Hill LF	Broward, Miami-Dade, Monroe, Palm Beach	6,359,760	142,012	1,233,211	1,431,149
South Dade LF	Miami-Dade	2,768,954	62,338	528,400	567,110
Medley LF	Broward, Miami-Dade, Monroe	4,827,042	110,828	919,024	1,061,213
Indian River County LF	Indian River	167,781	6,984	61,708	26,593
Okeechobee LF	Entire State	22,609,411	705,014	6,608,519	3,015,048
Palm Beach County SWA LF	Palm Beach	1,532,718	31,184	314,187	369,936
St. Lucie County LF	St. Lucie	368,628	4,090	140,262	17,182

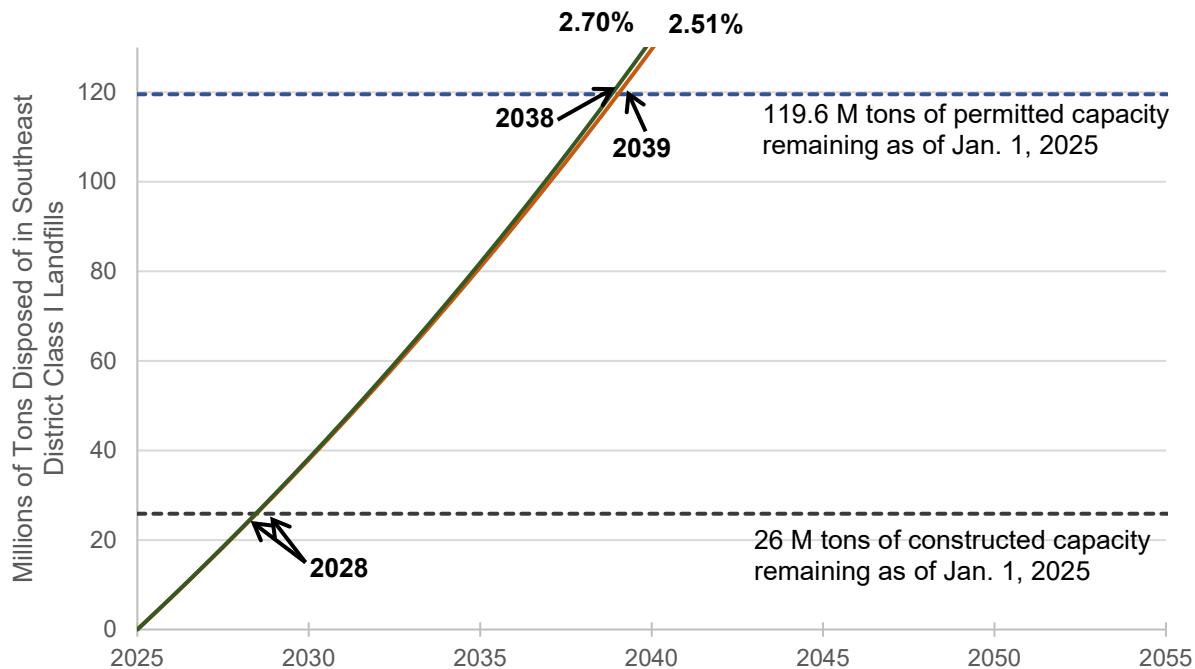
### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix A, Section 1.1.2**, it is estimated that the South District has approximately 119.6 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 26 million tons of this capacity has already been constructed capacity. In 2023, the Class I landfills in the Southeast District received a total of 6.9 million tons of waste. **Table 2-16** shows the normalized remaining capacity and tons of waste accepted in 2023 by each of the Class I landfills in the Southeast District. **Appendix A, Table 1-10.** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

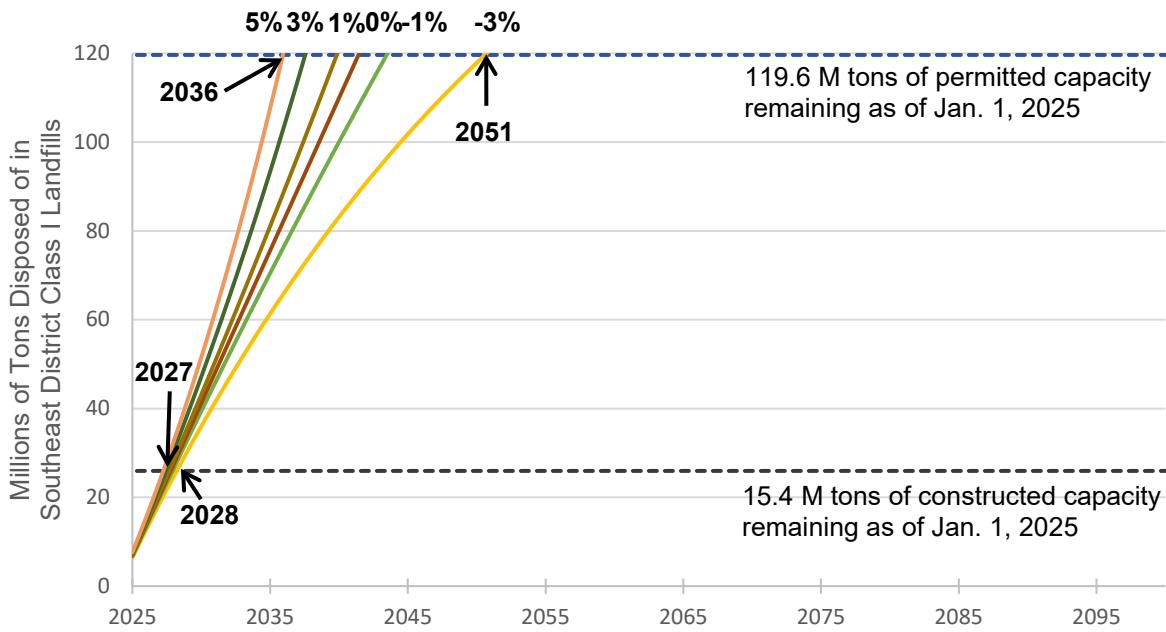
The five-year average annual increase (2018-2023) in waste received by Class I landfills in the Southeast District is approximately 2.51%, while the median annual increase (2018-2023) is approximately 2.70%. Using both the average and median annual growth rates, it is expected that the currently constructed capacity in the Southeast District will last until calendar year 2028. The currently permitted capacity is expected to last until 2039 using the average annual increase in waste disposal, or until 2038 using the median annual increase in waste disposal. See **Figure 2-18** and **Appendix A, Table 1-11.** **Figure 2-19** shows the estimated timeline for when the currently constructed and permitted capacity in the Southeast District's Class I Landfills will be fully utilized under different disposal growth scenarios.

**Table 2-16:** Tons of waste disposed of in 2023 and normalized remaining capacity estimate for each Class I landfill in the Southeast District; 2023 tonnages were obtained from FDEP annual solid waste reports

Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1, 2025 (tons)
Broward County LF	132,530	33,774	33,774
Monarch Hill LF	1,142,822	8,584,799	6,283,183
South Dade LF	758,053	3,346,605	3,346,605
Medley LF	1,267,212	7,496,331	7,496,331
Indian River County LF	244,392	12,330,615	4,199,276
Okeechobee LF	2,505,884	49,884,482	2,030,682
Palm Beach County SWA LF	596,701	24,734,318	2,077,068
St. Lucie County LF	222,782	13,226,963	486,239
<b>Total</b>	<b>6,870,375</b>	<b>119,637,887</b>	<b>25,953,159</b>



**Figure 2-18:** The currently constructed capacity in FDEP Southeast District Class I landfills is expected to be sufficient to accommodate Southeast District solid waste through 2028 using both the average and median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate Southeast District solid waste through 2039 using the average annual increase in disposal, and until 2038 using the median annual increase in disposal.



**Figure 2-19:** Under a range of different growth scenarios, the currently constructed capacity in the Southeast District is expected to be sufficient to accommodate disposal through 2028 using a -3% growth rate, or through 2027 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2093 using a -3% growth rate, or through 2041 using a 5% growth rate.

#### d. Future expansions beyond the currently permitted and constructed airspace

This section includes an analysis of the constructed and permitted capacity as of January 1<sup>st</sup>, 2025. However, several of the facilities in the Southeast District have planned capacity expansions in the coming years. In September 2024, WM submitted a permit application to construct and operate the Northwest Expansion of Medley Landfill in, which is expected to add 15.6 years of additional capacity based on an annual acceptance rate of 1.5 million tons. In November 2024, St. Lucie County submitted a permit application for the construction and operation of Phase VA-2. Broward County is in the preliminary stages of planning an expansion to the Class I landfill; however, no airspace estimates are available at this time. The Palm Beach County Solid Waste Authority (SWA) is also considering options for vertical expansion of future landfill areas, but no requests have been submitted to FDEP yet.

##### 2.3.7 Southwest District

###### a. Introduction

There are nine Class I landfills in the FDEP Southeast District that have active permits and can accept waste. These include the publicly owned Citrus County Central Landfill, Hardee County Landfill, Hernando County Landfill, Hillsborough County Southeast Landfill, Manatee County Lena Road Landfill, Pasco County Resource Recovery

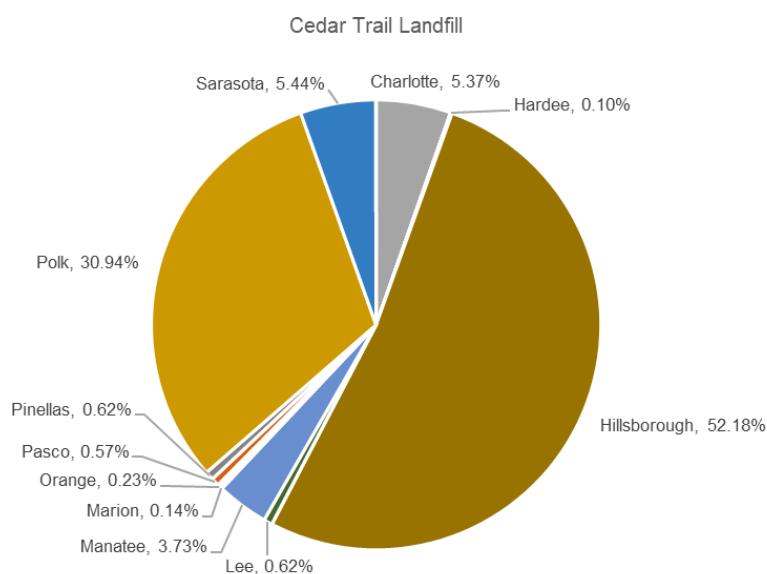
Facility, Pinellas County Bridgeway Acres Landfill, and Polk County North Central Landfill. Cedar Trail Landfill is the only privately owned landfill in the Southwest District.

### b. District population and facility service area

An estimated 4.8 million people live in the FDEP Southwest District, with county-based population growth projected to be between 0.03% and 1.08% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 2-17**. In 2023, the eight publicly owned landfills in the Southwest District accepted waste from within their own respective counties. The privately owned Cedar Trail Landfill, however, accepted waste from throughout the state, as seen in **Figure 2-20**. The waste accepted by the Cedar Trail Landfill primarily originated in Hillsborough, Manatee, Polk, Sarasota, and Charlotte Counties. The service area of each landfill, by county, population, and generator type, is shown in **Table 2-18**.

**Table 2-17:** Population of the FDEP Southwest District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Citrus	162,240	0.56%
Hardee	25,645	0.03%
Hernando	204,265	0.67%
Hillsborough	1,541,531	0.86%
Manatee	439,566	1.05%
Pasco	610,743	1.04%
Pinellas	974,689	0.25%
Polk	797,616	1.08%



**Figure 2-20:** Mass of waste accepted by county of origin at the Cedar Trail Landfill

**Table 2-18:** Service area of each Class I landfill in the Southwest District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Citrus County Central LF	Citrus	162,240	2,109	58,579	600
Hardee County LF	Hardee	25,645	863	7,805	427
Hernando County LF	Hernando	204,265	7,225	83,500	14,452
Hillsborough County Southeast LF	Hillsborough	1,541,531	36,189	403,528	240,980
Manatee County Lena Rd LF	Manatee	439,566	7,218	187,351	31,775
Pasco County Resource Recovery Facility	Pasco	610,743	48,236	262,405	24,928
Pinellas County Bridgeway Acres LF	Pinellas	974,689	47,000	274,419	160,710
Polk County North Central LF	Polk	797,616	23,493	284,634	48,719
Cedar Trail LF	Entire State	22,609,411	705,014	6,608,519	3,015,048

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix A, Section 1.1.2**, it is estimated that the Southwest District has approximately 87.2 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 75.2 million tons of this capacity has been constructed. In 2023, the Class I landfills in the Southwest District received a total of 3.2 million tons of waste. **Table 2-19** shows the normalized remaining capacity and tons of waste accepted in 2023 by each of the Class I landfills in the Southwest District.

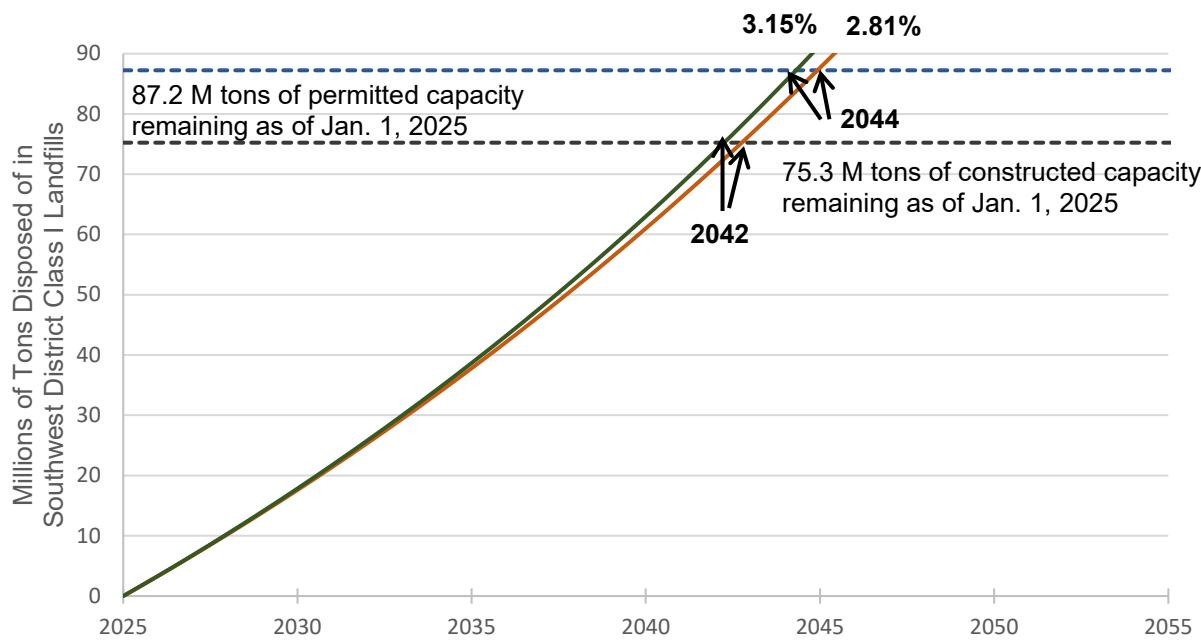
Pinellas County's Bridgeway Acres Landfill has the same constructed and permitted capacity remaining (around 48.3 million tons as of January 1, 2025) because all cells have already been constructed as a slurry wall landfill. **Appendix A, Table 1-12** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

The five-year average annual increase (2018-2023) in waste received by Class I landfills in the South District is approximately 2.81%, while the median annual increase (2018-2023) is approximately 3.15%. Using both the average and median annual growth rate, it is expected that the currently constructed capacity in the Southwest District will last until calendar year 2042, and the currently permitted capacity will last until calendar year 2044. See **Figure 2-21** and **Appendix A, Table 1-13**. **Figure 2-22** shows the estimated timeline for when the currently constructed and permitted capacity in the Southwest District's Class I Landfills will be fully utilized under different disposal growth scenarios.

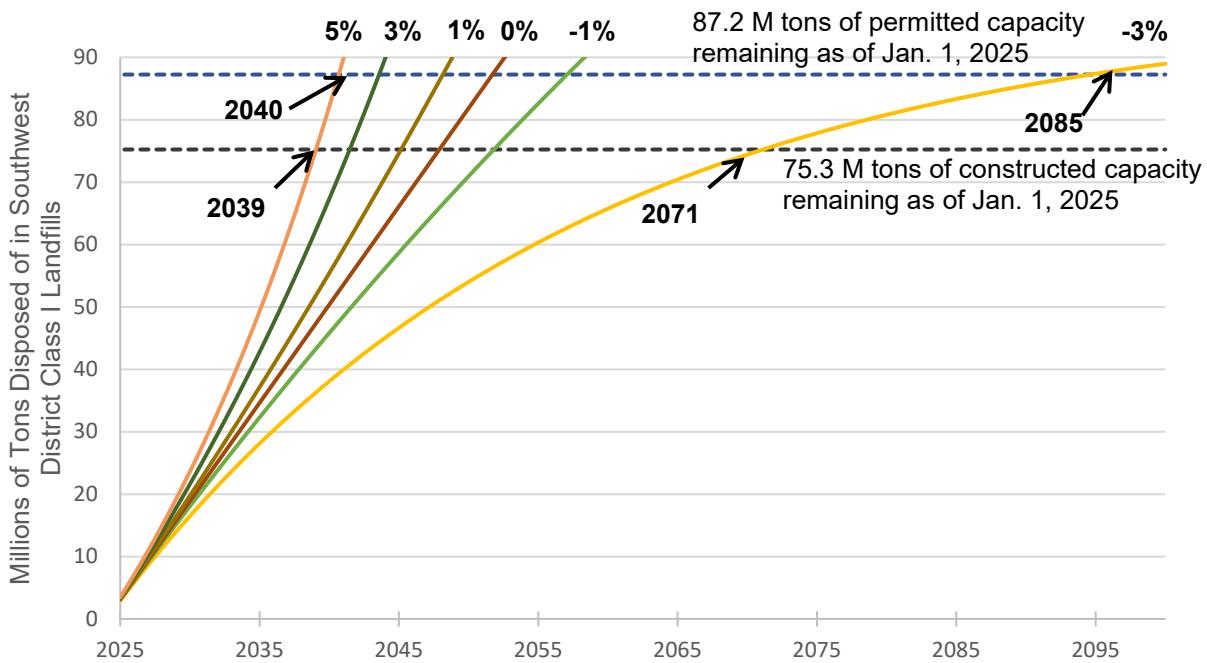
**Table 2-19:** Tons of waste disposed of in 2023 and normalized remaining capacity estimate for each Class I landfill in the Southwest District; 2023 tonnages were obtained from FDEP annual solid waste reports.

Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
Citrus County Central LF	133,594	3,029,957	411,662
Hardee County LF	20,957	379,222	379,222
Hernando County LF	168,732	5,544,714	491,644
Hillsborough County Southeast LF	456,330	3,368,446	3,368,446
Manatee County Lena Rd LF	387,086	15,932,435	15,932,435
Pasco County Resource Recovery Facility*	17,521	377,095	377,095
Pinellas County Bridgeway Acres LF	482,849	48,933,647	48,933,647
Polk County North Central LF	778,775	4,404,768	4,404,768
Cedar Trail LF	748,056	5,266,982	930,868
<b>Total</b>	<b>3,193,901</b>	<b>87,237,267</b>	<b>75,229,787</b>

\*The 2023 landfill tonnages from the annual solid waste report exclude ash residue because it is assumed that this waste is sent to the ash monofill rather than the Class I landfill.



**Figure 2-21:** The currently constructed capacity in FDEP Southwest District Class I landfills is expected to be sufficient to accommodate Southwest District solid waste through 2042 using both the average and median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate Southwest District solid waste through 2044 using both the average and median annual increase in disposal.



**Figure 2-22:** Under a range of different growth scenarios, the currently constructed capacity in the Southwest District is expected to be sufficient to accommodate disposal through 2071 using a -3% growth rate, or through 2039 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2085 using a -3% growth rate, or through 2040 using a 5% growth rate.

**d. Future expansions beyond the currently permitted and constructed airspace**

Cedar Trail Landfill notified FDEP on July 16, 2024, that new cell construction had begun on Cell 13. This is expected to increase the overall constructed capacity in the Southwest District in the coming year

## 3 WASTE-TO-ENERGY FACILITIES

### 3.1 Background

At the time of writing this report, there are nine waste-to-energy facilities in Florida. These facilities are certified under the Power Plant Siting Act, which requires certification for any steam or solar powered facilities which were built after July 1<sup>st</sup>, 1973 and generate greater than or equal to 75 MW of energy annually.

Many of the waste-to-energy facilities in Florida were built in the 1980s and 1990s; however, the Palm Beach County Solid Waste Authority's Renewable Energy Facility (REF) #2 began operating in 2015. REF #2 is not only the newest waste-to-energy facility in Florida, but also the newest facility in the United States. **Table 3-1** shows the nominal electricity generation capacity for each waste-to-energy facility, as well as the year that each facility began operations. Over the years, these facilities have undergone expansions and refurbishments to maintain the infrastructure and accommodate Florida's growing population.

**Table 3-1:** Electricity generation capacity and year of operation for each of Florida's nine waste-to-energy facilities

Facility	Annual Electricity Generation (MW)	Year of Operation
Pinellas County Resource Recovery Facility	75	1983
Hillsborough County Resource Recovery Facility	47	1987
Palm Beach County SWA REF 1	62	1989
Palm Beach County SWA REF 2	100	2015
South Broward Resource Recovery Facility	66.1	1991
Pasco County Resource Recovery Facility	31	1991
Lee County Resource Recovery Facility	60	1994
City of Tampa McKay Bay Waste-to-Energy Facility	22.5	1985
Lake County Resource Recovery Facility	15.7	1990

### 3.2 General Overview and Approach

Waste-to-energy facilities aim to operate at capacity to process and dispose of waste that is delivered by the municipality or county which they serve. While the disposal of waste is the primary purpose of a waste-to-energy facility, such facilities also receive revenue from the sale of electricity to the grid, which is ultimately used to power homes and businesses. There are three measures of capacity that are relevant to waste-to-energy facilities. These include: 1) the **maximum permitted capacity** per the Title V Permits; 2) the **design capacity** based on the size of the combustion units in the plant; and 3) the **operational capacity** accounting for maintenance, downtime, and variable heating value of the waste.

Per the Clean Air Act, Title V, Section 129, all municipal solid waste incinerators are required to operate under a Title V Permit which sets emissions limits for different air pollutants. As part of the emissions monitoring requirements, the plants must have continuous monitoring for primary pollutants, as well as undergo comprehensive stack testing annually (beginning with the initial acceptance testing of the facility). The Title V Permit outlines the **maximum permitted capacity** of the facility by establishing the prevention of significant deterioration (PSD) limits in terms of the maximum heat input rate (MMBtu/hr) and steam flow rating (lb/hr).

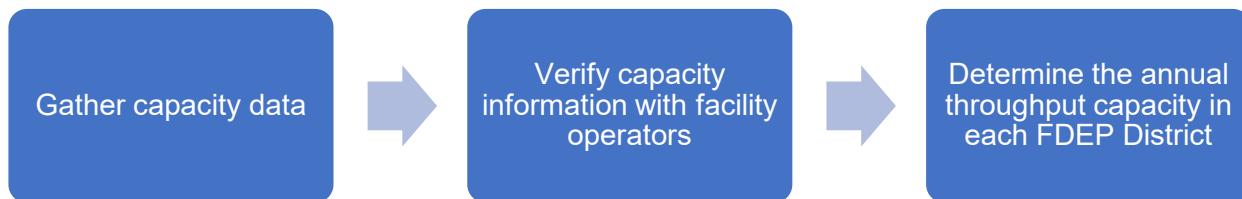
Waste-to-energy capacity is also determined by the physical infrastructure of the plant. Each waste-to-energy facility consists of one or more combustion units (i.e., boilers) which incinerate waste to produce steam that powers a turbine and generates electricity. Each boiler is designed to handle a certain quantity of waste (tons/day) as well as a certain heating value of waste (Btu/lb). So, the boilers determine the throughput of a waste-to-energy facility because they have a maximum capacity for the rate at which they can incinerate waste. The **design capacity** is based on the number of boilers within the plant and the nominal capacity (tons/day) of each boiler.

Finally, waste-to-energy capacity is constrained by actual operating conditions in the plant. One operational consideration that limits capacity is the heating value of the accepted material. If the waste stream were to have a higher heating value than the boiler is designed to handle (for example, due to a high proportion of plastic in the waste stream), then operators may need to slow the rate at which they process material. Downtime and maintenance also decrease the processing capacity of waste-to-energy facilities. The **operational capacity** accounts for these practical limitations and represents the typical throughput of material.

The method to estimate the statewide waste-to-energy capacity began with searching through the publicly available information, such as each facility's conditions of certification (under the Power Plant Siting Act) and Title V Permits to determine the **maximum permitted** and **design capacities**. Then, facility operators were contacted to verify the information gathered from public sources, as well as to obtain the **operational capacity** of each plant. Operators were asked about: 1) the maximum amount of waste that can be processed annually; 2) the types of waste (including approximate proportion) typically processed; 3) the tons processed in 2023; 4) the potential for future expansion; and 5) the anticipated life of the facility. See **Table 3-2** for an outline of the data sources used in the analysis and **Figure 3-1** for a visual depiction of the method.

**Table 3-2:** Summary of data sources and method used to analyze waste-to-energy capacity

Parameter	Description
Number of active facilities included in the analysis	9
Related statutes and regulations	<ul style="list-style-type: none"> <li><b>Power Plant Siting Act:</b> 403.501-.518, F.S. and 62-17, F.A.C.</li> <li><b>Title V Permits:</b> 40 CFR. §60 and 40 CFR §70</li> </ul>
Typical capacity measurement approach	<ol style="list-style-type: none"> <li>1) Use publicly available information to determine the <b>maximum permitted and design capacities</b>.</li> <li>2) Verify information with facility operators and obtain the <b>operational capacity</b>.</li> <li>3) Compile information for each FDEP District.</li> </ol>
Data sources used in methods	<b>Conditions of Certification under Power Plant Siting Act:</b> Maximum processing capacity of the plant and types of material processed <b>Title V Permits:</b> Maximum processing capacity of the plant and types of material processed <b>Correspondence with facility operators:</b> Verification of information gathered from reports and permits; potential for future capacity expansions



**Figure 3-1:** Flow chart of general method used to analyze waste-to-energy capacity

### 3.3 Results and Discussion

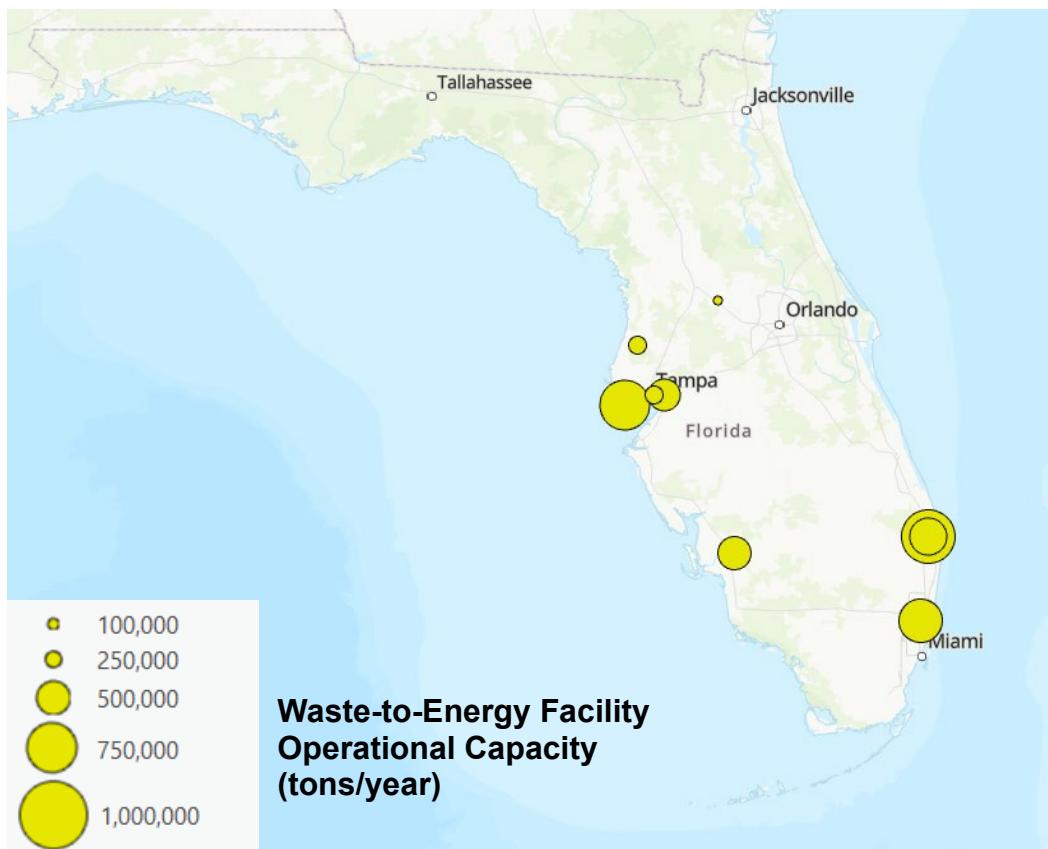
#### 3.3.1 Statewide

Florida's nine waste-to-energy facilities have a combined 27 combustion units with a gross **design capacity** to process 16,436 tons/day of MSW, or approximately 6 million tons annually. Through waste incineration, these plants have a nominal electricity generation capacity of approximately 479.3 MW. A portion of this energy is used for each plant's own operations, while the remainder is sold to the electric grid to power homes and businesses.

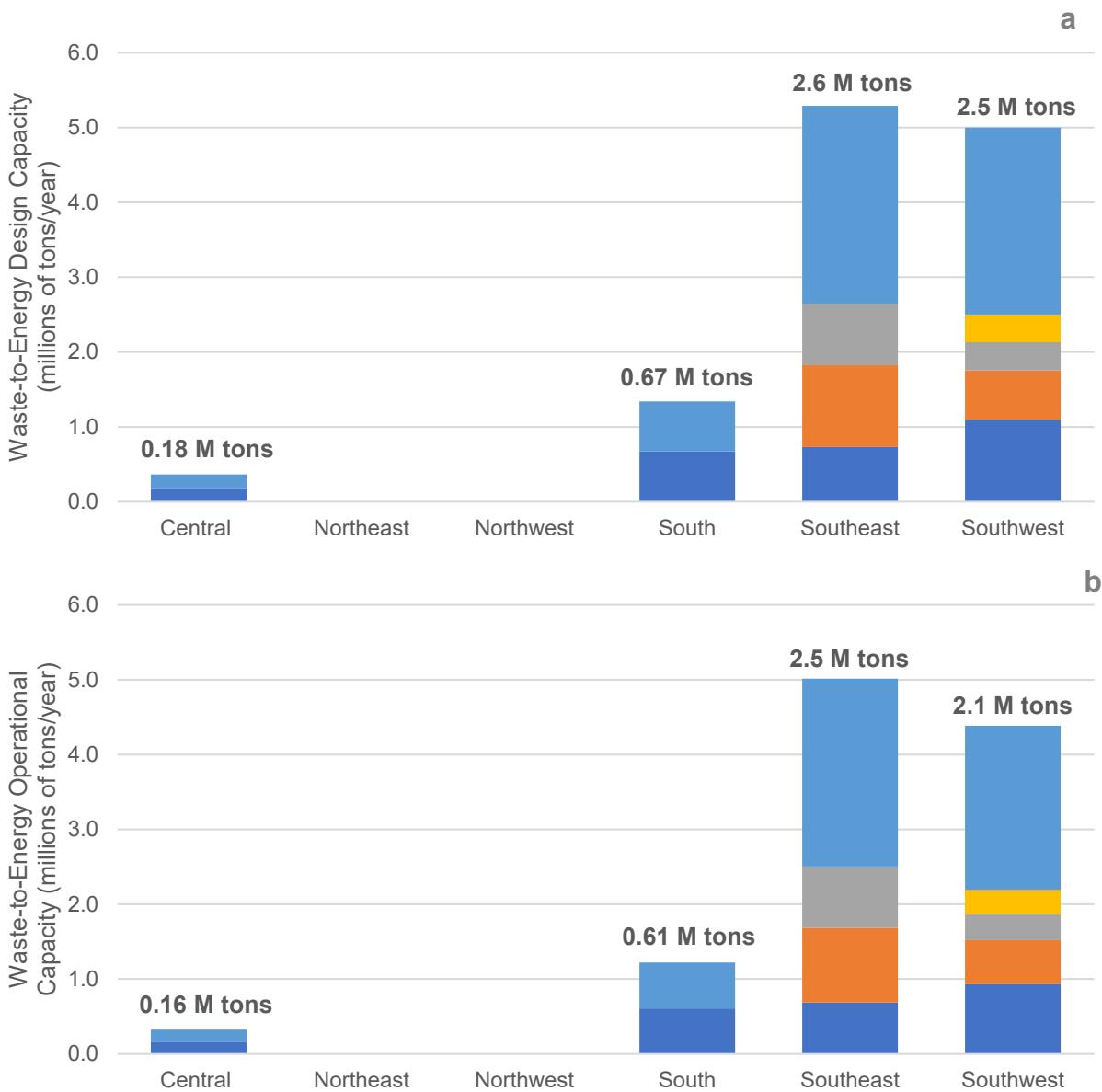
While the **design capacity** across the nine waste-to-energy facilities is approximately 6 million tons of waste annually, the **operational capacity** is approximately 5.5 million tons/year. The difference between the design capacity and operational capacity in these plants can be attributed to a variety of factors, including scheduled downtime for maintenance, unscheduled downtime due to outages, and heating value of waste which

exceeds the design capacity of the combustion units. For reference, approximately 20.9 million tons of waste were disposed of in Class I landfills in 2023, so approximately four times as much waste was disposed of in Class I landfills as can be processed in the state's waste-to-energy facilities. The **maximum permitted capacity** is provided as a maximum steam flow rate for all facilities, which limits the tons of waste that can be processed by the plant.

**Figure 3-2** shows the location of Florida's nine waste-to-energy facilities. Each dot represents a different facility, with the size of the dot scaled to show the annual operational capacity in the plant (i.e., larger dots represent a plant with greater operational capacity relative to other waste-to-energy facilities in the state). **Figure 3-3** shows the design and operational capacity of the waste-to-energy facilities, by FDEP District. Most waste-to-energy capacity resides in the Southeast and Southwest Districts, especially near major population areas in the state that provide a feedstock for incineration. There are no active waste-to-energy facilities in the Northeast or Northwest Districts since the closure of the Bay County Waste-to-Energy Facility in 2021.



**Figure 3-2:** Operational capacity in Florida's waste-to-energy facilities as of January 1<sup>st</sup>, 2025; the size of the dot corresponds to the operational capacity (tons/year)



**Figure 3-3:** a) Design and b) Operational capacity in Florida's waste-to-energy facilities as of January 1<sup>st</sup>, 2025 by FDEP District; the colors in the figure represent a different waste-to-energy facility in each district

**Table 3-3** displays capacity information for Florida's waste-to-energy facilities. Discussions with facility operators have revealed that there is limited capacity for expansions within the existing infrastructure. The only method to considerably increase the capacity of an existing waste-to-energy facility is to construct additional boilers; however, the original facility design must have accounted for the addition of these future boilers within the plant footprint. At the time of writing this report, the Pasco County Resource Recovery Facility is in the process of constructing a fourth boiler to increase capacity by 750 tons/day by 2026. Otherwise, the only plant capable of expanding capacity via boiler construction is the South Broward Waste-to-Energy Facility, though

Broward County does not have plans to add this fourth boiler at the time of writing this report. Therefore, siting and construction of new infrastructure is needed to increase waste-to-energy capacity in Florida.

**Table 3-3:** Design and operational capacity information for Florida's waste-to-energy facilities

Facility	Design Capacity (tons/year)	Operational Capacity (tons/year)	Combustion Unit Design Capacity
Pinellas County Resource Recovery Facility	1,095,000	850,000	3 boilers; 1,000 tons/day each
Hillsborough County Resource Recovery Facility	657,000	591,300	4 boilers; 400 tons/day in Units 1-3 and 600 tons/day in Unit 4
Palm Beach County SWA REF #1	730,000	686,280	2 boilers; 900 tons/day RDF each
Palm Beach County SWA REF #2	1,095,000	1,000,000	3 boilers; 1,000 tons/day each
South Broward Waste-to-Energy Facility	821,250	820,000	3 boilers; 750 tons/day each
Pasco County Resource Recovery Facility	383,250	340,000	3 boilers; 350 tons/day each
Lee County Resource Recovery Facility	670,140	610,000	3 boilers; 600 tons/day in two and 636 tons/day in the third
City of Tampa McKay Bay Refuse-to-Energy Facility	365,000	330,000	4 boilers; 250 tons/day each
Lake County Resource Recovery Facility	182,500	163,000	2 boilers; 250 tons/day each

Each of Florida's nine waste-to-energy facilities primarily accepts waste from within the county in which they are located. Palm Beach and Hillsborough Counties each have two waste-to-energy facilities which serve their population. REF 1 and REF 2 are owned by the Palm Beach County Solid Waste Authority and serve the entire county. The Hillsborough County Resource Recovery primarily serves unincorporated Hillsborough County and some municipalities, while the City of Tampa McKay Bay Refuse-to-Energy Facility primarily serves the City of Tampa. The Lake County Resource Recovery Facility receives MSW from Lake, Sumter, and Marion Counties because the facility serves The Villages, City of Leesburg, and Tavares. The Lake County Resource Recovery Facility also accepts segregated waste from throughout the state (e.g., USDA regulated garbage and off-specification or expired consumer products). See **Table 3-4** for the service area of each waste-to-energy facility.

**Table 3-4:** Service area of each waste-to-energy; population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Pinellas County Resource Recovery Facility	Pinellas	974,689	47,000	274,419	160,710
Hillsborough County Resource Recovery Facility	Hillsborough	1,541,531	36,189	403,528	240,980
Palm Beach County SWA REF #1	Palm Beach	1,532,718	31,184	314,187	369,936
Palm Beach County SWA REF #2	Palm Beach	1,532,718	31,184	314,187	369,936
South Broward Waste-to-Energy Facility	Broward	1,973,579	30,533	349,006	486,545
Pasco County Resource Recovery Facility	Pasco	610,743	48,236	262,405	24,928
Lee County Resource Recovery Facility	Lee	800,864	12,035	295,730	82,189
City of Tampa McKay Bay Refuse-to-Energy Facility	Hillsborough	1,541,531	36,189	403,528	240,980
Lake County Resource Recovery Facility	Lake, Sumter, Marion	974,033	19,966	269,782	115,882

### 3.3.2 Pinellas County Resource Recovery Facility

The Title V Permit for the Pinellas County Resource Recovery Facility (effective July 13<sup>th</sup>, 2021-2026) describes the plant as having three combustion units and a gross nominal electricity generation of 75 MW. Combustion Units 1 and 2 began operating in 1983 and Unit 3 began operating in 1986. The facility was designed to process 3,000 tons/day based on a higher heating value of 5,000 Btu. Therefore, **the design capacity of the plant is approximately 1,095,000 tons/year.**

**The maximum permitted capacity is approximately 1,204,500 tons/year** based on the limit of 1,100 tons/day processed per combustion unit. The permitted capacity from Section A.1 of the Title V Permit is summarized below:

- 1) The steam flow rate cannot exceed 275,000 lb/hr on a 4-hour block average.
- 2) Each combustion unit cannot exceed 1,100 tons/day MSW.

- 3) Each combustion unit cannot exceed 110% of the highest continuous 4-hour average unit (steam) load achieved during the most recent dioxin/furan performance test.

Even though the maximum permitted and design capacities for the Pinellas County Resource Recovery Facility both exceed one million tons per year, the operators estimate that **the operational capacity is approximately 850,000 tons/year**. The heating value of the waste was approximately 4,500 Btu/lb when the plant began operating. However, the heating value of material currently accepted exceeds 5,000 Btu/lb, so less material is required to generate electricity in the plant. Operating experience has also determined that 850,000 tons/year is a sustainable rate for facility to maintain while minimizing downtime.

**Table 3-5** shows the processing capacity for the Pinellas County Resource Recovery Facility, as determined by the three different metrics discussed above. In calendar year 2023, **832,271 tons** were combusted at the waste-to-energy facility. Regarding the types of waste that are combusted, the facility is limited to processing (by weight) up to 3% tires and 5% non-MSW material that are received as segregated loads, as defined in section A.4 (f) of the Title V Permit. However, the operators estimate that the facility processes less than 1.5% tires per month and less than 5% yard trash.

**Table 3-5:** Capacity and 2023 tons for the Pinellas County Resource Recovery Facility

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	CY 2023 Tons	Boilers
Pinellas County Resource Recovery Facility	1,095,000	1,204,500	850,000	832,271	3 boilers; 1,000 tons/day each

Over the years, the facility has been refurbished to maintain the infrastructure. The operators maintain a list of expected lifespans for major equipment (based on experience) so components can be replaced before they fail to reduce downtime. However, there are no planned capacity expansions at the Pinellas County Resource Recovery Facility. The operators have explained that the plant is the maximum size to be considered a ‘qualified facility’ to generate and sell power on the national electrical power grid.

### *3.3.3 Hillsborough County Resource Recovery Facility*

The Title V Permit for the Hillsborough County Resource Recovery Facility (effective December 16<sup>th</sup>, 2021-2026) describes the plant as having four combustion units and a gross nominal electricity generation of 47 MW. Units 1-3 began operating in 1986 and Unit 4 began operating in 2009. Units 1-3 each have a nominal capacity of 400 tons/day based on a heating value of 4,500 Btu/lb, while Unit 4 has a nominal capacity of 600 tons/day based on a heating value of 5,000 Btu/lb. The gross processing capacity is

1,800 tons/day based on a heating value of 4,667 Btu/lb across the four combustion units, so **the design capacity of the plant is approximately 657,000 tons/year**.

The Title V Permit for the Hillsborough County Resource Recovery Facility does not explicitly limit the quantity of waste that can be incinerated daily. Therefore, **the facility does not have a maximum permitted capacity in terms of the tons/day that can be incinerated**. Rather, the permit limits the steam flow from each of the combustion units, which influences the processing capacity of the waste-to-energy facility. The permitted capacity from Section A.4 and B.4 of the Title V Permit is summarized below:

- 1) The steam flow cannot exceed 102,000 lb/hr on a 4-hour block average for each of the Units 1-3.
- 2) The steam flow cannot exceed 200,000 lb/hr on a 4-hour block average for Unit 4.
- 3) Each combustion unit cannot exceed 110% of the highest continuous 4-hour average unit (steam) load achieved during the most recent dioxin/furan performance test.

While the Hillsborough County Resource Recovery Facility is designed to process 1,800 tons/day, the operators note that the industry standard for a mature, well operated waste-to-energy facility is approximately 90-92% boiler availability. This assumption is based on 4-5% availability loss each due to scheduled and unscheduled downtime.

Assuming 90% boiler availability throughout the year, **the operational capacity is approximately 591,300 tons/day**.

**Table 3-6** shows the processing capacity for the Hillsborough County Resource Recovery Facility, as determined by the three different metrics discussed above. In fiscal year 2023, **516,681 tons** were combusted with an average HHV of 5,133 Btu/lb. The facility experienced more downtime than is typically expected in 2023, leading to an overall boiler availability of 87.1% for the year. Therefore, fewer tons were processed in 2023 than would be expected based on the operational capacity. Regarding the types of waste that are combusted, the facility is limited to processing (by weight) up to 3% tires and 5% non-MSW material that are received as segregated loads, as defined in section A.6 (f) and B.6 (f) of the Title V Permit. However, the operators estimate that the facility processes approximately 95% MSW, with the remaining 5% consisting of tires and non-processable yard waste (e.g., bagged material).

**Table 3-6:** Capacity and 2023 tons for the Hillsborough County Resource Recovery Facility

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	FY 2023 Tons	Boilers
Hillsborough County Resource Recovery Facility	657,000	NA	591,300	516,681	4 boilers; 400 tons/day in Units 1-3 and 600 tons/day in Unit 4

The Hillsborough County Resource Recovery Facility does not currently have plans to expand processing capacity in the plant. However, the operators conduct an annual condition assessment to identify a list of capital projects that could maintain the facility in good condition to operate for another 20 years (to coincide with the end of the current Extension Agreement in 2049). The list also includes regular operating repairs and maintenance for the facility.

### *3.3.4 Palm Beach County SWA REF 1*

The Title V Permit for the Palm Beach Energy Renewable Park (effective April 8<sup>th</sup>, 2021-2026) describes REF 1 (which processes refuse derived fuel, or RDF) as having two combustion units and a gross nominal electricity generation of 62 MW. The two combustion units began operating in 1989, and each unit has a nominal capacity of 900 tons/day of RDF based on a heating value of 5,700 Btu/lb. The gross processing capacity is 2,000 tons/day of mixed MSW, so **the design capacity of the plant is approximately 730,000 tons/year**.

**The maximum permitted capacity is approximately 730,000 tons/year** based on the limit of 2,000 tons/day mixed MSW between the two combustion units, which is the same as the design capacity. The permitted capacity from Section A.2 of the Title V Permit is summarized below:

- 1) The steam flow rate cannot exceed 324,000 lb/hr on a 4-hour block average for each combustion unit.
- 2) The combined combustion units cannot exceed 2,000 tons/day of mixed MSW.

The 2025 Landfill Depletion Model for the Solid Waste Authority's Palm Beach Energy Renewable Park assumes the capacity of REF 1 to be 817,000 tons of mixed MSW, based on an assumed maximum throughput of 860,000 tons and 5% downtime. However, the model also assumes that 16% of the mixed MSW will be lost as process residue when producing RDF, so 686,280 tons will be burned annually in REF 1. Therefore, **the plant's operational capacity is approximately 686,200 tons/year** for incineration.

**Table 3-7** shows the processing capacity for REF 1, as determined by the three different metrics discussed above. In fiscal year 2023, **610,191 tons** of RDF were combusted at the waste-to-energy facility. REF 1 is only allowed to process RDF produced from mixed MSW, as described in Section A.5 (a) of the Title V Permit.

**Table 3-7: Capacity and 2023 tons for REF 1**

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	FY 2023 Tons	Boilers
Palm Beach County SWA REF 1	730,000	730,000	686,280	610,191	2 boilers; 900 tons/day RDF each

The Solid Waste Authority continues to maintain and refurbish the equipment in REF 1 to extend the life of the infrastructure. According to the 2025 Landfill Depletion Model for the Beach Energy Renewable Park, the trommel screens in REF 1 were replaced during fiscal year 2024. The trommel screen replacement has improved the production of RDF and reduced the generation of process residue which must be diverted either to the Solid Waste Authority's Class I landfill or REF 1.

### *3.3.5 Palm Beach County SWA REF 2*

The Title V Permit for the Palm Beach Energy Renewable Park (effective April 8<sup>th</sup>, 2021-2026) describes REF 2 as having three combustion units and a gross nominal electricity generation of between 90 and 100 MW. The three combustion units began operating in 2015, and each unit has a nominal capacity of 1,000 tons/day. The gross processing capacity is 3,000 tons/day of mixed MSW, so **the design capacity of the plant is approximately 1,095,000 tons/year**.

The Title V Permit for REF 2 does not explicitly limit the quantity of waste that can be incinerated daily. Therefore, **the facility does not have a maximum permitted capacity in terms of the tons/day that can be incinerated**. Rather, the permit limits the steam flow from each of the combustion units, which influences the processing capacity of the waste-to-energy facility. The permitted capacity from Section B.3 of the Title V Permit is summarized below:

- 1) The maximum heat input from natural gas for each combustion unit on a steady state basis during boiler startup, shutdown, and flame stabilization is limited to 167 MMBtu/hr.
- 2) The steam flow cannot exceed 320,100 lb/hr on a 4-hour block average for each of the combustion units.
- 3) The maximum demonstrated unit load for each combustion unit will be determined during each performance test and is the highest continuous 4-hour average unit (steam) load achieved during the most recent dioxin/furan performance test. Each combustion unit cannot exceed the steam production rate of 320,100 lb/hr or 110% of the maximum demonstrated unit load.

The 2025 Landfill Depletion Model for the Solid Waste Authority's Palm Beach Energy Renewable Park assumes the annual maximum throughput of REF 2 to be 1,000,000 tons. Therefore, **the plant's operational capacity is approximately 1,000,000 tons/year** for incineration.

**Table 3-8** shows the processing capacity for REF 2, as determined by the three different metrics discussed above. In fiscal year 2023, **993,154 tons** were combusted at the waste-to-energy facility. Regarding the types of waste that are combusted, the facility is limited to processing (by weight) up to 5% tires and 20% non-MSW material that are received as segregated loads, as defined in section B.7 (c) of the Title V Permit. None of the individual non-MSW categories (listed in section B.7 (c) of the Title V Permit) can exceed 5% of the total weight of material processed on a monthly basis.

**Table 3-8:** Capacity and 2023 tons for REF 2

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	FY 2023 Tons	Boilers
Palm Beach County SWA REF 2	1,095,500	NA	1,000,000	993,154	3 boilers; 1,000 tons/day each

It is important to note that REF 2 is not currently operating at capacity with mixed MSW alone. The plant was originally designed to provide more capacity than needed so that the infrastructure could keep up with trends in population growth and waste generation in Palm Beach County for the coming years. The 2025 Landfill Depletion Model assumes that 75% of the Class III material received by the Solid Waste Authority will be combusted in REF 2. Also, a portion of the yard waste received by the Solid Waste Authority will continue to be combusted in REF 2 until enough mixed MSW is received to exceed the capacity in both REF 1 and 2.

### *3.3.6 South Broward Waste-to-Energy Facility*

The Title V Permit for the South Broward Waste-to-Energy Facility (effective September 14<sup>th</sup>, 2020-2025) describes the plant as having three combustion units and a gross nominal electricity generation of 66.1 MW. All three combustion units began operating in 1991, and each unit has a nominal capacity of 750 tons/day based on a heating value of 4,500 Btu/lb. The gross processing capacity is 2,250 tons/day based on a heating value of 4,500 Btu/lb, so **the design capacity of the plant is approximately 821,250 tons/year**.

**The maximum permitted capacity is approximately 944,985 tons/year** based on the limit of 863 tons/day processed per combustion unit (or 2,589 tons/day for the entire facility). The permitted capacity from Section A.2 and A.4 of the Title V Permit is summarized below:

- 1) The steam flow rate cannot exceed 192,000 lb/hr on a 4-hour block average for each combustion unit.
- 2) Each combustion unit cannot exceed 863 tons/day MSW and 323.6 MMBtu/hr, as determined monthly.
- 3) Each combustion unit cannot exceed 110% of the highest continuous 4-hour average unit (steam) load achieved during the most recent dioxin/furan performance test.

Discussions with the facility operator have revealed that the plant typically operates near the design capacity. For the South Broward Waste-to-Energy facility, **the operational capacity is approximately 820,000 tons/year**.

**Table 3-9** shows the processing capacity for the South Broward Waste-to-Energy Facility, as determined by the three different metrics discussed above. In calendar year 2023, **822,777 tons** were combusted at the waste-to-energy facility, which is greater

than both the design capacity and the typical operational capacity of the plant. Regarding the types of waste that are combusted, the facility is limited to processing (by weight) up to 5% (non-liquid) biosolids, 3% tires, and 5% non-MSW material that are received as segregated loads, as defined in section A.5 (g) of the Title V Permit.

**Table 3-9:** Capacity and 2023 tons for the South Broward Waste-to-Energy Facility

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	CY 2023 Tons	Boilers
South Broward Waste-to-Energy	821,250	944,985	820,000	822,777	3 boilers; 750 tons/day each

The South Broward Waste-to-Energy Facility is constantly being maintained and refurbished. The original facility design accounted for the construction of a fourth boiler, so if the operators wanted to expand capacity in the plant, they could add an additional 750 ton/day boiler (which would increase the overall capacity of the waste-to-energy facility by 273,750 tons/year).

### *3.3.7 Pasco County Resource Recovery Facility*

The Title V Permit for the Pasco County Resource Recovery Facility (effective May 27<sup>th</sup>, 2021-2026) describes the plant as having three combustion units and a gross nominal electricity generation of 31 MW. All three combustion began operating in 1991, and each unit has a nominal capacity of 350 tons/day based on a heating value of 4,800 Btu/lb. The gross processing capacity is 1,050 tons/day based on a heating value of 4,800 Btu/lb, so **the design capacity of the plant is approximately 383,250 tons/year**.

The Title V Permit for the Pasco County Resource Recovery Facility does not explicitly limit the quantity of waste that can be incinerated daily. Therefore, **the facility does not have a maximum permitted capacity in terms of the tons/day that can be incinerated**. Rather, the permit limits the steam flow from each of the combustion units, which influences the processing capacity of the waste-to-energy facility. The permitted capacity from Section A.2 and A.3 of the Title V Permit is summarized below:

- 4) The steam flow cannot exceed 100,500 lb/hr on a 4-hour block average for each of the combustion units.
- 5) Each combustion unit cannot exceed 110% of the highest continuous 4-hour average unit (steam) load achieved during the most recent dioxin/furan performance test.

While the Pasco County Resource Recovery Facility is designed to process 1,050 tons/day, the operators note that **the operational capacity is approximately 340,000 tons/year**. The operational capacity may be lower than the design capacity due to scheduled and unscheduled downtime when the plant is unable to incinerate waste.

**Table 3-10** shows the processing capacity for the Pasco County Resource Recovery Facility, as determined by the three different metrics discussed above. In fiscal year 2023, **342,784 tons** were combusted at the waste-to-energy facility, which is greater than the typical operational capacity in the plant. Regarding the types of waste that are combusted, the facility is limited to processing (by weight) up to 5% (non-liquid) biosolids, 3% tires, and 5% non-MSW material that are received as segregated loads, as defined in section A.5 (g) of the Title V Permit. However, the operators note that approximately 99% of the waste incinerated at the plant is MSW, with some yard trash processed during times of high volume.

**Table 3-10:** Capacity and 2023 tons for the Pasco County Resource Recovery Facility

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	FY 2023 Tons	Boilers
Pasco County Resource Recovery Facility	383,250	NA	340,000	342,784	3 boilers; 350 tons/day each

The Pasco County Resource Recovery Facility was originally designed to account for the addition of a fourth boiler. Construction of this fourth boiler is underway and is expected to be completed in fiscal year 2026. When construction is complete, the capacity of the plant is anticipated to increase to 1,525 tons/day (or 510,000 tons/year operational capacity). Pasco County is also in the process of developing a new comprehensive solid waste master plan and expects that the facility will be operational for at least another 20 years.

### *3.3.8 Lee County Resource Recovery Facility*

The Title V Permit for the Lee County Resource Recovery Facility (effective August 26<sup>th</sup>, 2021-2026) describes the plant as having three combustion units and a gross nominal electricity generation of 60 MW. Units 1 and 2 began operating in 1994 and Unit 3 began operating in 2007. Two of the combustion units have a nominal capacity of 600 tons/day each, and the third has a nominal capacity of 636 tons/day, based on a heating value of 5,000 Btu/lb. The gross processing capacity is 1,836 tons/day based on a heating value of 5,000 Btu/lb across the three combustion units, so **the design capacity of the plant is approximately 670,140 tons/year**.

**The maximum permitted capacity is approximately 722,700 tons/year** based on the limit of 660 tons/day processed per combustion unit. The permitted capacity (based on a heating value of 5,000 Btu/lb) from Section A.1 and B.1 of the Title V Permit is summarized below:

- 1) Each combustion unit cannot exceed 660 tons/day MSW.
- 2) Each combustion unit cannot exceed 275 MMBtu/hr heat input for Units 1 and 2, and 291.5 MMBtu/hr for Unit 3.

- 3) The steam flow rate in each combustion unit cannot exceed 186,200 lb/hr on a 4-hour block average for Units 1 and 2, and 197,400 lb/hr for Unit 3.

While the Lee County Resource Recovery Facility is designed to process 1,980 tons/day, the operators note that **the operational capacity is approximately 610,000 tons/year**. The operational capacity is lower than the maximum permitted and design capacities to account for maintenance and outages.

**Table 3-11** shows the processing capacity for the Lee County Resource Recovery Facility, as determined by the three different metrics discussed above. In fiscal year 2023, **519,200 tons** were combusted at the waste-to-energy facility. Regarding the types of waste that are combusted, the facility is limited to processing (by weight) up to 5% (non-liquid) biosolids, 5% tires, and 5% non-MSW material that are received as segregated loads, as defined in section A.3 (g) and B.3 (g) of the Title V Permit. However, the operators note that the processed waste is assumed to be 85% MSW and 15% other waste (e.g., yard trash, recycling residues, tires, Class III, bulk waste) for planning purposes.

**Table 3-11:** Capacity and 2023 tons for the Lee County Resource Recovery Facility

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	FY 2023 Tons	Boilers
Lee County Resource Recovery Facility	722,700	670,140	610,000	519,200	3 boilers; 600 tons/day in two and 636 tons/day in the third

There are \$75M in investments planned for refurbishment of the Lee County Resource Recovery Facility between fiscal years 2025 and 2028 to maintain the infrastructure. However, the plant is unable to expand the existing facility because the stack and pit are at capacity. To add additional capacity, Lee County would need to construct a new stand-alone facility.

### *3.3.9 City of Tampa McKay Bay Refuse-to-Energy Facility*

The Title V Permit for the McKay Bay Refuse-to-Energy Facility (effective November 24<sup>th</sup>, 2021-2026) describes the plant as having four combustion units and a gross nominal electricity generation of 22.5 MW. The facility was retrofitted to operate as a waste-to-energy facility in 1985, and the four combustion units in use today began operating in 2001. The combustion units each have a short-term tonnage capacity of 288 tons/day, but the nominal capacity for each unit is restricted to 250 tons/day due to limiting steam production. The gross processing capacity is 1,000 tons/day based on a heating value of 5,000 Btu/lb across the four combustion units, so **the design capacity of the plant is approximately 365,000 tons/year**.

**The maximum permitted capacity is approximately 365,000 tons/year** based on the limit of 250 tons/day processed per combustion unit, which is the same as the design capacity. The permitted capacity from Section A.1 and A.2 of the Title V Permit is summarized below:

- 1) The four combustion units have a net maximum capacity of 1,103 Btu/lb of steam.
- 2) Each combustion unit cannot exceed 250 tons/day MSW, based on a 12-month rolling average.
- 3) The steam flow rate in each combustion unit cannot exceed 79,300 lb/hr on a 4-hour block average.
- 4) Each combustion unit cannot exceed 110% of the highest continuous 4-hour average unit (steam) load achieved during the most recent dioxin/furan performance test.

While the McKay Bay Refuse-to-Energy Facility is designed to process 1,000 tons/day, the operators note that **the operational capacity is approximately 330,000 tons/year**. The operational capacity reflects the average annual throughput, when accounting for scheduled and unscheduled downtime

**Table 3-12** shows the processing capacity for the McKay Bay Refuse-to-Energy Facility, as determined by the three different metrics discussed above. In calendar year 2023, **291,735 tons** were combusted at the waste-to-energy facility, which is less than the typical operational capacity in the plant. The lower processing rate for 2023 is attributed to equipment issues due to facility age. Regarding the types of waste that are combusted, the facility is limited to processing (by weight) up to 3% tires and 5% non-MSW material that are received as segregated loads, as defined in Section A.4 (f) of the Title V Permit. However, the operators estimate that the processed waste is approximately 90% MSW, 3% tires, and the remainder yard waste. The facility operators also began limiting the acceptance of yard waste a few years ago due to the heating value and moisture content of the waste.

**Table 3-12:** Capacity and 2023 tons for the McKay Bay Refuse-to-Energy Facility

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	CY 2023 Tons	Boilers
City of Tampa McKay Bay Refuse-to-Energy Facility	365,000	365,000	330,000	291,735	4 boilers; 250 tons/day each

A major retrofit of approximately 60% of the McKay Bay Refuse-to-Energy Facility has just been completed. The operators plan to refurbish the remainder of the facility in the next five years and expect that the next retrofit will not be needed for at least another 20 years. There are no possible additions to expand capacity in the plant.

### *3.3.10 Lake County Resource Recovery Facility*

The Title V Permit for the Lake County Resource Recovery Facility (effective April 27<sup>th</sup>, 2021-2026) describes the plant as having two combustion units and a gross nominal electricity generation of 15.7 MW. Both combustion units began operating in 1990. The combustion units each have a capacity of 250 tons/day based on a heating value of 5,000 Btu/lb. The gross processing capacity is 500 tons/day, so **the design capacity of the plant is approximately 182,500 tons/year**.

**The maximum permitted capacity is approximately 210,240 tons/year** based on the limit of 288 tons/day processed per combustion unit. The permitted capacity from Section A.1 and A.2 of the Title V Permit is summarized below:

- 1) Each combustion unit cannot exceed 288 tons/day MSW and 120 Btu/hr (based on a 4-hour block average)
- 2) The steam flow rate cannot exceed 69,000 lb/hr on a 4-hour block average for each combustion unit.
- 3) Each combustion unit cannot exceed 110% of the highest continuous 4-hour average unit (steam) load achieved during the most recent dioxin/furan performance test.

While the Lake County Resource Recovery Facility is designed to process 500 tons/day, **the operational capacity is approximately 163,000 tons/year**. The operators note that the facility is operating about 93% of the time due to scheduled and unscheduled downtime. Further, the facility was originally designed to accept 5,000 Btu/lb waste, so when the heating value of the waste exceeds 5,000 Btu/lb (e.g., due to a high proportion of plastic packaging), then the operators must slow the rate of fuel intake.

**Table 3-13** shows the processing capacity for the Lake County Resource Recovery Facility, as determined by the three different metrics discussed above. In calendar year 2023, **159,668 tons** were combusted at the waste-to-energy facility. Regarding the types of waste that are combusted, the facility is limited to processing (by weight) up to 10% biomedical waste, 3% tires and 40% non-MSW material (as defined in Section A.5 (f) of the Title V Permit) that are received as segregated loads. However, the operators estimate that the processed waste is approximately 27% segregated waste and 73% MSW. Compared to other waste-to-energy facilities, the Lake County Resource Recovery Facility processes a greater proportion of segregated waste (e.g., USDA regulated garbage and off-specification or expired consumer products). The MSW service area is relatively local to the facility, with waste originating in the Villages, City of Leesburg, Tavares, and some commercial sources. The segregated waste is transported farther distances and may come from all over the state.

**Table 3-13:** Capacity and 2023 tons for the Lake County Resource Recovery Facility

Facility	Design Capacity (tons/year)	Maximum Permitted Capacity (tons/year)	Operational Capacity (tons/year)	CY 2023 Tons	Boilers
Lake County Resource Recovery Facility	182,500	210,240	163,000	159,668	2 boilers; 250 tons/day each

The Lake County Resource Recovery Facility undergoes regular maintenance to extend the life of the infrastructure. However, there are no plans to expand capacity in the plant, as the original facility design did not account for the addition of other boilers.

## 4 WASTE-TO-ENERGY ASH MONOFILL

### 4.1 Background

Incineration of waste produces electricity to power homes and businesses, as described in **Section 3**, while simultaneously providing volume reduction of the waste stream. Ash residue is defined in 62-701.200(7), F.A.C. as the bottom and fly ash resulting from solid waste combustion, where bottom ash is the solid material removed from the grates or stoker and fly ash is the material that is removed from the air pollution control device. Ash residue is considered a non-hazardous solid waste and can either be disposed of in a Class I landfill or waste-to-energy ash monofill. Waste-to-energy ash monofills are lined disposal units which exclusively accept ash residue; as of April 2025, there are four such facilities in the state which have active permits and can accept waste.

Definition in 62-701.200(7), F.A.C.:

(7) *Ash residue* means all the solid residue and any entrained liquids resulting from the combustion of solid waste in a solid waste combustor, including bottom ash, fly ash and combined bottom and fly ash, but excluding recovered metals, glass, and other recovered materials separated from the ash residue.

(a) *“Bottom ash” means the solid material remaining after combustion of solid waste, which is discharged from the grates or stoker of a solid waste combustor.*

(b) *“Fly ash” means the residue from the combustion of solid waste, which is entrained in the gas stream of a solid waste combustor. Fly ash includes particulates, cinders, soot, and solid waste from air pollution control equipment.*

The four waste-to-energy ash monofills are located at: (1) the Lee/Hendry Regional Solid Waste Disposal Facility, (2) the Broward County South Resource Recovery Facility, (3) the Dade County Resource Recovery Facility, and (4) the Pasco County Resource Recovery Facility. Each of these waste-to-energy ash monofills serves as a disposal area for the ash residue generated in the accompanying waste-to-energy facility. The Dade County Resource Recovery Facility was destroyed in a fire in February 2023, but the capacity of the accompanying monofill is included in this analysis since there are ongoing discussions about the potential of building future waste-to-energy capacity in Miami-Dade County. So, the Dade County Resource Recovery waste-to-energy ash monofill may receive waste again in the coming years. Ash residue generated by the other waste-to-energy facilities described in **Section 3** are disposed of in Class I landfills.

Like Class I and III landfills, operators of waste-to-energy ash monofills typically conduct annual topographic surveys to determine the remaining capacity of the disposal area. During these survey events, the existing elevation of the monofill is compared to the permitted grade to determine the remaining available airspace. The date of the airspace estimate therefore depends on the date that the topographic survey is conducted, which varies between facilities. For example, one facility may conduct the topographic survey at the beginning of the calendar year, while another may time the survey to coincide

with the beginning of the fiscal year. Operators will combine knowledge of the remaining airspace with information on the annual accepted tonnages, per capita waste generation, population of the service area, density of compacted waste, or airspace consumed between topographic surveys to predict the years of life remaining for permitted and constructed areas.

## 4.2 General Overview and Approach

Since there is not a standardized format or reporting date for site life estimates, a method was developed to normalize capacity information and allow for comparison in waste-to-energy ash monofills throughout the state. First, information related to capacity, annual waste acceptance, and future landfill expansions were obtained from permitting and reporting information stored on the FDEP Solid Waste Universe ([https://fldep.dep.state.fl.us/www\\_wacs/Reports/SW\\_Facility\\_Count.asp](https://fldep.dep.state.fl.us/www_wacs/Reports/SW_Facility_Count.asp)) (which links to OCULUS). Then, facility operators were contacted to verify the following information: (1) annual tons disposed in the waste-to-energy ash monofill, (2) remaining capacity of permitted and constructed airspace, (3) maximum design capacity of permitted airspace (i.e., the sum of permitted capacity consumed and remaining), and (4) the airspace utilization factor for the monofill. The airspace utilization factor is the mass of solid waste that is disposed of in a cubic yard of airspace and is measured as the mass of waste (from scale house records) received over a time interval divided by the volume of airspace consumed in the same interval (from topographic surveys).

Facility operators were also asked about plans for future monofill expansions beyond the currently permitted airspace (i.e., maximum site life capacity). The general method for normalizing the capacity estimates is depicted graphically in **Figure 4-1**. **Table 4-1** below includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis.



**Figure 4-1:** Flow chart of general method used to analyze Class I landfill capacity

**Table 4-1:** Summary of data sources and method used to analyze Class I landfill capacity

Parameter	Description
Number of active facilities included in the analysis	4
Related reporting requirements	<ul style="list-style-type: none"> <li><b>Annual solid waste reports:</b> 403.706(7), F.S.</li> </ul>
Typical capacity measurement approach	<ol style="list-style-type: none"> <li>1) Use airspace utilization factor to convert remaining volume estimate (cy) to remaining mass estimate (tons).</li> <li>2) Normalize remaining capacity estimate for each facility to a single date (January 1<sup>st</sup>, 2025).</li> <li>3) Use the annual solid waste reports to estimate the service area of each waste-to-energy ash monofill.</li> </ol>
Data sources used in methods	<p><b>Annual site life estimates:</b> Remaining permitted and constructed capacity; airspace utilization factor; years of capacity remaining; annual ash residue disposal</p> <p><b>Annual solid waste reports:</b> Population and generator sectors within each county</p> <p><b>Permit applications:</b> Current operating footprint and potential for future expansions at each waste-to-energy ash monofill</p> <p><b>Correspondence with facility operators:</b> Verification of information gathered from reports and permits; potential for future monofill expansions</p>

## 4.3 Results and Discussion

### 4.3.1 Statewide

Across the four waste-to-energy ash monofills included in this analysis, there are approximately 7.3 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025. The Lee/Hendry Regional Solid Waste Facility, Dade County Resource Recovery Facility, and Pasco County Resource Recovery Facility have already constructed all their currently permitted airspace. The South Broward Waste-to-Energy Facility, however, has yet to construct their final permitted disposal cell (Cell 1C2). Therefore, the remaining constructed capacity is less than the remaining permitted capacity and is estimated to be approximately 5.7 million tons as of January 1<sup>st</sup>, 2025. **Table 4-2** shows the normalized remaining capacity for each of the facilities, as well as the airspace utilization factor and annual disposal rate used in the analysis.

**Table 4-2:** Normalized Remaining capacity estimate for each waste-to-energy ash monofill; the annual tons and airspace utilization factor were obtained from facility-specific site life estimates

Facility	Annual Tons Used in Capacity Analysis	Airspace Utilization Factor (lb/cy)	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
Lee/Hendry Regional Solid Waste Disposal Facility	162,000	2,799	1,696,829	1,696,831
South Broward Waste-to-Energy Facility	203,000	2,700	2,722,046	1,200,919
Dade County Resource Recovery Facility	NA*	2,700	1,099,494	1,099,494
Pasco County Resource Recovery Facility	76,130	2,200	1,743,907	1,743,907
<b>Total</b>			<b>7,262,277</b>	<b>5,741,152</b>

\*The Dade County Resource Recovery Facility monofill has not accepted ash residue since the facility's latest topographic survey was conducted on July 11<sup>th</sup>, 2023.

Therefore, the normalized remaining capacity (as of January 1<sup>st</sup>, 2025) is the same as the remaining surveyed capacity.

Once capacity has been consumed in the state's four waste-to-energy ash monofills, either additional cells will need to be permitted and constructed, or ash residue will need to be diverted via other management strategies (e.g., disposal in a Class I landfill, beneficial reuse in road base). The remaining life and potential for future expansions are outlined in **Table 4-3**: . The Dade County Resource Recovery Facility and the Lee/Hendry Regional Solid Waste Disposal Facility do not have any planned expansions for their waste-to-energy ash monofills at this time. The South Broward Waste-to-Energy Facility has area to build an additional cell which has already been permitted (Cell 1C2), and the Pasco County Resource Recovery Facility has area for future disposal cells to be permitted in their ash monofill.

Finally, the service area for each of the waste-to-energy ash monofills is shown **Table 4-4**. As discussed in **Appendix C Section 1.1.3**, each of the accompanying waste-to-energy facilities primarily accepts waste from within their own respective counties. The demographic statistics, including the population and generator sectors, were obtained from the 2023 annual solid waste report.

**Table 4-3:** Year through which permitted capacity is expected to accommodate ash residue disposal from each of the accompanying waste-to-energy facilities and plans for potential capacity expansions; the remaining permitted life estimates were obtained from facility-specific site life estimates

Facility	Remaining Permitted Life Estimate	Plans for Future Capacity Expansions
Lee/Hendry Regional Solid Waste Disposal Facility	2035	None at this time
South Broward Waste-to-Energy Facility	2038	The construction of Cell 1C2 will provide additional constructed capacity
Dade County Resource Recovery Facility	NA	None at this time
Pasco County Resource Recovery Facility	2041	Area remains for future cells to be permitted and constructed, but an airspace estimate will not be determined until the design phase for these future cells

**Table 4-4:** Service area of each waste-to-energy ash monofill; population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Lee/Hendry Regional Solid Waste Disposal Facility	Lee	800,864	12,035	295,730	82,189
South Broward Waste-to-Energy Facility	Broward	1,973,579	30,533	349,006	486,545
Dade County Resource Recovery Facility	Miami-Dade	2,768,954	62,338	528,400	567,110
Pasco County Resource Recovery Facility	Pasco	610,743	48,236	262,405	24,928

#### 4.3.2 Lee/Hendry Regional Solid Waste Disposal Facility

The Lee County Resource Recovery Facility is a 60 MW waste-to-energy facility with a design capacity of 722,200 tons/year. The ash residue from the Lee County Resource Recovery Facility is disposed of in the waste-to-energy ash monofill at the Lee/Hendry Regional Solid Waste Disposal Facility. The monofill consists of five cells with a maximum design capacity of 2.9 million cy.

Per the latest topographic survey conducted on October 14<sup>th</sup>, 2024, approximately 1.2 million cubic yards of permitted capacity remain; all of the permitted capacity has already been constructed so the remaining constructed capacity estimate is the same. The latest site life estimate assumes an annual disposal rate of 162,000 tons/year and an airspace utilization factor of 2,799 lb/cy. Based on the assumed annual tonnages and airspace utilization factor, it is estimated that the capacity of the monofill is sufficient to accommodate ash residue disposal for another 10.6 years, or through May 2035. Discussions with the facility operator reveal that there are no planned expansions for the ash monofill at this time. See **Table 4-5**.

**Table 4-5:** Capacity data for the Lee/Hendry Regional Solid Waste Disposal Facility waste-to-energy ash monofill; data were obtained from annual site life estimates and correspondence with facility operators

Facility	Maximum Design Capacity (cy)	Remaining Permitted Capacity (cy)	Remaining Capacity Date	Remaining Life Estimate	Airspace Utilization Factor (lb/cy)	Tons Disposed of
Lee/Hendry Regional Solid Waste Disposal Facility	2,943,874	1,237,508	10/14/2024	10.6 years, or May 2035	2,799	127,227 in Calendar Year 2023

#### 4.3.3 South Broward Waste-to-Energy Facility

The South Broward Waste-to-Energy Facility is a 66.1 MW waste-to-energy facility with a design capacity of 821,250 tons/day. Ash residue generated at the South Broward Waste-to-Energy Facility is disposed of in the accompanying ash monofill, which was opened in 1991. The South Broward WTE ash monofill consists of four disposal cells and approximately 61 acres. Construction of Cell 1C1 (6.2 acres) was completed in March 2024, adding to the disposal area in cells 1A, 1B1, and 1B2 (46.4 acres).

During the latest topographic survey (conducted on December 5<sup>th</sup>, 2023), approximately 0.18 million cubic yards of constructed capacity remained in Cells 1A and 1B. However, the remaining capacity estimate does not include the approximately 2 million cubic yards in the permitted Cell 1C. Therefore, the remaining permitted airspace is approximately 2.18 million cubic yards (as of December 5<sup>th</sup>, 2023), and the remaining constructed airspace is approximately 1.1 million cubic yards as of December 5<sup>th</sup>, 2023, since Cell 1C2 has yet to be constructed.

The *Post-Certification Submittal Application for the Cell 1C Baseline* assumes an airspace utilization factor of 2,700 lb/cy and the *2023 Site Life Estimate* assumes an annual disposal rate of 203,000 tons/year. Based on the assumed annual tonnages and airspace utilization factor, it is estimated that the capacity of the monofill is sufficient to accommodate ash residue disposal through July 2038. Construction was completed on

Cell 1C1 in March 2024, and Cell 1C2 (8.0) acres will be constructed in the future. See **Table 4-6**.

**Table 4-6:** Capacity data for the South Broward Waste-to-Energy Facility ash monofill; data were obtained from annual site life estimates and correspondence with facility operators

Facility	Maximum Design Capacity (cy)	Remaining Permitted Capacity (cy)	Remaining Capacity Date	Remaining Life Estimate	Airspace Utilization Factor (lb/cy)	Tons Disposed of
South Broward Waste-to-Energy Facility	7,400,000	2,178,236	12/05/2023	2038	2,700	177,794 in Calendar Year 2024

#### *4.3.4 Dade County Resource Recovery Facility*

The Dade County Resource Recovery Facility previously operated as a 77 MW resource derived fuel (RDF) waste-to-energy facility, with a design capacity of 946,080 tons/year. Ash residue was disposed of in the accompanying Dade County Resource Recovery Facility waste-to-energy ash monofill before the plant was destroyed in a fire in February 2023. The monofill consists of 20 disposal cells and approximately 80 acres. Cells 1-19 (61.5 acres) have been closed, and Cell 20 (16 acres) remains active.

Per the latest topographic survey conducted on July 11<sup>th</sup>, 2023, approximately 0.8 million cubic yards of permitted and constructed capacity remain in the Dade County Resource Recovery waste-to-energy ash monofill. Disposal of ash residue has ceased with the destruction of the waste-to-energy facility in 2023; however, if the region were to construct new waste-to-energy capacity in the future, the monofill could be used for disposal once again. Discussions with the facility operator reveal that there are no planned expansions for the ash monofill at this time. See **Table 4-7**.

**Table 4-7:** Capacity data for the Dade County Resource Recovery Facility waste-to-energy ash monofill; data were obtained from annual site life estimates and correspondence with facility operators

Facility	Maximum Design Capacity (cy)	Remaining Permitted Capacity (cy)	Remaining Capacity Date	Remaining Life Estimate	Airspace Utilization Factor (lb/cy)	Tons Disposed of
Dade County Resource Recovery Facility	5,766,066	814,440	6/24/2024	NA	2,700	72,144 between July 1, 2022, and June 30, 2023

#### *4.3.5 Pasco County Resource Recovery Facility*

The Pasco County Resource Recovery Facility is a 31 MW waste-to-energy facility with a design capacity of 383,250 tons/year. The ash residue is disposed of in the

accompanying waste-to-energy ash monofill, which consists of four permitted disposal cells (Cell A-1 through A-4) and additional area for future expansions.

Per the latest topographic survey conducted on January 24<sup>th</sup>, 2024, approximately 1.7 million cubic yards of permitted capacity remain; all of the permitted capacity has already been constructed so the remaining constructed capacity estimate is the same. The latest site life estimate assumes an annual disposal rate of 76,130 tons/year until the completion of the waste-to-energy facility expansion in fiscal year 2027, and 108,100 tons/year after the expansion. Based on the assumed annual tonnages and airspace utilization factor of 2,200 lb/cy, it is estimated that the capacity of the monofill is sufficient to accommodate ash residue disposal through 2041. Discussions with the facility operator reveal that future ash monofill cells have been sited but not designed or permitted. Therefore, while specific airspace estimates do not yet exist, there is capacity to accommodate ash residue disposal beyond 2041. See **Table 4-8**.

**Table 4-8:** Capacity data for the Dade County Resource Recovery Facility waste-to-energy ash monofill; data were obtained from annual site life estimates and correspondence with facility operators

Facility	Maximum Design Capacity (cy)	Remaining Permitted Capacity (cy)	Remaining Capacity Date	Remaining Life Estimate	Airspace Utilization Factor (lb/cy)	Tons Disposed of
Pasco County Resource Recovery Facility	3,600,000	1,650,408	2041	1/24/2024	2,200	81,853 in Fiscal Year 2023

## 5 CLASS III LANDFILLS

### 5.1 Background

Class III waste is defined in 62-701.200(14), F.A.C. as inert material such as yard trash, construction and demolition debris, and furniture. Since these materials are not expected to produce leachate that threatens public health or the environment, Class III landfills are only required to have a single liner (as opposed to the composite or double liner requirement for Class I landfills), and may even be eligible for liner, leachate, control, and water quality monitoring exemptions if the facility can demonstrate that the environment will not be adversely impacted. Therefore, Class III landfills are limited to the acceptance of Class III waste per 62-701.340(2)(b), F.A.C.

Definition in 62-701.200(14), F.A.C.:

*(14) "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.*

Definition in 62-701.340(2)(b), F.A.C.:

*(b) Class III landfills are those which receive only Class III waste. The Department shall exempt Class III landfills from some or all of the requirements for liners, leachate controls, and water quality monitoring in subsections 62-701.400(3) and (4), and rule 62-701.510, F.A.C., if the applicant demonstrates that no significant threat to the environment will result from the exemption based upon the types of waste received, methods for controlling types of waste disposed of, and the results of the hydrogeological and geotechnical investigations required in Rule 62-701.410, F.A.C. Such a demonstration must include a CCA treated wood management plan as described in subsection 62-701.730(20), F.A.C., if the landfill will not have a constructed liner system.*

As of April 2025, Florida has 27 Class III landfills that are actively permitted and able to accept waste. Of these, four are privately owned facilities that accept material exclusively from their company's own operations, and one is a publicly owned landfill which only accepts yard waste from within a single municipality. These five facilities are excluded from the analysis of district-wide capacity. Like Class I landfills, 62-701.500(13)(c), F.A.C. requires operators or owners of Class III landfills to report annually to FDEP the remaining life and capacity (in cy) of landfill airspace for both permitted and constructed areas.

Definition in 62-701.500(13)(c), F.A.C.:

*(13) Recordkeeping. In addition to records and reporting required by other sections of this chapter, the landfill owner or operator shall:  
... (c) Maintain an annual estimate of the remaining life and capacity in cubic yards of the existing, constructed landfill and an annual estimate of the life and*

*capacity in cubic yards of other permitted areas not yet constructed. The estimate shall be made and reported annually to the Department.*

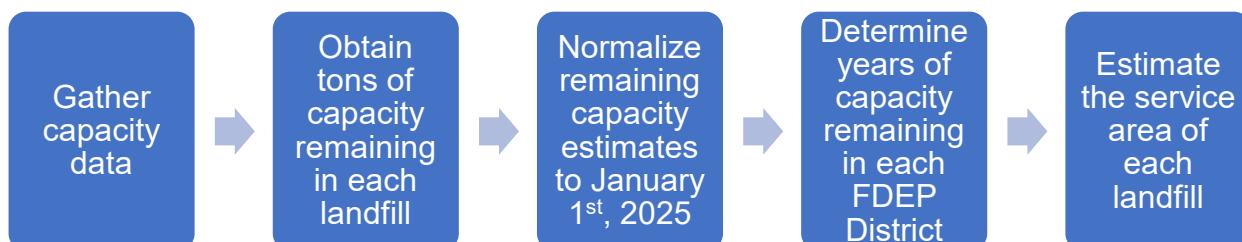
There are no formatting or annual reporting date requirements for this information, so the method used to estimate remaining airspace varies among the landfills. Typically, landfill operators conduct a topographic survey and compare the existing grade to the final permitted grade to determine the remaining airspace. The date of the airspace estimate therefore depends on the date that the topographic survey is conducted, which varies between facilities. For example, one facility may conduct the topographic survey at the beginning of the calendar year, while another may time the survey to coincide with the beginning of the fiscal year. Operators will combine knowledge of the remaining airspace with information on the annual accepted tonnages, per capita waste generation, population of the service area, density of compacted waste, or airspace consumed between topographic surveys to predict the years of life remaining for permitted and constructed areas.

## 5.2 General Overview and Approach

Since there is not a standardized format or reporting date for site life estimates, a method was developed to normalize capacity information and allow for comparison in Class III landfills throughout the state. First, information related to capacity, annual waste acceptance, and future landfill expansions were obtained from permitting and reporting information stored on the FDEP Solid Waste Universe (which links to OCULUS) ([https://fldep.dep.state.fl.us/www\\_wacs/Reports/SW\\_Facility\\_Count.asp](https://fldep.dep.state.fl.us/www_wacs/Reports/SW_Facility_Count.asp)).

Then, facility operators were contacted to verify the following information: (1) 2023 tons disposed in the Class III landfill, (2) remaining capacity of permitted and constructed airspace, (3) maximum design capacity of permitted airspace (i.e., the sum of permitted capacity consumed and remaining), and (4) the airspace utilization factor for the landfill. The airspace utilization factor is the mass of solid waste that is disposed of in a cubic yard of airspace and is measured as the mass of waste (from scale house records) received over a time interval divided by the volume of airspace consumed in the same interval (from topographic surveys).

Facility operators were also asked about plans for future Class III site expansions beyond the currently permitted airspace (i.e., maximum site life capacity). The general method for normalizing the capacity estimates is also depicted graphically in **Figure 5-1:**, and the data sources used in the analysis are outlined in **Table 5-1**.



**Figure 5-1:** Flow chart of general method used to analyze Class III landfill capacity

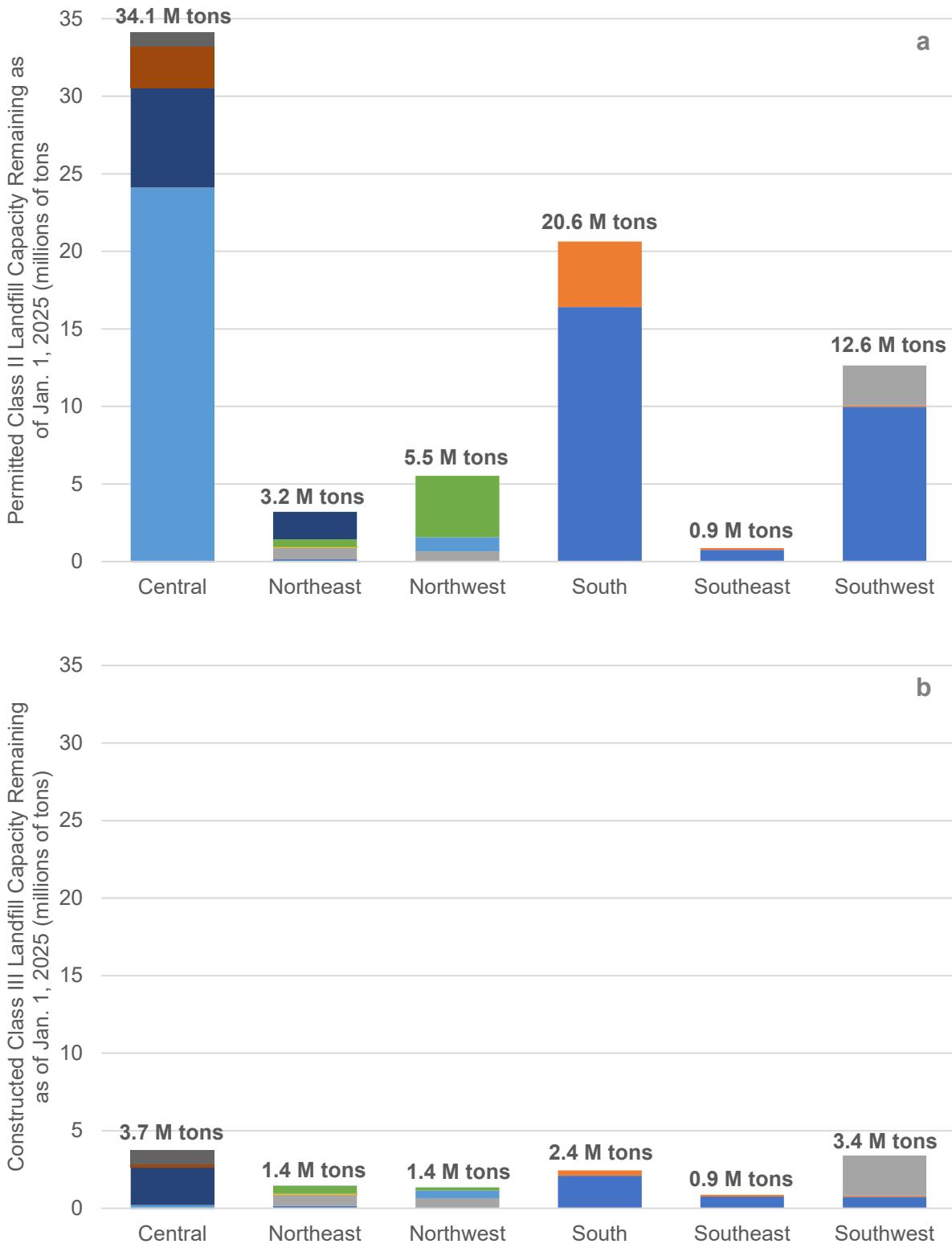
**Table 5-1:** Summary of data sources and method used to analyze Class III landfill capacity

Parameter	Description
Number of active facilities included in the analysis	22
Related reporting requirements	<ul style="list-style-type: none"> <li>• <b>Annual site life estimates:</b> 62-701.500(13)(c), F.A.C.</li> <li>• <b>Annual solid waste quantity reports:</b> 62-701.500(4)(b), F.A.C.</li> <li>• <b>Annual solid waste reports:</b> 403.706(7), F.S.</li> </ul>
Typical capacity measurement approach	<ol style="list-style-type: none"> <li>1) Use airspace utilization factor to convert remaining volume estimate (cy) to remaining mass estimate (tons).</li> <li>2) Normalize remaining capacity estimate for each facility to a single date (January 1<sup>st</sup>, 2025).</li> <li>3) Use the annual increase in waste disposed of in each FDEP District to predict how long the current capacity is expected to last.</li> <li>4) Use the annual solid waste quantity reports to estimate the service area of each landfill.</li> </ol>
Data sources used in methods	<p><b>Annual site life estimates:</b> Remaining permitted and constructed capacity; airspace utilization factor; years of capacity remaining</p> <p><b>Annual solid waste quantity reports:</b> Tons of material disposed of in each landfill by county of origin</p> <p><b>Annual solid waste reports:</b> Population and generator sectors within each county</p> <p><b>Permit applications:</b> Current operating footprint and potential for future expansions at each landfill</p> <p><b>Correspondence with facility operators:</b> Verification of information gathered from reports and permits; potential for future landfill expansions</p>

## 5.3 Results and Discussion

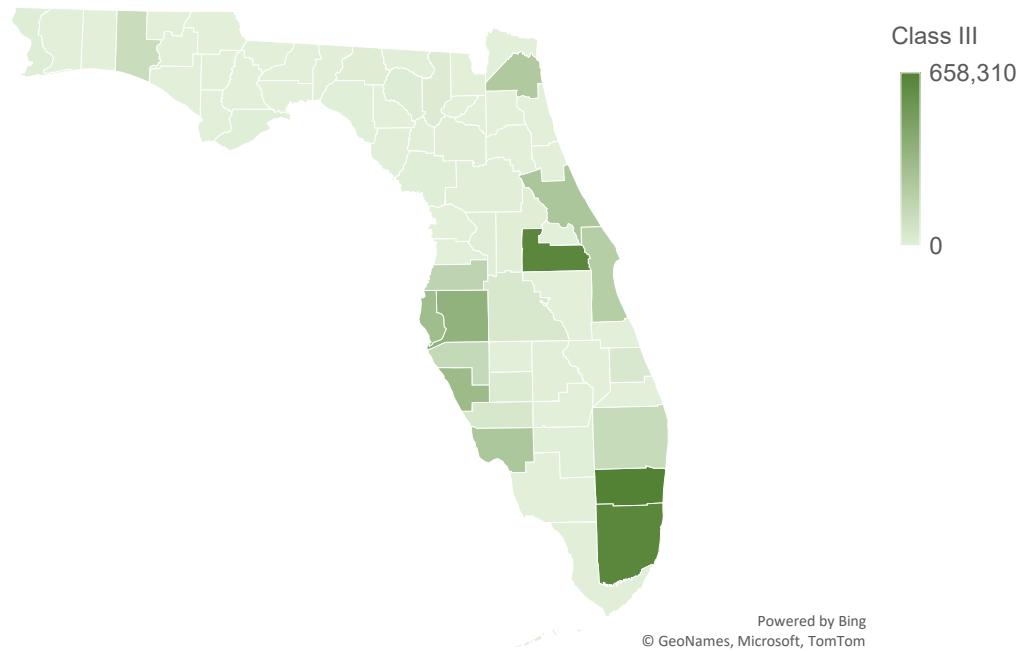
### 5.3.1 State-wide

Across the 22 Class III landfills included in this analysis, Florida has an estimated 77.0 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025. Approximately one fifth of this permitted capacity (approximately 13.2 million tons) has already been constructed. Approximately 4.7 million tons of waste were disposed of in Class III landfills in 2023. **Figure 5-2: a** and **Figure 5-2: b** show the permitted and constructed capacity, respectively, remaining in each FDEP District. Like Class I landfills, **Figure 5-2: a** shows that most of the state's currently permitted Class III landfill capacity comes from less than ten landfills. However, **Figure 5-2: b** shows that the remaining constructed capacity is similar between Class III landfills.



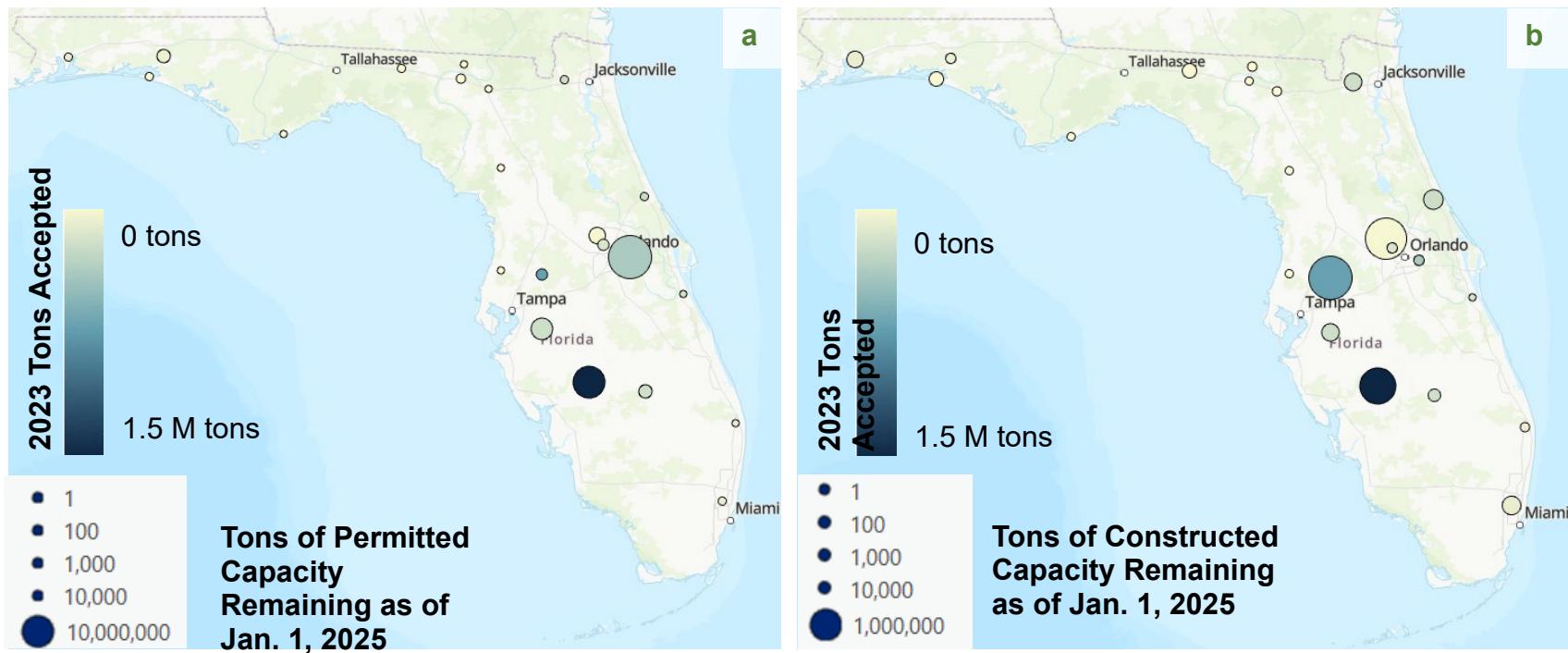
**Figure 5-2:** a) Permitted and b) Constructed capacity remaining in Florida's Class III landfills as of January 1<sup>st</sup>, 2025 by FDEP District; the colors in the figure represent a different landfill in each district

**Figure 5-3:** shows the county of origin for waste sent to Class III landfills in Florida during calendar year 2023. Miami-Dade, Broward, and Orange Counties sent the most material to Class III landfills; these are three of the five most populous counties in the state, so the large volume of Class III waste generation may correspond to a high rate of construction activity. Further, the high rate of landfill disposal reflects waste management practices where counties may be sending large quantities of material to a Class III landfill, rather than recycling the material or disposing of it in a Class I landfill. Other areas with a large quantity of material sent to Class III landfills include the Gulf Coast region (between Hillsborough and Lee Counties), Central Florida (especially around the Space Coast), and Northeast Florida (near Jacksonville). When comparing **Figure 2-3** and **Figure 5-3:**, it can be seen that counties which send a large quantity of material to Class I landfills also send a large quantity of material to Class III landfills, and that this is consistent with major population centers in the state.



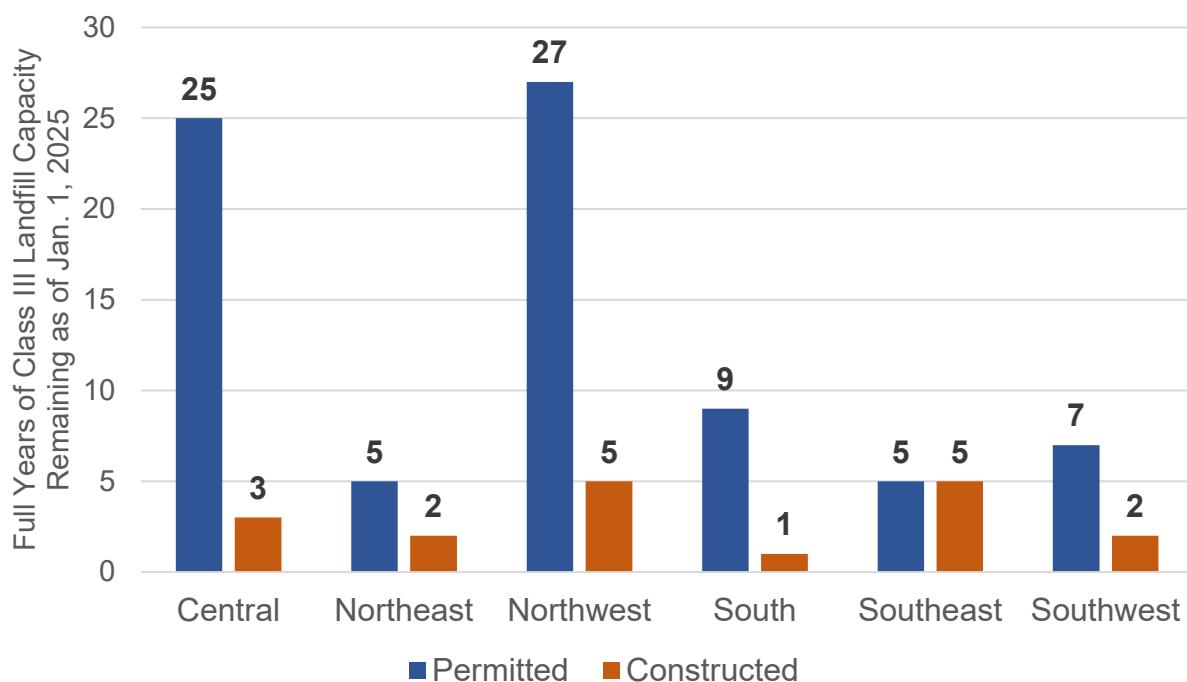
**Figure 5-3:** Origin of waste, by county, sent to Class III landfills in 2023, data were obtained from the 2023 annual solid waste quantity reports

The remaining permitted and constructed capacity of each Class III landfill in the state is shown on the maps in **Figure 5-4**. Each dot represents a different Class III landfill, with the size of the dot scaled to show the tons of permitted or constructed capacity remaining in each facility as of January 1<sup>st</sup>, 2025. The color of the dot represents the tons of material accepted by each facility in calendar year 2023, with the darker dots representing facilities which accepted the most waste. The darkest dot on the map is the DeSoto Disposal and Recycling Landfill, which accepted more than 1.5 million tons of material in 2023. Small dark dots on the map would therefore represent facilities where permitting and construction of new cells may be needed in the future, since they accept a large amount of material annually but have relatively little capacity remaining.



**Figure 5-4:** a) Permitted and b) constructed capacity remaining in Florida's Class III landfill as of January 1<sup>st</sup>, 2025; the size of the dot corresponds to the tons of capacity remaining and the color of the dot corresponds to the tons of material accepted in 2023 (note that the scale differs between maps a and b)

The years of Class III landfill capacity remaining in each FDEP District were estimated using the 2023 calendar year tonnages (with the exception of 2022 tonnages in the South District), the average annual increase in waste disposed of in Class III landfills, and the remaining permitted and constructed capacity. **Appendix D, Section 1.1.3** outlines the method for determining the average annual increase in waste sent to Class III landfills in each FDEP District. This estimate is shown in **Figure 5-5**: for each FDEP District. The constructed capacity in the state is expected to last as few as one year in the South District and as many as five years in the Northwest and Southeast Districts. The remaining permitted capacity in the state ranges between five years in the Northeast and Southeast Districts and 27 years in the Northwest District.



**Figure 5-5:** Full years of permitted and constructed capacity remaining in the Class III landfills in each FDEP District as of January 1<sup>st</sup>, 2025; projections are based on 2023 Class III landfill tonnages (with the exception of 2022 tonnages in the South District) and a five-year average annual increase in material sent to Class III landfills in each district

It is important to note that the scope of this analysis includes the constructed and permitted capacity remaining in each district as of January 1<sup>st</sup>, 2025. Many of the sites in the state have land surrounding their existing disposal area which could potentially be permitted for disposal in the future, and a description of the total site life for each of these facilities is detailed in the following sections. Therefore, permitting and construction of new Class III landfill cells will continue in the future, and this report may indicate areas where upcoming infrastructure investments are likely to be made.

### *5.3.2 Central District*

#### **a. Introduction**

There are five Class III landfills in the Central District included in the capacity analysis. These include the publicly owned Brevard County Sarno Road Landfill, Orange County Landfill, and Volusia County Tomoka Farms Road Landfill, as well as the privately owned Mid-Florida Materials and Vista Landfill. Three Central District Class III landfills were excluded from the analysis because they are not currently operational and do not appear to have plans to reopen in the near term. These include the privately owned C.R. 33 Hewitt Landfill (which is not currently accepting waste, but received an operations permit in April 2024), as well as the privately owned Bayside and Deland Landfills. The Bayside Landfill and the Deland Landfill last accepted waste in 2013 and 2022, respectively. Two Central District Class III landfills were excluded from the analysis because they are privately owned facilities which exclusively accept material from their own operations and therefore do not represent disposal areas for the public.

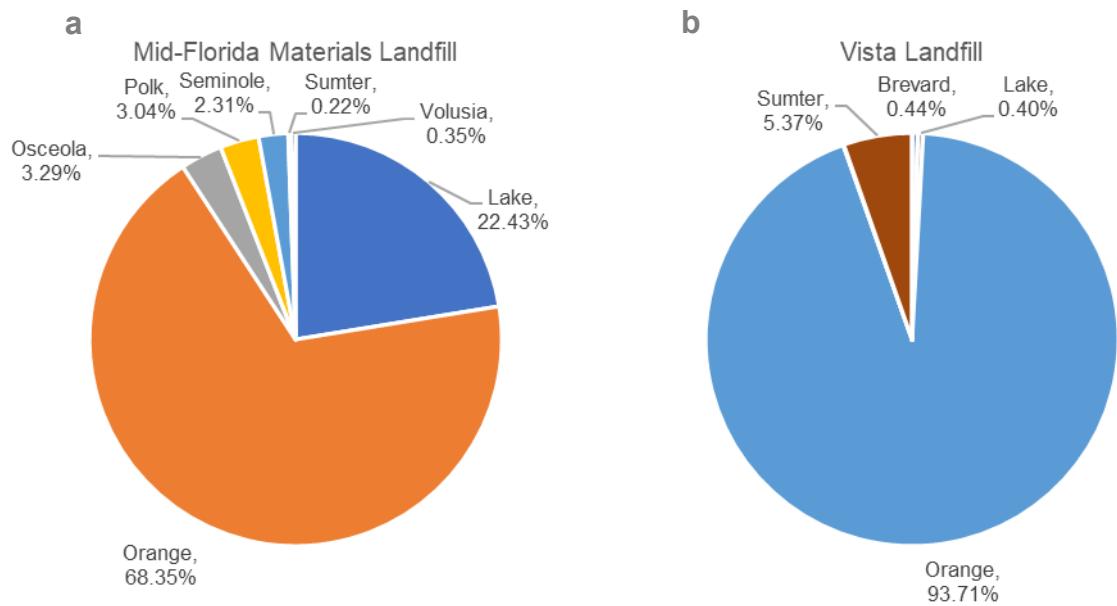
#### **b. District population and facility service area**

An estimated 4.6 million people live in the FDEP Central District, with county-based population growth projected to be between 0.60% and 1.64% annually, per the University of Florida (UF) Bureau of Economics and Business Research (BEBR) median population projections from 2025 to 2050. These population statistics are shown in **Table 5-2**.

The Brevard County Sarno Road Landfill, Orange County Landfill, and Volusia County Tomoka Farms Road Landfills accepted material from within their respective counties in 2023. The Mid-Florida Materials and Vista Landfills are privately owned facilities which primarily accepted material from Central District counties, as seen in **Figure 5-6**. Most waste received by the Mid-Florida Materials Landfill originated in Orange (~68%) and Lake (~22%) Counties, while most waste received by the Vista Landfill originated in Orange (~94%) and Sumter (~5%) Counties. The service area of each landfill, by county, population, and generator type, is shown in **Table 5-3**.

**Table 5-2:** Population of the FDEP Central District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Brevard	640,773	0.62%
Lake	414,749	1.21%
Marion	403,966	0.80%
Orange	1,492,951	0.95%
Osceola	439,225	1.64%
Seminole	486,839	0.58%
Sumter	155,318	1.64%
Volusia	572,815	0.60%



**Figure 5-6:** Mass of material accepted by county of origin in the a) Mid-Florida Materials and b) Vista Landfills

**Table 5-3:** Service area of each Class III landfill in the Central District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Sarno Rd LF	Brevard	640,773	11,144	223,469	68,781
Orange County LF	Orange	1,492,951	60,687	337,878	72,972
Mid-Florida Materials LF	FDEP Central District - Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter, Volusia	4,606,636	169,220	1,408,934	345,730
Vista LF	FDEP Central District - Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter, Volusia	4,606,636	169,220	1,408,934	345,730
Tomoka Farms Rd LF	Volusia	572,815	10,963	190,563	29,786

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix D, Section 1.1.2**, it is estimated that the Central District has approximately 34.1 million tons of permitted capacity remaining as of January 1st, 2025, and 3.7 million tons of this capacity has already been constructed. In 2023, the Class III landfills in the Central District received a total of 1.1 million tons of waste.

**Table 2-4** shows the normalized remaining capacity and tons of material accepted in 2023 by each of the Class III landfills in the Central District. **Appendix D, Table 4-1** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

**Table 5-4:** Tons of material disposed of in 2023 and normalized remaining capacity estimate for each Class III landfill in the Central District; 2023 tonnages were obtained from FDEP annual solid waste reports

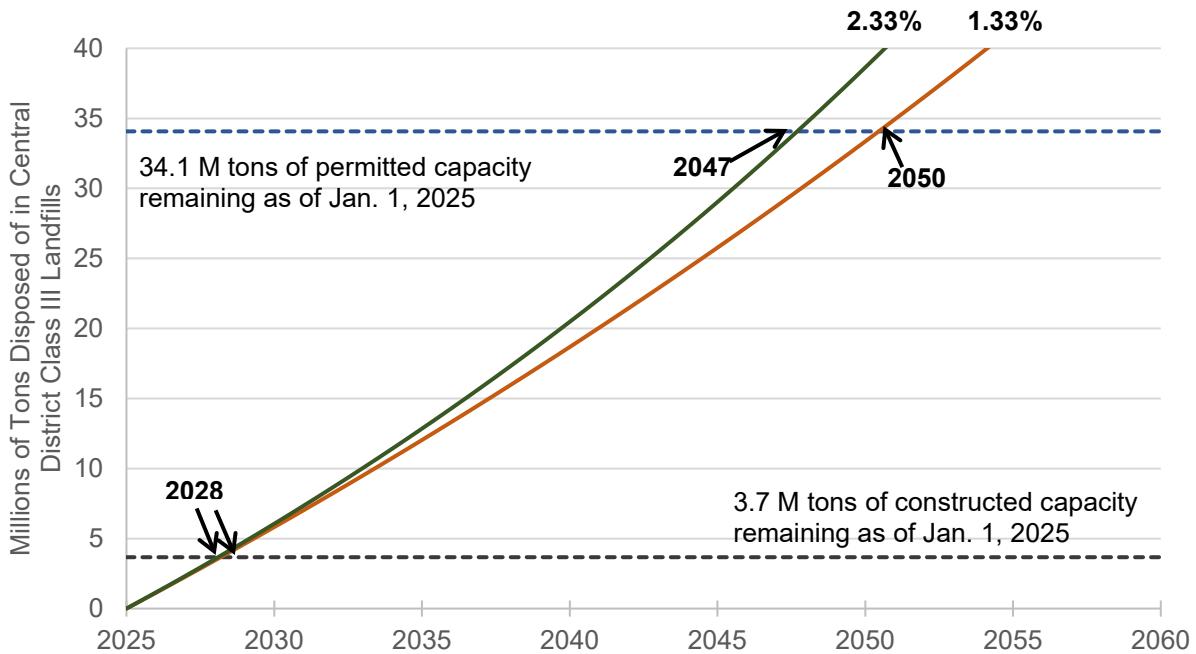
Facility	Tons Disposed of in Class III LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
Sarno Rd LF	201,506	-50,264	-50,264
Orange County LF	415,520	24,115,859	202,694
Mid-Florida Materials LF	47,415	6,412,735	2,461,935
Vista LF	181,810	2,697,590	157,260
Tomoka Farms Rd LF	253,647	905,401	905,401
<b>Total</b>	<b>1,099,897</b>	<b>34,081,320</b>	<b>3,677,025</b>

The normalization method from **Appendix D, Section 1.1.2** underestimates the remaining capacity at the Brevard County Sarno Road Landfill because the tons of waste disposed of between the survey date and the normalized date are projected using calendar 2023 tonnages. The Sarno Road Landfill is nearing completion, after which point Brevard County will shift Class III disposal operations to the US 192 Landfill (which has been permitted but not constructed as of April 2025). The annual site life projections in the *2024 Financial Responsibility and Long-Term Care Cost Estimate* submitted by Brevard County assumes that approximately 35,000 cy each will be disposed of in the Sarno Road Landfill in 2024 and 2025. The waste accepted in 2023, which was used in the projections, is much higher at about 300 million cy. Therefore, the normalization method overestimates the amount of waste that will be sent to the Sarno Road Landfill until its completion and underestimates the remaining capacity. The negative estimated remaining capacity for the Sarno Road Landfill is still used in the analysis district-wide capacity because it is assumed that the Class III waste generation rates remain consistent with earlier years, and that the waste will be distributed to other Central District Class III Landfills once the Sarno Road Landfill capacity has been exceeded.

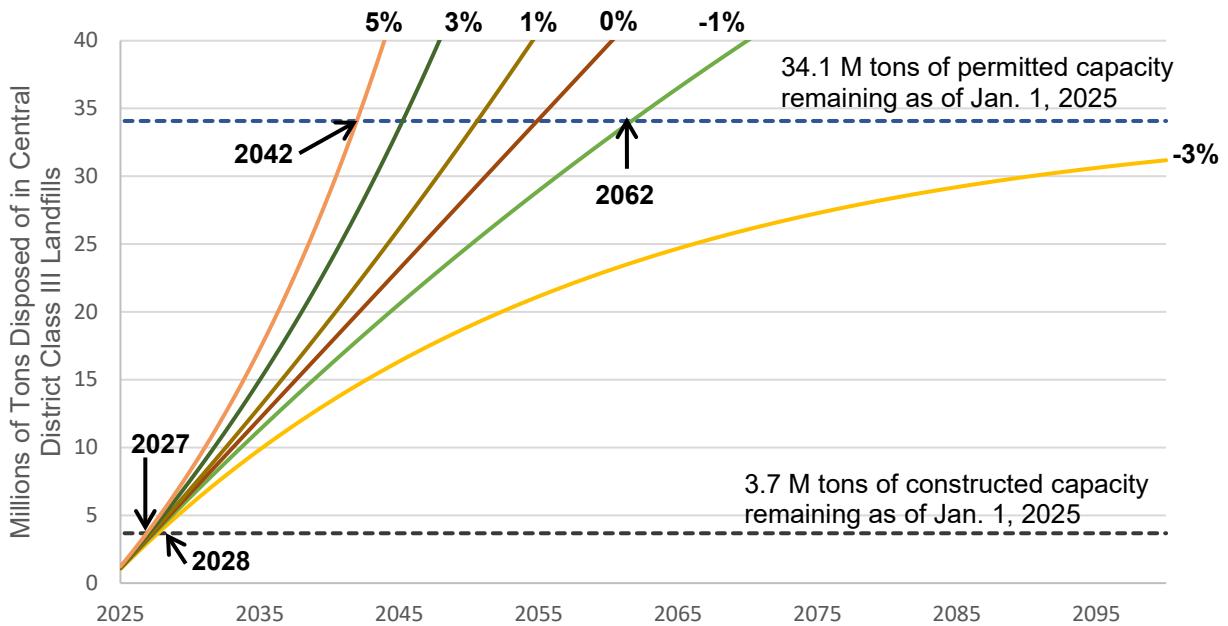
The five-year average annual increase (2018-2023) in waste received by Class III landfills in the Central District is approximately 1.33%, while the median annual increase (2018-2023) is approximately 2.33%. Using both the average and median annual growth rates, it is expected that the currently constructed capacity in the Central District will last until calendar year 2028. The currently permitted capacity is expected to last until 2050 using the average annual increase in waste disposal, or until 2047 using the median annual increase in waste disposal. See **Figure 5-7:** and **Appendix D, Table 4-2.** **Figure 5-8** shows the estimated timeline for when the currently constructed and permitted capacity in the Central District's Class III Landfills will be fully utilized under different disposal growth scenarios.

#### **d. Discussion of other Central District Class III landfill capacity**

As noted in the introduction to this section, there are five Central District Class III landfills whose capacity were excluded from the district-wide analysis in this section. Information from the latest site life estimates for these facilities is included in **Appendix D, Table 4-1** where data is available. The Vista Landfill submitted a permit application in September 2024 to modify the base grades of the unconstructed areas, which is expected to increase the facility's capacity. Following the closure of the Sarno Road Landfill, Brevard County will transfer Class III disposal operations to the US192 Landfill, which is expected to have an area of 201.5 acres and life of 62 years, per the *2024 Financial Responsibility and Long-Term Care Cost Estimate*. Brevard County submitted notice to FDEP in November 2024 that construction activities are beginning at the US192 landfill, which is expected to increase the constructed and permitted Class III landfill capacity in the Central District in the near future. The Volusia County Tomoka Farms Road Landfill is also nearing capacity in the Class III disposal area, with the latest site life estimate projecting capacity to last until 2029. Following the completion of the Class III disposal area, Volusia County plans to dispose of Class III waste in the ~270-acre Class I landfill that is currently being designed and permitted



**Figure 5-7:** The currently constructed capacity in FDEP Central District Class III landfills is expected to be sufficient to accommodate Central District waste through 2028 using both the average and median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate Central District waste through 2050 using the average annual increase in disposal, and through 2047 using the median annual increase in disposal.



**Figure 5-8:** Under a range of different growth scenarios, the currently constructed capacity in the Central District is expected to be sufficient to accommodate disposal through 2028 using a -3% growth rate, or through 2027 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2062 using a -3% growth rate, or through 2042 using a 5% growth rate.

### *5.3.3 Northeast District.*

#### **a. Introduction**

There are six Class III landfills in the Northeast District included in the capacity analysis. These include the publicly owned Columbia County Winfield Solid Waste Facility, Hamilton County Landfill, Levy County Landfill, and Aucilla Area Solid Waste Facility. The privately owned Otis Road Disaster Debris Management and Recycling Facility and the Suwannee Landfill are also located in the Northeast District. The Aucilla Area Solid Waste Facility serves as Class III disposal areas for a regional solid waste authority that was established to serve multiple counties in Northeast Florida.

#### **b. District population and facility service area**

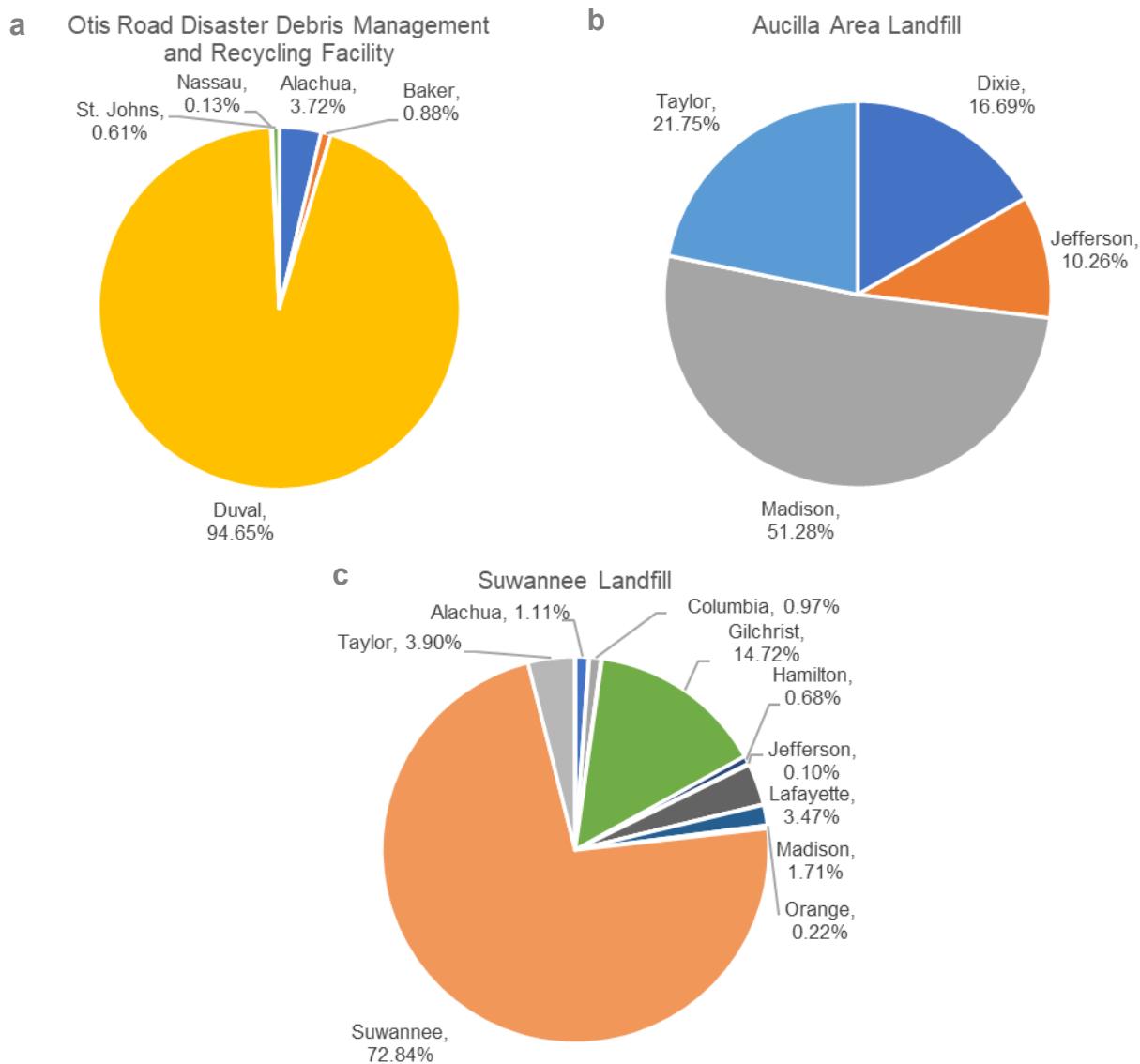
An estimated 2.5 million people live in the FDEP Northeast District, with county-based population growth projected to be between 0.08% and 1.61% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 5-5**.

**Table 5-5:** Population of the FDEP Northeast District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Alachua	285,994	0.57%
Baker	27,323	0.64%
Bradford	25,290	0.27%
Clay	231,042	0.76%
Columbia	72,191	0.38%
Dixie	17,271	0.35%
Duval	1,051,278	0.70%
Flagler	130,756	1.27%
Gilchrist	19,123	0.66%
Hamilton	13,671	0.20%
Lafayette	8,074	0.29%
Levy	45,283	0.53%
Madison	18,698	0.08%
Nassau	100,763	1.17%
Putnam	75,906	0.12%
St. Johns	315,209	1.61%
Suwannee	45,448	0.35%
Taylor	21,686	0.20%
Union	11,783	0.46%

In 2023, all material disposed of in the Columbia County Winfield Solid Waste Facility, Hamilton County Landfill, and Levy County Landfill originated from within their respective counties. The Aucilla Area Landfill serves a regional solid waste authority,

and in 2023, about half of the material accepted originated in Madison County, with the remainder originating in Dixie, Jefferson, and Taylor Counties. The Otis Road Disaster Debris Management and Recycling Facility and the Suwannee Landfill both accepted material from throughout northeast Florida. As shown in **Figure 5-9:** , most material accepted at the Otis Road Disaster Debris Management and Recycling Facility originated in Duval County (~95%) and most material accepted at the Suwannee Landfill originated in Suwannee County (~73%). The service area of each landfill, by county, population, and generator type, is shown in **Table 5-6.**



**Figure 5-9:** Mass of material accepted by county of origin in the a) Otis Road Disaster Debris Management and Recycling Facility, b) Aucilla Area, and c) Suwannee Landfill

**Table 5-6:** Service area of each Class III landfill in the Northeast District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Winfield Solid Waste Facility	Columbia	72,191	1,171	27,815	72
Otis Rd LF	FDEP Northeast District - Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor, Union	2,516,789	67,114	810,245	203,652
Hamilton County LF	Hamilton	13,671	180	5,284	329
Levy County LF	Levy	45,283	1,017	20,375	635
Aucilla Area Solid Waste Facility	Dixie, Jefferson, Madison, Taylor	73,057	1,398	33,789	835
Suwannee LF	FDEP Northeast District - Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor, Union	2,516,789	67,114	810,245	203,652

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix D, Section 1.1.2**, it is estimated that the Northeast District has approximately 3.2 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 1.4 million tons of this capacity has already been constructed. In 2023, the Class III landfills in the Northeast District received a total of 0.4 million tons of waste. **Table 5-7** shows the normalized remaining capacity and tons of material accepted in 2023 by each of the Class III landfills in the Northeast District.

**Appendix D, Table 4-3** includes the capacity data used in the normalization method for

each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

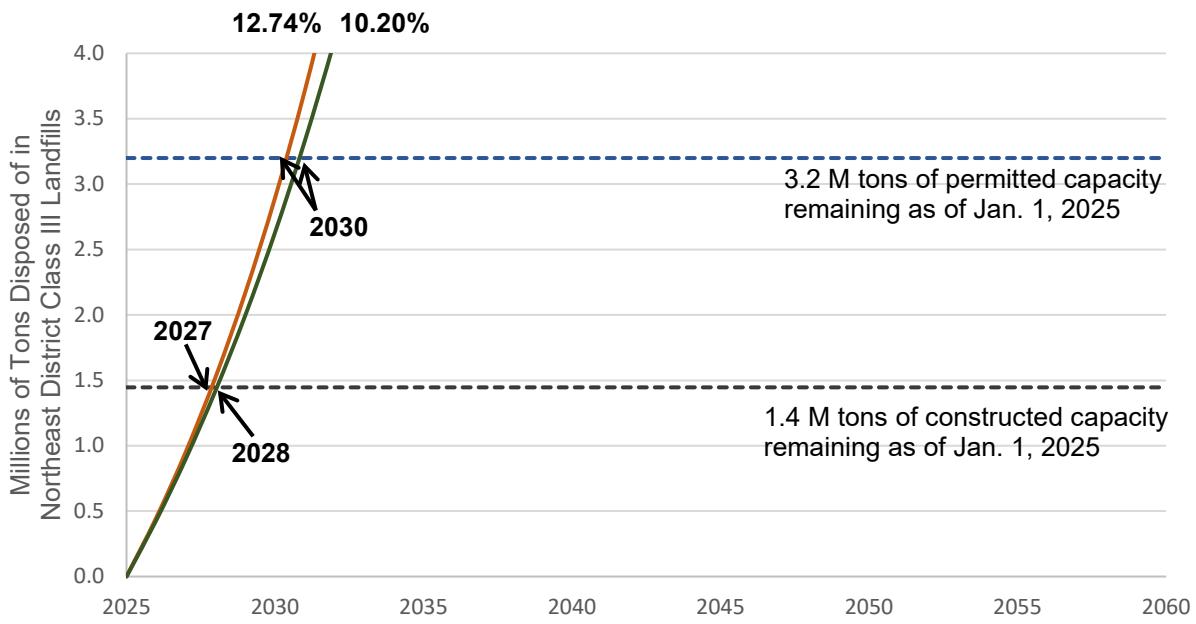
**Table 5-7:** Tons of material disposed of in 2023 and normalized remaining capacity estimate for each Class I landfill in the Northeast District; 2023 tonnages were obtained from FDEP annual solid waste reports

Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
Winfield Solid Waste Facility	28,024	135,155	135,155
Otis Rd LF	244,003	726,822	726,822
Hamilton County LF	4,963	78,922	78,922
Levy County LF	12,054	20,905	20,905
Aucilla Area Solid Waste Facility	34,349	476,434	476,434
Sewanee LF	29,882	1,761,243	7,986
<b>Total</b>	<b>353,275</b>	<b>3,199,482</b>	<b>1,446,225</b>

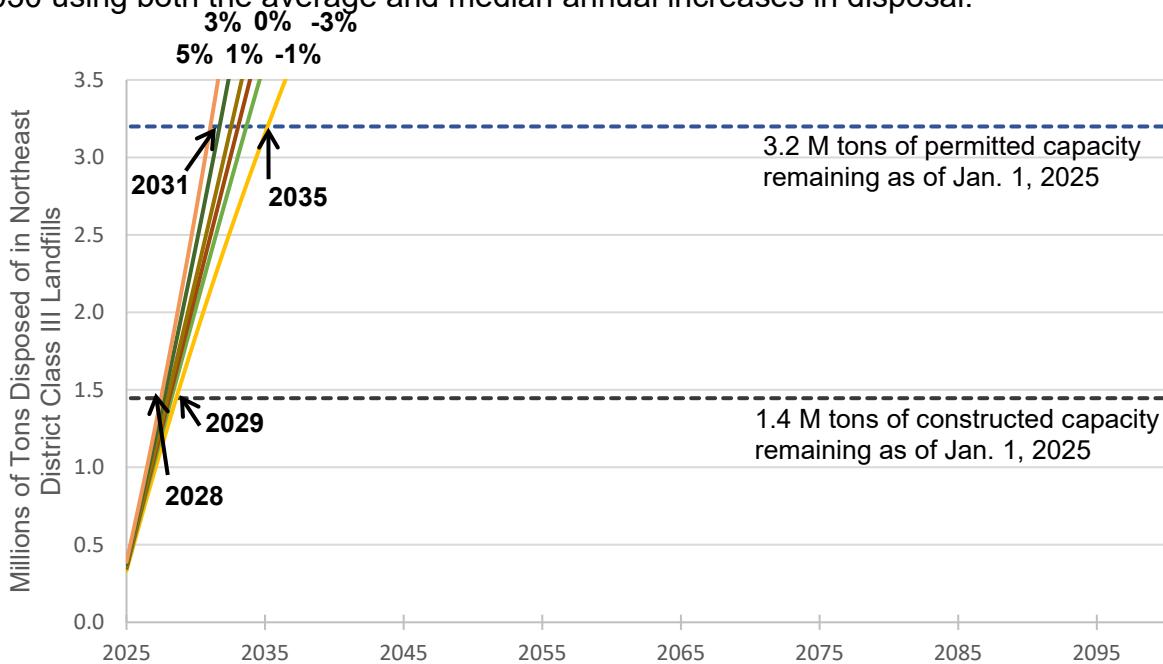
The five-year average annual increase (2018-2023) in waste received by Class III landfills in the Northeast District is approximately 12.74%, while the median annual increase (2018-2023) is approximately 10.20%. It is expected that the currently constructed capacity in the Northeast District will last until calendar year 2027 using the average annual growth rate for waste disposal and until 2028 using the median annual growth rate for waste disposal. The currently permitted capacity is expected to last until 2030 using both the average and median annual increases in waste disposal. See **Figure 5-10** and **Appendix D, Table 4-4**. shows the estimated timeline for when the currently constructed and permitted capacity in the Northeast District's Class III Landfills will be fully utilized under different disposal growth scenarios.

#### d. Discussion of other Northeast District Class III landfill capacity

There have not been any permit applications submitted within the last year to expand capacity at the Class III landfills in the Northeast District. However, the Columbia County Winfield Solid Waste Facility and the Levy County Landfill are both in the process of designing future disposal cells, as described in **Appendix D, Table 4-3**. The Winfield Solid Waste Facility expansion is expected to add approximately 1,392,770 cy to last 14-17 years, and the Levy County Landfill expansion is expected to add approximately 632,400 cy to last 15 years.



**Figure 5-10:** The currently constructed capacity in FDEP Northeast District Class III landfills is expected to be sufficient to accommodate Northwest District waste through 2027 using the average annual growth in waste disposal projections, and through 2028 using the median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate Northeast District waste through 2030 using both the average and median annual increases in disposal.



**Figure 5-11:** Under a range of different growth scenarios, the currently constructed capacity in the Northeast District is expected to be sufficient to accommodate disposal through 2029 using a -3% growth rate, or through 2028 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2035 using a -3% growth rate, or through 2031 using a 5% growth rate.

### *5.3.4 Northwest District*

#### **a. Introduction**

There are four Class III landfills in the Northwest District included in the capacity analysis. These include the publicly owned Franklin County Central Landfill, Santa Rosa County Central Landfill, and Walton County Central Landfill, as well as the privately owned Azland Landfill. There are two Northwest District Class III landfills which were excluded from this analysis because they are privately owned facilities which exclusively accept material from their own operations, and therefore do not represent disposal areas for the general public. One of these landfills serves as a Class III disposal area for the Apalachee Correctional Institution, while the other serves as a Class IIII disposal area for Sterling Fibers, Inc. at their Santa Rosa Plant.

#### **b. District population and facility service area**

An estimated 1.6 million people live in the FDEP Northeast District, with county-based population growth projected to be between 0.05% and 1.36% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 5-8**. In 2023, each of the Class III landfills in the Northwest District only accepted material from a single county. The Franklin County Central Landfill accepted material from Franklin County, the Santa Rosa County Central Landfill accepted material from Escambia County, and the Walton County Central Landfill and the Azland Landfill both accepted material from Walton County. The service area of each landfill, by county, population, and generator type, is shown in **Table 5-9**.

**Table 5-8:** Population of the FDEP Northwest District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Bay	187,545	0.50%
Calhoun	13,816	0.17%
Escambia	333,452	0.42%
Franklin	12,971	0.59%
Gadsden	44,421	0.05%
Gulf	16,323	0.55%
Holmes	19,910	0.14%
Jackson	48,982	0.08%
Jefferson	15,402	0.23%
Leon	301,724	0.45%
Liberty	7,977	0.20%
Okaloosa	219,260	0.56%
Santa Rosa	202,772	1.03%
Wakulla	36,168	0.82%
Walton	83,342	1.36%
Washington	25,497	0.34%

**Table 5-9:** Service area of each Class III landfill in the Northwest District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Franklin Central LF	Franklin	12,971	400	5,917	5,917
Santa Rosa Central LF	Escambia	333,452	23,542	121,375	29,859
Walton Central LF	Walton	83,342	6,920	38,220	43,620
Azland LF	Walton	83,342	6,920	38,220	43,620

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

Per the normalization method described in **Appendix D, Section 1.1.2**, it is estimated that the Northwest District has approximately 5.5 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 1.4 million tons of this capacity has already been constructed. In 2023, the Class III landfills in the Northwest District received a total of 0.2 million tons of waste. **Table 5-10** shows the normalized remaining capacity and tons of material accepted in 2023 by each of the Class III landfills in the Northwest District. **Appendix D, Table 4-5** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

**Table 5-10:** Tons of material disposed of in 2023 and normalized remaining capacity estimate for each Class III landfill in the Northwest District; 2023 tonnages were obtained from FDEP annual solid waste reports

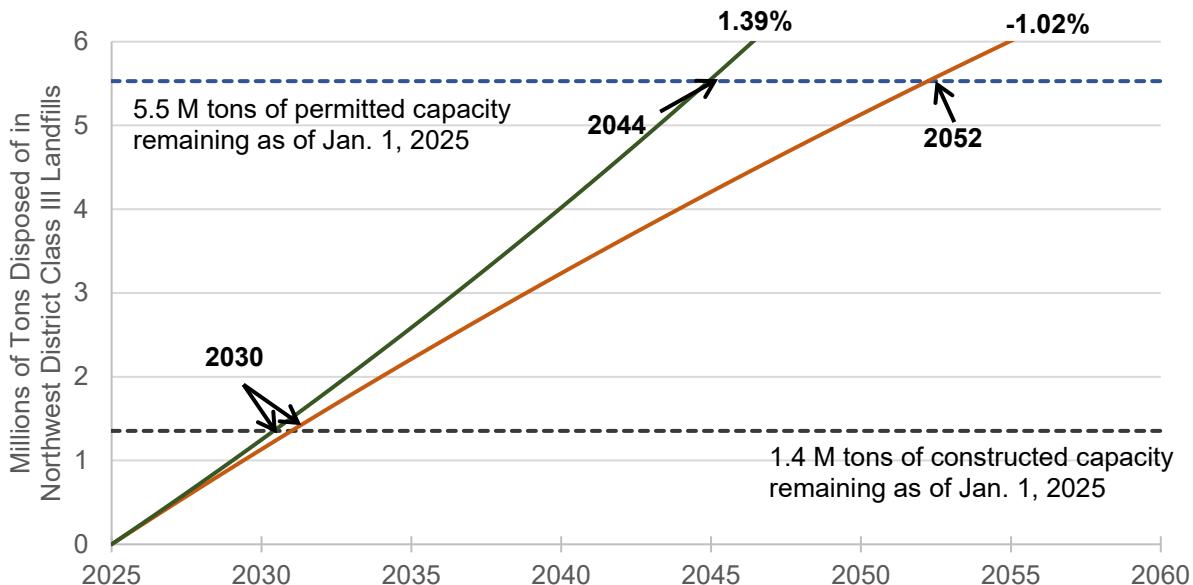
Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
Franklin Central LF	14,040	5,034	5,034
Santa Rosa Central LF	107,869	641,625	641,625
Walton Central LF	30,913	911,908	499,077
Azland LF	83,507	3,970,522	208,217
<b>Total</b>	<b>236,329</b>	<b>5,529,089</b>	<b>1,353,953</b>

The five-year average annual increase (2018-2023) in waste received by Class I landfills in the Northwest District is approximately -1.02% (representing a decline in waste disposal), while the median annual increase (2018-2023) is approximately 1.39%. Using both the average and median annual growth rate, it is expected that the currently constructed capacity in the Northwest District will last until calendar year 2030. The currently permitted capacity is expected to last until 2052 using the average annual

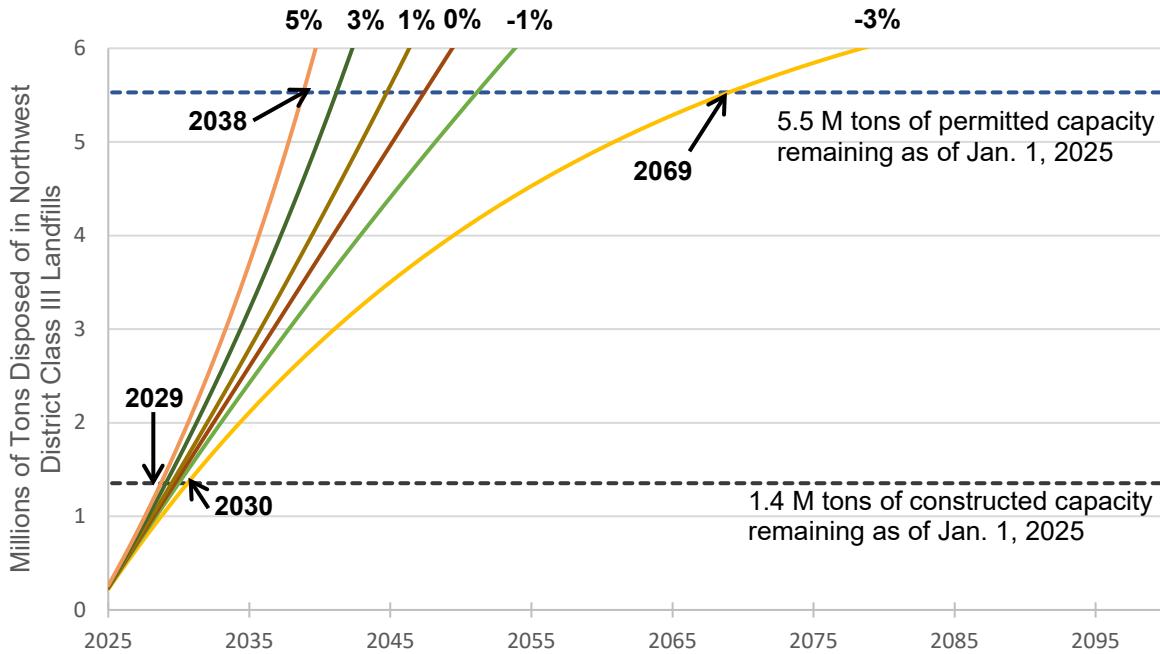
growth rate and until 2044 using the median annual growth rate, and the permitted capacity will last until 2052. Using the median annual growth rate, the currently constructed capacity is expected to last until 2030, and the permitted capacity is expected to last until 2044. See **Figure 5-12** and **Appendix D, Table 4-6**. **Figure 5-13** shows the estimated timeline for when the currently constructed and permitted capacity in the Northwest District's Class III Landfills will be fully utilized under different disposal growth scenarios.

#### d. Discussion of other Northwest District Class III landfill capacity

As noted in the introduction to this section, there are two Northwest District Class III landfills whose capacity were excluded from the district-wide analysis in this section. Information from the latest site life estimates for these facilities is included in **Appendix D, Table 4-6** where data is available. The Azland Landfill received a permit in August 2024 to convert the future Phases 4-7 from Class III to Class I cells. The facility is currently operating in Phases 1 and 2, and the future Phase 3 will also be a Class III disposal area. Other future capacity expansions are described in **Appendix D, Table 4-6**.



**Figure 5-12:** The currently constructed capacity in FDEP Northwest District Class III landfills is expected to be sufficient to accommodate Northwest District waste through 2030 using both the average and median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate Northwest District waste through 2052 using the average annual increase in disposal, and through 2044 using the median annual increase in disposal.



**Figure 5-13:** Under a range of different growth scenarios, the currently constructed capacity in the Northwest District is expected to be sufficient to accommodate disposal through 2030 using a -3% growth rate, or through 2029 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2069 using a -3% growth rate, or through 2038 using a 5% growth rate.

### 5.3.5 South District

#### a. Introduction

There are two Class III landfills in the South District included in the capacity analysis. One of the landfills is the privately-owned DeSoto Disposal and Recycling Landfill, and the other is the Lee/Hendry Regional Solid Waste Disposal Facility. The DeSoto Disposal and Recycling Landfill accepts material from throughout the state, especially from counties with limited opportunities for disposal of Class III and C&D debris. The Lee/Hendry Regional Solid Waste Disposal Facility jointly serves both counties as a regional disposal facility.

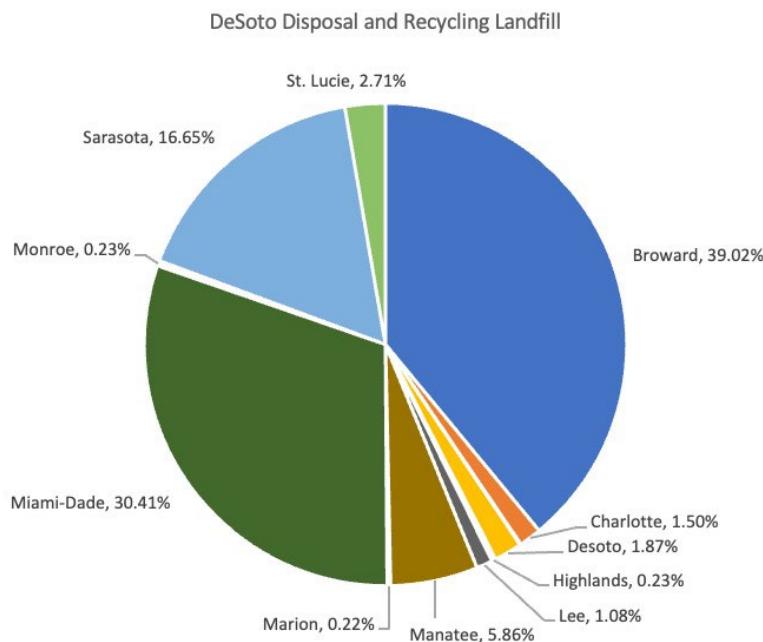
#### b. District population and facility service area

An estimated 2.1 million people live in the FDEP South District, with county-based population growth projected to be between 0.13% and 1.08% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 5-11**. In 2023, the DeSoto Disposal and Recycling Landfill accepted material from throughout the state, but primarily from counties in southern Florida. As seen in **Figure 5-14**, approximately 39% of the material accepted originated in Broward County, ~30% from Miami-Dade County, ~17% from Sarasota County, and ~6% from Manatee County. The DeSoto Disposal and Recycling Landfill also accepted disaster debris from the aftermath of Hurricane Ian. In 2023, approximately 96.5% of the

material accepted by the Class III landfill at the Lee/Hendry County Regional Solid Waste Disposal Facility came from Lee County while the remaining 3.5% came from Hendry County. The service area of each landfill, by county, population, and generator type, is shown in **Table 5-12**.

**Table 5-11:** Population of the FDEP South District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Charlotte	204,126	0.86%
Collier	399,464	0.83%
Desoto	34,974	0.18%
Highlands	104,385	0.33%
Hendry	40,895	0.41%
Glades	12,591	0.13%
Lee	800,864	1.08%
Sarasota	464,223	0.77%



**Figure 5-14:** Mass of material accepted by county of origin in the DeSoto Disposal and Recycling Landfill

**Table 5-12:** Service area of each Class III landfill in the South District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
DeSoto Disposal and Recycling LF	Entire State	22,609,411	705,014	6,608,519	3,015,048
Lee/Hendry Disposal Facility	Lee and Hendry	841,759	17,553	307,540	84,109

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

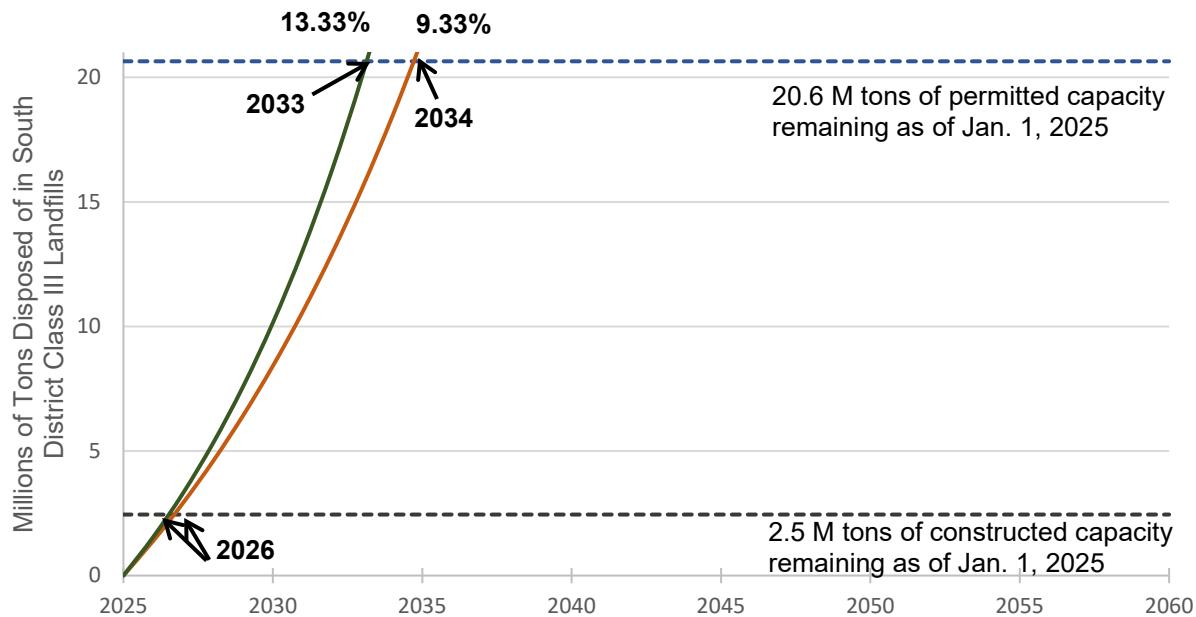
Per the normalization method described in **Appendix D, Section 1.1.2**, it is estimated that the South District has approximately 20.6 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025. 2.4 million tons of this capacity has already been constructed. Hurricane Ian made landfall as a Category 4 hurricane in Lee County, Florida on September 28<sup>th</sup>, 2022, generating massive amounts of debris in the FDEP South District counties. As such, when projecting airspace consumption for the normalization method described in **Appendix D, Section 1.1.2**, 2022 calendar year tonnages were used for the South District so as not to overestimate the amount of material disposed of in the Class III landfills during a typical year. In 2022, the Class III landfills in the South District received a total of 1.1 million tons of waste; the same facilities received 1.8 million tons of waste in 2023. There was a 67.5% increase in waste disposed of in the South District Class I landfills between 2022 and 2023, so 2022 data were used in the analysis.

**Table 5-13** shows the normalized remaining capacity and tons of material accepted in 2022 by each of the Class III landfills in the South District. **Appendix D, Table 4-7** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

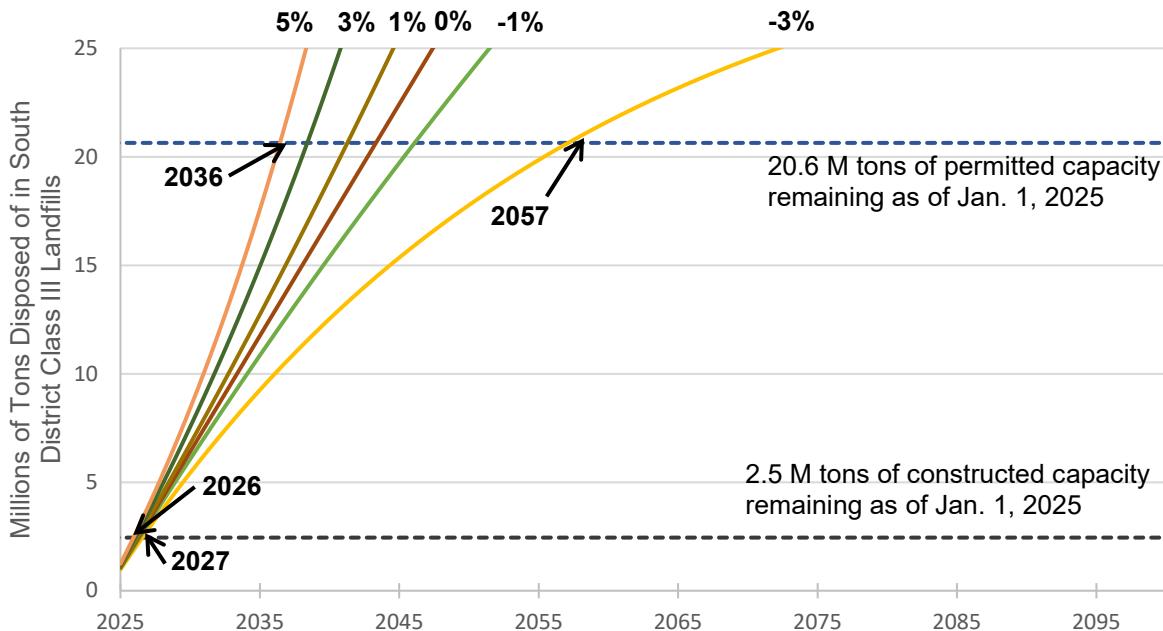
The five-year average annual increase (2018-2023) in waste received by Class III landfills in the South District is approximately 9.33%, while the median annual increase (2018-2023) is approximately 13.33%. It is expected that the currently constructed capacity in the South District will last until calendar year 2026 using both the average and median annual growth rate in waste disposal projections. The currently constructed capacity is expected to last until 2034 using the average annual growth rate and until 2033 using the median annual growth rate in waste disposal projections. See **Figure 5-15** and **Appendix D, Table 4-8**. **Figure 5-16** shows the estimated timeline for when the currently constructed and permitted capacity in the South District's Class III Landfills will be fully utilized under different disposal growth scenarios.

**Table 5-13:** Tons of material disposed of in 2022 and normalized remaining capacity estimate for each Class III landfill in the South District; 2022 tonnages were obtained from FDEP annual solid waste reports

Facility	Tons Disposed of in Class I LF 2022	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1., 2025 (tons)
DeSoto Disposal and Recycling LF	930,734	16,403,911	2,103,398
Lee/Hendry Disposal Facility	137,313	4,237,459	345,158
<b>Total</b>	<b>1,068,047</b>	<b>20,641,370</b>	<b>2,448,556</b>



**Figure 5-15:** The currently constructed capacity in FDEP South District Class III landfills is expected to be sufficient to accommodate South District waste through 2026 using both the average and median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate South District waste through 2034 using the average annual increase in disposal, and until 2033 using the median annual increase in disposal.



**Figure 5-16:** Under a range of different growth scenarios, the currently constructed capacity in the South District is expected to be sufficient to accommodate disposal through 2027 using a -3% growth rate, or through 2026 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2057 using a -3% growth rate, or through 2036 using a 5% growth rate.

#### d. Discussion of other Northwest District Class III landfill capacity

In July 2024, the DeSoto Disposal and Recycling Landfill received from FDEP an intent to issue a permit for the conversion of the future Cell 9 and Cells 12-18 from Class III to Class I cells. Therefore, the eastern portion of the landfill will be a Class I disposal area in the future while the western portion (current Cells 1-7 and future Cells 8 and 10-11) will remain a Class III disposal area. Further, while the constructed capacity at the Lee/Hendry Regional Solid Waste Disposal Facility represents the remaining airspace in Cell 1, construction has begun on Cell 2A, which is expected to impact constructed capacity in the South District Class III landfills.

##### 5.3.6 Southeast District

###### a. Introduction

There are two Class III landfills in the FDEP Southeast District included in the capacity analysis. These include the North Dade Landfill, the Palm Beach County Solid Waste Authority Landfill, both of which are publicly owned. The Town of Palm Beach also owns two Class III landfills which are excluded from the capacity analysis. The Skees Road Landfill exclusively accepts yard waste from landscaping and maintenance activities in the Town of Palm Beach, so it is not assumed to contribute to overall capacity in the Southeast District. The Okeechobee Boulevard Landfill received a closure permit in May 2023, and waste has not been accepted since 2015.

### b. District population and facility service area

The FDEP Southeast District has the largest population of any region in the state, with an estimated 7.1 million inhabitants and county-based population growth projected to be between 0.12% and 1.12% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 5-14**. In 2023, the North Dade Landfill and Palm Beach County Solid Waste Authority Landfill each received material from within their own respective counties. The service area of each landfill, by county, population, and generator type, is shown in **Table 5-15**.

**Table 5-14:** Population of the FDEP Southeast District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Broward	1,973,579	0.45%
Indian River	167,781	0.78%
Martin	162,847	0.50%
Miami-Dade	2,768,954	0.48%
Monroe	84,509	0.15%
Okeechobee	39,591	0.12%
Palm Beach	1,532,718	0.57%
St. Lucie	368,628	1.12%

**Table 5-15:** Service area of each Class III landfill in the South District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
North Dade LF	Miami-Dade	2,768,954	62,338	528,400	567,110
Palm Beach County SWA LF	Palm Beach	1,532,718	31,184	314,187	369,936

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

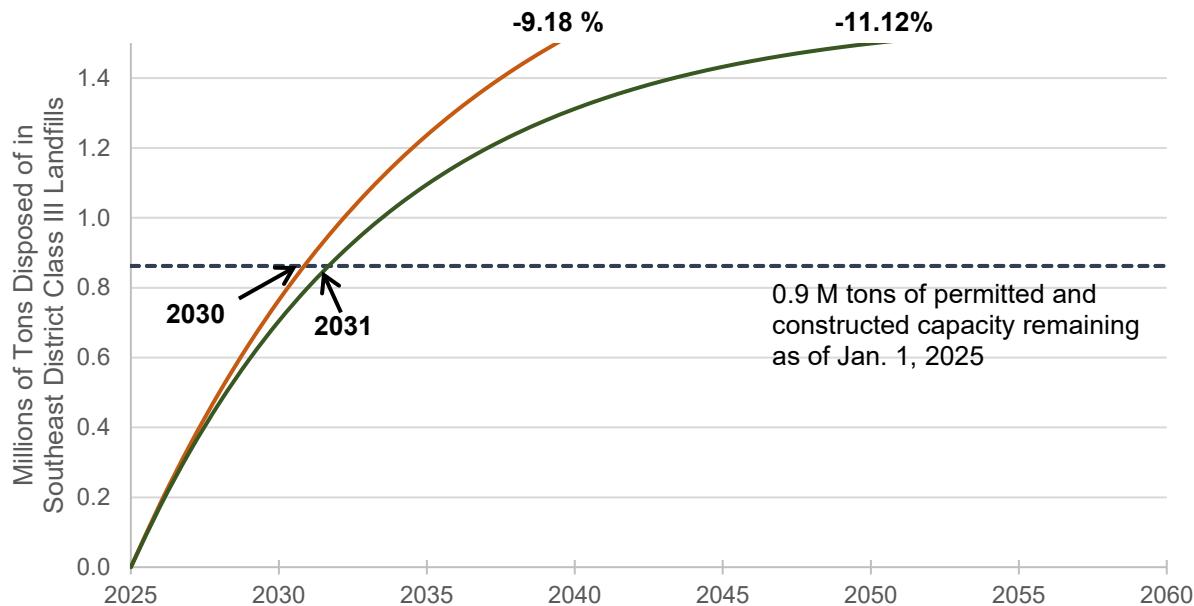
All of the currently permitted capacity in the Southeast District has already been constructed. Per the normalization method described in **Appendix D, Section 1.1.2**, it is estimated that the Southeast District has approximately 0.9 million tons of constructed and permitted capacity remaining as of January 1<sup>st</sup>, 2025. In 2023, the Class III landfills in the Southeast District received a total of 0.2 million tons of waste.

**Table 5-16** shows the normalized remaining capacity and tons of material accepted in 2023 by each of the Class III landfills in the Southeast District. **Appendix D, Table 4-9** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators.

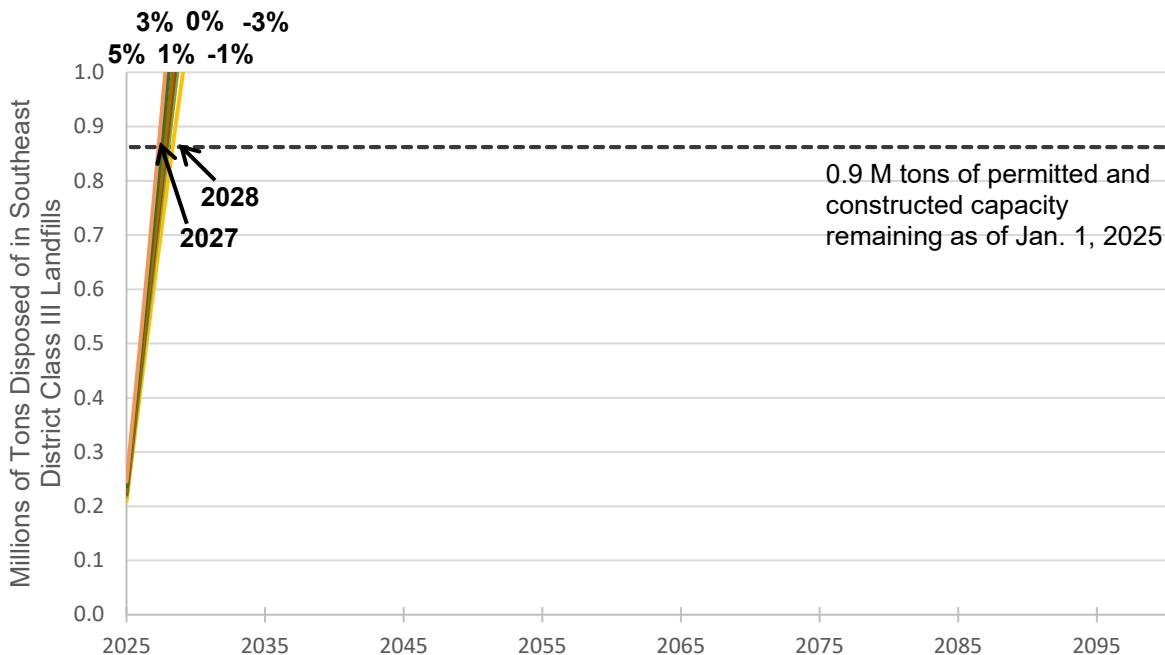
**Table 5-16:** Tons of material disposed of in 2023 and normalized remaining capacity estimate for each Class III landfill in the Southeast District; 2023 tonnages were obtained from FDEP annual solid waste reports

Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan 1, 2025 (tons)
North Dade LF	113,344	755,743	755,743
Palm Beach County SWA LF	109,300	106,428	106,428
<b>Total</b>	<b>222,644</b>	<b>862,171</b>	<b>862,171</b>

The five-year average annual increase (2018-2023) in waste received by Class III landfills in the Southeast District is approximately -9.18%, while the median annual increase (2018-2023) is approximately -11.12% (both of which represent a decline in waste disposal). Using the average annual growth rate, it is expected that the currently constructed and permitted capacity in the Southeast District will last until calendar year 2030. Using the median annual growth rate, it is expected that the currently constructed and permitted capacity is expected to last until 2031. See **Figure 5-17** and **Appendix D, Table 4-10**. **Figure 5-18** shows the estimated timeline for when the currently constructed and permitted capacity in the Southeast District's Class III Landfills will be fully utilized under different disposal growth scenarios.



**Figure 5-17:** The currently constructed and permitted capacity in FDEP Southeast District Class III landfills is expected to be sufficient to accommodate Southeast District waste through 2030 using the average annual growth in waste disposal projections. The currently constructed and permitted capacity is expected to be sufficient to accommodate Southeast District waste through 2031 using the median annual growth in waste disposal projections.



**Figure 5-18:** Under a range of different growth scenarios, the currently constructed and permitted capacity in the Southeast District is expected to be sufficient to accommodate disposal through 2028 using a -3% growth rate, or through 2027 using a 5% growth rate.

#### d. Discussion of other Southeast District Class III landfill capacity

As noted in the introduction to this section, the Town of Palm Beach Skees Road Landfill capacity is excluded from the district-wide analysis in this section. Information from the latest site life estimates for this facility is included in **Appendix D, Table 4-9**. The North Dade Landfill does not have any approved Class III landfill expansions and following the completion of the Palm Beach County Solid Waste Authority Class III landfill, all Class III waste will be disposed of in the Authority's Class I landfill.

#### 5.3.7 Southwest District

##### a. Introduction

There are three Class III landfills in the FDEP Southeast District included in the capacity analysis. These include the publicly owned Pasco County Resource Recovery Facility, as well as the privately owned North Manatee Landfill and Enterprise Landfill.

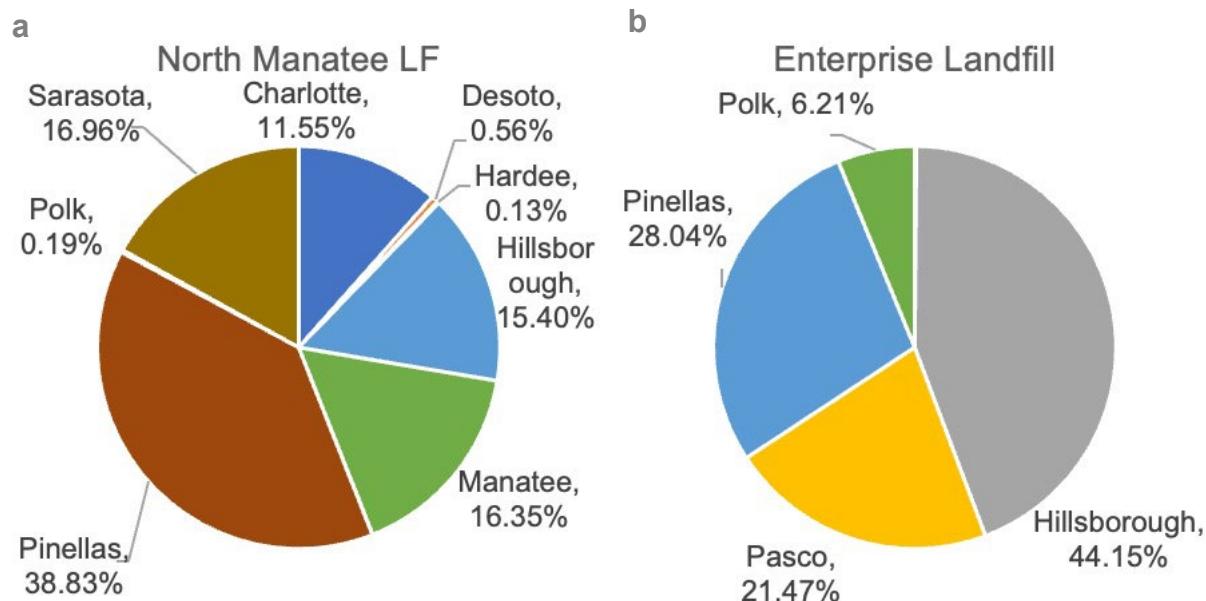
##### b. District population and facility service area

An estimated 4.8 million people live in the FDEP Southwest District, with county-based population growth projected to be between 0.03% and 1.08% annually, per the UF BEBR median population projections from 2025 to 2050. These population statistics are shown in **Table 5-17**. In 2023, the Pasco County Resource Recovery Facility accepted material from within Pasco County. The North Manatee and Enterprise Landfills accepted material from throughout the state, but especially from the South and

Southwest District counties. The North Manatee Landfill primarily accepted material from Pinellas (~39%), Sarasota (~17%), Manatee (~16%), Hillsborough (~15%), and Charlotte Counties (~12%). The Enterprise Landfill primarily accepted material from Hillsborough (~44%), Pinellas (~28%), Pasco (~21%), and Polk (~6%) Counties. See **Figure 5-19**. The service area of each landfill, by county, population, and generator type, is shown in **Table 5-18**.

**Table 5-17:** Population of the FDEP Southwest District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Citrus	162,240	0.56%
Hardee	25,645	0.03%
Hernando	204,265	0.67%
Hillsborough	1,541,531	0.86%
Manatee	439,566	1.05%
Pasco	610,743	1.04%
Pinellas	974,689	0.25%
Polk	797,616	1.08%



**Figure 5-19:** Mass of material accepted by county of origin at the a) North Manatee Landfill and b) Enterprise Landfill

**Table 5-18:** Service area of each Class III landfill in the Southwest District; counties served were obtained from the 2023 solid waste quantity report while population and generator information were obtained from the 2023 annual solid waste report

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
North Manatee LF	FDEP South and Southwest Districts - Citrus, Hardee, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Charlotte, Collier, DeSoto, Highlands, Hendry, Glades, Lee, and Sarasota	6,817,817	245,071	2,349,706	847,805
Pasco County Resource Recovery Facility	Pasco	610,743	48,236	262,405	24,928
Enterprise LF	FDEP Southwest District - Citrus, Hardee, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk	4,756,295	172,333	1,562,221	522,591

### c. Remaining capacity as of January 1<sup>st</sup>, 2025

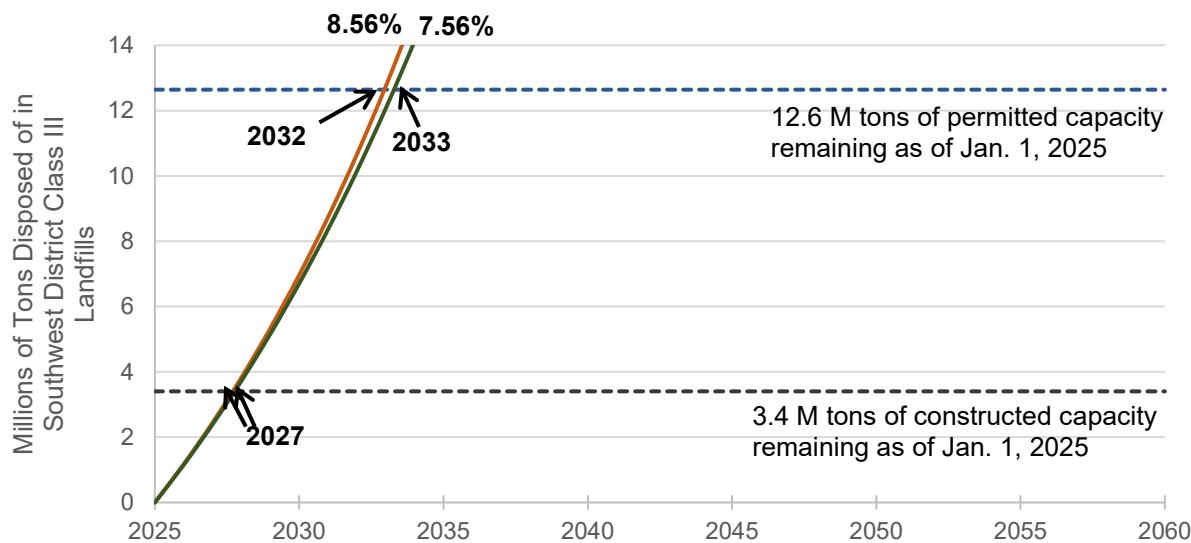
Per the normalization method described in **Appendix D, Section 1.1.2**, it is estimated that the Southwest District has approximately 12.6 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, and 3.4 million tons of this capacity has already been constructed. In 2023, the Class III landfills in the Southwest District received a total of 1.0 million tons of waste.

**Table 5-19** shows the normalized remaining capacity and tons of material accepted in 2023 by each of the Class III landfills in the Southwest District. **Appendix D, Table 4-11** includes the capacity data used in the normalization method for each facility, which were compiled from the annual site life estimates, annual solid waste quantity reports, and correspondence with facility operators. The remaining constructed capacity of the North Manatee Landfill is negative based on the normalization method in **Appendix D, Section 1.1.2** because over 241,000 tons were accepted in 2023, while the facility's site life estimate assumes an annual waste acceptance rate of 180,000 tons.

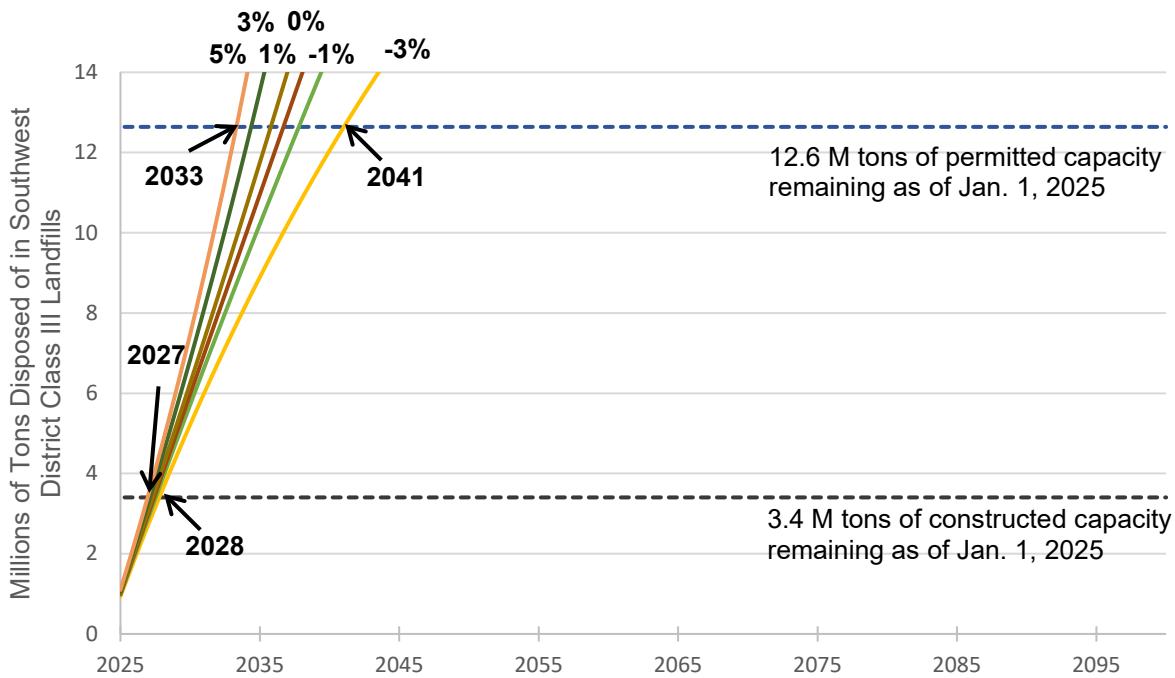
**Table 5-19:** Tons of material disposed of in 2023 and normalized remaining capacity estimate for each Class III landfill in the Southwest District; 2023 tonnages were obtained from FDEP annual solid waste reports

Facility	Tons Disposed of in Class I LF 2023	Permitted Capacity Remaining as of Jan. 1, 2025 (tons)	Constructed Capacity Remaining as of Jan. 1, 2025 (tons)
North Manatee LF	241,064	9,973,834	736,774
Pasco County Resource Recovery Facility	4,824	75,151	75,151
Enterprise LF	750,132	2,591,171	2,591,171
<b>Total</b>	<b>996,020</b>	<b>12,640,156</b>	<b>3,403,096</b>

The five-year average annual increase (2018-2023) in waste received by Class III landfills in the Southeast District is approximately 8.56%, while the median annual increase (2018-2023) is approximately 7.56%. Using both the average and median annual growth rates, it is expected that the currently constructed capacity in the Southwest District will last until calendar year 2027. Using the average annual growth rate, the currently permitted capacity is expected to last until 2032 and using median annual growth rate, it is expected that the currently permitted capacity is expected to last until 2033. See **Figure 5-20** and **Appendix D, Table 4-12**. **Figure 5-21** shows the estimated timeline for when the currently constructed and permitted capacity in the Central District's Class III Landfills will be fully utilized under different disposal growth scenarios.



**Figure 5-20:** The currently constructed capacity in FDEP Southwest District Class III landfills is expected to be sufficient to accommodate Southwest District waste through 2027 using both the average and median annual growth in waste disposal projections. The currently permitted capacity is expected to be sufficient to accommodate Southwest District waste through 2032 using the average annual growth and 2033 using the median annual growth in waste disposal projections.



**Figure 5-21:** Under a range of different growth scenarios, the currently constructed capacity in the Southwest District is expected to be sufficient to accommodate disposal through 2028 using a -3% growth rate, or through 2027 using a 5% growth rate. The currently permitted capacity is expected to be sufficient through 2041 using a -3% growth rate, or through 2033 using a 5% growth rate.

#### d. Discussion of other Southwest District Class III landfill capacity

There have not been any permit applications submitted within the last year to expand capacity in the Class III landfills in the Southwest District.

## 6 C&D DEBRIS DISPOSAL FACILITIES

### 6.1 Background

Construction and Demolition Debris (C&D) disposal facilities only accept construction and demolition debris as defined by Florida regulations. 62-701.200, F.A.C. classifies “construction and demolition debris” as generally non-water-soluble, non-hazardous materials like steel, glass, brick, concrete, asphalt, pipe, gypsum drywall, lumber, and other components from the construction or demolition of structures. These facilities are regulated under 62-701.730, F.A.C., which outlines their reporting, design, and operational requirements.

As of the most recent data, Florida has 63 permitted C&D debris disposal facilities in operation, outnumbering the 39 active Class I facilities. This reflects the high volume of construction activity statewide and the need for dedicated infrastructure to manage inert debris. C&D debris disposal facilities are generally smaller in scale than Class I sites and serve more localized waste streams. While Class I landfills often operate as large, publicly owned regional facilities, most C&D debris disposal sites are privately owned and operated by commercial waste haulers or construction firms. A smaller share is managed by counties, often as separate areas within larger Class I facilities.

C&D debris disposal facilities typically accept inert, non-putrescible materials such as concrete, wood, drywall, and asphalt. They are subject to less stringent permitting and operational requirements than Class I landfills, which must meet more rigorous standards for design, monitoring, and environmental protection. As a result, Class I landfills are more expensive to build and operate, and are more often publicly owned, while C&D debris disposal facilities tend to be privately operated by commercial waste companies or construction firms.

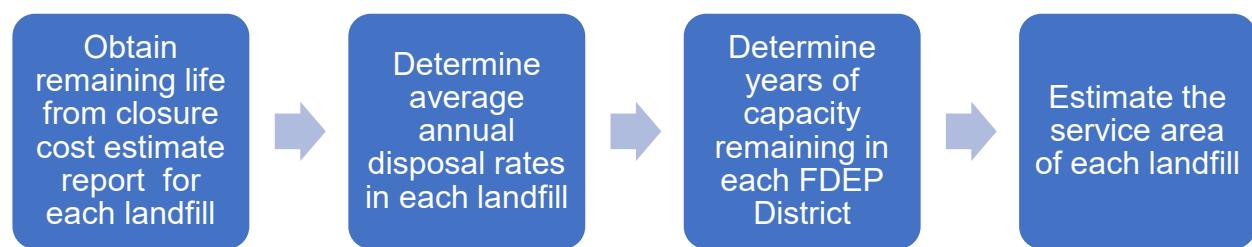
### 6.2 General Overview and Approach

C&D debris disposal facilities in Florida are not subject to the same capacity reporting requirements that apply to Class I landfills. These facilities are exempt from submitting annual estimates of remaining site life or airspace, and as a result, many lack publicly available capacity estimates.

To address this gap, the analysis followed a structured analytical approach, summarized in **Figure 6-1**, which outlines the sequence of steps used in the assessment. The process began with a review of closure cost estimate reports submitted to FDEP as part of each facility’s financial assurance obligations. These reports provide the most consistent and standardized data on facility design and lifespan. Key parameters extracted included total permitted acreage, maximum permitted height (where available), total projected active life (in years), and the estimated remaining operational life of each site.

The remaining life estimates were combined with reported annual disposal rates from the 2018-2023 C&D Annual Reports to estimate remaining capacity in tons. Where available, recent topographic surveys were used to compare and validate the calculated estimates, helping to gauge the accuracy and reliability of the approach.

In addition to the quantitative analysis, a sample of facility operators were contacted to better understand operational realities, processing limitations, and infrastructure needs. While the response rate was low, responses received helped contextualize the data and identify qualitative factors - such as throughput constraints or future expansion plans - not evident in regulatory filings. **Table 6-1** includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis. For the full method used in the analysis, please refer to **Appendix E**.



**Figure 6-1:** Flow chart of general method used to analyze C&D debris disposal facilities capacity

**Table 6-1:** Summary of data sources and method used to analyze C&D debris disposal facility capacity

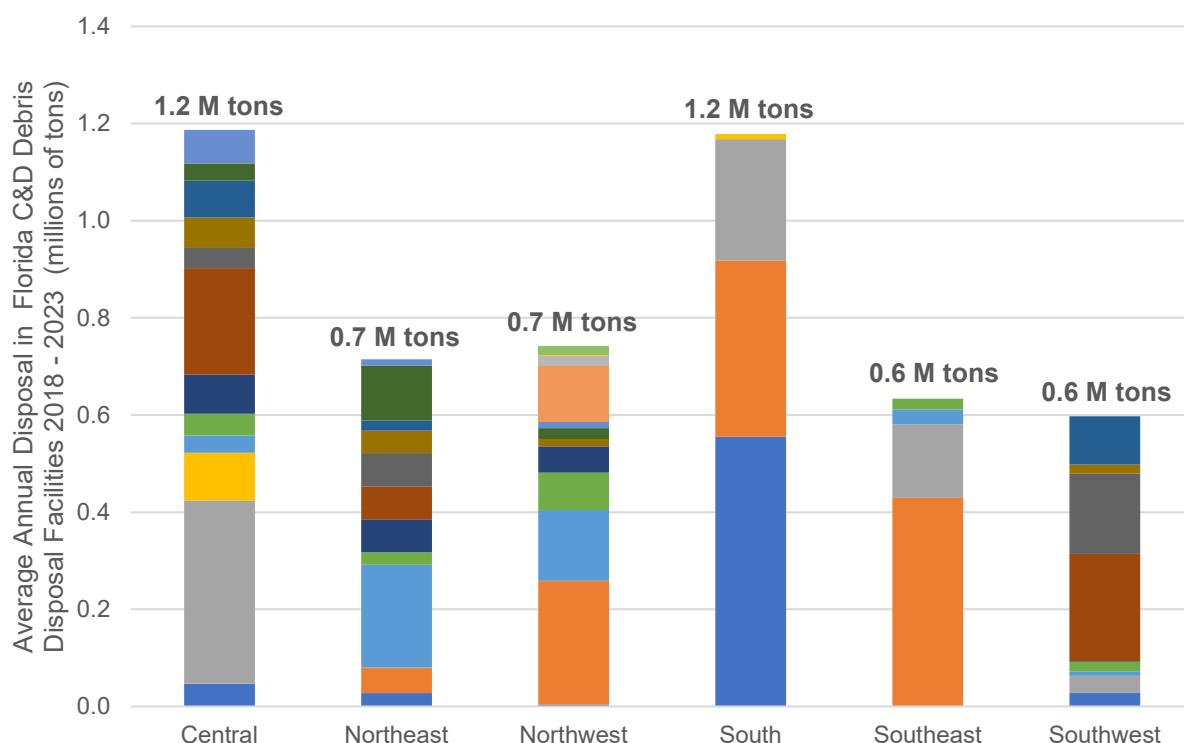
Parameter	Description
Number of active facilities included in the analysis	63
Related reporting requirements	<ul style="list-style-type: none"><li><b>C&amp;D annual reports:</b> 62-701.900, F.A.C</li><li><b>Cost estimate reports:</b> 62-701.730, F.A.C</li></ul>
Typical capacity measurement approach	1) Extract life remaining from closure cost estimate reports 2) Extract average annual disposal rate from C&D annual reports (tons/yr) 3) Calculate remaining capacity using remaining life (years) × reported average annual disposal rate (tons/year)
Data sources used in methods	<b>C&amp;D annual reports (2018–2023):</b> Annual disposal volumes (tons) by facility. <b>Cost estimate reports:</b> Remaining life for each facility (yrs) <b>Correspondence with facility operators:</b> Verification of information gathered from reports and permits

## 6.3 Results and Discussion

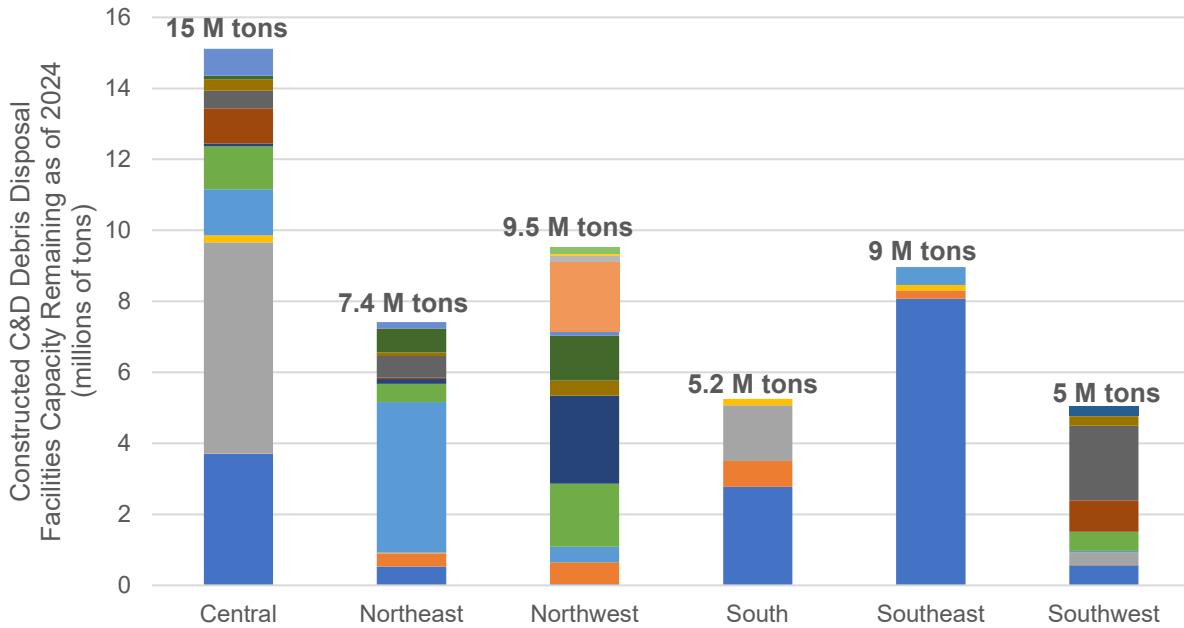
### 6.3.1 State-wide

Across the 63 active C&D debris disposal facilities in the state, approximately 5 million tons of C&D debris were disposed of annually from 2018 to 2023. Over this period, the disposal rate fluctuated between 4.5 and 5.2 million tons per year. **Figure 6-2** presents the average annual disposal rate for each district, highlighting the variation in facility usage. The Central and South Districts had the highest disposal rates, each averaging 1.2 million tons per year, while the Southeast and Southwest Districts recorded the lowest, at 0.6 million tons per year.

While disposal rates indicate ongoing demand for disposal capacity, the long-term sustainability of Florida's C&D debris disposal facilities depends on their remaining capacity. **Figure 6-3** shows the total constructed capacity remaining in each FDEP district, which, as of 2024, amounts to 51 million tons statewide. This capacity varies widely among districts, with the Central District maintaining the highest remaining capacity at 15 million tons, while the South and Southwest Districts have the lowest, with just 5.2 million tons and 5 million tons, respectively.



**Figure 6-2:** Average annual disposal tons in Florida's C&D debris disposal facilities from 2018 to 2023 by FDEP District; the colors in the figure represent a different facility in each district.



**Figure 6-3:** Constructed capacity remaining in Florida's C&D debris disposal facilities as of 2024 by FDEP District; the colors in the figure represent a different facility in each district.

The remaining constructed capacity of each C&D debris disposal facility in the state is shown in **Figure 6-4**. With 51 million tons of remaining capacity across Florida's C&D debris disposal facilities and an annual disposal rate of approximately 5 million tons, the state's existing capacity could last about 10 years assuming a flat disposal rate. However, capacity distribution varies by region, meaning some districts may face constraints much sooner than others.

The Central District, with 15 million tons of remaining capacity and the highest disposal rate at 1.2 million tons per year, has an estimated facility lifespan of about 12 years. This suggests that while the district is consuming facility space quickly, it has sufficient remaining capacity to accommodate future disposal needs for the foreseeable future. However, continued growth and development could accelerate depletion, requiring long-term planning.

The Northeast District, with 7.4 million tons of capacity and a 0.7 million ton annual disposal rate, is projected to last about 10 to 11 years. While this is in line with the state average, the district's reliance on a single major facility (Old Kings Road LLC) makes it more susceptible to capacity constraints if disposal volumes increase or if the facility reaches its limit sooner than expected.

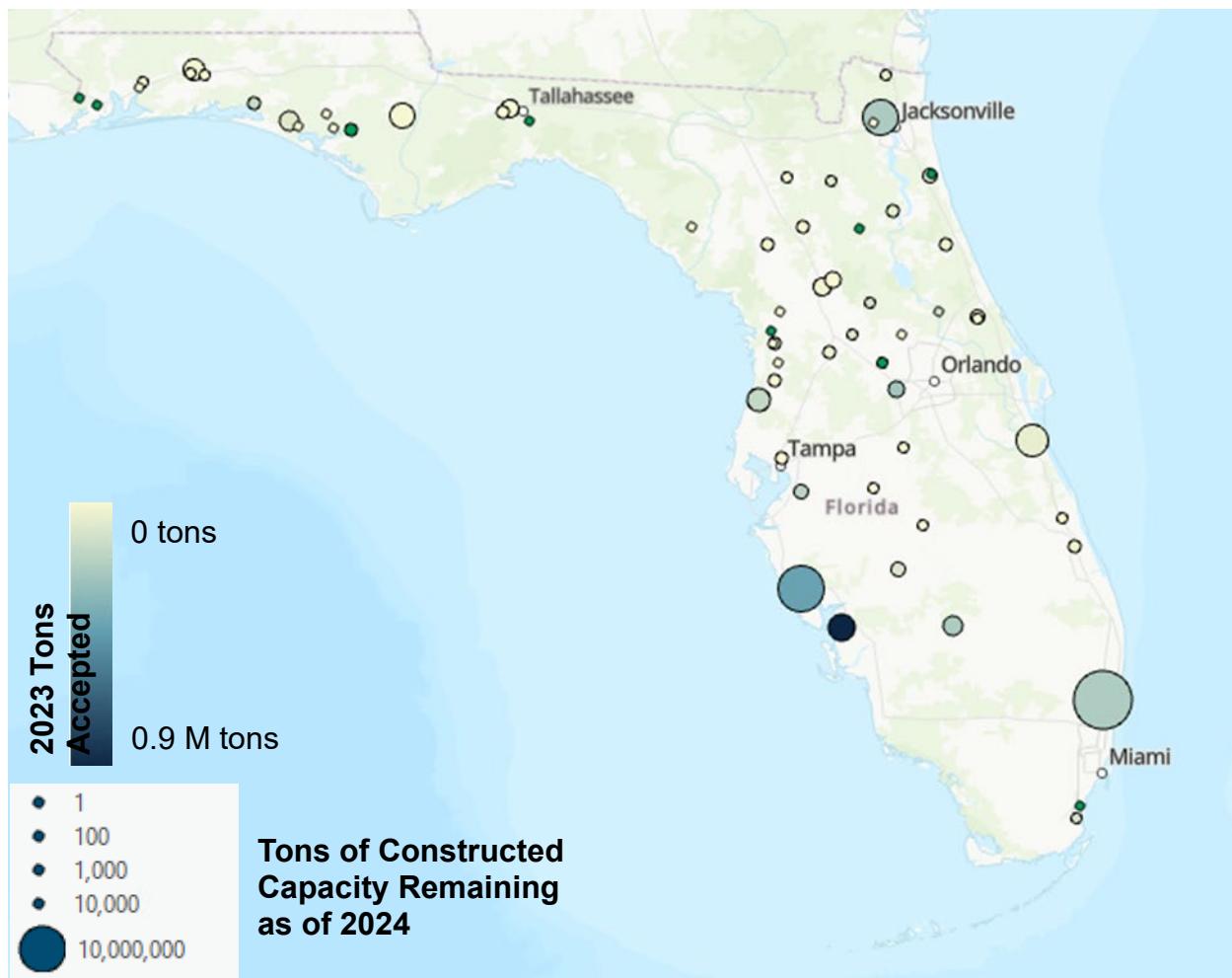
The Northwest District, with 9.5 million tons of remaining capacity and a 0.7 million ton annual disposal rate, has a longer estimated lifespan of about 13 to 14 years. The region benefits from a more distributed facility network, reducing dependence on any one facility. This flexibility provides a buffer against unexpected shifts in waste generation or operational disruptions.

The South District faces the most immediate capacity concerns. With only 5.2 million tons of remaining capacity and the second-highest disposal rate of 1.2 million tons per year, it could reach capacity within just four to five years if disposal rates remain steady.

The Southeast District, with 9 million tons of remaining capacity and a 0.6 million ton annual disposal rate, is expected to last approximately 15 years under current conditions. However, the district's capacity is also heavily concentrated in a single facility (Monarch Hill Landfill), meaning any operational disruptions at that site could create disposal challenges.

The Southwest District, with 5 million tons of capacity and an annual disposal rate of 0.6 million tons, has an estimated lifespan of about 8 to 9 years. Although the district's lower disposal rate extends its available capacity, the limited total space means that any unexpected increases in waste generation could shorten this timeline.

While Florida's C&D debris disposal facilities appear to have a decade of capacity remaining statewide, the South District is at the greatest risk of running out of capacity first, followed by the Southwest. In contrast, districts such as the Northwest and Southeast have a longer buffer before capacity constraints become critical. However, these estimates assume a constant disposal rate, and any fluctuations - whether due to economic growth, construction activity, or disaster-related debris surges - could considerably impact these projections. Continuous monitoring and adaptive waste management strategies will be necessary to ensure long-term sustainability.



**Figure 6-4:** Constructed capacity remaining in Florida's C&D debris disposal facilities as of 2024; the size of the dot corresponds to the tons of capacity remaining and the color of the dot corresponds to the tons of material accepted in 2023.

### 6.3.2 Central District

#### a. Introduction

There are 13 C&D debris disposal facilities in the FDEP Central District with active permits. However, one facility, HTS Environmental C&D Debris Disposal and Recycling Facility, has reported no remaining active life for its constructed cell and is therefore excluded from the analysis. The 12 active C&D debris disposal facilities included in this assessment are Melbourne LF (Florida Recyclers of Brevard), Professional Dirt Services C&D Facility, Mid Florida Materials - Mt. Dora Recycling and Disposal Facility, Lake Environmental Resources, LLC, Friends Recycling (formerly Ocala Recycling), Cypress Acres LF, Southside Materials Recycling, Pine Ridge LF (also known as 545 Sanifill LF), Sumter Recycling & Solid Waste Disposal Inc., C.R. 466A C&D Facility, 4 Jays Recycling, Inc. C&D Disposal & Recycling, and Samsula LF.

### b. District population and facility service area

An estimated 4.6 million people live in the FDEP Central District, with county-based population growth projected to range between 0.60% and 1.64% annually, according to the University of Florida (UF) Bureau of Economic and Business Research (BEBR) median population projections from 2025 to 2050. These population statistics are shown in **Table 6-2**. The counties within the district include Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter, and Volusia, with Orange County being the most populous at 1.49 million residents. The highest projected growth rates are in Osceola and Sumter Counties, each expected to increase by 1.64% annually, reflecting ongoing development and urban expansion in these areas. The population trends suggest that continued growth in construction and development could drive increased C&D debris generation over time, particularly in the rapidly expanding counties.

**Table 6-2:** Population of the FDEP Central District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Brevard	640,773	0.62%
Lake	414,749	1.21%
Marion	403,966	0.80%
Orange	1,492,951	0.95%
Osceola	439,225	1.64%
Seminole	486,839	0.58%
Sumter	155,318	1.64%
Volusia	572,815	0.60%

### c. Remaining capacity as of 2024

Per the normalization method described in **Appendix E, Section 1.1.2**, it is estimated that the Central District has approximately 15.1 million tons of constructed capacity remaining in 2024. Between 2018 and 2023, the C&D debris disposal facilities in the district received an average of 1.2 million tons of waste per year. **Table 6-3** presents the normalized remaining capacity and the average tons of material disposed of annually from 2018 to 2023 at each C&D debris disposal facilities in the Central District.

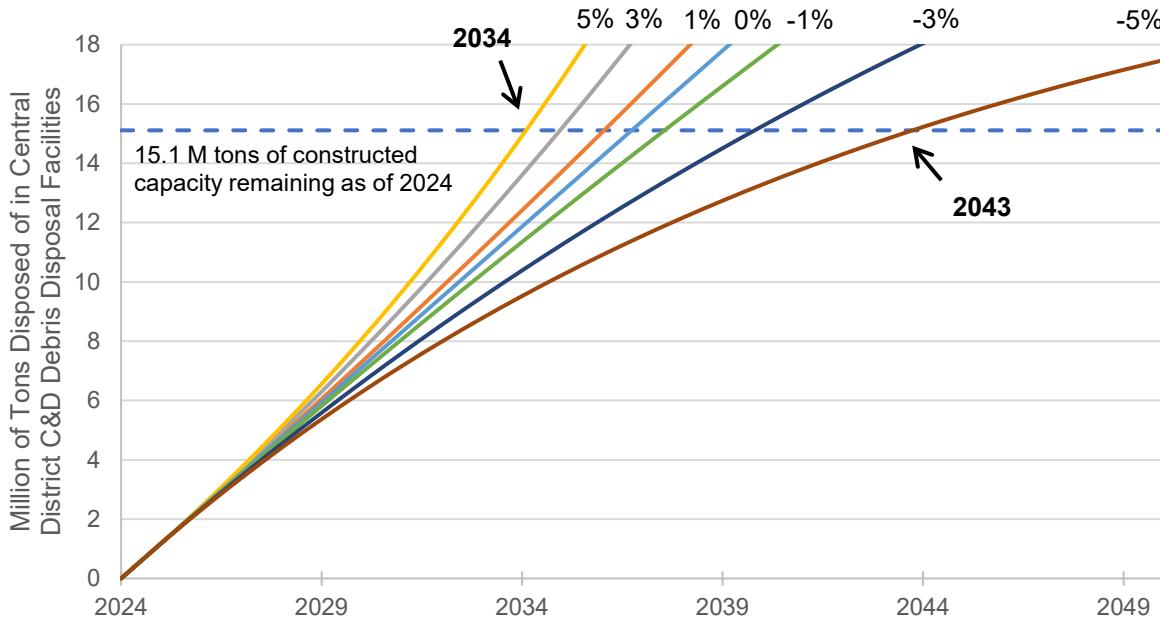
The Mid Florida Materials - Mt. Dora Recycling and Disposal Facility has the largest remaining capacity, with 5.95 million tons available, followed by the Melbourne LF (Florida Recyclers of Brevard) with 3.7 million tons. Several other facilities, including Friends Recycling, Cypress Acres LF, Pine Ridge LF, and Sumter Recycling, each have between 500,000 and 1.3 million tons of remaining capacity. In contrast, some facilities, such as Professional Dirt Services C&D Facility and Southside Materials Recycling, have lower remaining capacity, with less than 100,000 tons each, indicating they may reach their limits sooner.

While the district currently maintains the highest remaining C&D debris disposal facility capacity in the state, its high disposal rate of 1.2 million tons per year suggests that long-term planning will be necessary to ensure continued facility availability. The variability in remaining capacity among facilities also highlights the need for ongoing monitoring, as some facilities may reach capacity much sooner than others.

**Table 6-3:** Average tons of material disposed of from 2018 to 2023 and normalized remaining capacity estimate for each C&D debris disposal facility in the Central District; annual tonnages for each year were obtained from FDEP annual C&D reports

Facility	Average Tons Disposed of in C&D Debris Disposal Facilities 2018- 2023	Constructed Capacity Remaining as of 2024 (tons)
Melbourne LF (Florida Recyclers of Brevard)	46,332	3,706,533
Professional Dirt Services C&D Facility	808	1,617
Mid Florida Materials - Mt. Dora Recycling and Disposal Facility	376,759	5,952,792
Lake Environmental Resources, LLC	98,653	197,307
Friends Recycling Formerly Ocala Recycling	35,027	1,295,987
Cypress Acres LF	44,871	1,211,522
Southside Materials Recycling	80,299	80,299
Pine Ridge LF (AKA 545 Sanifill LF)	219,436	987,464
Sumter Recycling & Solid Waste Disposal INC	41,882	502,588
C.R. 466A C&D Facility	62,639	313,195
4 Jays Recycling, INC. C&D Disposal & Recycling	34,864	104,592
Samsula LF	68,776	197,307

**Figure 6-5** illustrates the estimated timeline for when the currently constructed capacity in the Central District's C&D debris disposal facilities will be fully utilized under different disposal growth scenarios. Assuming a constant disposal rate of 1.2 million tons per year, capacity is expected to last until 2036. However, given that disposal rates fluctuate over time, projections were also modeled for annual disposal rate changes of  $\pm 1\%$ ,  $\pm 3\%$ , and  $\pm 5\%$ . The results show that under a 5% annual increase, the constructed capacity could be depleted as early as 2034, while a 5% annual decrease could extend capacity until 2043. This wide range underscores the importance of closely monitoring disposal trends, as increasing construction activity or economic growth could accelerate depletion, while increased recycling or diversion efforts could extend facility life. See also **Appendix E, Table 5-3**.



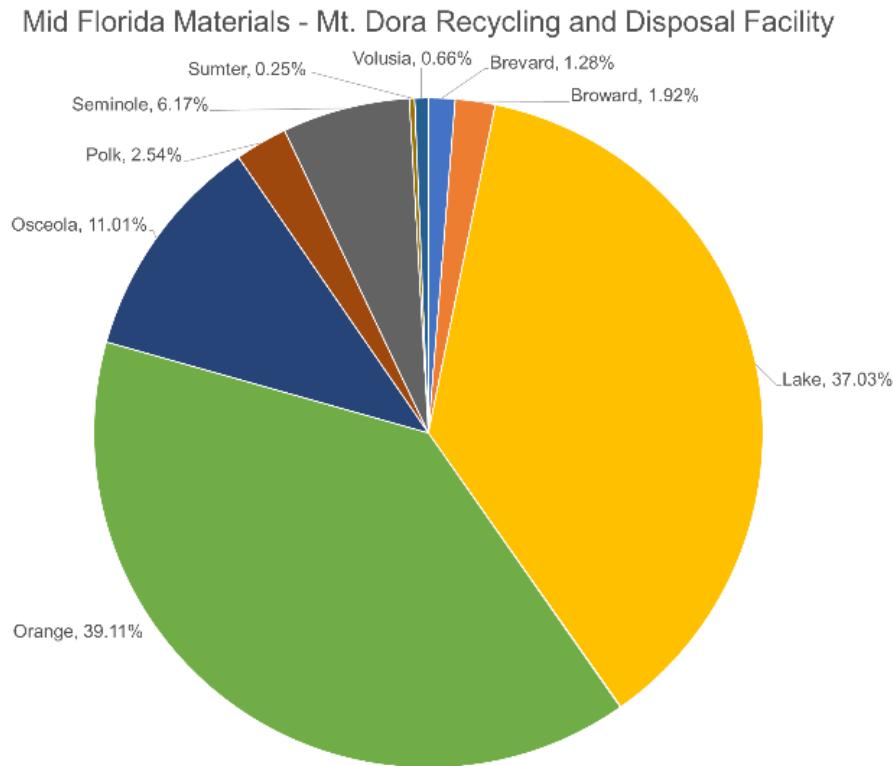
**Figure 6-5:** The currently constructed capacity in the Central District C&D debris disposal facilities is expected to last from 2034 to 2043 using the 5% increase annual disposal rate to 5% decrease annual disposal rate.

#### d. Estimating service area of each facility

In the Central District, most C&D debris disposal facilities primarily accepted material from their home county, with smaller quantities received from adjacent counties. For example, the Mid Florida Materials - Mt. Dora Recycling and Disposal Facility served a broad regional role in 2023, receiving material from nearly all counties within the Central District. See **Figure 6-6**. In contrast, Lake Environmental Resources, LLC accepted waste predominantly from Lake County (79%) and, to a lesser extent, from Miami-Dade County (21%). The C.R. 466A C&D Facility primarily served three counties: Lake (49%), Marion (32%), and Sumter (19%). The service area of each facility—including the counties of origin, estimated population served, and the breakdown of generator types—is detailed in **Table 6-4**. This information helps illustrate the regional reach and demand characteristics of each C&D debris disposal facility operating within the Central District.

**Table 6-4:** Service area of each C&D debris disposal facility in the Central District; counties served were obtained from the 2023 C&D annual report while population and generator information were obtained from the 2023 annual solid waste report.

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Melbourne LF (Florida Recyclers of Brevard)	Brevard	640,773	11,144	223,469	68,781
Professional Dirt Services C&D Facility	Lake	414,749	8,861	146,677	4,355
Mid Florida Materials - Mt. Dora Recycling and Disposal Facility	FDEP Central District: Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter, Volusia	4,606,636	169,220	1,408,934	345,730
Lake Environmental Resources, LLC	Lake, Miami-Dade	3,183,703	71,199	675,077	571,465
Friends Recycling Formerly Ocala Recycling	Marion	403,966	9,772	47,052	110,886
Cypress Acres LF	Marion	403,966	9,772	47,052	110,886
Southside Materials Recycling	Sumter	155,318	1,333	76,053	641
Pine Ridge LF (AKA 545 Sanifill LF)	Osceola	439,225	32,000	250,466	16,351
Sumter Recycling & Solid Waste Disposal INC	Sumter	155,318	1,333	76,053	641
C.R. 466A C&D Facility	Lake, Marion, Sumter	974,033	19,966	269,782	115,882
HTS Environmental C&D Debris Disposal and Recycling Facility	Volusia	572,815	10,963	190,563	29,786
4 Jays Recycling, INC. C&D Disposal & Recycling	Volusia	572,815	10,963	190,563	29,786
Samsula LF	Volusia	572,815	10,963	190,563	29,786



**Figure 6-6:** Mass of material accepted by county of origin in the Mid Florida Materials - Mt. Dora Recycling and Disposal Facility

### 6.3.3 Northeast District

#### a. Introduction

There are 13 C&D debris disposal facilities in the FDEP Northeast District with active permits. However, one facility, Nine Mile Road C&DD Disposal Facility, has reported no waste disposal activity since 2019. Cost estimates indicate that both the north and south parcels of the site have been closed, and it is therefore excluded from the analysis. The 12 active C&D debris disposal facilities included in this assessment are Florence C&D Facility, Watson C&D Debris Disposal Facility, Dixie County Solid Waste Management Facility, Jones Road LF & Recycling, LTD, Old Kings Road LLC, Flagler CDS, Incorporated C&D Debris Facility, Sand Hill Recycling, LLC, Interlachen C&DD Disposal Facility, Northeast C&DD Disposal Facility, Interlachen Blue C&D Disposal Facility, and St. Marks C&D Disposal Facility.

#### b. District population and facility service area

An estimated 1.5 million people reside in the FDEP Northwest District, with county-based population growth projected to range between 0.12% and 1.45% annually, according to UF BEBR median population projections from 2025 to 2050. These projections indicate that certain counties, particularly those with growing urban centers, will experience higher growth rates, while rural counties may see more modest

increases. These population statistics are shown in **Table 6-5**. The C&D debris disposal facilities in this district serve a mix of urban and rural populations, with larger facilities primarily located in more densely populated areas, while smaller disposal sites provide regional service to lower-density communities.

**Table 6-5:** Population of the FDEP Northeast District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Alachua	285,994	0.57%
Baker	27,323	0.64%
Bradford	25,290	0.27%
Clay	231,042	0.76%
Columbia	72,191	0.38%
Dixie	17,271	0.35%
Duval	1,051,278	0.70%
Flagler	130,756	1.27%
Gilchrist	19,123	0.66%
Hamilton	13,671	0.20%
Lafayette	8,074	0.29%
Levy	45,283	0.53%
Madison	18,698	0.08%
Nassau	100,763	1.17%
Putnam	75,906	0.12%
St. Johns	315,209	1.61%
Suwannee	45,448	0.35%
Taylor	21,686	0.20%
Union	11,783	0.46%

### c. Remaining capacity as of 2024

Per the normalization method described in **Appendix E, Section 1.1.2**, the Northeast District has an estimated 7.4 million tons of constructed C&D debris disposal facility capacity remaining as of 2024. Between 2018 and 2023, facilities in this district received an average of 679,956 tons of waste per year. **Table 6-6** presents the remaining constructed capacity and the average annual disposal tonnage for each facility in the district.

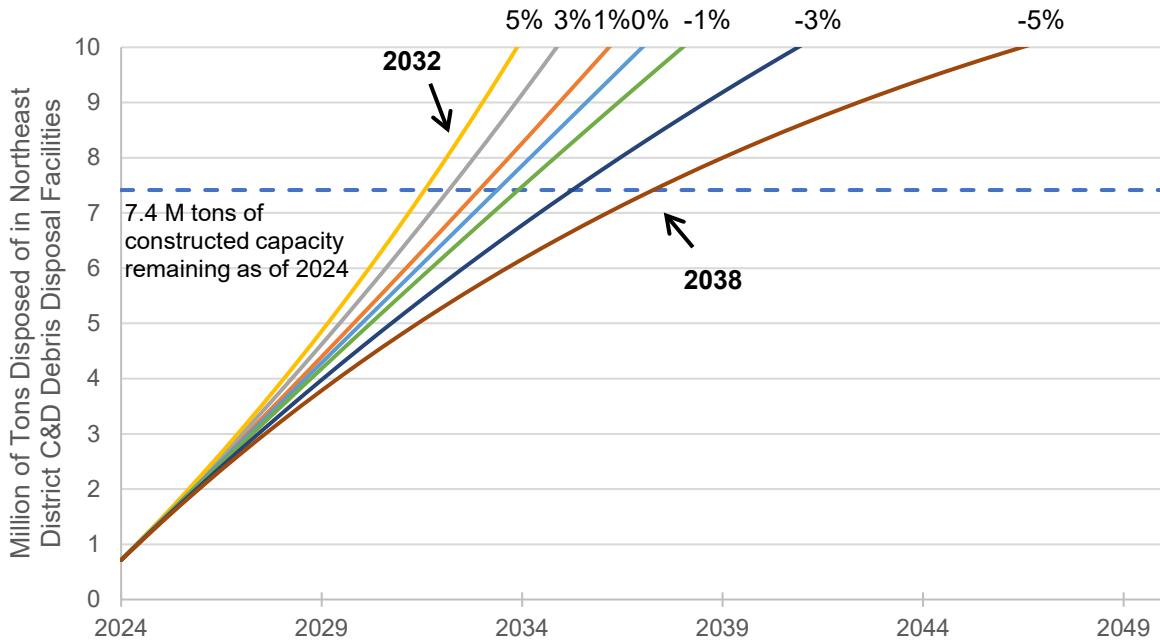
The Old Kings Road LLC facility has the largest remaining capacity, with 4.23 million tons, followed by St. Marks C&D Disposal Facility and Northeast C&DD Disposal Facility, with approximately 674,783 and 613,781 tons, respectively. Several other facilities, including Florence C&D Facility and Flagler CDS, each have between 500,000 and 600,000 tons of remaining capacity. Conversely, smaller sites such as Jones Road LF & Recycling, LTD and Interlachen C&DD Disposal Facility have very limited remaining capacity, indicating that they may reach their limits much sooner.

**Table 6-6:** Average tons of material disposed of from 2018 to 2023 and normalized remaining capacity estimate for each C&D debris disposal facilities in the Northeast District; annual tonnages for each year were obtained from FDEP annual solid waste reports

Facility	Average Tons Disposed of in C&D Debris Disposal Facility 2018- 2023	Constructed Capacity Remaining as of 2024 (tons)
Florence C&D Facility	27,733	526,924
Watson C&D Debris Disposal Facility	50,902	369,547
Dixie County Solid Waste Management Facility	1,399	32,185
Jones Road LF & Recycling, LTD	27	133
Old Kings Road LLC	211,698	4,233,960
Flagler CDS, Incorporated C&D Debris Facility	25,794	515,887
Sand Hill Recycling, LLC	67,446	134,893
Interlachen C&DD Disposal Facility	68,206	32,739
Northeast C&DD Disposal Facility	68,198	613,781
Interlachen Blue C&D Disposal Facility	46,089	98,913
St. Marks C&D Disposal Facility	112,464	674,783

Projections in **Figure 6-7** suggest that if disposal rates continue at current levels, the district's constructed facility capacity could be depleted by approximately 2033 to 2035, depending on actual growth in disposal rates. If annual waste disposal increases by 5% per year, capacity could be exhausted as early as 2032, whereas a 5% annual decrease in disposal rates could extend the lifespan of these facilities until 2038. See also **Appendix E, Table 5-4.**

While the district currently has sufficient capacity to manage C&D debris in the near term, the variation in facility sizes and disposal rates across facilities underscores the need for continued monitoring and long-term planning. Ensuring that capacity is available for high-growth areas will be critical to maintaining sustainable waste management infrastructure.



**Figure 6-7:** The currently constructed capacity in the Northeast District C&D debris disposal facilities is expected to last from 2032 to 2038 using the 5% increase annual disposal rate to 5% decrease annual disposal rate.

#### d. Estimating service area of each facility

In the Northeast District, most C&D debris disposal facilities primarily accepted material from a single county, supplemented by smaller volumes from nearby jurisdictions. The Northeast C&DD Disposal Facility had the broadest reach in 2023, receiving material from nearly every county in the district. In contrast, Old Kings Road LLC accepted material mainly from Duval County (63%) and Clay County (37%). Similarly, the St. Marks C&D Disposal Facility received the majority of its material from St. Johns County (82%) and a smaller portion from Duval County (18%). The counties served by each facility, along with associated population estimates and generator sector data, are summarized in **Table 6-7**.

**Table 6-7:** Service area of each C&D in the Northeast District; counties served were obtained from the 2023 C&D annual report while population and generator information were obtained from the 2023 annual solid waste report.

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Florence C&D Facility	Alachua	285,994	10,443	84,134	44,601
Watson C&D Debris Disposal Facility	Alachua	285,994	10,443	84,134	44,601
Dixie County Solid Waste Management Facility	Dixie	17,271	177	9,667	0
Jones Road LF & Recycling, LTD	Duval	1,051,278	27,467	306,024	116,459
Old Kings Road LLC	Clay, Duval	1,282,320	30,113	378,687	123,853
Flagler CDS, Incorporated C&D Debris Facility	Flagler	130,756	2,421	42,734	5,125
Sand Hill Recycling, LLC	Duval	1,051,278	27,467	306,024	116,459
Interlachen C&DD Disposal Facility	St. Johns	315,209	15,902	107,647	14,656
Northeast C&DD Disposal Facility	FDEP Northeast District - Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor, Union	2,516,789	67,114	810,245	203,652
Interlachen Blue C&D Disposal Facility (estimated using the acres constructed for cell 1)	St. Johns	315,209	15,902	107,647	14,656
Nine Mile Road C&DD Disposal Facility	St. Johns	315,209	15,902	107,647	14,656
St. Marks C&D Disposal Facility Cell 1	St. Johns, Duval	1,366,487	43,369	413,671	131,115
Green Cedar C&D Disposal Facility (FKA All South)	Suwannee	45,448	165	18,016	887

### *6.3.4 Northwest District*

#### **a. Introduction**

There are 18 C&D debris disposal facilities in the FDEP Northwest District with active permits. However, four facilities are excluded from this analysis due to lack of recent disposal activity. D.H. Griffin Wrecking Co. C&D has no waste disposal records, and its permit indicates that the facility ceased operations in 1998. Longleaf C&D Disposal Facility has reported no disposal activity in the past five years, and cost estimates suggest no constructed space remains. Crowder Recycling Tram, a C&D debris recycling and disposal facility, processes C&D debris material with an 80% recycling rate. Although its permit suggests that its disposal cell could last for 38 years, no tons have been disposed of in the past five years, making it unclear how much disposal capacity remains. Similarly, Suncoast C&D Debris Disposal Facility has reported no waste disposal activity in the last five years.

The 14 active C&D debris disposal facilities included in this assessment are State Route 20 C&D Debris Disposal Facility, SouthPort C&D Disposal Facility, Lynn Haven C&D Disposal Facility, West Bay C&D Facility, Trash Rolloff of Bay County Inc., Panama City Beach C&D Disposal Facility, Blountstown C&D Disposal Facility, Solomon C&D Landfill, LLC, Crowder Recycling Aenon Church, Crestview LF, LLC, Arena LF and Sand Co., Crestview C&D Disposal Facility, Persimmon Hollow C&D Pit, and East Milton C&D Disposal Facility.

#### **b. District population and facility service area**

An estimated 1.6 million people reside in the FDEP Northwest District, with county-based population growth projected to range between 0.05% and 1.36% annually, according to UF BEBR median population projections from 2025 to 2050. The district includes a mix of urban centers, such as Escambia and Leon counties, as well as smaller, rural communities with slower growth rates. These population statistics are shown in **Table 6-8**. C&D debris disposal facilities in this district serve a diverse range of communities, from high-growth coastal regions like Walton and Santa Rosa counties to more rural inland areas where waste disposal needs are comparatively lower. Facilities in larger population centers provide regional service to surrounding counties, ensuring adequate C&D debris waste management capacity across the district.

**Table 6-8:** Population of the FDEP Northwest District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Bay	187,545	0.50%
Calhoun	13,816	0.17%
Escambia	333,452	0.42%
Franklin	12,971	0.59%
Gadsden	44,421	0.05%
Gulf	16,323	0.55%
Holmes	19,910	0.14%
Jackson	48,982	0.08%
Jefferson	15,402	0.23%
Leon	301,724	0.45%
Liberty	7,977	0.20%
Okaloosa	219,260	0.56%
Santa Rosa	202,772	1.03%
Wakulla	36,168	0.82%
Walton	83,342	1.36%
Washington	25,497	0.34%

### c. Remaining capacity as of 2024

Per the normalization method described in **Appendix E, Section 1.1.2**, the Northwest District has an estimated 9.5 million tons of constructed C&D debris disposal facility capacity remaining as of 2024. Between 2018 and 2023, the district's C&D debris disposal facilities received an average of 743,176 tons of waste per year, slightly below the statewide district average. **Table 6-9** provides details on the remaining capacity and average annual disposal rate for each facility.

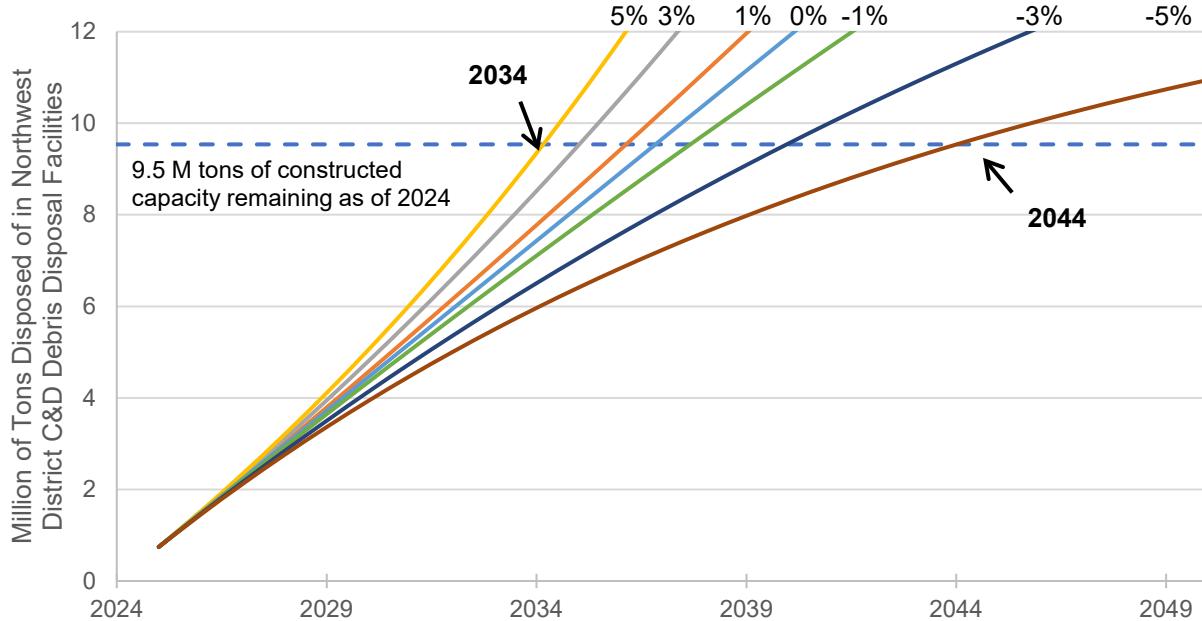
The Blountstown C&D Disposal Facility has the largest remaining capacity at 2.48 million tons, followed by Panama City Beach C&D Disposal Facility (1.78 million tons) and Arena LF and Sand Co. (1.95 million tons). Several other facilities, including Crowder Recycling Aeon Church and Trash Rolloff of Bay County Inc., have over 1 million tons of remaining capacity, ensuring continued service availability in key areas. However, smaller sites like Lynn Haven C&D Disposal Facility and West Bay C&D Facility have less than 2,000 tons of capacity remaining, indicating that they may reach their limits within a short timeframe.

**Table 6-9:** Average tons of material disposed of from 2018 to 2023 and normalized remaining capacity estimate for each C&D debris disposal facilities in the Northwest District; annual tonnages for each year were obtained from FDEP annual solid waste reports

Facility	Average Tons Disposed of in C&D Debris Disposal Facility 2018- 2023	Constructed Capacity Remaining as of 2024 (tons)
State Route 20 C&D Debris Disposal Facility	3,651	33,500
SouthPort C&D Disposal Facility	254,231	615,240
Lynn Haven C&D Disposal Facility	946	1,891
West Bay C&D Facility	2	37
Trash Rolloff of Bay County INC.	145,253	435,759
Panama City Beach C&D Disposal Facility	77,336	1,778,728
Blountstown C&D Disposal Facility	54,204	2,482,520
Solomon C&D Landfill, L.L.C.	15,104	422,898
Crowder Recycling Aenon Church	22,395	1,254,092
Crestview LF, LLC	12,917	127,880
Arena LF And Sand CO.	114,511	1,946,687
Crestview C&D Disposal Facility	21,571	194,139
Persimmon Hollow C&D Pit	2,453	49,064
East Milton C&D Disposal Facility	18,602	195,321

Projections in **Figure 6-8** suggest that under current disposal rates, the district's C&D debris disposal facility capacity could last 13 to 14 years, assuming a steady disposal rate. If disposal volumes increase by 5% annually, capacity could be exhausted as early as 2034, whereas a 5% annual decrease could extend facility life until 2044. This range provides some flexibility, particularly given that the district's facilities are more evenly distributed than in other regions, reducing reliance on any single facility. See also **Appendix E, Table 5-5.**

Compared to other districts, the Northwest District maintains a favorable long-term outlook. With 9.5 million tons of remaining capacity, it has one of the longest projected facility lifespans in Florida, surpassed only by the Southeast District. While disposal volumes remain stable, continuous monitoring will be necessary to anticipate any unexpected changes, such as increased construction activity or disaster-related debris, which could accelerate depletion rates.



**Figure 6-8:** The currently constructed capacity in the Northwest District C&D debris disposal facilities expected to last from 2034 to 2044 using the 5% increase annual disposal rate to 5% decrease annual disposal rate.

#### d. Estimating service area of each facility

In the Northwest District, most C&D debris disposal facilities primarily accepted material from a single county, supplemented by smaller volumes from neighboring counties. The State Route 20 C&D Debris Disposal Facility received material from five counties in 2023, with the majority coming from Bay County (66%), followed by Washington (27%), Okaloosa (4%), Walton (2%), and Liberty (1%). Persimmon Hollow C&D Pit accepted material mainly from Walton County (60%) and Okaloosa County (40%). East Milton C&D Disposal Facility received material from Escambia (65%), Santa Rosa (25%), and Okaloosa (10%) counties. The Suncoast C&D Debris Disposal Facility did not report any accepted material in 2023. The counties served by each facility, along with corresponding population and generator sector data, are summarized in **Table 6-10**.

**Table 6-10:** Service area of each C&D debris disposal facility in the Northwest District; counties served were obtained from the 2023 C&D annual report while population and generator information were obtained from the 2023 annual solid waste report.

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
State Route 20 C&D Debris Disposal Facility (Estimated based on the constructed acres)	Bay, Washington	213,042	8,065	59,581	22,757
SouthPort C&D Disposal Facility	Bay	187,545	6,964	50,712	20,788
Lynn Haven C&D Disposal Facility	Bay	187,545	6,964	50,712	20,788
West Bay C&D Facility	Bay	187,545	6,964	50,712	20,788
Trash Rolloff of Bay County INC.	Bay	187,545	6,964	50,712	20,788
Panama City Beach C&D Disposal Facility	Bay	187,545	6,964	50,712	20,788
Blountstown C&D Disposal Facility	Calhoun	13,816	430	5,200	200
D.H. Griffin Wrecking CO. C&D (Closed)	Escambia	333,452	23,542	121,375	29,859
Longleaf C&D Disposal Facility (seems to be closed)	Escambia	333,452	23,542	121,375	29,859
Solomon C&D Landfill, L.L.C.	Leon	301,724	4,105	81,684	2,314
Crowder Recycling Tram	Leon	301,724	4,105	81,684	2,314
Crowder Recycling Aenon Church	Leon	301,724	4,105	81,684	2,314
Crestview LF, LLC	Okaloosa	219,260	14,372	69,414	1,010
Arena LF And Sand CO.	Okaloosa	219,260	14,372	69,414	1,010
Crestview C&D Disposal Facility	Okaloosa	219,260	14,372	69,414	1,010
Persimmon Hollow C&D Pit	Okaloosa, Walton	302,602	21,292	107,634	44,630
East Milton C&D Disposal Facility	Okaloosa, Escambia, Santa-Rosa	755,484	41,830	267,573	39,787

### 6.3.5 South District

#### a. Introduction

There are four C&D debris disposal facilities in the FDEP South District with active permits, all of which are included in this analysis. These facilities provide essential disposal capacity for construction and demolition debris in the region. The four active C&D debris disposal facilities assessed in this report are SLD-Recycling & Disposal Facility, DeSoto C&D Disposal Facility, Glades LF, LLC, and Highlands County SW Management Center.

### b. District population and facility service area

An estimated 2.1 million people reside in the FDEP South District, with county-based population growth projected to range between 0.13% and 1.08% annually, based on UF BEBR median population projections from 2025 to 2050. These population statistics are detailed in **Table 6-11**. The region includes both high-growth coastal counties, such as Lee and Charlotte, and more rural inland areas like Glades and DeSoto counties, where population increases are expected to be more modest.

**Table 6-11:** Population of the FDEP South District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Charlotte	204,126	0.86%
Collier	399,464	0.83%
Desoto	34,974	0.18%
Highlands	104,385	0.33%
Hendry	40,895	0.41%
Glades	12,591	0.13%
Lee	800,864	1.08%
Sarasota	464,223	0.77%

### c. Remaining capacity as of 2024

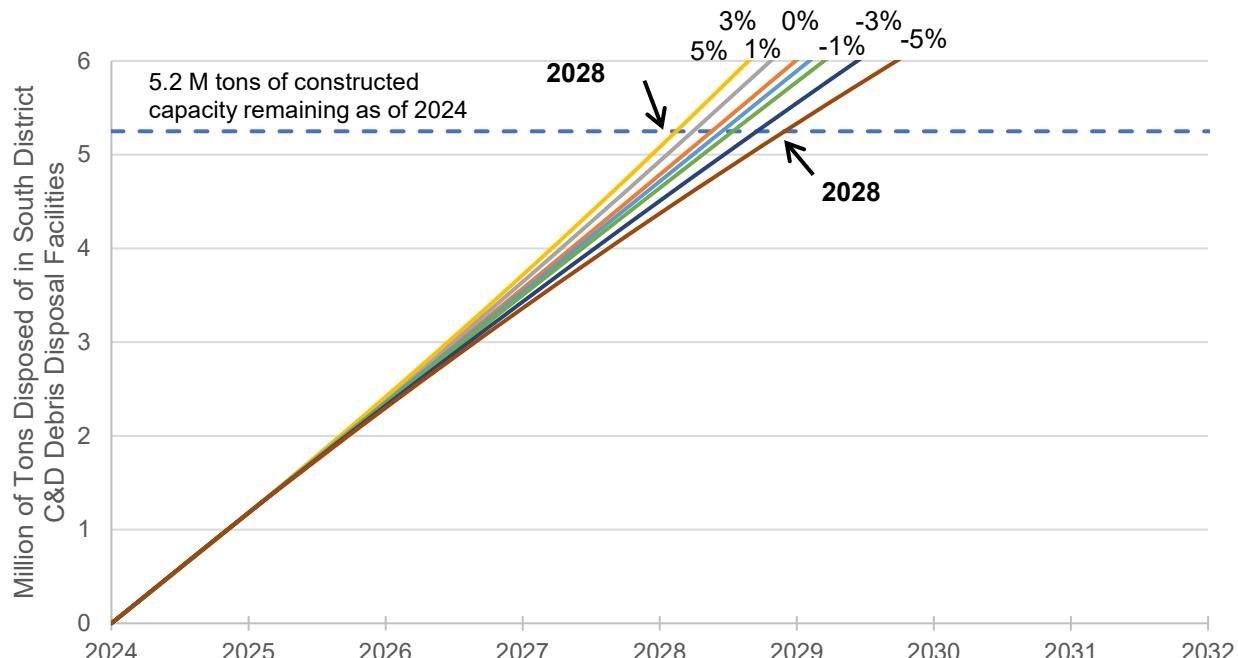
Per the normalization method described in **Appendix E, Section 1.1.2**, the South District has an estimated 5.2 million tons of constructed C&D debris disposal facility capacity remaining as of 2024. However, with an annual disposal rate of approximately 1.2 million tons, this district has one of the shortest projected facility lifespans in the state. As shown in **Figure 6-9** the South District is projected to run out of capacity by 2028, regardless of disposal rate fluctuations. Even if disposal volumes decrease by 5% annually, capacity would still be exhausted in 2028, highlighting the urgent need for additional disposal solutions. See also **Appendix E, Table 5-6**.

**Table 6-12** details the remaining capacity and disposal rates for each facility in the district. Among the four active facilities, the SLD-Recycling & Disposal Facility holds the majority of the district's remaining capacity, with 2.78 million tons available. The Glades LF, LLC follows with 1.57 million tons, while the DeSoto C&D Disposal Facility has 725,299 tons remaining. The Highlands County SW Management Center, with only 173,605 tons, is the most likely to reach its limit first.

As shown in **Figure 6-9** the South District is projected to run out of capacity by 2028, regardless of disposal rate fluctuations. Even if disposal volumes decrease by 5% annually, capacity would still be exhausted in 2028, highlighting the urgent need for additional disposal solutions. See also **Appendix E, Table 5-6**.

**Table 6-12:** Average tons of material disposed of from 2018 to 2023 and normalized remaining capacity estimate for each C&D debris disposal facilities in the South District; annual tonnages for each year were obtained from FDEP annual solid waste reports

Facility	Average Tons Disposed of in C&D Debris Disposal Facility 2018- 2023	Constructed Capacity Remaining as of 2024 (tons)
SLD-Recycling & Disposal Facility	555,376	2,776,880
DeSoto C&D Disposal Facility	362,650	725,299
Glades LF, LLC	249,767	1,573,530
Highlands County SW Management Center	10,850	173,605



**Figure 6-9:** The currently constructed capacity at C&D debris disposal facilities in the South District is projected to be exhausted by 2028, regardless of whether annual disposal rates increase or decrease by 5%.

Compared to other districts, the South District faces the most immediate and severe capacity challenges. With the second-highest disposal rate in the state and the lowest remaining capacity, it is at high risk of capacity depletion within the next four years. Without expansion, diversion efforts, or new facility development, this district is likely to experience waste management constraints in the near future.

#### d. Estimating service area of each facility

In the South District, three of the four C&D debris disposal facilities accepted material from multiple counties in 2023. Highlands County Solid Waste Management Center exclusively served Highlands County, while the other facilities had broader service areas. SLD—Recycling & Disposal Facility, DeSoto C&D Disposal Facility, and Glades Landfill, LLC all received material from a wide range of counties across the South District. This regional draw reflects the limited number of C&D disposal sites in the area and the need for cross-county hauling of construction debris. The service area of each facility—including counties served, population, and generator types—is presented in **Table 6-13**.

**Table 6-13:** Service area of each C&D debris disposal facility in the South District; counties served were obtained from the 2023 C&D annual report while population and generator information were obtained from the 2023 annual solid waste report.

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
SLD-Recycling & Disposal Facility	FDEP South District: Charlotte, Collier, Desoto, Highlands, Hendry, Glades, Lee, Sarasota	2,061,522	72,738	787,485	325,214
DeSoto C&D Disposal Facility	Broward, Manatee, Miami-Dade, Sarasota	5,646,322	126,186	1,239,073	1,177,433
Glades LF, LLC	Collier, Miami-Dade	3,168,418	66,999	670,083	675,023
Highlands County SW Management Center	Highlands	104,385	9,486	47,255	7,212

#### 6.3.6 Southeast District

##### a. Introduction

There are five C&D debris disposal facilities in the FDEP Southeast District with active permits. However, one facility, FVP C&D LLC, is excluded from this analysis due to the absence of annual waste tonnage reports in the past 5 years. The four active C&D debris disposal facilities included in this assessment are Monarch Hill LF, WM Recycling Homestead MRF and C&D Facility, Indian River County LF, and St. Lucie County Baling and Recycling Facility.

### b. District population and facility service area

The FDEP Southeast District is the most populous region in Florida, with an estimated 7.1 million residents. County-based population growth is projected to range between 0.12% and 1.12% annually, according to UF BEBR median population projections from 2025 to 2050. These population statistics are detailed in **Table 6-14**. The district encompasses highly urbanized counties such as Miami-Dade, Broward, and Palm Beach, as well as less densely populated areas like Monroe and Okeechobee counties, where growth rates are expected to be more moderate.

**Table 6-14:** Population of the FDEP South District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Broward	1,973,579	0.45%
Indian River	167,781	0.78%
Martin	162,847	0.50%
Miami-Dade	2,768,954	0.48%
Monroe	84,509	0.15%
Okeechobee	39,591	0.12%
Palm Beach	1,532,718	0.57%
St. Lucie	368,628	1.12%

### c. Remaining capacity as of 2024

Per the normalization method described in **Appendix E, Section 1.1.2**, the Southeast District has an estimated 9 million tons of constructed C&D debris disposal facility capacity remaining as of 2024. This district has one of the lowest disposal rates in the state, averaging 633,594 tons per year from 2018 to 2023, which contributes to a longer projected facility lifespan compared to higher-disposal districts. **Table 6-15** presents the remaining capacity and disposal rates for each facility in the district.

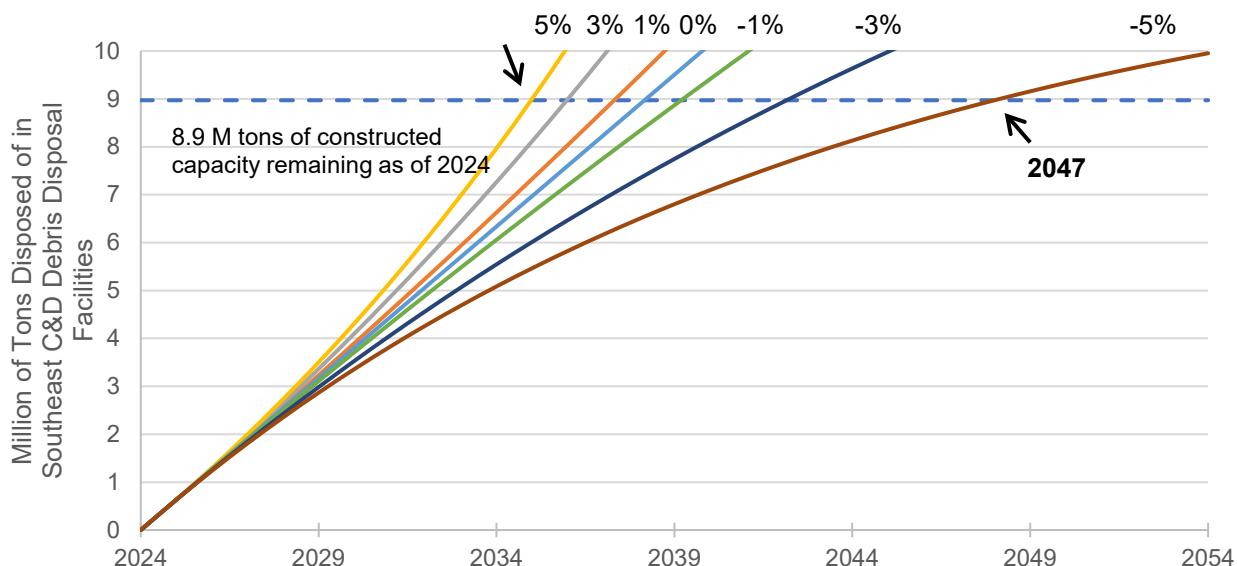
The Monarch Hill LF accounts for the vast majority of the district's remaining capacity, with 8.07 million tons, while other facilities, including WM Recycling Homestead MRF and C&D Facility, Indian River County LF, and St. Lucie County Baling and Recycling Facility, have much lower remaining capacities, collectively totaling 896,443 tons. This distribution makes the district highly reliant on a single major facility, meaning that any disruptions at Monarch Hill could create disposal challenges.

**Table 6-15:** Average tons of material disposed of from 2018 to 2023 and normalized remaining capacity estimate for each C&D debris disposal facility in the Southeast District; annual tonnages for each year were obtained from FDEP annual solid waste reports

Facility	Average Tons Disposed of in C&D Debris Disposal Facility C&D Debris Disposal Facility 2018- 2023	Constructed Capacity Remaining as of 2024 (tons)
Monarch Hill LF	429,325	8,074,131
WM Recycling Homestead MRF and C&D Facility	151,701	233,835
Indian River County LF	30,358	151,789
St. Lucie County Baling and Recycling Facility	22,210	510,819

According to **Figure 6-10**, at the current disposal rate, the district's capacity is projected to last approximately 15 years, making it one of the more sustainable regions in Florida. If disposal rates increase by 5% annually, capacity could be exhausted as early as 2034, while a 5% annual decrease would extend capacity availability until approximately 2047. See also **Appendix E, Table 5-7**.

Compared to other districts, the Southeast District is in a relatively strong position in terms of C&D debris disposal facility capacity. However, its heavy reliance on Monarch Hill LF makes it more vulnerable to capacity constraints if disposal volumes rise unexpectedly or if the facility reaches its limit sooner than projected. Long-term planning should focus on diversifying disposal options and monitoring disposal trends to ensure continued waste management stability.



**Figure 6-10:** The currently constructed capacity in the Southeast District C&D debris disposal facilities is expected to last from 2034 to 2047 using the 5% increase annual disposal rate to 5% decrease annual disposal rate.

#### d. Estimating service area of each facility

Most C&D debris disposal facilities in the Southeast District sourced the majority of their incoming material from a single primary county in 2023. Monarch Hill Landfill received the largest share of its material from Broward County (76%), with additional tonnage coming from Miami-Dade (17%), Palm Beach (6%), and Monroe (1%) Counties. WM Recycling Homestead MRF and C&D Facility primarily accepted material from Miami-Dade (68%) and Monroe (32%). Indian River County Landfill and FVP C&D LLC reported no incoming material in 2023. The service area of each facility—including counties served, associated population, and generator types—is summarized in **Table 6-16**.

**Table 6-16:** Service area of each C&D debris disposal facility in the Southeast District; counties served were obtained from the 2023 C&D annual report while population and generator information were obtained from the 2023 solid waste report.

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Monarch Hill LF** (with capacity study)	Broward, Miami-Dade, Monroe, Palm Beach	6,359,760	142,012	1,233,211	1,431,149
WM Recycling Homestead MRF and C&D Facility	Miami-Dade, Monroe	2,853,463	80,295	570,018	574,668
FVP C&D LLC					
Indian River County LF					
St. Lucie County Baling and Recycling Facility	St. Lucie	368,628	4,090	140,262	17,182

#### 6.3.7 Southwest District

##### a. Introduction

There are 11 C&D debris disposal facilities in the FDEP Southwest District with active permits. However, one facility, Citrus Sand & Debris I, has reported no waste disposal activity since 2012 and is therefore excluded from this analysis. The 10 active C&D debris disposal facilities included in this assessment are Citrus LF, INC C&DD (FKA Citrus Sand & Debris II), RIP, INC C&D Disposal Facility, Sand/Land of Florida Enterprises, INC, Hernando County Northwest LF, Sunshine Grove RD Phase 1 (C&D), Coniglio C&D LF, Sun Country Materials (FKA CR672 Recovery) C&DD Facility, Coastal LF Disposal INC (C&D), Pembroke South C&DD, and Orange Blossom Disposal Facility.

### b. District population and facility service area

An estimated 4.8 million people reside in the FDEP Southwest District, with county-based population growth projected to range between 0.03% and 1.08% annually, based on UF BEBR median population projections from 2025 to 2050. These population statistics are detailed in **Table 6-17**. The district includes densely populated urban centers like Hillsborough, Pinellas, and Polk counties, as well as more rural areas such as Hardee and Citrus counties, where population growth is expected to be slower.

**Table 6-17:** Population of the FDEP Southwest District counties per the 2023 annual solid waste reports and projected annual population increase based on the UF BEBR median population growth estimated from 2025 to 2050

County	Population	BEBR Percent Projected Annual Population Increase 2025-2050
Citrus	162,240	0.56%
Hardee	25,645	0.03%
Hernando	204,265	0.67%
Hillsborough	1,541,531	0.86%
Manatee	439,566	1.05%
Pasco	610,743	1.04%
Pinellas	974,689	0.25%
Polk	797,616	1.08%

### c. Remaining capacity as of 2024

Per the normalization method described in **Appendix E, Section 1.1.2**, the Southwest District has an estimated 5.0 million tons of constructed C&D debris disposal facility capacity remaining as of 2024. With an annual disposal rate of approximately 600,000 tons, this district faces moderate capacity constraints compared to higher-disposal districts but still has a shorter projected lifespan than the Northwest and Southeast Districts. **Table 6-18** details the remaining capacity and disposal rates for each facility in the district.

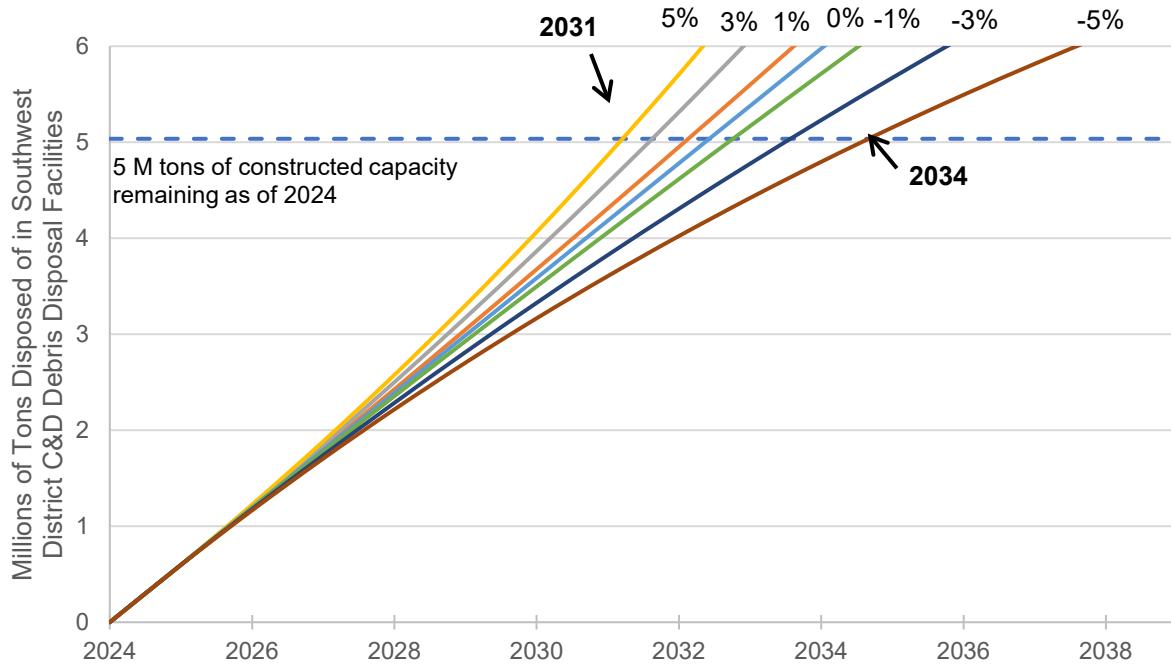
Among the active facilities, Coastal LF Disposal Inc. (C&D) has the largest remaining capacity, with 2.09 million tons, followed by Sun Country Materials (882,105 tons) and Citrus LF, Inc. (569,400 tons). Several smaller facilities, including RIP, Inc. C&D Disposal Facility and Hernando County Northwest LF, have less than 50,000 tons of remaining capacity, making them likely to reach their limits in the near future.

**Table 6-18:** Average tons of material disposed of from 2018 to 2023 and normalized remaining capacity estimate for each C&D debris disposal facility in the Southwest District; annual tonnages for each year were obtained from FDEP annual solid waste reports

Facility	Average Tons Disposed of in C&D Debris Disposal Facility 2018- 2023	Constructed Capacity Remaining as of 2024 (tons)
Citrus LF, INC C&DD (FKA Citrus Sand & Debris II)	28,470	569,400
RIP, INC C&D Disposal Facility	6	35
Sand/Land of Florida Enterprises, INC	34,495	362,201
Hernando County Northwest LF	9,137	36,546
Sunshine Grove RD Phase 1 (C&D)	19,959	538,880
Coniglio C&D LF	1,270	10,158
Sun Country Materials (FKA CR672 Recovery) C&DD Facility	220,526	882,105
Coastal LF Disposal INC (C&D)	165,901	2,095,742
Pembroke South C&DD	18,099	271,488
Orange Blossom Disposal Facility	99,794	269,442

As shown in **Figure 6-11**, at the current disposal rate, the Southwest District's C&D debris disposal facility capacity is projected to be fully depleted by 2032. If disposal volumes increase by 5% annually, capacity could be exhausted as early as 2031, while a 5% annual decrease would extend capacity only until 2034. This gives the district an estimated 6 to 10 years of remaining capacity, depending on disposal trends. See also **Appendix E, Table 5-8.**

Compared to other districts, the Southwest District faces one of the shorter remaining lifespans, but its moderate disposal rate and relatively distributed facility network provide some flexibility. However, without expansion, new facility development, or diversion efforts, the district is likely to experience capacity constraints within the next decade. Long-term planning will be essential to ensure sustainable waste management for the region.



**Figure 6-11:** The currently constructed capacity in the Southeast District C&D debris disposal facilities is expected to last from 2031 to 2034 using the 5% increase annual disposal rate to 5% decrease annual disposal rate.

#### d. Estimating service area of each facility

Most C&D debris disposal facilities in the Southwest District received the majority of their material from a primary county, along with smaller amounts from neighboring areas. Coniglio C&D Landfill had a broad service area, accepting material from most counties within the district in 2023. Sand/Land of Florida Enterprises, Inc. primarily received material from Citrus County (85%), with smaller shares from Hernando (10%) and Marion (5%). C.R. Sun Country Materials C&DD Facility accepted material predominantly from Hillsborough County (89%) and Manatee County (11%). Pembroke South C&DD received material from Manatee (76%), Polk (16%), Hillsborough (7%), and Highlands (1%) Counties. Orange Blossom Disposal Facility accepted roughly equal amounts of material from Polk and Osceola Counties. The full service areas of each facility—including counties served, population, and generator type—are presented in **Table 6-19**.

**Table 6-19:** Service area of each C&D debris disposal facility in the Southwest District; counties served were obtained from the 2023 C&D annual report while population and generator information were obtained from the 2023 solid waste report.

Facility	Counties Served	Population in Counties Served	Commercial Units in Counties Served	Single Family Residential in Counties Served	Multi-Family Residential in Counties Served
Citrus LF, INC C&DD (FKA Citrus Sand & Debris II)	Citrus	162,240	2,109	58,579	600
RIP, INC C&D Disposal Facility	Citrus	162,240	2,109	58,579	600
Sand/Land of Florida Enterprises, INC	Citrus, Hernando, Marion	770,471	19,106	189,131	125,938
Citrus Sand & Debris I	Citrus	162,240	2,109	58,579	600
Hernando County Northwest LF	Hernando	204,265	7,225	83,500	14,452
Sunshine Grove RD Phase 1 (C&D)	Hernando	204,265	7,225	83,500	14,452
Coniglio C&D LF	FDEP Southwest District - Citrus, Hardee, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk	4,756,295	172,333	1,562,221	522,591
Sun Country Materials (FKA CR672 Recovery) C&DD Facility	Hillsborough, Manatee	1,981,097	43,407	590,879	272,755
Coastal LF Disposal INC (C&D)	Pasco	610,743	48,236	262,405	24,928
Pembroke South C&DD	Hillsborough, Manatee, Polk	2,778,713	66,900	875,513	321,474
Orange Blossom Disposal Facility	Osceola. Polk	1,236,841	55,493	535,100	65,070

## **7 MATERIALS RECOVERY FACILITY (MRF) – C&D**

### **7.1 Background**

A Construction and Demolition Materials Recovery Facility (C&D MRF) is a specialized facility designed to process materials generated from construction, renovation, and demolition activities. Under 62-701.200(24), F.A.C., construction and demolition debris are defined as discarded materials that are generally non-water soluble and non-hazardous, including steel, glass, brick, concrete, asphalt, pipe, gypsum wallboard, lumber, and other materials commonly associated with structural construction or demolition. The definition also extends to vegetative matter from land clearing, clean paper, plastic, cardboard, wood and metal scraps from construction activities, and certain types of scrap generated by manufacturing facilities—so long as the materials are consistent with those typically produced during C&D operations.

C&D debris is distinct in both composition and handling requirements. Unlike mixed municipal solid waste or source-separated recyclables, C&D materials are often generated in large, dense volumes and may contain a broad mix of heavy, bulky, and inert materials. Effective management of this waste stream is crucial to reducing landfill dependency, recovering usable resources, and aligning with Florida's material recovery and sustainability goals.

Essentially, the primary purpose of a C&D MRF is to recover valuable materials from construction and demolition debris and divert them from landfills. This involves sorting, crushing, grinding, and processing materials into forms that can be reused in new construction projects or recycled into new products. By doing so, C&D MRFs play a critical role in reducing the environmental impact of construction and demolition activities, conserving natural resources, and minimizing the volume of waste sent to landfills. Key functions include separating materials by type, removing contaminants, processing materials into reusable forms (e.g., crushed concrete for road base), and ensuring that recovered materials meet the quality standards required for reuse or recycling.

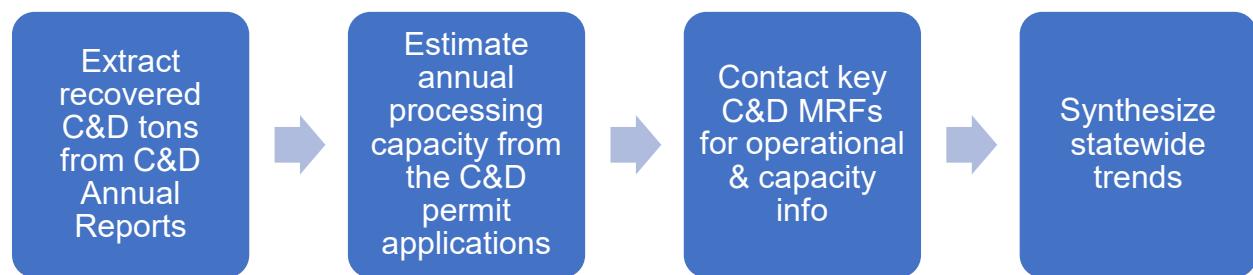
C&D MRFs are a vital component of Florida's waste management and recycling infrastructure. They support the state's sustainability goals by diverting large volumes of construction and demolition debris from landfills, thereby conserving landfill space and reducing greenhouse gas emissions. By processing and recovering materials, C&D MRFs contribute to the circular economy, where resources are reused and recycled rather than discarded. Florida has set ambitious waste reduction and recycling goals, and C&D MRFs help construction companies, municipalities, and private entities meet these goals by efficiently processing debris and ensuring that materials are reused or recycled.

## 7.2 General Overview and Approach

To evaluate the processing performance and capacity constraints of Florida's C&D MRFs, a multi-faceted approach was employed that combined regulatory data review with targeted facility outreach, as illustrated in **Figure 7-1**. **Table 7-1** includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis.

The assessment began with an analysis of facility-reported C&D materials recovery data, primarily sourced from FDEP's annual C&D report. Reported annual recovered tonnage in 2023 was used as the primary metric to evaluate facility output, with the goal of understanding the scale and distribution of C&D material recovery across the state. Only facilities identified as actively recovering C&D materials were included in the analysis. To assess facility processing capacity, permit documents were also reviewed. The operational plans included in these permits often specify the average daily processing capacity of the facility. Where such values were available, they were used to estimate annual processing capacity by assuming a standard operating schedule of 5 days per week, and 52 weeks per year.

To supplement this quantitative assessment, a targeted sample of C&D MRF operators were contacted, specifically those managing facilities equipped with processing lines and mechanical systems for sorting mixed loads. These facilities are more likely to experience operational constraints tied to equipment throughput, labor capacity, or infrastructure limits. The conversations provided additional insight into system design, operating conditions, material handling practices, and whether facilities were operating near or below their processing potential.



**Figure 7-1:** Flow chart of general method used to analyze C&D MRF capacity.

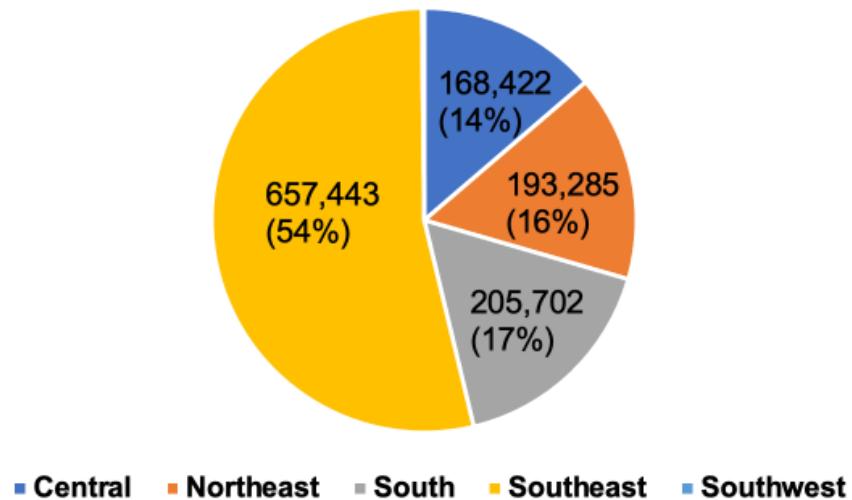
**Table 7-1:** Summary of data sources and method used to analyze C&D MRF capacity

Parameter	Description
Number of active facilities included in the analysis	43
Related reporting requirements	<ul style="list-style-type: none"><li><b>C&amp;D annual reports:</b> 62-716.450, F.A.C</li><li><b>Permit application plan:</b></li></ul>
Typical capacity measurement approach	1) Extract average daily processing capacity from permit application operational plan 3) Calculate remaining capacity using average daily processing capacity (tons/day) × 5 days/week × 52 weeks/yr
Data sources used in methods	<b>C&amp;D annual Reports (2023):</b> Annual disposal volumes (tons) by facility. <b>Permit application:</b> Annual processing capacity for each facility (tons) <b>Correspondence with facility operators:</b> Verification of information gathered from reports and permits

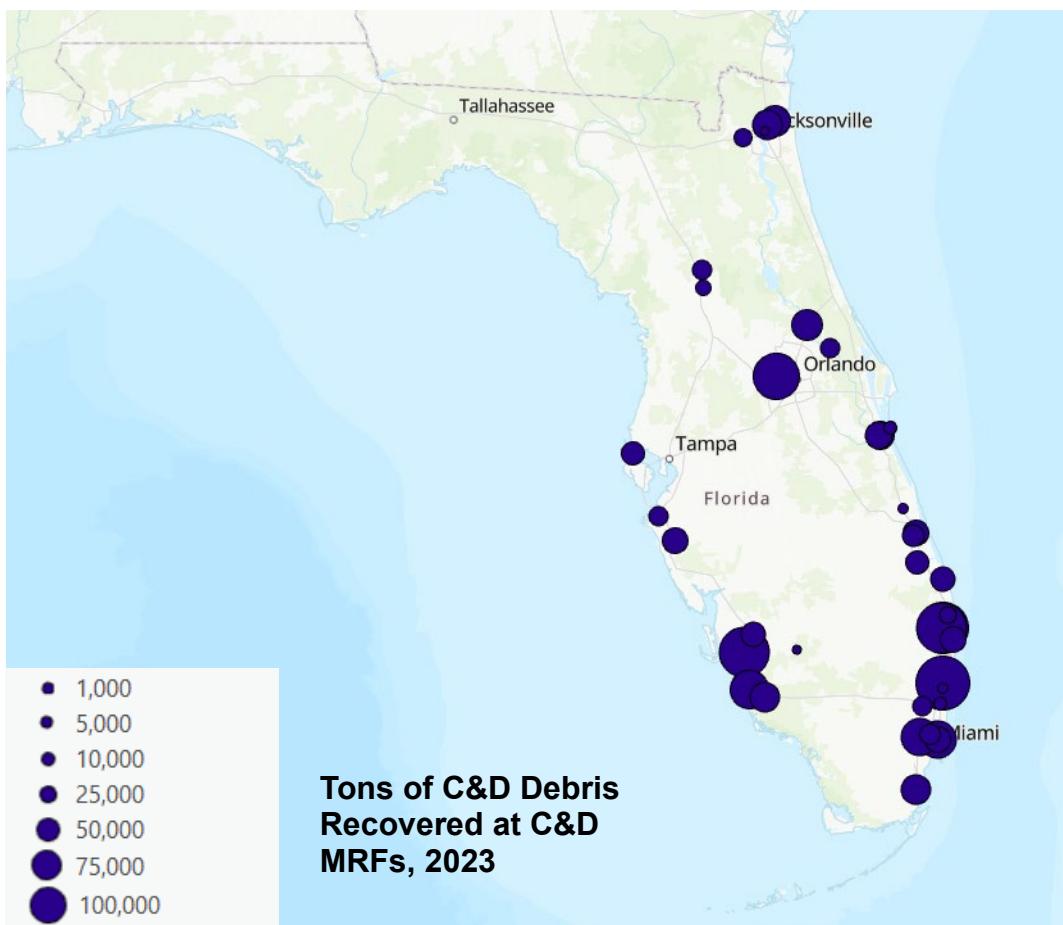
### 7.3 Results and Discussion

In 2023, 38 permitted C&D MRFs across Florida reported a total of 1,226,882 tons of construction and demolition debris (C&D debris) recovered, based on data from the C&D Annual Reports. This volume represents approximately 34% of the total 3,610,934 tons of C&D materials reported as recycled statewide that year. To evaluate system capacity, the annual processing capacity was estimated for facilities with available permit data. Of the 42 permitted C&D MRFs, 28 included operational plans with sufficient detail to derive daily throughput values. Using this data, the annual processing capacity of these 28 facilities was estimated to be approximately 5,582,902 tons. This total exceeds the quantity of C&D debris currently recovered at C&D MRFs, suggesting that Florida has substantial existing capacity for further C&D recovery. Because not all facilities had sufficient permit data to estimate capacity, the true statewide processing capacity is likely even higher.

The regional distribution of these recovered tons is shown in **Figure 7-2** and **Figure 7-3**. The Southeast district recovered the highest volume - 657,443 tons, or 54% of the statewide total - followed by the South (17%), Northeast (16%), and Central (14%) districts. The Southwest district reported only 2,030 tons, accounting for just 0.2% of the total, highlighting the relative absence of dedicated C&D MRF infrastructure in that district or possible underreporting. Notably, no permitted C&D MRFs are located in the Northwest District. Some facilities in that region that accept C&D materials may instead be classified as Class I or III MRFs, rather than dedicated C&D recovery facilities.



**Figure 7-2:** Distribution of recovered C&D tons by district from C&D MRF.



**Figure 7-3:** Tons of C&D debris recovered at Florida's C&D MRFs as of 2023; the size of the dot corresponds to the quantity of C&D debris recovered in 2023, as obtained from the 2023 C&D annual reports.

In addition to the C&D MRFs, Class I and III MRFs contributed to C&D debris recovery. In total, these facilities reported 1,185,258 tons of recovered material. Two facilities - 8001 Fruitville Rd Waste Processing Facility and Friends Recycling - appear in both categories, with a combined overlap of 11,937 tons. After adjusting for this, the combined contribution of C&D and Class I & III MRFs is estimated to cover about 66% of all recycled C&D material reported statewide in 2023.

C&D debris disposal facilities - which are not primarily designed as processing sites but still report recovered materials - accounted for an additional 875,736 tons, or 24% of the statewide C&D recycling total, after removing four facilities with overlapping classifications.

Together, C&D MRFs (34%), Class I and III MRFs (33%), and C&D Disposal Facilities (24%) collectively accounted for approximately 90% of all recovered C&D material in Florida in 2023. The remaining 10% may represent smaller, unpermitted recovery efforts, job site reuse, or unreported recovery from other types of facilities.

Conversations with operators of selected C&D MRFs revealed several recurring themes regarding processing conditions, capacity utilization, and material recovery challenges. Facilities with mechanical processing lines reported that they are generally not operating at full capacity, with typical estimates placing current throughput at around 70–75% of their total capability. This suggests room for growth if economic or policy conditions were more favorable.

One of the key limitations identified by operators is the lack of stable markets for recovered C&D materials. Materials such as carpet and shingles, which are received in large volumes, often lack viable recycling outlets. Similarly, C&D fines - which may constitute a large share of incoming loads by volume - pose handling and reuse difficulties due to contamination risks, especially from drywall content.

Several operators also emphasized the importance of source separation at construction sites, noting that recovery rates improve when materials are delivered pre-sorted. Facilities that rely on manual or mechanical separation must contend with high contamination rates, in some cases up to 50%, particularly when Class III waste is processed alongside C&D debris.

Economic drivers such as tipping fees and haul distances were also cited as critical factors influencing whether C&D materials are recycled or landfilled. Without regulatory requirements for C&D recycling, many facilities find it difficult to compete with landfilling unless they are well-positioned geographically and priced competitively.

Despite these constraints, operators expressed confidence that their facilities could scale up throughput with relatively modest changes - such as cleaner incoming material, stronger demand for recovered commodities, or incremental operational adjustments like expanded shifts.

## 8 MATERIALS RECOVERY FACILITY (MRF) – CLASS I AND III

### 8.1 Background

In Florida, Materials Recovery Facilities (MRFs) are defined in both rule and statute as permitted solid waste facilities that provide for the extraction of recyclable materials from solid waste, including materials suitable for use as fuel or soil amendments, or any combination of such materials (62-701.200(71), F.A.C.). MRFs are critical components of Florida's resource recovery infrastructure, designed to divert waste from landfills and enable the reuse or recycling of valuable materials that would otherwise be disposed.

Florida's solid waste regulations distinguish between Class I and Class III waste types. Class I waste includes putrescible and mixed municipal solid waste, which may contain organic material and household garbage. Class III waste includes non-putrescible, non-hazardous materials such as C&D debris, yard trash, and furniture. Multiple Class I and III MRFs are operating across Florida, serving both local and regional waste streams. Unlike Recovered Materials Processing Facilities (RMPFs), which focus on source-separated recyclables, Class I and III MRFs are designed to manage bulkier, more heterogeneous waste with higher contamination rates. Their operations are essential to landfill diversion, reuse market development, and advancing Florida's broader objectives around sustainable materials management.

In practice, most of these facilities primarily handle Class III waste, with many also processing C&D materials, creating considerable overlap with C&D MRFs. Facility configurations vary considerably. Some are equipped with mechanical processing systems to recover recyclables from mixed loads, while others depend on manual sorting or designated recovery areas for source-separated materials. A number of sites are also permitted to accept non-hazardous waste in bulk or containers, and conduct separation and bulking prior to transport for disposal or further processing.

Several Class I and III MRFs are co-located with landfills and operate as integrated recovery and disposal facilities, removing recyclable items from incoming loads before landfilling the residuals. Others serve as transfer stations with minimal on-site sorting. In all cases, recovered materials must be sent to in-state or out-of-state entities that utilize them in place of virgin feedstocks.

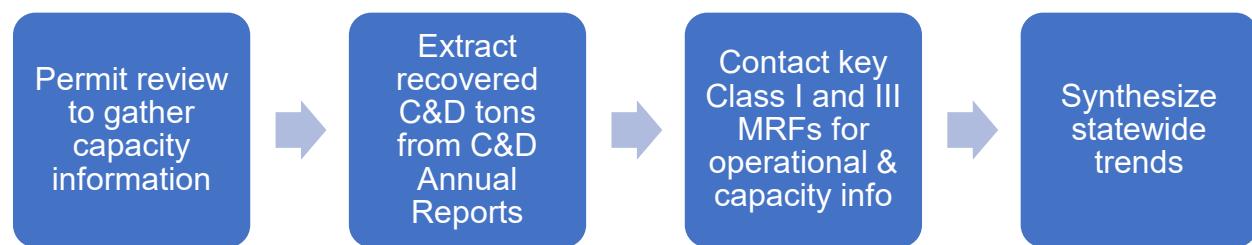
### 8.2 General Overview and Approach

To evaluate the processing capacity and operational characteristics of Class I and III MRFs in Florida, a structured, multi-step approach was applied. This included a review of permitting documentation, analysis of reported material recovery data, and conversation with selected facility operators to gather supplemental operational insight as shown in **Figure 8-1** and outlined in **Table 8-1**.

The analysis began with a comprehensive review of FDEP solid waste permit applications for each Class I and III MRF. These documents typically include an

expected daily processing capacity. This data was used to estimate the total statewide daily processing capacity for the Class I and III MRF sector. Because most of these facilities process a combination of Class III waste and C&D debris, reported annual C&D recovery tonnage—sourced from C&D Annual Reports—was used as a proxy for throughput where available.

To complement the quantitative analysis, a sample of facility operators was contacted to provide qualitative insights not captured in regulatory documents. These conversations addressed operational conditions, material handling practices, infrastructure constraints, and future capacity planning.



**Figure 8-1:** Flow chart of general method used to analyze Class I and III capacity.

**Table 8-1:** Summary of data sources and method used to analyze Class I and III MRF capacity

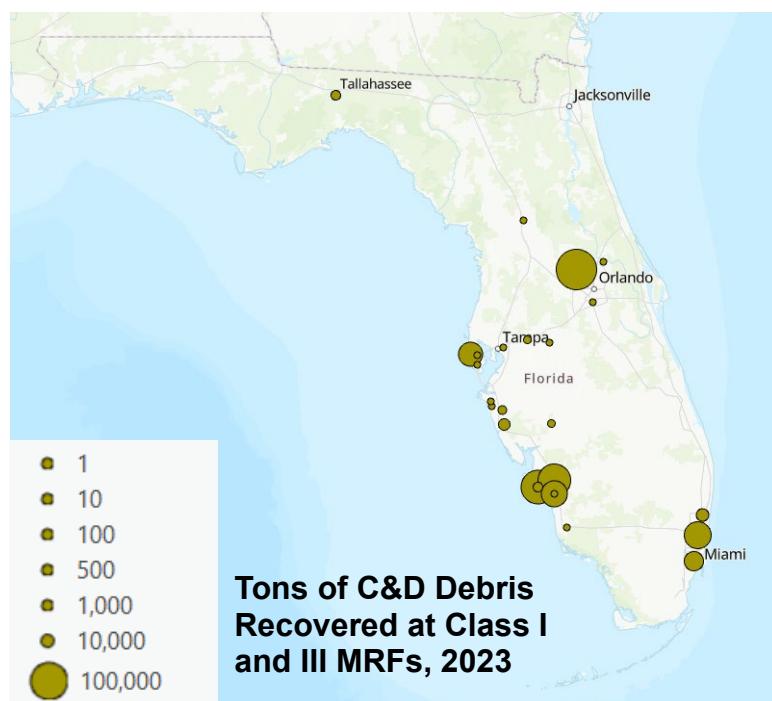
Parameter	Description
Number of active facilities included in the analysis	43
Related reporting requirements	<ul style="list-style-type: none"> <li><b>C&amp;D annual reports</b></li> <li><b>Permit application plan</b></li> </ul>
Typical capacity measurement approach	1) Extract average daily processing capacity from permit application operational plan 3) Calculate remaining capacity using average daily processing capacity (tons/day) $\times$ 5 days/week $\times$ 52 weeks/yr
Data sources used in methods	<b>C&amp;D annual Reports (2023):</b> Annual disposal volumes (tons) by facility. <b>Permit application:</b> Annual processing capacity for each facility (tons) <b>Correspondence with facility operators:</b> Verification of information gathered from reports and permits

### 8.3 Results and Discussion

Of the 39 permitted Class I and III MRFs evaluated across Florida, 31 provided sufficient data to estimate their expected average daily processing capacity. Using reported values from FDEP permit documents, the combined annual processing

capacity of these 31 facilities is estimated at approximately 7,034,760 tons per year. This figure reflects processing expectations under standard operating conditions (five days per week, 52 weeks per year), and excludes eight facilities for which no processing capacity data were available.

**Figure 8-2** shows the tons of C&D debris recovered at each Class I&III MRFs in the state in 2023. In comparison, 24 facilities reported recovered C&D debris tonnages in 2023, totaling approximately 1,185,258 tons which represents 17% of the combined average annual processing capacity reported by facilities included in the analysis. This suggests the substantial unused processing capacity across Florida's Class I and III MRF infrastructure, these facilities have the physical and operational potential to process more material than is currently being recovered. A detailed summary of each facility's processing capacity, recovered C&D tonnage, and operational description is presented in **Appendix G, Table 7-1**.



**Figure 8-2:** Tons of C&D recovered at Florida's Class I&III MRFs as of 2023; the size of the dot corresponds to the quantity of C&D recovered in 2023, as obtained from the 2023 C&D annual reports.

While the comparison offers meaningful insights, it should be interpreted with several considerations in mind. Some facilities have full processing lines and handle a much larger volume of incoming material than what is ultimately recovered. In these cases, the recovered tons reflect only a portion of their operational throughput, and the facility's capacity supports more than just the final extracted recyclables. However, some facilities operate differently - using manual sorting or recovering select materials from

already-separated loads - so their reported recovered tonnage may be closer to their actual throughput.

In addition, several facilities provided both expected and maximum daily capacities in their permits - with the maximum often reported at twice the expected value. This suggests a broader range of operational flexibility and headroom beyond what is captured in daily average figures. Interviews with facility operators indicated that they were not operating at full capacity and could process additional material. The infrastructure is in place to support higher recovery volumes, and improvements in collection practices, contamination reduction, and market development could help unlock that potential. Capacity, in this context, is not a limiting barrier - it is an opportunity.

## 9 RECOVERED MATERIALS PROCESSING FACILITIES

### 9.1 Background

A Recovered Materials Processing Facility (RMPF) is a specialized facility designed to process recyclable materials that have already been recovered from the waste stream. In Florida, RMPFs are legally defined under 62-701.200(166), F.A.C. as: "A facility where recovered materials are removed from solid waste or are received already removed from solid waste and are processed for reuse, including but not limited to, by means of sorting, baling, shredding, or other methods to prepare the materials for use as raw materials in manufacturing processes or for other productive uses." Essentially, RMPFs handle materials such as paper, plastics, metals, and glass that have been separated from general waste and prepare them for reuse in manufacturing or other applications.

The primary purpose of an RMPF is to process and prepare recovered materials for market. This involves sorting, cleaning, and packaging recyclable materials into a form that manufacturers can use as raw materials. By doing so, RMPFs play a critical role in the recycling supply chain, ensuring that recovered materials meet the quality standards required for reuse. Key functions include further separating and cleaning recyclable materials to remove contaminants, compressing materials into bales or other forms for easier transport and sale, and ensuring that recovered materials meet the requirements of end-users, such as manufacturers or recycling brokers.

RMPFs are a vital component of Florida's waste management and recycling infrastructure. They support the state's recycling goals by diverting materials from landfills, thereby conserving landfill space and reducing environmental impacts. By processing recovered materials, RMPFs help reduce the amount of waste sent to landfills and support the circular economy, where resources are kept in use for as long as possible. Florida has set ambitious recycling goals, including a target of achieving a 75% recycling rate, and RMPFs help municipalities and private entities meet these goals by efficiently processing recyclables and ensuring they are reused.

### 9.2 General Overview and Approach

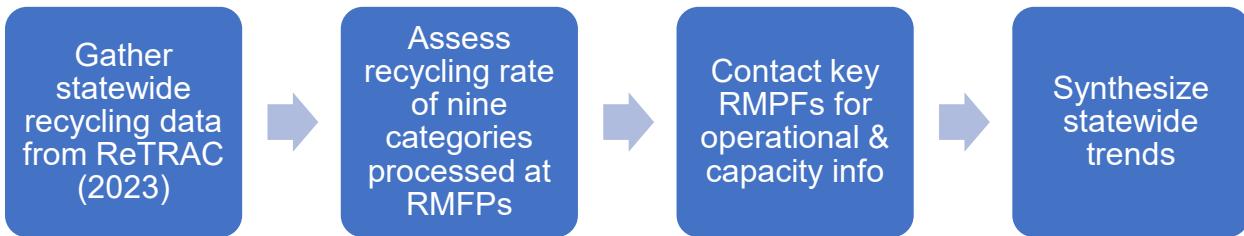
To assess the current performance and capacity of RMPFs in Florida, a multi-pronged approach was employed that integrates quantitative analysis from state-reported data with qualitative insights from facility operators as shown in **Figure 9-1. Table 9-1**. **Table 9-1** includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis. The analysis began with a review of 2023 solid waste management data, Florida's official platform for collecting solid waste and recycling information from counties, municipalities, and processors. Under 403.706(7), F.S., these entities are required to report annual recycling activity, including tonnage of materials generated and recycled, by April 1<sup>st</sup> each year. This dataset serves as the foundation for measuring progress toward Florida's recycling goals and understanding regional and material-specific recycling trends.

RMPFs in Florida vary widely in their function and complexity. The category includes large-scale single and dual stream recycling facilities that sort mixed recyclable materials using advanced mechanical and optical systems, as well as specialized facilities such as metal recyclers, cardboard-only handlers, electronics processors, and commodity brokers that may not conduct any on-site sorting. While all of these are legally categorized as RMPFs under Florida's permitting framework, not all operate with throughput constraints or perform the type of material separation that directly influences statewide processing capacity.

The analysis is focused on the subset of RMPFs that most directly impact Florida's residential and commercial recycling stream - specifically, single and dual stream recycling facilities that process mixed recyclables. These facilities are central to the recycling infrastructure and are more acutely affected by sorting complexity, contamination, and processing capacity limitations. Rather than analyzing all materials reported in Re-TRAC for the Solid Waste Management Report, the scope of analysis was further narrowed to nine key material categories that are commonly handled at these facilities and are most sensitive to market demand, contamination rates, and infrastructure limitations:

- Newspaper
- Office paper
- Cardboard
- Other paper
- Plastic bottles,
- Other plastics,
- Steel cans,
- Aluminum cans
- Glass

To supplement the quantitative analysis, major single and dual stream recycling facilities across the state were contacted to gather qualitative insights into their operational capacity and limitations. These conversations provided a clearer understanding of the real-world constraints facilities face, including processing bottlenecks, infrastructure limitations, and market-driven challenges. Facility operators also offered perspective on whether they were operating at or near capacity or had room to expand processing. These insights were essential to understanding the performance, pressure points, and regional challenges shaping Florida's recycling infrastructure.



**Figure 9-1:** Flow chart of general method used to analyze RMPF capacity

**Table 9-1:** Summary of data sources and method used to analyze RMPF capacity

Parameter	Description
Number of active facilities included in the analysis	16
Related reporting requirements	<ul style="list-style-type: none"> <li>Recovered materials reporting: 62-701.200</li> </ul>
Typical capacity measurement approach	<ol style="list-style-type: none"> <li>Contacted facility operators to obtain reported annual tonnage of materials recovered.</li> <li>Inquired with facility operators about whether their facilities are currently operating at or near their processing capacity.</li> </ol>
Data sources used in methods	<b>Correspondence with facility operators:</b> Gather annual recovered tons and capacity information

## 9.3 Results and Discussion

### 9.3.1 State-wide

#### a. Annual Solid Waste Management Report data

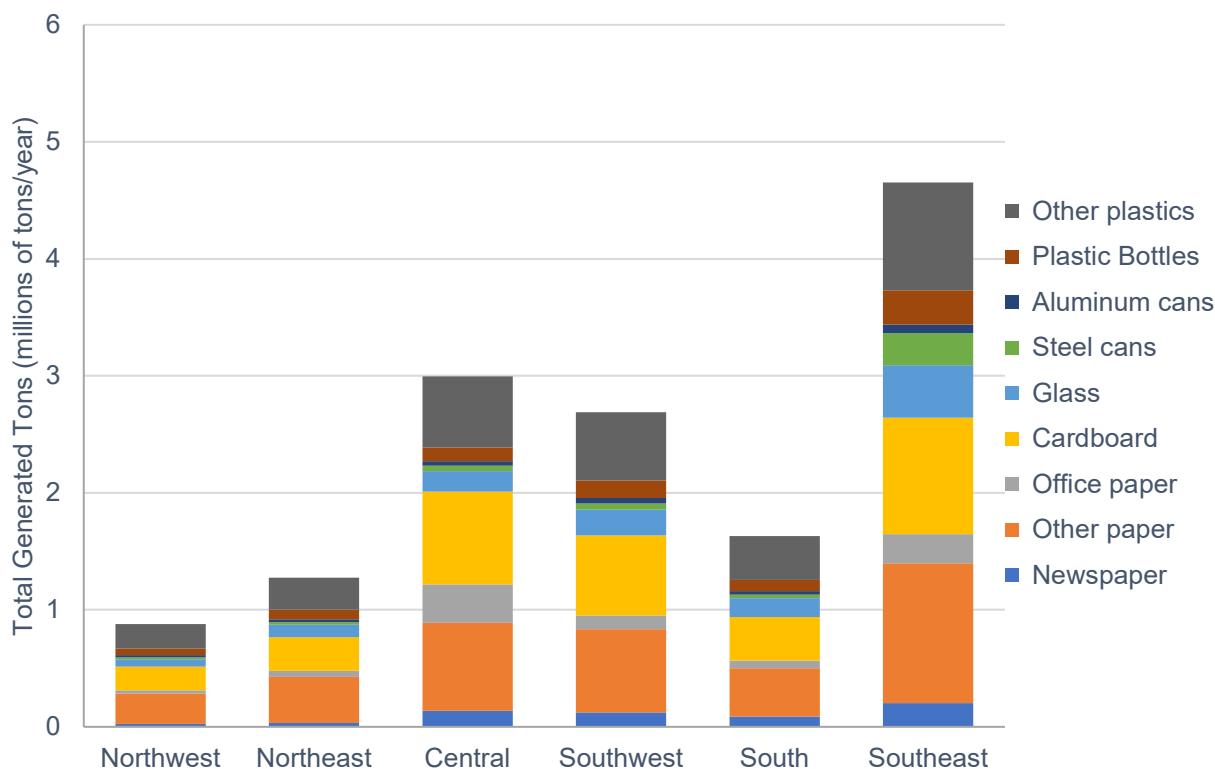
According to the 2023 Solid Waste Management Report (SWMR) data (published by FDEP), a total of 14,120,256 tons of materials in the nine key categories commonly processed at RMFPs were generated across Florida, based on data reported from both certified and non-certified sources. As shown in **Figure 9-2** the Southeast, Central, and Southwest districts were the largest generators, with the Southeast district alone accounting for over 4.5 million tons. In contrast, the Northwest and Northeast districts generated lower volumes, each under 1.5 million tons.

Of the total generated statewide, only 2,308,510 tons were recycled, resulting in an overall recycling rate of approximately 16%. **Figure 9-3** illustrates the distribution of recycled tons by district. While the Southeast, Central, and Southwest districts lead in both generated and recycled tons, their recycling rates remain close to or slightly above the state average, suggesting that generation volume alone does not translate to more effective recovery.

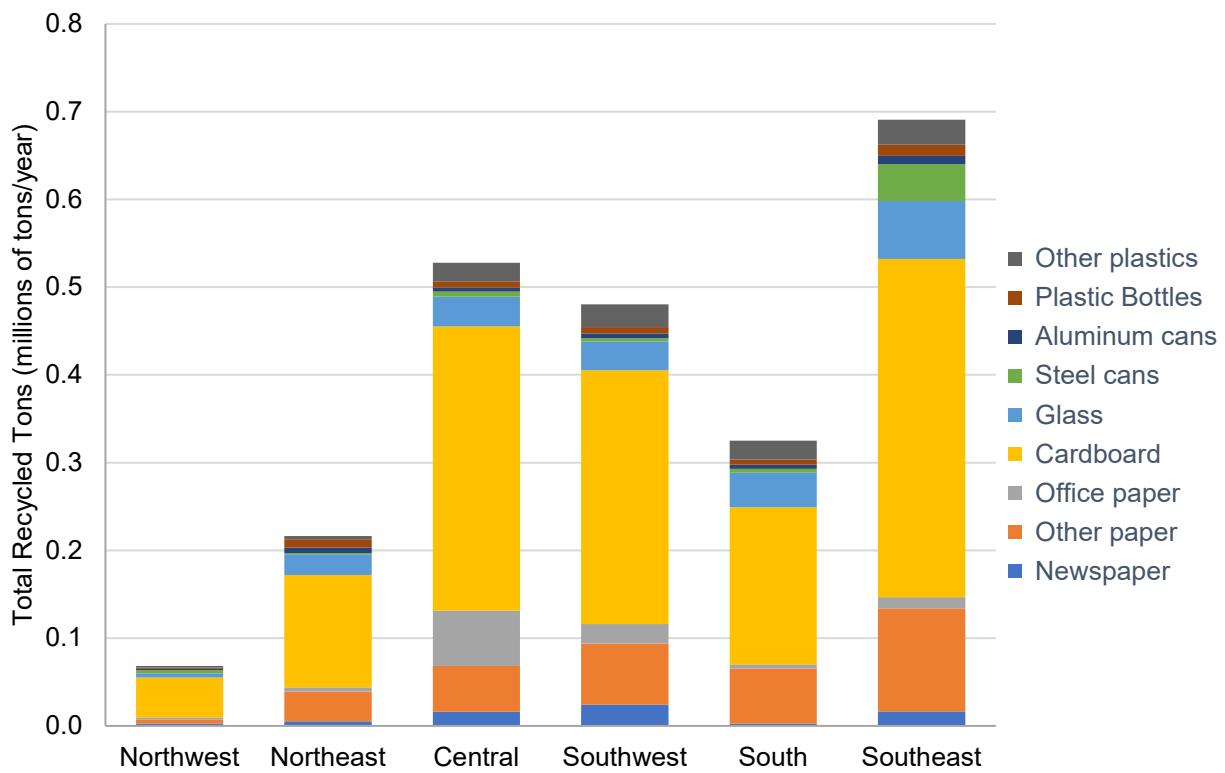
The Southeast district, while generating the most material, achieved a recycling rate roughly in line with the state average. The Central and Southwest districts followed,

each generating around 3 million and 2.7 million tons respectively, with recycling rates of approximately 18%. The South district, despite generating a smaller volume (1.6 million tons), exhibited the highest recycling rate at 20%, suggesting relatively efficient recovery practices or lower levels of contamination. The Northeast district, while generating fewer total tons, maintained a recycling rate close to 18%, indicating balanced performance relative to its scale. In contrast, the Northwest district had both low generation and the lowest recovery rate in the state at 8%, suggesting potential infrastructure gaps or less effective program participation.

**Table 9-2** shows the material-specific recycling rate. Cardboard had the highest recovery rate among the nine categories at 41%, with over 1.35 million tons recycled out of 3.33 million tons generated, indicating strong end-market demand and relatively clean recovery streams. Office paper (13%), steel cans (14%), and aluminum cans (14%) also demonstrated moderately successful recovery rates. Glass achieved a 17% recycling rate, though issues such as breakage and contamination may limit its recyclability. Newspaper and other paper had recycling rates of 11% and 9%, respectively, despite their high generation volumes. Plastic bottles, at 6%, and especially other plastics, at just 3%, were the lowest-performing categories.



**Figure 9-2:** Total generated tons of key nine recyclable materials by district in Florida, 2023.



**Figure 9-3:** Total recycled tons of key nine recyclable materials by district in Florida, 2023.

**Table 9-2:** Recycling rate for the nine recyclable materials across different districts in Florida, 2023

Categories	Northwest	Northeast	Central	Southwest	South	Southeast	State Average
Newspaper	11%	16%	12%	20%	3%	8%	11%
Other paper	2%	9%	7%	10%	15%	10%	9%
Office paper	9%	9%	19%	19%	7%	5%	13%
Cardboard	22%	45%	41%	42%	48%	39%	41%
Glass	8%	22%	19%	15%	24%	15%	17%
Steel cans	23%	8%	12%	7%	15%	15%	14%
Aluminum cans	8%	24%	12%	12%	15%	13%	14%
Plastic Bottles	2%	12%	6%	5%	6%	4%	6%
Other plastics	1%	1%	3%	4%	6%	3%	3%

### 9.3.2 Facility-Level Insights

To complement the quantitative analysis from SWMR, 16 major single and dual stream recycling facilities across Florida were contacted. These facilities represent the state's core material recovery infrastructure, with operations spanning all six FDEP districts. Of the 16 facilities, two were dual stream and the remaining 14 were single stream, reflecting the predominance of single stream collection systems in Florida.

**Figure 9-4** shows the tons of materials processed at Florida's RMPFs as of 2023. The annual processing capacity ranged from about 18,000 to 214,000 tons for the facilities which were contacted as part of the analysis, with a combined total of roughly 1.4 million tons processed in 2023. This totals approximately 62% of the 2.3 million tons reported as recycled in SWMR across the nine material categories included in the analysis. The slightly lower total could be due to a few factors. First, most of the contacted facilities primarily handle residential recyclables, while SWMR includes both residential and commercial streams. Second, some materials - like cardboard or metals - may be sent directly to specialized recyclers that weren't included in the sample, especially those that don't operate traditional sorting lines. While the conversations did not capture every ton in the system, they provide a strong picture of the core infrastructure responsible for processing the majority of Florida's mixed recyclables.

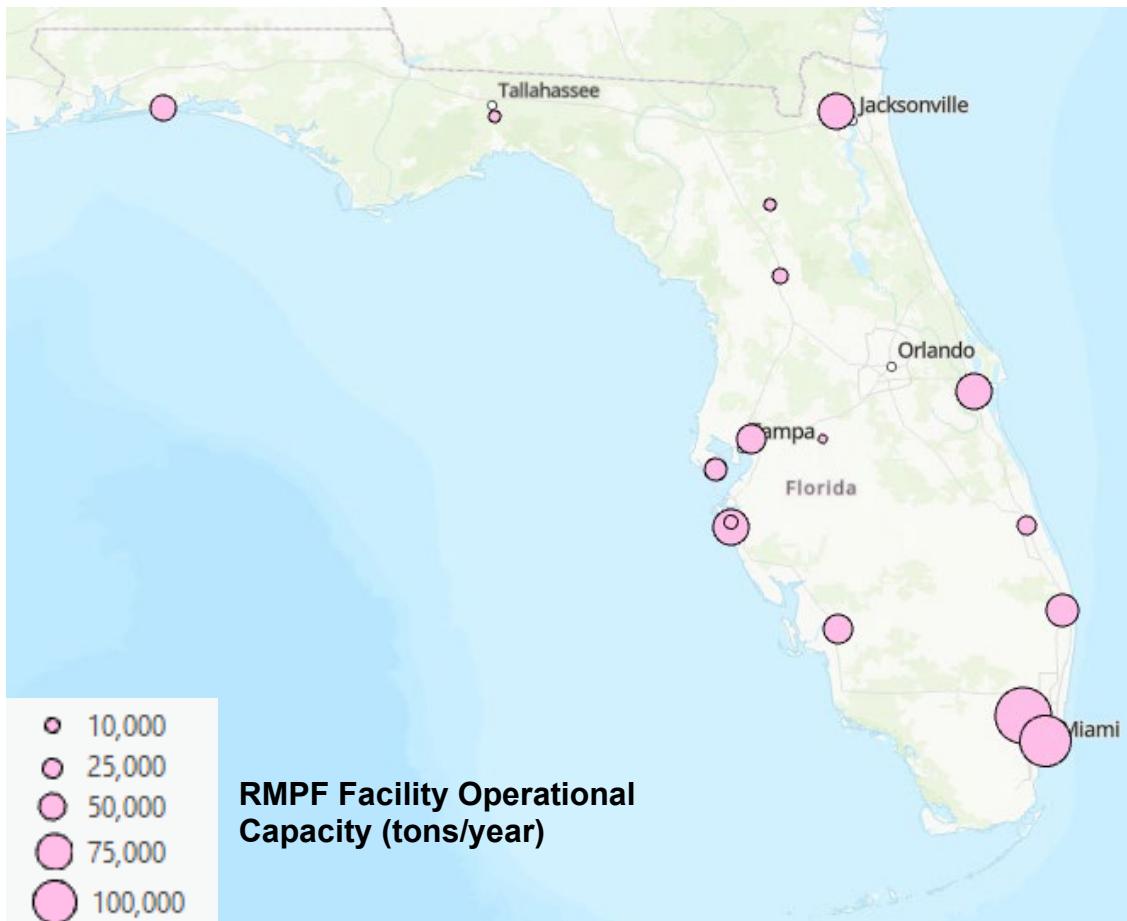
A summary of facility characteristics, processing volumes, contamination levels, and operational status is provided in **Appendix H, Table 8-1**. Together, the facilities contacted offer a representative snapshot of Florida's recycling infrastructure in action. While there is variation in scale and contamination rates, a clear pattern emerges: most facilities are operating at or near their current capacity, and several have limited room to expand without investments in staffing, equipment, or facility upgrades. Many facilities noted that they could process more if incoming materials were cleaner or if additional shifts could be supported. However, this flexibility is often constrained by labor availability, aging infrastructure, or budget limitations.

A consistent theme across facilities was the growing challenge of contamination and hazardous materials, which impact both processing efficiency and worker safety. Plastic bags and bagged recyclables are commonly flagged for tangling machinery or being landfilled unopened due to health risks. Glass, while accepted at some MRFs, is frequently cited as a top contaminant due to breakage and limited market value. Many of the facilities that do accept glass send it to Strategic Materials in Sarasota, the state's primary glass processor. This centralized model indicates the limited number of end-markets for glass. Other problematic items regularly found in incoming loads include Styrofoam, diapers, textiles, garden hoses, and wet or food-soiled materials.

Among the most serious concerns is the widespread presence of lithium-ion batteries, which have caused frequent fires across multiple facilities. For example, St. Lucie County reported experiencing three to seven battery-related fires per month, and other operators - including Balcones, Republic, and Waste Connections - shared similar incidents. Fires typically occur on the tipping floor or in balers, and are especially common following storms or hurricane events, when damaged electronics and batteries enter the waste stream. Several facilities also identified propane tanks and aerosol cans as hazardous materials that have caused flare-ups or near misses.

Despite these challenges, many facilities are actively pursuing infrastructure upgrades or operational improvements to improve throughput and safety. Planned or ongoing investments include the installation of new optical sorters, upgrades to fiber and

container lines, and expansion of processing shifts. Some operators are also working to strengthen public recycling education to reduce contamination at the source.



**Figure 9-4:** Tons of materials processed at Florida's RMPFs as of 2023; the size of the dot corresponds to the quantity of recyclables processed in 2023, as obtained from the facility operators.

The conversations reveal a recycling system that is broadly functional but under pressure - especially in high-growth or underserved regions. While the facilities included in the analysis are handling a large share of the state's recyclable material, they face clear limits on capacity and efficiency without further investment and policy support. These findings set the stage for the following regional analysis.

#### a. Central District

The Central District is one of the most populous regions in Florida and home to a large portion of the state's recycling infrastructure. In 2023, the Central District reported a total of 527,732 tons recycled across the nine key material categories analyzed from SWMR. Cardboard led the way with a recycling rate of 41%, followed by glass at 19%, slightly above the statewide average, despite persistent challenges with breakage and contamination. Office paper was recycled at a rate of 19%, while newspaper achieved

12%, and both steel and aluminum cans were recovered at 12%. Recovery of plastics remained low, with plastic bottles at 6% and other plastics at just 3%. Overall, these figures suggest that while certain material categories - particularly cardboard - are being recovered effectively, there is considerable room for improvement in other streams, especially plastics and lower-grade paper.

Two major RMPFs were contacted in the Central District as part of this assessment: WastePro Ocala and WM Cocoa. Together, they processed a combined total of approximately 161,000 tons in 2023 - about 31% of the total recycling tonnage reported in SWMR for the district. While not representative of every processor in the region, these facilities provide a useful snapshot of the core infrastructure handling mixed recyclables across Central Florida.

WastePro Ocala is a smaller single stream facility, processing about 36,000 tons annually. It reported a contamination rate of 40 to 50%, one of the highest among the facilities contacted. Operators cited issues with plastic bags, bagged recyclables, and household waste regularly contaminating incoming loads. Although the facility may have some room to accept additional clean material, equipment strain and high contamination levels have made expansion challenging. The operation is currently running near capacity and has limited downtime available for maintenance.

By contrast, WM Cocoa is a much larger facility, with a reported annual capacity of 125,000 tons and a contamination rate of 20%. The facility is undergoing a substantial equipment upgrade that is expected to lower the contamination rate to 12–15% and expand capacity by an additional 25,000 tons per year. In 2024, WM invested \$18 million to modernize the site, replacing 85% of the equipment. Operators noted that this investment positions the facility to better serve the rapidly growing communities along Florida's Atlantic Coast and improve recovery of harder-to-process materials such as mixed plastics and paper.

### **b. Northeast District**

In 2023, the Northeast District reported a total of 216,217 tons recycled across the nine key material categories tracked in SWMR. Cardboard had the highest recycling rate at 45%, slightly above the statewide average. Aluminum cans and glass were also recovered at relatively high rates - 24% and 22%, respectively - both exceeding the state average. Plastic bottles were recycled at 12%, which is notably higher than the statewide rate of 6%. In contrast, steel cans were recovered at 8%, lower than the state average of 14%. Recovery rates for office paper and other paper were each 9%, and newspaper reached 16%.

Two facilities were contacted in this district: the Alachua County Materials Recovery Facility and Republic Services North Florida Recycling Center in Jacksonville. Together, they processed approximately 109,000 tons of recyclables in 2023, accounting for about 50% of the district's reported recycling total.

The Alachua County MRF operates under a dual stream system, where residents separate containers and fiber at the curb. This approach limits contamination between material types and results in cleaner incoming loads. The facility reported a contamination rate of just 9 to 10%, which is lower than typical single stream operations. While it processes a relatively modest 18,000 tons annually, it plays a key role in keeping high-quality recyclables in circulation for Gainesville and surrounding rural areas. It operates on a single shift and uses a combination of mechanical and manual sorting. The MRF runs near capacity and has limited space for expansion. Staff attributed the low contamination rate to the dual stream collection system and long-standing public education efforts in the area.

In contrast, the Republic Services facility in Jacksonville is a much larger, single stream MRF, processing approximately 91,000 tons per year. With a contamination rate of 24%, it reflects the tradeoff that often comes with single stream convenience: higher volumes, but more mixed material. The facility is currently operating at or near capacity. After a period of reduced volume when St. Johns County temporarily suspended its recycling program, the facility returned to full operations once those services resumed. Republic is now exploring the addition of optical sortation technology to improve performance and increase throughput.

The district benefits from a mix of localized, quality-focused operations like Alachua County's MRF and higher-throughput regional facilities like Republic Jacksonville. The relatively strong recycling rates for aluminum, glass, and plastic bottles suggest that this infrastructure is capturing a broad range of materials, but the gap in steel cans and paper recovery points to ongoing challenges with sorting efficiency and contamination - especially in single stream systems. Both facilities are operating near their limits, and while investments are planned, the region's future recovery potential will likely depend on expanded capacity, equipment upgrades, and continued education to improve material quality at the curb.

### **c. Northwest District**

In 2023, the Northwest District reported a total of 68,205 tons recycled across the nine key material categories tracked in SWMR, with an overall recycling rate of 7.8% - the lowest among all districts, and less than half the statewide average of 16%. Recovery rates across most material categories were below state averages, with the exception of steel cans, which were recovered at a relatively high rate of 23%. Cardboard was recycled at 22%, noticeably lower than the statewide average of 41%. Newspaper and office paper were recovered at 11% and 9%, respectively, while glass and aluminum cans reached only 8% each. Recovery of plastic bottles and other plastics remained especially low, at 2% and 1%, among the weakest rates in the state.

Two facilities were contacted in the Northwest District: Marpan Recycling in Tallahassee and the WM Fort Walton Beach MRF. Together, these facilities reported a total processing capacity of approximately 97,250 tons - above the 68,000 tons reported as recycled in SWMR. This difference could be attributed to several factors. Both facilities

may process additional material types not captured in SWMR's nine-category framework.

Marpan Recycling processes around 21,250 tons annually and reported a 15% contamination rate - moderate for a single stream facility. It operates at roughly 75 to 80% capacity, with the potential to scale up if incoming material were cleaner. The facility services Leon County and surrounding areas and has consistently emphasized material quality as a limiting factor, particularly when dealing with bagged recyclables and mixed loads.

The WM Fort Walton Beach MRF processed an estimated 76,000 tons last year and serves a broad area within a 30- to 40-mile radius. Staff indicated the facility is operating near capacity and has the ability to double throughput by adding a second shift. Like many single stream MRFs, it faces routine challenges with plastic bags, film, and other contaminants that interfere with sorting and reduce recovery.

Compared to other districts, the Northwest has some of the lowest overall recovery performance. While steel cans are recovered at a relatively high rate, the district trails the state in nearly every other material category - particularly plastics and glass. The combination of lower population density, limited MRF infrastructure, and contamination challenges appears to constrain overall recovery. At the same time, the two contacted facilities are not yet fully maxed out and may have room to expand processing if material quality improves or if investment supports additional staffing or equipment. The gap between reported processing capacity and recycled tons in SWMR also suggests the need for improved reporting or integration of non-traditional material streams into statewide tracking efforts.

#### **d. South District**

In 2023, the South District reported a total of 324,917 tons recycled across the nine key material categories, with an overall recycling rate of 19.9% - the highest of any district in the state. Material-specific recovery was also strong: cardboard led with a recycling rate of 48%, followed by glass at 24%, steel and aluminum cans each at 15%, and other paper at 15%. Recovery of plastic bottles and other plastics reached 6%, while office paper was at 7%. The only notably low-performing category was newspaper, at just 3%. This mix reflects both the region's strong infrastructure and its typical single stream challenges, with high-value materials like cardboard performing well, and printed paper and plastics trailing behind.

Three facilities were contacted in this district - Balcones Recycling Fort Myers, Balcones Sarasota, and WastePro Sarasota - with a combined processing total of approximately 246,000 tons. These facilities collectively account for around 76% of the total recycling reported in SWMR for the South District. While not capturing every ton, they represent the core processing infrastructure for municipal and commercial recycling in the region.

Both Balcones Fort Myers and Balcones Sarasota are large-scale, single stream MRFs, each processing between 96,000 and 120,000 tons annually. Contamination rates at

both sites are reported between 18 and 20%. Operators described relatively strong recovery for materials like cardboard and aluminum, with persistent challenges around flexible plastics, bagged recyclables, and residue from food packaging. Both facilities are running close to capacity, and while they can handle more tonnage, doing so would require either cleaner material or operational changes, such as additional shifts.

WastePro Sarasota processes a smaller volume - about 30,000 tons per year - but faces similar conditions. The contamination rate is estimated between 18 and 24%, and staff noted the facility is constrained more by labor and material quality than equipment capacity. Like the other two facilities, WastePro reported frequent issues with plastic bags, film, and non-recyclable items entering the stream.

The South District's recycling infrastructure is highly centralized, with a few high-volume facilities processing the majority of the region's material. While contamination and staffing remain persistent concerns, the South District's performance shows that large-scale, urban MRFs - when well-managed - can operate efficiently within a single stream system. The region's relatively high recovery of glass and metals, combined with consistently strong cardboard recovery, suggests that these facilities are successfully capturing a broad mix of materials despite the typical constraints of single stream processing.

#### e. Southeast District

The Southeast District reported the highest total recycling tonnage in the state in 2023, with 690,931 tons recycled across the nine core material categories. The district achieved an overall recycling rate of 15%, just below the statewide average. Cardboard was the most successfully recovered material at 39%, followed by glass and steel cans, both at 15%, and aluminum cans at 13%. Other paper was recovered at 10%, newspaper at 8%, and office paper at 5%. Plastics had lower recovery rates, with plastic bottles at 4% and other plastics at 3%.

Four major facilities were contacted in the Southeast District: West Palm Beach Materials Recovery Facility (SWA), Solid Waste Baling & Recycling Facility – St. Lucie County, Waste Connections of Florida – Miami, and Reuter Recycling (Waste Management). Together, these four facilities processed approximately 498,500 tons in 2023 - about 72% of the total reported in SWMR for the district. The scale of these operations underscores the district's reliance on a few large-capacity MRFs to handle the bulk of recycling.

The SWA facility in Palm Beach County is a dual stream MRF, processing about 108,000 tons in 2023. Contamination rates vary by stream: 26% for residential containers, 19.7% for residential paper, and just 7.25% for commercial cardboard. Operators noted that commercial loads are typically cleaner, particularly cardboard collected from businesses, while residential materials are more prone to contamination. One of the contributing factors is the use of open-top containers in the dual stream system, which can expose recyclables to rain and weather, leading to soggy paper and food residue. The facility is currently at full capacity and occasionally requires an

additional shift to manage incoming volume. Contaminants such as plastic bags, lithium-ion batteries, and film packaging were frequently mentioned as ongoing operational issues.

The St. Lucie County MRF is a single stream facility that processed approximately 51,500 tons. It reported a contamination rate of 27% and is currently running on one shift. Operators mentioned a desire to maintain single-shift operations to control labor costs, but acknowledged that this limits processing flexibility. The facility serves St. Lucie and surrounding counties, and frequently encounters contamination from bagged materials, textiles, and non-recyclable plastics.

Waste Connections – Miami is another high-volume, single stream MRF, processing 125,000 tons in 2023. Its contamination rate is around 25%, and it is currently operating at approximately 90% of capacity. The facility handles material from throughout Southeast Florida, including cities like Pembroke Pines and Hollywood. Operators emphasized challenges with contamination and noted the rising presence of flexible packaging and non-recyclable consumer goods in the stream.

The largest of the four, Reuter Recycling (Waste Management), processed 214,000 tons in 2023, with a reported contamination rate of 25–30%. It serves Miami-Dade, Broward, Collier, and Monroe Counties and is currently undergoing an expansion that will increase its annual capacity by 60,000 tons. The facility handles a large share of the region's single stream recyclables and frequently encounters fire risks due to lithium-ion batteries, as well as film, food waste, and improperly sorted items.

Across the district, all four facilities reported consistent challenges with contamination, particularly from plastic bags, bagged recyclables, and hazardous items like lithium-ion batteries, which have caused repeated fires. While the Southeast has some of the largest and most high-throughput MRFs in the state, they are operating under substantial strain. Most are already at or near capacity, and continued growth in waste generation - paired with complex material streams - has made it harder to maintain or improve recovery rates without further investment.

Despite these challenges, the facilities in the Southeast are processing a large portion of the state's recyclables, and infrastructure investments such as Reuter's capacity expansion may help offset volume pressures in the near future. However, achieving higher recovery will require addressing contamination at the source, expanding education and outreach, and potentially re-evaluating collection strategies to better match what MRFs can efficiently handle.

#### **f. Southwest District**

In 2023, the Southwest District reported 480,508 tons recycled across the nine RMPF categories, with a recycling rate of 18% - the second highest in the state. Cardboard was the strongest-performing material at 42%, followed by newspaper (20%), office

paper (19%), and glass (15%). Recovery of aluminum cans (12%) and other paper (10%) was moderate, while steel cans (7%), plastic bottles (5%), and other plastics (4%) remained lower.

Three major MRFs were contacted - Waste Connections St. Petersburg, WM Tampa, and Republic Services Lakeland - which together processed an estimated 317,000 tons, or about 66% of the district's reported total.

The St. Petersburg MRF, operated by Waste Connections, runs two shifts a day and is operating near capacity. It does not accept glass due to contamination concerns. Contamination rates are typically around 30–35%, and worsened following recent hurricanes, when wet and damaged materials increased the volume of unusable recyclables. The facility accepts material from unincorporated Hillsborough and Pasco Counties, and several municipalities in Pinellas County. Operators noted that despite regional shifts - such as Polk County discontinuing unincorporated recycling - strong municipal demand continues to support two-shift operations.

The WM Tampa MRF processed 90,000 tons in 2023 and reported a 20% contamination rate. Its infrastructure is aging, and WM plans to replace the facility with a larger, modern MRF capable of processing 230,000 tons per year. The expansion is in response to population growth and future demand, and is expected to reduce residue levels to 12–15%.

At the Republic Services MRF in Lakeland, tonnage declined after Polk County ended recycling in its unincorporated areas. The facility continues to serve municipal customers and operates on a single shift. While contamination data was not provided, operators acknowledged that inbound volume is limited by local policy decisions.

Overall, the Southwest District benefits from three high-throughput facilities that handle most of the region's recycling. While processing capacity is strong, aging infrastructure, policy shifts, and persistent contamination - particularly from plastic bags and batteries - remain challenges. Planned infrastructure upgrades, such as the WM Tampa expansion, will be critical to maintaining and increasing recovery in the years ahead.

## 10 YARD TRASH DISPOSAL FACILITIES

### 10.1 Background

In Florida, yard trash is prohibited from disposal in Class I landfills that are not equipped with a gas collection for beneficial use of landfill gas (403.708(12), F.S.). As such, yard trash disposal facilities and source separated organics processing facilities (SOPFs) are designed to accept yard trash for landfill diversion.

Yard trash disposal facilities operate under general permit, per 62-701.803, F.A.C., for the management of yard trash, land clearing debris, and unpainted, non-treated wood scraps and pallets. Yard trash and land clearing debris include waste such as branches, trimmings, stumps, and associated rocks and soils from landscaping and land clearing activities. Yard trash disposal facilities accept such materials from offsite locations for disposal, which generally consists of placement in a pit or pile where the organic fraction is allowed to decompose naturally. These facilities typically have little or no processing but occasionally include mulching or air curtain incineration in their operations.

Definition in 62-701.200, F.A.C.:

(56) “*Land clearing debris*” means rocks, soils, tree remains, trees, and other vegetative matter that normally results from land clearing or land development operations for a construction project. Land clearing debris does not include vegetative matter from lawn maintenance, commercial or residential landscape maintenance, right-of-way or easement maintenance, farming operations, nursery operations, or any other sources not related directly to a construction project.

(135) “*Yard trash*” means vegetative matter resulting from landscaping maintenance or land clearing operations and includes materials such as tree and shrub trimmings, grass clippings, palm fronds, trees and tree stumps, and associated rocks and soils.

Yard trash disposal facilities are not subject to the same operating and reporting requirements as landfills. Therefore, operators are not required to report annually to FDEP the quantity of waste received, or the remaining airspace estimate for the site. Much of the information included in this capacity analysis relies on data from the general permit notification for each site and conversations with facility operators. At the time of writing this report, there are 111 yard trash disposal facilities with active permits.

### 10.2 General Overview and Approach

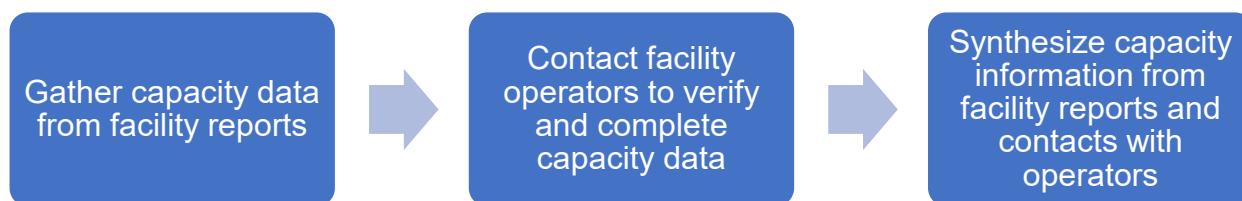
Yard trash disposal facilities are not required to report the quantity of waste received annually or the remaining airspace estimate for the site. As such, many of the facilities lack scales to track the tons of waste disposed of, as well as annual topographic surveys to determine the remaining capacity of the disposal area. Facility operators are

required, however, to estimate the site life for the yard trash disposal facility in the general permit notification, as well as employ spotters at the working face.

Information related to capacity was obtained from the general permit notification for each facility and conversations with facility operators. Information related to facility service area and processing methods were obtained from the general permit notification and annual FDEP inspection for each facility, as well as conversations with facility operators. **Table 10-1** below includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis. The general method for normalizing the capacity estimates is also depicted graphically in **Figure 10-1**.

**Table 10-1:** Summary of data sources and method used to analyze yard trash disposal facility capacity

Parameter	Description
Number of active facilities included in the analysis	111
Related reporting requirements	<ul style="list-style-type: none"><li>• <b>General permit notification requirement:</b> 62-701.803(1), F.A.C.</li></ul>
Typical capacity measurement approach	<ol style="list-style-type: none"><li>1) Gather information related to site life, service area, and processing method from the general permit notification and annual FDEP inspection.</li><li>2) Contact facility operators to determine site capacity, service area, and processing methods.</li><li>3) Synthesize capacity information from facility reports and contacts with operators.</li></ol>
Data sources used in methods	<b>General permit notification:</b> Facility site life and service area <b>Annual FDEP inspection reports:</b> Service area and processing method <b>Correspondence with facility operators:</b> Verification of information gathered from permit notification and annual inspection; quantity of waste disposed of in 2023, estimated site capacity, and future expansion plans

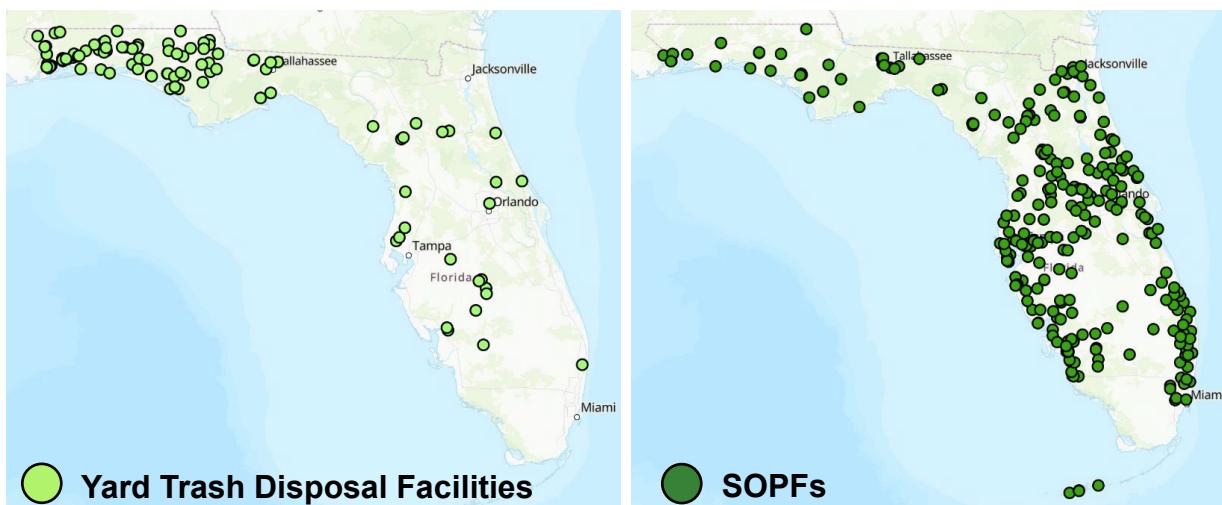


**Figure 10-1:** Flow chart of general method used to analyze yard trash disposal facility capacity

## 10.3 Results and Discussion

As described in **Appendix E, Section 1.1**, operators of the yard trash disposal facilities were contacted to collect information on facility capacity, operations, and service area. Of the 111 yard trash disposal facilities in the state, 17 provided data for this capacity study (~15% response rate). **Appendix I, Table 9-1** shows the responses from yard trash disposal facility operators.

**Figure 10-2a** shows the location of Florida's yard trash disposal facilities, 85 of which are located within the FDEP Northwest District. The concentration of facilities in the Northwest District indicates that there may be opportunities to improve resource recovery for yard waste in this region of the state, since yard trash and land clearing debris undergo little or no processing prior to disposal. Other regions rely primarily on SOPFs for the management of yard trash, as seen in **Figure 10-2b**. At SOPFs, material is often processed for beneficial use. Based on conversations with facility operators in the Northwest District, some possible reasons for the region's reliance on yard trash disposal facilities rather than SOPFs include: (1) availability of land for disposal sites, (2) lack of infrastructure for organics recycling, (3) insufficient end markets for recycled products (e.g., landfill cover, fuel, mulch, compost).



**Figure 10-2:** Location of a) yard trash disposal facilities and b) SOPFs in Florida

Many of the yard trash disposal facilities accept debris from within their company's own operations (for example, there are several facilities owned by land clearing, excavation, and developing companies). Some of the facilities also accept yard trash from outside customers, and these facilities generally have a small service area. Operators estimate that the service area for outside customers is limited to the immediate surrounding counties, or approximately a ~30-mile radius.

Since yard trash disposal facilities are not required to report annually the quantity of waste received, it is unknown how much material is managed by these facilities. Of the 22 facilities who responded to the data request, five did not accept waste in 2023 and three were unable to provide an estimate of the waste received. The other 14 facilities

were able to provide an estimate of the quantity of waste received in 2024, and 11 of these respondents typically receive less than 5,000 cy/year. Unlike other facilities included in the capacity analysis (e.g., landfills, waste to energy facilities, recycling facilities), yard trash disposal facilities often lack scales since they are not required to report the quantity of waste received. Therefore, operators estimate waste disposal in units of cubic yards or trucks received.

From review of the general permit notifications, annual FDEP inspection reports, and conversations with facility operators, the most common management method at yard trash disposal facilities is to place waste in a pit or pile and allow the organic fraction to decompose naturally. Few of the facilities employ processing prior to disposal, which may include mulching or air curtain incineration.

62-701.803(1), F.A.C. requires facility operators to include an estimate of the expected site life in the general permit notification. Review of the notifications revealed that 85 of the facilities included an expected site life, with an average of estimate of approximately 22 years and a median estimate of 15 years. The expected site life is shown in **Appendix I, Table 9-2**. Operators who responded to the data request noted that topographic surveys are not commonly conducted on yard trash disposal facilities. Therefore, between the general permit notifications and conversations with operators, few facilities were able to provide an estimate of the site capacity (in cubic yards). Most operators who responded to the data request also stated that they have no plans for future site expansions at this time, as capacity does not seem to be a concern.

## **11 SOURCE SEPARATED ORGANICS PROCESSING FACILITIES (SOPF) AND COMPOSTING FACILITIES**

### **11.1 Background**

In Florida, yard trash is prohibited from disposal in Class I landfills that are not equipped with a gas collection for beneficial use of landfill gas (403.708(12), F.S.). As such, source separated organics processing facilities (SOPFs) are designed to accept yard trash and other organic waste for landfill diversion. While yard trash disposal facilities are designated for disposal only, SOPF operations include beneficial use of the material or transfer to another facility for management.

SOPFs are facilities which manage organic waste with some degree of processing, including (1) yard trash transfer stations and recycling operations, (2) manure blending operations, and (3) composting operations. Yard trash recycling operations create products for beneficial use, such as landfill cover, fuel, and mulch. Composting operations may manage other organic waste besides yard trash, including vegetative waste, animal by-products, and manure.

Definition in 62-701.200, F.A.C.:

*(135) "Yard trash" means vegetative matter resulting from landscaping maintenance or land clearing operations and includes materials such as tree and shrub trimmings, grass clippings, palm fronds, trees and tree stumps, and associated rocks and soils.*

SOPFs either operate under permit or registration but may only qualify for registration if they meet the conditions of 62-709.330 and 62-709.350, F.A.C. At the time of writing this report, there are 293 active SOPFs in Florida, 51 of which are permitted. The remaining 242 SOPFs operate under registration, which limits processing and storage times on inbound waste. Registered SOPFs must remove processed material (e.g., landfill cover, fuel, mulch, compost) from the site within 18 months, so operators must have end markets to process and move material. Most SOPFs in the state are yard trash transfer stations and processing facilities (as defined under 62-709.201(26), F.A.C., which includes mulching and composting of yard trash).

### **11.2 General Overview and Approach**

62-709.320(4)(a), F.A.C. requires SOPFs to report annually the quantity of waste received and removed from the site. The capacity analysis relies on these annual SOPF reports to estimate the amount of organic waste received and processed in Florida's SOPFs each year. The permit applications and FDEP annual inspection reports were also reviewed to determine the processing methods employed by SOPFs to manage waste (e.g., mulching, compost production, creation of landfill cover).

Finally, facility operators were contacted to verify the following information: (1) quantity of waste received in 2023, (2) origin of waste received (i.e., facility service area), (3)

type of waste received (e.g., yard trash, manure, vegetative waste), and (4) processing method for material removed from the site. Facility operators were also asked whether their permitted limit (for the amount of waste that can be processed or stored) differs from the limit established in 62-709.330 and 62-709.350, F.A.C. This is especially important for facilities operating under a solid waste permit as opposed to SOPF registration.

**Table 11-1** below includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis. The general method for normalizing the capacity estimates is also depicted graphically in Figure 11-1.

**Table 11-1:** Summary of data sources and method used to analyze SOPF capacity

Parameter	Description
Number of active facilities included in the analysis	293
Related reporting requirements	<ul style="list-style-type: none"> <li><b>Annual SOPF reports:</b> 62-709.320(4)(a), F.A.C.</li> </ul>
Typical capacity measurement approach	<ol style="list-style-type: none"> <li>1) Compile and aggregate information related to the quantity received and processed at each SOPF.</li> <li>2) Project the quantity of organic waste expected to be managed at SOPFs in future years based on UF BEBR projections.</li> <li>3) Synthesize capacity information from facility reports and contacts with operators.</li> </ol>
Data sources used in methods	<b>Annual SOPF report:</b> quantity of waste received and processed <b>Permit applications and annual FDEP inspection reports:</b> processing method and type of waste received <b>Correspondence with facility operators:</b> Verification of information gathered from annual SOPF reports and inspection reports; estimated service area, types of material processed, and processing methods

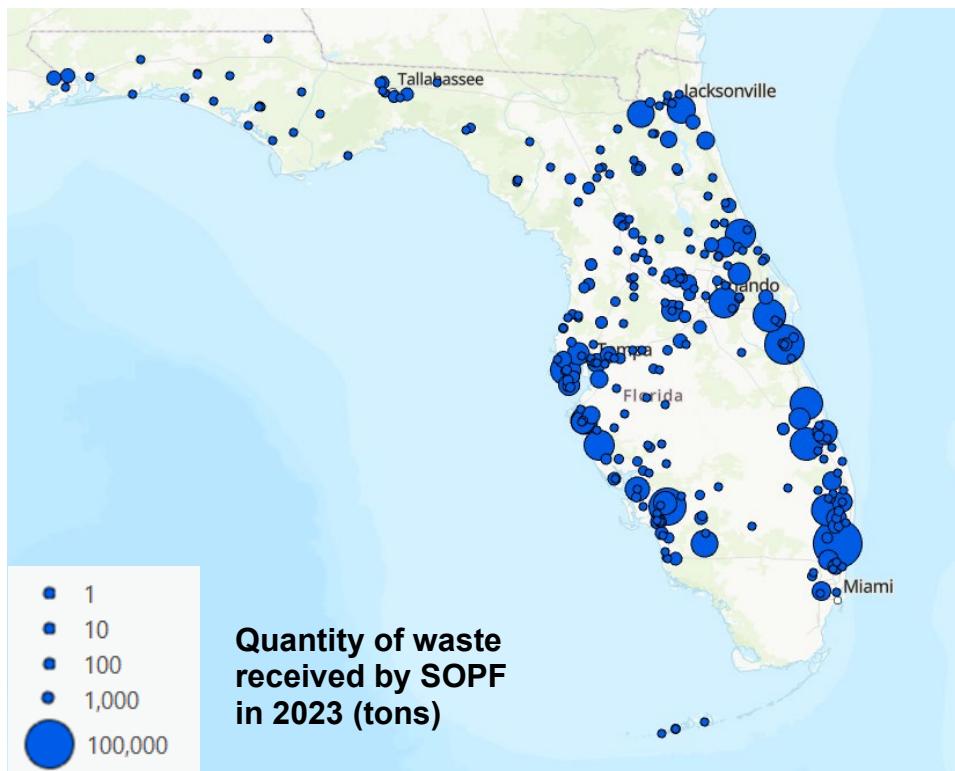


Figure 11-1: Flow chart of general method used to analyze SOPF capacity

### 11.3 Results and Discussion

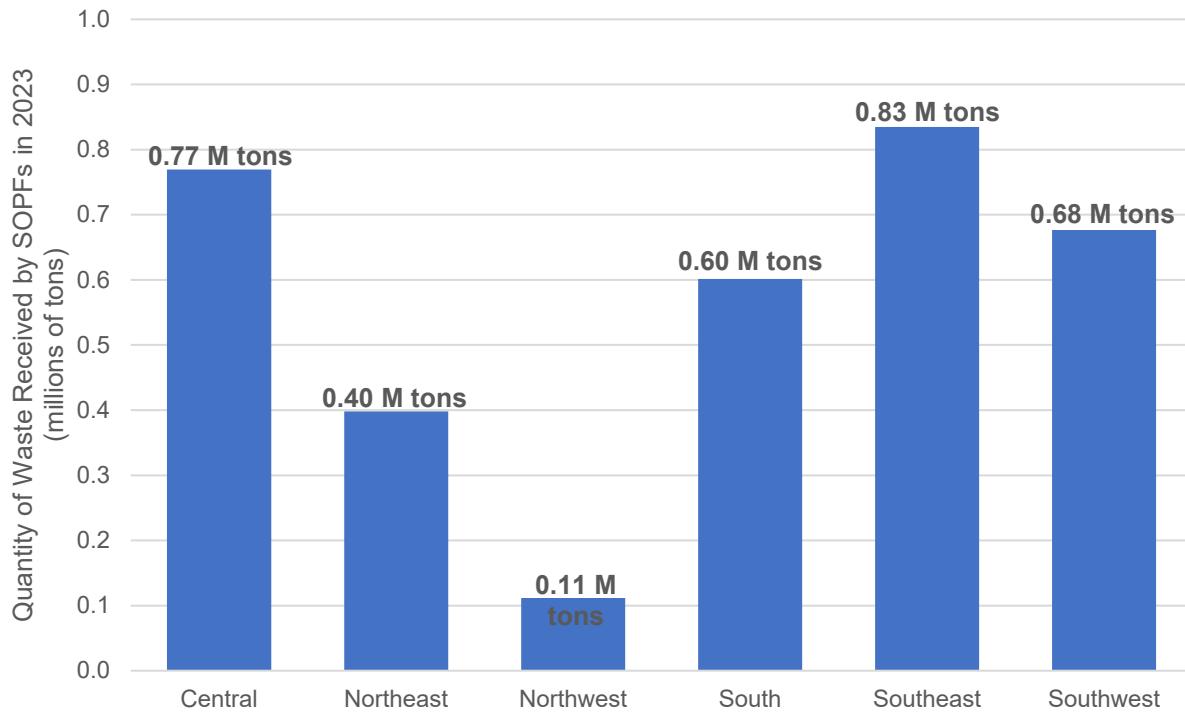
In 2023, SOPFs received over 3.4 million tons of organic waste and the location of the SOPFs (scaled by the quantity of waste received) is shown in **Figure 11-2**. Southeast District SOPFs accepted the greatest amount of waste in 2023, while the Northwest District facilities accepted the least. The Northwest District SOPFs may receive

relatively lower amounts of organic waste compared to other districts due to the prevalence of yard trash disposal facilities in the region. As described in **Section 10**, yard trash disposal facilities are those which dispose of yard trash and land clearing debris with little or no processing; most (~80%) of Florida's yard trash disposal facilities are located in the Northwest District. displays the total waste received by SOPFs in each FDEP District.

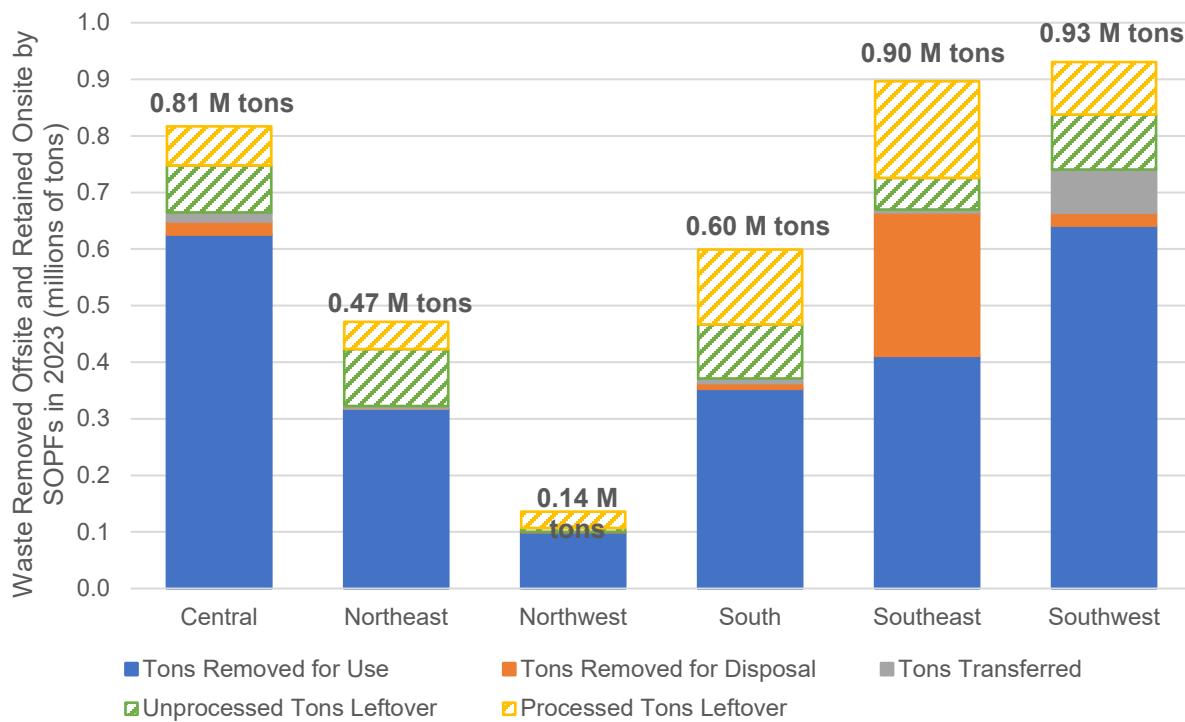


**Figure 11-2:** SOPFs throughout Florida; the size of the dot corresponds to the quantity of organic waste received in 2023, as obtained from the 2023 SOPF annual reports

Waste received by SOPFs is processed and removed from the site for beneficial use (e.g., landfill cover, fuel, mulch, compost), off-site disposal, or transfer to a different processing facility. Some waste typically remains on-site at the end of the calendar year as well, because facilities operating under registration have 18 months to process and remove inbound material. As seen in **Figure 11-4**, the most common method of removing organic waste from the SOPF is through beneficial use. From review of the permit applications and annual FDEP inspection reports, as well as conversations with facility operators, yard trash is the primary waste managed by SOPFs. There are few facilities in the state which process food waste (i.e., vegetative waste and animal by-products) or animal manure. Yard trash is processed and most commonly used for mulch or landfill cover. In fact, many landfills in Florida have SOPFs on the landfill site to produce alternative daily cover. Mulch produced at SOPFs has many applications in the state, namely free distribution to residents (in the case of many county and city-owned SOPFs), land application, and feedstock for composting operations.



**Figure 11-3:** Quantity of waste received by SOPFs in each FDEP District in 2023, as obtained from the 2023 SOPF annual reports

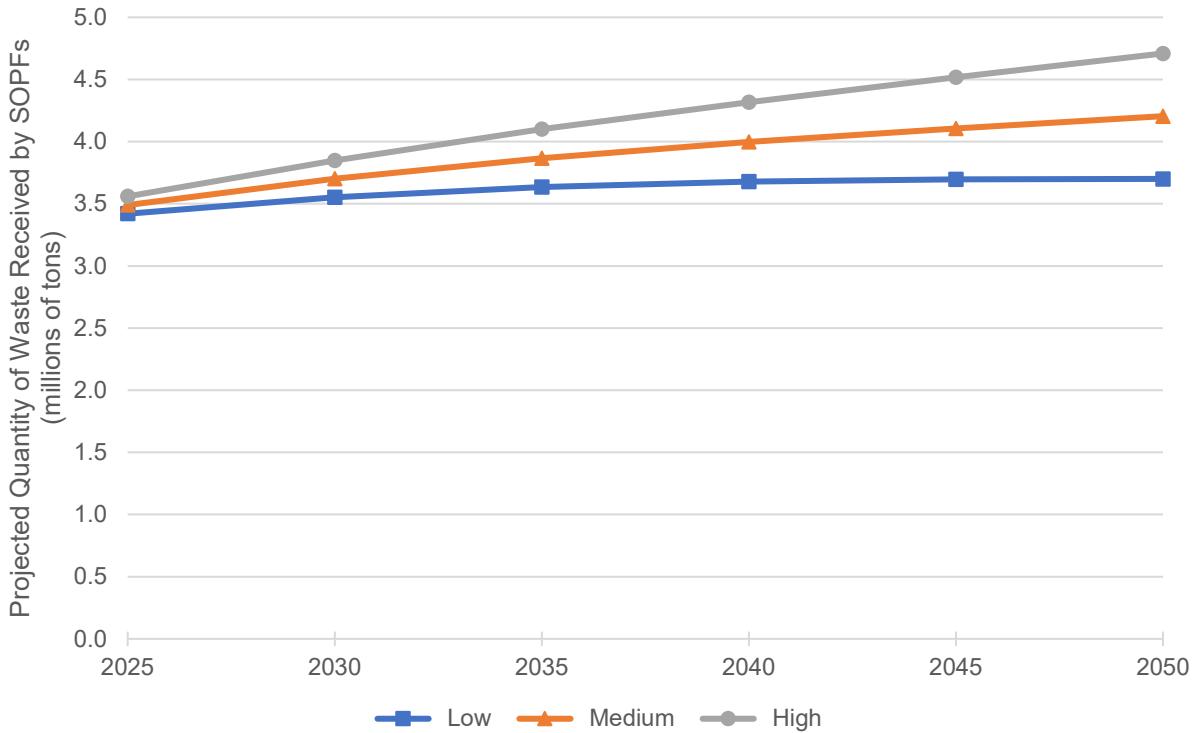


**Figure 11-4:** Quantity of waste removed or remaining on-site at SOPFs in 2023, as obtained from the 2023 SOPF annual reports

Conversations with facility operators have revealed that, like yard trash disposal facilities, SOPFs primarily serve the immediate surrounding areas. See **Appendix J**, **Table 10-2**. Between yard trash disposal facilities and SOPFs, there are over four hundred facilities dedicated to managing organic waste in Florida. Therefore, customers (i.e., residents, landscaping companies, land clearing businesses) do not have to transport waste long distances to dispose of material. The service area for SOPFs is assumed to be limited to the immediate surrounding counties for each facility, or about a 30-mile radius. Regarding the products generated at SOPFs, facility operators note that the product which is transported the furthest to the end user is generally compost. There are even facilities in Florida that have enough demand for their product that compost is shipped to other states in the Southeastern US. Mulch, boiler fuel, and landfill cover tend to be marketed to end users that are local to the SOPF. Further, operators have noted that the demand for mulch in landscaping applications is greatest near population centers, so much of the mulch is marketed to coastal areas in Florida.

SOPFs operating under registration (>80% of the SOPFs as of April 2025) must remove processed material from the site within 18 months. Therefore, the capacity of an SOPF is limited by the area of the site and the operator's ability to process and remove the material in a timely manner. Capacity could be expanded in Florida's existing SOPFs by making operational changes at the facility level (e.g., addition of processing equipment, extension of operating hours) or by improving the end markets for processed material to increase the facility throughput. One major challenge for SOPF operation and capacity in Florida is management of yard trash generated by hurricanes. Disaster debris management sites (DDMS) are activated following hurricanes for the management of storm-related debris; however, SOPFs and yard trash disposal facilities also experience an influx of waste following storm events. SOPF operators must be able to manage the inbound waste within the site boundary, while still maintaining the pile heights, setbacks, and access boundaries as required in 62-709, F.A.C.

In 2023, Florida's SOPFs received over 3.4 million tons of organic waste. **Figure 11-5** shows the projection of waste sent to Florida's SOPFs in the coming years based on a per capita waste contribution of 0.15 tons/year, and the UF BEBR population projections. Under the medium population projection scenario, the amount of waste received by SOPFs could exceed 3.5 million tons by 2030 and 4 million tons by 2045. To keep up with the rising population growth, Florida may need to site additional SOPFs, expand capacity in existing SOPFs, or improve markets for recycled organic materials.



**Figure 11-5:** Estimated future disposal of organic waste in SOPFs based on the UF BEBR low, medium, and high population projections between 2025 and 2050

## 12 HOUSEHOLD HAZARDOUS WASTE (HHW) COLLECTION FACILITIES

### 12.1 Background

Household Hazardous Waste (HHW) collection programs play a vital role in protecting Florida's public health and environment. These programs are designed to properly manage common household materials that exhibit hazardous characteristics such as ignitability, corrosivity, reactivity, or toxicity. Improper disposal of these materials—such as pouring them down drains, into storm sewers, or placing them in household trash—can result in contamination of soil and groundwater, which poses risk in a state where over 90% of drinking water is sourced from groundwater.

Although HHW is not regulated as hazardous waste under federal law, Florida provides a clear compliance framework for its collection and management. HHW programs in the state are typically operated by county or municipal governments as part of a “local hazardous waste management program.” All 67 counties in Florida offer residents access to HHW services either through permanent collection centers or scheduled mobile collection events. Currently, 45 counties operate their own HHW programs, while 22 counties participate through interlocal agreements with host counties to provide services via mobile events. As a result, Florida has developed one of the most extensive and accessible HHW collection infrastructures in the nation.

Under Rule 62-701.710, F.A.C., household hazardous waste collection centers operated by or on behalf of a local government are exempt from solid waste permitting requirements that apply to commercial facilities. However, this exemption does not relieve them of operational responsibilities. These sites must still implement practices that minimize leachate generation, control litter, and prevent environmental contamination. For example, HHW must be stored in closed, compatible containers on impermeable surfaces, and collection areas must be managed to prevent accidental releases.

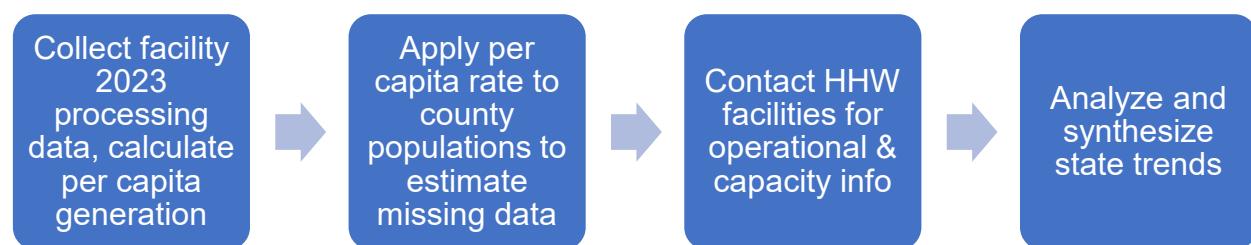
The state’s HHW programs have been especially active in promoting the collection of universal wastes - such as batteries, mercury-containing devices, and electronics - and educating the public on best practices for hazardous product use, storage, and disposal. These efforts not only reduce environmental contamination but also increase public awareness and encourage safer behavior in households across Florida.

### 12.2 General Overview and Approach

To evaluate the processing capacity of Household Hazardous Waste (HHW) collection centers across Florida, a mixed-methods approach was applied, integrating direct data collection, population-based estimation, contacts with facility operators, and hazardous waste shipment records as shown in **Figure 12-1**. **Table 12-1** below includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis. County HHW program coordinators were contacted to

provide information on the tons of HHW collected and processed during 2023. For facilities where direct data were unavailable, estimates were derived using per capita generation rates and their population in 2023.

To assess whether facilities are operating near capacity, HHW program operators were contacted. These conversations provided qualitative insights into infrastructure constraints, program scalability, and common operational challenges. Most operators indicated that while they currently have sufficient physical capacity to manage HHW volumes, their ability to expand services is often limited by staffing, funding, or transportation logistics - not storage infrastructure itself.



**Figure 12-1:** Flow chart of general method used to analyze HHW facility capacity

**Table 12-1:** Summary of data sources and method used to analyze HHW facility capacity

Parameter	Description
Number of active facilities included in the analysis	67
Related reporting requirements	<ul style="list-style-type: none"> <li><b>General permit notification requirement:</b> 62-701.710, F.A.C</li> </ul>
Typical capacity measurement approach	<ol style="list-style-type: none"> <li>Contacted facility operators to obtain reported annual tonnages of materials processed.</li> <li>Calculated per capita generation rates (tons/person/year) for counties with available recovery data.</li> <li>Estimated annual tons processed for counties lacking data by applying per capita generation rates to 2023 population figures.</li> <li>Inquired with facility operators about whether their facilities are currently operating at or near processing capacity.</li> </ol>
Data sources used in methods	<b>Correspondence with facility operators:</b> Gather annual processed tons and capacity information

## 12.3 Results and Discussion

Of the 67 counties contacted across Florida, data on HHW processed in 2023 was obtained for 28 counties. In several cases, this information was provided through interlocal agreements with host counties that manage HHW collection programs on behalf of smaller or neighboring jurisdictions. Reported annual tonnages varied

considerably, ranging from 3.44 tons to 1,988 tons, reflecting differences in program maturity, population served, and service model (e.g., permanent facilities versus mobile collection events).

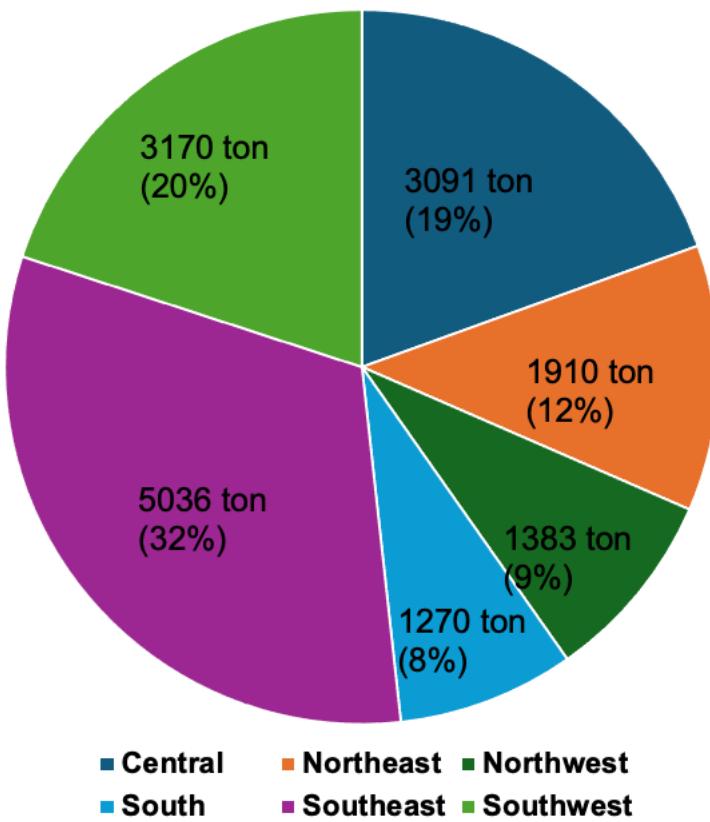
To develop a statewide estimate, counties were categorized based on whether they operate their own independent HHW program or rely on a host county. A total of five 45 counties manage their own programs, typically allowing residents to drop off HHW throughout the year. The remaining 27 counties rely on host jurisdictions and generally offer only one or two mobile collection events annually, limiting drop-off opportunities.

Separate per capita generation rates were calculated for these two groups to better reflect their differing service levels. For counties with independent programs, the average per capita generation rate was estimated at 1.4 pounds per person per year, while for those relying on host counties, the rate was estimated at 1.2 pounds per person per year. These values were applied to 2023 population figures from the University of Florida's Bureau of Economic and Business Research (BEBR) to estimate HHW generation for all 67 counties.

Based on this approach, it is estimated that a total of 15,859 tons of HHW were received at Florida's county-level collection centers in 2023. The distribution by FDEP district is summarized in **Figure 12-2**. For counties that rely on interlocal agreements with other jurisdictions to host and manage their HHW, the tonnage was attributed to the district of the hosting county (e.g., Okaloosa in the Northwest District and Alachua in the Northeast) to more accurately reflect where materials are physically processed.

The Southeast District accounted for the largest share of processed HHW at 5,036 tons (32% of the statewide total), followed by the Southwest (3,170 tons; 20%), Central (3,091 tons; 19%), Northeast (1,910 tons; 12%), South (1,270 tons; 8%), and Northwest (1,383 tons; 9%).

As part of the evaluation of HHW collection capacity and challenges, all 67 counties in Florida were contacted. A total of 15 counties responded, including several that serve as regional HHW collection hubs for neighboring jurisdictions. These 15 programs collectively represent service coverage across 37 counties, either directly or through interlocal agreements, providing a robust cross-section of operational practices across the state.



**Figure 12-2:** Estimated HHW tonnages processed by district, 2023.

Most counties reported that they are not operating at full capacity. Facilities in Leon, Hillsborough, Pinellas, Orange, and Polk Counties all indicated that they have sufficient physical capacity and generally ship materials offsite frequently—some biweekly, some monthly—to prevent accumulation. While the physical infrastructure was largely adequate, several program managers raised concerns about limited staffing, which restricts outreach and expansion potential, especially in rural or underserved communities. Some counties, like Marion and Orange, mentioned minor infrastructure improvements in progress, such as improved handling areas or covered storage upgrades, though no major expansions were reported. Notably, Alachua County - one of the key host counties - stated that it is currently operating at capacity and is seeking funding to construct a new HHW facility to better meet regional demand. This suggests that while many facilities have room operationally, larger or regional hubs may face pressures tied to the volume of material they receive from surrounding counties.

One recurring concern - particularly in counties relying on once- or twice-per-year mobile collection events - is the limited public participation. Conversations with several counties suggest that these events often serve fewer than 100 residents per event, capturing only about 1% of the population. While current volumes do not exceed system capacity, there is broad recognition that expanding these programs to serve more

residents would require increases in staffing, infrastructure, and funding - resources that are not currently available.

Lithium-ion battery management also emerged as a critical topic. The majority of responding counties confirmed that they do accept lithium-ion batteries, though some noted specific handling protocols or limitations. For instance, Leon County accepts only lithium batteries under 300 watt-hours. Counties like Lee, Pinellas, Volusia, Hillsborough, Orange, Marion, and Miami-Dade also confirmed acceptance. However, Bay County and a few others indicated they do not accept lithium-ion batteries, citing fire risk or lack of containment infrastructure. This is highly relevant given the consistent feedback from RMPFs, MRFs and landfill operators who cited lithium-ion battery fires as a growing concern.

Some facilities noted difficulties handling both residential and Very Small Quantity Generator (VSQG) waste under the same roof, which creates logistical and tracking complications. Citrus and Hendry Counties mentioned limited space for consolidation and reuse operations, while Indian River noted that site constraints impact efficiency. A few counties operate independently, serving only their own populations, but others - like Alachua and Okaloosa - act as regional hubs under interlocal agreements.

Overall, while HHW facilities across the state generally appear to have adequate physical capacity for current volumes, key regional hubs like Alachua County are currently operating at or near capacity and exploring expansion options. Most HHW facilities face persistent challenges related to staffing, public education, VSQG management, and safe handling of lithium-ion batteries.

## 13 USED OIL RECYCLING

### 13.1 Background

Used oil is broadly defined in 62-701.201(5), F.A.C as “any oil which has been refined from crude oil or synthetic oil and, as a result of use, storage, or handling, has become contaminated and unsuitable for its original purpose due to the presence of impurities or loss of properties”. This includes automotive lubricants, engine oils, transmission fluid, and industrial oils that have been used and thus contain contaminants (like metal particles, dirt, chemical residues). When improperly disposed of - such as poured down drains, onto the ground, or into storm sewers - used oil poses threats to soil, groundwater, and surface water quality due to its toxic constituents, including heavy metals and hydrocarbons.

Used oil recycling facilities serve to collect, store, and process used oil for reuse, including re-refining into lubricants, processing into fuel oils, or other forms of beneficial recovery. Once collected, used oil is typically stored in aboveground tanks or containers that are required to be in good condition, clearly labeled “Used Oil,” and equipped with secondary containment to prevent leaks or spills, in accordance with Rule 62-710.401, F.A.C. From these tanks, the oil is filtered to remove particulates and dewatered to separate out moisture. After initial processing, the used oil may follow different recycling pathways: it can be re-refined into base lubricating oil through vacuum distillation and hydrotreating, blended into fuel oils for use in industrial burners, or burned for energy recovery at permitted facilities. Proper tank storage is critical throughout this process - not only for regulatory compliance, but also for maintaining the quality of oil and ensuring worker and environmental safety during handling and transfer operations.

Processing and re-refining facilities must obtain permits from the FDEP, per 62-710.800, F.A.C. and meet design, storage, and operational standards. Simpler collection and transfer sites may register instead of obtaining full permits, provided they meet best management practices. Used oil filters are also regulated under 62-710.850, F.A.C. and must be properly drained and stored before recycling or disposal. To supplement state oversight, hazardous waste shipments - including those that may involve used oil mixed with hazardous constituents - must comply with the federal e-Manifest tracking system under 40 CFR Part 264 Subpart E and 40 CFR Part 274.

Florida’s regulatory approach emphasizes the safe management of used oil to prevent soil and water contamination while facilitating its reuse in energy recovery or re-refining applications. This infrastructure is critical for supporting circular economy goals and reducing reliance on virgin oil sources.

### 13.2 General Overview and Approach

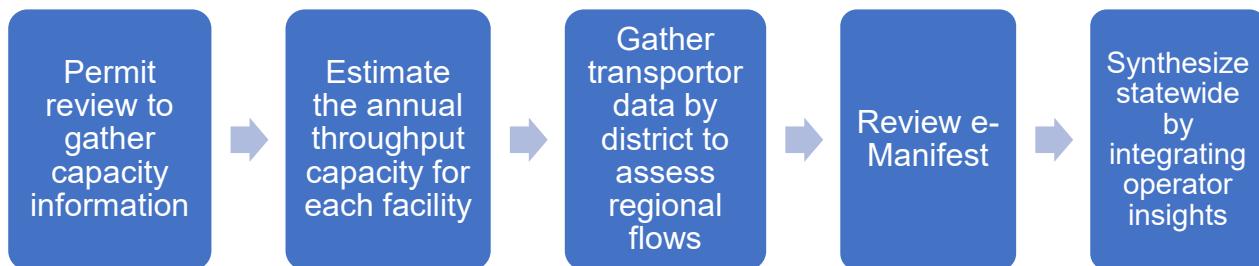
To estimate the processing capacity of used oil recycling facilities in Florida, a two-pronged approach was applied, combining permit data review and analysis of used oil transporter-reported generation data as shown in Figure 13-1. **Table 13-1** below

includes a summary of the related reporting requirements, general method overview, and data sources used in the analysis. First, facility-specific permits were reviewed to identify the maximum permitted storage volume. For facilities where this information was not available, the maximum permitted storage volume was calculated at 95% of their total used oil tank storage capacity. To estimate the annual throughput capacity, it was assumed the tanks are turned over every week. This reflects a conservative estimate of normal operational cycles for receiving, storing, and dispatching used oil or oily water for further processing or off-site recycling, as informed by conversations with facility operators. Actual statewide throughput capacity is likely higher than estimated here, given that some facilities operate on faster turnover cycles and additional processors not included in this analysis - only 10 facilities with available permit data were considered.

To complement this facility-level capacity analysis, used oil generation data were obtained from the FDEP, based on reports submitted by registered transporters. This dataset includes annual tonnages of used oil collected and transported for processing within Florida, disaggregated by FDEP District. The data reflect both in-state and out-of-state transporters and provide a comprehensive view of used oil flows across different regions of the state.

In addition to permit and generation data, publicly available e-Manifest records from the U.S. EPA's Enforcement and Compliance History Online (ECHO) database were reviewed for each permitted facility. These records offer insight into how much waste was transported off-site under manifest requirements, providing context for the portion of used oil that is managed as hazardous waste.

To assess whether facilities are operating near capacity and to better understand challenges within the industry, used oil facility operators were contacted. Through conversations with facility operators, insights were gathered on tank turnover frequency, logistical constraints, and other operational factors.



**Figure 13-1:** Flow chart of general method used to analyze used oil recycling capacity.

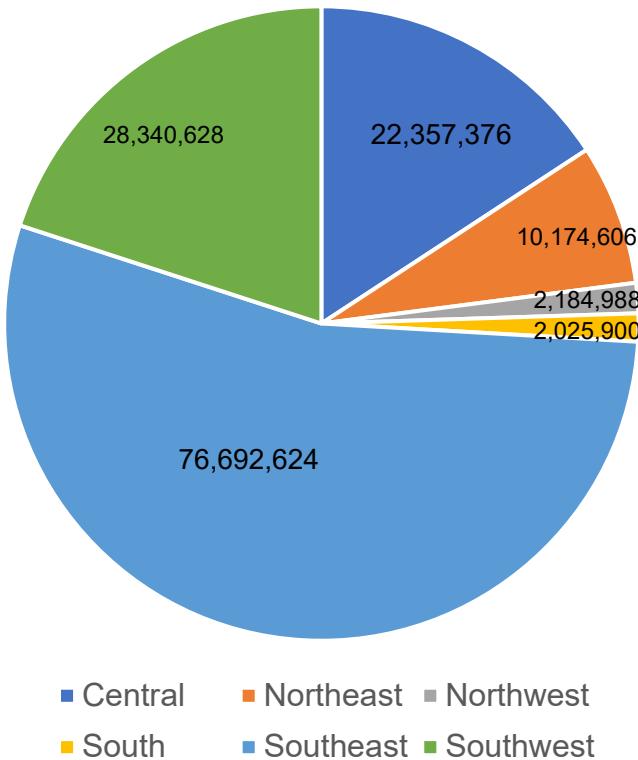
**Table 13-1:** Summary of data sources and method used to analyze used oil recycling facility capacity

Parameter	Description
Number of active facilities included in the analysis	18
Related reporting requirements	<ul style="list-style-type: none"> <li>• <b>General permit notification requirement:</b> 62-710.800, F.A.C</li> <li>• <b>Annual activity report:</b> 62-710.510, F.A.C</li> <li>• <b>U.S. EPA e-Manifest system</b> (hazardous waste tracking)</li> </ul>
Typical capacity measurement approach	<ol style="list-style-type: none"> <li>1) Contacted FDEP used oil coordinator to obtain reported used oil transported on FL highways in 2023</li> <li>2) Extract permitted storage volumes from facility permits.</li> <li>3) Calculated tank capacity as 95% of total used oil tank volume</li> <li>4) Estimated annual throughput by assuming weekly tank turnover, using the formula:  <math display="block">\text{Annual throughput (gallons/year)} = \text{tank capacity (gallons)} \times 52 \text{ turnovers/year.}</math> </li> <li>5) Inquired with facility operators to verify the information and ask whether their facilities are currently operating at or near processing capacity.</li> </ol>
Data sources used in methods	<b>Correspondence with facility operators:</b> Gather annual processed tons and capacity information

### 13.3 Results and Discussion

In 2023, a total of 188,487,000 gallons of used oil were transported on Florida highways, according to data reported by registered transporters. Of this, 98% was generated within Florida, with only 2% originating out of state. **Figure 13-2** displays the distribution of transported used oil by FDEP District. The Southeast District accounted for the largest share of transported oil, handling 76.7 million gallons, or approximately 41% of the statewide total.

Based on facility permit reviews and storage capacity calculations, 10 out of 18 permitted used oil recycling facilities are estimated to have a combined annual processing capacity of approximately 196,801,894 gallons. This estimate is based on tank storage volumes allocated for used oil and oily water, assuming weekly turnover - a conservative estimate informed by facility operators. Some operators indicated that actual turnover can occur more frequently, suggesting the capacity could be even higher. Even if 100% of the transported used oil were processed in-state, Florida's estimated total processing capacity would still be sufficient to manage the entire volume.



**Figure 13-2:** Total Volume (gallons) of Used Oil Transported on Florida Highways in 2023, by District.

**Table 13-2** shows a breakdown of estimated throughput capacity for each facility. The majority of Florida's used oil recycling capacity is concentrated in the Southeast District which accounts for approximately 148,543,034 gallons of capacity - over 75% of the state's total. By comparison, the Southwest District has a total annual capacity of 25,836,200 gallons, while the Central District has approximately 22,422,660 gallons of estimated throughput capacity.

While overall capacity appears adequate, one persistent challenge is the management of used oil classified as hazardous waste. According to e-Manifest data from the U.S. EPA's ECHO database, 133,150.5 gallons of used oil were shipped from these facilities under hazardous waste manifest requirements in 2023 - representing 0.07% of the used oil transported in 2023. Conversation with operators suggested that between 0.5% and 1% of used oil may sometimes meet the criteria for hazardous waste classification - typically due to elevated halogen content (over 1,000 ppm) or contamination with listed solvents. Although these volumes represent a small fraction of total throughput, they can still amount to substantial quantities in absolute terms given the scale of used oil generation across the state.

Given the available data and operator feedback, Florida's used oil recycling system appears to have robust physical capacity to manage existing and even increased volumes of material. The limiting factors to greater recovery appear to be collection

system gaps, market dynamics, contamination risks, and operational costs - not infrastructure bottlenecks.

Operators expressed interest in expanding collection and processing but cited a lack of additional funding or incentives to support this growth. Improving visibility into used oil flows - beyond what is captured in manifest systems - will be key to identifying where and how Florida can expand recovery and increase circularity within its used oil management system.

**Table 13-2:** Estimated Annual Throughput Capacity and 2024 Hazardous Waste Shipments (e-Manifest) for Used Oil Recycling Facilities in Florida.

Facility	District	Estimated Annual Throughput Capacity (gallon)	EPA's 2024 e-Manifest Hazardous Waste Shipments (gallon)
Safety Kleen Systems, Inc	CD	22,422,660	19,845
Cliff Berry Port Everglades	SED	40,791,754	104,559
Triumvirate Environmental (FKA Perma-Fix Ft. Lauderdale)	SED	17,981,600	7,819
World Petroleum Inc (FKA PMI)	SED	12,251,200	
Cliff Berry Miami Terminal	SED	47,038,680	927.5
Ricky's Oil & Environmental Services, LLC	SED	7,261,800	
Heritage Crystal Clean-Opa Locka	SED	23,218,000	
Cliff Berry Tampa Facility	SWD	13,338,000	
Synergy Recycling of Central Florida, LLC	SWD	4,273,100	
Heritage-Crystal Clean, LLC (Mulberry)	SWD	8,225,100	

## **14 IMPLICATIONS OF DISASTER DEBRIS MANAGEMENT ON SOLID WASTE CAPACITY**

### **14.1 Background**

Hurricanes have the potential to generate massive amounts of debris, which represents an influx of material into Florida's solid waste management system. For example, Hurricane Michael, which made landfall as a Category 5 storm near Mexico Beach on October 10<sup>th</sup>, 2018, produced approximately 32.9 million cubic yards of debris. Hurricane Ian, which made landfall as a Category 5 storm near Cayo Costa in September 28<sup>th</sup>, 2022, generated approximately 32.6 million cubic yards of debris. And as of April 1<sup>st</sup>, 2025, approximately 36.3 million cubic yards of debris have been collected as a result of Hurricanes Debby, Helene, and Milton in the 2024 Hurricane season.

The disaster debris may include vegetative debris (e.g., downed trees and branches), sand and soil, construction and demolition debris (e.g., drywall, lumber, roofing from damaged structures), or other solid waste (e.g., boats, vehicles, white goods, household hazardous waste). The composition and quantity of debris generation depends on the nature and severity of the storm event. For example, Hurricane Helene (which made landfall as a Category 4 storm near Perry on September 26<sup>th</sup>, 2024) produced storm surges throughout the Big Bend region and Southwest Florida, pushing massive amounts of sand inland and flooding communities. Hurricane Milton (which made landfall as a Category 3 storm two weeks later near Siesta Key) produced storm surges as well but also led to the formation of over 40 tornadoes throughout Florida. The wind damage from Hurricane Milton generated a large volume of vegetative waste.

Following a storm event, local government officials, state and federal agencies, debris contractors, and solid waste personnel work together to manage disaster debris in a manner that protects public welfare, minimizes environmental damage, and promotes a return to normalcy. Debris is collected by counties, municipalities, or debris contractors, and Disaster Debris Management Sites (DDMSs) are established throughout the state for the temporary staging of waste before it is transported to its ultimate disposal site. Selection of disposal sites for the disaster debris depends on regional capacity and acceptance by facility operators. Disposal sites may include landfills and C&D debris disposal facilities for C&D debris and mixed waste; HHW facilities for household hazardous waste; and yard trash disposal facilities, SOPFs, and land application for vegetative waste. It is difficult to implement resource recovery and recycling for C&D debris and mixed waste resulting from storm events due to the volume of debris generation, speed with which debris removal and management must occur, and contamination due to flooding and mixing of debris.

### **14.2 General Overview and Approach**

Hurricane debris management represents a massive influx into Florida's solid waste management system. As such, a method was developed to estimate the potential

impact of debris management on disposal capacity in the state, as well as evaluate the resiliency of existing infrastructure. The composition and quantity of debris generation is dependent on the nature and severity of the storm. Further, the selection of disposal sites depends on regional capacity and acceptance by facility operators.

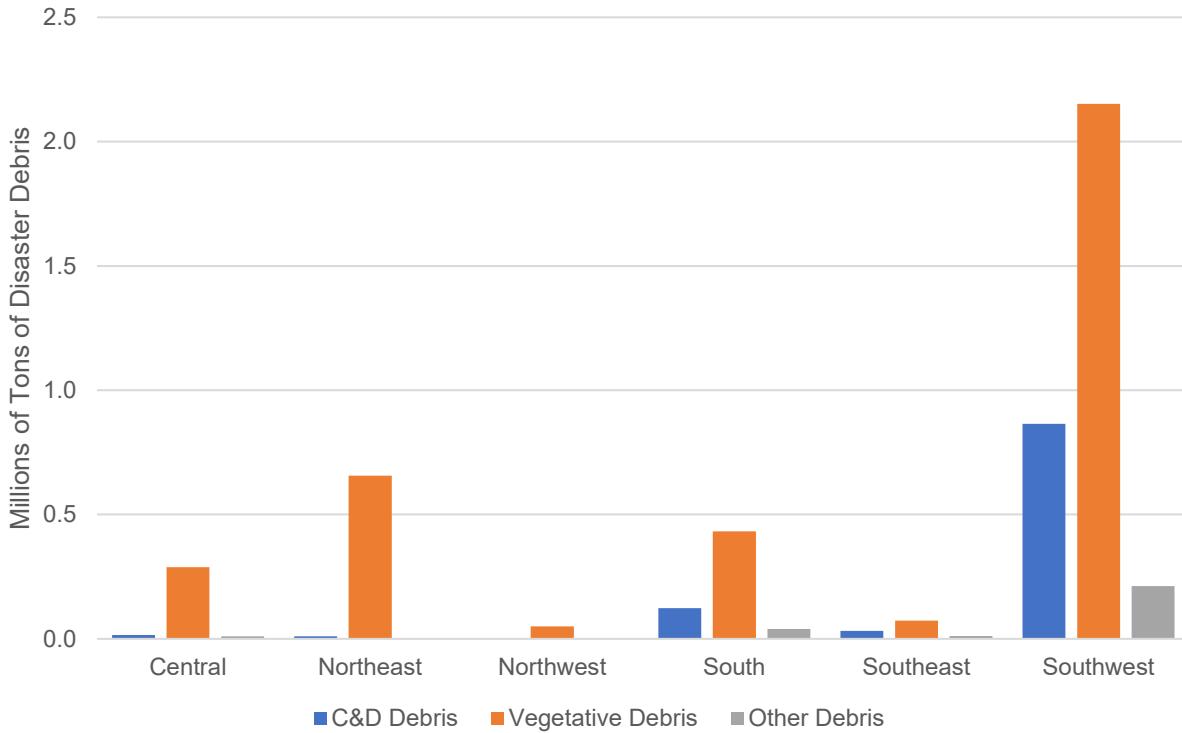
This method specifically estimates the impact of the 2024 storm season on capacity in Florida's landfills, C&D debris disposal facilities, and SOPFs. The capacity analysis thus far has been based on data that largely predates the landfall of Hurricanes Debby, Helene, and Milton. For example, the Class I and III landfill analysis includes few topographic surveys from late 2024, the method to estimate C&D debris disposal facility capacity is based on financial assurance documents which predate hurricane landfall, and the SOPF analysis relies on data from the 2023 annual reports. The total amount of debris collected by counties, municipalities, and debris contractors from the 2024 storm season were used in the analysis and may provide insight on potential infrastructure impacts if Florida were to experience similar hurricane events in future years.

### 14.3 Results and Discussion

As of April 1<sup>st</sup>, 2024, it is estimated that counties, municipalities, and debris contractors collected 1 million tons of C&D debris, 3.7 million tons of vegetative debris, and 0.27 million tons of 'other debris' (assumed to be mixed MSW) as a result of Hurricanes Debby, Helene, and Milton. Anecdotal evidence suggests that Hurricanes Helene and Milton contributed more to state-wide debris generation than Hurricane Debby, which made landfall in Steinhatchee on August 5<sup>th</sup>, 2024, as a category 1 storm. The mass of debris collected by FDEP District is outlined in **Table 14-1** and displayed graphically in **Figure 14-1**. The Southwest District had the greatest disaster debris generation, as this region faced devastating impacts from Hurricane Helene's storm surge and experienced a direct hit from Hurricane Milton.

**Table 14-1:** Disaster debris, by FDEP District, collected from counties, municipalities, and debris contractors as a result of Hurricanes Debby, Helene, and Milton; volume data were obtained from the Florida Division of Emergency Management's Florida City and County Debris Transparency Dashboard

	Tons of C&D Debris	Tons of Vegetative Debris	Tons of 'Other Debris'
Central	14,952	287,685	10,448
Northeast	9,921	656,097	0
Northwest	1,065	50,514	0
South	123,565	432,386	39,350
Southeast	32,618	72,920	11,500
Southwest	864,618	2,152,201	212,850
<b>Total</b>	<b>1,046,739</b>	<b>3,651,802</b>	<b>274,147</b>



**Figure 14-1:** Disaster debris, by FDEP District, collected from counties, municipalities, and debris contractors as a result of Hurricanes Debby, Helene, and Milton; volume data were obtained from the Florida Division of Emergency Management's Florida City and County Debris Transparency Dashboard

#### 14.3.1 Central District

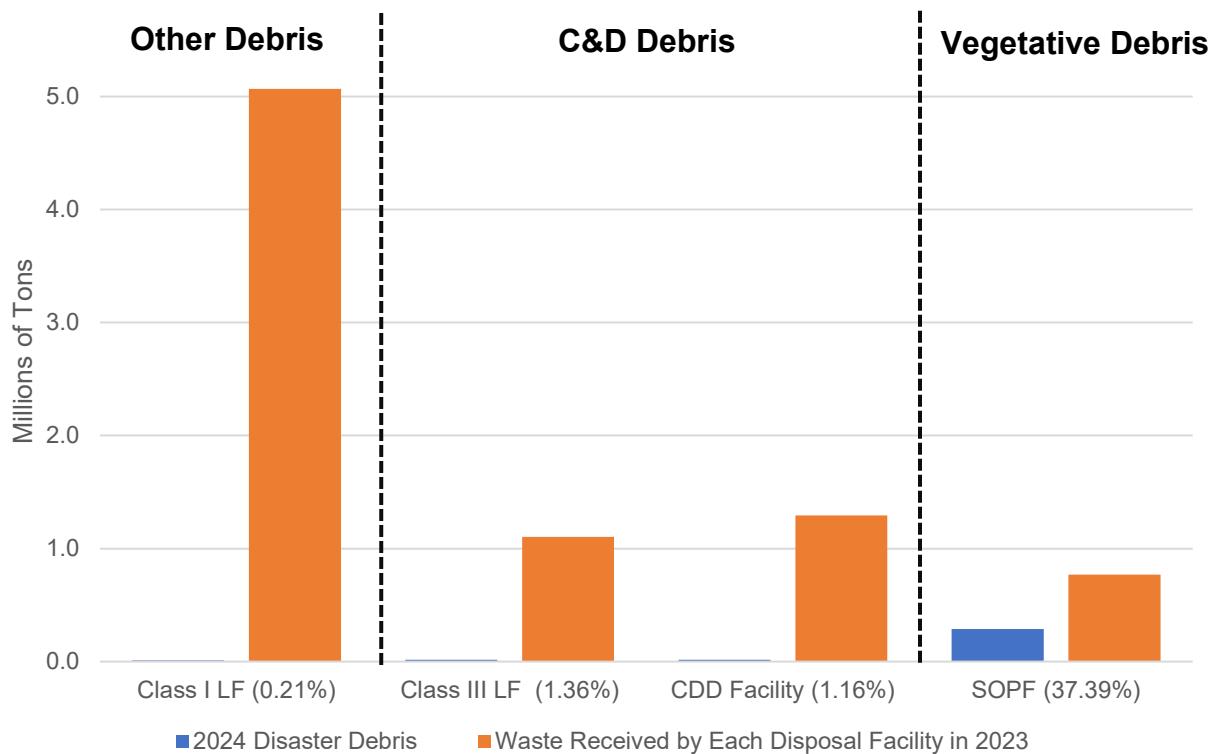
It is estimated that approximately 10,488 tons of mixed MSW were collected in the FDEP Central District, which is expected to have a negligible impact on Class I landfill capacity within the district. The capacity analysis in **Section 2.3.2** (which excludes debris management) estimated 139.3 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, of which 30.1 million tons of capacity has already been constructed. In 2023, approximately 5.1 million tons were disposed of in Class I landfills in the Central District, so 10,488 tons would represent a minor fraction of the waste disposed of annually.

It is estimated that approximately 14,952 tons of C&D debris were collected in the FDEP Central District, which is also expected to have a negligible impact on both Class III landfill and C&D debris disposal facility capacity within the district. The capacity analysis in **Section 5.3.2** (which excludes debris management) estimated 34.1 million tons of permitted capacity remaining in Class III landfills as of January 1<sup>st</sup>, 2025, of which 3.7 million tons of capacity has already been constructed. In 2023, approximately 1.1 million tons of waste were disposed of in Class III landfills in the Central District. The capacity analysis in **Section 6.3.2** (which excludes debris management) estimates 15.1 million tons of constructed capacity remaining in C&D debris disposal facilities as of 2024. In 2023, approximately 1.3 million tons of waste were disposed of in C&D debris disposal

facilities in the Central District. Therefore, the 14,952 tons of C&D debris is expected to represent a minor fraction of the waste sent to Class III landfills and C&D debris disposal facilities annually.

While mixed MSW and C&D debris generation are expected to have a negligible impact on disposal capacity in the Central District, large quantities of vegetative debris were generated during the 2024 storm season. It is estimated that 287,685 tons of vegetative debris were collected, which is equivalent to approximately 37% of the total organic waste managed by the Central District SOPFs in 2023. Only a fraction of the 287,685 tons of vegetative debris is expected to be processed at SOPFs (e.g., to produce landfill cover, fuel, mulch, compost), while the remainder is expected to be processed at DDMS (e.g., mulched with a mobile grinder or burned in an air curtain incinerator) or disposed of at a yard trash disposal facility. The fraction that does enter SOPFs, however, is expected to impact processing capacity at these facilities since a sudden influx of debris could strain operations and flood the markets that operators rely on to move material off-site.

See **Figure 14-2** for a comparison of the 2024 disaster debris generation to the total tons managed at each disposal facility in calendar year 2023. **Table 14-2** compares the disaster debris generation to the remaining disposal capacity in the Central District.



**Figure 14-2:** Central District tons of mixed MSW, C&D, and vegetative disaster debris generated in 2024 compared to the total tons received by disposal facilities in 2023

**Table 14-2:** Central District comparison of disaster debris generation in each material category to the remaining capacity of potential disposal facilities

	Tons of Disaster Debris	Disposal Facility	District-wide Facility Disposal Capacity	2023 Tons Received by Each Disposal Facility
Other Debris	10,448	Class I LF	139,267,793 tons of permitted capacity and 30,134,195 tons of constructed capacity remaining as of January 1, 2025	5,067,864
C&D Debris	14,952	Class III LF	34,081,320 tons of permitted capacity and 3,677,025 tons of constructed capacity remaining as of January 1, 2025	1,103,295
		CDD Facility	15,110,426 tons of constructed capacity as of 2024	1,292,480
Vegetative Debris	287,685	SOPF	NA	769,477

#### *14.3.2 Northeast District*

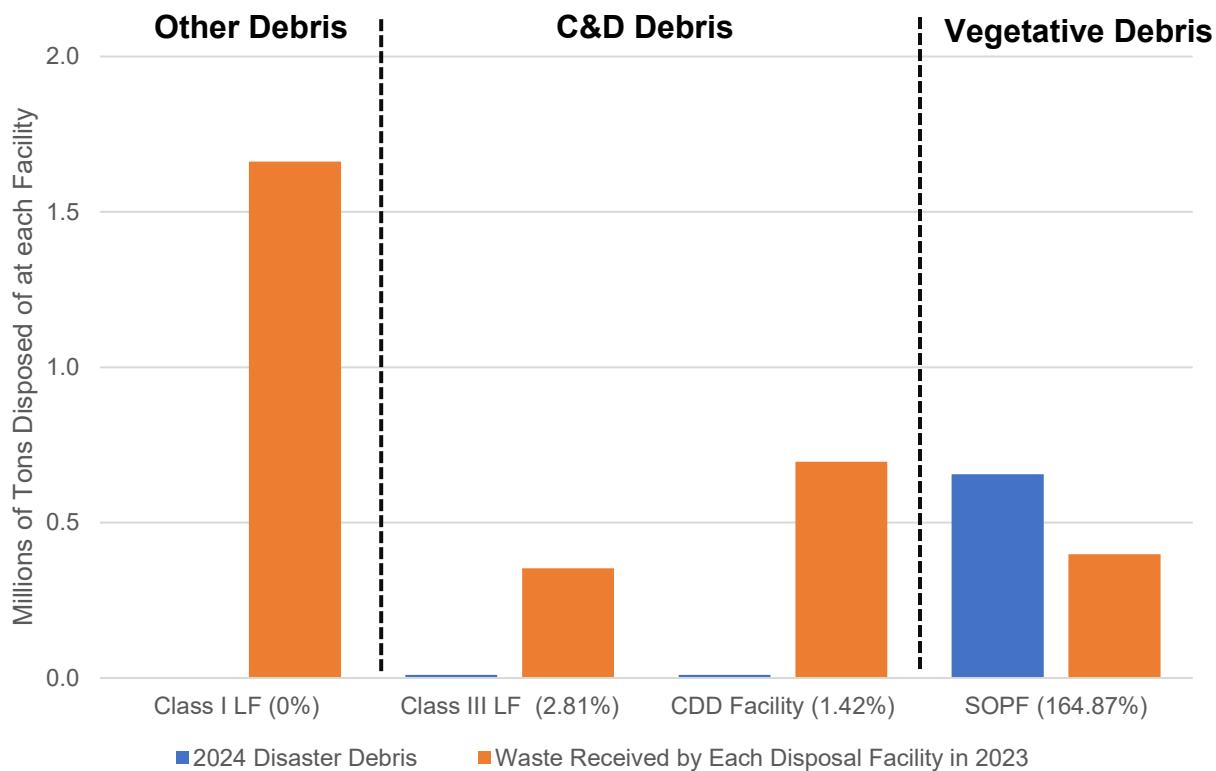
No mixed MSW was included in Northeast District debris collection efforts for the 2024 storm season. Therefore, Class I landfill capacity in the Northeast District is not expected to be impacted by Hurricanes Debby, Helene, and Milton.

It is estimated that approximately 9,921 tons of C&D debris were collected in the FDEP Northeast District, which is expected to have a negligible impact on both Class III landfill and C&D debris disposal facility capacity within the district. The capacity analysis in **Section 5.3.3** (which excludes debris management) estimated 3.2 million tons of permitted capacity remaining in Class III landfills as of January 1<sup>st</sup>, 2025, of which 1.4 million tons of capacity has already been constructed. In 2023, approximately 0.35 million tons of waste were disposed of in Class III landfills in the Central District. The capacity analysis in **Section 6.3.3** (which excludes debris management) estimates 7.4 million tons of constructed capacity remaining in C&D debris disposal facilities as of 2024. In 2023, approximately 0.35 million tons of waste were disposed of in C&D debris disposal facilities in the Central District. Therefore, the 9,921 tons of C&D debris is expected to represent a minor fraction of the waste sent to Class III landfills and C&D debris disposal facilities annually.

Besides the Southwest District, the Northeast District generated the largest quantity of vegetative debris during the 2024 storm season. After making landfall near Perry Florida, Hurricane Helene passed over the Northeast District counties as the storm traveled North into Georgia and the Carolinas. It is estimated that 656,097 tons of

vegetative debris were collected, which is equivalent to approximately 165% of the total organic waste managed by the Northeast District SOPFs in 2023. Similar to the Central District, the fraction of vegetative debris that is sent to SOPFs for processing is expected to impact capacity in the region following the storm event.

See **Figure 14-3** for a comparison of the 2024 disaster debris generation to the total tons managed at each disposal facility in calendar year 2023. **Table 14-3** compares disaster debris generation to the remaining disposal capacity in the Northeast District.



**Figure 14-3:** Northeast District tons of mixed MSW, C&D, and vegetative disaster debris generated in 2024 compared to the total tons received by disposal facilities in 2023

**Table 14-3:** Central District comparison of disaster debris generation in each material category to the remaining capacity of potential disposal facilities

	Tons of Disaster Debris	Disposal Facility	District-wide Facility Disposal Capacity	2023 Tons Received by Each Disposal Facility
Other Debris	0	Class I LF	56,545,866 tons of permitted capacity and 9,605,631 tons of constructed capacity remaining as of January 1, 2025	1,661,969
C&D Debris	9,921	Class III LF	3,199,482 tons of permitted capacity and 1,446,225 tons of constructed capacity remaining as of January 1, 2025	353,275
		CDD Facility	7,415,587 tons of constructed capacity as of 2024	696,330
Vegetative Debris	656,097	SOPF	NA	397,941

#### *14.3.3 Northwest District*

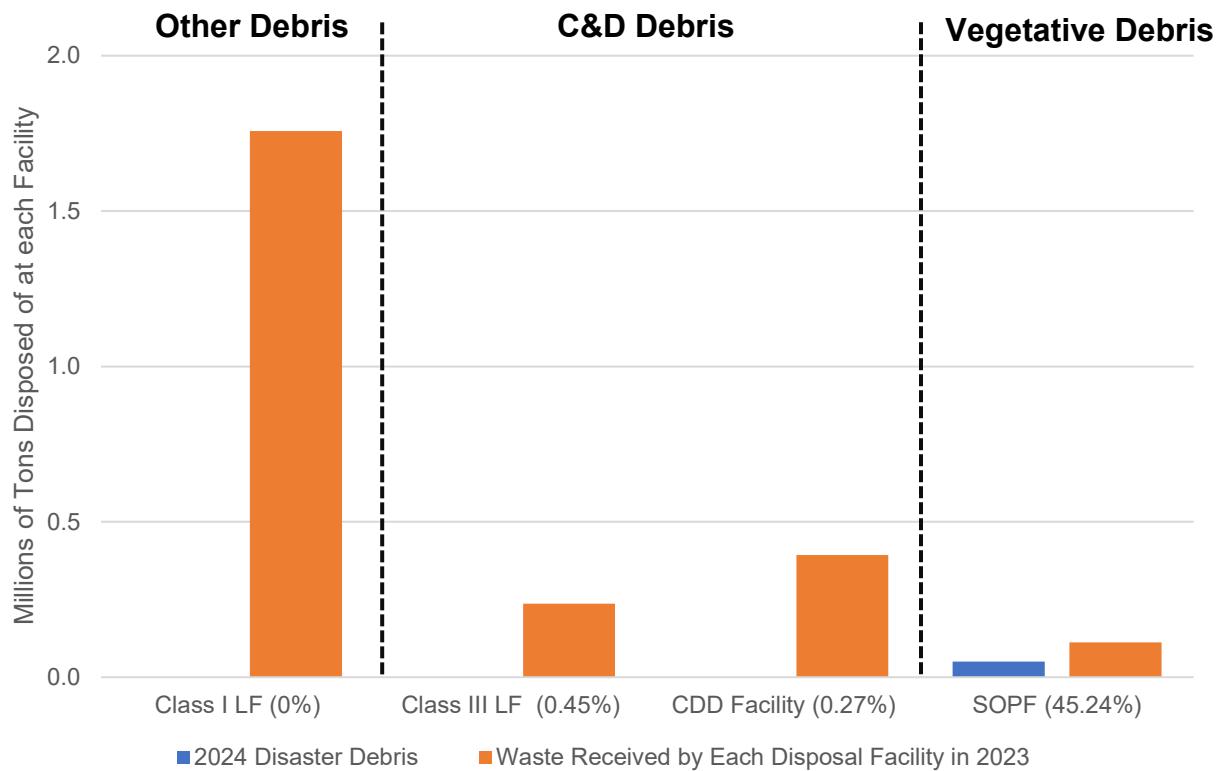
The Northwest District had the lowest debris generation from Hurricanes Debby, Helene, and Milton of any FDEP District. And like the Northeast District, no mixed MSW was included in Northwest District debris collection efforts for the 2024 storm season, so Class I landfill capacity is not expected to be impacted in this region.

It is estimated that approximately 1,065 tons of C&D debris were collected in the FDEP Northwest District, which is expected to have a negligible impact on both Class III landfill and C&D debris disposal facility capacity within the district. The capacity analysis in **Section 5.3.4** (which excludes debris management) estimated 5.5 million tons of permitted capacity remaining in Class III landfills as of January 1<sup>st</sup>, 2025, of which 1.4 million tons of capacity has already been constructed. In 2023, approximately 0.24 million tons of waste were disposed of in Class III landfills in the Central District. The capacity analysis in **Section 6.3.4** (which excludes debris management) estimates 9.5 million tons of constructed capacity remaining in C&D debris disposal facilities as of 2024. In 2023, approximately 0.39 million tons of waste were disposed of in C&D debris disposal facilities in the Central District. Therefore, the 1,065 tons of C&D debris is expected to represent a minor fraction of the waste sent to Class III landfills and C&D debris disposal facilities annually.

Like the other FDEP Districts, vegetative material represents most of the debris generated in the Northwest District. It is estimated that 50,514 tons of vegetative debris were collected, which is equivalent to approximately 45% of the total organic waste

managed by the Northwest District SOPFs in 2023. The disposal of a fraction of this vegetative debris at SOPFs is expected to impact operational capacity and strain markets in the region following the storm event.

See **Figure 14-4** for a comparison of the 2024 disaster debris generation to the total tons managed at each disposal facility in calendar year 2023. **Table 14-4** compares the disaster debris generation to the remaining disposal capacity in the Northwest District.



**Figure 14-4:** Northwest District tons of mixed MSW, C&D, and vegetative disaster debris generated in 2024 compared to the total tons received by disposal facilities in 2023

**Table 14-4:** Northwest District comparison of disaster debris generation in each material category to the remaining capacity of potential disposal facilities

	Tons of Disaster Debris	Disposal Facility	District-wide Facility Disposal Capacity	2023 Tons Received by Each Disposal Facility
Other Debris	0	Class I LF	38,827,037 tons of permitted capacity and 7,906,896 tons of constructed capacity remaining as of January 1, 2025	1,757,265
C&D Debris	1,065	Class III LF	5,529,089 tons of permitted capacity and 1,353,953 tons of constructed capacity remaining as of January 1, 2025	236,329
		CDD Facility	9,537,756 tons of constructed capacity as of 2024	392,980
Vegetative Debris	50,514	SOPF	NA	111,659

#### 14.3.4 South District

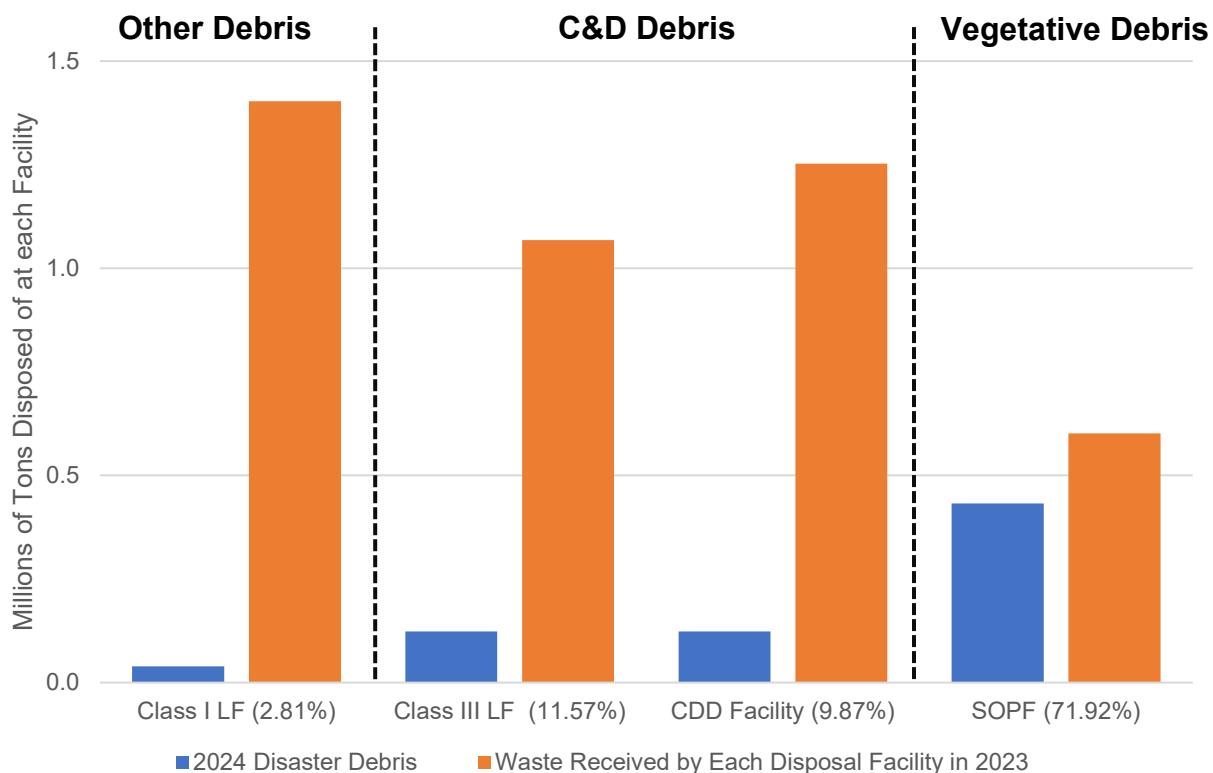
It is estimated that approximately 39,350 tons of mixed MSW were collected in the FDEP South District. Similar to the Central District, disposal of this quantity of mixed MSW is expected to have a negligible impact on Class I landfill capacity within the South district. The capacity analysis in **Section 2.3.5** (which excludes debris management) estimated 28.7 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, of which 15.4 million tons of capacity has already been constructed. In 2023, approximately 1.4 million tons were disposed of in Class I landfills in the South District, so 39,350 tons would represent a minor fraction of the waste disposed of annually.

It is estimated that approximately 123,565 tons of C&D debris were collected in the FDEP South District. This quantity is expected to have a negligible impact on both Class III landfill and C&D debris disposal facility capacity within the district but does represent a considerable fraction of the waste sent to these facilities annually, as seen in **Figure 14-5**. The capacity analysis in **Section 5.3.5** (which excludes debris management) estimated 20.6 million tons of permitted capacity remaining in Class III landfills as of January 1<sup>st</sup>, 2025, of which 2.5 million tons of capacity has already been constructed. In 2023, approximately 1.1 million tons of waste were disposed of in Class III landfills in the South District. The capacity analysis in **Section 6.3.5** (which excludes debris management) estimates 5.2 million tons of constructed capacity remaining in C&D debris disposal facilities as of 2024. In 2023, approximately 1.3 million tons of waste were disposed of in C&D debris disposal facilities in the South District. Therefore, the 123,565 tons of C&D debris is expected to represent approximately 12% and 10% of

the waste sent to Class III landfills and C&D debris disposal facilities, respectively, each year.

Like the Northeast District, the South District's vegetative debris generation during the 2024 storm season is expected to exceed the quantity of organic waste managed in the region's SOPFs in calendar year 2023. It is estimated that 432,386 tons of vegetative debris were collected, which is equivalent to approximately 72% of the total organic waste managed by the South District SOPFs in 2023. Like other FDEP Districts, the fraction of vegetative debris sent to SOPFs is expected to impact processing capacity at these facilities by straining operations and inundating markets for recovered organic waste.

See **Figure 14-5** for a comparison of the 2024 disaster debris generation to the total tons managed at each disposal facility in calendar year 2023. **Table 14-5** compares the disaster debris generation to the remaining disposal capacity in the South District.



**Figure 14-5:** South District tons of mixed MSW, C&D, and vegetative disaster debris generated in 2024 compared to the total tons received by disposal facilities in 2023

**Table 14-5:** South District comparison of disaster debris generation in each material category to the remaining capacity of potential disposal facilities

	Tons of Disaster Debris	Disposal Facility	District-wide Facility Disposal Capacity	2023 Tons Received by Each Disposal Facility
Other Debris	39,350	Class I LF	28,682,988 tons of permitted capacity and 15,386,505 tons of constructed capacity remaining as of January 1, 2025	1,402,825
C&D Debris	123,565	Class III LF	20,641,370 tons of permitted capacity and 2,448,556 tons of constructed capacity remaining as of January 1, 2025	1,068,047
		CDD Facility	5,249,314 tons of constructed capacity as of 2024	1,252,239
Vegetative Debris	432,386	SOPF	NA	601,182

#### *14.3.5 Southeast District*

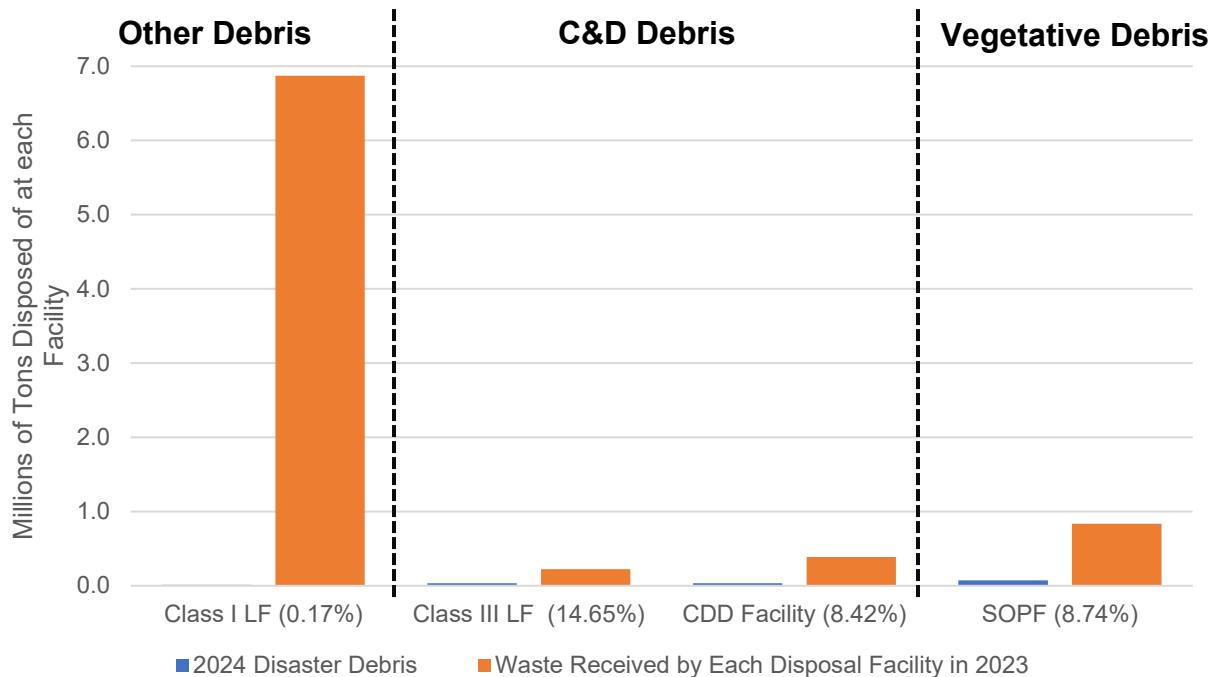
The Southeast District had among the lowest debris generation as a result of the 2024 storm season, led only by the Northwest District. It is estimated that approximately 11,500 tons of mixed MSW were collected in the FDEP Southeast District. Similar to the Central and South Districts, disposal of this quantity of mixed MSW is expected to have a negligible impact on Class I landfill capacity within the Southeast district. The capacity analysis in **Section 2.3.6** (which excludes debris management) estimated 119.6 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, of which 26 million tons of capacity has already been constructed. In 2023, approximately 6.9 million tons were disposed of in Class I landfills in the Southeast District, so 11,500 tons would represent a minor fraction of the waste disposed of annually.

It is estimated that approximately 32,618 tons of C&D debris were collected in the FDEP Southeast District during the 2024 storm season. This quantity represents a considerable fraction of the waste sent to Class III landfills and C&D debris disposal facilities in the region each year, as seen in **Table 14-6**. Among all the FDEP Districts, the Southeast District Class III landfills and C&D debris disposal facilities received the lowest quantity of material in 2023, indicating that C&D debris generated in the Southeast District diverted to other facilities (e.g., Class I landfills, C&D MRFs), or transported out of the district for disposal. The 32,618 tons of C&D debris generated by the Hurricanes Debby, Helene, and Milton represent approximately 15% and 9% of the waste sent to Class III landfills and C&D debris disposal facilities, respectively, each year.

The capacity analysis in **Section 5.3.6** (which excludes debris management) estimated 0.9 million tons of permitted capacity remaining in Class III landfills as of January 1<sup>st</sup>, 2025, all of which has already been constructed. In 2023, approximately 0.2 million tons of waste were disposed of in Class III landfills in the Southeast District. Therefore, if all C&D debris collected during the 2024 storm season were sent to a Class III landfill, it would consume approximately 4% of the district-wide capacity. The capacity analysis in **Section 6.3.6** (which excludes debris management) estimates 9.0 million tons of constructed capacity remaining in C&D debris disposal facilities as of 2024. In 2023, approximately 0.4 million tons of waste were disposed of in C&D debris disposal facilities in the Southeast District. If all C&D debris collected during the 2024 storm season were sent to a C&D debris disposal facility, this quantity is expected to have a negligible impact on C&D debris disposal facility capacity within the district.

The estimated 72,920 tons of vegetative debris collected in the Southeast District is equivalent to just 9% of the organic material managed in the region's SOPFs in 2023. This proportion of vegetative storm debris to 2023 SOPF tons is the lowest of any FDEP District in the state, indicating that the hurricanes may not have caused as great of an impact to SOPF capacity and end markets in the Southeast District compared to other regions.

See **Figure 14-6** for a comparison of the 2024 disaster debris generation to the total tons managed at each disposal facility in calendar year 2023. **Table 14-6** compares the disaster debris generation to the remaining disposal capacity in the Southeast District.



**Figure 14-6:** Southeast District tons of mixed MSW, C&D, and vegetative disaster debris generated in 2024 compared to the total tons received by disposal facilities in 2023

**Table 14-6:** South District comparison of disaster debris generation in each material category to the remaining capacity of potential disposal facilities

	Tons of Disaster Debris	Disposal Facility	District-wide Facility Disposal Capacity	2023 Tons Received by Each Disposal Facility
Other Debris	11,500	Class I LF	119,637,887 tons of permitted capacity and 25,953,159 tons of constructed capacity remaining as of January 1, 2025	6,870,375
C&D Debris	32,618	Class III LF	862,171 tons of permitted capacity and 862,171 tons of constructed capacity remaining as of January 1, 2025	222,644
		CDD Facility	8,970,573 tons of constructed capacity as of 2024	387,387
Vegetative Debris	72,920	SOPF	NA	834,655

#### 14.3.6 Southwest District

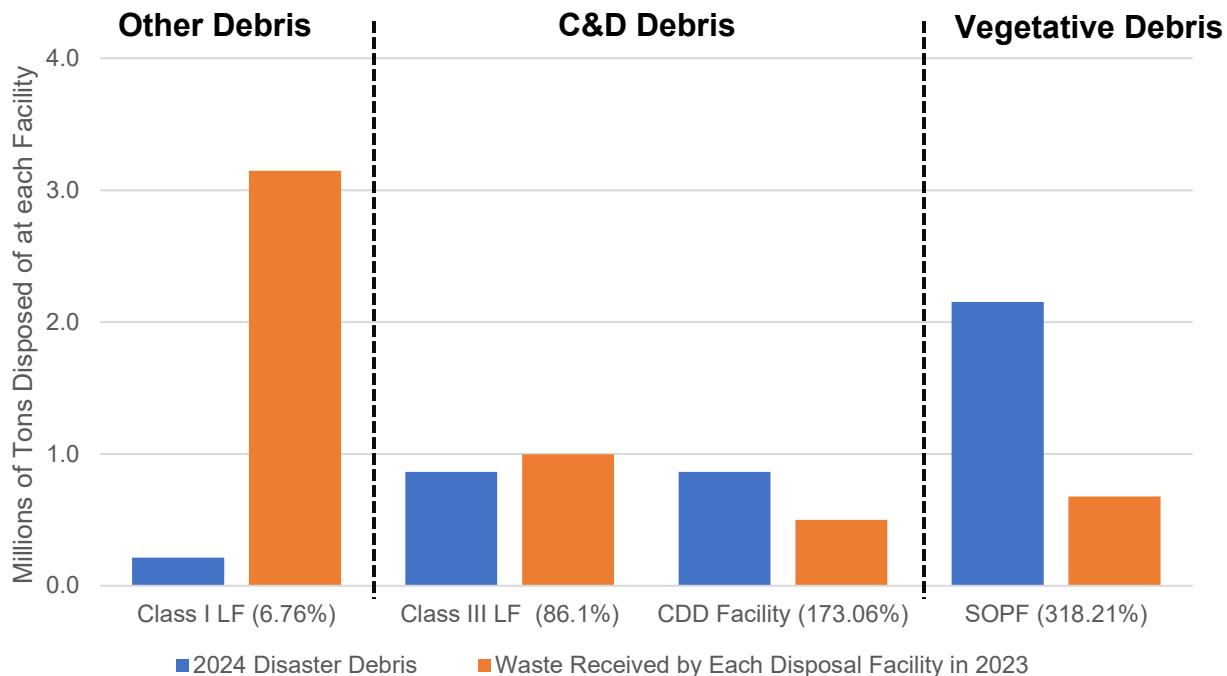
Debris generation was greatest in the FDEP Southwest District, which experienced devastating storm surges from Hurricane Helene, then a direct hit from Hurricane Milton two weeks later. It is estimated that approximately 212,850 tons of mixed MSW were collected in the FDEP Southwest District. This quantity is expected to have a negligible impact on Class I landfill capacity within the district but does represent a considerable fraction of the waste sent to these facilities annually, as seen in **Figure 14-7**. The capacity analysis in **Section 2.3.7** (which excludes debris management) estimated 87.3 million tons of permitted capacity remaining as of January 1<sup>st</sup>, 2025, of which 75.3 million tons of capacity has already been constructed. In 2023, approximately 3.1 million tons were disposed of in Class I landfills in the Southwest District; therefore, the 212,850 tons of C&D debris is expected to represent approximately 7% of the waste sent to Class I landfills in the region each year.

It is estimated that approximately 864,618 tons of C&D debris were collected in the FDEP Southwest District as a result of the 2024 hurricanes. This quantity is expected to have a considerable impact on both Class III landfill and C&D debris disposal facility capacity within the region. The capacity analysis in **Section 5.3.7** (which excludes debris management) estimated 12.6 million tons of permitted capacity remaining in Class III landfills as of January 1<sup>st</sup>, 2025, of which 2.5 million tons of capacity has already been constructed. In 2023, approximately 1.0 million tons of waste were disposed of in Class III landfills in the South District. The capacity analysis in **Section**

**6.3.7** (which excludes debris management) estimates 5.0 million tons of constructed capacity remaining in C&D debris disposal facilities as of 2024. In 2023, approximately 0.5 million tons of waste were disposed of in C&D debris disposal facilities in the South District. Therefore, the 864,618 tons of C&D debris is expected to represent approximately 86% and 173% of the waste sent to Class III landfills and C&D debris disposal facilities, respectively, each year. If all C&D storm debris generated in the Southwest District were disposed of in the region's Class III landfills, the disposal is expected consume approximately 34% of the currently constructed capacity. If all C&D debris were disposed of in the region's C&D debris disposal facilities, the disposal is expected to consume approximately 17% of the region's C&D debris disposal facility capacity.

The Southwest District's vegetative debris generation during the 2024 storm season is expected to far exceed the quantity of organic waste managed in the region's SOPFs in calendar year 2023. It is estimated that 2,152,201 tons of vegetative debris were collected, which is equivalent to approximately 318% of the total organic waste managed by the South District SOPFs in 2023. The Southwest District SOPFs are expected to have the greatest capacity strain and market inundation of any FDEP District because the vegetative storm debris more than tripled the 2023 tons received by the SOPFs.

See **Figure 14-7** for a comparison of the 2024 disaster debris generation to the total tons managed at each disposal facility in calendar year 2023. **Table 14-7** compares the disaster debris generation to the remaining disposal capacity in the Southwest District.



**Figure 14-7:** Southwest District tons of mixed MSW, C&D, and vegetative disaster debris generated in 2024 compared to the total tons received by disposal facilities in 2023

**Table 14-7:** Southwest District comparison of disaster debris generation in each material category to the remaining capacity of potential disposal facilities

	Tons of Disaster Debris	Disposal Facility	District-wide Facility Disposal Capacity	2023 Tons Received by Each Disposal Facility
Other Debris	212,850	Class I LF	87,237,267 tons of permitted capacity and 75,229,787 tons of constructed capacity remaining as of January 1, 2025	3,147,877
C&D Debris	864,618	Class III LF	12,640,156 tons of permitted capacity and 2,538,168 tons of constructed capacity remaining as of January 1, 2025	996,020
		CDD Facility	3,403,096 tons of constructed capacity as of 2024	499,611
Vegetative Debris	2,152,201	SOPF	NA	676,346

## CONCLUDING REMARKS

The tables below display the disposal and processing capacity within Florida's solid waste management system. For disposal facilities, it is important to note that the scope of this analysis includes the constructed and permitted capacity remaining in each facility as of January 1<sup>st</sup>, 2025. Many of the sites in the state have land surrounding their existing disposal area which could potentially be permitted for disposal in the future. Therefore, permitting and construction of new disposal areas are expected to continue in the future, and this report indicates areas where upcoming infrastructure investments are likely to be made. Among processing facilities, waste-to-energy facilities and single and dual stream RMPFs are currently operating at capacity. So, to increase the quantity of material combusted or recycling in these facilities, investments will be needed to expand existing facilities or construct new infrastructure.

Disposal Facility	Remaining Permitted Capacity (tons)	Remaining Constructed Capacity (tons)
Class I Landfill	470.2 M	164.1 M
Waste-to-Energy Ash Monofill	7.3 M	5.8 M
Class III Landfill	77.0 M	13.2 M
C&D Debris Disposal Facility	----	51.3 M
Yard Trash Disposal Facility	----	----

Processing Facility	Annual Processing Capacity	Operating at Capacity?
Waste-to-Energy Facility	5.5 M tons/year	Y
C&D MRF	> 5 M tons/year	N
Class I and III MRF	> 7 M tons/year	N
Single and Dual Stream RMPFs	1.4 M tons/year	Y
SOPFs	3.4 M tons in 2023	N
HHW Collection Facilities	10.2 K tons in 2023	N
Used Oil	> 196 M gal/year	N