

Albuquerque Integrated Waste Management Plan

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1.0 Introduction and Overview

The 2002–2006 Vision Statement adopted by the Albuquerque City Council contains Five Year Goals and related Desired Community Conditions. Of particular relevance to the City’s Solid Waste Management Department (SWMD or the Department) is Goal Statement 5 concerning “Environmental Protection and Enhancement” and Desired Community Conditions 3 and 5 (see Appendix I – A):

- ▶ # 3 / Solid wastes are produced no faster than natural systems and technology can process them.
- ▶ # 5 / Residents participate in caring for the environment and conserving natural resources.

In addition, the City’s primary solid waste goal / priority is to divert waste from landfill disposal as a waste management method. Two interim objectives have been defined as benchmarks for accomplishing this goal / priority – a 26 % recycling or diversion rate by 2010 and a 40 % recycling or diversion rate by 2015. This goal / priority is part of a broader, multi-faceted initiative called “Sustainable Albuquerque” or “Albuquerque Green”.

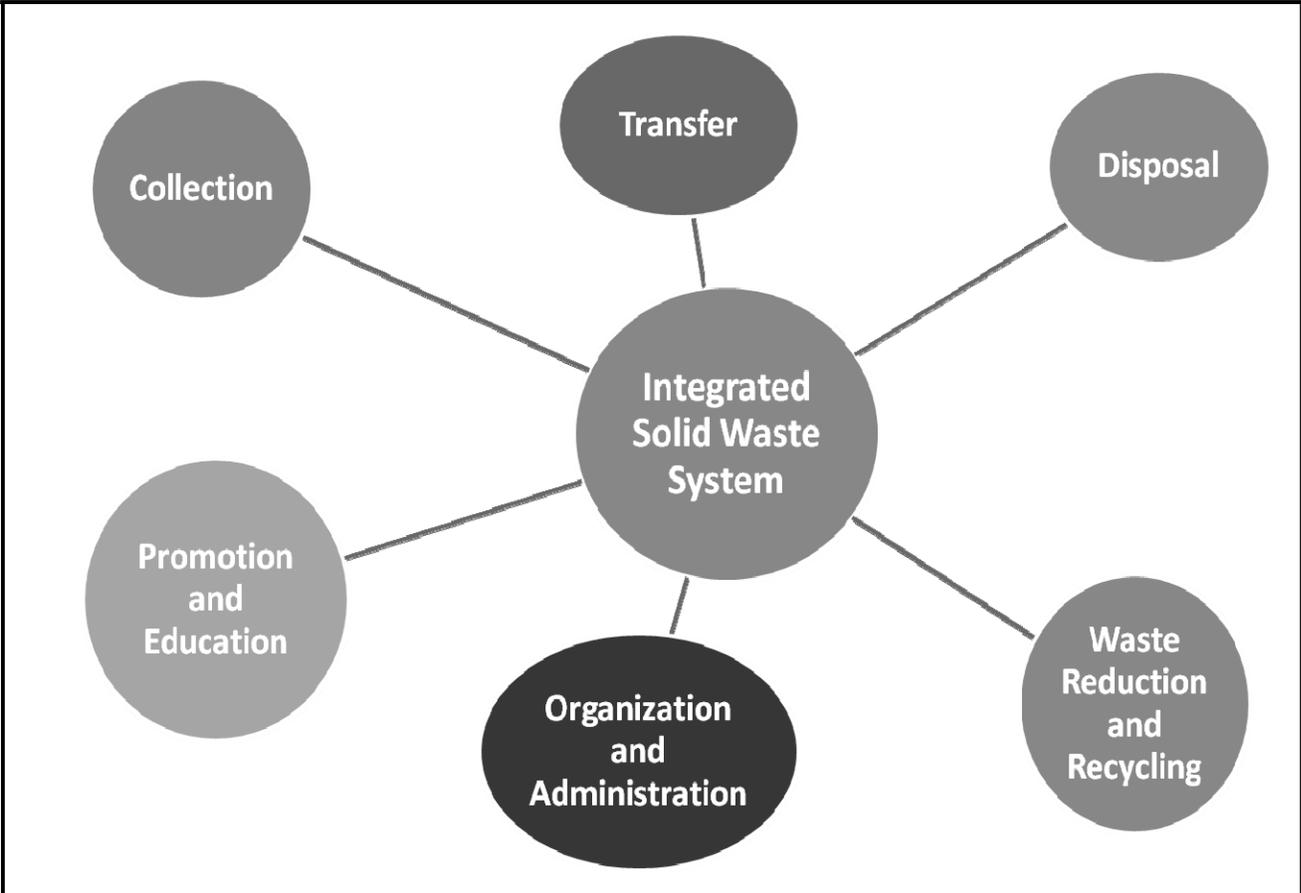
Finally, the most recently adopted Fiscal Year 2009 administrative performance objectives for the Department call for completion of an Integrated Waste Management Plan (IWMP) containing recommended measures for realizing the goal / priority of waste diversion.

Thus this IWMP is guided by the unified set of policies noted above that have been set forth by the City Council and Mayor.

The Solid Waste Management Department directly operates all aspects of the refuse and materials handling system as portrayed in Figure 1– collection, transfer and transport, recycling, disposal, promotion and education, organization and administration.



Figure 1 – General Solid Waste System Components



However, while the SWMD has virtually total control over the waste stream through its vertically integrated combination of services and facilities, the system is overwhelmingly oriented toward disposal at the present time.

The purpose of the Integrated Waste Management Plan is to decisively reverse that orientation in favor of waste reduction, reuse, repair, recycling, composting and other forms of diversion consistent with the goal / priority of waste diversion. Pursuit of the waste diversion goal / priority will require a series of coordinated, cooperative efforts between the Department and the private sector over the short-term (2010 to 2012), mid-term (2012 to 2015), and long-term (2015 to 2020) to accomplish the following:

- Chart a transition in system purpose from waste disposal to resource conservation / utilization by diverting materials from disposal.
- Improve and expand waste reduction / reuse / recycling in City buildings, facilities, and operations.
- Increase the convenience and accessibility of diversion opportunities for residents, businesses, and institutions.
- Implement a combination of policy, economic, and possible regulatory incentives to encourage participation in diversion programs.
- Make significant capital investments in infrastructure for transfer and transport of refuse, collection / processing / marketing of recyclables, and other types of diversion opportunities.
- Work more closely and formally in partnerships with local and regional private companies that collect, process, market, and use recyclables.
- Establish procedures for regularly monitoring and tracking progress toward eliminating landfill disposal.

This IWMP identifies the strengths and weaknesses of the existing solid waste management system. It then recommends programs, policies, and

facilities to address system needs and gaps in order to achieve goals / objectives / priorities.

2.0 Solid Waste Management Department – Profile of Operations and Assets

Table 1 describes the various services and facilities operated by the SWMD that make up the City's solid waste management system (see next page).

Table 1 – SWMD Facilities and Services

System Element	Notes and Comments
1 / Cerro Colorado Landfill	<ul style="list-style-type: none"> • Located about 20 miles southwest of downtown Albuquerque • Trash trucks drive to landfill directly from routes • Capacity until 2037
2 / Residential Waste Collection	<ul style="list-style-type: none"> • 173,000 households served weekly • Use 95 – gallon cart with automated pickup • Base, flat rate for 1 cart; 2nd cart is cheaper than 1st
3 / Commercial Waste Collection	<ul style="list-style-type: none"> • Service levels & rates vary based on # / size of containers, frequency of pickup
4 / Transfer Stations / Convenience Centers	<ul style="list-style-type: none"> • 3 – Eagle Rock (north side), Montessa Park (south side), Don Reservoir (west side) • Serve City & County residents • Waste hauled to landfill by City transfer trailers • Limited use by City refuse vehicles only at Montessa Park
5 / Residential Recycling	<ul style="list-style-type: none"> • Manual collection done weekly at curb • Plastic bags provided by SWMD for storing materials • Glass not collected; is taken at recycling drop – off centers • Pilot project for automated pickup of commingled recyclables & yard waste now under way • Otherwise, yard waste picked up for no charge twice annually
6 / Commercial Recycling	<ul style="list-style-type: none"> • No formal, organized program offered to private sector by SWMD • SWMD does serve City buildings / facilities, some schools
7 / Composting Operation	<ul style="list-style-type: none"> • Located near landfill • SWMD & other City departments bring green waste to site
8 / Recycling Drop – off Centers	<ul style="list-style-type: none"> • 30 – 23 are open to public, 7 are for site employees only
9 / Intermediate Processing Facility	<ul style="list-style-type: none"> • IPF located near landfill • Receives, sorts, compacts, bales, sells, ships recyclables
10 / Household Hazardous Waste	<ul style="list-style-type: none"> • City has contract with Rinchem to handle HHW • Rinchem site in Albuquerque open to public 4 days / week
11 / Maintenance / Storage Yard	<ul style="list-style-type: none"> • Located at 4600 Edith Blvd. NE • Includes SWMD administrative offices • Collection vehicles kept here

3.0 Albuquerque Solid Waste Facts

Table 2 provides quantitative information about SWMD facilities and services (data is rounded and approximate; see Appendices I – C and E for more details).

Table 2 – Basic Department and System Data

1 / Number of full – time employees	445
2 / Number of collection vehicles	170
3 / Number of residential customers	173,000
4 / Number of commercial customers	14,190
5 / Tons of residential trash disposed per year at Cerro Colorado Landfill	168,555 (FY 2008)
6 / Tons of commercial trash disposed per year at Cerro Colorado Landfill	217,197 (FY 2008)
7 / Tons sent to Waste Management landfill in Rio Rancho	49,270 (FY 2008; 34,488 residential tons, 14,782 commercial tons)
8 / Transfer station / convenience center tons sent to Cerro Colorado Landfill	57,085 (FY 2008)
9 / Other disposed tons from Albuquerque sent to Cerro Colorado Landfill	14,845 (FY 2008; various City departments & IPF)
10 / Total tons disposed per year	506,952 (FY 2008)
11 / Tons recycled / diverted per year through City activities	24,450 (FY 2008)
12 / Miles driven per day by collection vehicle	- Residential truck – 123 - Commercial truck – 175
13 / Trips to landfill per day by collection vehicle	- Residential truck – 2 - Commercial truck – 3.6
14 / Gallons of fuel used daily by collection vehicle	- Residential truck – 35 - Commercial truck – 44

4.0 System Strengths

Broad guidance and direction for the SWMD is found in applicable policies as adopted by the City Council and Mayor referenced in Section 1. These include:

- The overall City sustainability initiative termed “Albuquerque Green”.
- The 2002 – 6 Vision Statement, Five Year Goals, and Desired Community Conditions, in particular Goal Statement 5 – Environmental Protection and Enhancement and Desired Community Conditions 3 and 5.
- The waste diversion goal / priority from landfill disposal.

Other strengths of the SWMD and existing solid waste management system are discussed below.

- The City controls the flow of waste through its collection operations and thus can directly impact whether it is disposed or diverted without negotiating or contracting with private entities.
- Plenty of capacity is available at Cerro Colorado Landfill (see Appendix I – B) so the City is not faced with an imminent disposal crisis. Many capital / infrastructure investments have been made for the landfill operation. This situation allows the Department to focus on diversion.
- New leadership and upper management have been brought into the SWMD with the authority and policy support to implement diversion initiatives.
- A successful residential pilot project for collection of commingled (mixed) recyclables and yard waste in carts has been undertaken. The pilot project demonstrates conclusively that the convenience of commingling markedly increases public participation and the quantity of recovered materials. Thus the pilot project offers a sound basis to expand city – wide the cart – based collection of commingled residential recyclables as well as cart – based residential yard waste recovery.

- The City has already enacted a multi-family recycling ordinance that requires apartment building owners / managers to offer the opportunity to recycle for residents. Building owners / managers are supposed to make arrangements with SWMD personnel so containers for commingled recyclables can be placed on premises. Further, the ordinance allows the Department to charge each building unit the same recycling service fee that single-family residences pay – \$ 1.89 per month.
- Recycling is occurring at City buildings and the Department is seeking to upgrade and expand these internal efforts.
- Based on both formal and informal communication between SWMD personnel and industry representatives, it is clear there are several potential private sector firms that want to partner with the City in developing a major facility which would significantly increase capacity to process / market recyclables from not only the City of Albuquerque but from the surrounding region as well.
- While there are private recycling service companies operating in Albuquerque, the City itself does not have an organized business recycling program. Thus there is definite potential for much more diversion from institutional, commercial, and industrial generators.
- The SWMD has purchased equipment capable of size reducing and grinding yard waste in much larger quantities than are currently handled at the City's composting operation.
- Glass cannot be mixed with other recyclables in a cart-based recycling collection program because glass breakage contaminates these materials and makes them non-marketable. However, glass is not collected curbside now in the City but instead may be taken to community drop-off recycling centers. In essence, this alternative avoids a potential problem in implementing cart-based, commingled residential recycling city-wide.
- The City's large residential and commercial rate base is augmented by rate structures in place at Cerro Colorado Landfill and the three

convenience centers. The total rate base therefore can facilitate the equitable distribution of costs for program improvements by allocating these costs across many rate payers and operational units.

5.0 System Weaknesses

When considering the goal / priority of ending landfill disposal by 2030 and consequently how to maximize diversion in pursuit of this policy, there are a number of weaknesses or barriers in existing solid waste conditions and practices that need to be overcome. These are discussed below.

- Equipment used in all facets of the Department's operations needs to be replaced on a regular basis. In recent years this has not been done to the extent necessary, resulting in a significant backlog of outstanding capital equipment replacement / acquisition costs. The costs for unmet capital purchases are carried over to the next year. Thus it is conceivable that with scarce resources there could be competition for funds between equipment for the basic disposal functions of the SWMD and new infrastructure required for expanding diversion.
- In the past, money from the SWMD Enterprise Fund has been moved to General Fund. This undermines the Department's ability to build reserves for regular capital equipment replacement / acquisition.
- Trucks haul trash directly to the Cerro Colorado Landfill. Operations at the two larger convenience centers / transfer stations (Montessa Park and Eagle Rock) are oriented to public use almost exclusively and are only minimally available to the Department's collection fleet for off-loading and transfer of refuse or recyclables.
- As a consequence both the internal and external space at the two large convenience centers is not fully or efficiently utilized.
- Rates at the convenience centers do not cover operating costs. The facilities do not pay for themselves and are operated at a loss.
- Residential service and transfer station "flat" rates offer no economic incentive to reduce, reuse, recycle.

- There are other service and financial disincentives to reduce, reuse, recycle. For example, a second residential trash cart is cheaper than the first. Also, there is unlimited, free pickup of large items / bulky waste from residences throughout the year.
- The City does not currently have an organized, comprehensive commercial recycling program. Commercial recycling services are provided by private companies but data on the types and quantities of material recovered is limited and fragmentary.
- The current approach to residential recycling collection is inconvenient, inefficient, and ineffective. No material storage containers are offered to residents. Recyclables are handled manually by Department crews and placed into collection trucks. The residential diversion rate due to the curbside recycling program and other efforts participated in by citizens is about 5 %.
- The City's IPF or Intermediate Processing Facility for recyclables has limited capacity, outdated equipment, and is located near Cerro Colorado Landfill. In Fiscal Year 2008 about 40 % (5,725 tons) of the material delivered to the IPF was not separated or processed at all but simply baled and sold as "Super Mix".
- At the present time neither the City nor the private sector in the Albuquerque region has the ability or capacity to process / market large quantities of commingled (mixed) recyclables in the range of the 150,000 to 250,000 tons per year necessary for realizing the 26 % (by 2010) and 40 % (by 2015) diversion objectives.
- The City has had difficulty securing a stable, reliable, long-term market or end user for finished compost. Without such an outlet the equipment bought by the Department to size reduce and grind yard waste remains under-utilized. The lack of an end use market also undermines the rationale for investing in carts / trucks to recover separated yard waste at the curb and makes it hard to justify the extra cost to rate payers for such a service.

- There is one household hazardous waste site in Albuquerque, a city of approximately 500,000 people.
- Promotion / education is not regular, ongoing, or coordinated, and lacks a clear message presented through diverse media.
- Rate–setting and the rate structure are part of the Municipal Solid Waste Ordinance and thus subject to political influence and factors.
- The status of commercial accounts is not clear, including how many there are, whether the billing rates and levels of service are appropriate, and whether there might be an associated revenue loss due to these information gaps.

6.0 Key Conclusions

Based on the strengths and weaknesses of Albuquerque’ solid waste management system, as discussed in Sections 4 and 5 above, the following conclusions are reached:

- Throughout the system, providing maximum customer convenience for disposal at very little cost is determining operational practices rather than those practices being guided by clear public policy goals, objectives, priorities, and initiatives. System operations and structure should reflect public policy and guide customer behavior.
- The basic message to citizens and businesses from the current solid waste system is “anybody can get rid of anything for practically nothing.”
- Virtually unlimited disposal options for cheap rates is not consistent with an emphasis on diversion. The economics and operations of the system need to be changed to support the priority on diversion.

7.0 Recommendations

Major resource allocations and infrastructure development are necessary for both maintaining / upgrading basic solid waste services and reorganizing the system’s emphasis from disposal to diversion. The main challenge for the Department will be to pursue both of these agendas

simultaneously. The strategy proposed for accomplishing this dual agenda is as follows:

- ▶ Modify operations to re – direct use of existing SWMD resources (personnel, land, equipment, facilities, sites) toward diversion without large allocations of money.

combined with

- ▶ Taking initial steps to make the substantial infrastructure investment required to achieve major expansion of handling capacity for refuse and recyclables so the benefits of economies of scale and operating efficiencies are realized.

Recommendations are organized according to two basic categories – implementation timeframe and capital cost impacts. The implementation timeframes are as follows: Immediate Term – 2010 to 2012; Mid Term – 2012 to 2015; Long Term – 2015 to 2020. Capital cost impacts are considered to be minimal or moderate to significant. The recommendations are designed to address the system weaknesses and analytic conclusions presented respectively in Sections 5 and 6 above. The recommendations have been formulated with consideration given to viewpoints expressed citizens at several Community Recycling Forums conducted by SWMD staff during the week of October 27, 2008 (see Appendix I – V).

7.1 Immediate Term Recommendations with Minimal Capital Cost Impacts

The recommendations identified in this section can be implemented through administrative, managerial, or procedural actions and decisions made by the SWMD and do not entail infrastructure development, construction or operation.

- The SWMD should be allowed to function as a true enterprise fund and accumulate resources on an annual basis. This in turn positions the Department to start addressing the large backlog of unmet functional equipment needs related to maintaining and upgrading basic services. To the extent feasible, politics should be removed from solid waste decision – making.

- A thorough analysis of the correlation between costs of service and rates for each operational unit of the SWMD should be performed. The purpose of this analysis is to calculate rates that make each unit self-supporting. In addition, a rate-setting methodology would be defined for annually reviewing and revising rates as needed. Primary responsibility for determining rates would be exercised by SWMD personnel rather than the City Council.
- Revise the SWMD Mission Statement to reflect a priority emphasis on the different types of diversion-waste reduction, repair, reuse, recycling, composting.
- Set up a separate “Diversion Division” in the SWMD.
- Hire a staff person within the Diversion Division to assemble, implement, and periodically revise an ongoing, multi-faceted, multi-media promotion / education / outreach program with a coherent theme and associated set of general and audience-specific messages and materials. The central focus of promotion / education / outreach would be diversion, including backyard composting. This staff person would also manage the at – cost sale and distribution of backyard composting bins.
- Existing City “Green Team” representatives are responsible for monitoring the status of waste reduction / recycling efforts in participating departments.
- Ban disposable coffee cups in City offices and provide “Waste Reduction” mugs.
- Adopt code requirements for recycling storage space in designated commercial, institutional, and multi – family buildings
- Eliminate the concept and practice of providing services for “free”. In particular, define the number of large / bulky item pickups covered in the residential rate and charge for any collections over that number.

- Perform an audit of commercial accounts to answer these questions – How many are there? Are they all being billed? What is the service level? Is the billing rate consistent with the service level? Is there a revenue loss?
- Support the “33 % by 2012” statewide recycling goal proposed by the New Mexico Recycling Coalition (NMRC).
- Conduct an inventory of City–owned land according to the criteria in Appendix I – M for future siting of a transfer station, materials recovery facility, and multi – purpose Resource Recovery Park (see Appendix I – T).
- Form a Commercial Sector Advisory Group to review waste reduction / recycling options for the City and private sector.
- Determine the status of internal City recycling efforts and identify improvement / expansion actions.
- Set up a regional materials reuse / exchange service with Bernalillo, Sandoval, and Valencia Counties.
- Discuss expansion of waste reduction / recycling in public schools with School District officials.
- At the Eagle Rock and Montessa Park Convenience Centers utilize space better and organize customer behavior. Establish visible areas with proper signage for household hazardous waste (HHW), green waste recovery, recyclables drop–off, and materials reuse / exchange. Establish access procedures and a fee schedule based on type of waste stream with disposal of mixed waste the most expensive. Once these measures are in place then use these two convenience centers for the off – loading and transfer of refuse, recyclables, and green waste.

7.2 Immediate Term Recommendations with Moderate to Significant Capital Cost Impacts

- Start to meet capital equipment replacement and acquisition needs.
- Issue a Request-for-Proposals (RFP) for private sector design, construction, ownership, and operation of at least one centrally located Materials Recovery Facility (MRF) capable of processing various types of recyclable waste streams, especially those where recyclables are commingled or mixed together. The City would assist with siting and permitting the MRF and bring all City-collected recyclables to it. The MRF could also handle materials collected by other public entities or private companies. The MRF owner / operator could collect recyclables from commercial, institutional, and industrial generators in the City of Albuquerque. This arrangement minimizes the City's exposure to the capital costs and market volatility risk associated with a MRF. A revenue-sharing arrangement between the City and MRF owner / operator may be negotiated. However, for purposes of this Plan it is assumed that both the capital costs and revenues from the MRF for the City would be zero.
- Implement city-wide automated residential refuse collection using different cart sizes and variable or "Pay-As-You-Throw" (PAYT) service rates to encourage diversion. Under the PAYT approach for Albuquerque a 48 gallon cart would be offered as an alternative to the larger cart now used by single-family residences. In either case the cost for a second cart would be equal to or greater than the first cart cost. Larger carts and more carts = higher cost under a PAYT rate structure. Citizen comments / feedback from the Community Recycling Forums were supportive of the PAYT concept and emphasized the need to make the rate differential between the 48 and 96 gallon cart big enough so it would be an incentive to reduce, reuse, recycle.
- Implement city-wide a cart-based residential recycling collection program similar to the pilot project now going on. For each residence a 64 gallon cart containing commingled recyclables would be serviced weekly using a fully automated truck. Citizen comments / feedback from the Community Recycling Forums were supportive of weekly pickup and

commingling recyclables. This was favored as a higher initial priority than yard waste recovery, especially in view of the capital expenditures facing the SWMD for standard equipment replacement / acquisition, PAYT (carts, possibly trucks), and cart-based residential recycling (carts, possibly trucks). It was also pointed out by many citizens that the City is officially promoting xeriscaping and there is great variation across the City in how much yard waste is actually generated. For example, one person said they could not fill a 64 gallon cart with yard waste in a year while another person from a different area stated they could fill two such carts every week. For these reasons a regular residential collection service for yard waste recovery is not being recommended at this time.

7.3 Mid Term Recommendations with Moderate to Significant Capital Cost Impacts

- As an extension of its core responsibility to collect refuse, the SWMD should site, design, construct, own, and operate at least one centrally located transfer station for use by its waste collection fleet. The purpose would be to reduce to the absolute minimum the number of regular refuse trucks driving from their routes to the landfill. The transfer station could also be used for the off-loading and transfer of recyclables and yard waste should these functions be needed.
- Implement a subscription-based residential yard waste recovery program city – wide. Under this approach a resident would receive one or more storage carts and either pay for a specified number of collections per year on designated days, or pay per collection for an on – call service that would not have a specified number of collection days.