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**CASE**

## Emerald Coast Utilities Authority Invests in Regional Recycling Infrastructure

In Escambia County, Florida, a new single-stream sortation facility is serving close to 300,000 households in a region that lacked a reliable, economical solution for recycling.



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## SUMMARY

**BORROWER** EMERALD COAST UTILITIES AUTHORITY (ECUA), PENSACOLA, FL

**PORTFOLIO AREAS** SORTATION, MRF UPGRADES

**CLF LOAN** \$3M

**TOTAL PROJECT** \$10.6M  
*with co-investment from ECUA reserve funds*

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### OVERVIEW

ECUA and some of its neighbors had struggled for years to make recycling programs work with the costs of private haulers, transportation and tipping fees. When the Infinitus MRF in Montgomery, AL closed abruptly in 2015, the Emerald Coast Utilities Authority (ECUA) could not find another sortation facility within a five-hour drive that could handle its 22,000 tons per year of recyclables. ECUA, the public authority charged with stewarding Escambia County's quality of life through maintenance of its water, sewer and solid waste infrastructure, was committed to finding a sustainable solution for recycling, which enjoyed strong public support. ECUA decided to invest in its own state-of-the-art facility, which could absorb growth in its own recycling stream, as well as incoming tonnage from neighboring municipalities. ECUA chose to outsource the design, construction and initial operations of the facility to experienced partners Bulk Handling Systems and Zero Waste Energy because it had no experience in these areas and wanted to manage the risk of this new endeavor and allow for a learning curve in operating the new facility.

### BEFORE/AFTER

ECUA started landfilling almost all of its 22,000 tons per year of recyclables after the Infinitus facility closed, so the opening of the facility resulted in a dramatic increase in diversion. From January 2017 through September 2018, the facility processed more than 68,000 tons of materials, and grew the share of materials coming from nearby municipalities. The MRF generates economic benefits for ECUA in the form of avoided tipping fees and revenue from commodity sales. For the same 21-month period starting in January 2017, the facility generated \$4.2 million in economic benefits, after processing costs of \$46/ton. To date, the facility has operated at a profit margin between 10% and 30%, which gives ECUA capital to invest in other critical water, sewage and solid waste infrastructure and programs.

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#### PROJECTED BY 2026

#### PROGRESS (JANUARY 2017 TO SEPTEMBER 2018)

**400,000** TONS DIVERTED

**50,968** TONS DIVERTED

**1.1M** MTS GHG AVOIDED

**143,984** MTS GHG AVOIDED

**257,000** HOUSEHOLDS (EQUIVALENT)

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**30** JOBS CREATED

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**\$20M** IN ECONOMIC BENEFITS TO MUNICIPALITIES AT LEAST

**\$4.2M** IN ECONOMIC BENEFITS TO MUNICIPALITIES

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## CONTEXT

Escambia County is part of Florida's Emerald Coast, which straddles the border of Florida and Alabama and is well-known for the beaches and barrier islands that attract tourists and seasonal residents. The Emerald Coast Utilities Authority (ECUA) is the local government authority with the mission to promote good quality of life in the region by providing water, wastewater and sanitation services in an efficient, cost-effective and environmentally-sound manner to most of Escambia County and part of neighboring Santa Rosa county.

*In 2017, Escambia County had approximately 315,000 year-round residents, an increase of 5% since 2010, and in 2016, welcomed an estimated 2.1 million visitors, a 30% increase from the previous year.*

The authority's voluntary recycling program includes glass, paper, plastic and metals, as well as bio-solids composting for yard waste and bulk waste collection. The program has a 72% participation rate, which is high for a voluntary program, so the authority found itself in a tough position in late 2015 when the privately-owned Infinitus MRF in Montgomery, Alabama closed without notice. ECUA had been sending its recyclables to Infinitus—approximately 200 miles away—for lack of any closer option after the loss of two other contracts with privately-owned MRFs that closed. Neighboring Okaloosa County had a similar experience with Waste Management and West Florida Recycling. With the closing of the Infinitus MRF, there was no facility within a five-hour drive of Escambia County that was able of handling the volume of material that ECUA collected. And, for all the communities in the area, the lack of local sortation facilities translated into additional transportation and freight costs, which prevented them from achieving economic sustainability for their recycling programs.



Because of the demonstrated support for recycling, ECUA was committed to finding a solution. In the interim, ECUA continued to collect recycling curbside so as not to discourage the habit among residents, and deposited recyclables at the county's Perdido Landfill, which was still 40 years from reaching capacity. But even with room to spare and tipping fees below the national average, ECUA saw that this was not a long-term solution.

## SOLUTION

Rather than wait for another MRF to enter the market, the utility decided to build its own single stream facility on land it leased from Escambia County adjacent to the landfill. A loan from CLF provided about 30 percent of the required capital, with the rest coming from ECUA reserve funds.

Having never built or operated a MRF, ECUA chose to outsource the design, construction and operations of the facility. Through separate requests for proposals, ECUA selected Oregon-based Bulk Handling Systems (BHS) to design and build the facility and provide its equipment, and California-based Zero Waste Energy as the operating partner for the initial 18 months; this allowed ECUA time to learn the ins and outs of operating a MRF. ECUA assumed operation of the facility in May 2018.

The facility is a 53,000 square foot metal and fabric building—essentially a tent—on a 120,000 square foot plot of land. The unique structure was used in order to adhere to the limited timeframe the county was willing to commit to owning and operating the MRF. An on-site trailer provides office space and facilities for employees. The upside of this arrangement is that ECUA saved on costs and time for constructing the new MRF. The new facility came online in less than a year, opening in September 2016, and at a cost of approximately \$500,000 less than a traditional facility.



**Figure 1.** ECUA's MRF is a 53,000 square foot fabric and metal structure, which reduced the cost and construction time of the facility.

The facility has a processing capacity of 25 tons an hour, or 45,000 tons annually, to allow for 100 percent growth in ECUA's collection stream. The facility accepts paper, metal, glass and plastic, and equipment includes a Nihot glass cleaning system and a machine with bag-ripping teeth to release bagged materials; both technologies are designed to maximize materials recovery and increase profitability in the commodities market.

## BUSINESS CASE, KEYS TO SUCCESS

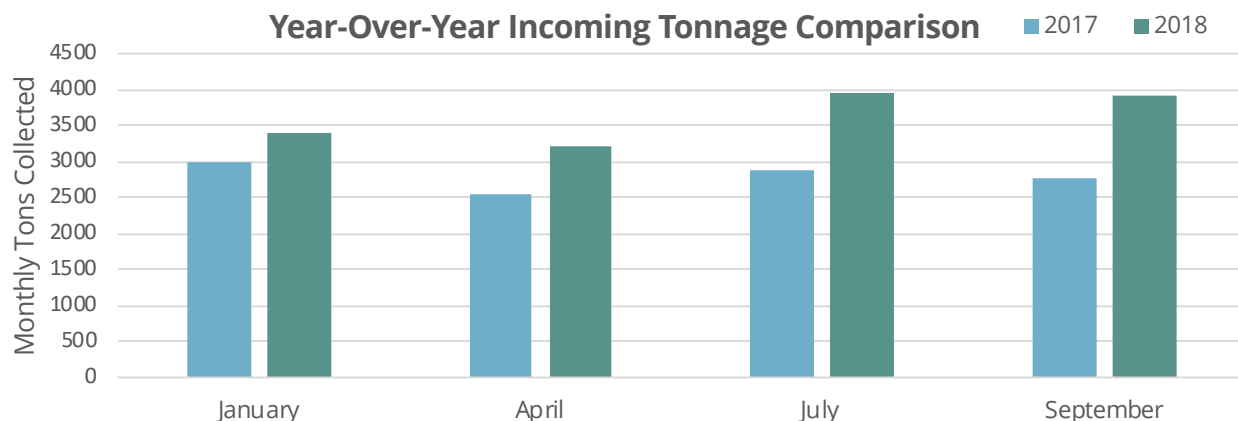
The facility creates three types of financial benefit: savings to ECUA, in the form of avoided landfill tipping fees; tipping fees collected from other municipalities and haulers; and revenues from commodity sales.

*As of September 2018, ECUA has avoided \$2.3 million in tipping fees and generated \$1.9 million in revenue, operating at a profit margin of 16% over the lifetime of the facility; in some months, the profit margin has been as high as 30%.*

This equates to an average total economic benefit of \$96 per ton for ECUA, taking into account revenue from commodity sales, savings from landfill tip fees, and an average processing cost of \$50 to \$60 per ton; the facility has averaged a \$30 per ton positive cash flow. If similar economics continue, ECUA would repay its debt and investment in the project in under 10 years.

Savings and increased revenue from recycling are being reinvested into other areas of need for ECUA, including upgrades to the county’s existing water and sewer infrastructure, which is central to the entity’s mandate and mission.

In January 2018, China’s National Sword policy took effect, restricting US exports of recycled commodities. This has introduced uncertainty into the market for mixed paper, which accounts for about 45 percent of ECUA’s outbound commodity stream. In late 2017, the facility started applying more stringent screening to its paper stream in anticipation of the policy’s enactment and holding some inventory from month to month while it looked for new domestic buyers.



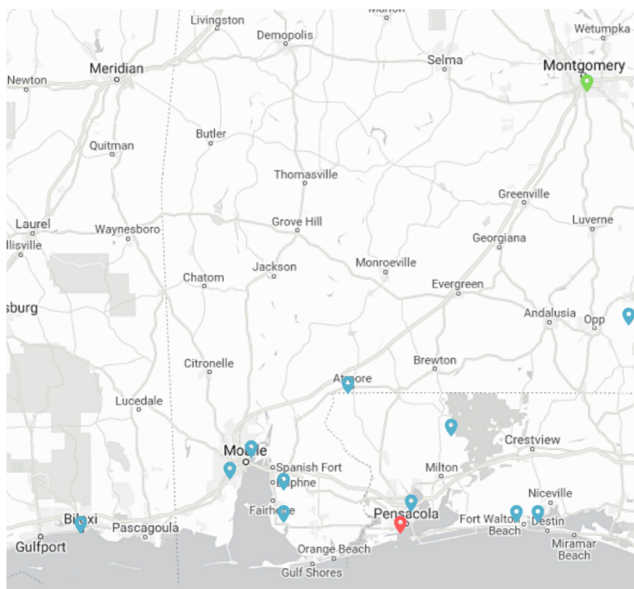
*Figure 2. The average monthly tonnage processed has increased by more than 25% over the first two years of operation*

Throughout much of 2018, commodity prices were fluctuating. While the situation continues to evolve, this initial experience underlines the importance of ECUA and its partners remaining flexible to adapt and continue to expand its markets.

## RESULTS TO DATE

Early results have been dramatic, given that ECUA was sending nearly 100% of its recyclables to landfill for more than a year prior to the MRF's opening. From January 2017 through September 2018, the facility processed more than 68,000 tons of materials, or about 85% of its projected annual capacity.

The average monthly tonnage collected and processed increased by more than 25 percent from the first to second year of operations, as the county continued to expand its own collection streams and grow its relationships with nearby municipalities and private commercial haulers. By the end of the third quarter of 2018, the facility was accepting materials from 11 other counties and cities in Alabama and Florida, and three private haulers (including one serving Biloxi, Mississippi). Thus, the facility has become an asset for a region that had not previously had a long-term or reliable solution for processing recyclables. Having a MRF in closer proximity also reduces the environmental impact of transporting materials.



**Figure 3: ECUA provides recycling services to 11 counties and cities in Alabama and Florida (blue pins). The MRF is co-located with the Perdido landfill (red). The now-closed Infinitus MRF, where ECUA previously sent their recyclables, was nearly 200 miles away in Montgomery, Alabama (green).**

Other participating municipalities are now realizing the benefits of having ECUA as a stable partner. Since partnering with ECUA, Okaloosa County, Florida, expanded their recycling program by adding 32,000 residential carts for curbside collection in June 2017. Okaloosa County has also received a rebate for their commodities for the first time in several years.

*“The facility in Escambia County is a long time coming. It’s something we’ve needed for years but there hasn’t been the political will to pull it off. For years, the cost of transporting recyclables has made recycling a cost to us, but we’ve just received our first rebate from ECUA. We’re so grateful ECUA figured out a way to make the facility work, and we particularly appreciate their commitment to environmental stewardship.”*

**- Jim Reece, Okaloosa County Recycling Coordinator**

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## LOOKING AHEAD

In its first two years of operation, ECUA has met or exceeded its goals for growing volume through new contracts with other municipalities and increased access to markets for commodities. But the impact of China’s National Sword policy has forced ECUA to continue to adapt to changes in the commodity markets. Looking ahead, ECUA is planning to increase both the volume and quality of materials processed and continue to grow the market for its commodity stream. In order to achieve these goals, ECUA is planning to implement a range of interventions, including:

- Continuing to add contracts with other municipalities, to maximize the processing capacity at the MRF;
- Identifying ways to streamline operational efficiencies at the plant, including introducing more automation to the sorting process;
- Educating households about recycling protocols in order to reduce residue and increase overall diversion rates; and
- Adding additional optical sorting equipment to generate a cleaner paper stream.

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## KEY INSIGHTS

### NUMBER ONE: MINIMIZING RISK THROUGH STRATEGIC PARTNERSHIPS

ECUA understood that the key to success for investing in its own MRF was to outsource construction and operations to experienced partners, and also identify other key municipal partners as customers. This enabled a timely and smooth launch process and reduced the operational risk of what was a new and ambitious endeavor for ECUA.

- **Integrate and outsource the facility design and construction process.** ECUA selected BHS through a competitive RFP process. Since building the first modern single-stream sorting facility in the United States in the 1980s, BHS has established a strong track-record of providing integrated, state-of-the-art recycling solutions. Its services include design, engineering, facility construction and equipment installation. This integration allows for greater efficiency and cost-savings in the design and construction phase, and also helps ensure that the facility is built to the intended specifications.
- **Identify experienced operators for the start-up phase.** Zero Waste Energy, a wholly-owned subsidiary of BHS, was selected through a separate RFP process to operate the facility during its start-up phase. This ensured a smooth transition to the operations phase, and helped ECUA learn the business of operating a MRF.
- **Reach out to other municipalities experiencing similar pain points.** While other municipalities are not partners in the operations of the facility, they do play an important role in managing the risk that ECUA took when it decided to open its own facility. Contracts to provide sortation to other municipalities have been a key part of the growth in processing volume in the facility's first year of operations, which is critical to ensuring that the project economics work. In turn, ECUA is providing a reliable option for sortation to municipalities that had previously been subject to the fluctuations in the private market for hauling and sortation, which often made recycling programs uneconomical and hard to sustain.



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## KEY INSIGHTS

### NUMBER TWO: ADAPTING TO CHANGING COMMODITIES MARKETS

The construction and early operational phases of ECUA's MRF have been smooth due to strong partnerships, but the ongoing work for ECUA and its partners is to be proactive and adaptive in the face of a changing commodities market.

- **Look for opportunities for continuous improvement.** ECUA is considering adding additional sorters to its paper stream in order to maintain the cleanliness and quality of the commodity for resale. This includes shifting more personnel to the container line, which is the least capital-intensive way to address the quality control issue, while also considering some longer-term investments in new optical sorters and robotics that would both improve the quality of the paper stream and eventually reduce the cost of labor in the facility.
- **Identify new market opportunities.** With the introduction of China's National Sword policy, ECUA has been focused on identify new domestic buyers for its mixed paper stream, as well as new international markets, and has been developing relationships with new commodity brokers.



## REPLICABILITY

ECUA's success demonstrates that local government and public authorities can be successful in building and operating recycling facilities, and makes the case for greater regional cooperation and planning in developing sortation facilities. What other municipal agencies should look for:

- **Committed municipal sponsor.** ECUA has a mandate to maintain the county's water, sewer and sanitation infrastructure, and thus was looking for a longer-term solution for its recycling program. This commitment to stewardship and improvement of the facility can also encourage other municipalities to invest in their recycling programs because they know that the infrastructure will be there for sortation.
- **Strong public support for recycling.** Escambia County's high voluntary participation rate in recycling increased the county's commitment to providing recycling collection, as well as its confidence that there would be a sufficient volume of material to make a new facility viable.
- **Access to domestic and export markets.** With the decline in exports to China, ECUA has had to seek out other end markets for their material, both from other export markets and domestic markets. This may require developing new partnerships with commodities brokers.
- **Opportunities for regional collaboration and partnership.** ECUA benefited from thinking beyond the primary jurisdiction or service area to understand who else was facing similar challenges and could be served by a new facility. They then worked to secure contracts with other municipalities or haulers as early as possible.





## **CONTACT US**

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