Baseline Report

Solid Waste Master Plan

Baseline Understanding Report

Pinellas County, Florida

October 2018

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1 Introduction

1.1 Location & Government

Pinellas County (County) is located in west-central Florida bounded on the north by Pasco County, the south by Manatee County (including a portion of Tampa Bay), the east by Hillsborough County (Including a portion of Tampa Bay), and the west by the Gulf of Mexico. According to the U.S. Census Bureau, the County has a total area of approximately 274 square miles, with an estimated permanent population in 2017 of 968,279[1]. The seasonal population is estimated at 80,313 in 2017 with an average duration of a 5-month stay in the County. Lastly, tourist (visitor) population is estimated at 6,260,124 in 2017 with an average duration of a 5.6 day stay. Details on permanent, seasonal and tourist population are provided in Sheets 2 through 5 of Appendix A (Baseline Report Data Tables).

The Board of County Commissioners (BCC) governs the unincorporated area of the County, as well as providing various countywide services that include the municipalities. The County government has the power to adopt ordinances, approve the budget, set millage rates, and provide municipal services. The 24 municipalities within the County govern their own affairs and can call upon the County for specialized services. The County Administrator, appointed by the BCC, oversees most of the day-to-day operations of the County.

Pinellas County, in partnership with representatives from the municipal jurisdictions within the County, formed the Technical Management Committee (TMC), as provided by Pinellas County Code of Ordinances, Section 106-54. The TMC serves to provide general oversight on major operations and functions of the Solid Waste Department. Any major changes to the solid waste program, annual adoption of disposal fees, or proposed solid waste projects are brought before the TMC for their consideration and subsequent recommendation to the BCC. This municipal input assures the standard of service is maintained by the County for the Solid Waste System (System) partners (unincorporated area and the county's municipalities).

1.2 Incorporated and Unincorporated Areas

The incorporated area of the County consists of 24 municipalities. The remaining area is classified as the unincorporated area of the County. Out of the estimated permanent population of 968,279 (in 2017), 71% reside in the incorporated areas (municipalities) and 29% reside in the unincorporated areas of the County. A detailed description of each of these areas is provided in Section 2. A map of the unincorporated areas and the 24 municipalities is provided as Figures 1.1 and 1.2 (area shown through two figures due to page size limitation)[2]. Note that, for purposes of this report, the unincorporated area is further divided into two sub areas: (1) Lealman Municipal Services Benefit Unit (MSBU); and (2) remainder unincorporated area. The Lealman MSBU was established primarily by the area's desire to have contracted, or franchised, solid waste collection services. A detailed map of the Lealman MSBU area is shown in Figure 1.3.[3]

[1] Pinellas County Economic Development; https://www.pced.org/page/DataCenter.
[2] Pinellas County Website; http://www.pinellascounty.org/PDF/unincorporated-pinellas-map.pdf.
[3] Pinellas County Solid Waste Website; http://www.pinellascounty.org/solidwaste/PDF/lealman-map.pdf.

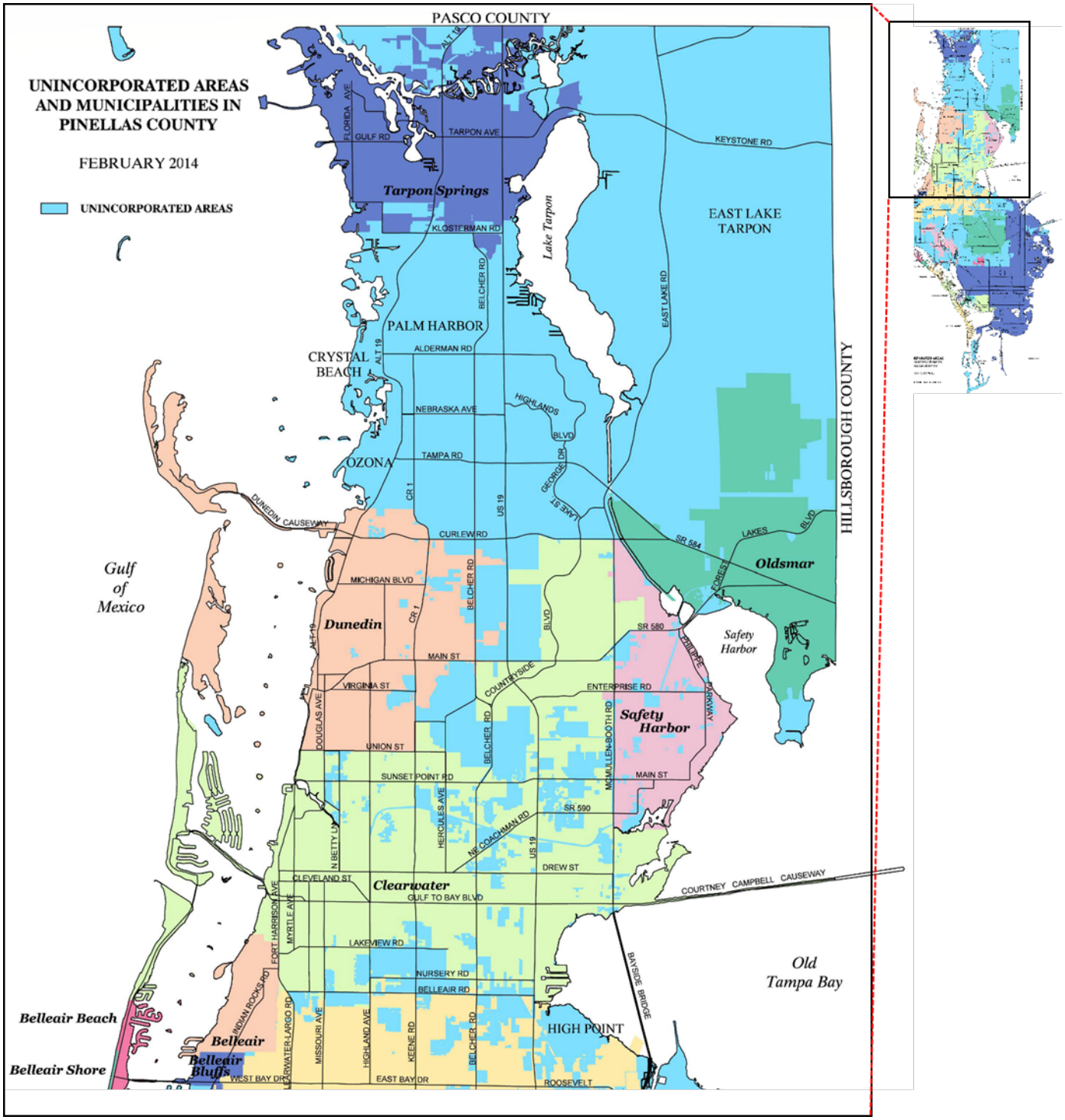


Figure 1.1 Pinellas County – North Area (Zoom-in, North of Bay Drive/Roosevelt)

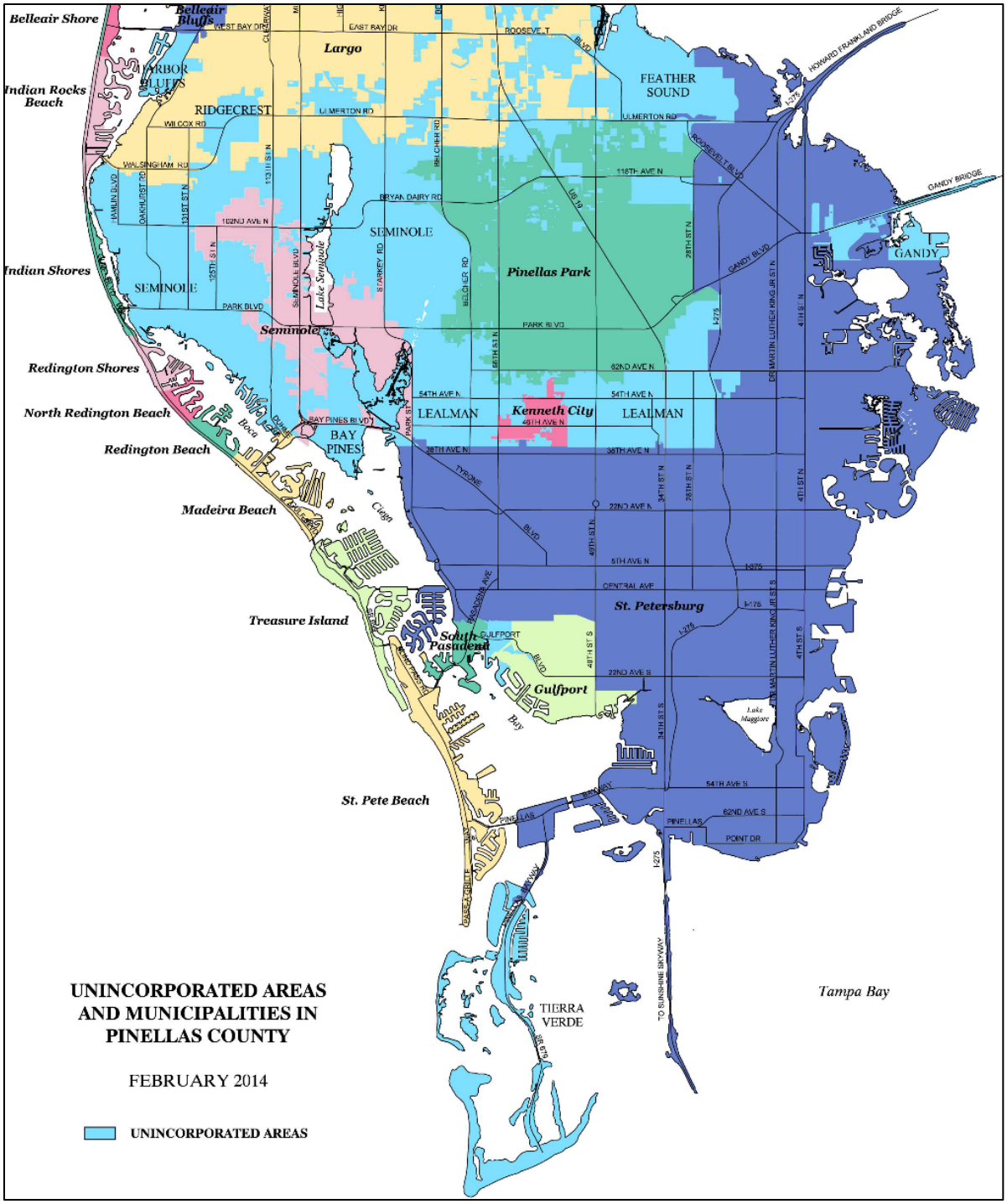


Figure 1.2 Pinellas County – South Area (Zoom-in, South of Bay Drive/Roosevelt)

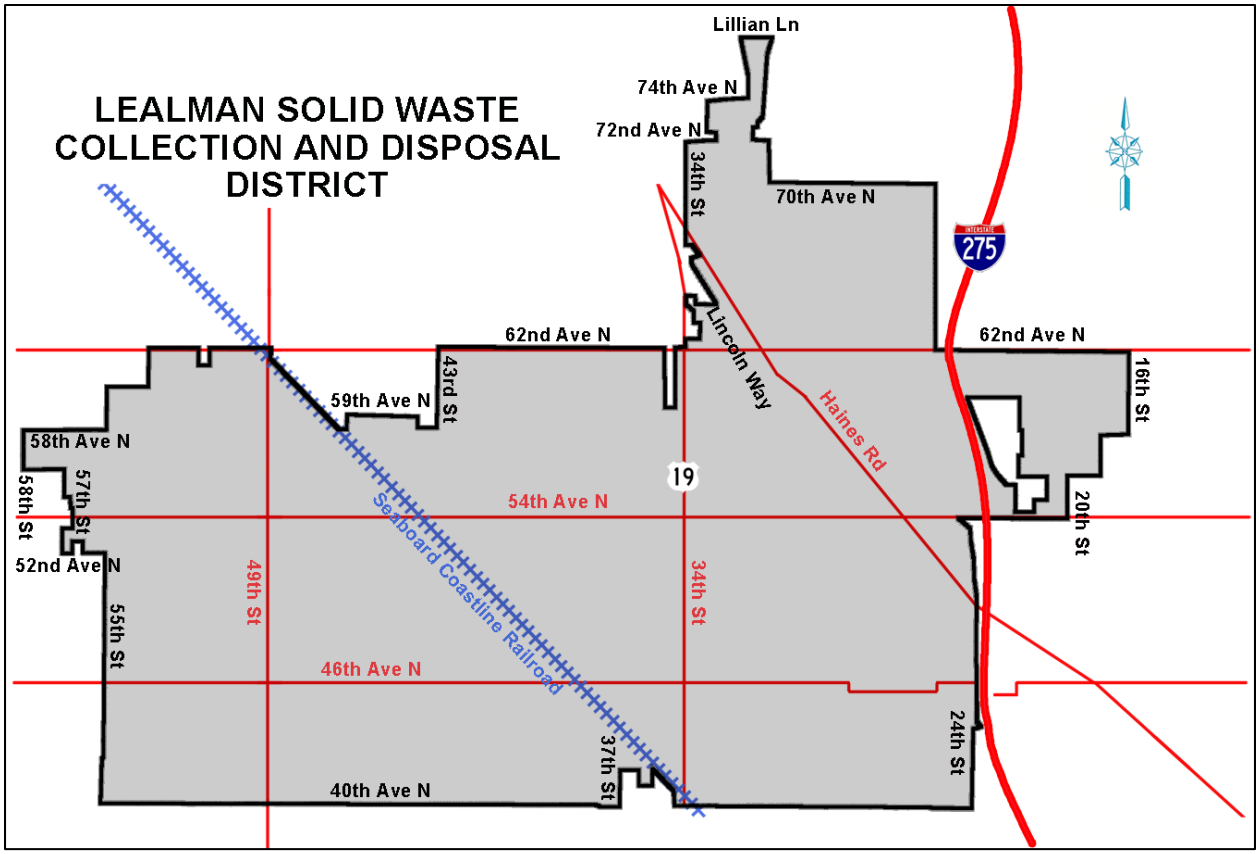


Figure 1.3 Pinellas County Lealman MSBU Boundary

1.3 Population

Figure 1.4 presents historical and projected permanent population growth patterns for the County. The County is expected to continue experiencing moderate growth in population at a rate of approximately 0.58 percent annually (average) in the projection period contemplated in this planning effort (2018-2048). The County is projected to have a total permanent population of 976,239 at the beginning of the planning period (2018) and 1,158,799 at the end of the planning period (2048).

In addition to the permanent population, seasonal and tourist population has also been considered in this master planning effort. By adding equivalent population for seasonal and tourist population to the permanent population, total County (referred as “Countywide” in this report) population is estimated at 1,106,012 at the beginning of the planning period (2018) and 1,293,135 at the end of the planning period (2048). Figure 1.5 presents Countywide total population projections from 2018 through 2048. Detailed population projection methodology can be found in Sheets 2 through 5 of Appendix A.

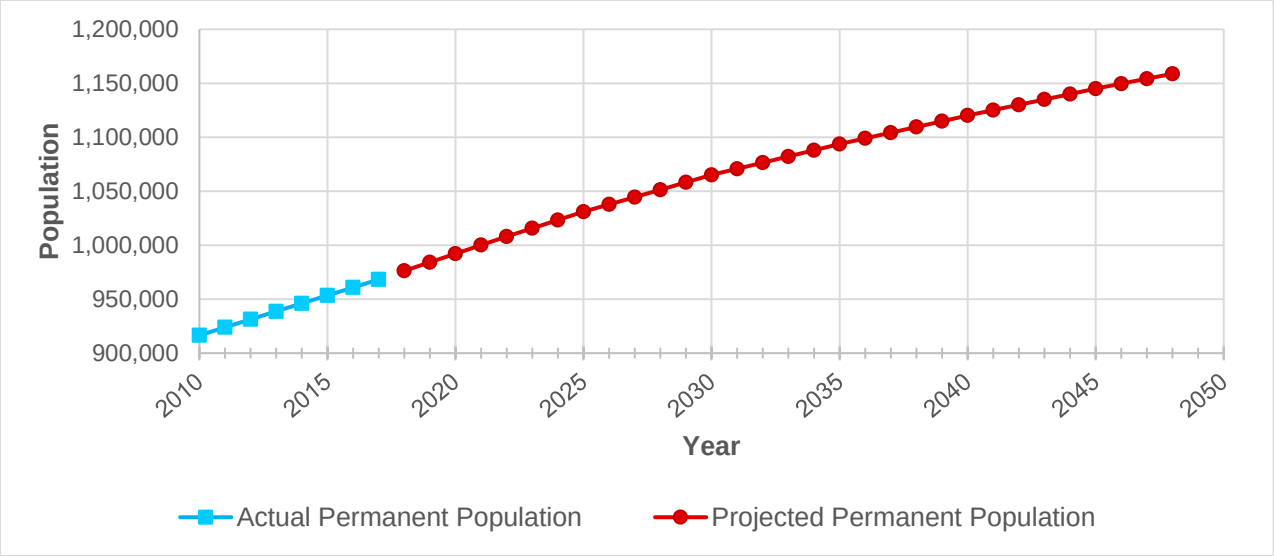


Figure 1.4 Historical and Projected Permanent Population of Pinellas County (2010-2048)

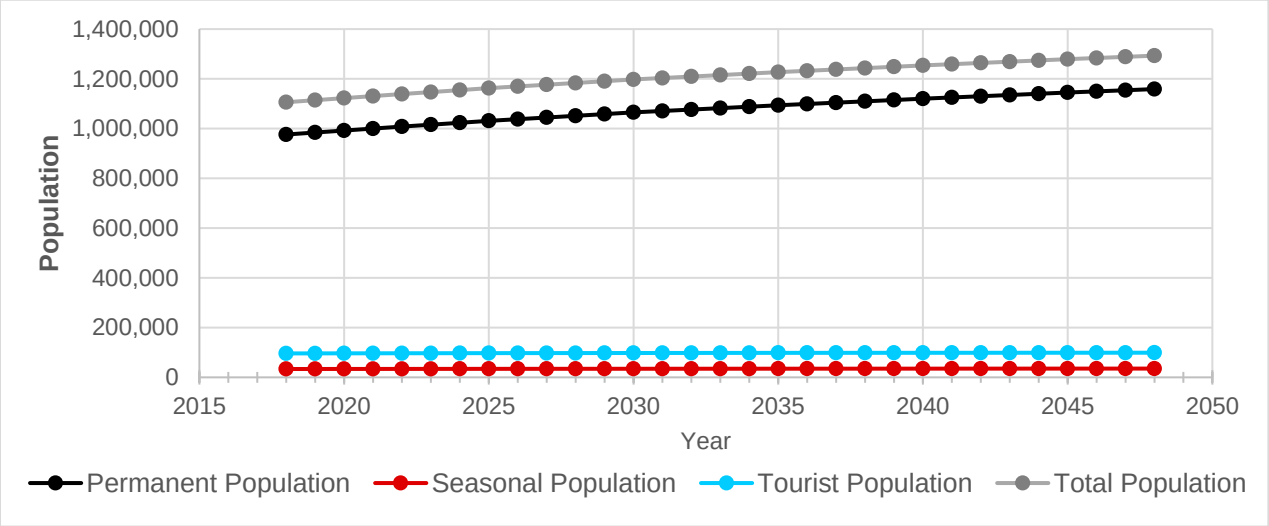


Figure 1.5 Total Projected Population of Pinellas County (2018-2048)

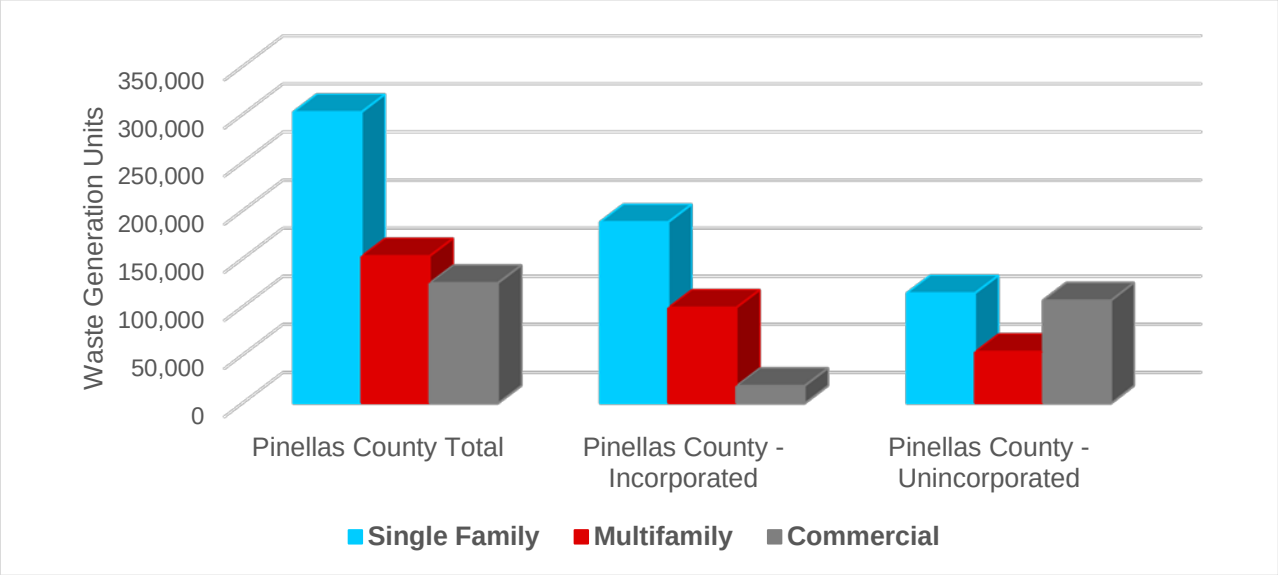
1.4 Waste Generation Units/Sectors

Waste generation units are primarily segregated into three categories: (1) single family residential units; (2) multifamily residential units; and (3) commercial units (including government units). In general, single family households in the County are defined as four units or less and multifamily households are defined as five units or more. However, some municipalities in the incorporated area may define single family and multifamily differently.

Note that specific waste generation unit designation between multifamily and commercial becomes somewhat challenging. As an example, manufactured home parks may be collected and categorized as single family residential units in some (but not all) cases. In other instances, multifamily customers

may be considered the same as commercial because of the type of container and vehicle used for multifamily collection; multifamily customers can be serviced by either a dumpster using a front-end loader or a roll-off container, the same vehicles that service commercial customers. The number of waste generation units in 2017, as published in 2017 Annual Municipal Solid Waste Management Report by the Florida Department of Environmental Protection (FDEP), are shown in Figure 1.6. Detailed data is shown on Sheets 6 and 7 of Appendix A.

As indicated in Figure 1.6, there are estimated to be 302,765 single family units, 153,005 multifamily units and 125,000 commercial units Countywide. Out of a total estimate of 580,770 waste generation units in the County, 53% of the units are located in the incorporated areas and the remaining 47% are located in the unincorporated areas.



Data Source: Annual Municipal Solid Waste Reports published by the FDEP

Figure 1.6 Waste Generation Units by Area and Unit Type for CY2017

1.5 Waste Generation by Sector

For the purpose of this planning effort, it is necessary to segregate the three waste generation sectors as described above (single family, multifamily, commercial). As shown in Figure 1.7 (and Sheet 8 of Appendix A), the most recent 6-year breakdown of collected waste shows that the commercial sector has consistently been the largest waste generator (by tonnage). But the single family and multifamily residential sectors have shown a recent waste generation increase over the past 6-years including a relatively significant increase in 2016 (compared to 2015), due in large part to a refinement of data collection methodology by the County.[4]

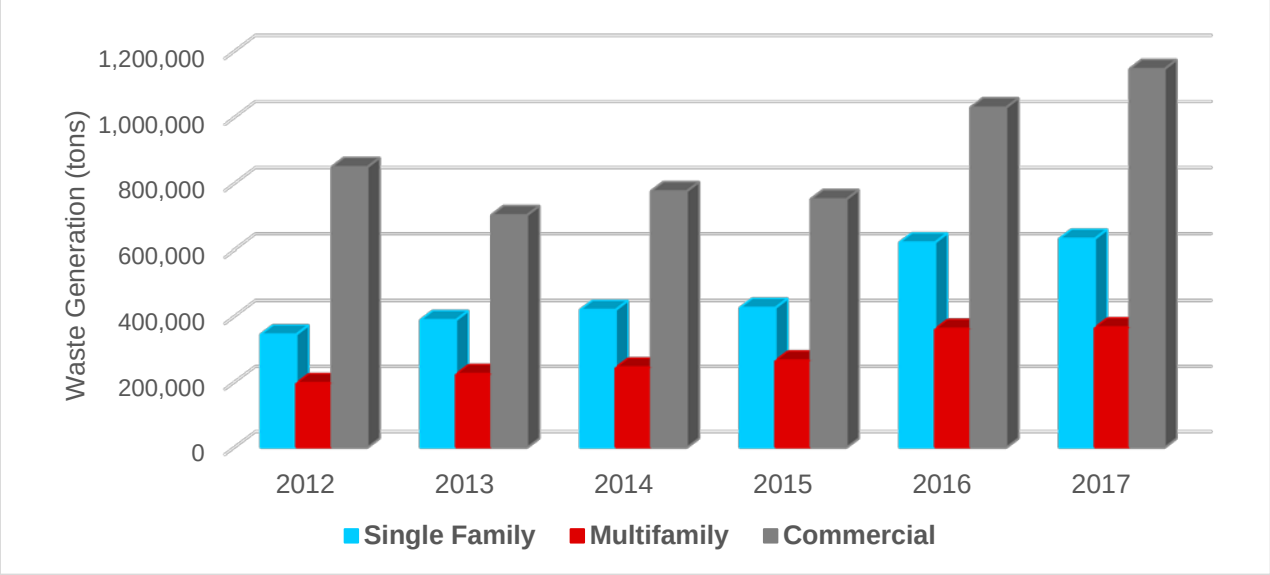
Single family and multifamily waste generation increased by 46% and 36% respectively in 2016. Commercial waste generation also showed a significant increase of 37% in 2016 followed by an 11% increase in 2017. Overall, total waste generation increased by 39% in 2016 compared to 2015. Based

[4] Waste generation data obtained from Annual Municipal Solid Waste Management Reports published by the FDEP.

on discussions with County staff, it appears that the noted 2016 waste generation increase is largely due to better data acquisition compared to prior years. A dedicated County staff member was assigned to collect waste generation data beginning in 2016. This staff member expanded the County's outreach efforts in obtaining waste generation data from municipalities and other customers. In 2017, there was also better accounting for the amount of waste leaving the County for disposal, which FDEP reported for the first time. It is important to note that data acquisition efforts are directly tied to the availability of County resources to undertake more comprehensive data acquisition efforts, the importance of which is evident in the difference in data available comparing 2016 and 2017 to prior years.

Waste generation per capita is another indicator that can be used to validate that recent waste generation rates provide a more accurate representation for Pinellas County compared to 2015 and prior years' data. Pinellas County's average daily waste generation was 10.72 pounds per capita in 2017, which is the year with the most recent data available for comparison with other counties through the FDEP. Pinellas County, at 10.72 pounds per capita, is within a reasonable range compared to Hillsborough County at 12.20 pounds per capita, Pasco County at 10.57 pounds per capita, Manatee County at 13.43 pounds per capita, Hernando County at 8.48 pounds per capita and Polk County at 9.28 pounds per capita. Detailed waste generation data on the 67 Counties in the State of Florida is provided on Sheet 9, Appendix A. The State average daily waste generation in 2017 was 12.09 pounds per capita with a few counties exceeding 20 pounds per capita daily waste generation. Pinellas County ranks 43rd out of 67 counties in Florida for its waste generation rate (in lowest to highest order) based on 2017 data published by the FDEP.

Based on discussions with County staff, and after comparing waste generation rates regionally and statewide, HDR is confident that the 2016 and 2017 Pinellas County data are more accurate representations of the current waste generation conditions than prior years.



Data Source: Annual Municipal Solid Waste Reports published by the FDEP

Figure 1.7 Waste Generation (tons) by Sector/Unit Type for 2012-2017

1.6 Overall Composition of Waste

Countywide waste composition is shown in Figure 1.8. The overall Pinellas County waste composition is based on the 2017 Annual Municipal Solid Waste Management Report published by the FDEP. The largest constituents are shown to be Construction and Demolition (C&D) debris (at 25.4%), paper (at 16.6%), and yard trash (at 13.3%).

Figure 1.9 shows the composition of municipal solid waste (MSW) delivered to the Pinellas County Solid Waste Disposal Complex (Disposal Complex). The waste composition data was obtained from a waste composition study performed in 2014 by Kessler Consulting, Inc. The figure represents waste composition from all generator sectors by material type (aggregate waste composition). The largest constituents are shown to be paper and cardboard (at 28.7%) and food waste (at 16.3%).

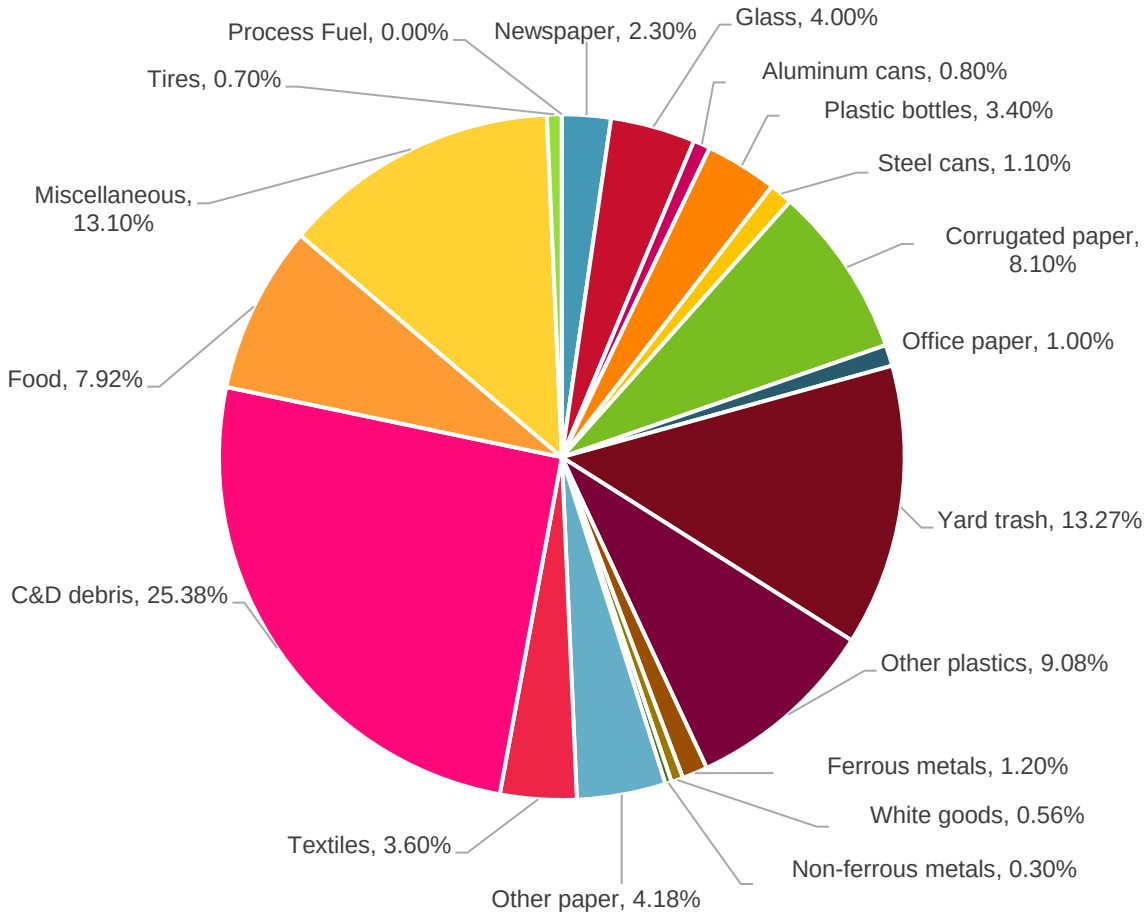


Figure 1.8 Countywide Waste Composition (from FDEP 2017 Annual Report)

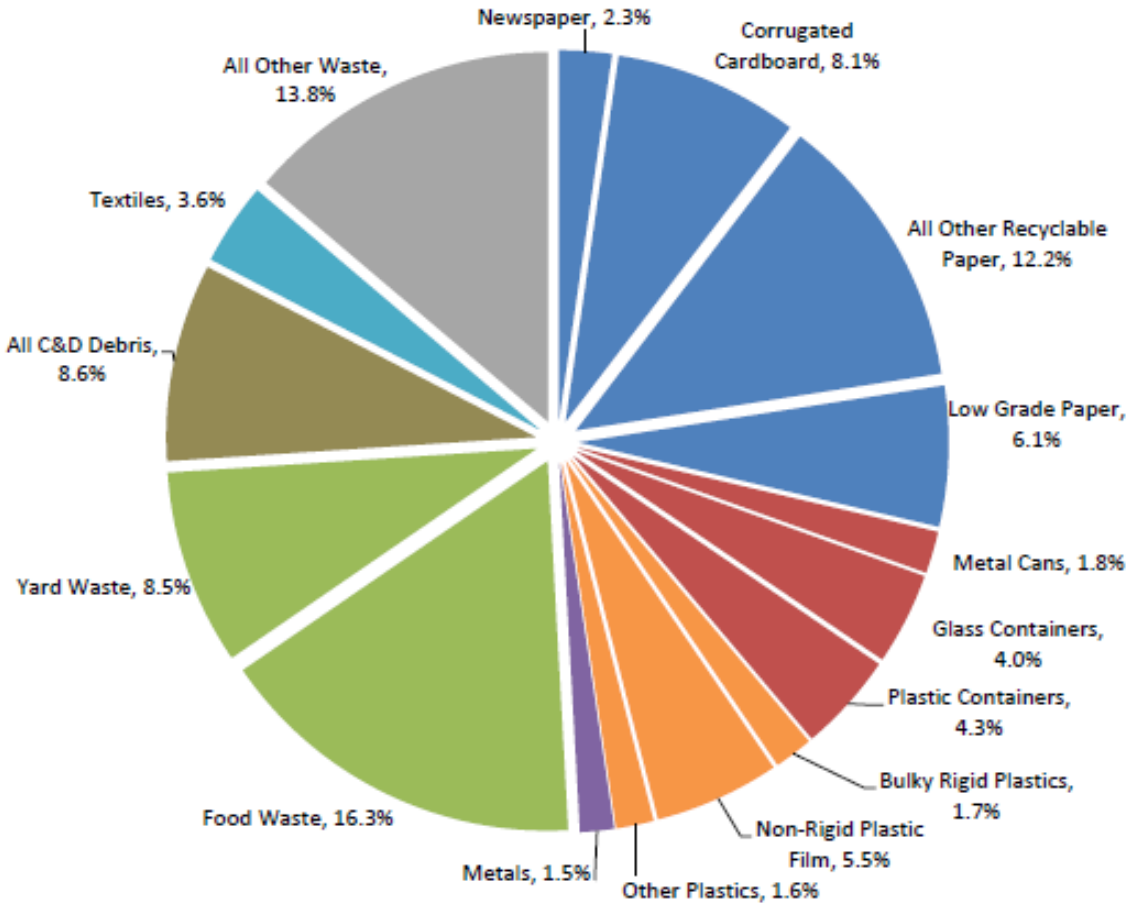


Figure 1.9 Aggregate MSW Composition Delivered to Disposal Complex (from 2014 Study)

1.7 Recycling and Disposal Trends

The total amount of waste collected within the County on an annual basis has increased from approximately 1.45 million tons in 2015 to approximately 2.02 million tons in 2016, and 2.15 million tons in 2017 (refer to Sheet 8 in Appendix A). In addition, overall waste per capita, which considers the total waste collected in a given year across all sectors and divides it by total County population, has been on a generally upward trend – increasing from 7.32 pounds per capita per day in 2015 to 10.13 pounds per capita per day in 2016, and 10.72 pounds per capita per day in 2017 (refer to Sheet 8, Appendix A). As described in Section 1.5, waste generation (and the associated generation rate per capita) increased significantly in 2016 compared to 2015, and the increase is believed to be largely attributable to better data acquisition beginning in 2016 compared to prior years.

Moreover, in 2017, the amount of waste leaving the County for disposal was captured for the first time through the information provided by the FDEP. Rule 62-701.500(4)(a), F.A.C. (effective February 15, 2015), requires disposal facilities to report the waste by County of origin by February 1st of each year[5]. Although this rule became effective in 2015, reporting of waste by County of origin was first reported

[5] Rule 61-701.500(4)(a), F.A.C.: The owner or operator of a landfill shall weigh all solid waste as it is received. Landfill operators shall record, in tons per day, the amount of solid waste received and shall estimate the amount of wastes listed in paragraph (b), of this subsection, by county of origin. Waste reports shall be compiled monthly, and copies shall be provided to the Department annually, by February 1 of each year.

by the FDEP in 2017. The waste leaving the County in 2017, as reported by FDEP, was 234,949 tons, representing 11% of the total waste generated in Pinellas County in 2017. The majority of this waste (215,849 tons, 92%) is classified as Class III waste; the remainder is primarily classified as Class I waste (19,018 tons), and a very small amount of ash waste (82 tons). Class III waste, as defined by the FDEP, includes yard trash, C&D 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. Per discussions with the FDEP and as required by Rule 61-701.500(4)(c), F.A.C., any **segregated** loads of C&D debris are required to be reported separately to the FDEP[6], implying that the 215,849 tons of Class III waste does not include any **segregated** C&D debris. Attempts were made to determine the origin of the 19,018 tons of Class I waste reported as leaving the County for disposal. At the time of this writing, it has been confirmed that 12,421 of those Class I tons were contaminated soil; it is not yet known the origin, or the specific type, of the remaining 6,597 tons of Class I waste leaving the County for disposal.

In 2012, the State of Florida established a goal of achieving a 75% recycling and diversion rate from landfilling by the year 2020. Since 2012, FDEP has tracked both traditional recycling rates and adjusted recycling rates. Traditional recycling rates account for recycling activities such as curbside and drop-off recycling programs. Adjusted recycling rates allows for renewable energy and beneficial reuse credits to be added to the traditional recycling rate. As shown in Sheet 8, Appendix A, the amounts of material that is traditionally recycled in the County has increased steadily for the last five years, with a traditional recycling rate of 33% in 2012 and a traditional recycling rate of 55% in 2017. Countywide adjusted recycling rates increased from 63% in 2012 to 82% in 2017. Efforts to increase the traditional recycling rate also meant a substantial improvement in the overall adjusted recycling rate for Pinellas County, attributable to the County reaching greater than a 50% traditional recycling rate, which per State law, allows for additional credit[7] for renewable energy.

For comparison with other Florida counties, Pinellas County's traditional recycling rate (excluding renewable energy credits) was 55% in 2017, which is the year with the most recent data available for comparison with other counties through the FDEP published reports. Compared to Pinellas County's 55% traditional recycling rate, recycling rates for Hillsborough County, Pasco County, Manatee County, Hernando County and Polk County were observed at 51%, 39%, 52%, 32% and 26% respectively. Detailed traditional recycling data for the 67 counties in the State of Florida is provided on Sheet 10, Appendix A. The State average traditional recycling percentage in 2017 was 42%, with Charlotte County ranked first with a 72% recycling rate. Pinellas County ranked 10th (out of 67 counties in Florida) for traditional recycling rates, in highest to lowest order, based on 2017 data published by the FDEP.

[6] Rule 61-701.500(4)(c), F.A.C.: In addition to the reports above, the owner or operator of any landfill that knowingly accepts dedicated loads of construction and demolition debris for disposal shall submit the annual report required in subsection 62-701.730(12), F.A.C., by February 1 of each year.

[7] F.S. 403.706, (4)(a): In order to promote the production of renewable energy from solid waste, each megawatt-hour produced by a renewable energy facility using solid waste as a fuel shall count as 1 ton of recycled material and shall be applied toward meeting the recycling goals set forth in this section. If a county creating renewable energy from solid waste implements and maintains a program to recycle at least 50 percent of municipal solid waste by a means other than creating renewable energy, that county shall count 1.25 tons of recycled material for each megawatt-hour produced. If waste originates from a county other than the county in which the renewable energy facility resides, the originating county shall receive such recycling credit. Any byproduct resulting from the creation of renewable energy that is recycled shall count towards the county recycling goals in accordance with the methods and criteria developed pursuant to paragraph (2)(h).

In 2017, only 20 percent of the waste generated within the County was landfilled at Bridgeway Acres Landfill, of which 9 percent was ash generated by waste incineration. Detailed data on tons managed at the Disposal Complex is presented in Sheet 11, Appendix A.

1.8 Waste Projections

As part of the planning process, HDR developed Countywide waste generation projections through 2048. The generation projections are based on an analysis of historical generation per capita over the last 6 years and population projections discussed in Section 1.3. As discussed in Section 1.5, historical collected waste within the County significantly increased in 2016 and 2017 compared to previous years, primarily due to a change in data collection methodology. As such, 2016 and 2017 waste generation data are believed to be more accurate than prior years. Two different approaches were considered for the waste projections:

- **Scenario 1**: Waste projections based on an average of annual tons per capita rate using 2012 through 2017 waste generation data from the FDEP reports. The average annual tons per capita rate was calculated as 1.51 tons per capita (equivalent to 8.27 pounds per capita per day).
- **Scenario 2**: Waste projections based on average annual tons per capita rate using 2016 and 2017 data based on waste generation data from the FDEP reports. The annual tons per capita rate was calculated as 1.90 tons per capita (equivalent to 10.42 pounds per capita per day).

Waste projections associated with these two waste projection scenarios are detailed in Sheet 12, Appendix A and Figure 1.10. These projections assume no material changes in the County's System (programs, policies, participating entities, facilities, etc.) over the planning period, and account only for tonnage increases resulting from projected population growth within the County.

Of these two waste projection scenarios, Scenario 2 is believed to be more representative of current conditions because of better waste generation data acquisition in 2016 and 2017. Therefore, waste projections associated with Scenario 2 will be used in the Master Plan development. As the planning process continues, the baseline generation projections may be adjusted as needed to reflect the anticipated impacts of proposed changes being considered for implementation in the Master Plan.

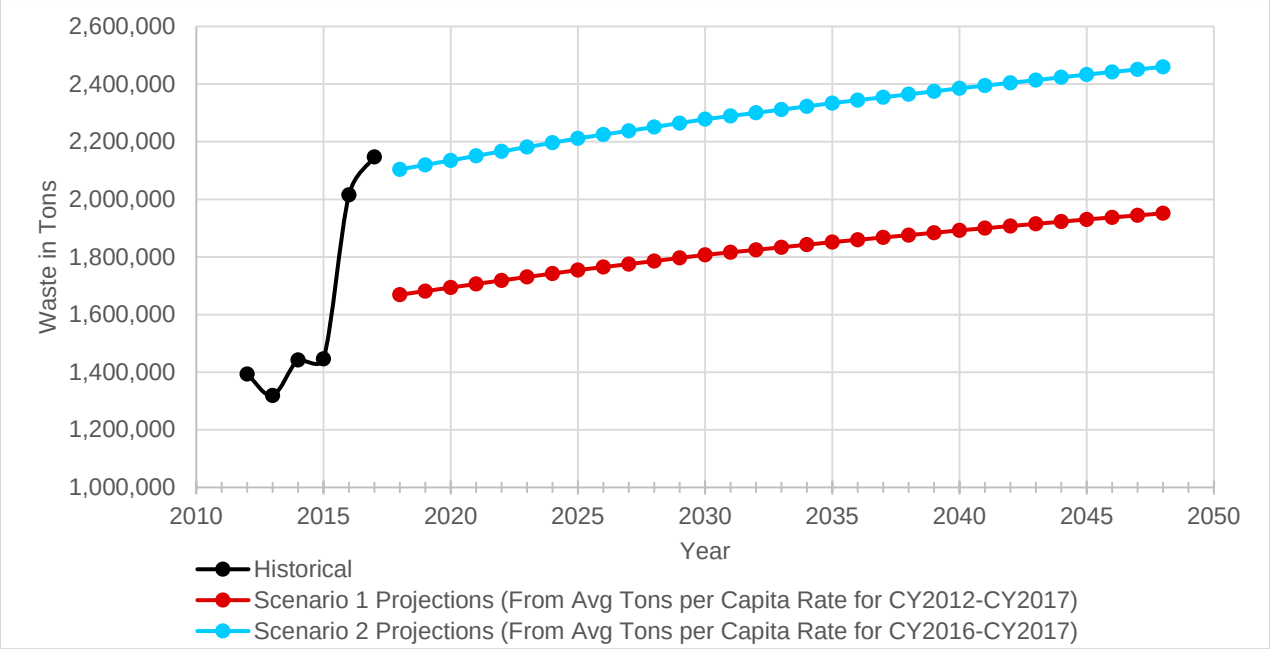


Figure 1.10 Waste Projections (Annual Tons)

Based on FDEP reports and County-provided data (see Sheet 11, Appendix A), the Disposal Complex received 58.5% and 55.5% of the total waste generated in the County in 2016 and 2017, respectively. For baseline projection purposes, it is assumed that the average of 2016 and 2017, or 57%, of the total waste generated in the County will be managed at the Disposal Complex under existing conditions. Additionally, new data obtained for 2017 show that approximately 11% of the total waste generated in the County was disposed by facilities located outside the County. Based on these observations, Figure 1.11 shows future Countywide waste generation estimates, future waste managed at the Disposal Complex estimates, and future waste disposed outside of the County estimates.

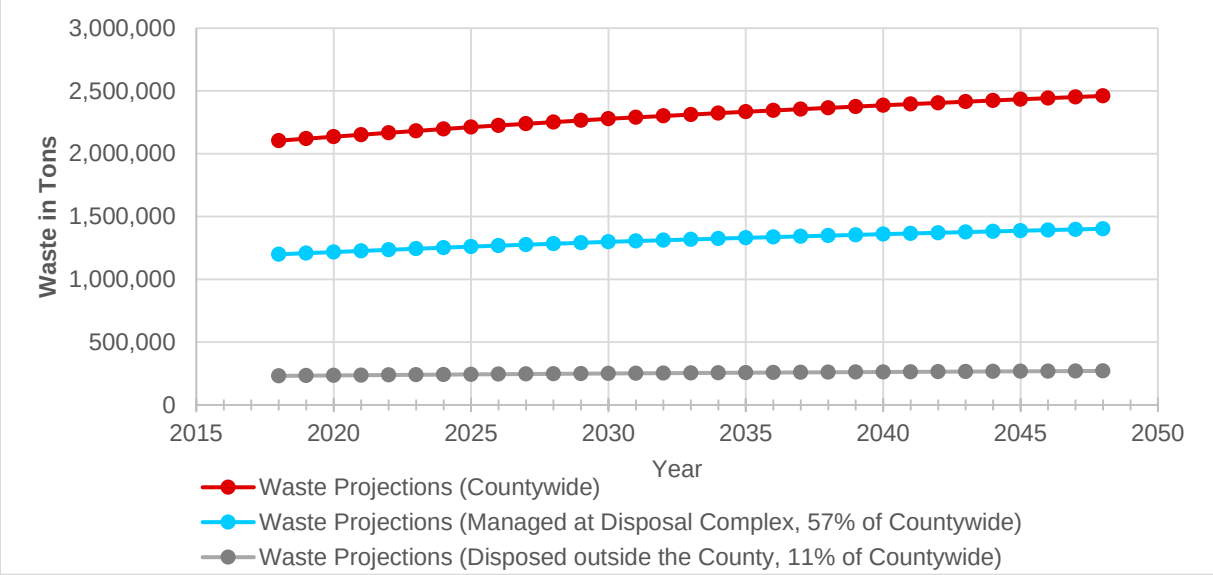


Figure 1.11 Waste Projections (Countywide Waste Generation and Management)

Sections 3 through 7 of this report take a closer look at the waste managed within the County's System by major material groups (i.e. non-source separated municipal solid waste, recyclables, organics, hazardous waste, and C&D debris). Each section describes how these materials are managed from collection and processing, to conversion and disposal, as appropriate.

1.9 Waste Projections by Material Type

Based on waste projections associated with the aforementioned Scenario 2 approach to waste projections and waste composition data discussed in Section 1.6, waste projections by major material type have been developed. Waste projections by major material type for waste delivered to the Disposal Complex are shown in Sheet 13, Appendix A. The projections assume that waste composition will remain unchanged during the projection period. By 2048, it is estimated that nearly 160,000 combined tons of newspaper, cardboard and office paper, and approximately 35,000 tons of PET and HDPE bottles, would be delivered to the Disposal Complex with municipal solid waste. Waste projections by major material type for the waste generated Countywide are shown in Sheet 14, Appendix A.

2 Solid Waste System Description

Each jurisdiction within the County manages the collection of municipal solid waste, yard waste, recyclables, bulk waste and C&D debris independently. Appendix B provides a matrix of collection style, frequency, and processing/disposal locations used, by material type and customer type for each jurisdiction. As described in Section 1.4, according to 2017 Annual Municipal Solid Waste Management Report published by the FDEP, there are an estimated total of 580,770 generating units in the County, including:

- 302,765 single family units;
- 153,005 multifamily units; and
- 125,000 commercial units.

For the unincorporated area of the County including the Lealman MSBU and remaining unincorporated areas, it is estimated that a total of 114,417 single family units, 53,532 multifamily units and 106,879 commercial units reside in the unincorporated area. In the 24 municipalities within the County, it is estimated that there are 188,348 single family units, 99,473 multifamily units, and 18,121 commercial units.

Section 2.1 summarizes collection, processing and disposal services in the unincorporated areas of the County, and Section 2.2 summarizes collection, processing and disposal services in each of the 24 municipalities. Note that many of the jurisdictions leave C&D debris services to the open market, and the disposal or processing location is unknown. Section 7 provides a list of facilities known to accept C&D debris generated in the County. Similarly, commercial recyclables collection cannot be made a part of an exclusive franchise or municipal collection system (per F.S. 403.7046 (3)), so the processing location of commercial recyclables is not known[8].

Section 2.3 describes the infrastructure in the County; Section 2.4 describes the flow of waste in the County, and Section 2.5 discusses waste generated versus waste managed at the Disposal Complex.

2.1 Services in Unincorporated County

2.1.1 Lealman MSBU

The Lealman MSBU is provided twice-weekly trash and yard waste pickup (comingled), and on-call bulky items pickup for its single family and multifamily residential customers through an exclusively franchised hauler (County Recycling Inc.). Collected residential waste is required to be delivered to the Disposal Complex for processing and/or disposal. Recycling collection service is not provided to every residential customer, but the service can be added for curbside customers, if desired, for an additional per month charge to the residential customer. At present, approximately 200 residential units in the Lealman MSBU have opted for recycling service. The hauler can take collected curbside recyclables to any recyclables processing facility; however, the hauler is required to provide the County

[8] F.S. 403.7046 (3): Except as otherwise provided in this section or pursuant to a special act in effect on or before January 1, 1993, a local government may not require a commercial establishment that generates source-separated recovered materials to sell or otherwise convey its recovered materials to the local government or to a facility designated by the local government, nor may the local government restrict such a generator's right to sell or otherwise convey such recovered materials to any properly certified recovered materials dealer who has satisfied the requirements of this section.

with information on tonnages and facility used. Recyclables collection is left to the open market for multifamily and commercial customers.

Commercial waste and C&D debris collection services are handled via an open market in the Lealman MSBU.

2.1.2 Remaining Unincorporated Area

The residential services in the remaining unincorporated area are provided by County-licensed haulers (eight haulers licensed as of August 2018), and are regulated by Pinellas County Ordinance, Chapter 106, Article V. Article V requires once per week minimum frequency for single family residential solid waste collection. Collected residential waste is required to be delivered to the Disposal Complex for processing and/or disposal. Recycling service, bulk waste collection and yard waste collection for single family customers are required to be offered, but not mandated to be used by customers (per Article V). Unincorporated residents are also allowed to self-haul waste to the Disposal Complex and recyclables to the 14 recycling Collection Centers (CC).

Although Article V does not address multifamily residential service, the County allows multifamily customers to use one of the eight licensed haulers in the County. Multifamily customers are also allowed to self-haul waste to the Disposal Complex and recyclables to the 14 recycling CC.

Commercial waste and C&D debris collection services are handled via open market in the remaining unincorporated area.

2.2 Services in Incorporated County

There are 24 municipalities in the County that manage their solid waste programs independently. Based on review of the program and tonnage information provided by the County, and additional data collection efforts, it appears that all municipal solid waste collected by the municipalities (or their franchised hauler) is delivered to the Disposal Complex. Collection and processing of residential recyclables are managed by each respective municipality and may include processing outside of Pinellas County. Many municipalities have commercial and C&D debris waste streams handled through open markets. A description of the services provided by each of the municipalities is provided in following subsections.

2.2.1 Town of Belleair

Single family municipal solid waste is collected curbside twice weekly in containers provided by the resident. Single family municipal solid waste is hauled to the Disposal Complex for processing/disposal. Recyclables are collected in 64-gallon carts provided by the Town once weekly and collected by the City of Clearwater that consolidates it before sending it to the MRF owned and operated by Waste Management. Bulk waste is collected by the municipality once weekly and is delivered to the Disposal Complex. Yard waste is collected once weekly by the Town and sent to Consolidated Resource Recovery (CRR) for processing.

Multifamily municipal solid waste is collected by the Town two to three times per week using carts or dumpsters collected as negotiated and is hauled to the Disposal Complex for processing/disposal. Multifamily recyclables are collected in 96-gallon carts provided by the Town once weekly. The recyclables are collected by the City of Clearwater that consolidates it before sending it to the Waste

Management MRF. Multifamily bulk waste is collected by the Town once weekly, and multifamily yard waste is hauled away by the landscaper performing the landscaping services.

Commercial municipal solid waste is collected by the Town two to three times per week using carts or dumpsters. Commercial solid waste is hauled to the Disposal Complex for processing/disposal. Commercial recyclables are collected using dumpsters, collected by the City of Clearwater that consolidates it before sending it to the Waste Management MRF. Commercial bulk waste is collected by the Town once weekly, and its yard waste is hauled away by the landscaper performing the landscaping services.

C&D debris collection services are handled via open market.

2.2.2 City of Belleair Beach

The City is under contract with Waste Management to provide curbside collection for single family customers. Curbside services include garbage collection twice weekly using the customer's own container, recycling once weekly using 18-gallon bins provided by the hauler, and bulk waste and yard waste is collected as part of regular garbage service. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Management MRF.

Multifamily units use two 8-yard dumpsters provided by Waste Management collected twice weekly, recycling is by 65-gallon carts provided by Waste Management collected once weekly and bulk waste and yard waste is collected in dumpsters. Multifamily municipal solid waste, yard waste and bulk waste streams are hauled to the Disposal Complex for processing/disposal. Recyclables are processed at the Waste Management MRF.

Commercial waste and C&D debris collection services are handled via open market.

2.2.3 City of Belleair Bluffs

The City is under contract with Waste Management to provide curbside collection for single family customers. Curbside services include garbage collection twice weekly using the customer's own container, recycling once weekly using 18-gallon bins, or 64-gallon carts provided by the hauler. Bulk waste is picked up by the hauler by appointment. Yard waste is picked up twice weekly as part of regular garbage collection. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are delivered to the Waste Management MRF.

Multifamily customers use dumpsters provided by Waste Management for garbage pickup twice weekly. Customers negotiate with Waste Management for special pick-up for bulk waste. Recyclables are handled via the open market. Yard waste is picked up as part of the regular garbage service. Multifamily municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal.

Commercial units negotiate with Waste Management for garbage service, and commercial recycling, bulk waste and yard waste collection is handled by an open market.

For C&D debris, single family and multifamily customers negotiate with Waste Management for collection services if the material is over ten tons, otherwise, it is handled by an open market. Commercial C&D debris is handled by an open market.

2.2.4 Town of Belleair Shore

The Town contracts with Waste Connections (previously called Progressive Waste Solutions of Florida, Inc.) for curbside collection for single family customers. Curbside services include garbage collection twice weekly, using a container provided by the resident, and recycling once weekly using an 18-gallon bin provided by Waste Connections. Bulk waste is by special appointment through Waste Connections and yard waste is collected as part of the regular garbage service. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

There are no multifamily or commercial developments in the Town.

C&D debris collection is handled by an open market.

2.2.5 City of Clearwater

Single family waste is collected in City-provided 96-gallon carts once weekly and is transported via a City owned Transfer Station to the Disposal Complex. At the time of this writing, the City is rebuilding the Transfer station, and waste is direct hauled to the Disposal Complex. Recyclables are collected in City-provided 96-gallon carts once weekly. Mixed recyclables (single stream) are returned to the Hercules Avenue facility for consolidation in trailers and transported to the Waste Management MRF in Tampa for processing. Cardboard is sold to Recycling Services of Florida. Bulk waste services are included in solid waste services once weekly and taken to either the Disposal Complex, or Waste Management or Sarnago & Sons facilities. Yard waste services are provided once weekly and returned to the Hercules Avenue Yard Trash Transfer Station for consolidation in trailers and then transported to Biomass Services in Tampa.

Multifamily waste is collected in either 96-gallon carts or dumpsters once weekly and delivered to the Disposal Complex the same as single family waste. Separate yard waste collection service is not offered to multifamily customers; however, if yard waste is set out at the curb at certain properties (i.e. condos), the City will collect with single family yard waste. Recyclables are collected in carts once per week, consolidated by the City and delivered to the Waste Management MRF. The City provides multifamily customers with once per month bulk waste collection for up to 10 items.

Commercial waste is collected in City-provided dumpsters (size and frequency determined by customer and City) and is taken to the Disposal Complex. Commercial waste may also be collected in City-provided compactors or roll-off containers (size and frequency determined by customer and City) and is taken to the Disposal Complex. Recycling for commercial recycling customers is collected in an open market where the City competes to provide it in City-provided 96-gallon carts, City-provided dumpsters (size and frequency determined by customer and City), City-provided compactors or roll-off containers (size and frequency determined by customer and City). Recyclables collected by the City are handled similar to the collected residential recyclables.

C&D debris collection service is handled by an open market. The City competes with the private sector for C&D debris collection services, and C&D debris collected by the City is taken to Waste Management-Pinellas or Sarnago & Sons.

2.2.6 City of Dunedin

The City's Solid Waste Division provides collection for single family garbage curbside once weekly in City-provided 90-gallon roll carts serviced by automated side-loader trucks. The City contracts with Waste Pro of Florida for the weekly residential collection, processing, and marketing of recyclables. The City provides once-weekly residential collection of yard waste and bulk waste on the same day that garbage and recycling is collected. Single family municipal solid waste and bulk waste streams are hauled to the Disposal Complex for processing/disposal. Clean or bagged yard waste is sent to the CRR facility. Collected recyclables are hauled to the Waste Pro MRF in Sarasota.

The City provides multifamily residents a variety of container types such as carts or dumpsters in order to accommodate the specific needs of the individual customer and the volumes and types of material generated. Multifamily recycling services are not provided by the City but are available through an open market. Multifamily bulk waste is collected by the City on call, on a fee based schedule. Multifamily municipal solid waste and bulk waste streams are hauled to the Disposal Complex for processing/disposal. For multifamily customers receiving curbside service in carts, clean or bagged yard waste is delivered to the CRR facility. Multifamily customers receiving dumpster service do not have separate yard waste collection.

The City provides commercial garbage collection via dumpsters. Dumpster size and frequency of collection is determined by the customer's needs. Commercial recycling services are not provided by the City but are available through an open market. Commercial bulk waste is collected by the City on call, for a fee. There is no separate commercial yard waste collection. Commercial garbage and bulk waste is hauled to the Disposal Complex for processing/disposal.

C&D debris is generally handled in an open market and can be collected by the City by special arrangement. C&D debris collected by the City is delivered to the Angelo's facility.

2.2.7 City of Gulfport

The City collects residential curbside garbage twice weekly in containers provided by the City or residents' own containers. Recyclables collection is separated into two 18-gallon bins provided by and collected by the City. Residential bulk waste and yard waste is collected by the City by special appointment. Single family municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Yard waste is taken to the CRR facility for processing. Collected recyclables are delivered to Recycling Services of Florida.

Multifamily waste is collected by the City using carts or dumpsters at a variety of frequencies as negotiated. Recycling for multifamily customers is collected using a number of 96-gallon carts once weekly. Multifamily bulk waste and yard waste is collected by the City by special appointment. Multifamily municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Yard waste is taken to the CRR facility for processing. Collected recyclables are delivered to Recycling Services of Florida.

Commercial waste is collected by the City using carts or dumpsters at a variety of frequencies as negotiated. Yard waste and bulk waste are only collected by appointment from commercial customers. Commercial solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Yard waste is taken to the CRR facility for processing. The City offers commercial recycling using carts. Collected recyclables are transferred to the Recycling Services of Florida.

C&D debris is generally handled in an open market and can be collected by the City by special appointment. C&D debris collected by the City is delivered to Angelo's or the Disposal Complex.

2.2.8 City of Indian Rocks Beach

The City provides curbside garbage collection for single family customers twice weekly using automated carts provided by the City. Waste Connections collects curbside recyclables once weekly using 18-gallon bins provided by the hauler. Bulk waste is collected by the City by appointment. Yard Waste is collected curbside once weekly by the City. Single family municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Yard waste is taken to the CRR facility for processing. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily collection is provided by the City using dumpsters or carts on an as-needed contract basis 1 to 6 times per week. Waste Connections collects multifamily recycling in carts once weekly. Bulk waste is collected by the City by appointment and yard waste is collected curbside once weekly by the City. Multifamily municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Yard waste is taken to the CRR facility for processing. Collected recyclables are hauled to the Waste Connections MRF.

Commercial garbage is collected by the City using dumpsters or carts on an as-needed contract basis 1 to 6 times per week. Commercial solid waste is delivered to the Disposal Complex for processing/disposal. Commercial recycling is offered for cardboard for those who request it and collected by the City of Largo; and is otherwise left to the open market. Bulk waste is collected by the City by appointment only, and yard waste collection is not provided to commercial customers.

C&D debris collection is provided through an open market.

2.2.9 City of Indian Shores

The City contracts with Waste Connections to provide curbside collection for residential customers. Curbside services include garbage collection twice weekly using containers provided by the residents, recycling once weekly using 18-gallon bins, or 64-gallon carts provided by the hauler. Bulk waste is picked up by the hauler by appointment. Yard waste is placed next to the garbage can for pick-up with regular garbage service, or the customer can call for a special pick-up. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily garbage is collected in dumpsters provided by Waste Connections, recycling can be arranged with Waste Connections for once weekly collection, or drop-off is offered. Bulk waste service is by special pick-up for a fee, and yard waste can be placed in regular garbage containers. Multifamily municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Commercial garbage collection is provided by Waste Connections using a variety of dumpsters and carts and collection times vary. Recycling collection can be arranged with Waste Connections once weekly but is otherwise handled by an open market. Bulk waste collection is by hauler appointment for additional fee. Yard Waste may be placed with regular garbage or customers can call ahead for a special pick-up. Collected garbage, bulk waste and yard waste is delivered to the Disposal Complex, and collected recyclables are sent to the Waste Connections MRF.

C&D debris is handled by the open market, though Waste Connections competes to provide the service. The disposal or processing location is unknown.

2.2.10 Town of Kenneth City

The City contracts with Waste Connections for the collection of single family garbage collected curbside twice weekly from 96-gallon carts provided by Waste Connections. Recyclables are collected once weekly in 18-gallon bins provided by the contractor. Bulk waste is by appointment with Waste Connections at no additional charge. Yard waste is collected with the garbage by placing it in the garbage containers, in bags for collection or branches laid next to the garbage twice weekly. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily recyclables are collected once weekly using wheeled carts or 18-gallon bins provided by the contractor. Multifamily bulk waste and yard waste collection is by appointment with Waste Connections. Waste collection for multifamily is through 2-8 cubic yard dumpsters provided by Waste Connections collected 1 to 6 times per week. Multifamily municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Commercial waste collection is through 2-8 cubic yard dumpsters provided by Waste Connections collected 1-6 times per week. Commercial bulk waste and yard waste collection is by appointment with the contractor. Collected garbage, bulk waste and yard waste is delivered to the Disposal Complex. Commercial recycling is through an open market.

Roll-off C&D debris collection is exclusive to Waste Connections; the disposal or processing location is unknown.

2.2.11 City of Largo

Single family garbage collection is by the City twice weekly using carts. Recycling is also collected by the City once weekly using carts. Bulk waste and yard waste are collected by the City using roll-off containers or a “spot location” four times per year. Single family municipal solid waste is delivered to the Disposal Complex for processing/disposal. Bulk waste and yard waste are taken to the Angelo’s facility for processing. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily collection of garbage is provided by the City using carts or dumpsters twice weekly. Recyclables are collected by the City in carts or dumpsters once weekly. Yard waste and bulk waste are collected using a roll off containers or a “spot location” as negotiated. Commercial garbage is collection by the City twice weekly using a variety of carts and/or dumpsters. Recycling is offered by the City once weekly using a variety of carts and dumpsters, though it is an open market. Bulk waste and yard waste are collected by the City using roll-off containers or a “spot location” with negotiated

frequency of pick-ups. Collected commercial garbage is delivered to the Disposal Complex, and yard waste and bulk waste streams are sent to Angelo's facility for processing. Recyclables collected by the City are hauled to the Waste Connections MRF.

C&D debris placed in roll-offs containers is collected by the City and then transferred to Angelo's for processing.

2.2.12 City of Madeira Beach

For single family waste, the City collects the garbage curbside twice weekly in a container supplied by the resident. The City contracts with Waste Connections to collect recyclables once weekly in an 18-gallon bin supplied by the contractor. Bulk waste collection is handled by the City through a special appointment. Yard waste is collected by the City once weekly. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily garbage collection is handled by the City two or more times per week using 1, 2 or 3 cubic yard dumpsters supplied by the City. Waste Connections collects recyclables once weekly in 96-gallon carts supplied by the contractor. The City collects bulk waste by a special appointment. Yard waste is collected by the City once weekly. Multifamily municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Commercial garbage collection is handled by the City two or more times per week using 1, 2 or 3 cubic yard dumpsters supplied by the City. Waste Connections offers commercial recycling as negotiated with each business, in the open market. The City collects bulk waste by special appointment. Yard waste is collected by the City once weekly. Commercial solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Recyclables collected by Waste Connections are hauled to the Waste Connections MRF.

C&D debris is handled by an open market.

2.2.13 Town of North Redington Beach

The Town contracts with Waste Connections for the curbside collection of single family garbage. It is collected "back door," meaning the homeowner does not need to take the garbage to the curb, twice weekly. Homeowners provide the container. Recycling is collected "back door" by Waste Connections using 18-gallon bins provided by the contractor. Bulk waste is collected by a special appointment by Waste Connections. Yard waste is collected with garbage. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily customers have collection for garbage by Waste Connections in 1 to 8 cubic yard dumpsters, collected 1 to 6 times per week. Recycling is handled by carts provided by Waste Connections and collection times vary. Bulk waste collection is by special appointment. Yard waste is usually handled by the commercial landscapers. Multifamily municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Commercial collection service for garbage is provided by Waste Connections in 1 to 8 cubic yard dumpsters, collected 1 to 6 times per week. Recycling is offered by Waste Connections, in an open market, and collection frequencies vary for those businesses that subscribe for recycling service. Collected commercial solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal, and recyclables collected by Waste Connections are hauled to the Waste Connections MRF.

C&D debris is handled by an open market.

2.2.14 City of Oldsmar

The City contracts with Republic Services to collect all single family waste and recyclables. The waste materials are transferred to the Disposal Complex. All waste and recycling containers are provided by Republic Services. Single family garbage is collected curbside twice weekly in 35, 64, or 96-gallon carts. Recyclables are collected once weekly in 35 or 64-gallon carts. Bulk waste and yard waste are collected twice weekly. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to Recycling Services of Florida.

Multifamily garbage is collected in 64 gallon carts twice weekly or in dumpsters with varying frequency. Multifamily recyclables are collected in 64 or 96-gallon carts collected once weekly. Bulk waste is collected twice weekly, and yard waste is collected with garbage. Multifamily municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to Recycling Services of Florida.

Commercial garbage collection is provided using customer-supplied trash cans or dumpsters 1 to 6 times per week. Commercial recycling is handled by the open market. No bulk waste or yard waste service is provided. Collected commercial solid waste is delivered to the Disposal Complex. (Note that the City requires new multifamily and commercial developments to provide adequate space and receptacles for recycling by owners and tenants of the property, via ordinance.)

C&D debris waste is handled through an open market.

2.2.15 City of Pinellas Park

The City contracts with Waste Management for the collection of waste and recycling. Single family customers have curbside garbage collection twice weekly, with the resident providing the container. Waste Management provides an 18-gallon recycling bin for once weekly recycling collection. Bulk waste is placed curbside next to garbage after notifying the City. Yard waste is collected with the garbage or residents can deliver to the Waste Management Brush Site (open only to single family residents). Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Management MRF.

Multifamily garbage collection is by use of a dumpster provided by Waste Management, its size and the frequency of pick-up varies by need. Recycling service is handled via an open market, but the City provides residents with Waste Management's information regarding pick-up using carts. Bulk waste and yard waste are collected by Waste Management after arrangements are made through the City, for an extra fee depending on the nature and amount to be collected. Multifamily municipal solid waste,

yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Management MRF.

Commercial garbage collection service is provided by use of various size dumpsters collected 1 to 6 times per week depending on need, or small commercial entities can be serviced by the use of containers provided by the business. Commercial recycling is handled by an open market. Bulk waste and yard waste are handled by special appointment through the City (extra fee). Collected commercial solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal, and collected recyclables are hauled to the Waste Management MRF.

Any residential C&D debris is handled through Waste Management, and commercial C&D debris waste is handled through an open market. C&D debris is collected by Waste Management is taken to the Waste Management Transfer Station in Pinellas County.

2.2.16 Town of Redington Beach

The Town contracts with Waste Connections for collection services. Single family customers have curbside garbage collection twice weekly, and homeowners provide containers. Recycling service is provided once weekly in an 18-gallon bin provided by Waste Connections. Yard waste is collected with garbage, and bulk waste is by special appointment. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily garbage is twice weekly using dumpsters provided by Waste Connections. Recycling is by open market. Bulk waste service is provided by special appointment with the hauler. Yard waste is handled with the garbage for residents or the landscaper disposes of it. Multifamily municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal.

Commercial collection services are handled by the open market, as there are very few commercial units in the Town.

C&D debris is handled by open markets.

2.2.17 Town of Redington Shores

The Town contracts with Waste Connections for single family garbage collection with curbside collection twice weekly. Homeowners provide their own containers. Recycling service is provided once weekly in an 18-gallon bin provided by the hauler or residents can buy their own small container. Yard waste is collected with garbage, and bulk waste collection is by appointment. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to Waste Connections MRF.

The Town contracts with Waste Connections for multifamily waste collection twice weekly using cans provided by the development or dumpster(s) provided by Waste Connections. Recyclables are collected in bins provided by Waste Connections or containers provided by the development once weekly. Yard waste is collected with garbage or handled by commercial landscapers. Multifamily municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

The Town contracts with Waste Connections for commercial waste collection 1 to 3 times per week using dumpsters supplied by Waste Connections. Recycling is offered by Waste Connections once weekly using dumpsters, if the commercial customer subscribes for the service. Bulk waste collection is provided by Waste Connections by special appointment. Yard waste is either collected with garbage, or the landscaper provides for disposal. Collected commercial waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Recyclables collected by Waste Connections are hauled to the Waste Connections MRF.

C&D debris is handled through an open market.

2.2.18 City of Safety Harbor

The City collects all residential waste and recycling. Single family municipal solid waste and bulk waste is delivered to the Disposal Complex. Recyclables are transferred to the City of Clearwater for processing. Yard waste is transferred to Safety Harbor Yard Waste Transfer for processing. All waste and recycling containers are provided by the City. Single family garbage is collected curbside once weekly in 96-gallon carts, recycling once weekly in 64- or 96-gallon carts, bulk waste and yard waste is collected once weekly.

Multifamily garbage is collected by the City in 96-gallon carts once weekly or in dumpsters with varying frequency. Multifamily municipal solid waste and bulk waste is delivered to the Disposal Complex. Recyclables are transferred to the City of Clearwater for processing. Yard waste is transferred to Safety Harbor Yard Waste Transfer for processing. Recyclables are collected in 64 or 96-gallon carts once weekly or dumpsters twice weekly. Bulk waste is collected once weekly, and yard waste is collected once weekly.

Commercial garbage collection service is provided by the City using 96-gallon carts or dumpsters, with variable collection frequency. Commercial garbage is delivered to the Disposal Complex. Recyclables are handled by open market, but the City offers to collect once weekly from 96-gallon carts or twice weekly if the entity has a dumpster service, and the entity subscribes for recycling services. Recyclables collected by the City are transferred to the City of Clearwater for processing. No bulk waste or yard waste service is provided.

C&D debris is handled through an open market.

2.2.19 City of Seminole

The City contracts with Waste Management for the collection of waste and recycling. Residential curbside garbage collection is twice weekly using containers supplied by its residents. Recycling is collected once weekly with a 65-gallon carts supplied by Waste Management. Bulk waste is included but is considered to be a special pick-up and requires the resident to notify the hauler. Yard waste is collected with the garbage. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Management MRF.

Multifamily garbage collection is twice weekly if the development's own containers are provided or by dumpster service with various pick-up service frequencies as needed. Bulk waste is included but considered to be a special pick-up and requires notification to the hauler. Yard waste is collected with

the garbage. Recycling service is provided through an open market. Multifamily municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal.

Commercial garbage is collected from dumpsters supplied by the hauler, with size and frequency based on need. Bulk waste is included but considered to be a special pick-up and requires notification to the hauler. Yard waste is collected with the garbage. Recycling service is provided through an open market. Collected commercial garbage, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal.

C&D debris collection is exclusively provided through Waste Management. The disposal or processing location is unknown.

2.2.20 City of South Pasadena

The City contracts with Waste Connections for garbage and recycling collection. All garbage and recycling containers and dumpsters are provided by the hauler. Residential curbside garbage collection is twice weekly using 96-gallon carts and recycling is once weekly using an 18-gallon bin. Bulk waste is handled by contacting Waste Connections for a special pick-up if needed and yard waste is collected with the garbage. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily garbage is on an individual basis by contracting with Waste Connections. Multifamily developments work directly with Waste Connections for recycling. Bulk waste is handled by contacting Waste Connections for a special pick-up if needed and yard waste is collected with the garbage. Multifamily municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to Waste Connections MRF.

Commercial garbage is on an individual basis by contracting with Waste Connections. Commercial cardboard recycling is via the open market, and all other commercial recycling is offered by Waste Connections, if the entity subscribes to recycling services, but is otherwise handled by the open market. Bulk waste is handled by contacting Waste Connections for a special pick-up if needed and yard waste is collected with the garbage. Collected commercial garbage, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Recyclables collected by Waste Connections are hauled to the Waste Connections MRF.

Roll-off service for C&D debris is contracted through Waste Connections, except for concrete which is handled by an open market. The disposal or processing location is unknown.

2.2.21 City of St. Petersburg

The City collects all of the waste and recycling for single family units. The City provides all of the garbage and recycling containers that it services with the exception of commercial compactors that are privately owned. Single family garbage is collected curbside once weekly in 90-gallon carts, and recycling is collected once every 2 weeks in 96-gallon carts. For residential homes of 2-4 units, garbage may be collected in 300-gallon containers. The City collects bulk waste by special appointment. Yard waste is either collected with the garbage, or curbside for an extra fee by special arrangement, or residents can take the yard waste to one of the four City-owned brush sites. Single family municipal solid waste and bulk waste streams are delivered to the Disposal Complex for

processing/disposal. Collected recyclables are hauled to Waste Connections MRF. The City processes yard waste into mulch at the four brush sites.

Multifamily garbage is collected in a variety of carts and dumpsters depending on space and need and collected 1 to 6 times per week. Recyclables collection is by open market. The City collects bulk waste by appointment. Yard waste is either collected with the garbage, for an extra fee by special arrangement, or developments can take the yard waste to one of the four City-owned brush sites. Multifamily municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. The City processes yard waste into mulch at the four brush sites.

Commercial garbage is collected in a variety of carts and dumpsters depending on space and need and collected 1 to 6 times per week. Commercial recycling is handled by the open market, though the City offers cardboard collected in dumpsters if commercial units request it. Collected commercial garbage and bulk waste streams are delivered to the Disposal Complex for processing/disposal.

C&D debris collection is provided by special arrangement with the City using roll-offs. Collected C&D debris waste is primarily sent to Angelo's facility for processing/disposal.

2.2.22 City of St. Pete Beach

The City contracts with Waste Connections for the collection of waste and recycling. Single family curbside garbage collection is twice weekly in the resident-provided container and recycling is once weekly in an 18-gallon bin supplied by the hauler. Bulk waste collection is by a special call to Waste Connections for a pick-up. Yard waste is collected with garbage, but yard waste over 1 cubic yard requires a call for special pick-up. Single family municipal solid waste, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Multifamily garbage collection is by containers provided by Waste Connections with frequency of pick-up as needed, and recycling is with 18-gallon bins or larger carts provided by the hauler, once weekly. Bulk waste collection is by a special call to Waste Connections for a pick-up. Yard waste is collected with garbage (if over 1 cubic yard it will require a call for special pick-up). Multifamily municipal solid waste, yard waste, and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste Connections MRF.

Commercial garbage collection is by use of roll-off containers or dumpsters with sizes and frequency of pick-up as needed. Yard waste is collected with garbage, and bulk waste is by special appointment. Collected commercial garbage, yard waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Recyclables are handled by open market.

C&D debris service is handled by open market.

2.2.23 City of Tarpon Springs

The City contracts with Waste Management for garbage and recycling collection. Residential curbside garbage is collected twice weekly in resident-provided containers. Recycling is collected once weekly in an 18-gallon bin provided by the hauler. Yard waste is also collected once weekly or can be dropped off at the City's Yard Waste Facility. Bulk waste service is via a special pick-up with Waste Management or it can be taken to the City's Yard Waste Facility. The City operates a Yard Waste

Facility that accepts bulk waste and yard waste for a fee. Single family municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste management MRF. Yard waste is taken to the City's Yard Waste Facility and then delivered to Mother's Organics for processing.

Multifamily collection is twice weekly when using 96-gallon carts, or 1 to 6 times per week when using a dumpster – both types of containers are supplied by the hauler. Recycling collection can be contracted with Waste Management. Bulk waste service is provided by special pick-up with Waste Management or by taking to the City's Yard Waste Facility. There is no service for yard waste collection, but it can be taken to the City's Yard Waste Facility for a fee. Multifamily municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to the Waste management MRF.

Commercial garbage is handled with either carts or dumpsters as negotiated. Separate yard waste or bulk waste collection services are not offered to commercial customers. Collected commercial garbage is delivered to the Disposal Complex for processing/disposal. Recyclables are handled through open market.

C&D debris is handled through an open market.

2.2.24 City of Treasure Island

The City collects residential garbage curbside twice weekly in 60- and 90-gallon containers supplied by the City. The City contracts with Republic Services for the provision of 35- or 65-gallon recycling containers collected once weekly. The City provides residential yard waste collection once weekly. Bulk waste collection is by special pick-up by the City. Single family municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to Republic's Lakeland MRF facility and the Recycling Services of Florida facility. Any yard waste separately collected is transported to the CRR facility for processing.

Multifamily garbage collection is provided by the City using 1, 2 or 3 cubic yard dumpsters supplied by the City, 2 to 6 times per week depending on customer's needs. The City recently passed an ordinance that establishes the framework for a universal (mandatory) multifamily recycling program. Mandatory multifamily recycling will be effective on December 1, 2018 and will be collected with carts picked up once weekly. Bulk waste collection is provided by special pick-up by the City. Multifamily municipal solid waste and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Collected recyclables are hauled to Republic's Lakeland MRF facility and the Recycling Services of Florida facility. Any yard waste separately collected is transported to the CRR facility for processing. Yard waste collection requires an appointment for special pick-up.

Commercial garbage collection is performed by the City using 1, 2 or 3 cubic yard dumpsters supplied by the City, 2 to 6 times per week depending on customer's needs. Commercial recycling is through the open market, but commercial entities will be able to use the same provider that will be providing multifamily recycling collection effective December 1, 2018. Bulk waste collection is provided by special pick-up by the City. Collected commercial garbage, and bulk waste streams are delivered to the Disposal Complex for processing/disposal. Any yard waste separately collected is transported to the CRR facility for processing. Yard waste collection requires an appointment for special pick-up.

C&D debris is handled through an open market.

2.3 Infrastructure

The infrastructure currently in place to manage solid waste generated within Pinellas County's service area includes:

- Solid Waste Facilities: The County owns the following facilities that are discussed in detail in the following sub-sections.
    - Pinellas County Solid Waste Disposal Complex
    - Multiple Beach & Park Recycling Locations
    - Multiple Collection Centers
    - Mulch Pick Up Sites

- Solid Waste Programs/Contracts: The County's System includes the following contractual and operations components:
    - The County provides residential MSW collection service in a portion of the unincorporated area (the Lealman MSBU) through a franchised hauler.
    - The County provides a licensing program for haulers in the remainder of the unincorporated County area.
    - The County contracts for private operation of the County-owned Waste-to-Energy (WTE) facility.
    - The County has a Power Purchase Agreement (PPA) with Duke Energy that expires in 2025. Duke Energy is currently in the process of renegotiating the PPA and in discussions with the County about a solar energy project (with location yet to be decided).
    - The County owns and operates an Industrial Water Treatment Facility, which is adjacent to the Disposal Complex.
    - The County contracts for private operation of the County-owned Bridgeway Acres Landfill, including yard waste processing within the landfill footprint. This contract also includes the maintenance of the closed Toytown landfill, as well as litter collection from defined roadways surrounding the Disposal Complex.
    - The County owns and operates a tire processing facility located at the Disposal Complex.
    - The County owns and operates a Household Electronics and Chemical Collection Center (HEC_3) and contracts with a private vendor for recycling and/or disposal of electronics and chemicals dropped off at the Disposal Complex. The County is developing a North County HEC_3 satellite location that will provide recycling opportunities to the residents living in the north area of the County.
    - The County owns and operates 25 Beach & Park Recycling Locations (BPRL) and 14 Collection Centers (CC). Most locations are owned by the County except for two locations that are on publicly accessible private property with 24 hour access (Walmart at 23106 U.S. 19 North in Clearwater and Bank of America at 10900 Seminole Boulevard in Largo). Both of these CC locations were established based on a verbal agreement with the property owners over a decade ago. One of the 14 CC is the *Recycling Drop Off Facility* located near the HEC_3 at the Disposal Complex. CC locations are serviced through an agreement with a private vendor (Waste

Management, Inc.). Waste Management is responsible for processing and marketing collected recyclables at its MRF located in Tampa.

- The County contracts with Keep Pinellas Beautiful, a Keep America Beautiful affiliate, (under Adopt a Program Management Services) to provide anti-litter programs and education.
- The Solid Waste Department has managed a man-made reef (underwater structures built to promote marine life) development program since 1975. The 42 reefs are created from clean inert C&D debris such as concrete, steel beams, and even derelict marine vessels. Since 1975, approximately 50,000 tons of reef material have been deployed.
- Administration systems and education programs to support the collection, recycling, processing, conversion, and disposal activities of the County.
- The City of Tampa and Hillsborough County have a verbal commitment/understanding with Pinellas County such that if either of these entities exceeds their facility capacity, or are not fully operational, Pinellas County can accept the waste at the Pinellas County Disposal Complex, provided the Disposal Complex has available capacity at the WTE.
- The City of Tampa Solid Waste Division has a Compliance Agreement with the U.S. Department of Agriculture (USDA) to accept international waste (municipal solid waste generated on ships). In this compliance agreement, the Pinellas County WTE Facility is identified as a backup system. (The term of the agreement is one year and is renewed annually, contingent upon inspections of the facilities by the USDA.)

2.3.1 Pinellas County Solid Waste Disposal Complex

The Solid Waste Disposal Complex accommodates the following facilities that are further discussed in the following sub-sections. Figure 2.1 shows the layout of the facilities located at the Disposal Complex.

- Pinellas County WTE facility that includes Metals Recovery Operations;
- Bridgeway Acres Landfill that includes a Class I waste disposal areas and a Class I non-putrescible waste disposal area, a Yard Waste Processing Facility, a Waste Tire Processing operation, and ash disposal;
- Citizens Hand Unloading Area (CHUA);
- Recycling Drop Off Center; and
- Household Electronics and Chemical Collection Center (HEC_3).

Additionally, the Disposal Complex accommodates other site features necessary for facility operations, such as scale house, remote scales, industrial water treatment facility, site water management system canals and impoundments, and Administration and Maintenance facility structures.

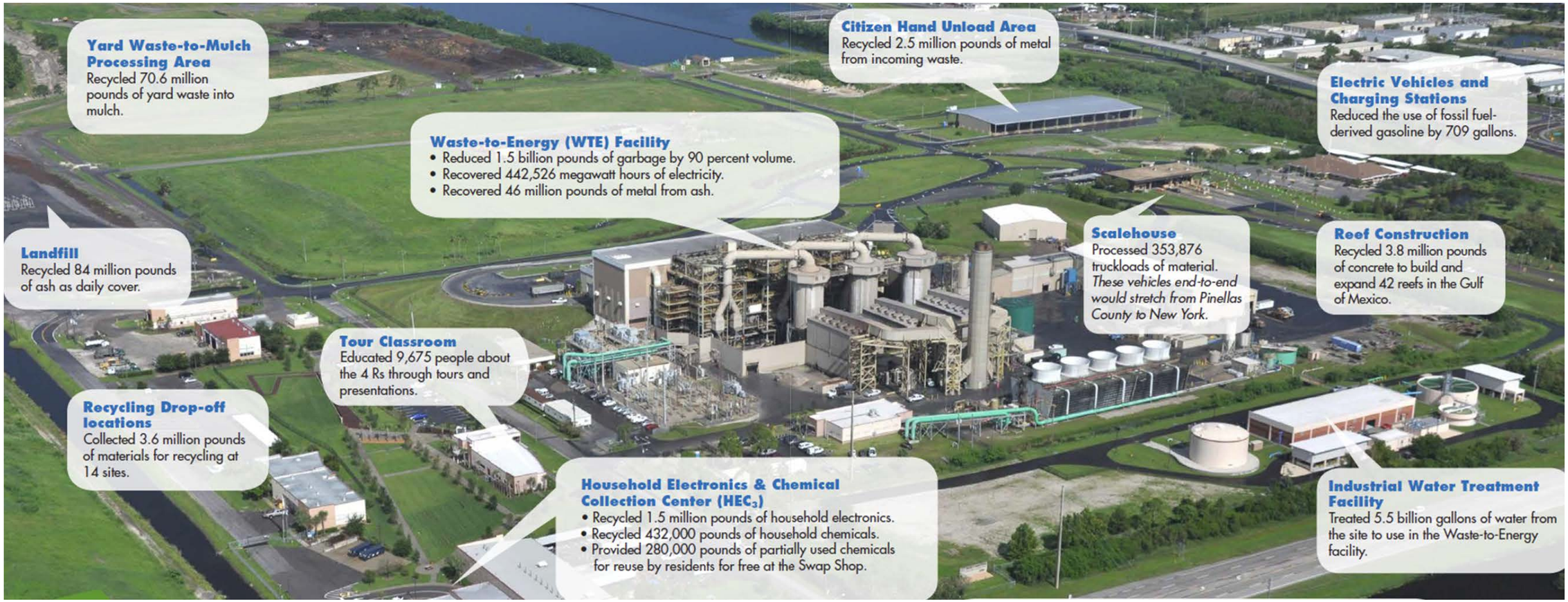


Figure 2.1 Overview of Facilities Located at the Disposal Complex

Source: Pinellas County Solid Waste

2.3.2 Pinellas County Waste-to-Energy Facility

The WTE is located on 15 acres within the 705 acre Disposal Complex. The facility is owned by the County and began commercial operation in 1983. The County contracts with a private entity (Covanta) that is responsible for the WTE's day-to-day operations, under a contract with an initial term of December 14, 2014 to December 31, 2024, and two potential 5-year extensions. The facility can process up to 3,150 tons per day of solid waste while generating up to 75 megawatts (MW) of clean, renewable electrical energy. The WTE consists of three major operating units:

- Waste-to-Energy Operations: The WTE Facility is operated 7 days a week, 24-hours a day. All processable municipal solid waste (MSW) is routed to the WTE Facility, provided there is room on the tipping floor and the plant operations allow. Specific to the WTE, processable waste can be classified as waste types allowed under 40 CFR 60.51b, including Class I waste (defined as general, non-hazardous household, commercial, industrial, and agricultural wastes, subject to the restrictions of Rules 62-701.300 and 62-701.520, F.A.C.), combustible portions of Class III waste (defined as yard trash, construction and demolition debris, carpet, cardboard, paper, glass, plastic, furniture other than appliances, or other materials approved by the FDEP) and certain electronics waste (such as printers and stereo equipment) with appropriate size so that waste can be fed to the WTE combustor. The WTE Facility does not accept non-processable waste. Non-processable waste means that portion of solid waste that is not processable: (a) due to its size; (b) because it is predominately non-combustible; (c) due to its physical or chemical composition; or (d) because it is inappropriate to process such waste using prudent industry practices as defined in County/Covanta contract, meaning processing the waste would be considered safe, and would not interrupt performance, dependability or efficiency of operations.

  Waste is incinerated through three MSW fired combustors (each combustor with 1,050 ton-per-day capacity). Each combustor consists of a Riley Stoker water wall boiler with a Martin reciprocating grate stoker system. Waste incineration reduces volume of waste by approximately 90% while producing renewable energy (electricity). Each combustor is equipped with state-of-the-art air pollution control equipment that consists of a spray dryer absorber (SDA) to capture acid gases, a fabric filter (FF) to capture particulates, a Selective Non-Catalytic Reduction (SNCR) system for NOx control, and a powdered activated carbon injection system (PACIS) to aid in capturing mercury and dioxins. Combustion gases exit the boiler economizer and pass through the SDA and FF, then to an induced draft fan prior to entering separate flues in a common stack.

- Metals Recovery Operations: Both ferrous (such as steel) and non-ferrous (such as aluminum, copper and brass) metals are recovered from the ash by using magnets and eddy currents. The recovered metals are sold to smelters for recycling and the ash is used for landfill cover. Covanta is responsible for marketing recovered metals.

- Industrial Water Treatment Facility (IWTF) Operations: Adjacent to the WTE facility is the county owned and operated IWTF. It is a 3.0 million Gallon per day industrial water treatment plant that treats water from an on-site retention pond (Pond A) fed by several surface water

canals and one underdrain system. The IWTF supplies treated water to the WTE for the cooling water systems and boiler makeup system within the WTE facility. The IWTF consists of the following main treatment and conveyance components: (1) Influent pump station; (2) Up-flow solids contact clarifier tank; (3) Microfiltration membranes; (3) Reverse osmosis membranes; and (4) Ground Storage Tank with fished water pump stations.

2.3.3 Bridgeway Acres Landfill

The Bridgeway Acres (BWA) Class I Landfill consists of 497 acres of disposal area within the 705 acres of the Disposal Complex. The Disposal Complex is surrounded by an engineered in-ground bentonite clay slurry wall. The active landfill facility has three distinct areas. The area west of 34th Street North is referred to as the West Landfill. The area east of 34th street and south of 110th Avenue N is referred to as the South Landfill. The area east of 28th Street North is referred to as the Sod Farm. Active waste disposal currently only occurs in the South and West Landfills. The South Landfill is primarily used for putrescible Class I waste disposal, and West Landfill is exclusively used for Class I non-putrescible waste disposal (NPWD) as this disposal area falls within a 10,000 feet radius of St. Pete–Clearwater International Airport runway. The final permitted build out elevation of the landfill at the time of closure is 150 feet National Geodetic Vertical Datum (NGVD). Moreover, the West Landfill footprint currently accommodates the yard waste and tire processing operations.

Different components of Bridgeway Acres Landfill operations are described below. The landfill is owned by the County and operated via a contract with a private entity (Advanced Disposal Services, Inc., previously known as Veolia ES Solid Waste Southeast, Inc.), except for the tire waste processing operations that are performed by County staff.

- Class I Landfill: In addition to landfilling WTE ash (either as daily cover or as ash landfilling), the South Class I Landfill area is used as an alternate MSW disposal location when the volume of waste received, volume of traffic, or plant operation requires redirection of customers from the WTE. This area is also used for disposal of large items and other wastes that cannot be handled at the WTE (grit, dead animals, etc.). The Landfill accepts wastes during all hours that the Bridgeway Acres Facility is open to the public (6:00 a.m. – 6:00 p.m. Monday through Friday, 7:00 a.m. – 5:00 p.m. Saturday). Daily cover (i.e. soil or other approved material that is laid on top of a day's deposition of waste on an operational landfill) is applied after closing each day. Procedures for identifying and handling unacceptable or prohibited materials are as described for all disposal locations in Operations Plan of the Bridgeway Acres Landfill. The County utilizes the NPWD Area (West Landfill) for the disposal of Class III waste and for the disposal of non-putrescible Class I wastes, including clothing, toys, brown goods, furniture, appliances (other than white goods), and other materials that do not easily decompose or that attract vectors.
- Yard Waste Processing: The Yard Waste Processing Facility receives clean yard and vegetative waste. This facility processes yard waste at the BWA footprint and operates during the same hours the BWA facility is open. The yard waste processing equipment is operated by a subcontractor to Advanced Disposal Services, Inc. Processed mulch is provided free of charge to customers.
- Bulk Waste & Tire Processing: The County owns and operates the bulk waste and tire processing facility. The intent is to direct tires and bulky items (items such as furniture, mattresses, and other large combustible items, excluding white goods) that could not be easily

processed by the WTE to the Bulky Waste and Waste Tire Processing Facility for size reduction prior to disposal at the WTE. Although permitted to process both bulky items and tires, the facility currently only processes tires, due to equipment design limitations. The bulky items are currently disposed in the Class I landfill.

- Citizens Hand Unloading Area (CHUA): Pinellas County Solid Waste operates the CHUA at the Disposal Complex so that County residents with passenger vehicles, pickup trucks and vans (with or without trailers), and small box trucks can deliver materials for disposal directly to this designated area. In general, CHUA is used for hand unloading of all the vehicles (including residential self-haul) that do not have self-tipping payloads. This practice allows better traffic flow at the Disposal Complex while providing a safer environment to the hand unloading customers. The collected waste is then moved to a designated on-site facility (such as WTE facility, Class I landfill, yard waste processing facility, bulk waste & tire waste processing facility or household electronics and chemical collection center). Daily operations and material movement, including spotters, roll offs and equipment are provided by Advanced Disposal Services, Inc.

2.3.4 Household Electronics and Chemical Collection Center (HEC_3)

Pinellas County Solid Waste operates the HEC_3 for household electronic and chemical wastes (including household hazardous waste, "HHW"). The HEC_3 is open for business Monday through Saturday 7 a.m. to 5 p.m., except for all major holidays. Moreover, the County conducts Mobile Collection Events and the Haz-to-Go Truck program that expand collection beyond the HEC_3 facility located at the Disposal Complex. Pinellas County residents are invited to bring select unwanted electronics and chemicals to the HEC_3 at no charge. Out of the collected electronics and chemical wastes, certain processable waste materials (such as oil based paints, printers, stereo equipment etc.) are processed at the WTE facility. Private vendors are contracted by the County to process or dispose the remainder of the collected electronic waste and chemicals in accordance with Subtitle C of the Resource Conservation and Recovery Act (RCRA). A summary of chemicals disposed or recycled by this program is provided on Sheet 16, Appendix A. Reusable household chemicals, such as paints, cleaners, fertilizer and pesticides in good condition are given away through the reuse center (Swap Shop).

2.3.5 Beach & Park Recycling Locations (BPRL) and Collection Centers (CC)

The County owns and operates 25 BPRL and 14 CC locations including a CC at the Disposal Complex. The CC at the Disposal Complex is called the "Recycling Drop Off Center" and is located near the HEC_3 where residents can drop off cardboard, paper, plastic and glass containers and aluminum and steel cans. Beach and Park Recycling Locations are also in parks and beaches owned and operated by municipalities. Over 500 collection containers with 32-gallon capacity each are part of the program. With the exception of two locations, the CC locations are owned by the County. These locations, spread throughout the County, provide Pinellas County residents with multiple additional options to recycle. The CC locations are serviced by a contracted private entity (Waste Management, Inc.). Waste Management is responsible for processing and marketing collected recyclables at their privately-owned MRF located in Tampa. As indicated on Sheet 15, Appendix A, these BPRL and CC locations currently receive approximately 1,800 tons of recyclables annually.

2.4 Flow of Waste

A brief description of the waste flow at the Disposal Complex, by category, is listed below:

- Curbside residential MSW, collected by the licensed, municipal or franchise haulers, passes through the scale facility, then comes to the WTE tipping floor. Processable waste is combusted/incinerated; non-processable tires are transferred to the tire processing facility (located in the West Landfill footprint) to create a processable waste for incineration; and remaining non-processable waste is transferred to the Class I Landfill. Metals are recovered from incinerator ash, and residual ash is either used as daily cover or landfilled in the non-putrescible landfill footprint. HHW is directed to the HEC_3 facility and yard waste is directed to the yard waste processing facility.
- Residents can use BPRL and CC locations to drop off recyclables or can subscribe for curbside recyclables collection. The County contracts with Waste Management to collect recyclables from BPRL and CC collection points, which then processes and markets those materials. Franchised or licensed haulers collecting recyclables curbside determine the processor.
- Commercial waste and C&D debris are handled by open markets. Any processable waste from the commercial waste and C&D debris streams that come to the Disposal Complex are used in the WTE process, and non-processable wastes are disposed in the landfill. It is believed that commercial waste is primarily coming to the Disposal Complex; however, it was reported in 2017 that 215,849 tons of Class III were disposed in facilities outside of the County, and 19,018 tons of Class I waste were disposed in facilities outside of the County.
- Pinellas County residents can bring materials to the CHUA – out of which processable waste is directed to the WTE. Non-processable waste is either transferred to the tire processing facility or is transferred to the landfill for direct disposal.
- If the WTE facility is down, there is an available option of temporarily landfilling processable waste and subsequently recovering it when the plant comes back online and has available capacity.

Figure 2.2 provides a general overview of the flow of waste within Pinellas County.

The following language is from the Pinellas County Code of Ordinances and provides the County the authority to exercise flow control for solid waste disposal Countywide, barring any conflicts between County and municipality ordinances.

- *Sec. 106-1 (d). This section shall be effective in the incorporated as well as the unincorporated areas of the county; however, to the extent that this section conflicts with a city ordinance, the city ordinance shall prevail.*
- *Sec. 106-53. Powers of the County. In addition to powers which it may now have, the county shall have the power under this division to:*
  - *Sec. 106-53 (3). Compel the inhabitants, persons, firms, corporations, municipalities, political subdivisions or other public agencies or bodies located within the territorial boundaries of the county to use such system for solid waste disposal.*
  - *Sec. 106-53 (11). Require all persons, lands (including municipalities and other political subdivisions), buildings and premises in the county to use the facilities and services of the solid waste disposal and resource recovery system in all cases deemed necessary or*

desirable by the board of county commissioners for the public health and safety of the county and the inhabitants thereof.

While the County has regulatory flow control through this ordinance over solid waste disposal, enforcement of the ordinance does not appear necessary in the current circumstances, considering it appears that residential and commercial MSW from each jurisdiction in the County is currently delivered to the Disposal Complex. The ability to enforce the flow control ordinance over the Class I and Class III materials now known to be taken to facilities outside of the County is not known and should be explored by determining the applicability of the phrase “solid waste disposal” to material streams included in Class III definition, such as C&D debris and yard waste.

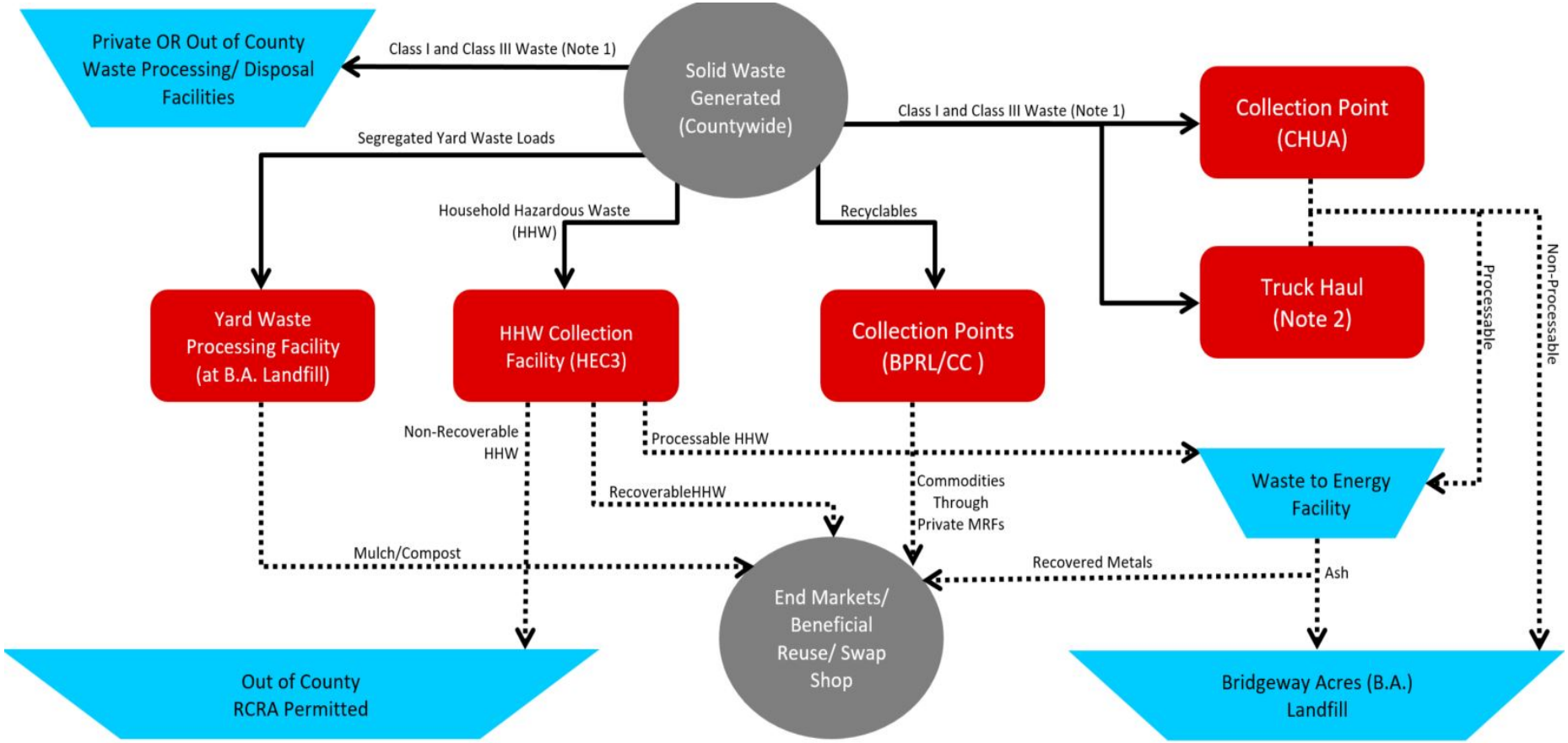
2.4.1 Unincorporated Area

Residential solid waste management is dictated by Pinellas County Ordinance, Chapter 106, Article V for the unincorporated area: (a) via the franchise agreement for the Lealman MSBU, and (b) by the hauler licensing procedure with the County for the remaining unincorporated area, both of which designate the Disposal Complex for delivery of municipal solid waste. Commercial municipal solid waste, yard waste and bulky waste service can be provided by the licensed haulers, though commercial collection service is not subject to the licensing procedure used for residential collection service and is an open market.

The County requires licensed haulers in the unincorporated area to offer curbside residential recycling service; however, this service is not mandatory, and is provided to customers by subscription for an additional fee. At a minimum, the licensed haulers must offer service for these recyclable materials: newsprint, magazines, mixed paper, cardboard, aluminum and steel cans, and plastic containers numbered 1 through 7. The haulers determine the processor of recyclables.

2.4.2 Incorporated Area

The 24 municipalities in the County manage their solid waste programs independently, as indicated in Section 2.2. Based on review of the tonnage data provided by the County, and information gathered from the municipalities, it appears that all residential municipal solid waste is delivered to the Disposal Complex. Commercial municipal solid waste, whether collected through City crews or franchise agreement, also appears to be delivered to the Disposal Complex. Collection and processing of residential recyclables are managed by each respective municipality. Many municipalities have commercial and C&D debris streams handled through open markets.



Notes: **(1)** Some Class I and Class III waste generated within the County is disposed out of County. In 2017, 19,018 tons of Class I (of which 12,421 tons were contaminated soil) and 215,849 tons of Class III waste left the County for disposal. **(2)** Municipal, and franchised, or licensed haulers bring Class I and Class III waste to the WTE tip floor, and processable waste is processed through the WTE. Non-processable waste is routed to the Landfill. **(3)** TSDF – Treatment, Storage, and Disposal Facility. **(4)** Class I and Class III are waste categories as defined by Chapter 62-701 F.A.C. C&D debris is a sub-category waste under Class III waste.

Figure 2.2 Flow of Waste in Pinellas County Solid Waste Management System

2.5 Waste Generated Versus Managed at Disposal Complex

As indicated in Figure 2.3, the Disposal Complex received 55% to 60% of the total waste generated within the County in 2016 and 2017, respectively. As explained in Section 1, waste generation increased significantly in 2016 because of more accurate data acquisition and therefore 2016 and 2017 waste generation tonnages are believed to be more representative of the amounts of waste generated in the County. In addition to the waste received at the Disposal Complex, the County manages recyclables delivered to the BPRL and CC locations.

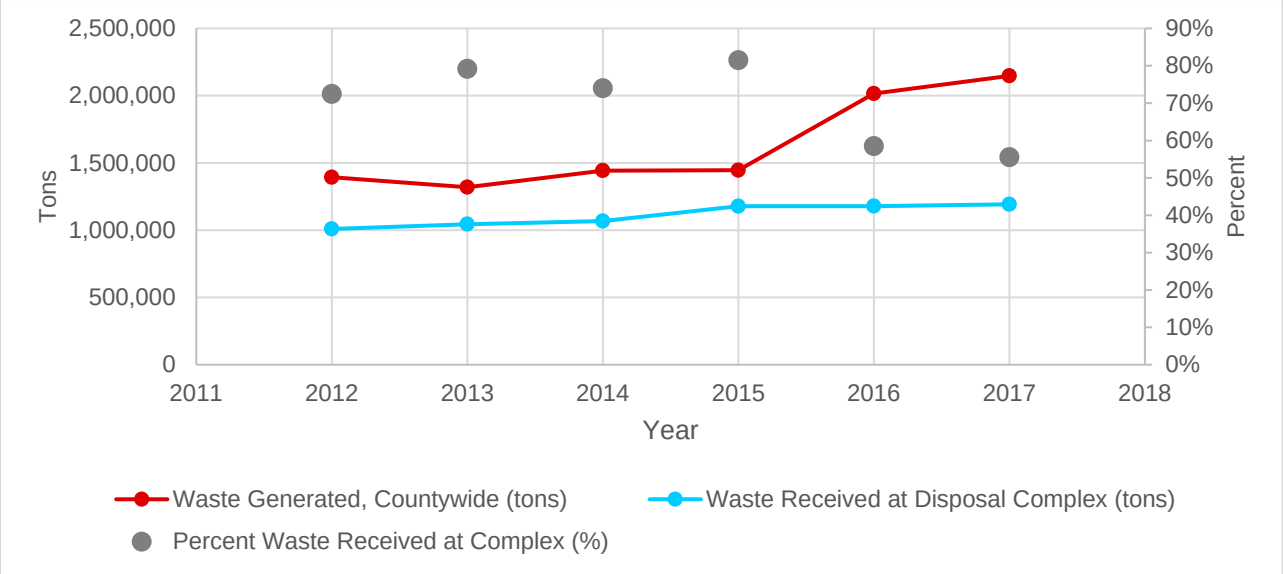


Figure 2.3 Waste Generated Versus Managed at Disposal Complex

3 Non-Source Separated Municipal Solid Waste

This section provides information on the waste stream that consists of municipal solid waste (MSW) that is generated, but not source separated for reuse or recycling. This waste stream enters the County's System through a variety of means including residential curbside collection, commercial collection, or self-hauling to one of the County's BPRL, CC or CHUA locations.

The County ensures that non-source separated MSW comes to the Disposal Complex by means of the following mechanisms:

- The County's franchise agreement for the Lealman MSBU;
- The County's licensing procedure for the remaining unincorporated area;
- The County's flow control ordinance;
- TMC guidance for the incorporated municipalities; and
- A competitive tip fee (currently $37.50/ton for MSW and $50.50/ton for tires).

3.1 Residential Collection

Residential customers are typically defined as single family residential units (4 units or less) and multifamily residential buildings (5 units or more). As detailed in Section 2.1, the County provides residential curbside solid waste collection services to its Lealman MSBU via an exclusive franchise, and in the remainder of the unincorporated County areas via licensed haulers. County residents have an option to self-haul their residential waste to the hand unloading area at the Disposal Complex. The 24 municipalities manage their residential solid waste programs independently, as described in Section 2.2.

3.2 Commercial Collection

Commercial collection is not managed by the County using a franchise agreement or hauler licensing in the unincorporated areas and is instead provided by an open market. The 24 municipalities within the County either provide commercial MSW collection with City crews or through franchise agreements. The County currently charges $37.50 per ton to accept commercial MSW at the Disposal Complex. This is a competitive rate (unchanged for over 30-years) that serves to provide an economic incentive to bring commercial waste to the Disposal Complex for disposal.

3.3 Disposal

Processable non-source separated waste is incinerated at the WTE. Materials that are primarily non-processable are landfilled in the Bridgeway Acres landfill along with the ash that is produced as a byproduct of the incineration process at the WTE.

3.4 Recent Trends

Figure 3.1 and Sheet 11 of Appendix A provide details on recent trends regarding residential and commercial waste received at the Disposal Complex. The figure shows the amount of waste incinerated and landfilled in relation to the waste received at the Disposal Complex. As can be noticed in the figure, residential waste delivered to the Disposal Complex has indicated a minor yet consistent increase since 2012. Commercial waste has also indicated a slight increase in the 2012 to 2015 period

but showed a slight decrease in 2016 and 2017. Compared to the 2012-2014 timeframe, landfilled quantities have increased slightly; whereas incinerated waste quantities have decreased slightly in the 2015-2017 timeframe.

The recent decrease in incinerated waste quantities is due to increased downtime at the WTE facility related to implementation of equipment upgrades and improvements related to the Technical Recovery Plan (TRP). The TRP is a $240 million plus multiyear capital improvement program initiated as part of the Service Agreement the County executed with Covanta who took over operation of the Facility in 2014. Under the TRP, Covanta is implementing various projects at the WTE facility to improve performance levels, including for availability, throughput, energy generation, and utility and reagent utilization.

As explained in Section 1.4, collected multifamily wastes are somewhat challenging to accurately segregate for analysis, because of the nature of collection methods used for multifamily, which can be the same as single family curbside collection, or could be the same as commercial collection using dumpsters or roll offs. Figure 3.1 shows residential waste received versus commercial waste received, without attempting to segregate multifamily waste.

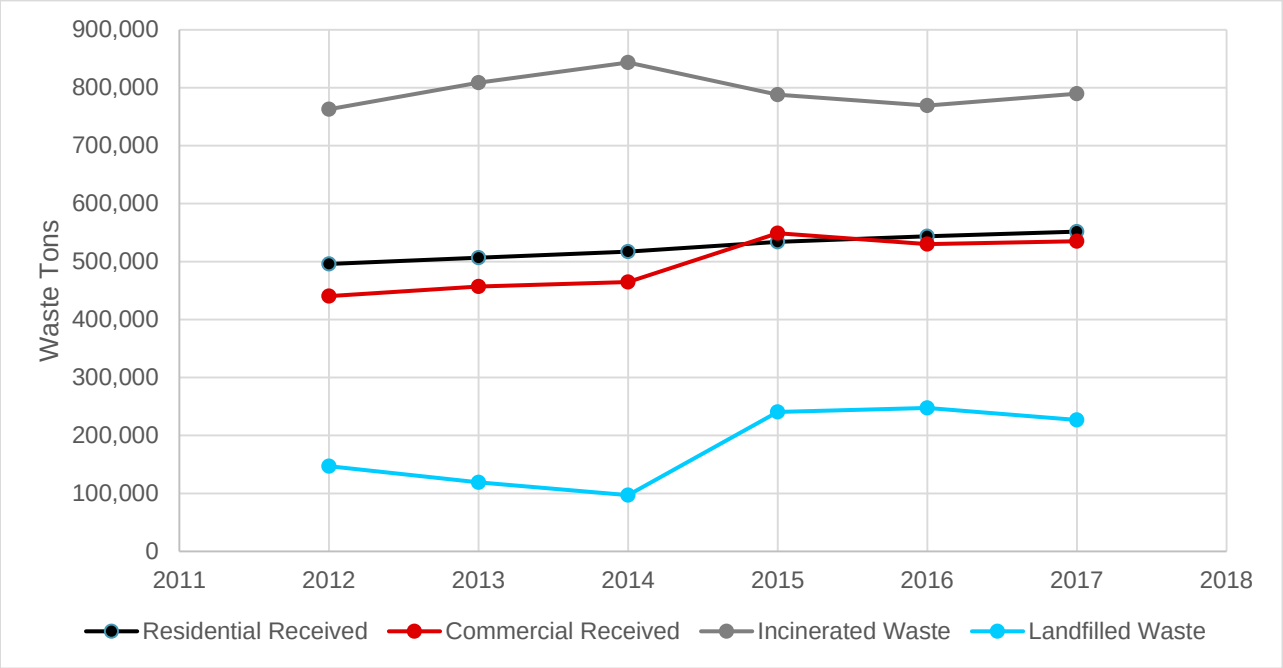


Figure 3.1 Waste Received and Disposed at the Pinellas County Disposal Complex

4 Recyclables

The U.S. Environmental Protection Agency (EPA) defines recycling as a series of activities by which discarded materials are collected, sorted, processed, converted into raw materials, and used in the production of new products. This section focuses on traditional curbside recyclables (i.e. paper and containers), and discusses recycling programs, services, and facilities that are currently part of the County's System. These include residential curbside recycling, drop-off recycling, the County's processing contract for residential recycling, public education and outreach programs, and recycling programs at County facilities. This section also discusses differences between how residential and commercial recycling is handled within the County. Organics and C&D recycling are addressed separately in subsequent sections.

4.1 Residential Collection

In the unincorporated area, recycling services are offered through a franchise hauler (Lealman MSBU) and other licensed haulers (remainder of the unincorporated area). However, recycling service is not mandatory in the unincorporated area of the County. The incorporated area municipalities operate residential waste programs independently. Section 2.2 discusses the details of the residential recycling programs offered in the incorporated municipalities, all of which provide curbside collection of recyclables. The County also provides the opportunity for residential customers to drop-off recyclables at BRRL and CC locations.

The County currently has a contract with Waste Management to collect recyclables from the BPRL and the CC locations, process the collected recyclables at the Waste Management MRF in Tampa, and market those materials. Revenue share to the County is contingent on the monthly market value of recyclables, and in the current market place, the County realizes minimal revenues from the sale of recyclables. The quantities of recyclables collected through the BPRL and CC locations are shown in Sheet 15, Appendix A. In general, the BPRL locations receive over 100 total tons annually and CC locations received approximately 1,700 tons of recyclables in Fiscal Year 2017.

4.1.1 Public Awareness of Residential Recyclables Collection Programs

The County performed a Residential Recycling Awareness Survey in 2016 in which 1,424 randomly selected residential interviews were conducted. Out of these survey respondents, 28% resided in the unincorporated County and the remaining 72% lived in an incorporated County area. Out of the survey respondents, 76% lived in single family developments. A few key observations from this survey are detailed below:

- 86% of single family respondents were aware that their garbage hauler offers curbside recyclables collection.
- 28% of single family respondents, whose haulers did not provide curbside recycling (or residents were unaware that their haulers provided service), were willing to pay as much as $5 per month for the service.
- 88% of the total respondents were aware of the drop off collection centers in the County, and 36% of the total respondents were unwilling to travel to drop off recyclables.

One key takeaway from the above observations and other data provided in the 2016 Awareness Survey report was that aggressive and continued public outreach can assist the County in increasing its traditional recycling rates for residential waste. Note that the County contracts with Keep Pinellas Beautiful to educate residents about the County's solid waste program and has been taking steps in continued public outreach.

The County also performed a multifamily residential curbside recycling survey in mid to late 2016. The effort was led by the Recycling Outreach and Programs (ROP) Section of the Department of Solid Waste. The ROP Section surveyed municipalities and haulers in Pinellas County regarding their multifamily recycling services. The survey indicated that recycling is available to all multifamily developments at an additional cost through licensed haulers. The multifamily development may choose not to contract for recycling services as it is not mandatory. The recycling fee arrangements varied in the different municipalities. A few issues identified through the survey were: (1) lack of mandatory recycling; (2) additional cost for recycling; (3) limited space for recycling in some multifamily developments; and (4) although individual residents may want to recycle, the property managers and home owner associations contract for the service. Many municipalities and haulers explained the benefits of using carts, instead of dumpsters, to overcome limited space issues to tailor a recycling program for such developments. The municipalities expressed the need for continued public education and outreach.

4.2 Commercial Collection

Recycling for commercial customers is provided by an open market in the County, as State law does not allow commercial recyclables to be controlled by a local government, whether through contracts or agreements or through municipal collection. However, the County encourages its commercial customers to "recycle and reuse" through programs such as Cutting Waste at Work (CWW), which evaluates collection and disposal of trash, recycling, yard waste, and disposal of chemicals and electronics (including things like grease waste and motor oil). In 2017, the CWW program resulted in 10 assessments, out of which 5 recycling programs were implemented. So far in 2018, assessments have surpassed those in 2017, with 16 assessments out of which 2 recycling programs have been confirmed at the time of this writing.

4.2.1 Public Awareness of Commercial Recyclables Collection Programs

The County performed a Commercial Recycling Awareness Survey in 2017 in which 242 randomly selected respondents were interviewed. Similar to the 2016 Residential Recycling Awareness Survey, this Commercial Recycling Awareness survey indicated that aggressive and continued public outreach can assist the County in increasing its traditional recycling rates by engaging commercial entities.

4.3 Recyclables Composition

Figure 4.1 shows the relative components of recyclable materials based on a composition study performed on drop off recyclables (at the BPRL and CC locations) in 2015 by Kessler Consulting, Inc. Paper (including corrugated cardboard) and glass comprise the top two categories of recyclables collected at these collection centers. The Kessler report found a contamination rate of 6.1 percent for these recyclables.

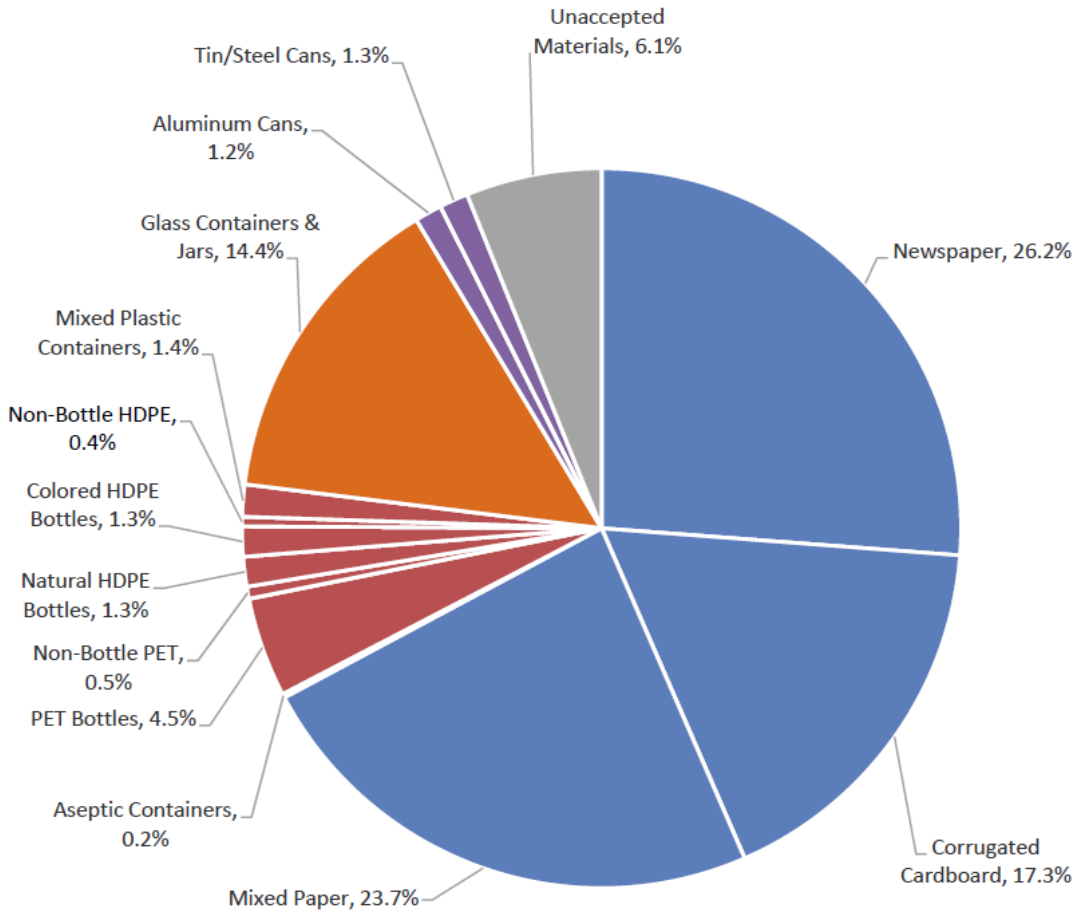


Figure 4.1 Drop-off Recyclables Composition (From 2015 Study)

4.4 Recent Trends & Programs

Volatility of commodity markets continues to be an issue for recyclables, recently exacerbated by actions taken by China. In July of 2017, China notified the World Trade Organization (WTO) of its intention to prohibit the import of certain solid wastes and scrap into their country, including mixed paper and mixed plastics, beginning on January 1, 2018. China also announced a new, and exceedingly stringent, contamination standard applicable to recyclable imports (0.5 percent). More details on China's actions and impacts on commodity markets are provided in the Market Assessment Report. Contamination has become a more prevalent issue for processors and the communities that rely on processors to manage recyclables collected across the United States.

In Florida, prompted by recyclables processors, during the 120th State legislative session, the State Legislature passed legislation that would place much of the burden of reducing contamination on the local governments. Specific language in HB 1149 would have required counties and municipalities to address the contamination of recyclable materials in contracts for collection, transportation and processing of residential recyclables by requiring local governments to detail how the local government would work to reduce contamination and allowed for haulers and processors to reject contaminated

loads. In April 2018, the Governor of Florida vetoed the bill; however, the issue of contamination, who is responsible for minimizing, and what recourse for contamination is allowed, it is likely to be revisited in the next State legislative session.

The TMC recommended that the County host a workshop with recycling stakeholders in the Tampa Bay Region (i.e. Recycling Workshop). The purpose of the Recycling Workshop was to facilitate discussions among public sector and private sector stakeholders that are currently, or may soon be, directly or indirectly impacted by the ongoing volatility in the recycling markets, with the goal of identifying issues and opportunities with recycling in the Tampa Bay Region. The Recycling Workshop was held on July 12, 2018, and resulted in the formation of three committees:

- **Contract Transparency**: to collaborate with local government, processors, collectors, and potentially manufacturers on contracting issues, to look for fair and equitable contracting improvements.
- **Glass**: to take the next step in looking for regional cooperation, and a community approach to beneficial use of glass.
- **Enforcement**: to take the next step in identifying the barriers, what is possible and reasonable to expect, and what tagging protocol may be appropriate.

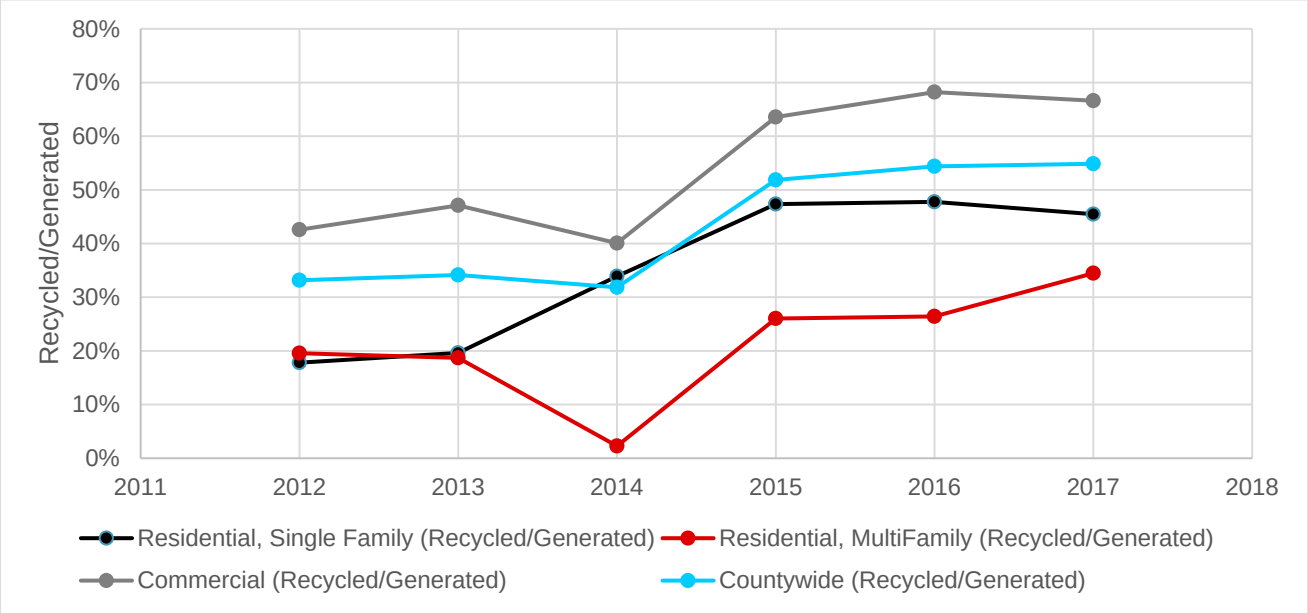
Pinellas Partners in Recycling (PPR) is a Recycling Subcommittee of the TMC that supports a variety of recycling and diversion efforts. There was agreement that the committees resulting from the Recycling Workshop would report back to the PPR to share results in PPR meeting(s), as appropriate, with the understanding that the PPR chairperson would report back to the TMC. Committee efforts are ongoing.

Because the different jurisdictions within the County manage their recyclables independently, the following trends have been analyzed for the entire County (Countywide) based on data published annually in the FDEP reports. Refer to Figure 4.2 below, and Sheet 8, Appendix A, for Pinellas County waste generation versus recycled tonnage information. In general, traditional recycling has followed an upward trend since 2014. According to the FDEP 2017 annual report, 45% of single family, 37% of multifamily, and 67% if commercial waste generated in Pinellas County was recycled, for an overall traditional recycling rate of 55%.

The County has undertaken many programs that contribute to this upward trend. Notably, the following efforts highlight the County's drive to promote and increase traditional recycling:

- The County contracts with Keep Pinellas Beautiful to drive various public outreach and recycling promotion related efforts such as the School Recycling program in which Keep Pinellas Beautiful offers school recycling initiatives to encourage students to reduce, reuse and recycle through contests, community service activities, etc.
- The County provides additional public education and outreach programs to increase recycling, including:
    - Municipal Recycling Grant program that provides $500,000 in grants to cities for recycling efforts each year;
    - Recycling A to Z Guide;
    - Annual Recycling Guide; and
    - Other public outreach events such as tours and presentations.

- The County operates a mobile household electronics and chemical collection program, in addition to the previously discussed options, HEC_3 facility and BPRL and CC Locations.
- The County provides its residents an option to obtain free mulch. The free mulch program involves yard waste processing by Pinellas County Solid Waste, cities of St. Petersburg and Tarpon Springs, and several private companies, and transporting mulch to free resident pickup locations (20 locations in the County as shown in Figure 4.3).
- Specific to the Commercial waste generation sector, programs like Cutting Waste at Work (discussed in Section 4.3); and
- Promotion and/or funding of alternative and unique ways to use recycled materials, such as building manmade reef using recycled concrete pipes, steel beams or entire (sunken) marine vessels.



Data Source: Annual Municipal Solid Waste Reports published by the FDEP

Figure 4.2 Waste Recycling Ratio (Recycled/Generated) by Different Waste Generators

Figure 4.3 Free Mulch Pickup Locations

5 Organics

Organics are defined as material containing carbon compounds and typically originating from plant or animal sources, which may be degraded by other living organisms. Organics include such materials as yard waste, food scraps, and compostable paper contaminated with food scraps.

5.1 Generation

The waste composition data for MSW delivered to the Disposal Complex (based on a 2014 waste characterization study and shown in Figure 1.9) indicates that food waste and yard waste represent 16.3 percent and 8.5, respectively, of the MSW delivered to the Disposal Complex, yielding a total organics content of 24.8 percent of the MSW waste stream.

Countywide, based on the 2017 waste management report submitted to FDEP and shown in Figure 1.8, food waste and yard waste represent 7.92 percent and 13.27 percent, respectively, yielding 21.19 percent organics content.

5.2 Collection

Organics currently collected separately and processed by the County are limited to yard waste and wood waste including: grass, leaves, weeds, tree trimmings, and clean wood (free of nails, paint, or other treatment). This organic waste is generated by single family households, multifamily households, and commercial waste generators. Yard waste is also generated as a result of changes in land use/development and storm debris.

Residential yard waste service is provided in the unincorporated areas as discussed in Section 2.1, which primarily provides for yard waste to be collected with MSW and delivered to the Disposal Complex; however, in the Lealman MSBU, if a separate yard waste collection is requested, the service provider is allowed to deliver yard waste to a different yard waste processing facility as long as the material is recycled. Segregated yard waste typically comes through drop off locations or through self-haul by residents to the Disposal Complex. Some incorporated area municipalities independently manage their yard waste, as described in Section 2.2. Separate yard waste collection service for the commercial sector is not a common practice, as it is common for commercial landscaping companies to manage the yard waste generated through landscaping activities.

5.3 Processing/Disposal & Trends

Yard waste is currently processed at the yard waste processing facility located at the Bridgeway Acres Landfill. Processed mulch is provided free of charge to the customers. Figure 5.1 indicates yard waste processed at this facility since 2012. Note that “Processed Mulch” is considered processed yard waste that leaves the Disposal Complex and that is transported to one of the free mulch locations (refer to Figure 4.3). Some of the processed yard waste is used on-site for supplementing landfill cover or for erosion control. As can be seen in Figure 5.1, yard waste tonnages for processing have increased steadily; however, the quantity of “processed mulch”, defined as processed material leaving the Disposal Complex, has declined, implying a majority of the processed yard waste is used on-site.

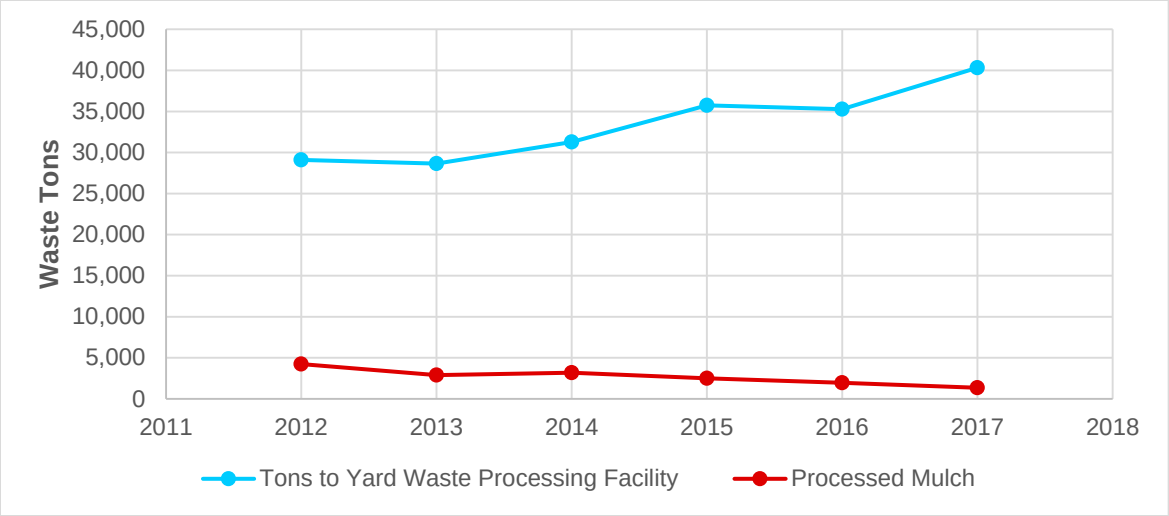


Figure 5.1 Yard Waste – Delivered to Processing Facility & Mulch

Although food waste is not separately collected by the County, the County initiated a pilot food waste composting program in the last quarter of 2017. The pilot was conducted on top of an inactive area at the West Landfill. The source of food waste was spent grain from Big Storm Brewing and pre-consumer vegetative waste from Publix Supermarkets in the County. The vegetative waste consisted primarily of melon rinds, discarded apples and pineapple rinds and tops from the produce department and was collected and delivered to the compost site by Bay Mulch (hauler). Bulking agent for the compost was freshly ground yard waste. The composting process was carried through traditional windrows. The pilot results indicated agronomic parameters (Stability, Maturity, Moisture Content, Organic Matter, Particle Size, pH, Soluble Salts and Physical Contaminants) in the “preferred” or “acceptable” range according to USCC guidance. The end product (after composting 221 CY of materials) was used for topdressing existing ornamental beds at the Disposal Complex. A detailed report was prepared by Kessler Consulting, Inc. that estimated at least a 30,000 cubic yards per year market potential (demand based) for the end product.

6 Hazardous Waste

The EPA defines hazardous waste generally as a waste with properties that make it dangerous to, or capable of having a harmful effect on human health or the environment.

Hazardous waste is generated within Pinellas County through many different sources. Some manufacturers create large quantities of hazardous waste; and these businesses are monitored by the EPA and FDEP to ensure their waste is properly handled and disposed. Many other businesses that are vital to our everyday lives also create relatively small amounts of hazardous waste. These businesses include dry cleaners, photo labs, automobile service stations and body shops, hospitals, clinics, funeral homes, dental offices and many others. Their compliance with hazardous waste regulations is monitored by Pinellas County's Small Quantity Generator Program on behalf of the FDEP.

Currently there are several businesses located in the state which have demonstrated financial responsibility to FDEP to transport, process, and coordinate with an out-of-state treatment, storage, and disposal facility (TSDF) for the treatment and disposal of hazardous waste. Federal and state regulations require large quantity generators (LQGs - generators of greater than 1,000 kilograms of hazardous waste per month) and small quantity generators (SQGs - generators of between 100 and 1,000 kilograms of hazardous waste per month) to process their waste in accordance with the Resource Conservation and Recovery Act's (RCRA's) cradle-to-grave concept.

Besides LQGs and SQGs, another category of hazardous waste generators is Very Small Quantity Generator (VSQG), which is a generator who produces less than or equal to the following amounts in a calendar month: (a) 100 kilograms of non-acute hazardous waste; (b) 1 kilogram of acute hazardous waste listed in 40 CFR Part 261.31 or Part 261.33(e); and (c) 100 kilograms of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR Part 261.31 or Part 261.33(e). The VSQGs are required to ensure delivery of hazardous waste to a proper recycling facility or TSDF and to keep records documenting proper disposal (Rule 62-730.030, F.A.C.).

County residents generate hazardous waste in the form of leftover paints, pesticides and herbicides, and cleaning solvents among other items. These wastes are called household hazardous waste (HHW) due to their limited quantities and are exempt from RCRA requirements for hazardous waste management.

6.1 Residential

The County's Solid Waste System provides programs to assist County residents in properly managing the collection, handling, and disposal of HHW. These services are provided at no additional cost to County residents through the operation of the HEC_3 facility for specific HHW items. Moreover, Mobile Collection Events and the Haz-to-Go Truck programs are mobile programs that expand collection beyond the HEC_3 facility located at the Disposal Complex. Pinellas County residents are encouraged to bring their unwanted electronics and chemicals to the HEC_3 (at no charge). Private vendors are contracted by the County to dispose of the collected household hazardous waste and electronics in accordance with Subtitle C of RCRA.

These are the examples of acceptable materials at the HEC_3:

- ***Electronics***: Cell phones, computer towers/CPUs, drives (e.g. hard drives, CD drives), laptops, monitors, rechargeable batteries (remove from device, place device in garbage), smart phones, tablets, televisions (must be whole).
- ***Chemicals***: Automotive fluids, batteries (household or vehicle), cleaners, cooking oil, fertilizers, fluorescent bulbs and other mercury-containing devices, fuels (e.g. gasoline, kerosene), fungicides, herbicides, insecticides, motor oil, paint (latex or oil), paint remover, paint thinner, pesticides, pool chemicals, rechargeable batteries (button or vehicle), smoke detectors, solvents, wood preservatives.

Residents are limited to certain quantities on a per vehicle basis, as indicated below. Customers with quantities in excess of these limits, or with electronics stripped of precious metals, may be considered a business. The County evaluates loads upon arrival.

- (6) Televisions (must be whole)
- (20) 1-gallon paint containers
- (5) 5-gallon containers of paint (all empty containers may be put in garbage)
- (5) Computers
- (12) Fluorescent bulbs
- (5) 5-gallon containers of automotive fuel, gasoline, or kerosene
- (1) 5-gallon container of automotive fluids & oil

The County also operates a Swap Shop (located at HEC_3) that offers reusable household products such as paint, cleaners, and automotive fluids, free of charge to Pinellas County residents. Electronics are not included in the Swap Shop Program.

6.2 Commercial

Pinellas County offers an electronic and chemical disposal option for qualifying businesses (i.e. businesses that are VSQGs of hazardous waste, as well as non-profits, religious organizations, haulers, hobbyists, property managers, and salvagers) during EnviroBusiness Days. The EnviroBusiness Days occur on the second Wednesday of every month at the rear of the HEC3 facility in the loading dock area. The HEC3 makes the loading area available for the collection event. Unlike residential, this business chemical disposal service is provided as a contracted service through the County's chemical and electronics disposal contractors. Charges are assessed by the contractor to the participants of the program per County's Household Chemical and Electronics collection contract.

6.2.1 Disposal & Trends

Pinellas County staff operates the HEC_3 facility. The County is under contract with a private entity (US Ecology) that disposes or recycles the collected HHW, and other non-hazardous chemicals that require special handing (such as Ethidium Bromide waste), in accordance with federal and state regulations.

In addition to the private entity, US Ecology, that disposes or recycles collected electronics and chemicals at the County facilities, a list of Pinellas County based private vendors handling mercury waste and used oil processors is provided below:

- **Mercury Handlers**: Envirolight and Disposal Inc. in St. Petersburg, Frontier Lighting Inc. in Clearwater, I3 Microsystems Inc. in St. Petersburg, Knight Industrial Supply Inc. in St.

Petersburg, Renew and Recycle Inc. in Seminole, Sellers Services of Safety Harbor Inc. in Safety Harbor, SWS Environmental Services in Largo, and Viatek Solutions in Clearwater.

- **Used Oil Processors**: HOWCO Environmental Services in St. Petersburg.

6.3 Recent Trends

Chemicals disposed or recycled by the County through HEC_3, Mobile Collections, Haz-to-Go and EnviroBusiness Days are shown in Sheet 16, Appendix A. Amounts of chemicals disposed or recycled in 2015, 2016 and 2017 were observed as 802,020, 516,278 and 509,048 pounds, respectively. It should be noted that the amount of chemicals in 2017 is based on normalizing available data for nine months on an annual basis. In general, the amount of disposed/recycled chemicals declined in 2016 compared to 2015 but remained fairly consistent in 2017.

7 Construction and Demolition Debris

Construction and demolition (C&D) debris is solid waste resulting from construction, remodeling, repair, or demolition operations on pavement, buildings, or structures. These materials are generally considered to be non-water soluble and non-hazardous in nature; including, but not limited to, steel, glass, brick, concrete, asphalt roofing material, pipe, gypsum wallboard, and lumber. It includes rocks, soils, trees and other vegetative matter that normally result from land clearing or land development operations for construction projects. These materials typically require different methods for collection, processing, diversion, and disposal than MSW. However, reduction, reuse, and recycling of C&D debris can result in significant diversion measured by weight, as the waste is typically heavy and in large volumes. C&D debris comprises approximately 25.38 percent of the waste stream in Pinellas County, based on 2017 published data from the FDEP.

C&D debris collection, processing, and disposal in the County are primarily handled by the private sector via an open market, though some municipalities manage the C&D debris through municipal collection, franchise agreements or service contracts. The County does not require annual registration for C&D debris haulers and does not exercise flow control over C&D debris generated within the County. The Bridgeway Acres landfill receives limited quantities of C&D debris due to competition in the C&D market. From the 2017 Annual Solid Waste Report by the FDEP, it was observed that the C&D debris generated in the County is managed in these eleven facilities:

- Cedar Trail Landfill in Polk County;
- Coastal Landfill Disposal Inc. in Pasco County;
- Enterprise Landfill and Recycling (aka Angelo's Recycled Materials) in Pasco County[9]
- Orange Blossom Disposal Facility in Polk County;
- Pembroke South C&DD Facility in Polk County;
- Sarnago & Sons Recycling Facility in Pinellas County;
- Sumter Recycling & Solid Waste Disposal, Inc (aka Heart of Florida, C&D) in Sumter County;
- Sun Country Materials in Hillsborough County;
- Sunshine Grove Road Phase I in Hernando County;
- Waste Management Pinellas MRF Clearwater in Pinellas County; and
- WMIF Tampa Class III Waste Processing Facility in Hillsborough County.

The FDEP receives annual reports from certified C&D recycling facilities and the facilities that dispose segregated C&D debris in the State of Florida. Based on the County of origin, the FDEP shares information on the certified C&D recycled tons and the segregated C&D landfill tons. According to the 2017 FDEP C&D data, 232,463 tons were recycled by certified C&D recycling facilities, and 39,645 tons of segregated C&D debris were disposed/ landfilled. A majority of the Pinellas County C&D debris stream was recycled by Angelo's Recycled Materials in Pasco County, per the certified recycled tons information reported to FDEP. An additional 295,661 non-certified tons were reported by the County as recycled.

[9] Note that Angelo's has a transfer station located in Largo; however, the list provided by FDEP refers to facilities either processing or disposing C&D debris and does not include transfer facilities.

8 Preliminary Financial Assessment

Pinellas County operates its integrated Solid Waste System as an enterprise fund and is considered a "business-type activity" insofar as the System expenses are financed by fees and user charges from customers, electrical sales, capacity payments, recovered materials revenues, and interest income; no County tax funds are used to support the System. The primary responsibilities of the System are to manage the County's Solid Waste Disposal Complex, comprised of a Waste-to-Energy facility and a landfill, as well as the County's waste diversion, recycling and other operations at the Disposal Complex.

As an enterprise fund, the System is expected to recover all costs including operating expenses, debt service[10], transfers, capital expenditures, and required reserves through its user fees and charges and other revenue. Any operating surplus resulting from revenues collected in excess of expenditures translates into retained earnings that are generally maintained in the solid waste enterprise fund as reserves. These reserves are available only for expenditures related to the solid waste enterprise fund activities.

8.1 System Balance Sheet

A review of the solid waste enterprise fund balance sheet for the prior three (3) fiscal years shows an increase in net assets of approximately $36.2 million from FY 2015 to FY 2017. Investment in capital assets (e.g., land, buildings, machinery, and equipment), less outstanding debt (of which there is none), represents approximately 70% of the System's total net assets as of September 30, 2017. Capital assets are used to provide services for users and customers of the System.

Unrestricted net assets[11] represent approximately 30% of the System's total net assets as of September 30, 2017 and may be used to meet daily obligations of the System without restrictions.

There are currently no restricted assets as of FY 2017, as the System does not have any outstanding debt service.

[10] The System has no outstanding debt.
[11] Unrestricted net assets are assets that are not subject to use restrictions; these assets may be used to meet the government's ongoing obligations to citizens.

Table 8.1 Solid Waste System Net Assets

	FY 2015	FY 2016	FY 2017
Assets			
Current Assets	$271,860,821	$266,534,972	$242,870,316
Capital Assets	295,358,388	319,150,039	379,350,439
Total Assets	$567,219,209	$585,685,011	$622,220,755
Liabilities & Net Assets[1]			
Current Liabilities	$23,723,128	$22,265,296	$36,464,887
Long-Term Liabilities	37,747,354	40,183,763	43,824,821
Total Liabilities	$61,470,482	$62,449,059	$80,289,708
Net Assets:			
Invested in capital assets, net of debt	$295,358,388	$319,150,039	$379,350,439
Unrestricted	210,390,339	204,085,913	162,580,608
Total Net Assets	$505,748,727	$523,235,952	$541,931,047
Metrics			
Current Ratio[2]	11.46	11.97	6.66 [3]

1 Excludes deferred inflows of Resources (i.e. pension-related deferred inflows).
2 Current Assets / Current Liabilities
3 Current ratio decrease in FY 2017 due to decrease in current assets, related to TRP and non-TRP related capital improvements (TRP = technical recovery plan).

Figure 8.1 illustrates total assets as compared to total liabilities. As can be seen from the figure, total assets have increased by approximately 10% between FY 2015 and FY 2017, while total liabilities have increased by approximately 31% during that same period. Total net assets increased by approximately 7% between FY 2015 and FY 2017.

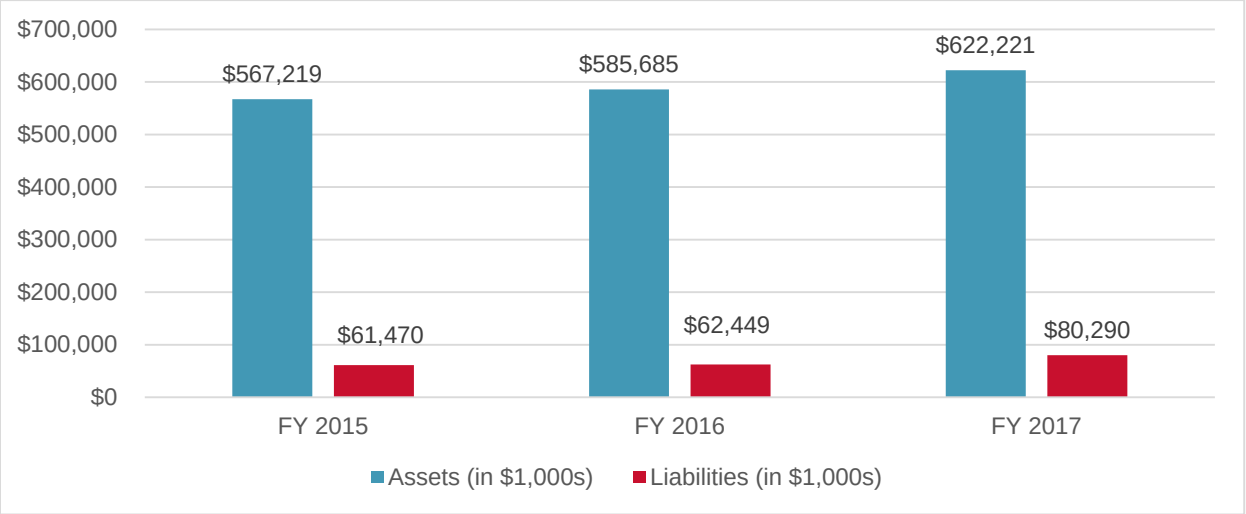


Figure 8.1 Assets to Liabilities

8.2 System Funding Sources

The System funds operations and other requirements through four (4) primary funding sources: tipping fee revenue, electrical sales revenue, capacity payments from the County's energy provider, and revenue from the sale of recyclables, such as ferrous and non-ferrous metal, and single stream recyclable material collected through the recycling drop-off program. Additional sources of funds include investment earnings and grants.

8.2.1 Rates

Currently, the System base disposal fee is $37.50 per ton, and it has remained at that level since 1986. Revenues are used to pay for salaries and operating costs and to build reserves and fund capital projects for the System. Table 8.2 provides a listing of System tipping fees that are currently in effect:

Table 8.2 Tipping Fees

	Rate	Unit
Tipping Fees		
Disposal Fee	$37.50	Per Ton
Flat Fees		
Pickup Trucks	$10.00	Per Load
Passenger Vehicles	$2.00	Per Load
Christmas Trees	$3.00	Per Load
Tire Fees		
<5 Tires	See Fees Above[1]	See Fees Above[1]
5+ Tires	$50.50	Per Ton
Special Fees[2]		
Load Search Fee	$100.00	N/A
Special Waste Fee	$100.00	N/A

1 Customers with fewer than 5 tires are charged the "flat fees" identified in Table 8.2.
2 Special rates are in addition to the per ton charge.

8.2.2 Annual Assessment

Residents living in the unincorporated areas of the County have the option to request the County create a Municipal Services Benefit Unit (MSBU). The Lealman Solid Waste Collection and Disposal District (Lealman District) is currently the only existing solid waste services MSBU within the unincorporated County, and it was established to provide the benefits associated with franchised solid waste collection (e.g., increased level of service, reduction in the number of garbage trucks traveling neighborhood roadways, etc.).

Residents who receive collection services within the Lealman District currently pay a fee of $192.00 per residential unit per year. This fee is only assessed for those residential customers who live within the Lealman District. The fee appears on each residential unit's property tax bill as a non-ad valorem assessment. Although the assessment appears on the property tax bill, it is a fee for collection service, *not a tax*. Revenues received for this service are used to pay for the exclusively franchised Lealman Solid Waste Collection service and are therefore **not** provided to the System.

8.3 Solid Waste System Revenues, Expenses, and Change in Net Assets

Table 8.3 compares the System revenues, expenses, and change in net assets from FY 2015 to FY 2017.

Table 8.3 Solid Waste System Revenues, Expenses, and Change in Net Assets

	FY 2015	FY 2016	FY 2017
Operating Revenues			
Tipping Fees	$36,575,329	$38,330,860	$38,256,036
Electricity Sales	10,144,214	8,970,447	10,592,745
Electrical Capacity Payment	44,390,205	47,212,020	50,219,438
Other [1]	1,331,643	641,247	990,733
Total Operating Revenues	$92,441,391	$95,154,574	$100,058,952
Expenses			
Personal Services	$6,778,197	$5,065,883	$6,556,698
Contractual Services	59,711,083	48,009,730	47,767,651
Utility Services	2,051,459	2,880,925	3,202,909
Supplies	804,691	828,595	638,485
Other Operating Expenses	6,881,514	6,396,291	8,254,539
Depreciation	15,099,846	15,082,176	15,947,315
Total Operating Expenses	$91,326,790	$78,263,600	$82,367,597
Operating Income	$1,114,601	$16,890,974	$17,691,355
Nonoperating Revenue (Expenses)			
Interest Income	$1,308,417	$1,624,863	$1,536,229
Miscellaneous Revenues	75,305	123,904	210,081
Interest Expense	-	-	-
Miscellaneous Expense	(499,686)	(498,070)	(499,164)
Total Nonoperating Revenues (expenses)	$884,036	$1,250,697	$1,247,146
Income (loss) before capital contributions, special items, and transfers	$1,998,637	$18,141,671	$18,938,501
Capital Contributions	-	$89,000	-
Special Items[2]	(1,484,787)	-	-
Change in Net Position	$513,850	$18,230,671	$18,938,501
Net Assets at Beginning of Year	$505,199,220	$505,713,070	$523,943,741
Net Assets at End of Year	$505,713,070	$523,943,741	$542,882,242

1 Includes revenues from the sale of recyclables, special events, and other miscellaneous income.

	FY 2015	FY 2016	FY 2017

2 In FY 2015, the County demolished the lime softening system used in solid waste operations, and replaced it with a more efficient process, resulting in a loss of $1,484,787. This was a significant item, infrequent in occurrence that was subject to management's control.

8.3.1 Revenues

The County's WTE facility burns garbage to produce steam that powers turbine generators. Duke Energy, the local utility provider, purchases electricity from the County each year, and additionally pays the County a monthly "capacity fee" per the terms of their contract. In FY 2017, electricity sales and capacity payments comprised approximately 61% of total operating revenues. Electricity sales and capacity payments increased by approximately 8% between FY 2016 and FY 2017.[12]

Tipping fees are the other primary sources of revenues for the County, which totaled approximately $38.3 million in FY 2017 and comprised approximately 38% of operating revenues in FY 2017. Tipping fee revenues decreased minimally between FY 2016 and FY 2017 (approximately 1.1%) but increased by approximately 5.8% between FY 2015 and FY 2016.

Table 8.4 summarizes the operating revenues associated with the following: 1) electricity sales and capacity payments made by Duke Energy; 2) revenues generated from tipping fees at the landfill; and 3) revenues generated from metal scrap sales. Table 8.4 also compares the tonnage that is converted to energy versus the tonnage that is disposed at the County landfill.

Table 8.4 Operating Revenues & Revenue per Ton

	FY 2015	FY 2016	FY 2017
Revenues			
Tipping Fee Revenues	$36,575,329	$38,330,860	$38,256,036
Revenues from Electricity Sales & Capacity Payments[1]	54,534,419	56,182,467	60,812,183
Scrap Sales	1,312,617	607,595	960,820
Total Revenue[2]	$92,422,365	$95,120,922	$100,029,039
Tonnage			
WTE Tonnage[3]	791,776	798,971	775,530
Landfilled Tonnage[4]	231,267	233,917	235,996
Ferrous/Non-Ferrous Metal Tonnage[5]	22,635	32,288	29,100
Total Tons	1,045,678	1,065,176	1,040,626
Operating Revenues per Ton[6]	$88.39	$89.30	$96.12
Electric Revenues per WTE Ton[7]	$68.88	$70.32	$78.41
Metal Revenue per Ton[8]	$57.99	$18.82	$33.02

1 Includes both electricity sales and capacity payments (see Table 8.3).

[12] The capacity payment has a built in annual escalator of approximately 6.4% per the terms of the contract.

		FY 2015	FY 2016	FY 2017
2	Excludes the following miscellaneous revenue sources: recycling, other income, and special events.			
3	Tonnage that is incinerated at the County's Waste-to-Energy Facility.			
4	Tonnage that is disposed of at the County landfill. Excludes ash.			
5	Ferrous and non-ferrous metal tonnage that is recovered.			
6	Total revenue from tipping fees, electricity sales, capacity payments, scrap sales / total tons.			
7	Revenue from electricity sales & capacity payments / WTE tonnage.			
8	Revenue from scrap sales / ferrous/non-ferrous tonnage			

Figure 8.2 illustrates the operating revenues on a per ton basis, for revenues generated from tipping fees, electricity sales, and capacity payments. As can be seen from the values and the corresponding trendlines, these metrics have increased over the past three (3) fiscal years. This can be attributed to increases in electricity revenues and capacity payments, as tipping fee rates have remained consistent at $37.50 per ton. Although total tonnage decreased by approximately 2% between FY 2016 and FY 2017, the average revenue per ton at the WTE facility increased from $70.32 per ton to $78.41 per ton due to increases in electrical sales revenue, as well as increases in revenue generated from electrical capacity payments.[13]

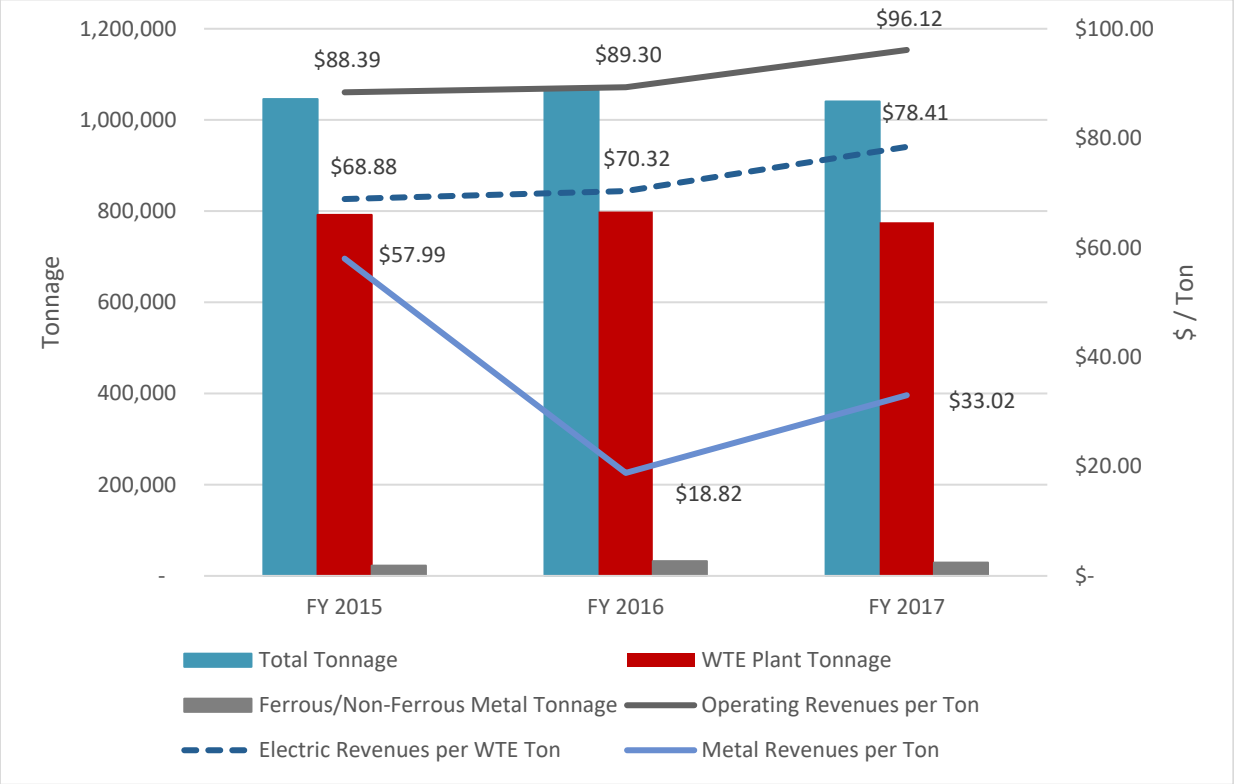


Figure 8.2 Operating Revenues on a Per Ton Basis

[13] Per the FY 2017 Comprehensive Annual Financial Report (CAFR), electrical sales revenues increased between FY 2016 and FY 2017 from a combination of additional demand and an annual rate increase. Revenues generated from electricity capacity payments also increased due to contractual rate increases.

8.3.2 Expenses

A review of annual operating expenses would indicate the System has been effectively managing its operating expenses over the last three (3) fiscal years, as overall operating expenses decreased by approximately 9.8% between FY 2015 and FY 2017. The overall decrease in the contractual services expense between FY 2015 and FY 2017, approximately $11.9 million, is the primary reason for the cost reduction.[14]

Table 8.5 summarizes the operating expenses incurred by the System.

Table 8.5 Operating Revenues & Revenue per Ton

	FY 2015	FY 2016	FY 2017
Expenses			
Personal Services	$6,778,197	$5,065,883	$6,556,698
Contractual Services	59,711,083	48,009,730	47,767,651
Utility Services	2,051,459	2,880,925	3,202,909
Supplies	804,691	828,595	638,485
Other Operating Expenses	6,881,514	6,396,291	8,254,539
Depreciation	15,099,846	15,082,176	15,947,315
Total Operating Expenses	$91,326,790	$78,263,600	$82,367,597
Total Tons	1,045,678	1,065,176	1,040,626
Cost per Ton	$87.34	$73.47	$79.15

Figure 8.3 illustrates operating expenses on a per ton basis. As shown, operating expenses per ton decreased between FY 2015 and FY 2016 but increased between FY 2016 and FY 2017.

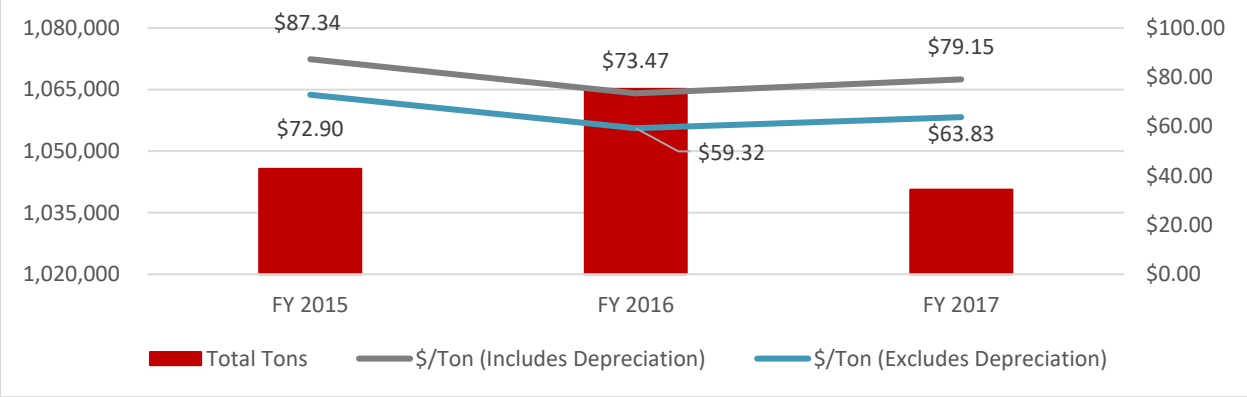


Figure 8.3 Operating Expenses per Ton

[14] Per the 2017 CAFR, costs for personal services increased as a result of reorganizations of personnel among the utilities' functions within the County in order to better align staff with operational needs. Other operating expenses also increased in FY 2017 as a result of negotiating a final payment to the former WTE Facility contractor. The County has, however, realized significant cost savings associated with their WTE operations contract, as a result of changing the contractor managing the facility.

8.4 Capital Assets

As of September 30, 2017, the System had approximately $379 million, net of accumulated depreciation, invested in multiple capital assets, which represents a net increase of approximately $84 million between FY 2015 and FY 2017. Table 8.6 summarizes the System's capital assets.

Table 8.6 Solid Waste System Capital Assets

	FY 2015	FY 2016	FY 2017
Capital Assets			
Land	$8,493,767	$8,493,767	$8,493,767
Buildings	37,617,934	37,617,934	37,906,783
Improvements other than Buildings	461,231,723	471,245,192	500,067,101
Equipment	5,407,857	5,848,567	6,723,614
Intangible Assets	260,155	271,555	303,889
Construction in Progress	24,420,185	52,595,643	98,099,698
Less Accumulated Depreciation	(242,073,233)	(256,922,619)	(272,244,413)
Total Capital Assets, Net	$295,358,388	$319,150,039	$379,350,439

In December 2014, the County began working with their facility operator, Covanta, to prioritize Technical Recovery Plan (TRP) projects at the WTE facility. The increase in net capital assets between FY 2015 and FY 2017 is a direct result of the implementation of TRP projects.

Between FY 2019 and FY 2023, the System currently expects to spend $109 million for recommended capital improvement projects.[15] Table 8.7 summarizes these forecasted projects and their estimated costs by fiscal year.

Table 8.7 Capital Improvement Projects

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Non-TRP Related Projects					
Bridgeway Acres Landfill Miscellaneous	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
WTE Roadway & Drainage Redesign	700,000	-	-	-	-
Recycling Center Expansion	130,000	-	130,000	-	-
WTE Discretionary	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Organics Processing Facility Design	-	200,000	800,000	-	-
Sand Key Fender System Replacement	279,000	-	-	-	-
Pavement Replacement Program	100,000	100,000	100,000	100,000	100,000

[15] Capital Improvement Plan provided by County as of October 16, 2018. Please note that estimated project costs have not been adjusted for inflation.

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Replace Scales	-	6,590,000	2,000,000	-	-
Landfill – Sediment Ponds	250,000	-	-	-	
Industrial Waste Treatment Facility Discharge Piping	1,100,000	-	-	-	-
Industrial Waste Treatment Facility Sludge Dewatering	-	100,000	3,000,000	1,500,000	-
New Canopy at Scalehouse	-	350,000	3,500,000	-	-
HEC_3 Satellite Site-South	-	200,000	2,500,000	-	-
Solid Waste Stormwater System Improvements	1,300,000	-	-	-	-
Landfill Gas	2,000,000	1,000,000	-	-	-
Tipping Floor Expansion	-	3,000,000	-	-	-
Ash Processing Facility	250,000	2,500,000	-	-	-
Sod Farm Slurry Wall	1,000,000	12,000,000	-	-	-
Industrial Waste Treatment Facility (Brine Treatment)	-	250,000	3,000,000	1,500,000	-
SCADA Upgrades	36,400	36,400	36,400	36,400	36,400
Side Slope Closures	-	-	-	4,000,000	4,000,000
North County HEC_3 Facility	1,300,000	-	-	-	-
Landfill Perimeter Buffer	250,000	-	-	-	-
Visitor Information Kiosks & Claw Mount	300,000	-	-	-	-
New Scale Lane	-	-	200,000	-	-
Total Non-TRP Projects	$11,995,400	$29,326,400	$18,266,400	$10,136,400	$7,136,400
TRP Designated Projects					
Air Pollution Controls (TRP)	$4,519,000	-	-	-	-
Electrical Systems (TRP)	1,050,000	-	-	-	-
Mechanical Systems (TRP)	303,200	-	-	-	-
Stoker, Grates, Boilers, Combustion Control (TRP)	14,642,000	5,651,000	4,650,000	-	-
Turbine Generator (TRP)	530,200	468,064	-	-	-
Technical Recovery Plan CIP (TRP)	393,200	-	-	-	-
Total TRP Projects	$21,437,600	$6,119,064	$4,650,000	-	-
Total CIP Projects	$33,433,000	$35,445,464	$22,916,400	$10,136,400	$7,136,400

8.5 Financial Assessment Conclusion

The System has demonstrated consistent stability in its revenue streams, and it is anticipated that the current tipping fees, electricity sales, and committed electrical capacity payments will continue to generate reliable and predictable operating revenues through the remaining term of the current Power Purchase Agreement (PPA). It should be noted, however, that the current PPA will expire on July 25,

2025; at such time, the revenue from electricity sales and electricity capacity payments are expected to decrease, though the amount of the decrease cannot be known until a new PPA is negotiated. Although the System had an operating margin of only 1.2% in FY 2015, it increased its operating margin to 17.8% and 17.7% in FY 2016 and FY 2017, respectively (largely due to operational efficiencies gained in that time period) indicating a financially stable utility.

It is important that the System closely monitor its funding of the planned capital projects (both TRP and non-TRP related, as shown in Table 8.7) and continue to review on an annual basis the ability of the System to fund these projects from current revenues and reserves. To the extent that any future increases in tipping fees or bond issues may be required, the System would have sufficient time to prepare, allowing staff to discuss the utility's funding options with the appropriate County officials, as necessary.

The Current Ratio shown in Table 8.1 and Table 8.8 indicates sufficient reserves to meet reserve requirements and fund operations in the event of fluctuations in sales (i.e., reductions in revenues from tipping fees and/or reductions in revenues from electricity sales/electrical capacity payments) or an emergency. The System's current assets declined from $272 million to $243 million between FY 2015 and FY 2017, while current liabilities increased from $24 million to $36 million.[16] Despite a decrease in the Current Ratio over this three (3) fiscal year period, the System is still considered to be in a healthy financial condition. The County should continue to monitor this ratio going forward.

Table 8.8 summarizes various financial performance metrics for the System which illustrate its overall financial stability.

Table 8.8 Summary of Financial Metrics

	FY 2015	FY 2016	FY 2017
Current Assets[1]	$271,860,821	$266,534,972	$242,870,316
Current Liabilities[1]	$23,723,128	$22,265,296	$36,464,887
Current Ratio[2]	11.46	11.97	6.66
Operating Revenues[1]	$92,441,391	$95,154,574	$100,058,952
Operating Expenses[1]	$91,326,790	$78,263,600	$82,367,597
Operating Margin[3]	1.21%	17.75%	17.68%
Operating Expenses, less depreciation[4]	$76,226,944	$63,181,424	$66,420,282
Daily Cost of Operation[5]	$208,841	$173,100	$181,973
Working Capital[6]	$248,137,693	$244,269,676	$206,405,429
Days of Working Capital[7]	1,188	1,411	1,134

1 Per County CAFRs (FY 2015, FY 2016, FY 2017)
2 Calculation: Current Assets / Current Liabilities
3 Calculation: 100% – (Operating Expenses / Operating Revenues)
4 See Table 8.5
5 Calculation: Operating Expenses, less depreciation / 365
6 Calculation: Current Assets – Current Liabilities (See Table 8.1)
7 Calculation: Working Capital / Daily Cost of Operation

[16] Although current assets decreased by approximately $29 million from FY 2015 to FY 2017, mostly due to capital payments for TRP projects, capital assets increased by approximately $84 million during that period. See Table 8.1.

9 Potential Capacity Needs and Timing

Of the County owned infrastructure, there are three primary facilities – WTE, Class I Landfill and HEC3 Facility – to be evaluated for waste disposal/processing capacity.

9.1 Pinellas County WTE

The WTE can process up to 3,150 tons per day. Because of scheduled and unscheduled outages, guaranteed processing capacity for the WTE is 930,000 tons per year. Additionally, the County has agreed to make 810,000 tons of base delivery amount per year (minimum) available to the Operator. On an annual basis, the actual capacity utilized (defined in this report as a ratio of waste incinerated at the WTE to guaranteed processing capacity) fluctuates between 80% and 90% as indicated in Figure 9.1.

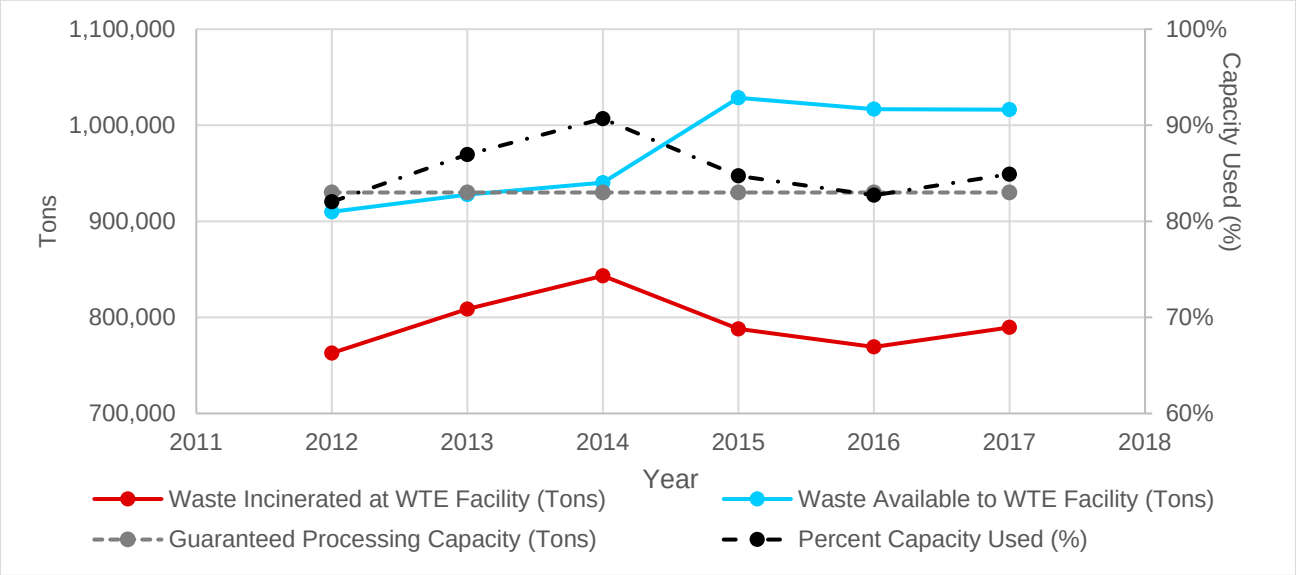


Figure 9.1 WTE – Capacity versus Usage

Waste available to the WTE is projected using historical tonnages of processable waste and Countywide generated waste. Based on 2016 and 2017 tonnage data analysis, approximately 37.5% of total Countywide generated waste is processed at the WTE, and 11.5% of total Countywide generated waste is disposed at the Bridgeway Acres Landfill. Assuming a maximum of 49% of the Countywide generated waste will be available to the WTE as potentially processable waste, projections for processable waste available to the WTE are shown in Figure 9.2.

Waste available to the WTE currently exceeds the guaranteed processing capacity of 930,000 tons per year; this excess waste, above guaranteed processing capacity, increases from approximately 101,000 tons in 2018 to approximately 275,000 tons in 2048, based on the projections. Note that 930,000 tons is the contractual guaranteed processing capacity, and actual processing capacity can exceed the guaranteed processing capacity depending on actual operating experience. Potential available capacity in some years could be as high as 1,090,000 tons per year. Were the Facility to actually operate at these levels on a year in year out basis in the near term, it would delay the need to

dispose or find alternative diversion programs for such excess waste into the next decade. Under the TRP, various projects at the WTE facility have been implemented to improve performance levels, including for availability, throughput, energy generation, and utility and reagent utilization.

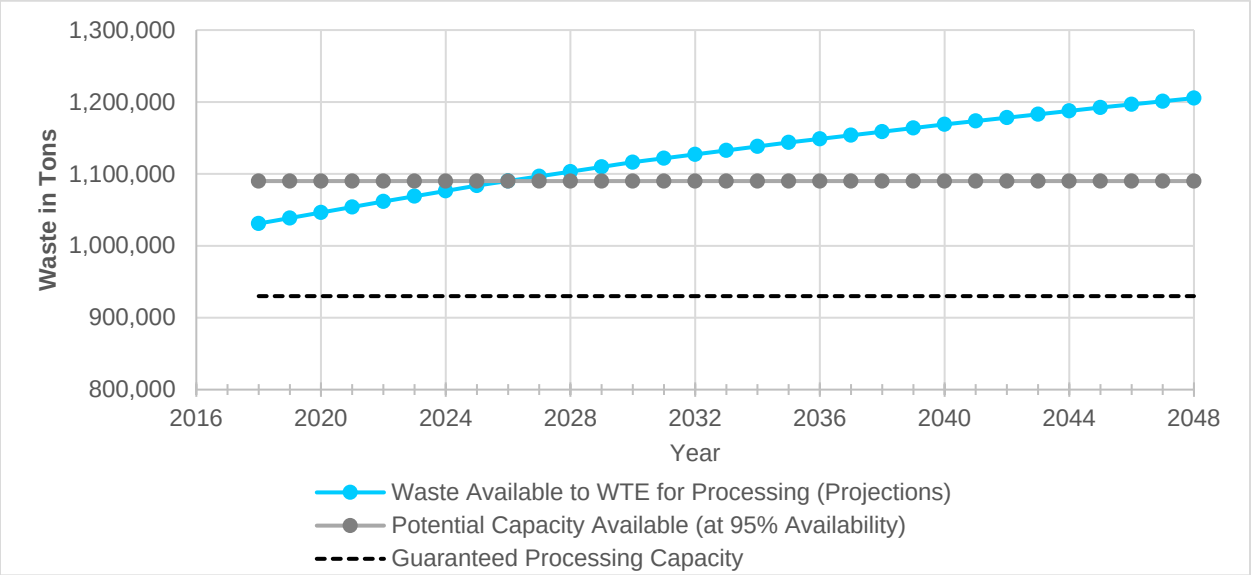


Figure 9.2 Waste Available to the WTE

9.2 Class I Landfill, Bridgeway Acres

Bridgeway Acres landfill has approximately 84 years of remaining capacity (incudes the existing South Landfill, existing West Landfill and future sod farm landfill footprint, all at a maximum permitted height of 150 feet). The 84 years projected capacity is based on information presented in the recent Annual Remaining Site Life & Capacity Report (dated April 2018, prepared by CDM Smith and submitted to the FDEP). Figure 9.3 presents landfill capacity analysis through the projection period based on this CDM report (assuming 2,200 pounds/cubic yard landfilled waste density).

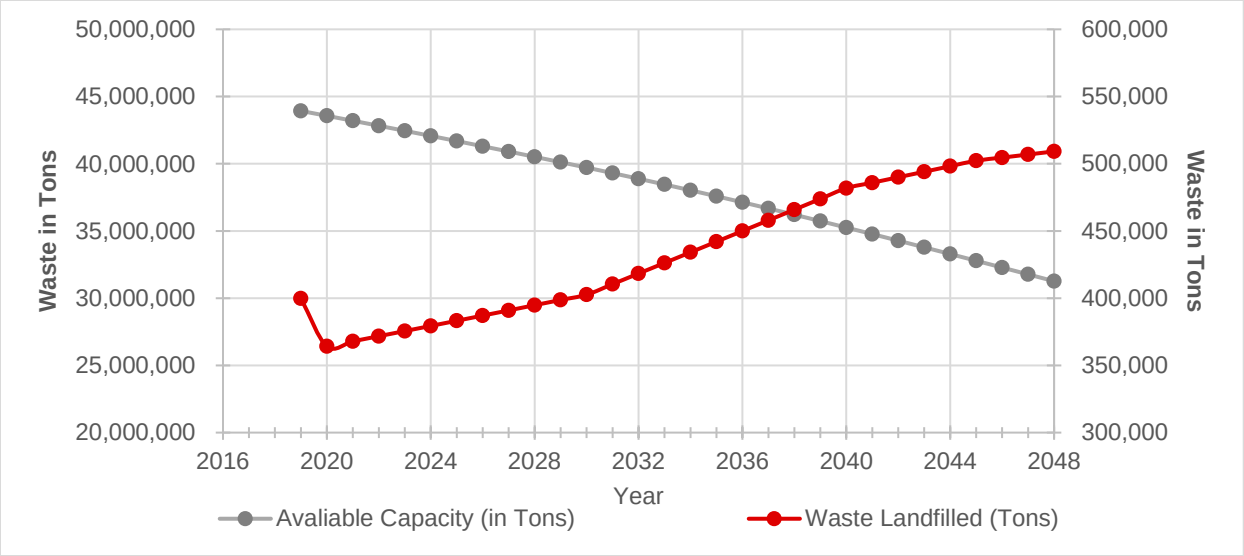


Figure 9.3 Bridgeway Acres Capacity

9.3 HEC_3 Facility

This facility was built in 2009 and is operated by the County staff. The facility receives chemical and electronic waste from residents and utilizes several contractors to process collected waste. There are other programs associated with the HEC_3. This includes Mobile Collections, Haz-to-Go, and VSQG programs. The facility and these programs collect over 3,000,000 pounds of electronic and chemical waste and recorded over 48,000 participants annually.

The facility is open to the public Monday through Saturday from 7:00 am to 5:00 pm. Chemical and electronic wastes are received, sorted, categorized, stored and prepared for shipment at this facility. Once sorted, chemical waste is placed in chemical storage bays which are clearly labeled with the appropriate DOT placards indicating the hazard class of the materials which it contains. In addition to the “hazard stores collected chemicals” category, each storage bay has a list including, but not limited to, chemicals which can be safely stored in that bay posted on the door. The chemicals are removed from the chemical bays by the contracted vendor for packaging, shipment and processing.

Electronic waste is collected and packaged for shipment. Cathode Ray Tube (CRT) computer monitors are stacked on pallets no more than three levels high, with cardboard separating each level. CRT televisions are stacked only to chest level height. The CRT monitors and CRT televisions are shrink wrapped and then weighed before shipping. Projection televisions and console televisions are disassembled. The hazardous components are placed in a cubic yard box for shipment and the outer casings are placed in a 40-yard container to be taken to the WTE. Computers and laptops are stored together, and flat screen monitors are placed in cubic yard containers on pallets. Cell phones are individually bagged. Materials consisting of drives, large circuit boards or any devices capable of holding personal information are segregated and placed in cubic yard boxes for recycling or destruction. Electronic devices that have a sealed in rechargeable battery are also placed in cubic yard boxes on pallets and weighed for shipment to a processor. Fluorescent bulbs are placed in the labeled storage bulb storage container.

Collected automobile/truck batteries are stacked no more than three levels high. Smaller batteries are placed on a separate pallet. All pallets of batteries are shrink-wrapped before shipping. Rechargeable batteries are packaged individually in a plastic bag. After packaging or securing the contacts, all batteries are taken by the contractor for recycling.

The collected chemicals and electronic equipment are then removed by the Contractor. The facility has adequate capacity to meet resident/user needs as collected material can be temporarily stored or removed by the Contractor based on available storage space. In addition to the existing HEC_3 facility, the County is development of a North County HEC_3 satellite facility. The addition of such a facility will provide more convenient access to the residents living in northern areas of the County.

10 Preliminary Findings and Needs Assessment

This Section presents key findings and preliminary needs assessments and considerations to be further explored, based on historical and current data reviewed and analyzed. The second phase of the master planning effort will begin with a more thorough needs assessment and potential strategies identification.

10.1 General

- The population of the County is projected to grow by nearly 17 percent total (or 0.6% average annually) over the 30-year planning period. A majority of the permanent population resides in the incorporated areas (71 percent of the total permanent population). The County observed a significant number of transient population and visitors, and both of these categories are considered in the population projections.
- Out of three customer types (single family, multifamily and commercial), commercial waste makes up the largest share of the County's total waste stream with 53 percent (in excess of 1.1 million tons per year).
- Data obtained by FDEP for the first time in 2017 shows that approximately 11% (nearly 235,000 tons) of the total waste generated in the County was managed by facilities located outside the County. The majority of this waste managed outside of the County (215,849 tons) is classified as Class III waste.
- Section 106-53 of the County's Code of Ordinances provides for the authority to exercise flow control over solid waste disposal Countywide, barring any conflicts between County and municipality ordinances.
- The ability and advisability to enforce the flow control ordinance over the Class I and Class III materials taken to facilities outside of the County is not known and should be explored.
- The County's Disposal Complex handled an average of 57 percent of the total waste generated from all sectors within the County in 2016 and 2017. An average of 49 percent of total waste generated was processed at the WTE or disposed at the landfill.
- Annual waste generation per capita in the County has shown considerable variability over the last six years. Waste generation per capita in the last two years is believed to be more representative of the County for 2016 and 2017. In 2016 and 2017, waste generation per capita was observed (per FDEP's Annual Solid waste Management Report) as 1.85 and 1.96 annual tons (or 10.13 and 10.72 daily pounds) respectively, which is consistent with regional and statewide waste generation rates.
- Using the average waste generation rate for 2016 and 2017, waste projections indicate that Countywide solid waste tonnage will increase from 2.15 million tons in 2017 to 2.46 million tons in 2048. If the County makes no changes to the System, with 57 percent of the County's total waste arriving at the Disposal Complex, then solid waste managed at the Disposal Complex will increase from 1.20 million tons in 2017 to 1.40 million tons in 2048. These projections assume no material changes in the County's System over the planning period, and accounts only for tonnage increases resulting from projected population growth.
- In order to streamline and better manage material streams, the County should consider organizing collection services in the entire unincorporated area of the County, similar to the approach currently used for the Lealman MSBU.
- Evaluate physical traffic flow to ensure that vehicles can efficiently enter, move through the site to the appropriate disposal/processing areas and exit the site.

10.2 Non-Source Separated MSW

- For the last 6-years, the WTE has been operating at between 80 to 90 percent of its guaranteed minimum processing capacity of 930,000 tons. Actual processing capacity can exceed the guaranteed minimum processing capacity depending on actual operating experience. Potential available capacity could be as high as 1,090,000 tons per year.
- In the past, the County has temporarily landfilled processable waste during plant downtimes and then recovered that waste when the plant came back on-line. Although this practice is not standard procedure or required, the availability of this practice could ensure continuous tonnage to the WTE, during periods when waste flow is below the plant's processing capacity. As an alternative to this temporary landfilling practice, the County could consider evaluating increasing its tip floor storage capacity to minimize its reliance on temporary landfilling.
- The annual waste (processable and non-processable combined) delivered to the Disposal Complex is in excess of the WTE guaranteed minimum processing capacity of 930,000 tons (annually). This excess waste is either landfilled, recycled/beneficially re-used or mulched at the Disposal Complex. In 2017, the WTE combusted 0.79 million tons out of 1.20 million tons delivered at the Disposal Complex.
- As part of the planning process, the County will need to consider how to handle excess waste. Options may include another expansion of the existing WTE, increased diversion efforts, development of some other type of processing/conversion facility, landfilling, a contract with an outside facility, or some other option or combination of options.
- The County's landfill has approximately 84 years of remaining capacity. The landfill's capacity could be further increased by amending the permit to allow future vertical and/or horizontal expansions.
- In the last 6 years, incinerator ash landfilled (direct or as cover material) has remained relatively constant at approximately 200,000 tons annually. The County is currently examining enhanced metals recovery from the ash and should consider alternatives for beneficial re-use of the ash.
- Evaluate whether targeting additional processable waste streams, such as non-bio hazardous medical waste, for processing at the WTE is advisable.

10.3 Recyclables

- Countywide traditional recycling has steadily increased since 2014. In 2017, 55 percent of the total waste collected within the County was recycled (including metals recovered from ash), while 37 percent was combusted, and 11 percent was disposed (excluding ash).
- A recyclables composition study conducted in 2015 by Kessler Consulting, Inc. for 14 CC locations found a contamination rate of 6.1 percent for these recyclables.
- Curbside residential recycling is not mandatory in the unincorporated area but is included in most of the 24 municipalities' basic curbside service.
- The County could consider implementation of mandatory curbside recycling for its residential customers in the Lealman MSBU, and as part of organizing the remaining unincorporated area collection services similar to the franchise approach used in the Lealman MSBU.
- Per state law (see Florida Statute 403.7046), local governments can require haulers to offer recycling to commercial establishments, and local governments can mandate that commercial establishments recycle; however, local governments cannot require a commercial establishment to contract with a specific service provider. To date, the broad aim of the

County's commercial recycling program has been to increase awareness and understanding of waste-reduction and recycling principles and practices among the business sector.

- Given that commercial waste makes up 53 percent of Countywide waste and makes up 45 percent of the waste handled at the Disposal Complex, the County could consider implementation of a mandatory recycling ordinance for both residential and commercial customers. Such an ordinance can take a number of forms in terms of the actual requirements, as well as the level of education and types of enforcement mechanisms utilized to support it. Coordination with the municipalities within the County for consistency should be explored.
- Data related to commercial recycling is difficult to accurately assess due to the open market requirements and limitations of current FDEP reporting processes. However, the 2017 Annual Solid Waste Report published by FDEP indicates a 67% recycling rate for the commercial sector.
- 2017 FDEP data indicates that the majority of ferrous and non-ferrous metals, C&D debris and yard waste are recycled in the County. However, there are a number of other materials that make up significant portions of the waste stream (50,000 tons or more annually) where there is significant potential for increased recovery, including:
    - Newspaper – 36% recycled;
    - Glass – 13% recycled;
    - Plastic Bottles – 2% recycled; and
    - Corrugated Paper – 34% recycled.
- Given that approximately 200,000 tons of ash residue from the WTE are disposed at the landfill each year (as landfill cover or ash filling), the County may want to examine alternatives for the beneficial reuse of bottom ash and/or fly ash from the WTE. Potential applications could include use in cement and concrete production, road paving applications, or other possible applications.
- Continue to monitor State Legislative activity with regard to solid waste issues, specifically contamination in recyclables.
- Continue to monitor progress of the three committees resulting from the Recycling Workshop that will report to the PPR.

10.4 Organics

- Organics currently collected and processed by the County are limited to segregated yard waste and wood waste that can be processed by the Tub Grinder located at the Disposal Complex.
- Mulched yard waste can be used as a bulking agent in composting operations.
- Nine of the 24 municipalities currently process their yard waste through means other than the County's Disposal Complex.
- Diversion or recovery, and processing, of food waste could present additional opportunities for the County to increase diversion.
- Evaluate source separating, processing, and revenue generating opportunities for organics. (Revenue could result from sale of compost in a composting operation, or through biogas generation in anaerobic digestion processing.)

10.5 C&D Debris Waste

- C&D debris comprises approximately 25.38 percent of the waste stream in Pinellas County. A majority of C&D debris is recycled, according to 2017 Annual Municipal Solid Waste Management Report Published by the FDEP.
- C&D debris collection, processing, and disposal in the unincorporated County, and many of the municipalities within the County, are handled by the private sector through an open market. The County does not require annual registration for C&D debris haulers and it is not known if the County's flow control ordinance could be applied to C&D debris generated within the County.
- The most recently available FDEP reports indicate there are two C&D processing/recycling facilities located in Pinellas County: Sarnago & Sons and Waste Management of Pinellas MRF. However, the majority of Pinellas County C&D debris is processed/managed by Angelo's Recycled Materials in Pasco County (per 2017 Annual Solid Waste Report).
- The Disposal Complex receives limited quantities of C&D debris collected within the County.

10.6 Hazardous Waste

- Over the last three years, the County has disposed or recycled an average of 51,000 pounds of chemicals every month (or approximately 300 tons per year). A gradual decline is noted, however, in the quantities of chemicals disposed or recycled by the County during this three-year period.
- The HEC_3 facility and HHW programs have collected over 3,000,000 pounds of electronic and chemical waste and recorded over 48,000 participants annually.

A

Appendix A – Baseline Report Data Tables

Sheet 1 - Index for Baseline Report Data Tables

Purpose: **Index Sheet for Baseline Report Data Tables**
Project: **Pinellas County Solid Waste Master Plan**

Index

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Sheet 2B	Permanent Population, Unincorporated Area	Lealman MSBU and remainder unincorporated area
Sheet 3	Seasonal Population, Pinellas County	
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Sheet 13	Waste Projections for Waste Delivered to the Disposal Complex by Material Type	Sheet Split into 13A and 13B due to large amount of data
Sheet 14	Waste Projections for Pinellas County (Incorporated and Unincorporated) by Material Type	
Sheet 15	Recyclables Collected through BPRL and CC Locations	
Sheet 16	Chemicals Disposed or Recycled through HEC3, Mobile Collection, Haz-to-Go and EnviroBusiness Day	
Sheet 17	Waste Projections, Waste Avaliable to WTE at Disposal Complex	

Sheet 2 - Population Data, Permanent Population

Purpose: Permanent Population (Incorporated and Unincorporated Area)
Project: Pinellas County Solid Waste Master Plan

Population Data[1]		
Year	Population	% Change
2010	*916,542*	-
2011	923,933	0.806%
2012	931,324	0.800%
2013	938,715	0.794%
2014	946,106	0.787%
2015	953,497	0.781%
2016	960,888	0.775%
2017	*968,279*	0.769%
2018	976,239	0.822%
2019	984,199	0.815%
2020	992,159	0.809%
2021	1,000,119	0.802%
2022	*1,008,080*	0.796%

Population Data[2]		
Year	% Change	Population
2023	0.754%	1,015,680
2024	0.754%	1,023,337
2025	0.754%	1,031,052
2026	0.653%	1,037,781
2027	0.653%	1,044,554
2028	0.653%	1,051,371
2029	0.653%	1,058,232
2030	0.653%	1,065,138
2031	0.531%	1,070,798
2032	0.531%	1,076,488
2033	0.531%	1,082,208
2034	0.531%	1,087,959
2035	0.531%	1,093,740
2036	0.480%	1,098,986
2037	0.480%	1,104,257
2038	0.480%	1,109,554
2039	0.480%	1,114,876
2040	0.480%	1,120,223
2041	0.439%	1,125,136
2042	0.439%	1,130,070
2043	0.439%	1,135,026
2044	0.439%	1,140,004
2045	0.439%	1,145,004
2046	0.400%	1,149,584
2047	0.400%	1,154,182
2048	0.400%	1,158,799

Notes:

1. Population data for 2010, 2017 and 2022 is obtained from Pinellas County Economic Development. Intermediate year population data is based on linear projections.
2. Population projections from 2023-2045 use Bureau of Economic and Business Research (BEBR) population growth factors (% change). The growth factors were calculated from BEBR published data for Pinellas County. An average of MEDIUM and HIGH growth scenarios was used in order to align average growth with the population growth from Pinellas County Economic Development published data (2010-2022). Population from 2046-2048 assumes 0.400% increase based on growth trends for the previous 10-year period (2036-2045).

Sheet 2A - Population Data, Permanent Population

Purpose: **Permanent Population, Incorporated Areas (24 Municipalities)**
Project: **Pinellas County Solid Waste Master Plan**

Population Data[1]		
Year	Population	% Change
2010	*646,792*	-
2011	652,189	0.834%
2012	657,586	0.828%
2013	662,983	0.821%
2014	668,380	0.814%
2015	673,777	0.807%
2016	679,174	0.801%
2017	*684,570*	0.794%
2018	690,438	0.857%
2019	696,306	0.850%
2020	702,174	0.843%
2021	708,042	0.836%
2022	*713,909*	0.829%

Population Data[2]		
Year	% Change	Population
2023	0.754%	719,291
2024	0.754%	724,714
2025	0.754%	730,178
2026	0.653%	734,943
2027	0.653%	739,739
2028	0.653%	744,567
2029	0.653%	749,426
2030	0.653%	754,317
2031	0.531%	758,325
2032	0.531%	762,355
2033	0.531%	766,406
2034	0.531%	770,479
2035	0.531%	774,573
2036	0.480%	778,288
2037	0.480%	782,021
2038	0.480%	785,772
2039	0.480%	789,541
2040	0.480%	793,328
2041	0.439%	796,807
2042	0.439%	800,301
2043	0.439%	803,811
2044	0.439%	807,336
2045	0.439%	810,877
2046	0.400%	814,121
2047	0.400%	817,377
2048	0.400%	820,647

Notes:

1. Population data for 2010, 2017 and 2022 is obtained from Pinellas County Economic Development. Intermediate year population data is based on linear projections.

2. Population projections from 2023-2045 use Bureau of Economic and Business Research (BEBR) population growth factors (% change). The growth factors were calculated from BEBR published data for Pinellas County. An average of MEDIUM and HIGH growth scenarios was used in order to align average growth with the population growth from Pinellas County Economic Development published data (2010-2022). Population from 2046-2048 assumes 0.400% increase based on growth trends for the previous 10-year period (2036-2045).

Sheet 2B - Population Data, Permanent Population

Purpose: Permanent Population, Unincorporated Area
Project: Pinellas County Solid Waste Master Plan

Population Data[1]		
Year	Population	% Change
2010	269,750	-
2011	271,744	0.739%
2012	273,738	0.734%
2013	275,732	0.728%
2014	277,726	0.723%
2015	279,720	0.718%
2016	281,714	0.713%
2017	283,709	0.708%
2018	285,801	0.737%
2019	287,893	0.732%
2020	289,985	0.727%
2021	292,077	0.721%
2022	294,171	0.717%

Population Data[1]		
Year	Population	% Change
2023	296,389	0.754%
2024	298,623	0.754%
2025	300,874	0.754%
2026	302,838	0.653%
2027	304,815	0.653%
2028	306,804	0.653%
2029	308,806	0.653%
2030	310,821	0.653%
2031	312,473	0.531%
2032	314,133	0.531%
2033	315,802	0.531%
2034	317,480	0.531%
2035	319,167	0.531%
2036	320,698	0.480%
2037	322,236	0.480%
2038	323,782	0.480%
2039	325,335	0.480%
2040	326,895	0.480%
2041	328,329	0.439%
2042	329,769	0.439%
2043	331,215	0.438%
2044	332,668	0.439%
2045	334,127	0.439%
2046	335,463	0.400%
2047	336,805	0.400%
2048	338,152	0.400%

Notes:

1. Population of Unincorporated area is calculated from Sheets 2 and 3 by subtracting Incorporated area values (Sheet 3) from Pinellas County total values (Sheet 2).

Sheet 3 - Population Data, Seasonal Population

Purpose: Seasonal Population, Pinellas County
Project: Pinellas County Solid Waste Master Plan

Population Data				
Year	Population[1]	% Change	Average Stay (months)[2]	Equivalent Population with 12 months Stay
2010	*78,340*	-	5	32,642
2011	78,639	0.38%	5	32,766
2012	78,938	0.38%	5	32,891
2013	79,236	0.38%	5	33,015
2014	79,535	0.38%	5	33,140
2015	*79,834*	0.38%	5	33,264
2016	80,074	0.30%	5	33,364
2017	80,313	0.30%	5	33,464
2018	80,553	0.30%	5	33,564
2019	80,792	0.30%	5	33,664
2020	*81,032*	0.30%	5	33,763
2021	81,226	0.24%	5	33,844
2022	81,421	0.24%	5	33,925
2023	81,615	0.24%	5	34,006
2024	81,810	0.24%	5	34,087
2025	82,004	0.24%	5	34,168
2026	82,163	0.19%	5	34,234
2027	82,321	0.19%	5	34,301
2028	82,480	0.19%	5	34,367
2029	82,638	0.19%	5	34,433
2030	82,797	0.19%	5	34,499
2031	82,928	0.16%	5	34,553
2032	83,059	0.16%	5	34,608
2033	83,190	0.16%	5	34,663
2034	83,321	0.16%	5	34,717
2035	83,452	0.16%	5	34,772
2036	83,560	0.13%	5	34,817
2037	83,669	0.13%	5	34,862
2038	83,778	0.13%	5	34,908
2039	83,887	0.13%	5	34,953
2040	83,996	0.13%	5	34,998
2041	84,080	0.10%	5	35,033
2042	84,164	0.10%	5	35,068
2043	84,248	0.10%	5	35,103
2044	84,332	0.10%	5	35,138
2045	84,416	0.10%	5	35,173
2046	84,484	0.08%	5	35,202
2047	84,552	0.08%	5	35,230
2048	84,620	0.08%	5	35,258

Notes:

1. 2010 to 2035 from Pinellas County Planning Department Population Projections, Oct. 2009 (http://www.pinellascounty.org/plan/demographics/SeasonalPopCalcs.pdf). 2036 onwards population projections assume population change trend depicted from 2010 to 2035 data.
2. Based on review of available data and discussions with the County staff.

Sheet 4 - Population Data, Tourist Population

Purpose: Tourist Population, Pinellas County
Project: Pinellas County Solid Waste Master Plan

Population Data				
Year	Population[1]	% Change[2]	Average Stay (days)[2]	Equivalent Population with 365 days Stay
2010	5,845,946	-	5.6	89,691
2011	5,855,884	0.17%	5.6	89,844
2012	5,865,839	0.17%	5.6	89,996
2013	5,875,811	0.17%	5.6	90,149
2014	*5,885,800*	0.17%	5.6	90,303
2015	*6,197,500*	5.30%	5.6	95,085
2016	*6,249,500*	0.84%	5.6	95,883
2017	6,260,124	0.17%	5.6	96,046
2018	6,270,766	0.17%	5.6	96,209
2019	6,281,426	0.17%	5.6	96,373
2020	6,292,104	0.17%	5.6	96,536
2021	6,302,801	0.17%	5.6	96,701
2022	6,313,516	0.17%	5.6	96,865
2023	6,324,249	0.17%	5.6	97,030
2024	6,335,000	0.17%	5.6	97,195
2025	6,345,770	0.17%	5.6	97,360
2026	6,352,750	0.11%	5.6	97,467
2027	6,359,738	0.11%	5.6	97,574
2028	6,366,734	0.11%	5.6	97,681
2029	6,373,737	0.11%	5.6	97,789
2030	6,380,748	0.11%	5.6	97,896
2031	6,387,767	0.11%	5.6	98,004
2032	6,394,794	0.11%	5.6	98,112
2033	6,401,828	0.11%	5.6	98,220
2034	6,408,870	0.11%	5.6	98,328
2035	6,415,920	0.11%	5.6	98,436
2036	6,419,128	0.05%	5.6	98,485
2037	6,422,338	0.05%	5.6	98,535
2038	6,425,549	0.05%	5.6	98,584
2039	6,428,762	0.05%	5.6	98,633
2040	6,431,976	0.05%	5.6	98,682
2041	6,435,192	0.05%	5.6	98,732
2042	6,438,410	0.05%	5.6	98,781
2043	6,441,629	0.05%	5.6	98,830
2044	6,444,850	0.05%	5.6	98,880
2045	6,448,072	0.05%	5.6	98,929
2046	6,451,296	0.05%	5.6	98,979
2047	6,454,522	0.05%	5.6	99,028
2048	6,457,749	0.05%	5.6	99,078

Notes:

1. 2014 to 2016 visitor/tourist information obtained from Pinellas County 2018 Economic Profile (https://c.ymcdn.com/sites/www.pced.org/resource/collection/67248A37-781F-4AC2-B4B8-0FEFABF0E41A/Pinellas_County_Economic_Profile.pdf). Remainder is projected using percent population change.

2. Average annual Percentage change from 2006 to 2025 is calculated as 0.17% (except for 2014-2016 available data), from 2026 to 2035 is calculated as 0.11%, and 2026 onwards assumed as 0.05% based on 2006-3035 trend. These percentage change is calculated from visitor data published in Pinellas County Population Forecast Report (https://www.pinellascounty.org/mpo/docs/Demographics/StaffReport_Oct2008.pdf).

3. Assumed based on Pinellas County 2018 Economic Profile.

Sheet 5 - Population Data, Total Population

Purpose: Total Population, Pinellas County (Permanent & Seasonal & Tourist)
Project: Pinellas County Solid Waste Master Plan

Population Data				
Year	Permanent Population	Seasonal Population	Tourist Population	Total Population
2010	916,542	32,642	89,691	1,038,875
2011	923,933	32,766	89,844	1,046,543
2012	931,324	32,891	89,996	1,054,211
2013	938,715	33,015	90,149	1,061,880
2014	946,106	33,140	90,303	1,069,548
2015	953,497	33,264	95,085	1,081,846
2016	960,888	33,364	95,883	1,090,135
2017	968,279	33,464	96,046	1,097,789
2018	976,239	33,564	96,209	1,106,012
2019	984,199	33,664	96,373	1,114,235
2020	992,159	33,763	96,536	1,122,459
2021	1,000,119	33,844	96,701	1,130,664
2022	1,008,080	33,925	96,865	1,138,870
2023	1,015,680	34,006	97,030	1,146,716
2024	1,023,337	34,087	97,195	1,154,619
2025	1,031,052	34,168	97,360	1,162,580
2026	1,037,781	34,234	97,467	1,169,482
2027	1,044,554	34,301	97,574	1,176,429
2028	1,051,371	34,367	97,681	1,183,419
2029	1,058,232	34,433	97,789	1,190,454
2030	1,065,138	34,499	97,896	1,197,533
2031	1,070,798	34,553	98,004	1,203,355
2032	1,076,488	34,608	98,112	1,209,208
2033	1,082,208	34,663	98,220	1,215,090
2034	1,087,959	34,717	98,328	1,221,004
2035	1,093,740	34,772	98,436	1,226,948
2036	1,098,986	34,817	98,485	1,232,288
2037	1,104,257	34,862	98,535	1,237,654
2038	1,109,554	34,908	98,584	1,243,045
2039	1,114,876	34,953	98,633	1,248,462
2040	1,120,223	34,998	98,682	1,253,904
2041	1,125,136	35,033	98,732	1,258,901
2042	1,130,070	35,068	98,781	1,263,919
2043	1,135,026	35,103	98,830	1,268,960
2044	1,140,004	35,138	98,880	1,274,022
2045	1,145,004	35,173	98,929	1,279,107
2046	1,149,584	35,202	98,979	1,283,764
2047	1,154,182	35,230	99,028	1,288,440
2048	1,158,799	35,258	99,078	1,293,135

Notes:

1. 2014 to 2016 visitor/tourist information obtained from Pinellas County 2018 Economic Profile (https://c.ymcdn.com/sites/www.pced.org/resource/collection/67248A37-781F-4AC2-B4B8-0FEFABF0E41A/Pinellas_County_Economic_Profile.pdf). Reminder is projected using percent population change.

2. Average annual Percentage change from 2006 to 2025 is calculated as 0.17% (except for 2014-2016 available data), from 2026 to 2035 is calculated as 0.11%, and 2026 onwards assumed as 0.05% based on 2006-3035 trend. These percentage change is calculated from visitor data published in Pinellas County Population Forecast Report (https://www.pinellascounty.org/mpo/docs/Demographics/StaffReport_Oct2008.pdf).

3. Assumed based on Pinellas County 2018 Economic Profile.

Sheet 6 - Waste Generation Units - Incorporated Areas

Purpose: Waste Generation Units for Pinellas County Incorporated Areas
Project: Pinellas County Solid Waste Master Plan

Municipality	Unit Type	2015	2016	2017
Belleair Bluffs	S.F.	450	450	450
Belleair Bluffs	M.F.	0	0	0
Belleair Bluffs	Com.	71	71	71
Belleair	S.F.	1,460	1,460	1,358
Belleair	M.F.	18	953	30
Belleair	Com.	7	7	12
Belleair Shore	*S.F.*	*54*	*54*	*54*
Belleair Shore	*M.F.*	*0*	*0*	*0*
Belleair Shore	*Com.*	*0*	*0*	*0*
Belleair Beach	S.F.	819	819	819
Belleair Beach	M.F.	425	425	425
Belleair Beach	Com.	0	0	0
Clearwater	*S.F.*	*26,800*	*26,800*	*26,800*
Clearwater	*M.F.*	*30,000*	*30,000*	*30,000*
Clearwater	*Com.*	*200*	*200*	*200*
Dunedin	S.F.	12,600	12,600	12,600
Dunedin	M.F.	10,452	10,452	10,452
Dunedin	Com.	746	746	746
Gulfport	*S.F.*	*4,243*	*4,253*	*4,355*
Gulfport	*M.F.*	*1,673*	*1,673*	*1,673*
Gulfport	*Com.*	*245*	*225*	*127*
Indian Rocks Beach	S.F.	1,349	1,348	1,352
Indian Rocks Beach	M.F.	2,445	2,545	2,542
Indian Rocks Beach	Com.	155	155	155
Indian Shores	*S.F.*	*298*	*300*	*301*
Indian Shores	*M.F.*	*168*	*171*	*171*
Indian Shores	*Com.*	*86*	*87*	*87*
Kenneth City	S.F.	1,204	1,205	1,204
Kenneth City	M.F.	220	220	220
Kenneth City	Com.	76	77	76
Largo	*S.F.*	*15,389*	*16,460*	*17,300*
Largo	*M.F.*	*0*	*0*	*0*
Largo	*Com.*	*1,588*	*4,559*	*3,385*
Madeira Beach	S.F.	1,923	1,925	1,925
Madeira Beach	M.F.	276	276	276
Madeira Beach	Com.	26	26	26

Municipality	Unit Type	2015	2016	2017
N. Redington Beach	S.F.	713	712	712
N. Redington Beach	M.F.	756	765	765
N. Redington Beach	Com.	35	35	35
Oldsmar	S.F.	4,275	4,296	4,336
Oldsmar	M.F.	1,167	26	28
Oldsmar	Com.	487	474	507
Pinellas Park	*S.F.*	14,385	14,409	14,585
Pinellas Park	*M.F.*	0	0	0
Pinellas Park	*Com.*	0	0	0
Redington Beach	S.F.	917	915	915
Redington Beach	M.F.	0	0	0
Redington Beach	Com.	15	15	15
Redington Shores	*S.F.*	946	946	916
Redington Shores	*M.F.*	346	350	342
Redington Shores	*Com.*	47	47	45
Safety Harbor	S.F.	6,456	6,483	6,487
Safety Harbor	M.F.	812	812	812
Safety Harbor	Com.	178	178	180
Seminole	*S.F.*	4,199	4,329	4,397
Seminole	*M.F.*	2,947	3,288	3,288
Seminole	*Com.*	298	302	309
South Pasadena	S.F.	632	632	632
South Pasadena	M.F.	0	0	0
South Pasadena	Com.	167	167	167
St. Pete Beach	*S.F.*	3,316	3,316	3,314
St. Pete Beach	*M.F.*	0	0	0
St. Pete Beach	*Com.*	205	205	207
St. Petersburg	S.F.	73,873	73,905	73,905
St. Petersburg	M.F.	46,254	47,660	47,660
St. Petersburg	Com.	6,928	6,680	6,680
Tarpon Springs	*S.F.*	7,881	7,615	7,817
Tarpon Springs	*M.F.*	0	0	0
Tarpon Springs	*Com.*	660	745	681
Treasure Island	S.F.	1,833	1,814	1,814
Treasure Island	M.F.	764	807	789
Treasure Island	Com.	4,304	4,377	4,410

Note:

1. S.F. = Single Family; M.F. = Multifamily; Com. = Commercial
2. Above data is obtained from Annual Municipal Solid Waste Management Reports published by the FDEP.

Sheet 7 - Waste Generation Units - Pinellas County (Totals)

Purpose: **Waste Generation Units for Pinellas County (Incorporated & Unincorporated Areas)**
Project: **Pinellas County Solid Waste Master Plan**

Area Type	Unit Type[4]	2015	2016	2017
Pinellas County Total (Note 1)	S.F.	316,857	302,765	302,765
Pinellas County Total	M.F.	184,289	153,005	153,005
Pinellas County Total	Com.	124,794	125,000	125,000
Pinellas County Total	Total	625,940	580,770	580,770

Area Type	Unit Type	2015	2016	2017
Pinellas County - Incorporated (Note 2)	S.F.	186,015	187,046	188,348
Pinellas County - Incorporated	M.F.	98,723	100,423	99,473
Pinellas County - Incorporated	Com.	16,524	19,378	18,121
Pinellas County - Incorporated	Total	301,262	306,847	305,942

Area Type	Unit Type	2015	2016	2017
Pinellas County - Unincorporated (Note 3)	S.F.	130,842	115,719	114,417
Pinellas County - Unincorporated	M.F.	85,566	52,582	53,532
Pinellas County - Unincorporated	Com.	108,270	105,622	106,879
Pinellas County - Unincorporated	Total	324,678	273,923	274,828

Notes:

1. Pinellas County total waste generation units obtained from Annual Municipal Solid Waste Management Reports published by the FDEP.
2. Pinellas County Incorporated Area waste generation units are based on Sheet 6.
3. Pinellas County Unincorporated Area waste generation units are calculated by subtracting incorporated units from total units.
4. Abbreviations: S.F. = Single Family; M.F. = Multifamily; Com. = Commercial.

Sheet 8 - Waste Generation & Processing Tonnages (Historical)

Purpose: Waste Generation & Processing Tonnages (Historical) for Pinellas County (Incorporated & Unincorporated Areas)
Project: Pinellas County Solid Waste Master Plan

	Waste Generation (tons)[1]					
Sector (Unit Type)	2012	2013	2014	2015	2016	2017
Single Family	345,681	389,255	420,164	426,318	622,144	633,398
Multi Family	197,842	225,682	245,706	267,149	363,075	367,157
Commercial	849,993	704,486	776,749	752,604	1,030,159	1,146,557
Total	1,393,516	1,319,423	1,442,619	1,446,071	2,015,378	2,147,112

	Waste Per Capita Generation (tons)					
	2012	2013	2014	2015	2016	2017
Population	1,054,211	1,061,880	1,069,548	1,081,846	1,090,135	1,097,789
Waste Per Capita (tons per Year)	1.32	1.24	1.35	1.34	1.85	1.96
Waste Per Capita (lbs. per day)	7.24	6.81	7.39	7.32	10.13	10.72

	Waste Recycled (tons)[1,2,4]					
Sector (Unit Type)	2012	2013	2014	2015	2016	2017
Single Family	61,593	76,400	142,493	201,845	297,182	287,926
Multi Family	38,685	42,194	5,563	69,568	95,947	126,509
Commercial	361,811	331,922	311,396	478,363	702,643	763,606
Total	462,089	450,516	459,452	749,776	1,095,772	1,178,041

	Recycling %[3,4]					
	2012	2013	2014	2015	2016	2017
Traditional	33.16%	34.14%	31.85%	51.85%	54.37%	54.87%
Adjusted	63.00%	65.00%	63.00%	89.00%	81.82%	82.14%

	Waste Processed/Disposed (tons)[1,4,5]					
	2012	2013	2014	2015	2016	2017
Incinerated or Landfilled	931,427	868,907	983,167	963,600	1,195,176	1,321,818

Notes:

1. Pinellas County total waste data obtained from Annual Solid Waste Management Reports submitted to the FDEP.

2. Recycled tonnage includes both FDEP certified tons (processed by FDEP certified recovered materials dealers) and non-certified tons (processed by non-certified dealers).

3. As published in the Annual Municipal Solid Waste Management Reports by the FDEP.

4. Note that beginning in 2015, the County includes certain materials that are by-products of tonnages processed via the WTE process, such as ash beneficially used and recovered metals, in the traditional recycling tons, which is allowable by FDEP. Largely because those by-product tonnages are included in the recycled tons, tons reported as recycled + tons reported as incinerated/landfilled do not equal reported countywide waste generated for 2015, 2016, and 2017.

5. Waste not necessarily processed/disposed in Pinellas County facilities.

Sheet 9 - Waste Generation Comparison in Florida

Purpose: Waste Generation Comparison in Florida
Project: Pinellas County Solid Waste Master Plan

		Waste Generation[1]	
S.No	County	Tons/Year	Pounds/Day
1	Holmes	0.30	1.62
2	Liberty	0.30	1.67
3	Gilchrist	0.35	1.91
4	Calhoun	0.36	1.99
5	Lafayette	0.45	2.47
6	Union	0.56	3.07
7	Wakulla	0.65	3.55
8	Dixie	0.66	3.63
9	Washington	0.68	3.73
10	Flagler	0.74	4.04
11	Gadsden	0.76	4.17
12	Highlands	0.77	4.21
13	Hardee	0.77	4.23
14	Levy	0.81	4.45
15	Baker	0.85	4.66
16	Madison	0.86	4.69
17	Jefferson	0.86	4.75
18	Taylor	0.94	5.13
19	Glades	0.94	5.17
20	Jackson	0.99	5.40
21	Bradford	1.02	5.60
22	Hamilton	1.08	5.94
23	Osceola	1.24	6.80
24	Columbia	1.29	7.08
25	Clay	1.30	7.14
26	Lake	1.31	7.20
27	Citrus	1.31	7.17
28	Desoto	1.31	7.16
29	Hendry	1.45	7.93
30	Gulf	1.50	8.22
31	Franklin	1.54	8.42
32	Seminole	1.55	8.50
33	Hernando	1.55	8.48
34	Santa Rosa	1.60	8.79

		Waste Generation[1]	
S.No	County	Tons/Year	Pounds/Day
35	Okeechobee	1.62	8.85
36	Putnam	1.64	9.00
37	Okaloosa	1.65	9.05
38	Polk	1.69	9.28
39	St. Lucie	1.69	9.28
40	Miami-Dade	1.85	10.15
41	St. Johns	1.89	10.38
42	Pasco	1.93	10.57
43	Pinellas	1.96	10.72
44	Broward	2.08	11.37
45	Volusia	2.14	11.71
46	Hillsborough	2.23	12.20
47	Nassau	2.23	12.20
48	Lee	2.29	12.56
49	Marion	2.29	12.55
50	Escambia	2.39	13.12
51	Palm Beach	2.44	13.39
52	Martin	2.44	13.35
53	Manatee	2.45	13.43
54	Leon	2.46	13.47
55	Sumter	2.49	13.64
56	Orange	2.55	13.97
57	Bay	2.58	14.13
58	Walton	2.74	15.02
59	Brevard	2.83	15.53
60	Alachua	3.03	16.61
61	Sarasota	3.05	16.73
62	Duval	3.16	17.30
63	Collier	3.31	18.14
64	Indian River	3.45	18.92
65	Suwannee	4.18	22.88
66	Charlotte	4.87	26.70
67	Monroe	8.54	46.81

State Average Waste Generation = 2.21 tons/Yr or 12.09 lbs./Day

Notes:

1. Data from 2017 Annual Solid Waste Report published by the FDEP. Waste generation is assumed as waste collected as reported by the FDEP.

2. Pinellas County's waste generation was reported at 2.23 tons/year (or 12.24 pounds/year) in the 2017 Annual Solid Waste Report by the FDEP. The generation rate was higher since the FDEP used permanent population only in calculating the number. In the above table, generation rate calculated in Sheet 8 has been used.

Sheet 10 - Waste Recycling Percentage Comparison in Florida

Purpose: Waste Recycling Percentage Comparison in Florida
Project: Pinellas County Solid Waste Master Plan

S.No	County	Waste Recycling %[1] S.F.	M.F.	Com.	Total
1	Charlotte	66%	49%	117%	72%
2	Sumter	72%	72%	131%	72%
3	Leon	13%	11%	86%	65%
4	Indian River	64%	64%	84%	64%
5	Collier	65%	22%	83%	62%
6	Marion	55%	63%	159%	60%
7	Duval	13%	6%	73%	58%
8	Alachua	29%	29%	65%	56%
9	Highlands	56%	56%	154%	56%
10	Pinellas	45%	34%	103%	55%
11	Brevard	54%	54%	110%	54%
12	Monroe	66%	45%	108%	54%
13	St. Lucie	63%	42%	170%	53%
14	Manatee	36%	24%	68%	52%
15	Hillsborough	16%	18%	72%	51%
16	Martin	42%	38%	104%	51%
17	Lee	54%	22%	72%	50%
18	Escambia	36%	42%	87%	49%
19	Citrus	54%	41%	434%	48%
20	Franklin	46%	46%	137%	46%
21	Palm Beach	45%	45%	88%	45%
22	Sarasota	29%	18%	102%	41%
23	Volusia	42%	77%	100%	40%
24	Seminole	17%	9%	60%	40%
25	Pasco	9%	9%	59%	39%
26	Putnam	40%	15%	71%	39%
27	Broward	8%	14%	46%	33%
28	Bay	33%	33%	51%	33%
29	Hernando	4%	3%	86%	32%
30	Bradford	32%	32%	108%	32%
31	Orange	24%	13%	48%	31%
32	Gilchrist	43%	76%	74%	31%
33	Gadsden	27%	5%	68%	29%
34	Columbia	25%	41%	74%	28%

S.No	County	Waste Recycling %[1] S.F.	M.F.	Com.	Total
35	Polk	15%	5%	40%	26%
36	Flagler	26%	26%	64%	26%
37	Nassau	26%	5%	39%	26%
38	Hamilton	23%	22%	68%	25%
39	Madison	26%	24%	73%	24%
40	Santa Rosa	22%	22%	66%	22%
41	St. Johns	18%	21%	30%	19%
42	Okaloosa	13%	11%	32%	19%
43	Wakulla	28%	28%	56%	19%
44	Holmes	19%	19%	45%	19%
45	Miami-Dade	18%	18%	42%	18%
46	Clay	14%	51%	40%	18%
47	Suwannee	17%	66%	42%	18%
48	Taylor	16%	10%	41%	18%
49	Hendry	4%	12%	22%	17%
50	Baker	17%	17%	57%	17%
51	Okeechobee	15%	15%	44%	15%
52	Osceola	10%	5%	33%	14%
53	Jackson	7%	8%	33%	13%
54	Lake	18%	130%	22%	12%
55	Levy	12%	12%	232%	12%
56	Lafayette	12%	12%	43%	12%
57	Desoto	11%	11%	34%	11%
58	Washington	11%	8%	61%	9%
59	Gulf	5%	55%	45%	9%
60	Calhoun	7%	10%	17%	8%
61	Walton	8%	7%	20%	7%
62	Union	7%	7%	23%	7%
63	Jefferson	5%	5%	16%	5%
64	Hardee	3%	2%	7%	3%
65	Dixie	2%	3%	12%	2%
66	Glades	1%	0%	2%	1%
67	Liberty	1%	100%	4%	1%

State Average Waste Recycling % = 31% for S.F., 29% for M.F., 70% for Comm, and 42% for Total Waste

Notes:
1. Data from 2017 Annual Municipal Solid Waste Management Report published by the FDEP.
2. S.F. = Single Family; M.F. = Multifamily; Com. = Commercial

Sheet 11 - Waste Generated Versus Managed at Disposal Complex

Purpose: Waste Generated Versus Managed at Disposal Complex
Project: Pinellas County Solid Waste Master Plan

	Countywide Waste Generation (tons)[1]					
	2012	2013	2014	2015	2016	2017
Total	1,393,516	1,319,423	1,442,619	1,446,071	2,015,378	2,147,112

	Waste Received at Disposal Complex by Waste Type (tons)[2]					
	2012	2013	2014	2015	2016	2017
Class I Waste	925,933	946,118	983,133	1,047,648	1,093,270	1,093,697
Class III Waste	76,340	88,524	75,678	121,989	75,153	87,312
Tires	6,965	9,654	8,707	8,668	10,144	11,473
Total	1,009,238	1,044,296	1,067,519	1,178,305	1,178,567	1,192,482

	Waste Received at Disposal Complex by Customer Type (tons)[2]					
	2012	2013	2014	2015	2016	2017
Residential	495,898	506,742	517,115	534,113	543,592	551,721
Commercial[3]	440,417	457,012	464,720	548,762	530,211	535,114
Mix	72,924	80,542	85,684	95,430	104,765	105,648
Total	1,009,238	1,044,296	1,067,519	1,178,305	1,178,567	1,192,482

	Non-Recoverable Waste Processed at Complex (tons)[2]					
	2012	2013	2014	2015	2016	2017
Incinerated	762,904	808,689	843,304	788,002	769,257	789,621
Landfilled (excluding Ash)	147,003	119,130	96,958	240,541	247,461	226,657
Yard Waste Processed	29,089	28,653	31,287	35,743	35,280	40,321
Total	938,996	956,472	971,548	1,064,286	1,051,999	1,056,600
Incinerator Ash Landfilled	*199,351*	*206,235*	*226,763*	*206,926*	*209,800*	*197,303*

	Waste Disposed Out of County[1]					
	2012	2013	2014	2015	2016	2017
Class I Waste	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	19,018
Class III Waste	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	215,849
Ash	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	82
Total						234,949

Notes:

1. From 2017 Annual Municipal Solid Waste Management Report published by the FDEP.

2. Waste quantities delivered to the disposal complex (by customer and waste type) were provided by the County. These waste quantities excludes materials directly received at HEC3 waste and dropped off recyclables.

3.Includes industrial waste delivered to the Disposal Complex.

Sheet 12 - Waste Projections for Pinellas County

Purpose: Waste Projections for Pinellas County (Incorporated and Unincorporated)
Project: Pinellas County Solid Waste Master Plan

				Projected Waste (Tons)	
Year	Population	Historical Waste (Tons)	Annual Tons per Capita	Scenario 1 - Using 2012-2017 Average Annual Tons/Capita	Scenario 2- Using 2016-2017 Average Annual Tons/Capita
2012	1,054,211	1,393,516	1.32		
2013	1,061,880	1,319,423	1.24		
2014	1,069,548	1,442,619	1.35		
2015	1,081,846	1,446,071	1.34		
2016	1,090,135	2,015,378	1.85		
2017	1,097,789	2,147,112	1.96		
2018	1,106,012			1,669,058	2,103,963
2019	1,114,235			1,681,468	2,119,606
2020	1,122,459			1,693,878	2,135,250
2021	1,130,664			1,706,260	2,150,859
2022	1,138,870			1,718,644	2,166,470
2023	1,146,716			1,730,484	2,181,394
2024	1,154,619			1,742,410	2,196,428
2025	1,162,580			1,754,424	2,211,573
2026	1,169,482			1,764,840	2,224,703
2027	1,176,429			1,775,322	2,237,917
2028	1,183,419			1,785,871	2,251,214
2029	1,190,454			1,796,487	2,264,596
2030	1,197,533			1,807,171	2,278,064
2031	1,203,355			1,815,957	2,289,140
2032	1,209,208			1,824,789	2,300,272
2033	1,215,090			1,833,666	2,311,463
2034	1,221,004			1,842,590	2,322,712
2035	1,226,948			1,851,560	2,334,019
2036	1,232,288			1,859,618	2,344,178
2037	1,237,654			1,867,716	2,354,385
2038	1,243,045			1,875,852	2,364,641
2039	1,248,462			1,884,026	2,374,946
2040	1,253,904			1,892,238	2,385,297
2041	1,258,901			1,899,780	2,394,804
2042	1,263,919			1,907,353	2,404,350
2043	1,268,960			1,914,959	2,413,939
2044	1,274,022			1,922,599	2,423,569
2045	1,279,107			1,930,272	2,433,241
2046	1,283,764			1,937,301	2,442,101
2047	1,288,440			1,944,357	2,450,996
2048	1,293,135			1,951,442	2,459,927

Average Annual Tons Per Capita (2012 - 2017) = 1.51 tons per Capita
Average Annual Tons Per Capita (2016 - 2017) = 1.90 tons per Capita

Sheet 13 (A) - Waste Projections for Waste Delivered to the Disposal Complex by Material Type

Purpose: Waste Projections for Waste Delivered to the Disposal Complex by Material Type
Project: Pinellas County Solid Waste Master Plan

Year	Waste Projections for Waste to Disposal Complex (Note 1)	Waste Projections by Material Type (Waste Composition Data from 2014 Waste Composition Study for Waste Delivered to the Disposal Complex)															
		News paper	Corrugated Container	Office Paper	Other Recyclable Paper	Low Grade Paper	Aseptic Containers	PET Bottles	HDPE Bottles	Plastics #1 and #2	Plastic Containers (#3-#7)	Bulky Rigid Plastics	Non-Rigid Plastic Film	Expanded Polystyrene	All Other Plastics	Tin/Steel Cans	Other Ferrous
		2.30%	8.10%	1.00%	10.80%	6.10%	0.40%	1.60%	0.90%	0.90%	0.90%	1.70%	5.50%	0.90%	0.70%	1.10%	1.20%
2018	1,199,259	27,583	97,140	11,993	129,520	73,155	4,797	19,188	10,793	10,793	10,793	20,387	65,959	10,793	8,395	13,192	14,391
2019	1,208,175	27,788	97,862	12,082	130,483	73,699	4,833	19,331	10,874	10,874	10,874	20,539	66,450	10,874	8,457	13,290	14,498
2020	1,217,092	27,993	98,584	12,171	131,446	74,243	4,868	19,473	10,954	10,954	10,954	20,691	66,940	10,954	8,520	13,388	14,605
2021	1,225,989	28,198	99,305	12,260	132,407	74,785	4,904	19,616	11,034	11,034	11,034	20,842	67,429	11,034	8,582	13,486	14,712
2022	1,234,888	28,402	100,026	12,349	133,368	75,328	4,940	19,758	11,114	11,114	11,114	20,993	67,919	11,114	8,644	13,584	14,819
2023	1,243,395	28,598	100,715	12,434	134,287	75,847	4,974	19,894	11,191	11,191	11,191	21,138	68,387	11,191	8,704	13,677	14,921
2024	1,251,964	28,795	101,409	12,520	135,212	76,370	5,008	20,031	11,268	11,268	11,268	21,283	68,858	11,268	8,764	13,772	15,024
2025	1,260,596	28,994	102,108	12,606	136,144	76,896	5,042	20,170	11,345	11,345	11,345	21,430	69,333	11,345	8,824	13,867	15,127
2026	1,268,081	29,166	102,715	12,681	136,953	77,353	5,072	20,289	11,413	11,413	11,413	21,557	69,744	11,413	8,877	13,949	15,217
2027	1,275,612	29,339	103,325	12,756	137,766	77,812	5,102	20,410	11,481	11,481	11,481	21,685	70,159	11,481	8,929	14,032	15,307
2028	1,283,192	29,513	103,939	12,832	138,585	78,275	5,133	20,531	11,549	11,549	11,549	21,814	70,576	11,549	8,982	14,115	15,398
2029	1,290,820	29,689	104,556	12,908	139,409	78,740	5,163	20,653	11,617	11,617	11,617	21,944	70,995	11,617	9,036	14,199	15,490
2030	1,298,496	29,865	105,178	12,985	140,238	79,208	5,194	20,776	11,686	11,686	11,686	22,074	71,417	11,686	9,089	14,283	15,582
2031	1,304,810	30,011	105,690	13,048	140,919	79,593	5,219	20,877	11,743	11,743	11,743	22,182	71,765	11,743	9,134	14,353	15,658
2032	1,311,155	30,157	106,204	13,112	141,605	79,980	5,245	20,978	11,800	11,800	11,800	22,290	72,114	11,800	9,178	14,423	15,734
2033	1,317,534	30,303	106,720	13,175	142,294	80,370	5,270	21,081	11,858	11,858	11,858	22,398	72,464	11,858	9,223	14,493	15,810
2034	1,323,946	30,451	107,240	13,239	142,986	80,761	5,296	21,183	11,916	11,916	11,916	22,507	72,817	11,916	9,268	14,563	15,887
2035	1,330,391	30,599	107,762	13,304	143,682	81,154	5,322	21,286	11,974	11,974	11,974	22,617	73,171	11,974	9,313	14,634	15,965
2036	1,336,181	30,732	108,231	13,362	144,308	81,507	5,345	21,379	12,026	12,026	12,026	22,715	73,490	12,026	9,353	14,698	16,034
2037	1,341,999	30,866	108,702	13,420	144,936	81,862	5,368	21,472	12,078	12,078	12,078	22,814	73,810	12,078	9,394	14,762	16,104
2038	1,347,846	31,000	109,175	13,478	145,567	82,219	5,391	21,566	12,131	12,131	12,131	22,913	74,132	12,131	9,435	14,826	16,174
2039	1,353,719	31,136	109,651	13,537	146,202	82,577	5,415	21,660	12,183	12,183	12,183	23,013	74,455	12,183	9,476	14,891	16,245
2040	1,359,619	31,271	110,129	13,596	146,839	82,937	5,438	21,754	12,237	12,237	12,237	23,114	74,779	12,237	9,517	14,956	16,315
2041	1,365,038	31,396	110,568	13,650	147,424	83,267	5,460	21,841	12,285	12,285	12,285	23,206	75,077	12,285	9,555	15,015	16,380
2042	1,370,480	31,521	111,009	13,705	148,012	83,599	5,482	21,928	12,334	12,334	12,334	23,298	75,376	12,334	9,593	15,075	16,446
2043	1,375,945	31,647	111,452	13,759	148,602	83,933	5,504	22,015	12,384	12,384	12,384	23,391	75,677	12,384	9,632	15,135	16,511
2044	1,381,434	31,773	111,896	13,814	149,195	84,267	5,526	22,103	12,433	12,433	12,433	23,484	75,979	12,433	9,670	15,196	16,577
2045	1,386,947	31,900	112,343	13,869	149,790	84,604	5,548	22,191	12,483	12,483	12,483	23,578	76,282	12,483	9,709	15,256	16,643
2046	1,391,998	32,016	112,752	13,920	150,336	84,912	5,568	22,272	12,528	12,528	12,528	23,664	76,560	12,528	9,744	15,312	16,704
2047	1,397,068	32,133	113,162	13,971	150,883	85,221	5,588	22,353	12,574	12,574	12,574	23,750	76,839	12,574	9,779	15,368	16,765
2048	1,402,158	32,250	113,575	14,022	151,433	85,532	5,609	22,435	12,619	12,619	12,619	23,837	77,119	12,619	9,815	15,424	16,826

Notes:

1. Waste projections for total waste to the Disposal Complex assumes 57% of the total County waste will be delivered to the Disposal Complex during projection period. The 57% average is calculated by comparing waste delivered to the Disposal Complex to waste generated in Pinellas County for 2016 and 2017 (as presented in Sheet 11). The 57% is applied to the Countywide waste projections (Scenario 2, Sheet 12) to obtain waste projections for the Disposal Complex. We note that the waste delivered to the Disposal Complex (57% of total) can fluctuate or vary significantly depending on future waste flow conditions.

Sheet 13 (B) - Waste Projections for Waste Delivered to the Disposal Complex by Material Type

Purpose: Waste Projections for Waste Delivered to the Disposal Complex by Material Type
Project: Pinellas County Solid Waste Master Plan

Year	Waste Projections for Waste to Disposal Complex (Note 1)	Waste Projections by Material Type (Waste Composition Data from 2014 Waste Composition Study for Waste Delivered to the Disposal Complex)																
		Aluminum Cans	Other Non-Ferrous	Glass Containers	Other Glass	Textiles	Special Wastes	Electronics	Household Batteries	Clean Wood Waste	Treated Wood Waste	C&D Debris	Tires and Rubber	Yard Waste	Food Waste	All Other Garbage	Liquids	Grit
		0.80%	0.30%	4.00%	0.30%	3.60%	0.20%	1.70%	0.10%	2.20%	2.60%	3.80%	0.70%	8.50%	16.30%	9.40%	1.00%	0.40%
2018	1,199,259	9,594	3,598	47,970	3,598	43,173	2,399	20,387	1,199	26,384	31,181	45,572	8,395	101,937	195,479	112,730	11,993	4,797
2019	1,208,175	9,665	3,625	48,327	3,625	43,494	2,416	20,539	1,208	26,580	31,413	45,911	8,457	102,695	196,933	113,568	12,082	4,833
2020	1,217,092	9,737	3,651	48,684	3,651	43,815	2,434	20,691	1,217	26,776	31,644	46,250	8,520	103,453	198,386	114,407	12,171	4,868
2021	1,225,989	9,808	3,678	49,040	3,678	44,136	2,452	20,842	1,226	26,972	31,876	46,588	8,582	104,209	199,836	115,243	12,260	4,904
2022	1,234,888	9,879	3,705	49,396	3,705	44,456	2,470	20,993	1,235	27,168	32,107	46,926	8,644	104,965	201,287	116,079	12,349	4,940
2023	1,243,395	9,947	3,730	49,736	3,730	44,762	2,487	21,138	1,243	27,355	32,328	47,249	8,704	105,689	202,673	116,879	12,434	4,974
2024	1,251,964	10,016	3,756	50,079	3,756	45,071	2,504	21,283	1,252	27,543	32,551	47,575	8,764	106,417	204,070	117,685	12,520	5,008
2025	1,260,596	10,085	3,782	50,424	3,782	45,381	2,521	21,430	1,261	27,733	32,776	47,903	8,824	107,151	205,477	118,496	12,606	5,042
2026	1,268,081	10,145	3,804	50,723	3,804	45,651	2,536	21,557	1,268	27,898	32,970	48,187	8,877	107,787	206,697	119,200	12,681	5,072
2027	1,275,612	10,205	3,827	51,024	3,827	45,922	2,551	21,685	1,276	28,063	33,166	48,473	8,929	108,427	207,925	119,908	12,756	5,102
2028	1,283,192	10,266	3,850	51,328	3,850	46,195	2,566	21,814	1,283	28,230	33,363	48,761	8,982	109,071	209,160	120,620	12,832	5,133
2029	1,290,820	10,327	3,872	51,633	3,872	46,470	2,582	21,944	1,291	28,398	33,561	49,051	9,036	109,720	210,404	121,337	12,908	5,163
2030	1,298,496	10,388	3,895	51,940	3,895	46,746	2,597	22,074	1,298	28,567	33,761	49,343	9,089	110,372	211,655	122,059	12,985	5,194
2031	1,304,810	10,438	3,914	52,192	3,914	46,973	2,610	22,182	1,305	28,706	33,925	49,583	9,134	110,909	212,684	122,652	13,048	5,219
2032	1,311,155	10,489	3,933	52,446	3,933	47,202	2,622	22,290	1,311	28,845	34,090	49,824	9,178	111,448	213,718	123,249	13,112	5,245
2033	1,317,534	10,540	3,953	52,701	3,953	47,431	2,635	22,398	1,318	28,986	34,256	50,066	9,223	111,990	214,758	123,848	13,175	5,270
2034	1,323,946	10,592	3,972	52,958	3,972	47,662	2,648	22,507	1,324	29,127	34,423	50,310	9,268	112,535	215,803	124,451	13,239	5,296
2035	1,330,391	10,643	3,991	53,216	3,991	47,894	2,661	22,617	1,330	29,269	34,590	50,555	9,313	113,083	216,854	125,057	13,304	5,322
2036	1,336,181	10,689	4,009	53,447	4,009	48,103	2,672	22,715	1,336	29,396	34,741	50,775	9,353	113,575	217,798	125,601	13,362	5,345
2037	1,341,999	10,736	4,026	53,680	4,026	48,312	2,684	22,814	1,342	29,524	34,892	50,996	9,394	114,070	218,746	126,148	13,420	5,368
2038	1,347,846	10,783	4,044	53,914	4,044	48,522	2,696	22,913	1,348	29,653	35,044	51,218	9,435	114,567	219,699	126,697	13,478	5,391
2039	1,353,719	10,830	4,061	54,149	4,061	48,734	2,707	23,013	1,354	29,782	35,197	51,441	9,476	115,066	220,656	127,250	13,537	5,415
2040	1,359,619	10,877	4,079	54,385	4,079	48,946	2,719	23,114	1,360	29,912	35,350	51,666	9,517	115,568	221,618	127,804	13,596	5,438
2041	1,365,038	10,920	4,095	54,602	4,095	49,141	2,730	23,206	1,365	30,031	35,491	51,871	9,555	116,028	222,501	128,314	13,650	5,460
2042	1,370,480	10,964	4,111	54,819	4,111	49,337	2,741	23,298	1,370	30,151	35,632	52,078	9,593	116,491	223,388	128,825	13,705	5,482
2043	1,375,945	11,008	4,128	55,038	4,128	49,534	2,752	23,391	1,376	30,271	35,775	52,286	9,632	116,955	224,279	129,339	13,759	5,504
2044	1,381,434	11,051	4,144	55,257	4,144	49,732	2,763	23,484	1,381	30,392	35,917	52,494	9,670	117,422	225,174	129,855	13,814	5,526
2045	1,386,947	11,096	4,161	55,478	4,161	49,930	2,774	23,578	1,387	30,513	36,061	52,704	9,709	117,891	226,072	130,373	13,869	5,548
2046	1,391,998	11,136	4,176	55,680	4,176	50,112	2,784	23,664	1,392	30,624	36,192	52,896	9,744	118,320	226,896	130,848	13,920	5,568
2047	1,397,068	11,177	4,191	55,883	4,191	50,294	2,794	23,750	1,397	30,735	36,324	53,089	9,779	118,751	227,722	131,324	13,971	5,588
2048	1,402,158	11,217	4,206	56,086	4,206	50,478	2,804	23,837	1,402	30,847	36,456	53,282	9,815	119,183	228,552	131,803	14,022	5,609

Notes:

1. Waste projections for total waste to the Disposal Complex assumes 57% of the total County waste will be delivered to the Disposal Complex during projection period. The 57% average is calculated by comparing waste delivered to the Disposal Complex to waste generated in Pinellas County for 2016 and 2017 (as presented in Sheet 11). The 57% is applied to the Countywide waste projections (Scenario 2, Sheet 12) to obtain waste projections for the Disposal Complex. We note that the waste delivered to the Disposal Complex (57% of total) can fluctuate or vary significantly depending on future waste flow conditions.

Sheet 14 - Waste Projections for Pinellas County by Material Type

Purpose: Waste Projections for Pinellas County (Incorporated and Unincorporated) by Material Type
Project: Pinellas County Solid Waste Master Plan

Year	Countywide Waste Projections (Sheet 9, Scenario 2)	Waste Projections by Material Type (Waste Composition Data Percentages from 2017 Annual Solid Waste Management Report by the FDEP)																	
		News paper	Glass	Aluminum cans	Plastic bottles	Steel cans	Corrugated paper	Office paper	Yard trash	Other plastics	Ferrous metals	White goods	Non-ferrous metals	Other paper	Textiles	C&D debris	Food	Misc.	Tires
		2.30%	4.00%	0.80%	3.40%	1.10%	8.10%	1.00%	13.27%	9.08%	1.20%	0.56%	0.30%	4.18%	3.60%	25.38%	7.92%	13.10%	0.70%
2018	2,103,963	48,391	84,159	16,832	71,535	23,144	170,421	21,040	279,272	191,081	25,248	11,759	6,312	88,050	75,743	534,047	166,584	275,619	14,728
2019	2,119,606	48,751	84,784	16,957	72,067	23,316	171,688	21,196	281,349	192,502	25,435	11,846	6,359	88,705	76,306	538,018	167,822	277,668	14,837
2020	2,135,250	49,111	85,410	17,082	72,598	23,488	172,955	21,352	283,425	193,923	25,623	11,934	6,406	89,360	76,869	541,989	169,061	279,718	14,947
2021	2,150,859	49,470	86,034	17,207	73,129	23,659	174,220	21,509	285,497	195,340	25,810	12,021	6,453	90,013	77,431	545,951	170,297	281,762	15,056
2022	2,166,470	49,829	86,659	17,332	73,660	23,831	175,484	21,665	287,569	196,758	25,998	12,108	6,499	90,666	77,993	549,913	171,533	283,807	15,165
2023	2,181,394	50,172	87,256	17,451	74,167	23,995	176,693	21,814	289,550	198,113	26,177	12,192	6,544	91,291	78,530	553,702	172,714	285,763	15,270
2024	2,196,428	50,518	87,857	17,571	74,679	24,161	177,911	21,964	291,546	199,479	26,357	12,276	6,589	91,920	79,071	557,518	173,905	287,732	15,375
2025	2,211,573	50,866	88,463	17,693	75,193	24,327	179,137	22,116	293,556	200,854	26,539	12,360	6,635	92,554	79,617	561,362	175,104	289,716	15,481
2026	2,224,703	51,168	88,988	17,798	75,640	24,472	180,201	22,247	295,299	202,047	26,696	12,434	6,674	93,103	80,089	564,695	176,143	291,436	15,573
2027	2,237,917	51,472	89,517	17,903	76,089	24,617	181,271	22,379	297,053	203,247	26,855	12,507	6,714	93,656	80,565	568,049	177,190	293,167	15,665
2028	2,251,214	51,778	90,049	18,010	76,541	24,763	182,348	22,512	298,818	204,455	27,015	12,582	6,754	94,213	81,044	571,424	178,242	294,909	15,758
2029	2,264,596	52,086	90,584	18,117	76,996	24,911	183,432	22,646	300,594	205,670	27,175	12,657	6,794	94,773	81,525	574,821	179,302	296,662	15,852
2030	2,278,064	52,395	91,123	18,225	77,454	25,059	184,523	22,781	302,382	206,893	27,337	12,732	6,834	95,336	82,010	578,239	180,368	298,426	15,946
2031	2,289,140	52,650	91,566	18,313	77,831	25,181	185,420	22,891	303,852	207,899	27,470	12,794	6,867	95,800	82,409	581,051	181,245	299,877	16,024
2032	2,300,272	52,906	92,011	18,402	78,209	25,303	186,322	23,003	305,330	208,910	27,603	12,856	6,901	96,266	82,810	583,877	182,127	301,336	16,102
2033	2,311,463	53,164	92,458	18,492	78,590	25,426	187,228	23,115	306,815	209,926	27,738	12,919	6,934	96,734	83,213	586,717	183,013	302,802	16,180
2034	2,322,712	53,422	92,908	18,582	78,972	25,550	188,140	23,227	308,308	210,948	27,873	12,981	6,968	97,205	83,618	589,572	183,903	304,275	16,259
2035	2,334,019	53,682	93,361	18,672	79,357	25,674	189,056	23,340	309,809	211,975	28,008	13,045	7,002	97,678	84,025	592,442	184,799	305,756	16,338
2036	2,344,178	53,916	93,767	18,753	79,702	25,786	189,878	23,442	311,158	212,897	28,130	13,101	7,033	98,103	84,390	595,021	185,603	307,087	16,409
2037	2,354,385	54,151	94,175	18,835	80,049	25,898	190,705	23,544	312,513	213,824	28,253	13,158	7,063	98,530	84,758	597,612	186,411	308,424	16,481
2038	2,364,641	54,387	94,586	18,917	80,398	26,011	191,536	23,646	313,874	214,756	28,376	13,216	7,094	98,960	85,127	600,215	187,223	309,768	16,552
2039	2,374,946	54,624	94,998	19,000	80,748	26,124	192,371	23,749	315,242	215,692	28,499	13,273	7,125	99,391	85,498	602,831	188,039	311,118	16,625
2040	2,385,297	54,862	95,412	19,082	81,100	26,238	193,209	23,853	316,616	216,632	28,624	13,331	7,156	99,824	85,871	605,458	188,859	312,474	16,697
2041	2,394,804	55,080	95,792	19,158	81,423	26,343	193,979	23,948	317,878	217,495	28,738	13,384	7,184	100,222	86,213	607,871	189,611	313,719	16,764
2042	2,404,350	55,300	96,174	19,235	81,748	26,448	194,752	24,043	319,145	218,362	28,852	13,438	7,213	100,621	86,557	610,294	190,367	314,970	16,830
2043	2,413,939	55,521	96,558	19,312	82,074	26,553	195,529	24,139	320,418	219,233	28,967	13,491	7,242	101,023	86,902	612,728	191,126	316,226	16,898
2044	2,423,569	55,742	96,943	19,389	82,401	26,659	196,309	24,236	321,696	220,108	29,083	13,545	7,271	101,426	87,248	615,173	191,889	317,487	16,965
2045	2,433,241	55,965	97,330	19,466	82,730	26,766	197,092	24,332	322,980	220,986	29,199	13,599	7,300	101,830	87,597	617,628	192,655	318,755	17,033
2046	2,442,101	56,168	97,684	19,537	83,031	26,863	197,810	24,421	324,156	221,791	29,305	13,649	7,326	102,201	87,916	619,877	193,356	319,915	17,095
2047	2,450,996	56,373	98,040	19,608	83,334	26,961	198,531	24,510	325,336	222,599	29,412	13,698	7,353	102,573	88,236	622,135	194,060	321,080	17,157
2048	2,459,927	56,578	98,397	19,679	83,638	27,059	199,254	24,599	326,522	223,410	29,519	13,748	7,380	102,947	88,557	624,402	194,767	322,250	17,219

Sheet 15 - Recyclables Collected at BPRL and CC Locations

Purpose: Recyclables Collected through BPRL and CC Locations
Project: Pinellas County Solid Waste Master Plan

	Recyclables Collected at BPRL Locations (tons)[1,2]						
	2012	2013	2014	2015	2016	2017	2018
Total Tons in CY	15	40	65	77	89	104	126

	Recyclables Collected at CC Locations (tons)[2]												
	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	FY Total
JOHN CHESNUT PARK	38	37	42	38	33	35	30	32	31	34	32	32	**413**
A.L. ANDERSON PARK	10	10	11	8	9	9	8	8	8	7	7	5	**102**
BANK OF AMERICA	11	11	15	12	10	11	8	10	9	8	9	7	**122**
BROOKER CREEK RESERVE	1	1	1	1	2	1	1	1	2	0	1	1	**13**
CO-OP EXTENTION SERVICES	2	6	5	4	3	5	4	5	3	4	5	3	**49**
CURLEW ROAD	25	24	30	27	23	27	21	22	20	20	20	30	**288**
DUNN TREATMENT PLANT	9	12	12	12	10	8	9	11	10	8	10	9	**121**
Ft. DESOTO PARK	0	1	0	1	1	1	1	1	3	1	2	0	**12**
HAMLIN LANDING	7	7	9	8	9	7	7	8	7	8	8	9	**95**
LAKE SEMINOLE PARK	14	15	18	17	15	15	14	13	13	13	12	7	**166**
NO. CO. GOV'T. CENTER	18	15	16	15	14	14	11	13	12	13	11	13	**164**
PINELLAS CO. SOLID WASTE	14	6	7	7	8	9	7	8	8	9	10	6	**100**
SAND KEY PARK	1.04	0.00	1.25	1.64	1.10	1.29	0.05	0.96	0.72	0.00	1.37	0.83	**10**
WAL-MART COACHMAN ROAD	3.09	2.73	3.87	3.88	2.46	3.49	2.20	4.45	3.13	3.39	2.67	2.56	**38**
Total	**153**	**148**	**171**	**155**	**141**	**147**	**124**	**136**	**130**	**130**	**132**	**125**	**1,693**

Notes:

1. 2018 total tons based on normalizing 5-months of available tons (52 tons in Jan to May 2018) on annual basis.
2. Data provided by the County.

Sheet 16 - Disposed/Recycled Chemicals - Pinellas County Solid Waste

Purpose: Chemicals Disposed or Recycled through HEC_3, Mobile Collection, Haz-to-Go and EnviroBusiness Day
Project: Pinellas County Solid Waste Master Plan

	Chemicals Collected and Disposed/Recycled (pounds)			
Chemical	**2015**	**2016**	**2017 (Jan-Sept)**	**2017 (Annualized)**
Aerosols	15,164	28,648	22,537	30,049
Antifreeze	10,499	11,049	6,668	8,891
Asbestos	0	0	0	0
Batteries (Auto/Marine)	22,102	40,884	33,206	44,275
Batteries (Sealed Lead)	10,783	14,401	21,214	28,285
Batteries (Mixed)	6,071	24	21	28
Batteries (Rechargeable)	0	0	0	0
Batteries (Lithium)	45	183	184	245
Cooking Oil	2,400	5,673	0	0
Corrosives	25,885	44,134	30,179	40,239
Chlorinated / Halogenated	0	0	0	0
Corrosives Neutralized	0	0	0	0
Flammable Liquids	22,958	55,069	34,485	45,980
Flammable Solid	15,028	16,194	10,533	14,044
Flares/Fireworks	584	0	0	0
Fluor. Bulbs	17,370	17,301	12,091	16,121
Fuels (Gasoline & Mixed Gasoline)	32,522	35,571	38,220	50,960
Fuels (Used Oil, Kerosene, Heating Fuel)	44,138	64,007	48,861	65,148
Latex Paint (Swap Shop Only)	525,783	154,653	104,856	139,808
Merc. for Rec.	0	3	40	53
Mercury Poisons	0	116	0	0
Mercury Containing Devices	6	39	23	31
Oil Paints	0	0	0	0
Oxidizers	4,390	1,049	691	921
Oxidizer Organic Peroxide	2	0	0	0
PCBs	862	106	8	11
Poisons	44,751	27,130	17,950	23,933
Poison Amines	133	0	0	0
Poison Isocyanates	322	0	0	0
Reactives	106	0	0	0
Smoke Detectors	99	0	0	0
Sulfides/Cyanides	0	0	0	0
Thermostats	17	44	19	25
Total Chemical Pounds	**802,020**	**516,278**	**381,786**	**509,048**

Sheet 17 - Waste Projections, Waste Avaliable to WTE at Disposal Complex

Purpose: **Waste Projections, Waste Avaliable to WTE at Disposal Complex**
Project: **Pinellas County Solid Waste Master Plan**

Sector (Unit Type)	Countywide Waste Projections	Waste Available to WTE (tons)[1]
2018	2,103,963	1,030,942
2019	2,119,606	1,038,607
2020	2,135,250	1,046,272
2021	2,150,859	1,053,921
2022	2,166,470	1,061,570
2023	2,181,394	1,068,883
2024	2,196,428	1,076,250
2025	2,211,573	1,083,671
2026	2,224,703	1,090,104
2027	2,237,917	1,096,579
2028	2,251,214	1,103,095
2029	2,264,596	1,109,652
2030	2,278,064	1,116,251
2031	2,289,140	1,121,678
2032	2,300,272	1,127,134
2033	2,311,463	1,132,617
2034	2,322,712	1,138,129
2035	2,334,019	1,143,669
2036	2,344,178	1,148,647
2037	2,354,385	1,153,649
2038	2,364,641	1,158,674
2039	2,374,946	1,163,723
2040	2,385,297	1,168,796
2041	2,394,804	1,173,454
2042	2,404,350	1,178,132
2043	2,413,939	1,182,830
2044	2,423,569	1,187,549
2045	2,433,241	1,192,288
2046	2,442,101	1,196,630
2047	2,450,996	1,200,988
2048	2,459,927	1,205,364

Notes:

1. Based on 2016 and 2017 tonnage data analysis, approximately 49% of total countywide generated waste is either processed by the WTE Plant or landfilled at the Disposal Complex. Projections assume that 49% of the countywide generated waste will continue to be the available waste fraction to the WTE.

B

Appendix B – Unincorporated and Incorporated Area Service Summary

Jurisdiction	2017 Unit Count	Appendix B, Sheet 1. Single Family Customer Details for Unincorporated and Incorporated County Areas							
		MSW				Yard Waste			
		Collection Provider	Style	Frequency	Processing/Disposal	Collection Provider	Style	Frequency	Processing/Disposal
Unincorporated Area – Lealman MSBU	Roughly 6,900	Service Agreement with County Recycling, Inc.	Automated w/ carts	2 x week	PCSWDC	County Recycling Inc.	With MSW, unless special collection requested	With MSW	With MSW (PCSWDC); can deliver separated YW to different facility if recycled
Unincorporated Area – General	114,417 (includes Lealman)	8 licensed private haulers (subscription) or residents can self haul	NA	Hauler must offer minimum of 1 x week, per ordinance and license requirements	PCSWDC	8 licensed private haulers (subscription) or residents can self haul	NA	Hauler must offer minimum of 1 x week, per ordinance and license requirements	PCSWDC
Town of Belleair	1,358	Town	Manual	2 x week	PCSWDC	Town	Manual	1 x week	Consolidated Resource Recovery (CRR)
City of Belleair Beach	819	Waste Management	Manual	2 x week	PCSWDC	Waste Management	with MSW	with MSW	PCSWDC
City of Belleair Bluffs	450	Waste Management	Manual	2 x week	PCSWDC	Waste Management	with MSW	with MSW	PCSWDC
Town of Belleair Shore	54	Waste Connections	Manual	2 x week	PCSWDC	Waste Connections	with MSW	with MSW	PCSWDC
City of Clearwater	26,800	City	Automated w/ carts	1 x week	PCSWDC	City	Manual; fee may be charged for excess yard waste	1 x week	Biomass Services in Tampa
City of Dunedin	12,600	City	Automated w/ carts	1 x week	PCSWDC	City	Manual	1 x week, same day as garbage	Clean or bagged vegetation to Consolidated CRR
City of Gulfport	4,355	City	Automated w/ carts; and manual	2 x week	PCSWDC	City	Manual	By appointment	Consolidated Resource Recovery (CRR)
City of Indian Rocks Beach	1,352	City	Automated w/ carts	2 x week	PCSWDC	City	Manual	1 x week	Consolidated Resource Recovery (CRR)
City of Indian Shores	301	Waste Connections	Manual	2 x week	PCSWDC	Waste Connections	with MSW, or special pick up	With MSW, or special pick up	PCSWDC
Town of Kenneth City	1,204	Waste Connections	Automated w/ carts	2 x week	PCSWDC	Waste Connections	with MSW	with MSW	PCSWDC
City of Largo	17,300	City	Automated w/ carts	2 x week	PCSWDC	City	Manual	4 x year	Angelo's
City of Madeira Beach	1,925	City	Manual	2 x week	PCSWDC	City	Manual	1 x week (extra fee for piles over 8' x 4')	PCSWDC
Town of North Redington Beach	712	Waste Connections	Manual, back door	2 x week	PCSWDC	Waste Connections	with MSW	with MSW	PCSWDC
City of Oldsmar	4,336	Republic	Automated w/ carts	2 x week	PCSWDC	Republic	with MSW	2 x week	PCSWDC
City of Pinellas Park	14,585	Waste Management	Manual	2 x week	PCSWDC	Waste Management	with MSW, or drop off at WM site	2 x week	PCSWDC
Town of Redington Beach	915	Waste Connections	Manual	2 x week	PCSWDC	With MSW or Commercial landscaper	NA	NA	NA
Town of Redington Shores	916	Waste Connections	Manual	2 x week	PCSWDC	With MSW or Commercial landscaper	NA	NA	NA
City of Safety Harbor	6,487	City	Automated w/ carts	1 x week	PCSWDC	City		1 x week	Safety Harbor Yard Waste Transfer for processing
City of Seminole	4,397	Waste Management	Manual	2 x week	PCSWDC	Waste Management	with MSW	with MSW	PCSWDC
City of South Pasadena	632	Waste Connections	Automated w/ carts	2 x week	PCSWDC	with MSW	with MSW	with MSW	PCSWDC
City of St. Petersburg	73,905	City	Automated w/ carts	1 x week	PCSWDC	City	Either with MSW, or separate at curbside for extra fee, or drop off at one of four city brush sites		City grinds up yard waste brought to site or collected curbside into mulch at the four city brush sites
City of St. Pete Beach	3,314	Waste Connections	Manual	2 x week	PCSWDC	Waste Connections	With MSW or special appointment	With MSW or special appointment	PCSWDC
City of Tarpon Springs	7,817	Waste Management	Manual	2 x week	PCSWDC	Waste Management	Manual	1 x week curbside, or drop off at City Yard Waste facility	Tarpon Springs Yard Waste Facility and then to Mothers Organics for processing
City of Treasure Island	1,814	City	Automated w/ carts	2 x week	PCSWDC	City	Manual for small piles and claw truck for large piles	1 x week	Consolidated Resource Recovery (CRR)

Jurisdiction	Appendix B, Sheet 1. Single Family Customer Details for Unincorporated and Incorporated County Areas								
	Recyclables				Bulk Waste			C&D	
	Collection Provider	Style	Frequency	Processing/Disposal	Collection Provider	Frequency	Processing/Disposal	Collection	Process/Dispose
Unincorporated Area – Lealman MSBU	Subscription with County Recycling Inc.	Automated w/ carts	1 x week	Determined by hauler	County Recycling Inc.	As requested	PCSWDC	Open (no organized C&D collection)	Unknown
Unincorporated Area – General	8 licensed private haulers (subscription) or residents can self haul	NA	Hauler must offer minimum of 1 x week, per ordinance and license requirements	Determined by hauler	8 licensed private haulers (subscription) or residents can self haul	Hauler must offer minimum of 1 x week, per ordinance and license requirements	PCSWDC	Open (no organized C&D collection)	Unknown
Town of Belleair	City of Clearwater	Automated w/ carts	1 x week	Clearwater consolidates and delivers to WM MRF	Town	1 x week	PCSWDC	Open (no organized C&D collection)	Unknown
City of Belleair Beach	Waste Management	Manual w/ bins	1 x week	WM MRF	Waste Management	with MSW	PCSWDC	Open (no organized C&D collection)	Unknown
City of Belleair Bluffs	Waste Management	Manual w/ bins	1 x week	WM MRF	Waste Management	As requested, special collection	PCSWDC	Open up to 10 tons; if over WM has exclusive	Unknown
Town of Belleair Shore	Waste Connections	Manual w/ bins	1 x week	WC MRF	Waste Connection	As requested, special collection	PCSWDC	Open (no organized C&D collection)	Unknown
City of Clearwater	City	Automated w/ carts	1 x week	Clearwater consolidates and delivers to WM MRF	City	1 x week	PCSWDC, Waste Management-Pinellas, or Sarnago & Sons	City competes with private sector (open); •C&D Waste is taken to Waste Management-Pinellas or Sarnago & Sons	City collected C&D is taken to Waste Management-Pinellas or Sarnago & Sons
City of Dunedin	Waste Pro	Automated w/ carts	1 x week	Waste Pro MRF in Sarasota	City	1 x week, same day as garbage	PCSWDC	Open (no organized C&D collection)	City delivers what it collects to Angelo's; otherwise unknown
City of Gulfport	City	Manual w/ bins	1 x week	Recycling Services of Florida	City	By appointment	PCSWDC	City will collect by appointment; Open (no organized C&D collection)	City delivers material to Angelos or PCSWDC depending on material, otherwise unknown
City of Indian Rocks Beach	Waste Connections	Manual w/ bins	1 x week	WC MRF	City	By appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Indian Shores	Waste Connections	Bins and Carts	1 x week	WC MRF	Waste Connection	By appointment, additional fee	PCSWDC	Waste Connections through special arrangement (competes with open market)	Unknown
Town of Kenneth City	Waste Connections	Manual w/ bins	1 x week	WC MRF	Waste Connections	By appointment, no additional fee	PCSWDC	Roll-off C&D offered by Waste Connections (exclusive)	Unknown
City of Largo	City	Automated w/ carts	1 x week	Waste Connections	City	4 x year	Angelo's	Roll-off's collected by City (exclusive? Or compete with private?)	City delivers to Angelo's
City of Madeira Beach	Waste Connections	Manual w/ bins	1 x week	WC MRF	City	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
Town of North Redington Beach	Waste Connections	Manual w/ bins	1 x week	WC MRF	Waste Connections	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Oldsmar	Republic	Automated w/ carts	1 x week	Recycling Services of Florida	Republic	2 x week, with MSW	PCSWDC	Open (no organized C&D collection)	Unknown
City of Pinellas Park	Waste Management	Manual w/ bins	1 x week	WM MRF	Waste Management	Call ahead, place next to garbage	PCSWDC	Waste Management, depending on need (exclusive)	Waste Management's Transfer Station in Pinellas County
Town of Redington Beach	Waste Connections	Manual w/ bins	1 x week	WC MRF	Waste Connections	By special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
Town of Redington Shores	Waste Connections	Manual w/ bins	1 x week	WC MRF	Waste Connections	By special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Safety Harbor	City	Automated w/ carts	1 x week	Transferred to Clearwater for consolidation	City	1 x week	PCSWDC	Open (no organized C&D collection)	Unknown
City of Seminole	Waste Management	Automated w/ carts	1 x week	WM MRF	Waste Management	By special appointment	PCSWDC	By arrangement through Waste Management (exclusive)	Unknown
City of South Pasadena	Waste Connections	Manual w/ bins	1 x week	WC MRF	Waste Connections	Special appointment	PCSWDC	Concrete is open market; all other contracted through Waste Connections	Unknown
City of St. Petersburg	City	Automated w/ carts	Every other week	WC MRF	City	Special appointment	PCSWDC	Roll off's by special arrangement with City or open market	City uses mostly Angelos/Unknown for open market
City of St. Pete Beach	Waste Connections	Manual w/ bins	1 x week	WC MRF	Waste Connections	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Tarpon Springs	Waste Management	Manual w/ bins	1 x week	WM MRF	Waste Management	Special appointment or drop off at City Facility	PCSWDC	Open (no organized C&D collection)	Unknown
City of Treasure Island	Republic Services	Automated w/ carts	1 x week	Split between Republic's Lakeland MRF and Recycling Services of FL	City	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown

Appendix B, Sheet 2. Multifamily Customer Details for Unincorporated and Incorporated County Areas								
Jurisdiction	2017 Unit Count	MSW				Yard Waste		
		Collection Provider	Style	Frequency	Processing/Disposal	Collection Provider	Style	Frequency
Unincorporated Area – Lealman MSBU	Unknown	County Recycling, Inc.	Varies	Varies	PCSWDC	County Recycling Inc.	With MSW, unless special collection requested	With MSW
Unincorporated Area – General	53,532 (includes Lealman)	Can use one of 8 licensed private haulers (subscription) or residents can self haul	NA	Hauler must offer minimum of 1 x week, per ordinance and license requirements	PCSWDC	8 licensed private haulers (subscription) or residents can self haul	NA	Hauler must offer minimum of 1 x week, per ordinance and license requirements
Town of Belleair	30	Town	Carts or dumpsters	2 to 3 x week, as negotiated	PCSWDC	Commercial landscapers	NA	NA
City of Belleair Beach	425	Waste Management	2 to 8 cy dumpsters	2 x week	PCSWDC	Waste Management	with MSW	with MSW
City of Belleair Bluffs	NA	Waste Management	Dumpsters	2 x week	PCSWDC	with MSW	with MSW	with MSW
Town of Belleair Shore	NA	NA	NA	NA	NA	NA	NA	NA
City of Clearwater	30,000	City	Carts or dumpsters	1 x week	PCSWDC	No separate yard waste collection for multifamily; however, if yard waste is set out at the curb at certain properties (i.e. condos), the City will collect with single family yard waste.	NA	NA
City of Dunedin	10,452	City	Carts or dumpsters	as negotiated	PCSWDC	Multifamily with curbside has City provided yard waste collection; dumpster service customers do not	Manual	1 x week
City of Gulfport	1,673	City	Carts or dumpsters	as negotiated	PCSWDC	City	as negotiated	By Appointment
City of Indian Rocks Beach	2,542	City	Carts or dumpsters	as negotiated	PCSWDC	City	Manual	1 x week
City of Indian Shores	86	Waste Connections	Dumpsters	as negotiated	PCSWDC	Waste Connections	with MSW, or special pick up	with MSW, or special pick up
Town of Kenneth City	220	Waste Connections	Dumpsters	as negotiated	PCSWDC	Waste Connections	with MSW, or special pick up	with MSW, or special pick up
City of Largo	NA	City	Carts or dumpsters	2 x week	PCSWDC	City	with Roll off or "spot location"	as negotiated
City of Madeira Beach	276	City	Dumpsters	as negotiated	PCSWDC	City		1 x week
Town of North Redington Beach	765	Waste Connections	Dumpsters	as negotiated	PCSWDC	Handled by Commercial Landscapers	NA	NA
City of Oldsmar	28	Republic	Carts or dumpsters	as negotiated	PCSWDC	Republic	with MSW	
City of Pinellas Park	NA	Waste Management	Dumpsters	as negotiated	PCSWDC	Waste Management	NA	Call city for appointment - extra fee
Town of Redington Beach	Included in single family and commercial	Waste Connections	Dumpsters	2 x week	PCSWDC	With MSW or Commercial landscaper	NA	NA
Town of Redington Shores	342	Waste Connections	Customer provided container or dumpster	2 x week	PCSWDC	With MSW or Commercial landscaper	NA	NA
City of Safety Harbor	172	City	Carts or dumpsters	as negotiated	PCSWDC	City	1 x week if small amount, or with MSW	1 x week if small amount, or with MSW
City of Seminole	3,288	Waste Management	Dumpsters or customer container	If dumpster, as negotiated; if customer container 2 x week	PCSWDC	With MSW	With MSW	With MSW
City of South Pasadena	Included in single family	Waste Connections	Carts or dumpsters	as negotiated	PCSWDC	with MSW	with MSW	with MSW
City of St. Petersburg	47,660	City	Carts or dumpsters	as negotiated	PCSWDC	City	Either with MSW, or separate at curbside for extra fee, or drop off at one of four city brush sites	Either with MSW, or separate at curbside for extra fee, or drop off at one of four city brush sites
City of St. Pete Beach	Included in single family	Waste Connections	Dumpsters	as negotiated	PCSWDC	Waste Connections	With MSW or special appointment	With MSW or special appointment
City of Tarpon Springs	NA	Waste Management	Carts or dumpsters	as negotiated	PCSWDC	With MSW or drop off at City Yard Waste Facility	NA	NA
City of Treasure Island	789	City	Dumpsters	as negotiated	PCSWDC	City	Manual	By Appointment

Jurisdiction		Appendix B, Sheet 2. Multifamily Customer Details for Unincorporated and Incorporated County Areas								
		Recyclables				Bulk Waste			C&D	
	Processing/Disposal	Collection Provider	Style	Frequency	Processing/Disposal	Collection Provider	Frequency	Processing/Disposal	Collection	Process/Dispose
Unincorporated Area – Lealman MSBU	With MSW (PCSWDC); can deliver separated YW to different facility if recycled	Open Market	NA	NA	NA	County Recycling Inc.	As requested	PCSWDC	Open (no organized C&D collection)	Unknown
Unincorporated Area – General	PCSWDC	Open Market	N/A	N/A	N/A	Open Market	N/A	Unknown	Open (no organized C&D collection)	Unknown
Town of Belleair	Commercial landscaper determines	City of Clearwater	Automated w/ carts	1 x week	Clearwater consolidates and delivers to WM MRF	Town	1 x week	PCSWDC	Open (no organized C&D collection)	Unknown
City of Belleair Beach	PCSWDC	Waste Management	Automated w/ carts	1 x week	WM MRF	Waste Management	with MSW	PCSWDC	Open (no organized C&D collection)	Unknown
City of Belleair Bluffs	PCSWDC	Open Market	NA	NA	NA	Waste Management	As requested, special collection	PCSWDC	Open up to 10 tons, if over exclusive with Waste Management	Unknown
Town of Belleair Shore	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
City of Clearwater	NA	City	Automated w/ carts	1 x week	Clearwater consolidates and delivers to WM MRF	City	1 x month, up to 10 items	PCSWDC, Waste Management-Pinellas, or Sarnago & Sons	City competes with private sector (open)	City collected C&D is taken to Waste Management-Pinellas or Sarnago & Sons
City of Dunedin	Clean or bagged vegetation to Consolidated CRR	Open Market	NA	NA	NA	City	As requested, additional fee	PCSWDC	Open (no organized C&D collection)	City delivers what it collects to Angelo's; otherwise unknown
City of Gulfport	Consolidated Resource Recovery (CRR)	City	automated & manual w/ carts	1 x week	Recycling Services of Florida	City	By appointment	PCSWDC	City will collect by appointment; Open (no organized C&D collection)	City delivers material to Angelos or PCSWDC depending on material, otherwise unknown
City of Indian Rocks Beach	Consolidated Resource Recovery (CRR)	Waste Connections	Automated w/ carts	1 x week	WC MRF	City	By appointment	PCSWDC or Angelos	Open (no organized C&D collection)	Unknown
City of Indian Shores	PCSWDC	Waste Connections (subscription)	Automated w/ carts	1 x week, if subscribe	WC MRF	Waste Connections	By appointment, additional fee	PCSWDC	Waste Connections through special arrangement (competes with open market)	Unknown
Town of Kenneth City	PCSWDC	Waste Connections	Bins or Carts	1 x week	WC MRF	Waste Connections	By appointment, may be additional fee	PCSWDC	Roll-off C&D offered by Waste Connections (exclusive)	Unknown
City of Largo	Angelo's	City	Carts or dumpsters	1 x week	Waste Connections	City	with Roll-off's or "spot location", as negotiated	Angelo's	Roll-off's collected by City (exclusive? Or compete with private?)	City delivers to Angelo's
City of Madeira Beach	PCSWDC	Waste Connections	Automated w/ carts	1 x week	WC MRF	City	By appointment	PCSWDC	Open (no organized C&D collection)	Unknown
Town of North Redington Beach	NA	Waste Connections	Automated w/ carts	as negotiated	WC MRF	Waste Connections	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Oldsmar	PCSWDC	Republic	Automated w/ carts	1 x week	Recycling Services of Florida	Republic	with MSW	PCSWDC	Open (no organized C&D collection)	Unknown
City of Pinellas Park	PCSWDC	Open Market	NA	NA	NA	Waste Management	Call ahead, extra fee	PCSWDC	Waste Management, depending on need (exclusive)	Waste Management's Transfer Station in Pinellas County
Town of Redington Beach	PCSWDC or NA	Open Market	NA	NA	NA	Waste Connections	By special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
Town of Redington Shores	PCSWDC or NA	Waste Connections	Manual w/ bins or container provided by customer	1 x week	WC MRF	Waste Connections	By special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Safety Harbor	Safety Harbor Yard Waste Transfer for processing	City	Carts or dumpsters	Carts 1 x week; dumpsters 2 x week	Transferred to Clearwater for consolidation	City	1 x week if small amount, or with MSW	PCSWDC	Open (no organized C&D collection)	Unknown
City of Seminole	PCSWDC	Open Market	NA	NA	NA	Waste Management	By special appointment	PCSWDC	By arrangement through Waste Management (exclusive)	Unknown
City of South Pasadena	PCSWDC	Waste Connections	Carts or dumpsters	as negotiated	WC MRF	Waste Connections	Special appointment	PCSWDC	Concrete is open market; all other contracted through Waste Connections	Unknown
City of St. Petersburg	City grinds up yard waste brought to site or collected curbside into mulch at the four city brush sites,	Open Market	NA	NA	NA	City	Special appointment	PCSWDC	Roll off's by special arrangement with City or open market	City uses mostly Angelos/Unknown for open market
City of St. Pete Beach	PCSWDC	Waste Connections	Bins or Carts	1 x week	WC MRF	Waste Connections	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Tarpon Springs	PCSWDC or City Yard Waste Facility (processing by Mothers Organics)	Waste Management offers	as negotiated	as negotiated	WM MRF	With MSW or drop off at City Yard Waste Facility	NA	PCSWDC	Open (no organized C&D collection)	Unknown
City of Treasure Island	Consolidated Resource Recovery (CRR)	Will become mandatory for multifamily on 12/1/18; Conex	Automated w/ carts	1 x week	Split between Republic's Lakeland MRF and Recycling Services of FL	City	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown

Jurisdiction	Appendix B, Sheet 3. Commercial Customer Details for Unincorporated and Incorporated County Areas								
	2017 Unit Count	MSW				Yard Waste			
		Collection Provider	Style	Frequency	Processing/Disposal	Collection Provider	Style	Frequency	Processing/Disposal
Unincorporated Area – Lealman MSBU	Unknown	Open	NA	NA	NA	Open	NA	N	NA
Unincorporated Area – General	106,879 (includes Lealman)	Open	NA	NA	NA	Open	NA	N	NA
Town of Belleair	12	Town	Carts or dumpsters	2 - 3 x week, as negotiated	PCSWDC	Commercial landscapers	NA	NA	Commercial landscaper determines
City of Belleair Beach	NA	NA	NA	NA	NA	NA	NA	NA	NA
City of Belleair Bluffs	71	Waste Management	As negotiated	As negotiated	PCSWDC	Open	NA	NA	NA
Town of Belleair Shore	NA	NA	NA	NA	NA	NA	NA	NA	NA
City of Clearwater	200	City	exclusive to City for dumpsters; City competes for roll-off	As negotiated	PCSWDC	NA	NA	NA	NA
City of Dunedin	746	City	Dumpsters	As negotiated	PCSWDC	NA	NA	NA	NA
City of Gulfport	127	City	Carts or dumpsters	As negotiated	PCSEDC	City	Manual	By Appointment	Consolidated Resource Recovery (CRR)
City of Indian Rocks Beach	155	City	Carts or dumpsters	As negotiated	PCSWDC	NA	NA	NA	NA
City of Indian Shores	87	Waste Connections	Carts or dumpsters	As negotiated	PCSWDC	Waste Connections	with MSW, or special pick up	with MSW, or special pick up	PCSWDC
Town of Kenneth City	76	Waste Connections	Dumpsters	As negotiated	PCSWDC	Waste Connections	By appointment		PCSWDC
City of Largo	3,385	City	Carts or dumpsters	2 x week	PCSWDC	City	with Roll off or "spot location"	as negotiated	Angelo's
City of Madeira Beach	26	City	Dumpsters	As negotiated	PCSWDC	City		1 x week	PCSWDC
Town of North Redington Beach	35	Waste Connections	Dumpsters	As negotiated	PCSWDC	Handled by Commercial Landscapers	NA	NA	NA
City of Oldsmar	507	Republic	Customer provided containers or dumpsters	As negotiated	PCSWDC	NA	NA	NA	NA
City of Pinellas Park	NA	Waste Management	Dumpsters	As negotiated	PCSWDC	Waste Management	NA	Call city for appointment - extra fee	PCSWDC
Town of Redington Beach	15	No commercial	NA	NA	NA	NA	NA	NA	NA
Town of Redington Shores	45	Waste Connections	Dumpsters	As negotiated	PCSWDC	With MSW or Commercial landscaper	NA	NA	PCSWDC or NA
City of Safety Harbor	180	City	Carts or dumpsters	As negotiated	PCSWDC	NA	NA	NA	NA
City of Seminole	309	Waste Management	Dumpsters	As negotiated	PCSWDC	with MSW	with MSW	with MSW	PCSWDC
City of South Pasadena	167	Waste Connections	Carts or dumpsters	As negotiated	PCSWDC	with MSW	with MSW	with MSW	PCSWDC
City of St. Petersburg	6,680	City	Carts or dumpsters	As negotiated	PCSWDC	City	Either with MSW, or separate at curbside for extra fee, or drop off at one of four city brush sites		City grinds up yard waste brought to site or collected curbside into mulch at the four city brush sites,
City of St. Pete Beach	207	Waste Connections	Dumpsters or roll-offs	As negotiated	PCSWDC	Waste Connections	With MSW or special appointment	With MSW or special appointment	PCSWDC
City of Tarpon Springs	681	Waste Management	Carts or dumpsters	As negotiated	PCSWDC	With MSW or drop off at City Yard Waste Facility	NA	NA	PCSWDC or City Yard Waste Facility then to Mothers Organics for processing
City of Treasure Island	4,410	City	Dumpsters	As negotiated	PCSWDC	City	Manual	By Appointment	Consolidated Resource Recovery (CRR)

Jurisdiction	Appendix B, Sheet 3. Commercial Customer Details for Unincorporated and Incorporated County Areas								
	Recyclables				Bulk Waste			C&D	
	Collection Provider	Style	Frequency	Processing/Disposal	Collection Provider	Frequency	Processing/Disposal	Collection	Process/Dispose
Unincorporated Area – Lealman MSBU	Open	NA	NA	NA	Open	NA	NA	Open (no organized C&D collection)	Unknown
Unincorporated Area – General	Open	NA	NA	NA	Open	NA	NA	Open (no organized C&D collection)	Unknown
Town of Belleair	City of Clearwater	Dumpsters, subscription	as negotiated	Clearwater processes before delivering to WM MRF	Town	1 x week	PCSWDC	Open (no organized C&D collection)	Unknown
City of Belleair Beach	NA	NA	NA	NA	NA	NA	NA	NA	NA
City of Belleair Bluffs	Open	NA	NA	N	Open	NA	NA	Open (no organized C&D collection)	Unknown
Town of Belleair Shore	NA	NA	NA	NA	NA	NA	NA	NA	NA
City of Clearwater	City competes with private sector. City dprovides cardboard only dumpsters	Automated w/ carts, dumpsters	as negotiated	Clearwater processes before delivering to WM MRF. Cardboard dumpster material goes to separate processor outside county	NA	NA	NA	City competes with private sector (open);	City collected C&D is taken to Waste Management-Pinellas or Sarnago & Sons
City of Dunedin	Open Market	NA	NA	NA	City	As requested, additional fee	PCSWDC	Open (no organized C&D collection)	City delivers what it collects to Angelo's; otherwise unknown
City of Gulfport	City	automated & manual w/carts	1 x week	Recycling Services of Florida	City	By Appointment	PCSWDC	City will collect by appointment; Open (no organized C&D collection)	City delivers material to Angelos or PCSWDC depending on material, otherwise unknown
City of Indian Rocks Beach	City of Largo - Cardboard only, as requested		As requested	Recycling Services of FL	City	By Appointment	PCSWDC or Angelos	Open (no organized C&D collection)	Unknown
City of Indian Shores	Waste Connections, by subscription (open_	Carts or dumpsters	1 x week	WC MRF	Waste Connections	By appointment, additional fee	PCSWDC	Waste Connections through special arrangement (competes with open market)	Unknown
Town of Kenneth City	Open Market	NA	NA	NA	Waste Connections	By appointment	PCSWDC	Roll-off C&D offered by Waste Connections (exclusive)	Unknown
City of Largo	City offers (subscription)	Carts or dumpsters	as negotiated	Cardboard to Recycling Services of FL, other to Waste Connections	City offers	with Roll-off's or "spot location", as negotiated	Angelo's	Roll-off's collected by City (exclusive? Or compete with private?)	City delivers to Angelo's
City of Madeira Beach	Waste Connections offers (subscription)	as negotiated	as negotiated	WC MRF	City offers	By appointment	PCSWDC	Open (no organized C&D collection)	Unknown
Town of North Redington Beach	Waste Connections offers (subscription)	as negotiated	as negotiated	WC MRF	Waste Connections	By special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Oldsmar	Open Market	NA	NA	NA	NA	NA	NA	Open (no organized C&D collection)	Unknown
City of Pinellas Park	Waste Management offer, but Open Market	as negotiated	as negotiated	WM MRF	City	by special appointment	PCSWDC	Waste Management, depending on need (exclusive)	Waste Management's Transfer Station in Pinellas County
Town of Redington Beach	NA	NA	NA	NA	NA	NA	NA	Open (no organized C&D collection)	Unknown
Town of Redington Shores	Waste Connections offer, but Open Market	Dumpsters, subscription	1 x week	WC MRF	Waste Connections	By special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Safety Harbor	City offers (subscription)	Carts or dumpsters	Carts 1 x week; dumpsters 2 x week	Transferred to Clearwater for consolidation	NA	NA	NA	Open (no organized C&D collection)	Unknown
City of Seminole	Open Market	NA	NA	NA	Waste Management	By special appointment	PCSWDC	By arrangement through Waste Management (exclusive)	Unknown
City of South Pasadena	Cardboard open market; all others offered through Waste Connections (subscription)	Carts or dumpsters	as negotiated	WC MRF	Waste Connections	Special appointment	PCSWDC	Concrete is open market; all other contracted through Waste Connections	Unknown
City of St. Petersburg	City offers Cardboard Collection, Open Market	NA	NA	NA	City	Special appointment	PCSWDC	Roll off's by special arrangement with City or open market	City uses mostly Angelos/Unknown for open market
City of St. Pete Beach	Waste Connection offers				Waste Connections	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown
City of Tarpon Springs	Open Market	NA	NA	NA	With MSW or drop off at City Yard Waste Facility	NA	PCSWDC	Open (no organized C&D collection)	Unknown
City of Treasure Island	Open Market, but businesses can use Conex commercial rates in Multi-Family bid effective 12/1/18	NA	NA	NA	City	Special appointment	PCSWDC	Open (no organized C&D collection)	Unknown

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