



Recycling and Zero Waste

Decomposition of solid waste is a significant contributor to greenhouse gas emissions. The City of Albuquerque is taking significant steps to reduce its waste through the adoption and implementation of a Zero Waste plan.

To reduce greenhouse gas emissions, Mayor Chávez has committed to the goal of closing the Albuquerque landfill by 2030 by diverting all material out of the waste stream or into a system to convert the waste to energy. This is a bold and ambitious goal.

In Fiscal Year 2009, the City landfilled over 700,000 tons of garbage—roughly 1,900 tons per day:

- Municipal collections comprised 53% of the total landfill. Of this amount, 45% is from residential customers and 55% is from commercial customers.
- Less than 7% of the residential waste stream is diverted by the existing residential curbside recycling program.
- Because there is no existing City-operated commercial recycling program, the City’s overall landfill diversion rate—the amount of wastes diverted from the landfill through recycling or composting—is just 3.8% for all City-run programs.

In order to achieve the Zero Waste goal for Albuquerque, aggressive steps need to be taken now. Zero Waste can be achieved by recycling existing waste and reducing the need for recycling by reducing and reusing existing materials. Many of the following strategies do not prescribe a solution but recommend a framework for communities to find a solution.

What is Zero Waste?

Zero waste is based on the concept that wasting resources is inefficient and that we should work to use our natural resources efficiently. Zero waste requires that we **maximize our existing recycling and reuse efforts**; ensure that we **design products for the environment**; and, ensure the potential to repair, **reuse or recycle products**.

A successful zero waste initiative requires that we **redefine the concept of “waste”** in our society. In the past, waste was considered a natural by-product of our cultures. We must also **improve upon recycling and pollution prevention strategies** by providing a visionary endpoint that leads us to take larger, more innovative steps.

Strategy One

Recycling Program—Implement a commercial recycling program and increase residential recycling to achieve a recycling rate of 30% by 2020, exclusive of composting (see strategy three).

Strategy Two

Product Stewardship & Extended Producer Responsibility—By 2020, provide incentives and motivation strategies to retailers and manufacturers doing business in Albuquerque to take back products and packaging at the end of their useful life.

Strategy Three

Organic Waste Management

Implement a comprehensive organic waste management system for both residential and commercial customers by 2020.

Strategy Four

Materials Exchange—Develop a materials exchange program and resource center where residents and businesses can donate unwanted but reusable materials for reuse by classrooms and non-profits.

Strategy Five

Waste-to-Energy—Develop a waste-to-energy program that consumes no more than 50% of the waste stream by 2020.

Strategy Six

Partnership/Coalitions

Create working partnerships with producers and retailers, educational institutions, commercial and residential sectors, government and other non-profits to achieve zero waste and recycling goals by 2020.



1. Recycling Program—Implement a commercial recycling program and increase residential recycling to achieve a recycling rate of 30% by 2020, exclusive of composting (see strategy three).

Accomplish the following short-term actions by 2012

- Develop and implement public outreach and education, including creating an elementary education program about recycling similar to the Albuquerque/Bernalillo County Water Utility Agency's (ABCWUA) recent "1-2-3-2-1" watering initiative.
- Construct a new materials recovery facility within 12 months of adopting the Plan. The facility will be designed for planned growth to process 300,000 tons per year. Consider initiating the development through a public-private partnership.
- Create an advisory action committee comprised of stakeholders such as the business community, private recyclers, haulers and non-profits. The committee will develop a comprehensive commercial recycling collection program and address the role the City should play in collecting recyclables and providing program incentives.
- Implement a "pay as you throw" program in conjunction with a cart-based recycling program for residential refuse customers.
- Require rubberized asphalt (utilizing tires) in all Albuquerque paving projects. Seek a manufacturer of rubberized asphalt to relocate to Albuquerque.
- Develop and adopt a Zero Waste plan, including researching and evaluating incentive programs for reuse and recycling by 2012.

In order for curbside and landfill recommendations to be successful, patrol and enforcement against illegal dumping is critical.

What is a pay as you throw program?

A pay as you throw program allows customers to choose the size of the refuse cart needed among several sizes.

This program provides an incentive to reduce wastes because a larger cart costs more and a smaller cart costs less.

The initiative encourages customers to recycle more and dispose of less waste.

Accomplish the following mid-term actions by 2020

- Revise and update the 2012 Zero Waste plan by 2020.
- Develop a resource recovery park to increase the type and amount of materials collected for reuse and recycling by 2020. A resource recovery park is a facility that collects recyclable materials that are not accepted in a curbside recycling program.

Ongoing actions

- Develop a marketing plan to continually increase recycling efforts.
- Develop and maintain a Green Resource Guide (reuse and recycling resources database) for all City of Albuquerque Solid Waste residential and commercial customers available online, in the water bill and at all libraries.
- Address the following waste streams: yard waste, plastic recycling, paper recycling, aluminum and tin recycling, cardboard and glass.

Measuring Waste Reduction and Recycling Efforts

Many of the Recycling and Zero Waste recommendations are collaborations with multiple groups, which requires a standardized method for measuring waste reduction and recycling efforts. The Recycling and Zero Waste workgroup recommends the adoption of the U.S. Environmental Protection Agency's *Measuring Recycling: A Guide for State and Local Governments* publication as a standard.

Readers may learn more by downloading the guide from: epa.gov/wastes/conservation/tools/recmeas/docs/guide.pdf.



Synergy with Business,
Industry and Carbon
Offset Opportunities

What is a Beverage Container Deposit Program?

A beverage container deposit program requires the consumer to pay a deposit on beverage containers that can be later redeemed.

Once collected, beverage containers are recycled. A beverage container deposit program encourages consumers to recycle beverage containers and reduces littering.

2. Product Stewardship and Extended Producer Responsibility—By 2020, provide incentives and motivation strategies to retailers and manufacturers doing business in Albuquerque to take back products and packaging at the end of their life.

Given the large number of programs to be implemented in the Zero Waste plan and the complexity of a product stewardship and extended producer responsibility initiative, a realistic implementation schedule could take until 2020 to be fully implemented.

Accomplish the following short-term actions by 2012

- Develop an advisory action committee comprised of stakeholders from state, business community, private recyclers and non-profits to propose a comprehensive beverage container deposit bill by 2012.
- Develop and expand a voluntary “take back” program for toxic waste as well as a retail program for items not covered by the curbside recycling program.
- Establish City procurement guidelines to include local preferences. Such contracts will require businesses to use “take back” packaging (e.g., furniture and computers) by 2012 or upon contract renewal. The City will encourage voluntary compliance if the contract is in place before 2012.
- Ensure that City concessions contracts include provisions that vendors develop and implement a sustainability plan to include 30% of all materials sold to be in recyclable packaging, take back these products for recycling and use recyclable and compostable products by 2012 or upon contract renewal.
- Encourage voluntary compliance with these guide lines if the contract is in place before 2012.
- Establish reporting requirements for materials diverted from the waste stream through product stewardship and extended producer responsibility. The City will require concessionaires and City suppliers to complete the reporting requirements.

Accomplish the following mid-term actions by 2020

- Investigate and implement product stewardship and extended producer responsibility incentives for retailers and manufacturers by 2020.
- Review reporting requirements for materials diverted from the waste stream through product stewardship and extended producer responsibility.
- Expand this program to include retailers and manufacturers.

Ongoing actions

- Include a section in the Green Resource Guide to address product take-back for glass containers (e.g., a regional glass crushing plant), plastic bags, tires, electronic waste and toxic waste (including all fluorescent bulbs and lamps).



**Synergy with Food
and Agriculture**

3. Organic Waste Management—Implement a comprehensive organic waste management system for both residential and commercial customers by 2020.

In mid July 2008, the City Solid Waste Department hired a consultant to analyze the residential waste stream. Current estimates are that organic waste comprises up to 30% of the residential waste stream (9-16% from yard debris and 10-13% from compostable food waste). These figures do not include apartments or commercial food waste.

Because landfilled food waste has a much higher greenhouse gas potential, both residential and commercial food composting and collection initiatives are strongly recommended to reduce greenhouse gas emissions and avoid the permanent loss of landfill space and nutrient resources.

Accomplish the following short-term actions by 2012 (residential)

- Investigate and assess existing nationwide education programs within 12 months of adopting the Plan.
- Implement a “green” tipping fee by discounting the regular tipping fee by \$2.00 for segregated clean green loads at the City’s convenience centers within 12 months of adopting the Plan.
- By 2012, require all landscaping companies to segregate clean green loads, either by composting themselves, or by bringing to a composting facility.
- Ban all clean green loads from landfills by 2012.
- Implement a composting bin rebate program within 12 months of the Plan’s adoption. Ensure that a maximum of \$40.00 towards the cost of a bin is rebated to the resident (not including tax and shipping costs).
- Design the composting bin rebate program so that residents can buy a composting bin or worm bin from any retail store. Residents would obtain a proof of purchase (itemized receipt), then request a rebate by sending their original itemized, dated receipt along with proof of being a City of Albuquerque Solid Waste customer. The customer’s rebate will be a credit on a future refuse bill.
- Residents participating in the composting bin rebate program will be strongly encouraged to attend a City-organized composting workshop.
- Provide one rebate per household for new composting bins or worm bins for receipts dated after the program’s implementation date.
- Evaluate the effectiveness of the composting bin rebate program and food waste collection programs one year after implementing the programs.
- Perform the program evaluation by providing a survey to participants within 12 months of the Plan’s adoption.
- The survey should include questions that assess the ease of the program, the program’s value and the estimated gallons of green and food waste composted. The survey will also solicit suggested program improvements.
- Based upon the survey and outcome of the residential composting bin rebate program, determine whether or not a curbside green waste collection program that uses carts should be implemented for residents. If a curbside collection program is deemed necessary, begin implementing the program in targeted green waste collection areas with no xeriscape restrictions (NE, SE, NW, SW) by 2012.

What is a tipping fee?

A tipping fee is the fee charged at the gate of a landfill or waste convenience center.

What is a composting bin?

Backyard composting can take place with or without a bin, but a bin keeps the site neat and contained. Bins vary in design by manufacturer with the objective to hold compostable materials in a mass that is about 3’ to 5’ in each direction. Smaller sizes tend to not develop enough heat, and larger sizes may not allow adequate penetration of air and water.

What is a worm bin?

A worm bin is specifically constructed for composting with worms, called vermicomposting.

What is a food waste collection program?

When collected separately, food waste can be sent to a composting facility and made into a soil amendment. Food waste typically makes up nearly 15% of the commercial waste stream by weight.



Synergy with Food
and Agriculture

Accomplish the following mid-term actions by 2020

Residential

- If the curbside green waste program is implemented, the City must develop a means to collect residential compost and organic waste.
- City leaders will evaluate the input, capacity, processing cost and location of a composting facility.
- If the City decides to create a curbside green waste program, an advisory committee should investigate uses for the compost waste collected through the program. Some uses for compost include City parks and medians, roadside erosion mitigation and use in the BioPark and community gardens.
- Create an ancillary market by selling compost and mulch. The proceeds from the sales of compost and mulch could be used to offset the composting facility's operating expenses.

Commercial

- Create an advisory action committee comprised of the business community, private composters and non-profit organizations to develop a comprehensive commercial food waste collection and composting program by 2020. The committee will address the role the City should play in the commercial food waste collection and composting program and consider incentives for this voluntary industry initiative, such as an annual awards program.
- Evaluate the effectiveness of the commercial food waste collection program and determine whether or not to expand program incentives. Program evaluations should be conducted by program stakeholders, such as commercial participants, third-party recipients and representatives from the City's Solid Waste department.
- Conduct the program evaluation one year after the incentive program begins.

Ongoing actions

Organize an annual composting workshop every spring (subcontract to a private composting business) to encourage and motivate the use of the City's residential backyard composting program. The workshop will be free to residents and will work in conjunction with the food waste collection program, beginning within 12 months of adopting the Plan.

- Organize an annual food waste collection workshop to encourage and motivate the use of food recycling by restaurants and businesses. The workshop will be free to businesses and will work in conjunction with the food waste collection program, beginning within 12 months of the Plan's adoption.
- Develop a Green Resource Guide for organic waste management that includes information about backyard composting, workshops, the existing green waste programs and the discounted green tipping fee at the City's convenience centers. The guide will be developed within 12 months the Plan's adoption.



Synergy with Business,
Industry and Carbon
Offset Opportunities

4. Materials Exchange—Develop a materials exchange program and resource center where residents and businesses can donate unwanted but reusable materials for reuse by classrooms and non-profits.

Accomplish the following short-term actions by 2012

- By the end of 2012, the City will develop a virtual materials exchange that includes links to non-profit organizations.
- Construction materials, furnishings and such could be linked to Habitat for Humanity's Restores, Barrett House and similar non-profits.
- Non-recyclable plastics, office supplies and paper products could be listed for use in classrooms, community centers, senior centers and such for "make and take" and other projects that require consumable goods.
- Teachers, program directors and others can list the products that they need, such as gallon jugs, empty paper towel rolls, magazines (for cutting), plastic containers and bags, so that donors identify and meet recipient needs.

Accomplish the following mid-term actions by 2020

- Develop an advisory action committee that includes the business community and organizations, educators, community leaders, private recyclers and non-profits.
- These stakeholders will work to implement one or more physical reuse centers, perhaps in quadrants, and then by City Council district by 2020.
- Address the role the City should play in collecting materials and providing incentives (such as an awards program).

Ongoing actions

- The City will create a Green Resource Guide to assist residents and businesses in participating in a materials exchange program instead of discarding reusable materials in the trash, which adds to the City's landfill.
- Promote synergy between teachers, program directors and non-profits with potential donors to maximize resources and minimize unnecessary landfill.

What is a Virtual Materials Exchange?

A virtual materials exchange functions as a "bulletin board" whereby donors and beneficiaries list large items, such as appliances, electronics or furniture as well as provide contact information for direct exchange. This operates in much the same way that St. Vincent de Paul, Goodwill and other non-profits take direct exchanges.

The advantages of creating and maintaining a virtual materials exchange with direct exchange between the donors and the non-profit recipients are:

- Eliminates the City's concern for product liability exposure.
- Reduces transportation and facilities costs.
- Enables users to post their needs and donors to review postings, select recipients and contact recipients directly.
- Creates and maintains partnerships between donors and recipients (such as classrooms).
- Eliminates issues of cleanliness, infestation and so on.



Synergy with Clean, Renewable Energy

The aim of the waste-to-energy strategy is not to divert recyclable and reusable materials to a waste-to-energy program, but to **address the materials remaining after waste diversion goals are met.**

5. Waste-to-Energy—Develop a waste-to-energy program that consumes no more than 50% of the waste stream by 2020.

The challenge of the Climate Action Plan is to reduce greenhouse gas emissions. Each goal must be evaluated in light of its impact on greenhouse gases—when actions compete, we must prioritize the actions in terms of their impact.

Waste reduction and recycling generally provide a greater net life cycle reduction in greenhouse gas emissions than waste-to-energy programs, and are therefore given higher priority. For materials that cannot be readily diverted from the landfill, waste-to-energy strategies are appropriate.

The aim of this waste-to-energy strategy is *not* to divert recyclable and reusable materials to a waste-to-energy program, but to *address the materials remaining after waste diversion goals are met.*

Accomplish the following mid-term actions by 2020

- By 2020, research emerging waste-to-energy technologies and evaluate them based on applicability, cost-effectiveness and environmental impact for Albuquerque.
- By 2020, convert the captured methane from the Cerro Colorado Landfill into power, using appropriate and cost-effective technology.

The waste-to-energy analysis should incorporate the following considerations:

- Capital costs of a waste-to-energy system
- Emissions and impacts of a waste-to-energy system
- Existing renewable energy credit incentives
- Energy production versus the cost of maintaining the system
- Return on investment and payback time frame
- Cost-to-benefit analysis
- Available grants to assist with capital costs

Synergy with Social Change

6. Partnership/Coalitions—Partner with producers and retailers, educational institutions, commercial and residential sectors, government and non-profits to achieve zero waste and recycling goals by 2020.

Accomplish the following short-term actions by 2012

- Designate a community liaison to commercial organizations for education and idea-sharing.
- Solicit commercial recyclers for program input for effective recycling strategies.
- Establish a community liaison to the Albuquerque Public Schools district and various chambers of commerce.
- Appoint a liaison to State agencies to keep them informed about the City’s recycling progress.