

Organics Management Guide Submission

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Select the Primary Entity Type Please identify the category that best represents your project: Other

Other (please specify): Environmental Engineering/Solid Waste Consulting

Questions:

- 1. Background: Provide context for the program, project, or policy — why it was developed, when it began, and the problem or opportunity it addresses.**

Tetra Tech developed Colorado's first Statewide Organics Management Plan for the Colorado Department of Public Health and Environment (CDPHE) to serve as a comprehensive resource for evaluating and advancing organic waste diversion across the state. The Plan identified key elements, management options, and recommendations to increase organic waste diversion opportunities on a state and strategic recommendations intended to expand organics recovery opportunities at the state and regional level. It provides state agencies and local governments with a framework for assessing options, costs, and feasible strategies across Colorado's four (4) regions – ranging from the urban front range to more rural areas of the state.

Ultimately, the Plan was designed as both a policy framework for state decision makers and as a practical tool for counties and municipalities. It supports the development of organics diversion programs while also promoting the creation and expansion for finished compost and other valuable organic products, contributing to Colorado's broader climate and materials management goals.

- 2. Summary: Briefly describe the initiative, including its goals, location, and primary outcomes.**

Tetra Tech evaluated Colorado's existing organics management infrastructure and, using feedback gathered through multiple stakeholder engagement meetings, identified key barriers that may be limiting organics diversion growth in organics diversion. This assessment focused on understanding the region-specific gaps and challenges across Colorado's 4 distinct regions: Western Slope, Mountains, Front Range and Eastern Plains; as they relate to developing and maintaining successful organics diversion systems.

As part of this effort, Tetra Tech also examined how jurisdictions within Colorado, as well as states with similar geographic and demographic characteristics, are successfully diverting organic materials from landfills. This comparative analysis provided additional context for identifying elements that could be adapted to Colorado's regional conditions and policy landscape.

Key Goals and Primary Outcomes from the study:

- **Divert Organic Waste from Landfills:** Develop strategies to increase the capture and diversion of organic materials from landfill disposal to reduce greenhouse gas emissions.
- **Establish Infrastructure & Processing Capacity:** Identify the infrastructure, facility capacity and systems needed to support expanding organics processing and ensure sustainable end-markets for compost and value-added organics products.
- **Enhance Soil Health:** Promote the use of compost to build healthy soils, nutrient availability, and overall soil health with added benefit of increasing long-term carbon storage in soils.
- **Support Statewide Diversion Targets:** Align organics management strategies with Colorado's statewide waste diversion goals, based on targets established in 2021, targeting 35% diversion by 2026 and 45% by 2036.
- **Advance Circular Economy:** Encourage decentralized, community-based composting solutions that reduce transportation emissions, strengthen local systems, and retain the value of organic materials within regional markets.
- **Contamination Reduction in Organic Feedstocks:** Develop clear guidelines and best management practices to minimize contamination in collected organic materials ensuring the production of high-quality finished compost.

3. Percent of Overall Diverted Material: If available, include data or estimates on the portion of the community or organization's total diverted material no longer associated with the waste stream that this program or policy addresses.

The research found that overall, there is available capacity to manage 127,000 to 157,000 additional tons of organic materials without significant investments or facility expansions. In 2020, over 780,000 tons of organics were composted or beneficially reused, avoiding disposal in the landfill. This represents 5.8% of the total generated waste in Colorado. As part of the organic waste survey, the potential organic waste feedstocks for each of Colorado's four (4) regions were identified and analyzed to determine the amount of feedstock available. The results showed that the front range had the most potential at 2,300,000 tons per year while the eastern plains had the least potential (63,000 tons per year).

- 4. Key Program Elements or Policy Provisions: Describe the structure and main components of your program or policy. Explain the investments origins (who, how much). Please include as many of the following elements as applicable: What types of materials are being managed? (e.g., surplus recoverable foods, food scraps, wasted food. How are these materials managed? Who is responsible for managing them? (Organizations, agencies, businesses, or other entities) What products are generated, and how are they utilized or managed? (e.g., compost, animal feed, energy products) Who funds the management of these materials? (Funding sources, grants, partnerships) Who generates these materials? (Identify the origin: households, institutions, businesses, etc.)**

Tetra Tech project team conducted a statewide city/county Organics Waste survey designed to gather data on generation, transportation, and end-of-life management for five (5) organics waste stream materials including:

- 1) yard waste
- 2) food waste
- 3) agricultural materials
- 4) forest materials (in a limited capacity) and
- 5) biosolids to present a framework toward increasing organics diversion in Colorado.

The research was aimed to develop key strategies to increase regional organics diversion and processing infrastructure, identify methods to increase use of organic waste derived products by end users, including agricultural uses, and the challenges, barriers, and needs from both the Organics Waste Survey and the Stakeholder Engagement Meetings (SEMs). The research and evaluation also provide the current state of organic waste management in Colorado and hierarchy of organic waste management as it relates to potential greenhouse gas (GHG) reduction opportunities.

- 5. Regulatory Impact: Describe how laws, policies, regulations, and/or code have affected your program or project. This may include positive, negative, or neutral impacts. Consider noting which regulations apply, how they influenced implementation or operations, any challenges or barriers encountered, and how compliance requirements shaped program decisions.**

This plan aligns with and supports several broader statewide environmental and policy initiatives, including HB 22-1355 that established a statewide Producer Responsibility Program, and the Colorado Greenhouse Gas Pollution Reduction Roadmap for climate leadership, pollution reduction and clean energy transition. In addition, the framework and recommendations developed by Tetra Tech directly informed subsequent legislation, notably the SB23-191 Colorado Organic Diversion Study, which expanded the state's analysis of organics management opportunities and needs.

- 6. Measurable Increase in Supply: Include data or qualitative outcomes showing growth in collection, diversion, or reuse volumes if available.**

Although the Colorado Statewide Organics Management Plan did not include direct measurement of tonnage increases, it produced several qualitative indicators of potential and anticipated growth in the supply of recovered organic materials. These indicators reflect both increased system capacity and improved readiness among generators, processors, and end-market users to expand organics diversion.

- 7. Behavior Change: Describe whether the initiative resulted in measurable behavior change and explain how you determined this. If behavior change occurred, outline the strategies that proved most effective. Please include any available data or evidence that supports your findings.**

Although the Statewide Organics Management Plan did not directly measure behavior change through quantitative metrics (e.g., household participation rates or tonnage tracked before and after program interventions), several qualitative indicators suggest meaningful shifts in awareness, attitudes, and readiness among key stakeholder groups. These indicators emerged through the stakeholder engagement process and regional assessments conducted as part of the Plan. Some of these indicators include:

- Increased awareness of organics diversion opportunities across the 4 regions and range of stakeholders.
 - A greater willingness to adopt new practices. For example, discussions during engagement sessions showed a shift in stakeholder attitudes toward implementing or expanding organics collection services, adjusting hauling routes, improving feedstock quality, and participating in regional collaboration.
 - More effective strategies for facilitating behavior change: regionally tailored engagement, clear articulation of state climate and diversion goals.
 - Highlighting economic opportunities through demonstrating the value of end market use of compost and other organic products among jurisdictions, agricultural, landscaping and land-restoration users.
 - Stakeholders were highly responsive to examples from comparable jurisdictions within Colorado and from other states with similar demographics and geography.
- 8. Benefits and Impacts (Economic, Environmental, and Social): Describe the economic, environmental, and social sustainability impacts of the program, policy, or initiative. This may include both positive and negative outcomes. You may address impacts such as costs or savings, job creation, waste reduction, emissions, resource conservation, community engagement, equity, or public health. Please include data or qualitative observations where available and note any trade-offs or challenges.**

The Statewide Organics Management Plan was designed to support Colorado’s long term environmental, economic, and social sustainability goals. While the Plan itself does not directly implement diversion programs, its recommendations, and the stakeholder engagement process that informed them, highlight several meaningful impacts and anticipated benefits across the state’s organics management system. Qualitatively it was determined that on a per capita basis, between 13,000-23,000 tons of food could be recovered in the state.

- 9. How Stakeholder Buy-In Was Achieved: Explain how the program gained support from key stakeholders (e.g., government agencies, businesses, residents, nonprofits).**

The development of the Plan required the facilitation of five (5) Stakeholder Engagement Meetings (SEMs) to obtain critical feedback on organics management and processing throughout the state. The Project Team conducted the SEMs with the goal of sharing the Organic Survey results and obtaining stakeholder input to develop potential organics management strategies and policy recommendations to be considered in the Plan.

The Stakeholders were solicited from the following pool of participants and experts:

- Compost Facility Operators
- Organics Waste Haulers
- Local Government Officials
- Solid Waste, Recycling and Composting Association Members
- Waste Management Consultants • Soil Health Experts
- Agricultural Producers
- Interested Members of the Public

10. Stakeholders’ Perspectives and Dynamics at Play: Highlight collaboration dynamics, challenges, or differing stakeholder interests and how they were addressed.

More than 190 stakeholders participated in the engagement process, representing all aspects of the organics management value chain. Attendees included public sector officials, compost and anaerobic digestion processors, waste haulers, environmental advocates, organic waste generators, non-profit and non-governmental organizations (NGOs), agricultural representatives, landfill and waste disposal facilities, and food recovery organizations.

High-level stakeholder insights were gathered from the five regional Stakeholder Meetings described earlier, which provided region specific perspectives on operational challenges, infrastructure needs, and opportunities for advancing organics diversion across Colorado.

To ensure broad understanding of the survey findings and to maximize stakeholder input during the development of Statewide Organics Management Plan, the Project Team organized a series of virtual stakeholder meetings. These meetings were designed to gather perspectives from residents, businesses, environmental organizations, and governmental staff from across Colorado’s four (4) regions. In total five regional meetings were held:

- Front Range – 2 meetings
- Eastern Plains – 1 meeting
- Mountains – 1 meeting
- Western Slope – 1 meeting

11. Lessons Learned: Share what worked well, what didn’t, and recommendations for others seeking to replicate your approach.

The development of Colorado's Statewide Organics Management Plan yielded several important insights regarding effective statewide organics management planning. Although the work was specific to Colorado's geographic diversity, regulatory landscape, and market conditions, the methodology and core elements are broadly applicable to other states and regions interest in pursuing similar objectives.