



LOUISVILLE METRO GOVERNMENT

Solid Waste Study

Recommendations for improving recycling,
increasing reuse, and reducing waste in
Louisville/Jefferson County.

Executive Summary

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MSW CONSULTANTS



SOLID WASTE STUDY FOR LOUISVILLE/JEFFERSON COUNTY

EXECUTIVE SUMMARY

1. Introduction

In 2013, the *Louisville Metro Sustainability Plan* established a goal to divert 90% of Jefferson County's solid waste from landfills by 2042. To identify strategies to move toward that goal, Louisville Metro commissioned a solid waste study that included extensive community stakeholder engagement, a study of Jefferson County's current waste and recycling streams, a study of waste collection systems in Jefferson County, and research on best practices used elsewhere to maximize collection efficiency and diversion. This executive summary provides an overview of the three study volumes:

- Volume 1: *Waste Characterization Study*
- Volume 2: *Solid Waste Management System Evaluation*
- Volume 3: *Solid Waste Study for Louisville/Jefferson County (the Study)*

2. Community Engagement

Community stakeholder input was vital to the development of the recommendations. Table 1 summarizes the outreach, publicity, and stakeholder engagement that was undertaken to better understand the current programs, existing infrastructure, and stakeholder priorities. Stakeholders provided valuable input regarding opportunities and challenges; goals, objectives, and guiding principles; potential programs, policies, and infrastructure strategies; and implementation strategies.

Table 1. Stakeholder Outreach and Engagement Summary

Outreach Initiative	Details
Press	Press releases by Louisville Metro Government to publicize the initiative and opportunities for community involvement.
Incorporated City Outreach	Invited the Urban Services District and all 82 other incorporated cities to take a survey regarding solid waste and recycling services.
Residential Surveys	Statistically representative survey sent to 2,000 unincorporated area households (335 households responded); online survey of residential households from anywhere in Jefferson County (242 responses).
Stakeholder Workshops	Four stakeholder workshops, attended by a cumulative 230 people representing businesses, trade associations, and the general public.
Meetings	One-on-one meetings with six local organizations (businesses and waste industry trade associations) to obtain input.

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3. Current Diversion, Disposal, and Composition

Effective diversion relies on a thorough understanding of existing diversion and disposal streams. Volume 1 presents complete results from a waste characterization study of disposed residential waste; disposed industrial, commercial, and institutional (ICI) waste; disposed construction and demolition (C&D) debris; disposed bulky and self-haul (SH) wastes; and recycled curbside residential materials. Louisville Metro also obtained data on commercial recycling, composting, and C&D debris diversion through reports from haulers and facilities.

Overall, Jefferson County achieved a diversion rate of nearly 49% and diverted nearly 834,000 tons in 2015. As shown in Figure 1, diversion rates and tonnages varied significantly across the residential, ICI, self-haul, and C&D sectors.

Figure 1. Current Diversion Rates by Sector (2015)

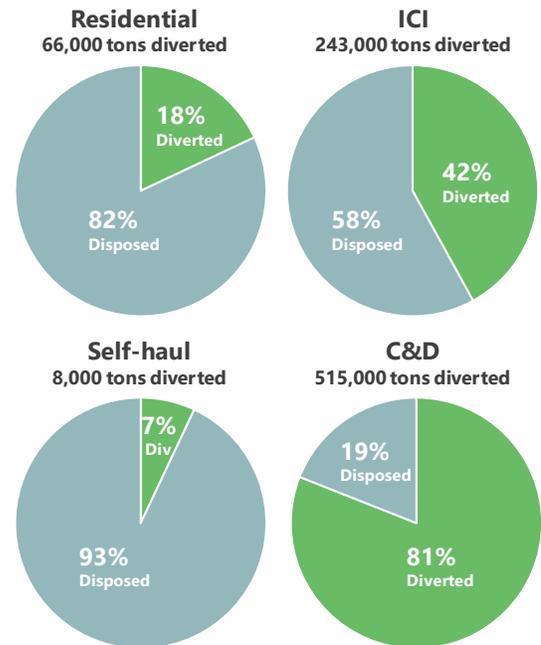
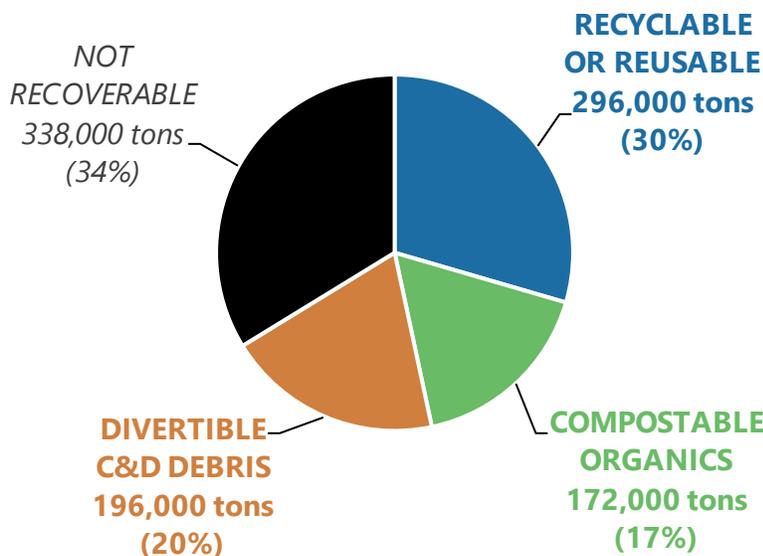


Figure 2. Materials Sent to Landfills (2015)



At the same time, two-thirds of all materials that Jefferson County residents and businesses sent to landfills were currently or potentially recoverable, as shown in Figure 2.

The Study focuses on these 592,000 tons of recoverable materials that are currently lost to landfills. Most of these recoverable materials were disposed of by the ICI sector (243,000 tons) and the residential sector (211,000 tons).

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4. Current Collection and Diversion System Evaluation

Volume 2 of this study evaluates the existing solid waste collection system, and Volume 3 includes research on best practices for diversion programs. Key findings of this analysis are highlighted below.

Strengths

Strengths of Jefferson County's current system include varied educational and outreach programs, wide availability of curbside and drop-off collection services, some standardization of waste reduction and recycling colors and messages (although not universal), and use of partnerships with groups outside the solid waste industry to divert waste.

Limitations and Challenges

At the same time, Jefferson County's solid waste system also has limitations and challenges, including:

- **Solid waste management in Jefferson County is dramatically more complicated than in comparable peer communities**, with 83 incorporated cities and a large number of homeowner associations separately managing collection services. There is a lack of standardized services across these cities and homeowner associations as well as for the 40% of households located in the unincorporated areas. Inherent inefficiencies in this system of overlapping haulers lead to higher customer costs.
- **Recycling program participation is mostly voluntary**; there is limited enforcement of regulations that do exist; and incentives to recycle and reduce waste are limited.
- **Many programs exist only at limited scale**; some educational materials are not widely distributed; and messaging is inconsistent throughout Jefferson County.
- **Recycling and organics services are available but not universally delivered to customers.**
- **Some best management practices for diversion are not currently used in Jefferson County**, such as technical assistance for multifamily property managers, universal standardization of services and messages, and product stewardship.
- **Transparent, full-cost funding mechanisms that provide incentives to recycle and reduce waste are not widely in place.** Limited opportunities exist to incentivize recycling behavior through basic user fee mechanisms because many households do not pay directly for the services they are receiving, either because the services are included as part of property taxes or homeowner association fees.

Opportunities

Key opportunities to improve the current system include:

- **Increasing efficiency and reducing the cost of collection services** in unincorporated Jefferson County by transitioning over time to competitively bid collection zones. This leads to a more

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efficient collection system that can be expanded to include recycling and composting without increasing costs to customers.

- **Expanding the reach of programs** by scaling up implementation of pilot programs to full deployment and increasing the distribution of educational materials.
- **Ensuring that all residents receive basic recycling collection services** throughout the county.
- **Developing additional incentives** (financial or regulatory) for participation in waste reduction and recycling programs.
- **Addressing materials that are present in the waste stream in large quantities**, such as textiles, food waste, and untreated wood.

5. Study Summary

The Solid Waste Study integrates the findings of the waste characterization analysis, current system evaluation, and stakeholder engagement. The recommendations are intended to move Jefferson County from its current 49% diversion rate in 2016 toward a new “90%-90%” goal. This new goal is that 90% of customers will participate in recovery programs and will divert 90% of recoverable materials by 2042.

Figure 3 on the following page provides an overview of Jefferson County’s trajectory toward its “90%-90%” goal through implementing the recommended strategies. In the short-term, implementation of the 10-year recommendations in the Study is expected to increase the County’s diversion rate to 58% and achieve an intermediate milestone of 80% of customers participating and correctly diverting 70% of recoverable materials overall. In 2026, the County will be in a strong position to decide what long-term adjustments to make to its programs.

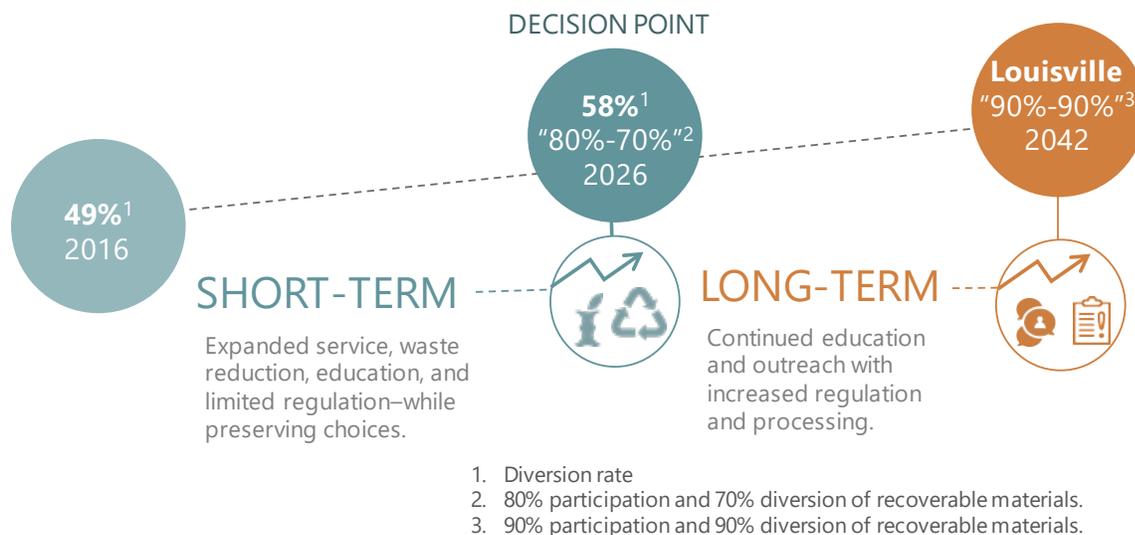
The Study adheres to eight guiding principles:

1. It results from **stakeholder input**—participants in the stakeholder engagement process assessed all included actions.
2. It **provides a foundation** for county-wide advancement toward achieving the 2042 goal.
3. It is designed to be **acceptable** and work for the county’s **private sector partners**—including haulers, recyclers, and Material Recovery Facility (MRF) operators—using existing infrastructure and leveraging their capabilities to enable them to continue providing valuable and effective services.
4. It **preserves choice**. As is currently the case, customers and incorporated cities will continue to be able to select their preferred waste hauler and recycling service providers. However, consideration should be given to selecting and using a single service provider within competitively bid collection zones of the unincorporated county.
5. The Study assures that **essential services**—waste, recycling, and yard waste collection, as well as self-haul and Construction & Demolition (C&D) facilities—**are in place** and/or accessible to all customers. Importantly, everyone will have the opportunity to recycle cost-effectively and conveniently.

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6. It is intended to provide a high level of **consistent, county-wide, quality education and outreach services**.
7. It **strives to eliminate financial and other barriers** to recycling and yard waste collection.
8. It is designed to be **affordable and cost effective** to create a solution that balances high diversion with reasonable cost.

Figure 3. Jefferson County's "90%-90%" Trajectory
90% of customers participating in recovery programs that divert 90% of recoverable materials by 2042.



Recommendations

The Study recommends an integrated package of policies, programs, and infrastructure investments covering three key program types:

- Developing and implementing new **service standards**:
 - County-wide service-level standards for single-family residential recycling.
 - County-wide service-level standards for self-haul facilities.
 - Signage standards and adequate infrastructure for the multifamily residential and Industrial-Commercial-Institutional (ICI) sectors.
- Adopting and enforcing **ordinances and contracts**:
 - Enforcement of the existing yard waste disposal ban for residential, self-haul, ICI, and Construction & Demolition (C&D).
 - Develop a process to sort and recover reusable and recyclable materials from bulky waste and junk collected by the Department of Public Works.
 - C&D ordinance that requires processing of all C&D materials.
 - Separation requirement for self-haul waste.

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- Conducting **education and marketing campaigns**:
 - Waste reduction and reuse education for residential, ICI, self-haul, and C&D.
 - Partnerships with local reuse retailers for residential and self-haul.
 - Expanded marketing programs for residential, ICI, self-haul, and C&D.
 - Technical assistance for multifamily residential and ICI.
 - Business awards and recognition.
 - Promotion of reuse of materials in road construction.
 - Promotion of green building practices.

Study Recommendations Impact

If all of the recommended programs are successfully implemented and achieve their expected outcomes, Jefferson County's diversion rate in 2026 will increase from a baseline of 876,000 tons or 49% to over 1 million tons, resulting in a 58% diversion rate. In addition to the 174,000 tons newly diverted, Jefferson County would generate nearly 6,000 fewer tons of waste than in the baseline scenario. Table 2 presents the additional tons that will be diverted or source reduced (not created in the first place) in 2026 compared to implementing no new strategies.

Table 2. Additional Tons Diverted or Source Reduced in 2026

Recommended Strategies	Additional 2026 Tons
Service Standards	41,000
Ordinances, Contracting, and Enforcement	109,000
Education and Marketing	31,000
Total	181,000

The total cost to the County to implement the recommended policies, programs, and infrastructure in the 10-year term of this Study is estimated to be approximately \$7.5 million over 10 years (2017 to 2026), measured in 2016 dollars, with an average cost of \$6 per new ton diverted or source reduced.¹

It is important to note that these costs do not include cost and/or saving impacts on collection services for individual residential customers. For example, in the short term, if the County adopted single-family service-level standards that required all haulers to provide cart-based recycling service bundled with garbage service, residential customers who do not currently subscribe to recycling would bear a new cost for the added service.

¹ A discount rate of 4.09% was applied to future costs to estimate the net present value in 2016 dollars. These costs do not include collection services cost impacts for individual residential customers. Costs to unincorporated residents could be entirely offset if the County moved to a more efficient collection system with exclusive, competitive contracts in unincorporated areas

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Based on data collected in Volume 2 (*Solid Waste Management System Evaluation*), roughly 77% of households in the unincorporated areas and 25% of households in incorporated cities outside the Urban Services District are expected to need to begin paying for new recycling services. The average cost of every-other-week recycling service is \$2 per month in incorporated cities and \$5 per month in unincorporated areas, although the exact cost to a specific household will vary given the wide range of rates charged by haulers in the current system.

Costs to unincorporated area residents could be entirely offset if the County moved to a more efficient system of competitively bid collection zones in unincorporated areas. These collection service costs are external to the County's budget of \$7.5 million over 10 years.

6. Moving Forward

To move forward, the County will need to continue working with community stakeholders as community support and collaboration are important factors to implement any study successfully.

The strategies recommended in the short-term are projected to move Louisville Metro to a 58% diversion rate in 2026 with an 80% participation rate and 70% diversion of recoverable materials. In 2026, Louisville Metro will reach a decision point at which it will need to reassess program performance, system infrastructure, waste stream components, and capture rates in order to select the next suite of strategies to reach a 90% participation rate with 90% diversion of recoverable materials. The Study includes recommendations regarding metrics Louisville Metro can use to track progress. Long-term strategies are expected to continue education and outreach efforts and to increase processing options and regulations.

Long-term strategies are also expected to increase collection system efficiency. There are significant opportunities in the long term to make the county-wide collection system more efficient and less costly to customers—and to apply the cost savings to expanding curbside recycling service. Over the long term, the Study contemplates an eventual move towards competitively bid collection zones in the unincorporated areas of Jefferson County.