

# EXECUTIVE SUMMARY

## ALBUQUERQUE INTEGRATED WASTE MANAGEMENT PLAN

### 1.0 BACKGROUND

In May of 2008 the City of Albuquerque's Solid Waste Management Department (SWMD or the Department) began development of an *Integrated Waste Management Plan* or *IWMP*. The IWMP was pursued by the Department as an important planning tool for attaining the aggressive waste reduction / recycling (often referred to as diversion) goals of the Albuquerque City Council and Mayor. The IWMP examines both distinct solid waste practices – such as collection, disposal, and recycling – as well as how those individual elements interact as pieces of a larger management system. Analysis and assessment of how the system functions are intended to avoid the adoption of contradictory programs and policies. This perspective helps insure that near – term decisions support long – range priorities.

The IWMP reviews the current status of the City's solid waste management system including operations, rates and facilities to provide a clear understanding of the Department and its services. This also includes consideration of the City's broad environmental policy goals and priorities as they impact solid waste and performance objectives established for the Department.

This initial system assessment produces a series of findings which demonstrate both the merits and the challenges of the existing solid waste program. These findings should be viewed as the "outcomes" or results of existing Department operations, policies, services, and procedures as presently implemented.

Finally, the IWMP offers recommendations consistent with the City's goal / priority of ending reliance on landfill disposal of solid wastes and significantly increasing diversion through various types of waste reduction / recycling initiatives.

## 2.0 CURRENT CONDITIONS

The City of Albuquerque’s Solid Waste Management Department operates a diverse range of services, facilities, and programs. Of particular importance is the fact that the Department collects and disposes of all residential and commercial refuse generated in the City of Albuquerque. Operations for disposing, recycling, and composting are also maintained directly by the Department. This vertical integration equates to control over the flow of waste based on prevailing policy guidance and access to a large rate base for equitable distribution of costs through rates charged to customers. The figure below summarizes the scope of services, facilities, and programs that make up the City’s solid waste management system.

**Figure 1 – Department Inventory**

Collections	Waste Handling	Other
<ul style="list-style-type: none"><li>• Waste<ul style="list-style-type: none"><li>• Residential</li><li>• Commercial</li></ul></li><li>• Recycling<ul style="list-style-type: none"><li>• Residential</li><li>• Drop-Off</li><li>• Multi-Family</li><li>• City Offices</li></ul></li><li>• Convenience Centers<ul style="list-style-type: none"><li>• Eagle Rock</li><li>• Don Reservoir</li><li>• Montessa Park</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Cerro Colorado Landfill<ul style="list-style-type: none"><li>• Recycling Processing</li><li>• Compost Operation</li></ul></li><li>• Closed Landfills</li></ul>	<ul style="list-style-type: none"><li>• Clean City<ul style="list-style-type: none"><li>• Weed Removal</li><li>• Litter Removal</li></ul></li><li>• Graffiti Removal</li><li>• Fleet Services</li><li>• Administrative<ul style="list-style-type: none"><li>• Billing</li><li>• Compliance</li><li>• Customer Service</li></ul></li></ul>

## 2.1 RATES

As an *Enterprise Fund* the Department is obligated to cover all costs associated with the services, facilities, and programs noted above through revenues derived from rates paid by residents and businesses. For example, households receive a monthly bill for collection of waste and recyclables. The residential rate also incorporates fees for numerous other services as detailed in Table 1 below. It is noted that all households are charged for pickup of recyclables regardless of whether they participate in this service or not. Table 2 shows fees at the three convenience centers / transfer stations and Table 3 contains rates charged to users of the Cerro Colorado Landfill.

**Table 1 - Residential Rate Summary**

<b>Service Class</b>	<b>Rate</b>
<b>1. Refuse Collection</b>	\$8.18
<b>2. Recycling Collection</b>	\$1.89
<b>3. Environmental Services</b>	\$0.68
Household Hazardous Waste	\$0.22
Dead Animal Pickup	\$0.03
Bonds / Characterization Study	\$0.24
Old Landfill Monitoring / Methane Gas	\$0.09
Clean – up of Old Landfills	\$0.10
<b>4. Clean City (Graffiti, Weeds and Litter)</b>	No Charge
<b>5. 2 + Electronic Waste Recovery Events Yearly</b>	No Charge
<b>6. Large Item Pickup (unlimited)</b>	No Charge
<b>7. 2 Yard Waste Pickups/Year</b>	No Charge
<b>8. Landfill Disposal</b>	No Charge
<b>Total Monthly Residential Rate</b>	<b>\$10.75</b>
Plus Floating Fuel Charge & Tax	

The residential rate for waste and recycling does provide revenues commensurate with the cost of collections. It does not however, support the costs associated with the disposal of collected wastes and the several ancillary services provided to residents. For example, the provision of *Large Item Pickup* services at no charge to the user means the Department does not recover any fees to offset the costs of this service.

**Table 2 - Convenience Center Rate Summary**

<b>Service Class</b>	<b>Unit</b>	<b>Rate</b>
<b>Residential Waste</b>	Per Load (up to 4' x 8' x 2')	\$3.47
<b>Commercial Waste</b>	Per Load (up to 4' x 8' x 2')	\$9.08
<b>Unsecured Load</b>		\$5.54

The rate structure at the convenience centers does not yield enough revenue to make this part of the Department’s overall solid waste program self – supporting. A user with one or two bags of trash will pay the same fee as someone with a fully loaded pick – up truck. Thus the rates do not reflect the actual cost of the provided services and are being subsidized by other components of the system. It is also emphasized that neither the monthly residential rate nor the convenience center rates provide financial

incentives for waste reduction / recycling. In fact, they actually do the reverse by making disposal cheap and convenient.

**Table 3 - Cerro Colorado Landfill Rate Summary**

<b>Service Class</b>	<b>Unit</b>	<b>Rate</b>
<b>Municipal Solid Waste</b>	Per Ton	\$28.55
<b>Special Handling</b>	Per Ton	\$37.96
<b>Petroleum Contaminated Soils</b>	Per Ton	\$25 – \$45
<b>Tires</b>	Per Ton	\$110.93
<b>Hauling Permit Fee*</b>		\$12.00

**\*Required on an annual basis for all commercial waste haulers using Cerro Colorado Landfill**

It should be pointed out that the fee for municipal solid waste is only assessed on material delivered by private parties, not SWMD vehicles. This material accounts for less than 30% by weight of all waste received at Cerro Colorado Landfill, with the balance being delivered by City crews. That 70% or more of the waste is disposed without any fee for service is another clear indication that some system functions are being substantially subsidized by other rates.

## 2.2 WASTE VOLUMES

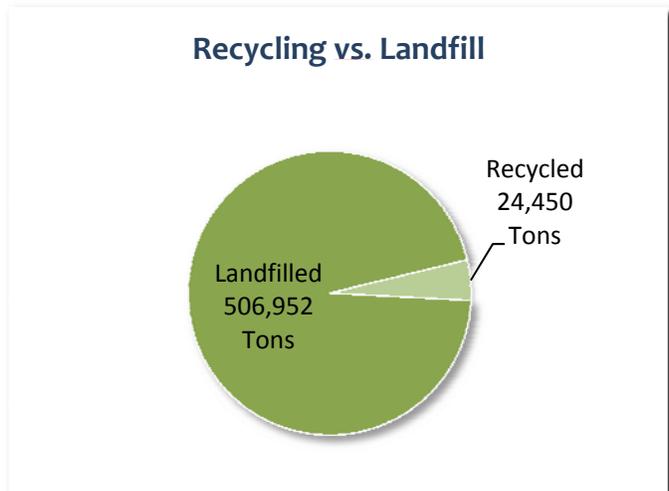
Nearly 507,000 tons of garbage collected by SWMD personnel were landfilled in Fiscal Year 2008. City recycling activities diverted 24,450 tons from disposal for the same period. The diverted tonnage includes recyclables from single-family homes, apartment buildings, community drop-off centers, the convenience centers, City offices and such materials as electronic waste, yard waste, Christmas trees, scrap metals, and appliances. The Department's *Diversion Rate* is approximately 5%, as compared to a national average of 32% and a New Mexico average of 9%. The diversion rate is calculated according to the following formulas:

$$\text{Waste Generated} = \text{Tons Disposed} + \text{Tons Recycled}$$

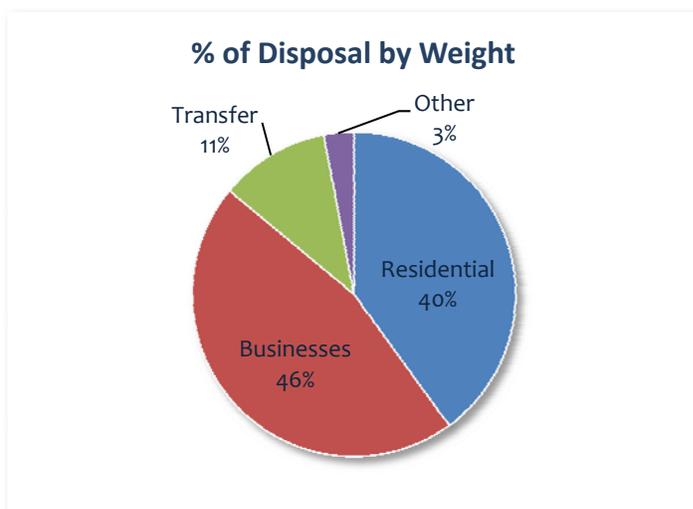
and

$$\text{Diversion Rate} = \frac{\text{Tons Recycled}}{\text{Tons Generated}}$$

**Figure 2 – Current Diversion**



**Figure 3 – Waste Sources**

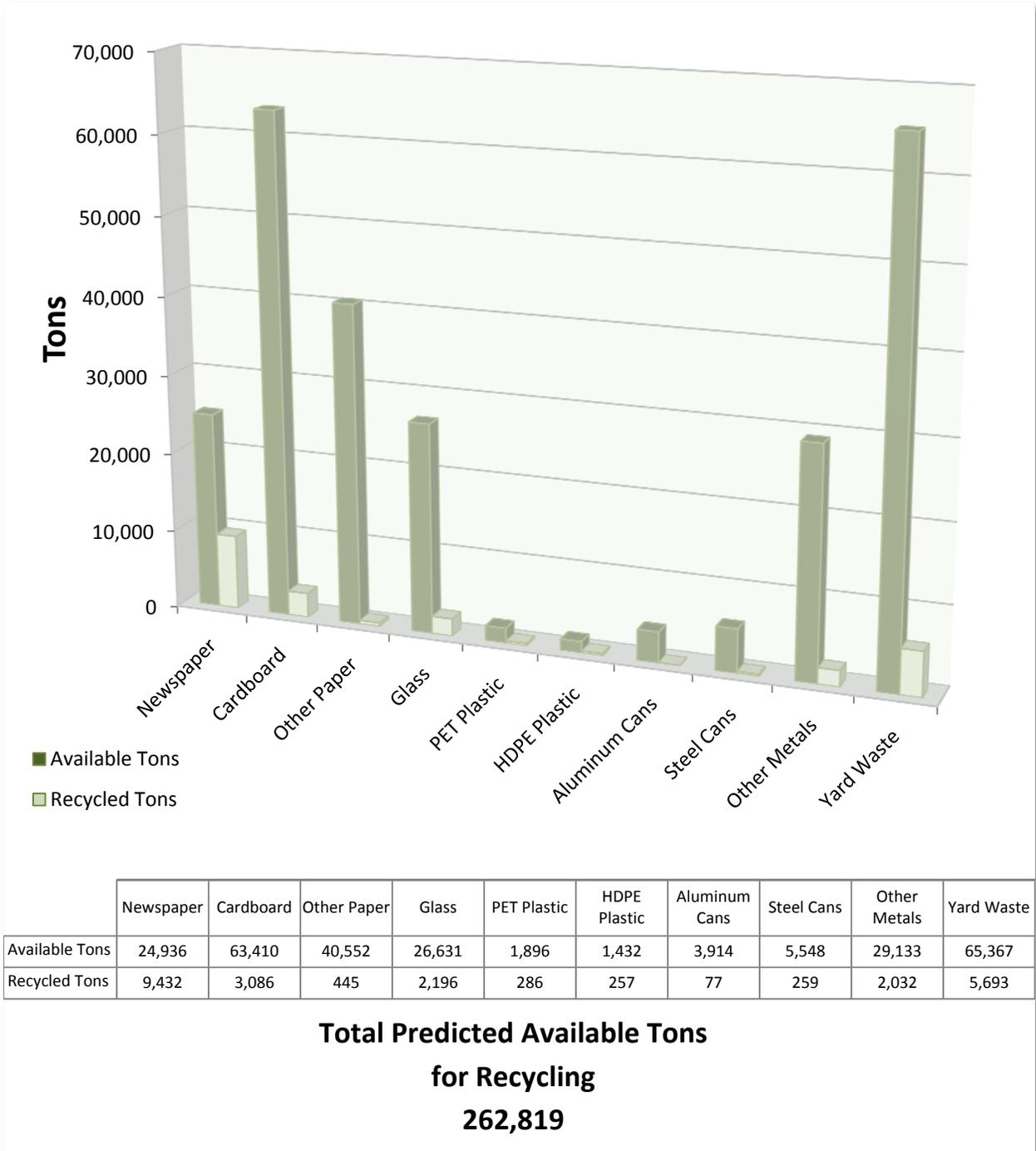


Of the 507,000 disposed tons about half comes from commercial businesses in Albuquerque and half from residents, since it is believed they make up a substantial portion of those that use the convenience centers / transfer stations.

With only a 5% diversion rate Albuquerque has ample opportunities to expand its recycling efforts for a wide variety of materials, as demonstrated by the figure which follows. The chart identifies actual volumes recycled by the Department in 2008 (in light green) and

the forecasted generation, or available quantities (in dark green) of each material based on US EPA statistics. The table accompanying the graph provides recovered and available tonnages for each material.

**Figure 4 – Diversion Opportunities**



### 3.0 FINDINGS

After reviewing the existing operating services, facilities, programs, and policies of the Department, specific issues of concern and overall system strengths / weaknesses were identified. This analysis focused primarily on waste diversion since it is the stated goal / priority of the Department and the City of Albuquerque’s elected leadership.

#### 3.1 Solid Waste System Strengths

The following matrix highlights the positive assets of the Department. These system strengths provide a sound platform or foundation from which the SWMD can launch new and expanded diversion activities and make materials handling methods more efficient. As part of the goal of waste diversion, two interim objectives have been adopted - 26% diversion by 2010 and 40% diversion by 2015.

**Figure 5 – System Strengths**



### 3.2 Weaknesses

Albuquerque’s solid waste management system has several notable weaknesses or challenges to overcome through a phased implementation sequence if diversion is to reach the 26% level in 2010 and 40% level in 2015. These weaknesses / challenges are listed below.

**Figure 6 – System Weaknesses**



The City’s and the Department’s expressed solid waste goal / priority is to greatly increase waste reduction / recycling, and in that regard several discrete but somewhat disconnected actions and policies have been undertaken, as portrayed in Section 3.1. However, there are many other factors that characterize the current system (noted in the matrix above) which seriously constrain the level of diversion. In essence, these factors make it possible for residents and businesses in Albuquerque “to dispose of practically anything for practically nothing” while at the same time making recycling options difficult and inconvenient to access. The recommendations presented in the next section are designed to address these system weaknesses in a step – by – step and comprehensive manner.

## 4.0 RECOMMENDATIONS

The conclusions from the evaluation of Albuquerque’s solid waste management system are the basis of recommendations to the SWMD for improving operating efficiencies and advancing diversion. The recommendations are guided by the broad goal / priority of waste diversion from landfilling and would be implemented in stages. A dual strategy for change is advocated that simultaneously modifies existing operations and develops capital-intensive infrastructure resources necessary for the Department to pursue waste diversion as its new, primary responsibility.

Recommendations are initially categorized according to whether they have minimal associated capital costs or moderate to significant associated capital costs. These two classes of recommended improvements are further divided by suggested timeframes for their implementation, as follows: Immediate Term – 2010 to 2012; Mid Term – 2012 to 2015; Long Term – 2015 to 2020. The matrix below identifies several of the central recommendations and their position relative to these timeframes. Discussion of selected recommendations is then presented.

**Figure 7 – Recommendations Matrix**

Minimal Capital Cost Impact Immediate Term / 2010-2012
<ul style="list-style-type: none"><li>• Development of Permanent Education &amp; Outreach Program Including Staff</li><li>• Rebranding of Department</li><li>• Establishment of Diversion Division w/in Department</li><li>• Promotion of <i>Back Yard Composting</i></li><li>• Internal Auditing of All Commercial Accounts</li><li>• Analysis of Potential Sites for Transfer &amp; Recycling Facility Development</li><li>• Convenience Center Operational Efficiency Analysis</li><li>• Adoption of Equal Space Requirement in Development Code for Storage of Recyclables</li><li>• Edith Yard Operations Efficiency Analysis</li><li>• System-Wide Rate Analysis</li><li>• Rate Setting Procedure Adoption</li></ul>

## Moderate to Significant Capital Cost Impact Immediate Term / 2010-2012

- Capital Equipment Scheduled Replacement
- Development of New Materials Recovery Facility (MRF)
- Implementation of Variable or PAYT (Pay As You Throw) Rate Structure
- Implementation of Cart-Based Residential Recycling Collection

## Moderate to Significant Capital Cost Impact Mid Term / 2012-2015

- Transfer Station Development
- Implementation of Subscription Yard Waste Collection Program
- Resource Recovery Park Development

### 4.1 Minimal Capital Cost Impact – Immediate Term/2010-2012

- **Education and Outreach Program:** Regardless of adopted system improvement, the Department must establish a program to inform customers of the services offered by the Department. This effort should include the designation of one or more FTE's to produce programs, materials and resources to support the Department's existing and future goals.
- **Rebranding:** The Department's shift in focus from disposal to diversion should be reflected in a revised Mission Statement and emphasized in internal communications with employees and external communications with the public and targeted stakeholders.
- **Diversion Division:** A new, separate organizational unit should be established within the Department – the Diversion Division – to clarify and centralize the operations of facilities, services, programs, and related policies connected with diversion.
- **Convenience Center Analysis:** Allocation / utilization of enclosed space and surrounding land at the two largest convenience centers – Eagle Rock and Montessa Park – along with low rates, now favor maximizing customer access for disposal of trash. This situation needs to be thoroughly evaluated so these facilities function much more efficiently and serve as aggregation / transfer points for both refuse and recyclables. Yard waste could also be collected, stored on – site, and then transported in bulk quantities to the composting operation adjacent to Cerro Colorado Landfill. Availability of these two convenience centers should be structured according to day, time, entry / exit points, type of waste stream, and variable user charges to promote diversion rather than disposal.

- **Equal Space Building Codes:** Building development codes should be revised to include equal space for recycling storage containers in addition to those for garbage. Adoption of an equal space requirement in the development code for designated new buildings would address a common barrier to recycling in commercial, institutional, and industrial settings as well as multi – family dwellings.

## 4.2 Moderate to Significant Capital Cost Impact– Immediate Term/2010-12

- **Development of New Materials Recovery Facility (MRF):** Prior to any effort for expanding diversion the City must develop new processing / marketing capacity for recyclable materials that is more centrally located. The City’s Intermediate Processing Facility at the Cerro Colorado Landfill has limited ability to handle more tonnage due to aging equipment and space constraints. It is recommended the City proactively seek a public / private partnership where a for–profit company with



a proven track record in the recycling industry establishes a processing facility in Albuquerque to support the City’s collection efforts. The MRF should be capable of processing a variety of recyclable material streams from households and businesses, especially those where recyclables are commingled or mixed together. This approach has proven to be very successful in communities across the country and very recently in El Paso, TX, Denver, CO and Phoenix, AZ. To expedite such a strategy the City will need to issue a Request – for – Proposals (RFP) for these services and complete a procurement process in the near future. The new MRF should be ready to accept materials once city–wide collection of commingled residential recyclables begins (see **Cart–Based Residential Recycling** below). The RFP would establish the terms of the proposed partnership as well as identify the basic needs of the City.

- **Pay–As–You–Throw (PAYT) or Variable Residential Rates:** In order to provide clear incentive for residents to “reduce, reuse, recycle”, the City must revise its rate structure. A PAYT or Pay–As–You–Throw rate model charges customers on a volume or quantity basis. Much like other utilities, the consumer pays for only the level of service they use. It is recommended that households be offered either a 48 or 96 gallon refuse cart with a rate difference between these two options that provides a financial incentive for diversion. As well, the cost for a second cart should be equal to or greater than the first cart price. This policy would reverse the disincentive for waste diversion that now exists because an additional cart actually costs less.



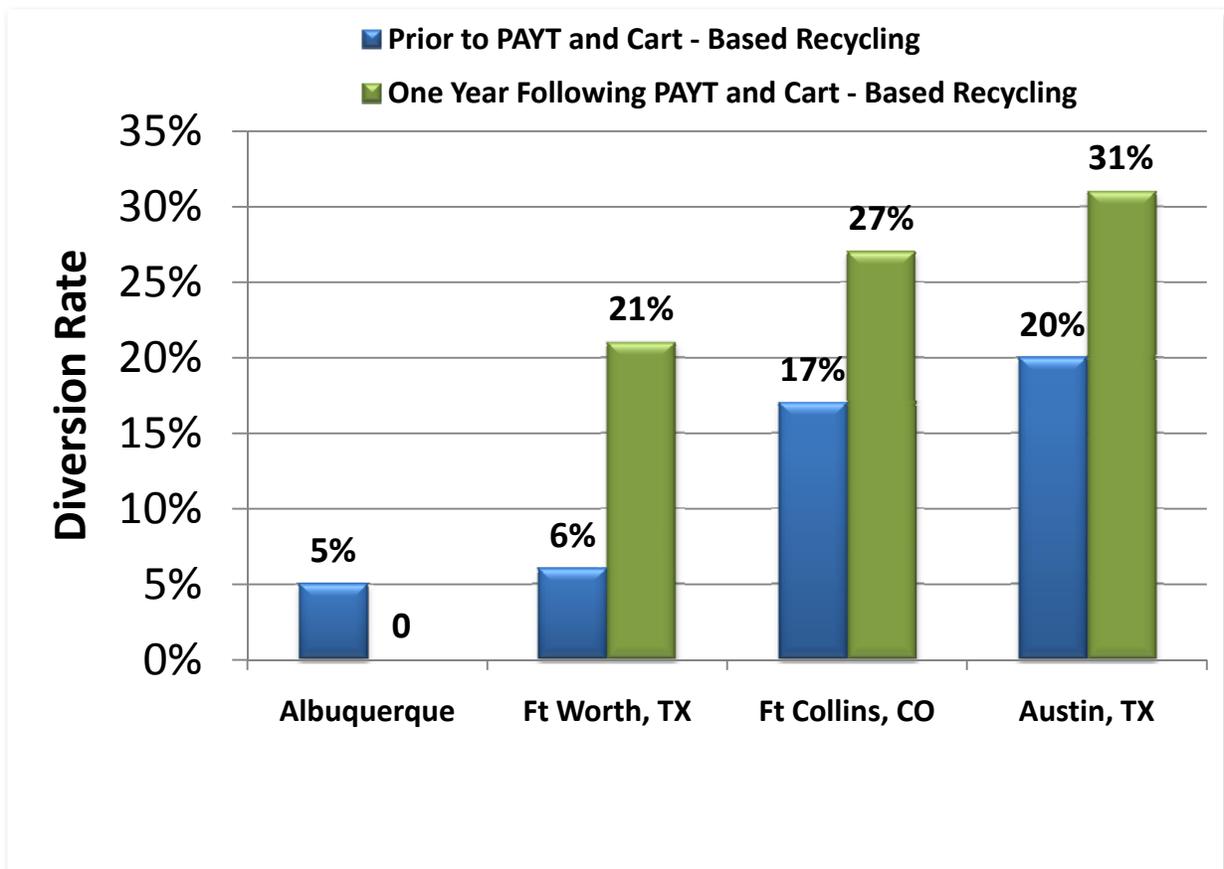
- **Cart–Based Residential Recycling:** In conjunction with a PAYT rate structure the City must provide convenient and universal access to residential recycling service. A cart – based collection system for recycling provides residents with a simple and easy to use recycling program through

which they can divert their waste away from the landfill. With a cart, all recyclables can be commingled together, with the exception of glass which contaminates other materials due to breakage. Glass would continue to be recovered through the Department’s network of community recycling drop-off centers. It is recommended each single-family home receive a 64 gallon cart for storage of mixed recyclables that would be collected weekly. When paired with PAYT, cart-based recycling has proven to be a very effective tool in attaining high diversion rates.



The graph below depicts the impacts on diversion rates following the implementation of both a PAYT rate structure and cart - based residential recycling. The diversion rate prior to the start of these programs is represented in blue and the rate after one year of program utilization is presented in green. All programs experienced significant increases in their respective diversion rates. Assuming Albuquerque vigorously promotes PAYT / Cart Based Recycling, similar results could be expected

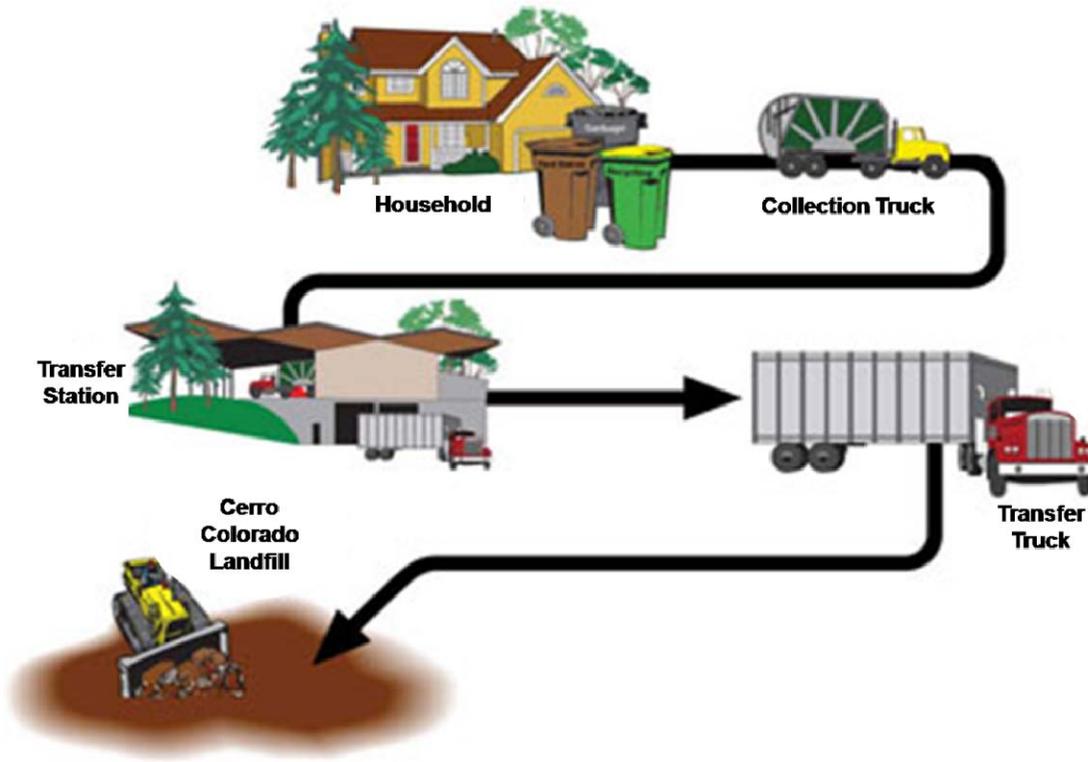
**Figure 8 – Impact of PAYT and Cart – Based Recycling**



### 4.3 Moderate to Significant Capital Cost Impact – Mid Term/2012-15

- **Development of New Transfer Station:** Current SWMD operations require that solid waste collection vehicles transport waste directly to the Cerro Colorado Landfill. These trucks are designed for collection and their co-use for long-haul transport purposes presents many problems. Foremost is unnecessary wear on the vehicles as roundtrip to the landfill requires an additional 60 to 100 miles per day of driving. The second issue of concern is lost efficiency. The time spent driving to the landfill and back is time the vehicle is not performing its primary duty, collecting waste. A new central transfer station would allow these vehicles to significantly reduce their daily mileage while also allowing them to spend more time on route collecting waste. Thus route size for refuse could be expanded potentially making trucks available for recycling collection. The new facility would also provide another refuse and recyclables drop-off point for residents and businesses. Finally, given enough land, a new transfer station could be the basis for siting enhanced management and diversion operations for such material streams as yard waste, wood waste, electronic waste, scrap metals and appliances, construction and demolition debris, household hazardous waste, and a reuse / repair exchange. The ultimate result would be a multi – faceted Resource Recovery Park.

**Figure 9 – Transfer Station Flow Diagram**



#### 4.4 Rate Implications of Residential Recommendations

The cost ranges noted below are based on actual costs for delivery of services. The City can also choose to adjust rates for the purpose of accomplishing policy priorities. For example, the rate difference for use of a 48 versus 96 gallon refuse cart could be increased beyond what is indicated by the cost of service resulting in a substantially greater cost for the larger cart. This would provide additional economic incentive for recycling.

**Figure 10 – Estimated Rate Components**



**Figure 11 – Estimated Rate Summary**

	<b>Program Option</b>	<b>48 Gallon Trash Cart</b>	<b>96 Gallon Trash Cart</b>
<b>Weekly Trash Collection</b>	<b>PAYT Rates with Current Recycling</b>	<b>\$10 - \$11 per month</b>	<b>\$12 - \$13 per month</b>
	<b>PAYT with Weekly Cart Based Recycling</b>	<b>\$12 - \$13 per month</b>	<b>\$14 - \$15 per month</b>
	<b>PAYT with Every Other Week Cart Based Recycling</b>	<b>\$11 - \$13 per month</b>	<b>\$13 - \$15 per month</b>