

Contamination in the Recycling Stream: Costs, Impacts & Solutions

FCC Environmental Services

- FCC is an international corporation that has been providing waste collection and disposal services since 1911
- FCC was awarded the City of Houston recycling contract in January 2018.
- Operations started in March 2019 and is a 15 year contract.



FCC Environmental Services

Contract Summary

- Contract term 15 years + 5 year extension.
- Recycling ALL single stream from the City of Houton which includes, paper, cardboard, glass, plastics, metals.
- Contamination limit per contract 25%



What Is Recycling Stream Contamination?

Contamination occurs when non-recyclable or improperly prepared materials enter the recycling stream, reducing the value and processability of collected materials.

Common Contaminants

- Electronics
- Non-accepted plastics (Styrofoam)
- Tanglers: hoses, wires, textiles, and bagged recyclables
- Hazardous materials: batteries, syringes, chemicals



Tanglers (Straps)

“Each shutdown increases operational cost and safety exposure”.



Battery fires, Tarps,

“A single battery fire can shut down facilities for days.”



The Financial Cost of Contamination



Nationally, contamination rates average between 15% and 25% by weight.
In Houston, contamination exceeds 42%,

What does it mean for FCC?

- **Higher processing costs:** Contaminated loads require additional sorting, increasing labor costs per ton processed.
- **Higher maintenance cost** due to equipment damage; tanglers causes jam causing costly downtime and repairs.
- **Higher disposal cost:** Rejected loads are landfilled, incurring disposal tipping fees
- **Loss of revenue** since we are not selling volume that we were supposed to recover
- **Commodity Value Reduction:** End markets discount or reject bales with elevated contamination, directly reducing MRF revenue per ton

The Financial Cost of Contamination



Contamination Impact	Additional Annual Cost
Processing Cost	\$ 824,605.20
Maintenance Cost	\$ 280,365.77
Disposal of Excess Residual Waste	\$ 317,187.14
Transportation of Residual Waste	\$ 84,109.73
Loss in Revenues	\$ 934,552.56

In Summary, FCC in 2025 had an impact of \$1,506,267 on extra cost due to the high contamination and also, a loss on revenues of \$934,552 on the Single Stream Recyclables of the City of Houston.

The total negative impact in 2025 was close to \$2.5M

Practical Solutions & Best Practices

- **Renegotiating the contract to be financially feasible for FCC to keep processing this material.**
- **Policy & Contract Provisions:** Enforce contamination thresholds through service agreements; reject or charge back loads that exceed acceptable limits
- **Public Education & Outreach:** Targeted campaigns (mailings, digital content, community events) to teach residents what is and is not accepted
- **Clearer Bin Labeling:** Simple, visual “accepted/not accepted” labels on carts and dumpsters reduce wishful recycling at the point of disposal
- **Load Auditing & Feedback:** Regular customer load audits with documented contamination rates enable data-driven enforcement and corrective action



Questions?



**We welcome your questions and
partnership.**