

**Boulder County Comprehensive Plan
DRAFT -- Sustainable Materials Management Element**

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I. Purpose and Background

The Sustainable Materials Management Element (SMME) sets forth the goals and policies that will guide related regulations and management plans adopted by the county. The county’s zero waste, environmental sustainability, and related plans support the goals and policies of this element by providing detailed objectives, metrics for success, and related tools to support the county’s actions. The goals of the SMME include:

- The management and use of discarded materials with emphasis on sustainable practices and resource conservation, including full life-cycle management of materials;
- Influence on material design to reduce burdens in recycling and disposal facilities; and
- Waste reduction and reuse.

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The SMME shall help inform county policies and decisions related to growth and development that pertain to waste, including recycling, composting, discards, disposal, reuse, and waste reduction/repair facilities, programs, and operations.

a) History

Boulder County has had a commitment to responsible and sustainable management of its waste streams since the mid-1970s, with several important milestones occurring since that time:

- The original Solid Waste Element¹ of the *Boulder County Comprehensive Plan* was adopted in 1978.
- The general planning objectives which were adopted in 1978 and extensive public comment, were the basis of the county's 1982 Solid Waste Plan.
- The 1987 update of the Solid Waste Element included new goals and policies.
- The 2010 *Boulder County Zero Waste Action Plan* which set forth "a vision for attaining Zero Waste 'or darn near' throughout Boulder County, including unincorporated area as well as municipalities, by 2025."
- The 2012 Environmental Sustainability Plan which outlines many specific zero waste goals.

b) Definitions

Energy Recovery - Energy recovery from waste is the conversion of non-recyclable waste materials into usable heat, electricity, or fuel through a variety of processes, including combustion, gasification, pyrolyzation, anaerobic digestion and landfill gas recovery. This process is often called waste to energy.² Any energy recovery projects should be focused on those discards still remaining after other source separation efforts have been maximized.

EPA's Waste Management Hierarchy - The county's commitment to Sustainable Materials Management follows the U.S. Environmental Protection Agency's (EPA's) waste management hierarchy (see Figure 1). This hierarchy maps the most preferred strategies as, in order: source reduction and reuse, recycling and composting, energy recovery, and waste treatment and disposal.³

Hazardous Waste - Hazardous waste is a waste with properties that make it capable of having a harmful effect on human health or the environment. Hazardous wastes can be liquids, solids, or contained gases. They include, but are not limited to, by-products of industrial, manufacturing and extraction processes (e.g., waste fluids from hydraulic fracturing), discarded used materials, or discarded unused commercial products (such as many household cleaning products, pesticides, and paints)

Sustainable Materials Management - The EPA describes Sustainable Materials Management (SMM) as "a systemic approach to using and reusing materials more productively over their entire life cycles. It represents a change in how our society thinks about the use of natural resources and

¹ Re-named as the Sustainable Materials Management Element (SMME) in 2017 to reflect the broader scope and intent of the county's approach to waste and materials management.

² US EPA, Energy Recovery from the Combustion of Municipal Solid Waste (MSW), www.epa.gov/smm/energy-recovery-combustion-municipal-solid-waste-msw accessed March 13, 2017.

³ US EPA, Sustainable Materials Management, www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy, accessed October 10, 2016.

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environmental protection... By looking at a product's entire life cycle— from materials extraction to end-of-life management —we can find new opportunities to reduce environmental impacts, conserve resources, and reduce costs.”⁴

Figure 1: U.S. EPA’s Waste Management Hierarchy



II. Goals and Policies

Goal 1. Promote and Uphold the County’s SMM Values. Boulder County promotes SMM in its actions, policies, and decision making county-wide. The county values SMM for its environmental protection, including greenhouse gas emission mitigation, its economic soundness, and its contribution to community vitality and quality of life. SMM prioritizes diversion practices that best preserve the inherent value of the resources used.

Policies

SMM 1.01 **Support for SMM Efforts.** Boulder County supports efforts that promote SMM (consistent with adopted plans and agreements) in the following areas: environmental stewardship, product stewardship, resource conservation, pollution prevention, mitigation of adverse climate impacts, and protection of public health. The county will strive to support initiatives that align with SMM including those related to facilities, programs,

⁴ US EPA, Sustainable Materials Management, www.epa.gov/smm/sustainable-materials-management-basics, accessed October 7, 2016.

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granting mechanisms, policy mechanisms, local markets, education and outreach.

- SMM 1.01.01 To the extent possible, the county shall support land use decisions that align with SMM while balancing other regulatory and policy priorities, e.g., zoning amendments, and/or property acquisitions for facilities in suitable locations. SMM values, functions, and impacts to county lands shall be considered in the review of development proposals submitted through the Land Use department.
- SMM 1.01.02 To the extent possible, the county shall support SMM from public, private, and non-profit sector organizations, including development of local end-markets designed to reuse or repurpose materials.
- SMM 1.01.03 Boulder County may acquire real estate interests in land for SMM functions, if periodic feasibility research and planning studies indicate the need for county-owned land for viable SMM facilities or operations.
- SMM 1.01.04 Boulder County shall minimize resource use and waste streams by encouraging growth of markets for local products, and facilitating the local processing and reuse of discarded waste materials within the county.

SMM 1.02 **SMM in County Operations.** Boulder County shall implement SMM practices in its own operations of its facilities, purchasing, and generation of waste and discards. Furthermore, the activities of county departments shall promote and reflect the values of SMM.

Goal 2. Facilitate SMM. Boulder County purposefully facilitates SMM activities taking place across the county through county-wide planning, management, and education functions, including its active role in providing zero waste services.

Policies

SMM 2.01 **Facilitation of SMM Activities.** Boulder County supports various types of materials processing, management, and diversion-related technologies, processes, and activities to reach its zero waste and SMM goals in a fiscally responsible manner.

SMM 2.02 **Scope of County Plans and Policies.** Boulder County prepares management plans and policies as appropriate for SMM facilities, programs, education, and activities and uses the plans and policies to manage SMM resources and assets. The scope of planning and policies shall encompass:

- a. The establishment, maintenance, responsible stewardship, and needed improvement of all current and future SMM related facilities county-wide.
- b. Planning for both short- and long-range forecasting of capacity needs for capital, expansion, and operation and maintenance needs, as well as address criteria in Goal 3;
- c. Forecasting ownership and operation scenarios and compensation formulas for all facilities to optimize environmental stewardship, materials recovery, and operational efficiencies, and ensure fiscal stability;

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- d. Providing oversight and regulation of private, public, and non-profit sector collection, processing, management, and end-marketing of discarded, recyclable, compostable, and reusable materials;
- e. Convening appropriate parties to consider and develop intergovernmental agreements (IGA) for SMM initiatives;
- f. Setting performance goals and level-of-service standards for all county-owned SMM facilities, programs, or operations;
- g. Planning for zero waste and SMM using applicable criteria (see Goal 3 for criteria), data on waste generation, population, and waste trends; land use constraints; and in the context of the Comprehensive Plan and the county's goals and values (e.g., addressing the use of landfills in adjacent counties – monitoring lifespan and status of these landfills);
- h. Structuring responsible financing mechanisms for SMM facilities (see SMM Policy 2.04);
- i. Clearly defining the management and operational roles of county staff and the guidance and input roles of the county's Resource Conservation Advisory Board (see Goal 5).

Information to Implement in Sidebar

For reference, the county owns and operates the following facilities:

- **Mountain Transfer Station & Recycling Center**
- **Drop-Off Centers**
- **Boulder County Recycling Center**
- **Construction and Demolition Facility**
- **Debris Management Sites**
- **Hazardous Materials Management Facility**

SMM 2.03 **Monitoring and Evaluating Innovation in Approaches.** Boulder County monitors and evaluates waste, recycling, composting, and related SMM policies and activities both locally and more broadly, to inform management decisions. The county seeks to be innovative in its approaches to SMM, using knowledge of current conditions, latest science, best technologies, and best management practices.

SMM 2.04 **Financing and Planning Mechanisms.** Boulder County shall engage in planning activities to facilitate the development of SMM facilities and policies.

SMM 2.05 **Awareness, Education, and Outreach Related to SMM.** Boulder County shall promote awareness of SMM activities and initiatives taking place across the county through communication methods designed to reach a broad spectrum of the public, including waste generators, residents, stakeholders, organizations, and businesses. Boulder County shall reach out to the public through educational programs, volunteer opportunities, special events, regular interactions at sustainable materials management facilities, and other appropriate educational venues.

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Goal 3. Maintain and Apply Criteria for Implementation. Boulder County maintains and applies criteria for ensuring SMM principles are reflected at all stages of facilities development, planning processes, and policy implementation.

Policies

SMM 3.01 **Criteria for Evaluating SMM Efforts.** Boulder County shall apply the following criteria when evaluating SMM plans, policies, facilities, programs, and other initiatives in Boulder County. The county, together with its partners will strive to ensure consistent monitoring and utilization of best available data. Specifically, any initiatives reviewed shall:

- a. Mitigate or reduce waste (e.g., waste prevention and diversion to reduce mining of virgin resources);
- b. Ensure that facilities or operations are planned, located, designed, and operated to prevent and divert unacceptable air, water, noise and visual pollution, including assessing the positive and negative environmental impacts of the transport of materials, workers, etc. to and from a facility or operation;
- c. Measure and seek to reduce climate change (or carbon) footprint for SMM activities by reducing adverse greenhouse gas emissions;
- d. Prevent and divert waste; reduce local emissions from mining, materials extraction and processing; and reduce transportation-related emissions during the full life cycle of materials used, reused, and processed at end of life;
- e. Use sequestration to reduce carbon impacts where applicable (e.g., using compost to replenish depleted soils);
- f. Demonstrate, based on a life-cycle analysis, that the initiative(s) results in the least adverse environmental and human health impact from ‘cradle to grave’ of the options available;
- g. Eliminate or reduce toxic or otherwise hazardous materials used in products and practices;
- h. In order to ensure the responsible end-of-life management of toxic or hazardous waste, and recognizing the populous nature of the County, all such waste must be neutralized or otherwise treated to remove the toxic and/or hazardous components and discharged according to national, state, and local regulations;;
- i. Demonstrate the economic/fiscal and social impacts (e.g., job creation, costs to county, revenue potential, environmental justice, funding mechanism/debt service, etc.) of SMM initiatives and ensure long-term funding mechanisms are viable;
- j. Ensure accessibility and affordability of all SMM-related facilities and programs to all residents county-wide;
- k. Ensure public education/outreach mechanisms are included in fiscal and operational planning;
- l. Demonstrate availability of fiscal and other needed resources for appropriate enforcement; and

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- m. Seek to manage discarded materials as locally as possible to provide the highest benefit to the local economy.

SMM 3.02 **SMM and Green Building Practices.** SMM and green building practices for both new and retrofit construction shall be incorporated into policies, regulations, and requirements for both residential and commercial building design and materials selection, and construction and maintenance practices shall:

- a. Ensure building longevity and resilience;
- b. Prioritize and provide for safe deconstruction and materials reuse/recycling at end of life;
- c. Discourage demolition of otherwise safe and functional structures;
- d. Promote other sustainable initiatives such as energy efficiency and water conservation.
- e. Align with circular economy principles and practices (e.g., life-cycle asset management analyses, collaborative consumption, products designed for longevity, performance and service systems and incentivized returns, economic vitality for resiliency, and extended producer responsibility);
- f. Address issues of ‘new’ materials or products entering the waste stream for which reuse and/or diversion end markets have not yet been developed; and
- g. Collect and report data on SMM activities.

Goal 4. Gather Input and Collaborate with Stakeholders and Partners. Boulder County actively engages the public to solicit input on policies and practices related to SMM and resource conservation.

Policies

SMM 4.01 **Resource Conservation Advisory Board.** The county commissioners shall appoint a Resource Conservation Advisory Board (RCAB) to provide a forum for public input and advice to the Board of County Commissioners and the Resource Conservation Division regarding SMM plans, programs, and actions.

SMM 4.02 **Input from Public and Other Stakeholders.** Boulder County shall invite input from a broad spectrum of stakeholders relevant to the policy and management issues under consideration. Boulder County shall periodically solicit input from, and provide updates to municipalities and stakeholders on SMM priorities, and may seek and consider public input about SMM initiatives and management through a variety of informal and formal engagement tools.

SMM 4.02.01 Boulder County will actively seek input from interested community members to ensure policies and initiatives are based on a sound understanding of constituents’ and stakeholders’ short- and long-term needs and operational context.

SMM 4.03 **Public Hearings.** County land acquisitions and capital improvement plans for SMM facilities, along with county zero waste management plans and policies, require approval by the Board of County Commissioners, after a public hearing and after review and input by the RCAB.

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SMM 4.04 **Collaboration with Stakeholders.** Boulder County shall collaborate with businesses, organizations, non-profits, educators, and other partners to promote the county's SMM values and practices.

SMM 4.05 **Collaboration with Authorities.** Boulder County shall work closely with federal, state, and local authorities to promote and achieve SMM goals (e.g., state-level product stewardship legislation).

SMM 4.05.01 Boulder County shall strive for harmonization of goals, policies and initiatives at the local level (e.g., policies regarding discards, waste, diversion, reuse, etc.) to ensure they do not serve as disincentives to one another, but rather complement one another.

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