



September
2020

ZERO WASTE

Preliminary Strategy Report

Alachua County & City of Gainesville, Florida

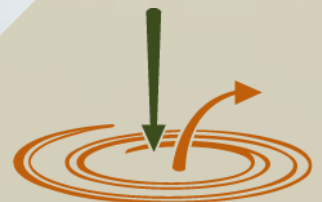
Preliminary Report for Stakeholder Review

PREPARED FOR

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WE WORK GREEN

- > KCI is proud to be a carbon neutral company
- > 2008 Sustainable Business Award Recipient from Earth Charter U.S.
- > 2002 National Small Business Champion for EPA WasteWise
 - o Member since 1999
- > Recognized by the Florida Department of Environmental Protection for outstanding recycling efforts
- > KCI's Green Office Program includes:
 - o Curbside Recycling of Metal, Glass, Plastics & Paper
 - o Food Waste Composting
 - o Post-Consumer Recycled Content Paper Products
 - o Duplex Printing, Paper Reuse & Recycling
 - o Reusable & Refillable Office Supplies
 - o Low Flow Water Fixtures
 - o Energy-Efficient Lighting & Equipment
 - o Eco-Friendly Non-Toxic Cleaning Supplies
 - o Xeriscaping
- > All company vehicles are hybrid/electric
- > KCI Employees Volunteer with sustainable organizations:
 - o Solid Waste Association of North America
 - o SWANA Florida
 - o American Public Works Association
 - o U.S. Composting Council
 - o U.S. Green Building Council
 - o Florida Green Building Coalition
 - o Recycle Florida Today



WE LIVE GREEN

- > Employees actively recycle and compost at home
- > Many of our employees practice environmentally preferable landscaping methods including, Xeriscaping, Grass-Cycling and other water conservation techniques
- > Employee Conservation Efforts at Home include:
 - o Energy Star® Rated Appliances
 - o Energy Efficient Lighting
 - o Low Flow Water Fixtures
 - o Solar Panels



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Section 1

Introduction to Zero Waste in Alachua County

In 2018, Alachua County (County) retained Kessler Consulting, Inc. (KCI) for professional services to develop a community wide Zero Waste Strategy Report with the City of Gainesville (City). The project, initiated in 2019, provides direction for devising the means, methods, and infrastructure necessary to sustainably manage materials within both jurisdictions and, once completed, will establish obtainable milestones for achieving Zero Waste goals.

The purpose of this preliminary report is to gain insight from stakeholders regarding the Zero Waste strategies being considered by the County and City and their importance to the community.

1.1 General Understanding of Zero Waste

Zero Waste is a relatively new concept in the waste management field and its definition varies. Some communities define it as a broad reduction goal, understanding that the technical difficulties related to landfilling zero materials may not be viable for their specific waste streams. They may also utilize a broader definition because marketplace fluctuations in recyclable materials can alter the ability to reach Zero Waste. These communities may include alternative technologies for managing these materials, such as those that transform the material into an energy source. Alternatively, other communities view Zero Waste as a philosophy focused on eliminating waste in everyday life with a long-term goal of eliminating landfills and incinerators. It is important to determine what is in the best interest for the County and City. Thus, this document is designed to seek guidance regarding what is most appropriate for meeting the overall vision of a Zero Waste future for the community.

Many Zero Waste principles are rooted in conservation and reuse practices that predate the current industrial, consumer-based economy of the past three decades. This social movement expands beyond the concepts of source reduction and recycling that originated in the 1970s, and embodies ideas of changing lifestyles, personal habits, and producer responsibility. This whole-system approach is based upon the repositioning of disposal and reuse opportunities. Through this process, less raw materials are consumed for production, more manufactured materials remain in use, and commodities are recycled to continue to maximize the value of material.¹ These are all part of the Zero Waste concept known as a *Circular Economy*, as depicted in Figure 1. This concept allows resources to have a continuous life cycle through multiple uses and purposes, rather than limiting their life space to simple production that results in waste. The four main stages include:

¹ "Zero Waste: Principles and Practices – Zero Waste Training Program," SWANA, CRRA, KCI, 2018.

Figure 1: Circular Economy

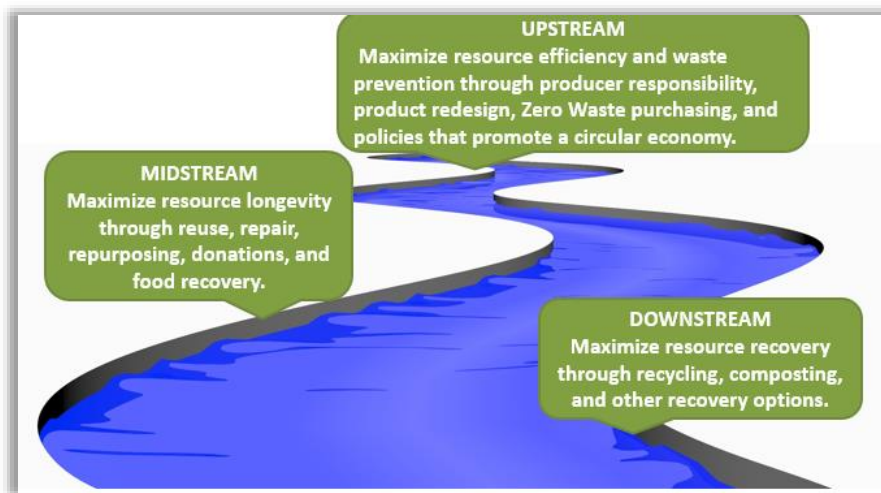


1. **Production** – The conversion of raw or recycled materials into usable products.
2. **Reduction** – Limiting the need for as much raw or recycled material in the economy stream.
3. **Reuse and Repair** – Fostering the repair of commodities or the reuse of materials instead of disposal.
4. **Recycling and Composting** – Breaking commodities down to their raw state or re-producing them for another use.

Source: U.S. Public Interest Research

Strategies for reaching Zero Waste goals are often categorized based on when they impact resource management. The Solid Waste Association of North America (SWANA) and the California Resource Recovery Association (CRRA) utilize the planning categories noted in Figure 2 in their Zero Waste training to illustrate the stages of Zero Waste.

Figure 2: Three Categories of Zero Waste Solutions from SWANA and the CRRA



Source: "Three Categories of Zero Waste Solutions" SWANA, CRRA Zero Waste Training Program (Developed by Kessler Consulting, Inc. – 2018)

Examples of each phase include, but are not limited to the following:

1. ***Upstream Strategies*** – Producer responsibility covenants, Zero Waste purchasing policies, use of recycled materials and content, packaging changes, and local economic growth incentives.
2. ***Midstream Strategies*** – Promotion of repairs for household electronics and other commodities, donation bins and systems to reuse clothing and household items, and food recovery programs for restaurants and grocery stores to support local feeding programs.

3. *Downstream Strategies* – Resource recovery facilities for recycling and composting, facilities for the break down and recycling of difficult recyclable materials, hazardous and electronic waste recycling facilities, and more.

1.2 History of Zero Waste in Alachua County

The movement towards Zero Waste in Alachua County has been active for several years and continues to gain momentum from the public, private, and non-profit sectors. Both the County and City have begun implementation of Zero Waste policies to reduce single-use items and promote waste reduction strategies within their daily operations.

In addition to policy initiatives designed to reduce waste, both the County and City governments have multiple public outreach programs. These include dedicated staffing, public education campaigns, and outreach tools available through their websites, targeted business solid waste guides, and the Eco-Industrial Park (a 37-acre resource recovery space and innovation hub for waste-related material research and business incubation). This facility, planned to be an innovative long-term collaboration between the University of Florida (UF) and the County, will offer extensive opportunities for growing a circular economy for the area.

UF's commitment to be a *Zero Waste Campus*, and initiatives through the Office of Sustainability and Facilities Services, provides additional support, educational opportunities, and general motivation that will bolster successful waste reduction outcomes. Additionally, growing momentum from Zero Waste Gainesville has pushed forward the concepts of Zero Waste to governmental entities, residents, and businesses in the community. This community action group provides advocacy, as well as educational programs to residents and local leaders.

1.3 Required Support for Zero Waste Planning

Zero Waste, as a social movement, requires a consortium of local leaders, businesses, and residents to become viable and achievable. In 2017, Commissioner Hayes-Santos, City of Gainesville, presented recommendations for the City to establish a diversion goal of 90% by 2030 and be defined as a Zero Waste City by 2040.² Continued support and cross-sector partnerships will ensure positive outcomes for the community.

² "Zero Waste – Recommendations for the City to Move Towards Zero Waste" Commissioner Hayes-Santos, 2017.

Section 2

Current Waste System

Assessment of the current conditions in the County and City are critical for an accurate understanding of potential strategies. This section explains existing solid waste financial requirements, policies, programs, and infrastructure, as well as an overview of the waste characterization and generation for the community.

2.1 Current Policies and Programs

Combined, the County and City spent over \$12.4 million collecting and managing over 800,000 tons of solid waste during FY2018 and over 560,000 tons in FY2019. This equated in 2019 to 1.5 tons of waste per capita (per person), collected and processed.³ Multiple programs and policies outlined within both community's solid waste ordinances govern the management methods and educational opportunities currently in place. These are further described below.

Residential Collection Service: Alachua County

Waste collection for residents within the County varies based upon location. The County provides weekly waste and recycling collection to designated unincorporated residential areas. Garbage cart

Figure 3: Residential Collection



sizing is currently a Pay-As-You-Throw (PAYT) rate structure with annual costs ranging from \$184.73/yr. (20-gallon) to \$322.68 (96-gallon). Recycling is collected utilizing a dual stream system in orange and blue 18-gallon bins to separate recyclables as seen in Figure 3. Educational programs and materials are provided through the County's Solid Waste and Resource Recovery Department. Recycling collection service at apartment complexes is mandatory and is arranged by the manager or owner of the complex with services provided by private collection companies.

Municipalities offering single stream curbside collection include the Cities of Alachua, Archer, Hawthorne, La Crosse, Micanopy, and Newberry. Residents of subscription-only areas may subscribe to curbside pickup through private services with Waste Corporation of America (WCA) or

³ Per capita rate excludes construction and demolition materials.

utilize the Rural Collection Centers (RCCs) or the Leveda Brown Environmental Park and Transfer Station.

The RCCs positioned throughout the County offer recycling (plastic, metals, glass, mixed paper, cardboard), household hazardous waste disposal, yard waste composting, bulk material disposal, and garbage waste disposal. The Environmental Park accepts recycling (plastic, metals, glass, mixed paper, cardboard), scrap metal, tires, yard waste, and household hazardous wastes; garbage disposal, and provides further educational outreach to the community. Residential composting education and supplies are currently offered through the Alachua County Solid Waste Department.

Presently there is no mandate on the recycling of green (yard) waste nor construction and demolition (C&D) materials. Curbside collection of yard waste is currently offered within the County and is accepted at the RCCs. At this time, the RCCs nor Environmental Park accept commercial C&D material (although small amounts of residential C&D debris may be accepted). Private outlets exist for the recovery of both yard waste and C&D materials.

Residential Collection Service: City of Gainesville

The City provides curbside waste and recycling collection to single-family homes within the City limits. Weekly curbside collection includes garbage, dual stream recycling, bulk items, and yard waste. Recycling for the City is separated into two streams: 1) Containers (plastic bottles, aluminum cans, steel cans, glass bottles, and cartons); and 2) Papers (cardboard, paperboard, newspapers, magazines, office paper, junk mail, phone books, and brown paper bags). Clearly defined educational materials that include pictures and descriptions are provided for residents via the City's website.

Garbage cart sizing is currently a PAYT rate structure and varies from \$18.50/month (20-gallon) to \$37.00/month (96-gallon) as seen in Figure 4. Yard waste collection is unlimited but must be set out according to guidelines, which includes no plastic bags. Large appliances and electronics collections are scheduled by appointment only. Recycling is required for all multi-family units over five and must be coordinated by the building manager or property owner through private collection companies.

Figure 4: Gainesville PAYT Garbage Cart Sizes



Commercial Collection Service: Alachua County

In 2011, Alachua County updated their existing ordinance mandating commercial recycling. Per the ordinance, collection services are provided by an open franchise system. Businesses in the County are required to recycle the following materials: steel cans, aluminum cans, glass containers, plastic containers, magazines, newspapers, office paper, and corrugated cardboard. A plastic stirrer and straw ban became active on March 10, 2020. Private hauler databases, educational materials and

staff support are available to assist businesses in implementing the mandate. There is currently no mandate requiring the diversion of yard waste or C&D materials from the landfill.

Commercial Collection Service: City of Gainesville

Waste collection and recycling within the City limits is mandated per ordinance as specified in the City's non-exclusive franchise policies. All commercially collected waste generators in the City of Gainesville are required to recycle designated materials as specified by the City's Mandatory Commercial Recycling Ordinance. Any business generating 15% or more by volume of the designated recyclable materials in their waste stream are required to separate and recycle these materials. Designated Commercial Recyclable Materials are: 1) Papers (cardboard, paperboard, newspaper, magazines, office paper, and junk mail); and 2) Containers (plastic bottles, aluminum cans, steel cans, glass bottles, and cartons). Several private collection companies service the area and can easily be found on the City website. City staff are available to provide information and technical support to any business on this recycling mandate, as well as support for developing workplace recycling programs. Effective January 1, 2020, the City implemented a ban on plastic straws and stirrers.

Community Policies, Programs, and Policy Drivers

University Collection Services: University of Florida

In striving to be a *Zero Waste Campus*, UF offers numerous waste management alternatives to students, staff, and operational programs of the university. These include a wide array of recycling options and food waste composting, as well as other waste reduction programming as depicted in

Figure 5: UF's Bigbelly Smart Waste and Recycling



Figure 5 with UF's smart waste and recycling partnership with Bigbelly. Additional initiatives include the UF Surplus Property (reclaiming and distributing useable materials such as electronics and office furniture), Print Smart Initiative (reducing paper consumption by providing departmental assessments for faxing, scanning, printing and copying), Reusable Coffee Mugs and To-Go Containers (reducing single-use containers by providing discounts for bringing reusable mugs, cups, and

containers), Housing Move-Out Recycling Program (partnership with local charities for redistributing furniture and supplies left during move-out), Housing Compost Initiatives (composting paper towels), and Collection Day (open to faculty, students, and staff to drop off unwanted items to be recycled, donated or responsibly disposed).

Further Circular Economy Opportunities and Policy Drivers

In addition to the strategies described above, the following pertinent resources for waste reduction exist within Alachua County.

- *Food Waste Diversion* – As previously noted, the UF food waste and composting program, as well as the County’s composting education program are generating awareness about alternatives to food waste from the larger stream. Additionally, several residential and small business private food waste pickup/composting services exist. This includes Beaten Path Compost. The County also provides waste-to-energy opportunities with the conversion of vegetable oil to a fuel source as presented in Figure 6.
- *Construction & Demolition Diversion* – In addition to multiple private C&D hauling and recycling companies, several reuse stores and facilities exist in Alachua County. Additionally, the City’s Green Building Ordinance incentivizes the reuse and recycling of construction materials.
- *Hazardous Waste Diversion* – The Alachua County Hazardous Waste Collection Center properly disposes and recycles several household hazardous wastes. These include household chemicals, auto fluids and batteries, paints and solvents, pesticides and corrosive chemicals, electronic scrap, and fluorescent and other mercury containing bulbs.
- *2008 Florida Energy Act* – This State statute developed a goal of 75% waste diversion by 2020.

Figure 6: Alachua BioDiesel Initiative



2.2 Current Infrastructure

Strategically addressing Zero Waste for a community requires an examination of infrastructure that includes the traditional facility model of managing wastes, as well as the full circularity of material generation. The following compilation of existing infrastructure provides a foundation for understanding opportunities and potential needs within the County and City.

Solid Waste Disposal – Landfill, Transfer, Waste-to-Energy and Facilities

In 1998, the Alachua County Landfill reached maximum capacity. Upon closure, the County determined it in the best interest of the community to outsource landfill disposal. The County currently contracts to dispose of waste at the New River Regional Landfill in Raiford, Florida. In FY2018-2019 the County and its municipalities expended over \$6 million in tip fees to dispose waste to the facility at a current disposal rate of \$29 per ton. It is important to note, the minor increases of recycling and usage of combustion in the past three years has resulted in decreasing landfill disposal costs. Further examination on the waste characterization and tonnage data of materials being disposed may be found in Section 2.3.

Prior to disposal, collected waste is transported to the Leveda Brown Environmental Park and Transfer Facility in Gainesville. Materials are screened for prohibited waste and hazardous

materials to include tires, medical waste, and industrial appliances before being compacted and transported to the landfill facility (70.6 miles round trip). Approximately 36 loads of waste are transported to the New River Landfill Facility daily.

Resource Recovery and Recycling Facilities

Recycling Centers

While curbside recycling collection is offered in multiple areas throughout the County, rural, unincorporated areas are serviced by multiple RCCs as seen in Figure 7. Additionally, the County offers collection services at the Leveda Brown Environmental Park and

Transfer Station. These collection facilities are listed in Table 1 and accept the following recycled materials: mixed paper, glass, plastic, metal, white goods and other large metals, household hazardous waste, oil filters, fluorescent lamps, rechargeable batteries, vehicle/boat batteries, computer equipment, electronics, up to five gallons of waste oil, and old paint. Multiple locations also accept gently used items such as toys, pots, pans, furniture, clothing, household goods, and school supplies as noted in the reuse column of Table 1.

Figure 7: Alachua County Recycling Facilities



Table 1: Alachua County Collection Facilities

Name	Address	Reuse Available
Archer Rural Collection Center	19401 SW Archer Road Archer, FL 32618	Yes
Alachua/High Springs Rural Collection Center	16929 SW Highway 441 High Springs, FL 32643	Yes
Fairbanks Rural Collection Center	9920 NE Waldo Road Gainesville, FL 32609	Yes
North Central Rural Collection Center	10714 N SR 121 Gainesville, FL 32653	Yes
Phifer Rural Collection Center	11700 SE Hawthorne Road Gainesville, FL 32640	Yes
Leveda Brown Environmental Park and Transfer Station	5115 NE 63 rd Avenue Gainesville, FL 32609	No

The recycling of debris from C&D activities remains vital for areas of significant growth, like the County and City. Linking the sorting and processing of mixed C&D to programs and policies for job-site separation and prohibition are central to a Zero Waste system. Currently there are several private facilities accepting C&D materials as depicted in Table 2.

Table 2: Alachua County C&D Recycling and Reuse

Name	Address	Private / Public	Options
Florence Recycling & Disposal	3222 SE Hawthorne Road Gainesville, FL 32641	Private	Recycling Landfill Transfer Station
Florida Concrete Recycling, Inc.	930 SW 3 rd St Gainesville, FL 32601	Private	Glass Recycling Concrete Recycling Asphalt Recycling
Habitat for Humanity ReStore	2317 SW 13 th St Gainesville, FL 32608	Private	Material Reuse Appliance Reuse
The Repurpose Project – Reuse Store	1920 NE 23 rd Ave Gainesville, FL 32609	Private	Material Reuse Scrap Wood
Watson C&D	12890 NE SR 24 Archer, FL 32618	Private	C&D Material Recycling

Note: List is subject to change and may not be all inclusive.

Organic Waste Collection

Limited waste diversion opportunities exist for residents of Alachua County to compost yard waste and food waste. These are comprised of both public and private methods as outlined in Table 3. Note, no option currently provides curbside collection for food waste.

Table 3: Alachua County Compost (Food and Yard Waste) Recycling

Name	Address	Private / Public	Material
Alachua County RCCs	Multiple - See Table 1	Public	Yard Waste
Beaten Path Compost	Multiple Drop Off Locations	Private	Food Waste Yard Waste
Gaston's Tree Debris Removal	9333 NW 13 th St Gainesville, FL 32653	Private	Yard Waste
UF Student Compost Cooperative	Energy Research and Ed Park Gainesville, FL 32608	Private	Food Waste Yard Waste
Watson Greener Landscaping	12890 NE SR 24 Archer, FL 32618	Private	Yard Waste

Note: List is subject to change and may not be all inclusive.

Additional Community Resources to Support a Circular Economy

When assessing the multiple avenues for creating a circular economy, there are other facilities and businesses that can assist by accepting gently used materials or providing additional community-wide recycling services. These are identified in Table 4. In addition to these businesses, the Gainesville Recycling Resource Guide is an updated, informational directory to assist residents and businesses with finding local options to recycle, donate, compost, resell, repair, and properly dispose of various unwanted materials (<https://zerowastegnv.com/recycle/>). Please note, these opportunities link to many midstream and downstream initiatives and are considered an important variable for a Zero Waste community.

Table 4: Alachua County Additional Recycling Opportunities

Name	Address	Items Accepted
Alachua Habitat for Humanity ReStore	2317 SW 13 th St Gainesville, FL 32608	Clothing, Household Goods, Furniture, Appliances
Batteries Plus Bulbs	3318 SW 35 th Blvd. Gainesville, FL 32608	Rechargeable Batteries
Battery Land	1535 NW 6 th St. Gainesville, FL 32601	Rechargeable Batteries
Battery Source	4811 SW 34 th Ter. Gainesville, FL 32608	Rechargeable Batteries
Best Buy	3520 SW 34 th St Gainesville, FL 32608	Electronics, batteries, Wires, Cords, Cables, Plastic Bags
Bj's Thrift Shop	1847 S Main St Gainesville, FL 32601	Clothing, Household Goods, Electronics
Cartridge World	3501 SW 2 nd Ave, Suite N Gainesville, FL 32607	Printer Ink Cartridges and Toners
CMC Recycling of Gainesville	1508 NW 55 th Pl Gainesville, FL 32653	Aluminum Cans and Scrap, Auto Parts, Bikes, Brass, Cookware, Copper, Ferrous Metals, Garden Tools, Hardware, Lawnmowers, Metal Clothes Hangers, Metal Tags, Musical Instruments – Metal, Nonferrous Metals, Pipes, Radiators, Scrap Metal, Stainless Steel, Tools, Zinc
Entenmanns Gainesville Thrift	1124 SE 4 St Gainesville, FL 32601	Clothing, Household Goods
eco ATM	4010 W Newberry Rd Gainesville, FL 32607	Smartphones, Tablets, Cell Phones
Flashbacks Recycled Fashions	220 NW 8 th Ave Gainesville, FL 32601	Clothing
Gainesville Junk Removal	4010 W Newberry Rd Gainesville, FL 32607	Furniture, Appliances, Misc. Scrap Metal
Gator Appliance Recycling	3402 NE 2 nd St C Gainesville, FL 32609	Appliances
Goodwill – Gainesville North	1223 NW 23 rd Ave Gainesville, FL 32609	Clothing, Household Goods
Goodwill – Gainesville South	3520 SW 34 th St Gainesville, FL 32608	Clothing, Household Goods
Haven – Attic Resale	300 NW 8 th Ave Gainesville, FL 32601	Clothing, Household Goods
Home Depot	5150 NW 13 th St Gainesville, FL 32609 7107 NW 4 th Blvd Gainesville, FL 32607	Light Bulbs Rechargeable Batteries
Humane Society of North Central Florida Thrift Store	4205 NW 6 th St Gainesville FL 32609	Clothing, Household Goods
JCPenney	6841 W Newberry Rd Gainesville, FL 32605	Plastic Bags #2 and #4

Name	Address	Items Accepted
Kohls	3501 SW Archer Rd Gainesville, FL 32608	Plastic Bags #2 and #4
Lowes	15910 NW 144 Terrace Alachua, FL 32615 2564 Northwest 13 th St Gainesville, FL 32609 3500 SW Archer Rd Gainesville, FL 32608	Plastic Bags #2 and #4, Cell Phones, CFLs, Lead-acid Batteries, Lithium-ion Batteries, Nickel-cadmium Batteries, Nickel-metal Hydride Batteries, Nickel-zinc Batteries, Plastic Plant Materials (No Single-use Batteries)
Melody's Memories	5000 NW 34 th Blvd Suite 1 & 2 Gainesville, FL 32605	Clothing
Office Depot	1015 NW 13 th St Gainesville, FL 32601 6861 W Newberry Rd Gainesville, FL 32605	Ink and Toner Cartridges
Office Max	3642 SW Archer Rd Gainesville, FL 32608	Ink and Toner Cartridges
Outreach Thrift	2430 NW 6 th Street Gainesville, FL 32609	Clothing, Household Goods
Plato's Closet	3441 W University Ave B Gainesville, FL 32607	Clothing
Publix Super Markets	All Locations	Plastic Bags #2 and #4, Plastic Egg Cartons, Paper Bags, Plastic Film #2 and #4
Recycling Services of America	2874 NE 1 st Terrace Gainesville, FL 32609	Office Paper, Cardboard, Bottles, Cans
Salvation Army	55 NW 23 rd Ave Gainesville, FL 32609	Clothing, Household Goods
Sam's Club	2801 NW 13 th St Gainesville FL 32609	Plastic Bags #2 and #4, Car Batteries, Marine Batteries
Sandy's Savvy Chic Resale Boutique	4148 NW 13 th St Gainesville, FL 32609	Clothing
Sound Ideas	3215 NW 13 th St Gainesville, FL 32609	Small Electronics
Sprint Store	3600 SW Archer Rd Gainesville, FL 32608	Cell Phones
St. Patrick's Thrift Shop	2010 NW 6 th St Gainesville, FL 32609	Clothing, Household Goods, Furniture
St. Vincent De Paul Thrift Shop	710 N Main St Gainesville, FL 32601	Clothing, Household Goods, Furniture
Target	3970 SW Archer Rd Gainesville, FL 32608	Plastic Bags #2 and #4, Cell Phones, Inkjet Cartridges, MP3 Players
T-Cellular	6419 W Newberry Rd Gainesville, FL 32605	Cell Phones
The ARC of Alachua County	3781 NW 6 th St Gainesville, FL 32609	Clothing, Household Goods
The Heart of Gainesville Thrift Store	125 NW 23 rd Ave #5 Gainesville, FL 32609	Clothing, Household Goods, Furniture

Name	Address	Items Accepted
The Repurpose Project	1920 NE 23 rd Ave Gainesville, FL 32609	Clothing, Household Goods, Furniture, Appliances
Trademark Metals Recycling	817 NE Waldo Rd Gainesville, FL 32641	Ferrous and Non-ferrous Metals, White Goods, and Appliances
Uniquities Consignment Shop	526 N Main St Gainesville, FL 32601	Furniture, Home Goods, Clothing
Walmart	All Locations	Plastic Bags #2 and #4, Car Batteries, Marine Batteries
Watson C&D	12890 Northeast State Route 24 Archer, FL 32618	Aluminum Scrap, Asphalt, Brass, Brick, Carpet, Carpet Padding, Ceiling Tiles, Ceramic
Whole Foods	3490 SW Archer Rd Gainesville, FL 32608	Batteries, Corks, Plastic Bags, Brita Filters, Yogurt Cups and #5 Plastics
WeeCycle of Gainesville	1405 NW 23 rd Ave Gainesville, FL 32605	Clothing, Furniture, Household Goods

Note: List is subject to change and may not be all inclusive.

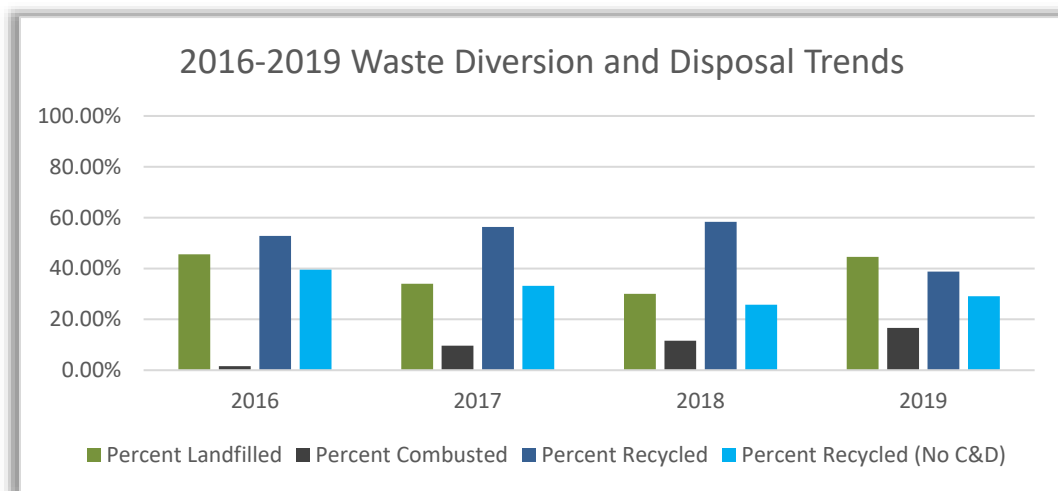
2.3 Waste Characterization and Generation

Defining Zero Waste strategies within a community requires knowing existing resources available for achieving a circular economy as presented in Section 2.2, as well as solid waste output in tonnages (recycled materials, landfilled, or combusted garbage), solid waste compositions, and trends over time.

In 2019, the County and City managed over 560,000 tons of municipal solid waste with a recycling rate of 39%. It is important to note in the County and City, as in many growing jurisdictions, C&D waste constitutes a large portion of the materials managed. Isolating C&D and removing it from waste totals, reveals a decreasing long-term trend in municipal recycling in the County. In 2019, only 29% of materials other than C&D were recycled. This compares to 40% in 2016.⁴ Figure 8 presents the waste diversion and disposal trends from 2016-2019.

⁴ “Annual Reporting of Materials Collected”, Florida Department of Environmental Protection (FDEP), 2016-2019

Figure 8: Alachua County Waste Diversion and Disposal Trends

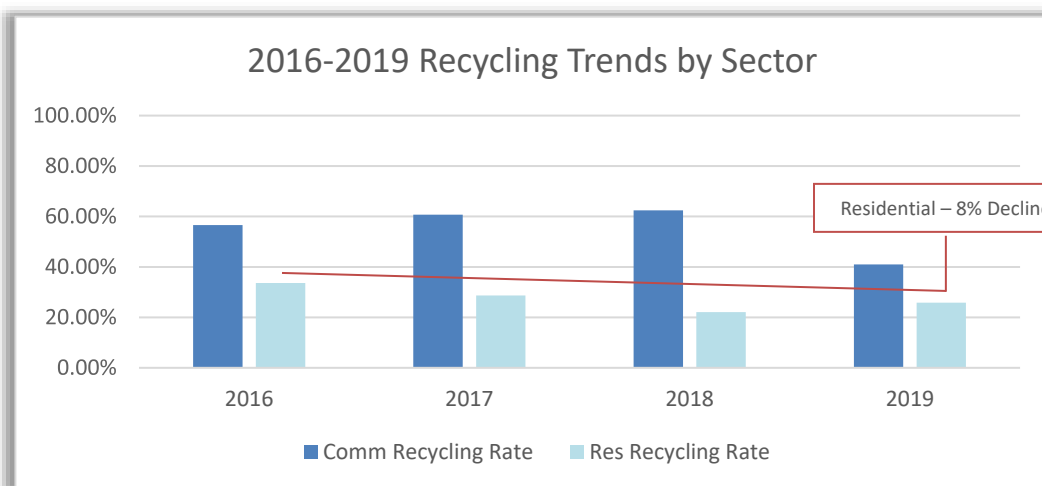


Data Source: FDEP Annual Reporting of Materials Collected (2016-2019).

Further analysis of recycling rates for the County and City reveal an increase in commercial recycling as noted in Figure 9. However, in 2019 the commercial recycling rate did drop to 41%. While this drop may reflect a reduced quantity of C&D materials for the year (as discussed later in this section) it may also reveal an area for increased outreach and education and should be tracked in future years.

Residential recycling rates steadily declined since 2016 with a 3% increase in 2019. Over 85,000 tons of residential solid waste was collected in 2019 with 26% recycled. As the County and City move forward with defining strategies for increasing diversion and meeting Zero Waste goals, public awareness on these recycling rates may reveal opportunities for increased education.

Figure 9: Alachua County Recycling Trends by Sector

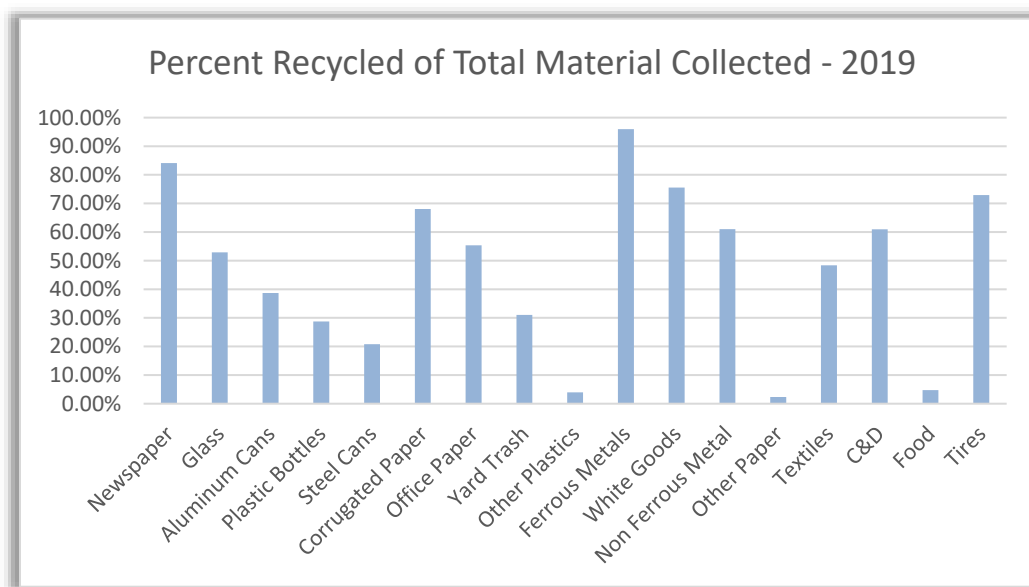


Data Source: FDEP Annual Reporting of Materials Collected (2016-2019).

Note: Large scale construction and development may have impacted commercial rates from 2018-2019.

Understanding commodities being recycled in comparison to total tonnages collected can assist in designing appropriate Zero Waste strategies for not only increasing diversion rates through recycling, but those that impact a circular economy. Figure 10 reveals the recycling rate of each material in 2019, exposing diversion potentials. Materials collected in the residential dual stream system that saw a less than 30% capture rate include plastic bottles and steel cans. Newsprint saw the highest diversion at 84%, a large increase from the 2018 percentage of 9%. Both glass and aluminum can recycling also increased in 2019 by 16% and 12%, respectively.

Figure 10: 2019 Composition of Recycled Material in Alachua County



Data Source: FDEP Annual Reporting of Materials Collected (2019).

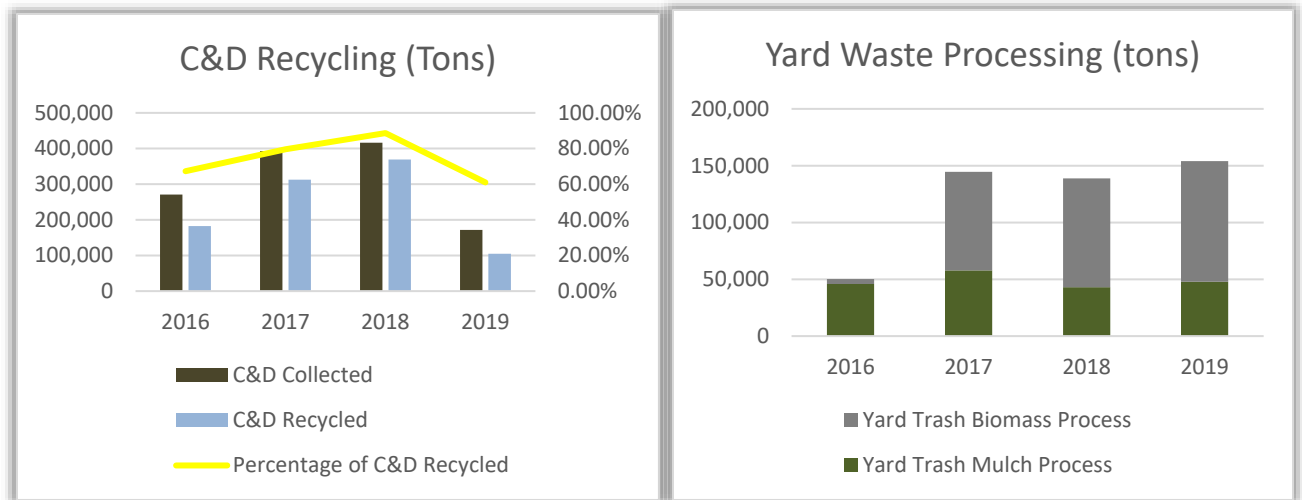
Data represented in Figure 10 is further defined in Table 5. This reveals actual tonnages collected and recycled by material type in 2019.

Table 5: 2019 Tonnage Data by Material Type

	Newspaper	Glass	Aluminum Cans	Plastic Bottles	Steel Cans	Corrugated Paper	Office Paper	Yard Waste	Other Plastics	Ferrous Metals	White Goods	Non-Ferrous Metals	Other Paper	Textiles	C&D	Food	Tires
Collected (t)	3,619	7,694	1,067	3,702	1,606	40,217	4,800	153,995	24,242	14,496	3,590	2,384	42,737	8,530	171,838	27,847	2,801
Recycled (t)	3,043	4,072	413	1,063	334	27,363	2,657	47,826	965	13,912	2,712	1,455	989	4,125	104,770	1,323	2,042
Percent Diverted	84%	53%	39%	29%	21%	68%	55%	31%	4%	96%	76%	61%	2%	48%	61%	5%	73%

Materials with the greatest diverted tons for 2019 include C&D (104,770 tons recycled) and yard waste (47,826 tons recycled). However, further analysis reveals a decreasing trend in the recycling rates of these materials as seen in Figure 11. The recycling of C&D materials trended towards greater diversion, until 2019. These rates may be monitored in the future to determine any lasting trends. Additionally, yard waste diversion has decreased by 30% since 2016.

Figure 11: 2016-2019 C&D and Yard Waste Recycling Trends



Data Source: FDEP Annual Reporting of Materials Collected (2016-2019).

Note: C&D tonnages can fluctuate for a community based upon large scale construction projects.

In addition to the potential for recycling yard waste as noted in Figure 11, food waste was one of the least diverted materials in trend data. In 2019, over 27,000 tons of food waste was collected in the County. As presented in Table 5, only 5% (or 1,300 tons) were recycled.

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Section 3

Zero Waste Strategies

In addition to collecting baseline data, KCI utilized a Zero Waste strategy planning tool issued by the United States Environmental Protection Agency (EPA). This spreadsheet tool titled *Managing and Transforming Waste Streams*⁵ was revised by KCI to focus on initiatives necessary for the County and City to maximize their waste reduction and achieve their circular economy goals. Analysis of the baseline data presented in Section 2 and the EPA spreadsheet tool allowed KCI to perform an opportunity and gap analysis to identify potential strategies to be considered by both the County and City.

3.1 Evaluation Process

Strategic planning for Zero Waste impacts a variety of sectors and initiatives across a community. The County and City have several initiatives that fundamentally overlap with the goals and strategies for Zero Waste. The Solid Waste Element of the adopted 2019 Alachua County Comprehensive Plan defines multiple objectives and policies that are supported by the potential strategies identified in this section.

The potential strategies the County and City may consider are categorized into the following:

1. *General Recommendations*
2. *Organic Material Recovery*
3. *Recyclables and C&D Recovery*

3.1.1 Strategy Identification and Selection

KCI consulted with representative staff from the County's Solid Waste and Resource Recovery Department and the City's Public Works and Sustainability Departments to refine findings from the baseline assessment and clarify identified strategies.

3.1.2 Strategy Evaluation Methodology

Table 6 presents the evaluation criteria selected for each strategy. These were based on an initial list identified in coordination with representative staff from the County and City. These criteria included overarching community drivers and recognized the need for both quantitative (measurable) and qualitative (non-measurable) evaluation measures. It remains important to note that not all criteria apply to every strategy and quantitative measures were based on a hypothetical reduction potential. These numerical qualifiers may prove useful in future calculations for quantifying impacts and when measuring progress of the implemented strategies.

⁵ EPA Website: <https://www.epa.gov/transforming-waste-tool/managing-and-transforming-waste-streams-tool>

Table 6: Non-Measurable and Measurable Criteria for Evaluating Strategies

Non-Measurable Criteria	Description
<i>Supports Source Reduction</i>	Strategy reduces or influences the reduction of materials from the point-of-use source.
<i>Supports Material Reuse</i>	Strategy results in the reuse of a material rather than disposal.
<i>Supports Material Repair</i>	Strategy results in the repair of a material rather than disposal.
<i>Reduces Toxicity</i>	Strategy reduces toxicity levels for the community and environment.
<i>Builds Circular Economy</i>	Strategy increases the circular economy for the community and region.
<i>Engages Community</i>	Strategy increases user awareness, promotes engagement, and builds participation (households and/or businesses).
<i>Supports Future Zero Waste</i>	Strategy provides a basis for future Zero Waste activities for the community (households and/or businesses).
<i>Ease of Implementation</i>	Implementation of strategy relative to its ease, including related policy changes.
<i>Timeliness</i>	Strategy will begin increasing waste diversion rates to meet Zero Waste goals within the planning period.
<i>Fosters Community Partnerships</i>	Strategy creates new (or expands existing) partnerships between the governments, businesses, and organizations.
Measurable Criteria	Ranking Basis
<i>Tons Diverted</i>	Municipal Solid Waste (MSW) tonnage diverted from disposal
<i>Per Capita Disposal Reduction</i>	MSW disposal tonnage calculated per capita
<i>Business Development</i>	Business growth factors (new licenses and permits) / Increased partnerships in the Eco-Industrial Park
<i>Job Creation</i>	Local Area Unemployment Statistics – LAUS (U.S. Dept of Labor Bureau of Labor Statistics)
<i>Reduced Greenhouse Gas (GHG) Emissions</i>	Metric tons CO ₂ , equivalents reduced

In addition to the criteria identified in Table 5, selected strategies were also evaluated for their advantages and disadvantages, estimated impacts on material reduction, diversion, and reuse, as well as overarching environmental impacts.

3.2 Potential Zero Waste Strategies

The sections below present the potential strategies to be considered in the final plan.

3.2.1 General Strategies

The assessment process of baseline data revealed six general strategies for the County and City for fostering Zero Waste within their jurisdictions, as well as meeting their own internal operational Zero Waste goals. Table 7 defines each selected strategy and includes advantages and potential challenges for implementation.

Table 7: Selected General Strategies

Strategy	Category	Impact Area
Establish a Solid Waste Reduction Goal and Formalize by Adopting a Resolution on Zero Waste.	Policy	Upstream
Description: Utilizing strategies in this plan, develop a template Zero Waste resolution for use by the County and municipalities. Increase coordination with all municipalities (City of Alachua, City of Archer, City of Hawthorne, City of High Springs, Town of La Crosse, Town of Micanopy, City of Newberry, and City of Waldo) to ensure governments adopt a resolution to address Zero Waste and the final recommendations in the forthcoming Alachua County Zero Waste Strategic Plan. Advantages: Establishes a formalized commitment and foundation for Zero Waste initiatives in the community. Ensures commitment from policy leaders in making Zero Waste a priority for the community. Potential Challenges: Funding requirements to fulfill goal. Public support for initiative. Requires intergovernmental coordination.		
Implement a Zero Waste Procurement Policy.	Policy	Upstream
Description: Adopt a policy for the procurement of services and materials that supports a circular economy (e.g., local products, required percentage of recycled content, biodegradable single-use products, precautionary principle for purchases, etc.). Advantages: Supports the circular economy in the area and allows governments to lead by example. Potential Challenges: Requires political motivation and financial resources. Additionally, locating the services and materials may initially be difficult.		
Revise Future Contracts and Franchise Agreements with Collections and Processing Vendors to Include Requirements and Incentives Addressing Zero Waste.	Policy	Downstream
Description: Address waste diversion in the procurements of collections and processing contracts and include future opportunities for organics collection and other materials (e.g., performance linked renewals and extensions, additional payments for achieving targeted waste reduction, inbound tip fees).		

Strategy	Category	Impact Area
<u>Advantages:</u> Can lead to higher diversion rates and the ability to meet established goals. Allows the County and City greater control of their procurements and may be linked to educational and outreach programming to increase public awareness. <u>Potential Challenges:</u> Will require careful integration into the procurement process to minimize impacts to rates and may make contracts complex with phasing in of certain services (e.g., organics collection) as infrastructure is built. May limit participation by some vendors in public procurements.		
Establish Public and Private Partnerships to Facilitate Innovative Research and Develop New Technologies for Managing Solid Waste in Alachua County and City of Gainesville.	Program Infrastructure	Upstream Downstream
<u>Description:</u> Foster the implementation of the Eco-Industrial Park Business Plan by continuing to build public and private partnerships and acquire new tenants in the recycling and recycling-related manufacturing industries. <u>Advantages:</u> Encourages innovation, utilizes existing infrastructure, and incorporates Zero Waste planning into the Eco-Industrial Park Business Plan. <u>Potential Challenges:</u> Will require political buy-in, support, and potential funding.		
Develop Partnerships with the Private Sector to Implement a Large-Scale Reuse Program.	Program Operations	Downstream
<u>Description:</u> Engage the private entities in developing a comprehensive reuse program to increase the level of material recovery for Alachua County and City of Gainesville. <u>Advantages:</u> Large waste reduction impacts based upon case study programs. Fosters circular economy. Generates job growth. May be more financially advantageous than disposal fees. <u>Potential Challenges:</u> Requires private sector interest, capital, and warehouse or infrastructure for the collection of salvaged materials and storefront for sales. Requires political support. May require altering of current collection contracts to ensure appropriate Designated Facility for receipt of materials or allow for the infrastructure for salvaging of materials to be co-located at the facility.		
Develop a Community-Wide Zero Waste Recognition and Certification Program.	Program	Upstream Downstream
<u>Description:</u> Partner with businesses, industries, and community groups to establish a program promoting the principles of waste diversion and reduction by including social and behavioral change marketing tools. Include incentives for businesses collecting both organic and recyclable materials and implementing Zero Waste procurement policies (e.g., biodegradable single-use products, etc.). <u>Advantages:</u> Provides a recognition platform for changes. Utilizes social behavioral change techniques to foster sustainable business growth, increase waste reduction rates, and increase use of sustainable materials. <u>Potential Challenges:</u> Will require dedicated staff time and resources to implement. Design of the program will need to meet current community needs, while building upon social marketing strategies to ensure it is widely utilized and accepted. Implications from selected incentives (e.g., financial, structural) will need to be fully evaluated and understood prior to implementation.		

3.2.2 Organic Material Recovery

In addition to general strategies, data analysis revealed seven strategies specific to the material reduction, diversion, and reuse of organic materials. Table 8 defines each selected strategy and includes advantages and potential challenges for implementation.

Table 8: Selected Organic Material Recovery Strategies

Strategy	Category	Impact Area
Establish the Processing Facility Infrastructure Necessary for Diverting Organic Materials from the Waste Stream.	Infrastructure Operations	Downstream
<u>Description:</u> Increase organics diversion rates by developing or fostering the development of a community-wide organics processing facility to transition materials into a compost commodity. <u>Advantages:</u> Current processing of organic materials is limited to yard waste. Establishing an organics processing facility will allow for the diversion of over 20% of materials from the County and City's solid waste stream and foster partnerships. <u>Potential Challenges:</u> Will require planning, space, and adequate funding. Financial sustainability of the processing facility will require adequate materials collected to process (feedstock). Feedstock will be needed to ensure adequate operations and to leverage any potential private sector interest.		
Develop a Plan to Phase Organics from Garbage Collection.	Policy	Upstream
<u>Description:</u> Implement a two phased approach for reducing organic materials from the waste stream. Phase I to limit or encourage diversion as compost facility infrastructure is established. Phase II to include the ban of organics from refuse based on use sector (residential, commercial, and operational). <u>Advantages:</u> Will ensure adequate feedstock for any future organics processing facility. Will allow for a comprehensive assessment of requirements to ensure a viable and successful organics processing facility. <u>Potential Challenges:</u> May require revisions to collection contracts. Plan will need political and public support and buy-in to be viable. May require changes to customer collection programs including new containers or new set-out procedures.		
Develop Infrastructure for the Collection of Organic Materials.	Infrastructure Operations	Downstream
<u>Description:</u> Utilize existing collection methods for recyclable materials (i.e. curbside collections, drop off sites, etc.) to build or purchase the infrastructure for collecting organic materials for processing. <u>Advantages:</u> Allows for greater diversion of organic materials. Can foster partnerships with the private sector and inter-locally. Allows for consistent messaging and branding to encourage greater participation and stability. <u>Potential Challenges:</u> Infrastructure may require staffing or operational changes to resource recovery centers, carts, or other collection bins, as well as a collection fleet. May additionally require modifications to solid waste ordinances. Significant public education and outreach to inform customers of programmatic changes and to improve diversion potentials.		
Build Upon Recycling Outreach and Education Programming to Include Organic Material Diversion.	Program	Midstream
<u>Description:</u> Provide educational programming on the benefits for composting and food waste prevention to grocery stores, restaurants, school cafeterias, caterers, and other food service vendors.		

Strategy	Category	Impact Area
<u>Advantages:</u> Supports organics processing infrastructure and may increase program participation rates. Diversion rates of organic materials will increase. Easy expansion of existing solid waste system programming. <u>Potential Challenges:</u> Requires consistency in messaging. May require additional financial resources.		
Add Incentives to Current Residential Backyard Composting Programs and Expand.	Policy	Midstream
<u>Description:</u> Incentivize material diversion through backyard composting. Incentives may be linked to existing PAYT programs and could be advertised and marketed to residential customers. <u>Advantages:</u> Builds upon an existing program and infrastructure. Reduces the collection and processing burden on the communities by having materials processed at the source. <u>Potential Challenges:</u> Program participation may already be maxed. Incorporating incentives may not have an adequate return on investment.		
Market Final Compost Product Throughout Community and Provide Education on Importance of Soil Restoration.	Operations	Midstream
<u>Description:</u> Support concepts of a circular economy by ensuring the sale and marketing of final compost products. (If processing facility is publicly owned, include in operations. If public-private include requirement in procurement documents. Potentially partner with Water Quality and other departments.) <u>Advantages:</u> Fosters circularity within the community. Offsets a portion of organic material processing costs. Increases community awareness of the product, but also of community's commitment to Zero Waste. <u>Potential Challenges:</u> Will require staff, or a contracted vendor, with training or expertise in commodity marketing to increase sales to a viable level.		
Expand Food Recovery Networks to Include Food Pantries.	Operations	Midstream
<u>Description:</u> Encourage the coordination of pick-up and delivery of edible food from food service vendors and partner with Florida Organics Growers and Consumers to encourage "Gleaner" volunteer groups to harvest surplus for food banks. <u>Advantages:</u> Fosters partnerships among different sectors of the community. Increases awareness on hunger and poverty initiatives within the County and City. Redirects excess food to those within the County and City in need. Reduces organic materials in need of reprocessing or disposal. <u>Potential Challenges:</u> May require new resources for transporting materials. May require incentives or social marketing campaigns to increase participation of food service vendors.		

3.2.3 Recyclables and C&D Recovery

Analysis of data for the County and City identified the potential to increase the recovery, diversion, and reuse of both common recyclable materials and those from C&D. Thirteen resulting strategies were selected. Table 9 defines each selected strategy and includes advantages and potential challenges for implementation.

Table 9: Selected Recyclables and C&D Recovery Strategies

Strategy	Category	Impact Area
Foster the Expansion and New Development of C&D Reuse and Recycling Facilities for the Region.	Infrastructure Operations	Downstream
<u>Description:</u> Increase community-wide opportunities for diverting C&D materials from disposal by enhancing collection, processing, and reuse marketing. This may include economic development incentives, tax breaks, etc. <u>Advantages:</u> Establishes the framework for partnerships to assist diverting C&D materials. Increases economic circularity. Fosters business growth. <u>Potential Challenges:</u> Will require ordinance revisions, changes in contractual relationships, a funding source for education, and political support. Landfill operations may require different cover sources or stabilization material.		
Establish Uniform Multi-family Recycling.	Operations	Midstream
<u>Description:</u> Develop uniform multi-family recycling to increase diversion rates through collections services, materials accepted, and education and outreach promotion. <u>Advantages:</u> Will strengthen the recycling program and increase diversion rates by providing uniformity and simplifying educational programming. <u>Potential Challenges:</u> Will require ordinance revisions and political support. Multi-family materials typically have high contamination levels, requiring significant outreach and education efforts, as well as potential carts or equipment for units to recycle effectively.		
Conduct an Analysis of Recycling and Disposal Fees for the County to Identify Methods for Discouraging the Landfill of Material.	Operations	Midstream
<u>Description:</u> Build upon results from an analysis of the existing fee structures to identify necessary changes for utilizing cost factors as a deterrent for landfilling material (i.e. providing lower customer rates for reuse and recycling rather than landfill or thermal disposal, negotiating lower tipping fees in hauler and processor contracts, etc.). <u>Advantages:</u> Provides the County and City with a clear picture of fees associated with municipal solid waste disposal to evaluate potential areas for deterring landfill material. Can be utilized as a financial foundation for numerous Zero Waste strategies. <u>Potential Challenges:</u> Will require staffing and/or funding to perform.		
Foster the Development of Regional Reprocessing Facilities.	Infrastructure	Downstream
<u>Description:</u> Increase economic development and diversion opportunities by implementing incentives that encourage the development of textile, electronics, and other innovative reprocessing facilities to foster closed loop approaches to waste management and foster job growth. This may include economic development incentives, tax breaks, etc. <u>Advantages:</u> Fosters economic and job growth. Increases Zero Waste partnerships across the community. <u>Potential Challenges:</u> Selected incentives could have unexpected implications for the community and should be thoroughly vetted. May require intergovernmental coordination.		
Revise Building Code Standards or Green Building Ordinances to Address Zero Waste Initiatives for C&D Material Diversion.	Policy	Upstream

Strategy	Category	Impact Area
<u>Description:</u> Require reuse and recycling for the construction industry by integrating into existing policies and codes and provide contractor education. If linking to Green Building Ordinances, consider incentivizing to include streamlined permit review, permit fee reductions, flexibility in parking requirements, adaptive reuse for historic buildings, etc. <u>Advantages:</u> Supports infrastructure investments by ensuring necessary feedstock. <u>Potential Challenges:</u> Requires political buy-in and support. May be challenged by the building community. May impact the costs of construction and new development.		
Conduct Operational Analysis of Current Material Recovery Facilities (MRFs) to Ensure High Performance Rates that Support Zero Waste.	Operations	Downstream
<u>Description:</u> Conduct operational analysis assessing the age, size, commodities recycled, potential upgrades, contamination rates, residue rates, quality of baled commodities, etc. and develop operational and outreach strategies for improvement. Strategies may be included in new processing contracts. <u>Advantages:</u> Allows the County and City to optimize processing and reduce residue. Allows for the identification of potential upgrades to increase recovery. <u>Potential Challenges:</u> Will require staff time and/or funding.		
Expand Existing Mandatory Commercial Recycling Ordinance.	Policy	Midstream
<u>Description:</u> Build upon existing ordinances to include waste stream audits to evaluate compliance and establish a maximum waste contamination of recyclable materials for businesses, institutions, and multi-family complexes. <u>Advantages:</u> Audits will present clear data on compliance for commercial and multi-family recycling. <u>Potential Challenges:</u> Maximum contamination levels may be controversial. Policy changes will require political buy-in and support. Inspection and enforcement will be required to implement effectively.		
Adopt New Ordinances Banning Specific Recyclables from Entering Local Transfer Stations, Landfills, and Incinerators.	Policy	Midstream
<u>Description:</u> Expand upon the Florida Department of Environmental Protection list of recyclable materials to be banned from entering local transfer stations, landfills and incinerators and ensure inclusion in all contractual agreements with haulers and processors. <u>Advantages:</u> Increases material diversion from disposal and fosters more opportunities for reuse and repurpose. <u>Potential Challenges:</u> Will require political buy-in and support. May require amendments to contractual agreements. May increase rates. Will require adequate infrastructure for processing and managing materials. Will require significant outreach and education to the public.		
Adopt an Ordinance to Incorporate Reusable and Recyclable Materials into Local Government Road Construction and Maintenance Projects.	Policy	Upstream
<u>Description:</u> Develop or revise existing ordinances to include the use of reusable and recyclable materials into construction and maintenance projects. <u>Advantages:</u> Fosters an end use for certain repurposed C&D materials. May reduce road construction costs. <u>Potential Challenges:</u> Will require political buy-in and support. May require review and revision of operational standards in addition to ordinance adoption. Will require a phased approach or the assurance of adequate feedstock from local sources.		

Strategy	Category	Impact Area
Conduct a Feasibility Study on the Development of a Regional CHaRM Facility for Processing Bulky Materials.	Infrastructure	Downstream
<u>Description:</u> Allocate resources for conducting a feasibility study researching the viability for constructing a regional Center for Hard to Recycle Materials (CHaRM) drop off site. <u>Advantages:</u> Will evaluate community interest and need for a center to collect items. Results may provide insight and support for private partnerships or interlocal agreements. <u>Potential Challenges:</u> Will require staff time and/or funding. Currently not a widely operated type of facility nationally. Thus, operating procedures may need to be developed for use.		
Consider the Use of Waste-to-Energy to Address Difficult to Recover Materials and Waste Streams.	Infrastructure	Downstream
<u>Description:</u> Assess the viability and need for utilizing alternative technologies to address materials and streams clearly identified as difficult to recover. <u>Advantages:</u> Assessments will provide the County and City with necessary information to determine if alternative technologies are a viable option for certain materials. May allow for business development, job growth and potential partnerships. <u>Potential Challenges:</u> Will require political interest and support. Selection of materials to be utilized for alternative technologies will need to be clearly defined to ensure it is being utilized as a last resort option prior to landfill disposal.		
Expand the Reach of the Business Recycling Toolkit to all Municipalities within the County.	Operations	Upstream
<u>Description:</u> Coordinate educational programming for businesses and define target goals for fostering recycling among the private sector. Include education on contamination and residue. <u>Advantages:</u> Toolkit already developed. Easy strategy to implement. <u>Potential Challenges:</u> Will require staff time. May have minimal impacts to diversion levels. May not be suitable for all municipalities depending upon their own ordinances, policies, and programs.		
Support Organizations Working on the Implementation of Take-Back Programs.	Operations	Downstream
<u>Description:</u> Assess composition of collected hard to recycle and hazardous items for County and City to determine industries to target and implement "Take-Back" programs. <u>Advantages:</u> Requires businesses to take-back difficult to manage items such as batteries and lightbulbs and reduces the County and City's need for processing or providing proper disposal. <u>Potential Challenges:</u> Will require political buy-in and support. Compositional analysis will require staff time, partnerships, and/or funding to determine appropriate industries to target.		

Section 4

Additional Recommendations and Resources

4.1 Contractual and Franchise Relationships

Procurement agreements for collecting and processing municipal solid waste can be key to advancing Zero Waste within a community. Currently, the County and City contract solid waste stream collections through an exclusive franchise for residential collection and provide an open franchise collection option for the commercial sector. If the County considers more contractual relationships in the future, the challenge will lie with developing contracts that address waste reduction, recycling, and composting while still providing cost effective per unit rates. While these are specific to individual municipalities, the following are general best practices:

- Procurement language must clearly define the scope of services. Some communities seek contractual agreements that will universally require providers to offer recycling and composting services to all garbage collection customers. This can also be an important foundation in ensuring adequate feedstock for infrastructure investments in processing facilities.
- If an equitable and sustainable partnership is in place, communities may consider negotiating with their current vendors to foster fundamental programming that can increase diversion.
- While it has the potential to impact rates, directly requesting vendors to meet minimum Zero Waste standards and including these standards in the evaluation process can directly impact waste reduction and diversion.
- The legal strength of different contractual arrangements that mandate the direction of materials to certain facilities should be considered.

There are numerous examples of zero waste service standards that can be incorporated into contractual agreements. While an appropriate standard for one community may not be applicable to another, common standards utilized include:

- Structuring franchise fees to encourage recycling.
- Eliminating volume discounts for large waste generators.
- Include recycling in the cost of garbage.
- Providing universal recycling services to all multi-family dwellings, institutions, commercial businesses, and industries.
- Providing reuse and recycling of bulky items collected.
- Providing organics collection and processing to include yard waste, food waste, and compostable materials to all residents, businesses, and institutions.

- Providing collection and/or processing services for household hazardous waste and difficult to recycle items.
- Providing Zero Waste education and outreach to residents and businesses.
- Fostering an independent take-back service for returning products and packaging to manufacturers and retailers.
- Providing independent audit services to businesses for waste reduction.
- Resource management and sales, such as recovered recyclable commodities, landfill gas and biogas or the energy from those sources, greenhouse gas credits, and compost.

The following provides additional high diversion strategies that may prove helpful for structuring effective service requirements:

- Do not provide financial restrictions on recycling set-outs. Allow extra carts, bins, or bags at no additional cost.
- Restrict compaction of recyclables in the transfer and delivery process to maintain the integrity of materials.
- Establish a compensation structure that allows contractors to realize the financial benefits for service improvements and innovations that lead to higher levels of diversion.
- Establish a compensation structure that provides performance bonuses tied to reduced costs (e.g., from increased efficiency, reduced contamination, or avoided disposal fees).

4.1.1 Case Studies

As the County and City consider changes to their contractual agreements, the following case studies may provide insight on strategies taken by local governments. Please note, after receipt of stakeholder feedback, these will be expanded to identify case studies on specific strategies from comparable communities. Where applicable, emphasis will be on those located in Florida.

City of Key West, Florida: [Zero Waste Plan](http://www.cityofkeywest-fl.gov/departments/division.php?structureid=175)
www.cityofkeywest-fl.gov/departments/division.php?structureid=175

The City of Key West integrated community goals for Zero Waste into their Solid Waste Master Plan. The plan included several studies to not only identify tonnages, but to characterize the city's disposed waste to identify opportunities for increasing diversion. Short-term strategies identified include:

- Enhance residential recycling to maximize recycling and composting from single-family and multi-family residents.
- Redesign commercial waste system to provide recycling and composting services to all businesses and institutions in the City.
- Enhance the construction and demolition debris recycling to increase diversion from the building sector.

- Evaluate anaerobic digestion of food scraps at the San Jose/Santa Clara Water Pollution Control Plant.
- Pursue opportunities to support Extended Producer Responsibility initiatives and target reduction of single-use carryout bags, as well as non-recyclable/non-compostable take-out food packaging.

City of Austin, Texas: [Policy Changes and Contractual Agreements](https://austintexas.gov/department/zero-waste-2040)
<https://austintexas.gov/department/zero-waste-2040>

In 2011, Austin City Council adopted the “Austin Resource Recovery Master Plan” to guide the city in reaching the Council’s goal of diverting at least 90% of discarded materials from the landfill by 2040.

- Ordinance and policy changes supported new contractual agreements. These included:
 - Universal Recycling and Composting Ordinance – Phases in requirements for recycling services to all tenants and employees in multi-family dwellings, office buildings and institutions. Additionally, the ordinance phases in retail, restaurants, and industrial generators.
 - Construction and Demolition Recycling Ordinance – Required building projects for more than 5,000 square feet of new, added, or remodeled floor area to reuse or recycle at least 50% of construction debris or dispose of no more than 2.5 pounds per square foot.
 - Hauler Registration Ordinance – Private service providers are required to register with the city and report service levels, diversion, and disposal tonnages with fees covering monitoring and enforcement costs.
 - Take-back Ordinance – The city is considering requiring brand owners to take back non-recyclable, non-compostable, or hard to handle products such as pharmaceuticals, sharps, batteries, and fluorescent bulbs.
- The city utilized a phased-in approach in their contracts to allow time for all stakeholders to understand new regulations and roles.

City of Berkley, California: [Reuse Partnership](http://www.urbanore.com)
www.urbanore.com

To reclaim reusable materials and divert them from disposal, the city has contracted with a private salvage company for over 20 years. This company holds exclusive rights of all reusable materials from the city’s transfer station tip floor and is allocated space on the property for a staff shed and vehicle to transport materials to their retail store in the Eco Park of South Berkley. Additionally, the company reports hazardous materials to city staff to avoid illegal disposal.

Initially, the city contracted \$40 per ton for all materials salvaged, less than the cost of landfilling and transportation. However, the financial success and stability of the program eliminated the revenue payment from contractual terms from 2012-2020. Currently, City Council is adopting a resolution for a three-year term for an amount not to exceed \$114,576. Over 800 tons of reusable

material are reclaimed from the transfer station floor annually supporting 40 full-time, living wage jobs with benefits.⁶

4.2 Zero Waste Education Programs

Outreach and educational programming for Zero Waste can vary among communities. Costs may also vary widely depending upon population densities, whether new programs are being implemented or major changes introduced. SWANA and Curbside Value Partnerships used an expenditure of \$1 per household for existing recycling programming but recommended a budget as high as \$4 per household per year on residential education and outreach when new programs or major changes are implemented.⁷

A wide range of educational tools and examples are available for local governments seeking to expand programming. When promoting Zero Waste programs, it is important to keep the message simple and easy to understand. A message that limits choices and actions is easier to decipher and act on than one that requires increasingly detailed knowledge. Changing behavior with education and outreach programs relies on providing communication so clear the choices become almost obvious. Case studies identified within this preliminary report will be refined based upon the results from stakeholder engagement. The following examples may currently be of interest to the County and City.

4.2.1 Case Studies

San Francisco, California⁸: www.sfenvironment.org/zero-waste

- Achieved 80 percent diversion across all sectors - based in large part on the "Fantastic 3" three-bin, PAYT curbside collection system (exclusive single-hauler contract).
- Maintains a strong focus on Multi-Family Unit (MFU) and business generators (approximately 80% of all businesses and all MFUs with less than six units divert recyclables and organics) based heavily on one-on-one consultations and social marketing, including onsite waste sorts, waste assessments, online compliance toolkit, performance audits, and regular reporting.
- Utilizes a multi-lingual staff assigned by city sector with specific expertise (e.g., C&D, commercial accounts, government collection, etc.) and bolsters outreach efforts with "green job trainees" (many of whom represent underserved communities and provide strong advocacy in traditionally hard-to-reach areas of the city).

California has stringent and enforced state-level diversion mandates.

⁶ City of Berkley, "June 2020 Council Documents and Draft Resolution."

⁷ Solid Waste Association of North America, "Manager of Recycling Systems Training Manual," (prepared by Kessler Consulting, 2009) – cites averages of \$1 per household per year and recommendations of higher investments for new programming.

⁸ San Francisco contact = Donald Oliveira, San Francisco Department of the Environment, 415-606-8039, donald.oliveira@sfgov.org.

Additional Resources

- Austin, TX's communications plan calls for a research-based approach to target specific audiences.⁹ <http://austintexas.gov/departments/austin-resource-recovery>
- Castro Valley Sanitary District, CA has developed a strong brand used consistently in all communications and has an exemplary commercial assistance/audit/award program. www.cvsan.org/BizRecyclingandOrganics
- Champaign, IL (home of the University of Illinois at Urbana-Champaign) has an exceptional attention-grabbing brand and great marketing campaign and brand. See the "Feed the Thing Recycling Logo" from the City of Champaign website. <http://ci.champaign.il.us/departments/public-works/residents/recycling>
- Charlotte, NC used focus groups to target prominent community values and increased neighborhood diversion levels by 12% in a three-month period. <http://portal.ncdenr.org/web/deao/outreach/recycling-education-campaigns>
- Curbside Value Partnership provides example programs, best practices, and numerous resources for outreach campaigns. www.recyclecurbside.org/index.cfm
- Boulder County, CO utilizes funding from a "Sustainability Tax" to provide grant funding for community Zero Waste projects ranging from \$1,000 - \$15,000. Local governments, non-profit organizations, school districts, and private companies within Boulder County are applicable – In 2020, \$100,000 was allocated. www.bouldercounty.org/environment/sustainability/zero-waste-funding

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⁹ Austin contact = Gena McKinley, Austin Resource Recovery, 512-974-1915, gena.mckinley@austintexas.org.

Section 5

Next Steps

Upon finalization of the stakeholder review process, this preliminary report will be refined to prioritize strategies identified as important to the community. Further analysis will be conducted on strategies to provide:

- Estimated waste reduction/diversion potentials.
- Potential public and/or private partnerships.
- An initial macro-scale assessment of cost for implementing strategies.

These findings will then be summarized into a final report and implementation plan for identifying short-term, mid-term, and long-term strategies to assist the County and City in obtaining their Zero Waste goals.