DRAFT

Los Alamos Resileincy, Energy and Sustainability Task Force
Waste Consumption and Natural Resources Subcommittee
Waste Management, Recycling and Composting Update

Introduction

Solid waste in Los Alamos is managed by the Los Alamos County Environmental Services Department (ESD). The ESD provides trash, recycling and yard trimming collection services to all residents and trash and recycling collection for commercial entities in the county. This includes 7,200 households, 333 commercial dumpsters in service and a 7 day per week transfer station operation. In 2019, annual residential waste collected represented 4,889 tons, commercial waste was 2,890 tons. The diverted waste (recycled, reclaimed, or composted) is approximately 21,194 tons/annually or 56% of all waste generated. In addition, the municipal solid waste, which includes all commercial, residential and transfer stations is 16,509 tons and is shipped to the Rio Rancho landfill at a cost to the county of approximately $1,000,000 in 2019, which includes transportation and disposal. In addition, the Rio Rancho is estimated to close in the next 5-7 years and the next landfill will be a further distance and may increase the cost of hauling and disposal.

The Environmental Services Department submits a monthly report on waste diversion and GHGe benefits and costs of these activities in their monthly sustainability report HERE. You can also read the 2017 Environmental Sustainability Plan HERE.

Recommendations

For the Los Alamos County waste recommendations, the LARES Task Force is recommending a Zero Waste approach, which was adopted by the US conference of Mayors in 2015. Zero waste is a philosophical and programmatic strategy to minimize the environmental impact of materials disposal. Ideally, all materials and products would be reduced, or re-used, re-purposed, recycled or composted. This strategy prioritizes care of hazardous materials, so that disposal or recycling of these is done to have a minimal (ideally zero) impact on the natural and human environments. Los Alamos County has the opportunity to be a leader in the work of Zero Waste through community commitment to reducing materials that end up in the waste stream, reusing or re-purposing materials, and recycling. This is an innovative, socially connected community of scientists, nature enthusiasts, educators and people dedicated to service and innovation. We are also the healthiest county in the United States. With these attributes, we are well-poised to tackle the complexities and challenges of shifting toward a future that embraces Zero Waste practices. It is currently estimated that 21,194 tons of material which include concrete and asphalt, recycle, yard trimmings, batteries, electronics, tires, pallets, metal, cardboard, mixed recycle, oil and antifreeze diverted from the landfill in 2019 . While 17% of waste represents food waste , 491 tons (37%) comes from commercial enterprises and 831 tons (63%) comes from residential homes.

Time frame/Smart Goals:

1. Decrease (over time to 100%) the amount of municipal solid waste (MSW) that is deposited in a landfill

a. Increase diversion rate of materials to 90% of waste is diverted from landfill by ? Year? (example from LA : 90 % by 2025, 95% by 2030 and 100% by 2050)

b. Reduce Municipal Solid Waste Generation per capita by 15% by 2030, including phase out of single use plastics by 2028 (LA example)
c. Eliminate organic waste going to landfill (by 2028?)
d. Increase proportion of waste products and recyclables productively used or repurposed by ?% in 2025 and ??% by 2035
e. Increase commercial and industry participation in county goals by ??% per year - to 100% by 2030

Planning

- **Strategy – 1 Integrate concepts of Zero Waste into all aspects of LAC. This includes education, programs and practices as well as supported outreach on Zero Waste goals, strategies and benefits.**
    - Tactic 1: with resource allocation (staffing/consultants) Implement policies to support reduction of single use materials, waste produced and support repurposing and recycling where indicated.
        - Considerations
            - Responsible waste management systems (trash, compost, recycling)
            - Improve county recycling and compost operations - to increase capacity
            - Hazardous waste reduction best practices
            - Disaster planning to include waste reduction strategies
    - Tactic 2: Implement waste reduction, composting and recycling at all county facilities, programs and household services.
        - Considerations
            - Policies and codes need to be reviewed for opportunities to support Zero Waste goals.
    - Tactic 3: Conduct waste education and outreach on Zero Waste and programs, practices and recommendations for individual, commercial and county/public entities to adopt this framework.
        - Considerations:
            - Support/incentivize local commerce innovations
            - Green business awards
            - Promote Zero Waste Outreach at Events (support needed)
    - Tactic 4: Improve recycling practices - through 100% recycling and at the same time, decreasing reliance on single use materials.
        - Considerations
            - Use apps and programs like the recycle coach
        - Improve on recycling education to include environmental footprint, so people understand the % of materials that are actually transitioned to usable products.
        - Look for ways to reuse materials that are generated in Los Alamos county
        - Support commercial recycling through policies, codes and services that improve recycling practices.
    - Tactic 5 Improve refrigerant management policies and recycling

        - Every refrigerator and air conditioner contains chemical refrigerants that absorb and release heat to enable chilling. Hydrofluorocarbons (HFCs), the primary replacement for ozone depleting substances, spare the ozone layer, but have 1,000 to 9,000 times greater capacity to warm the atmosphere than carbon dioxide. In May 2021, the U.S. Environmental Protection Agency (EPA) proposed its first rule under the American Innovation and Manufacturing (AIM) Act of 2020 to phase down the production and consumption of HFCs.
        - Consequently, adopt policies and practices as outlined in Project Drawdown to:
            - avoid leaks from refrigerants
            - destroy refrigerants at end of life, both after the adoption of alternatives to HFC refrigerants such as propane, isobutene, ammonium, etc.
- Tactic 6 Improve household hazardous waste reduction and safe deposit.
    - Household hazardous waste (HHW) includes cleaners, solvents, automotive fluids, batteries, garden chemicals, and other materials that pose hazards to solid waste workers and the public. Proper disposal is necessary to prevent injury, illness, or environmental contamination. Although HHW is excluded from Subtitle C of the Resource Conservation and Recovery Act, it is regulated under Subtitle D of this law as a solid waste. In other words, household hazardous waste is regulated on the state and local level.
    - Considerations:
        - Reduce purchases of products that contain hazardous ingredients for viable alternatives. Advance collection programs, events, and opportunities. Utilize information resources from the EPA, NMED, and NM Recycling Coalition.
        - Battery use, recycling and disposal
        - Pesticide sale, use and safe disposal
- Tactic 7 Encourage recycling and repurposing of construction materials for construction projects in Los Alamos.
    - Considerations:
        - Construction material re-purposing, for example the Habitat for Humanity Re-Store.
        - Sustainable Materials Management approaches for C&D materials should be considered. These include best practices for for Reducing, Reusing, and Recycling Construction and Demolition Materials: https://www.epa.gov/smm/best-practices-reducing-reusing-and-recycling-construction-and-demolition-materials#buytake, Design for Disassembly https://kingcounty.gov/~/media/depts/dnrp/solid-waste/green-building/documents/Design_for_Disassembly-guide.ashx?la=en, and NM Construction & Demolition Recycling Guide, https://www.recyclenewmexico.com/pdf/C&D_Guide_2010_FINAL.pdf.
        - Use asphalt and concrete in projects in Los Alamos. Sustainable materials management (SMM) is a systemic approach to using and reusing materials more productively over their entire life cycles. Technical guidance, tools, and models such as: EPA SMM Strategic Plan Examples:

- https://www.epa.gov/smm/epa-sustainable-materials-management-program-strategic-plan-fiscal-years-2017-2022, Road Ahead report https://www.epa.gov/sites/production/files/2015-09/documents/vision2.pdf, Waste Reduction Model (WARM) https://www.epa.gov/warm/basic-information-about-waste-reduction-model-warm should be explored for applicability. Feasibility of materials and waste exchanges through Reuse Centers, which are markets for buying and selling reusable and recyclable commodities, should be investigated.

- Tactic 8: Reduce Organic Waste diversion
  - Goals: 0% of compostable materials will be sent to landfill
  - Increase composting of Yard trimmings to 100% currently, 70% of households have yard trimming carts
  - Implement food waste composting – community compost pick up for food waste, policies for public, county and commercial food waste reduction and composting
    - Examples:
      - Restaurants: compostable to go containers and utensils
      - Households, apartments, schools and businesses will have compost pick up
      - More backyard composting kits
      - Partner with schools, churches, extracurricular activities and nutrition services to reduce food waste through left over challenges
      - Guerilla food app – for fruit trees and Gaia's pantry project
- Tactic 9: reduce reliance on single use items
  - Implement best practices that support reusable materials
  - Integrate water filling stations through downtown
  - Conduct a community campaign to bring own cups everywhere
  - Work with grocery and food vendors to reduce impact of "to go"
- Tactic 10: support reusing, repurposing and repair
  - Exchange center for sharing of reusable household items
  - create a re-maker space with community to fix and repair and trade
- Tactic 11: Incentivize, fund/support "Waste to Energy Solutions"
  - Considerations:
    - LA county could look into the use of anaerobic digestors for methane recovery - refinement and pipe into other processes. Organic wastes can emit fugitive methane gases as they decompose. Methane creates a greenhouse warming effect 34 times stronger than carbon dioxide over a century. One option to control decomposition of organic waste is in tanks called anaerobic digesters. They harness the power of microbes to transform scraps and sludge and produce two main products: biogas, an energy source, and solids called digestate, a nutrient-rich fertilizer. A potential source would be the closed landfill. Overall, landfills can be a top source of methane emissions, releasing 12 percent of the world's total. Landfill methane can be tapped, captured, and used as a fairly clean energy source for

generating electricity or heat, rather than leaking into the air or being dispersed as waste. The climate benefit is twofold: prevent landfill emissions and displace coal, oil, or natural gas that might otherwise be used.