



# SANDOVAL COUNTY NEW MEXICO SOLID WASTE MANAGEMENT NETWORK

## SWANA 2012 INTEGRATED SOLID WASTE MANAGEMENT SYSTEMS



EXCELLENCE  
AWARD  
NOMINATION  
APRIL 13, 2012





## **Executive Summary**

### **Sandoval County Solid Waste Management Network**

Sandoval County, NM has been uniquely challenged with addressing explosive growth, and a dramatically diverse mix of rural and metropolitan landscapes. The Public Works Division is constantly implementing improvements to keep pace with the growing demands on the sprawling solid waste management infrastructure. The County is deploying the most comprehensive and sophisticated integrated system in the state to address:

- Population growth that has ballooned over 640% since 1970; and nearly 50% between 2000 and 2010.
- A high desert service area comprising over 3,700 square miles, stretching over 100 miles.
- Dedicating resources to Rio Rancho, the fastest growing city in New Mexico; while optimizing services to rural communities.
- Focusing on waste reduction, reuse, and diversion to reduce pressure on shrinking landfill capacities.

The sustainable solutions implemented by the Public Works Division include:

- The only containerized composting operation in NM, with a design capacity of 50 tpd.
- Three satellite convenience centers and one remote recycling facility.
- New on-site convenience center, including green waste diversion, recycling drop-off, etc.
- Expanded Subtitle D Landfill with extended environmental monitoring networks.
- On-site processing for C&D and green waste, providing re-use opportunities and volume reduction.

***Sandoval County is 1.5 times the size of Delaware; and is home to 6 of New Mexico's 19 tribal "pueblos" (reservations) and 3 Navajo Nation Chapters.***



**SANDOVAL COUNTY NEW MEXICO  
SOLID WASTE MANAGEMENT NETWORK**

**SWANA 2012 INTEGRATED SOLID WASTE MANAGEMENT SYSTEMS  
EXCELLENCE AWARD NOMINATION**

**APRIL 13, 2012**

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# PART 1: SYSTEM OVERVIEW AND PERFORMANCE

## 1.1 Introduction

The most remarkable attribute of Sandoval County is its diversity, which is responsible for attracting new residents at a consistent growth rate of over 16% per year. Its high desert landscape stretches from the fertile valley of the Rio Grande at 5,000 ft, to over 11,000 ft in the pine forests to the north. Home to indigenous cultures for thousands of years, the Spanish conquistadors first habitated the area in 1540; picking Bernalillo, the County Seat, for settlement.

The unique cultural, historical, land use, and topographic diversity; coupled with about 280 “sunshine” days per year; have been a magnet for commercial and residential development. The City of Rio Rancho, home to an Intel® plant and the County

Public Works Division and Landfill, has grown to become the third largest city in the state. While Sandoval County has emerged as a jewel in the crown of the Land of Enchantment, the continued growth has challenged the Public Works Division to stay ahead of the solid waste management demands.

Since opening the Sandoval County Landfill in 1972, the Public Works Division (PWD) has been constantly upgrading its solid waste services to keep pace with the growth. The goals of the Division are to deploy cost-effective and sustainable technologies to reduce waste generation; divert, recycle, and reuse discards; and maintain sufficient landfill disposal capacity to meet the growing demand.

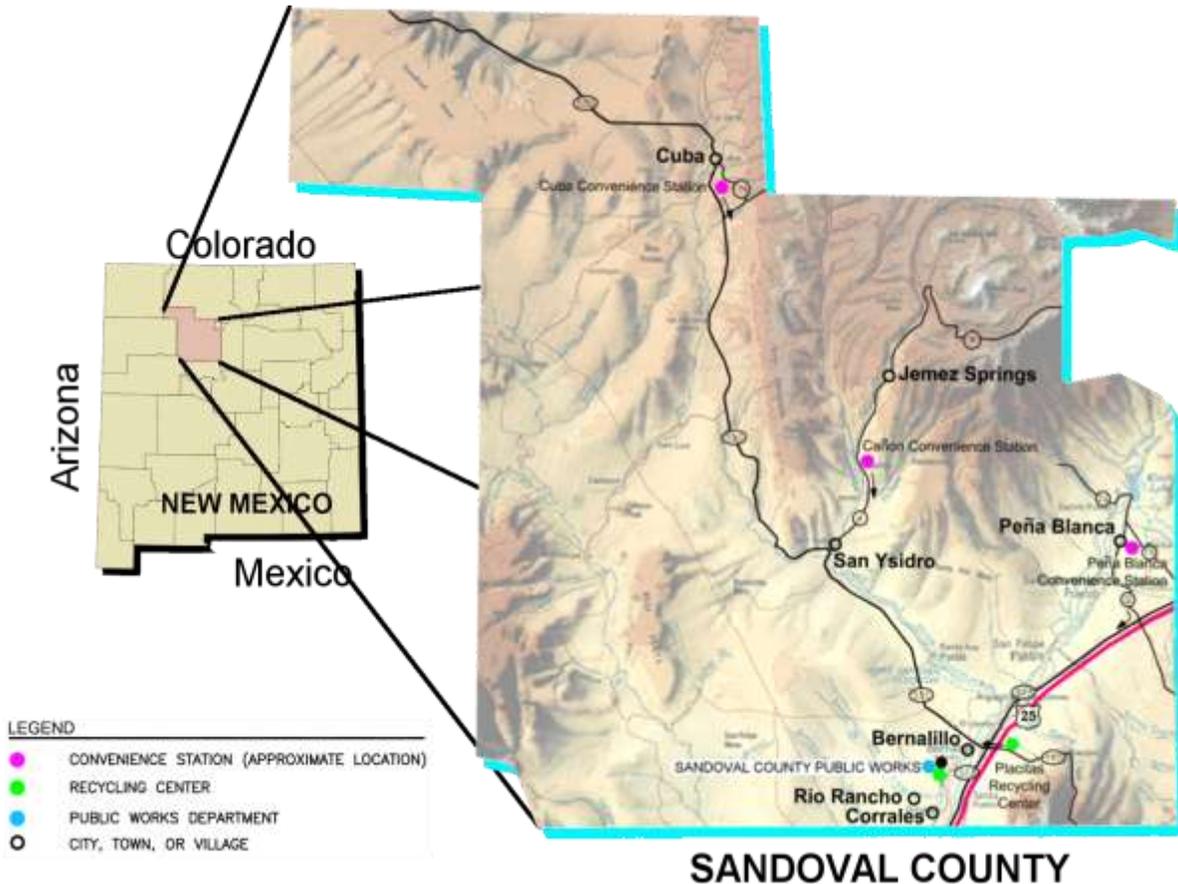


Figure 1. Sandoval County Map

## PART 1: SYSTEM OVERVIEW AND PERFORMANCE

The PWD's Waste Management Network ("the Network") has evolved to include:

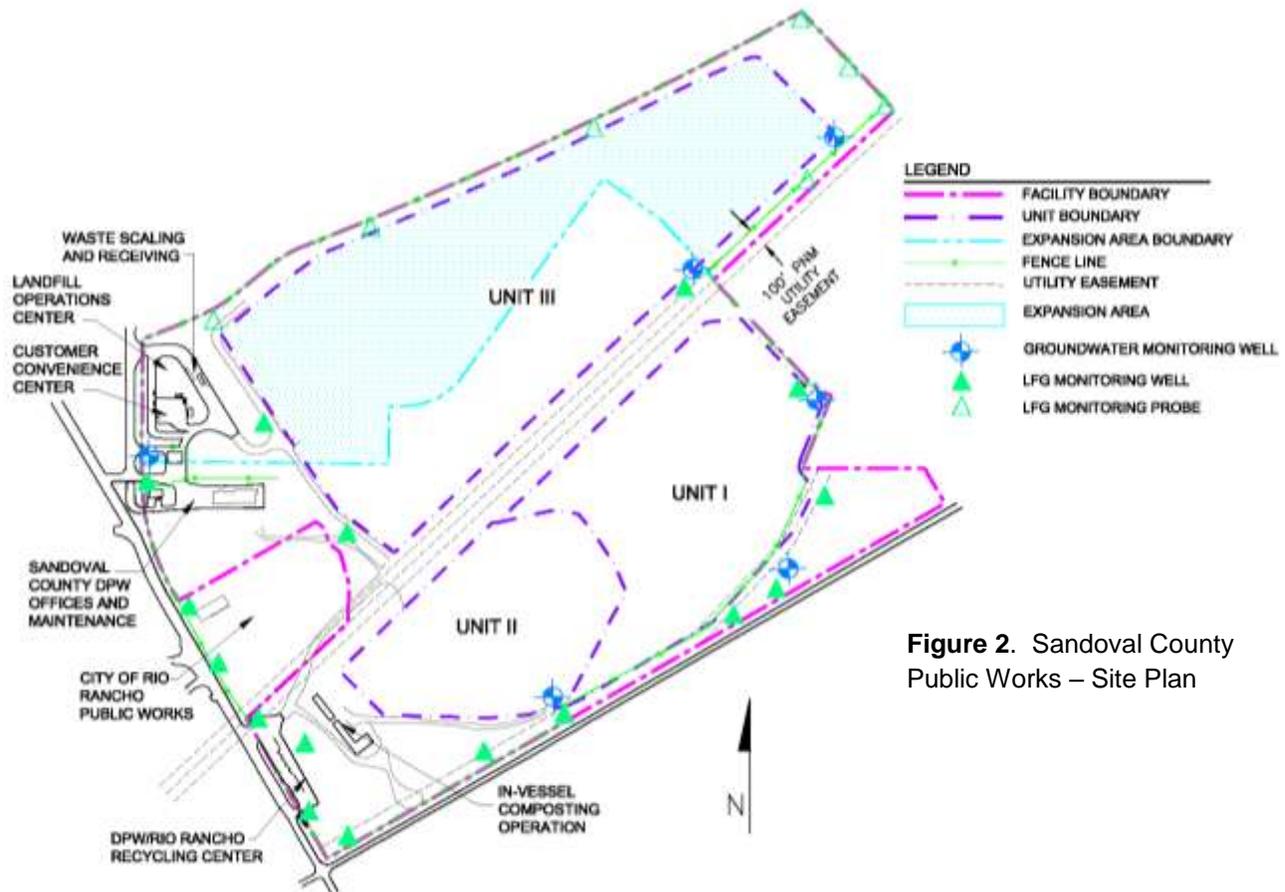
1. Peña Blanca, Cañon, and Cuba Convenience Stations.
2. Placitas Recycling Center, volunteer-staffed.
3. On-site Recycling Center, operated in collaboration with the City of Rio Rancho.
4. On-site Customer Convenience Center for waste discards.
5. Sandoval County Landfill, co-located with the PWD infrastructure; including waste processing, composting, and diversion activities.
6. Initiatives, often conducted in collaboration with Rio Rancho, including site clean-ups, HHW collections, e-waste diversion, compost distribution, etc.

**Figure 1** shows the expanse of Sandoval County, and both the remote and centralized solid waste management facilities. **Figure 2** shows the Sandoval County Public Works Complex, including:

- Subtitle D Landfill, recently expanded
- PWD Administration Center
- PWD Maintenance Compound
- On-site Recycling Center
- Environmental Monitoring Network
- Waste Processing Operations
- In-Vessel Composting Facilities
- Rio Rancho Public Works

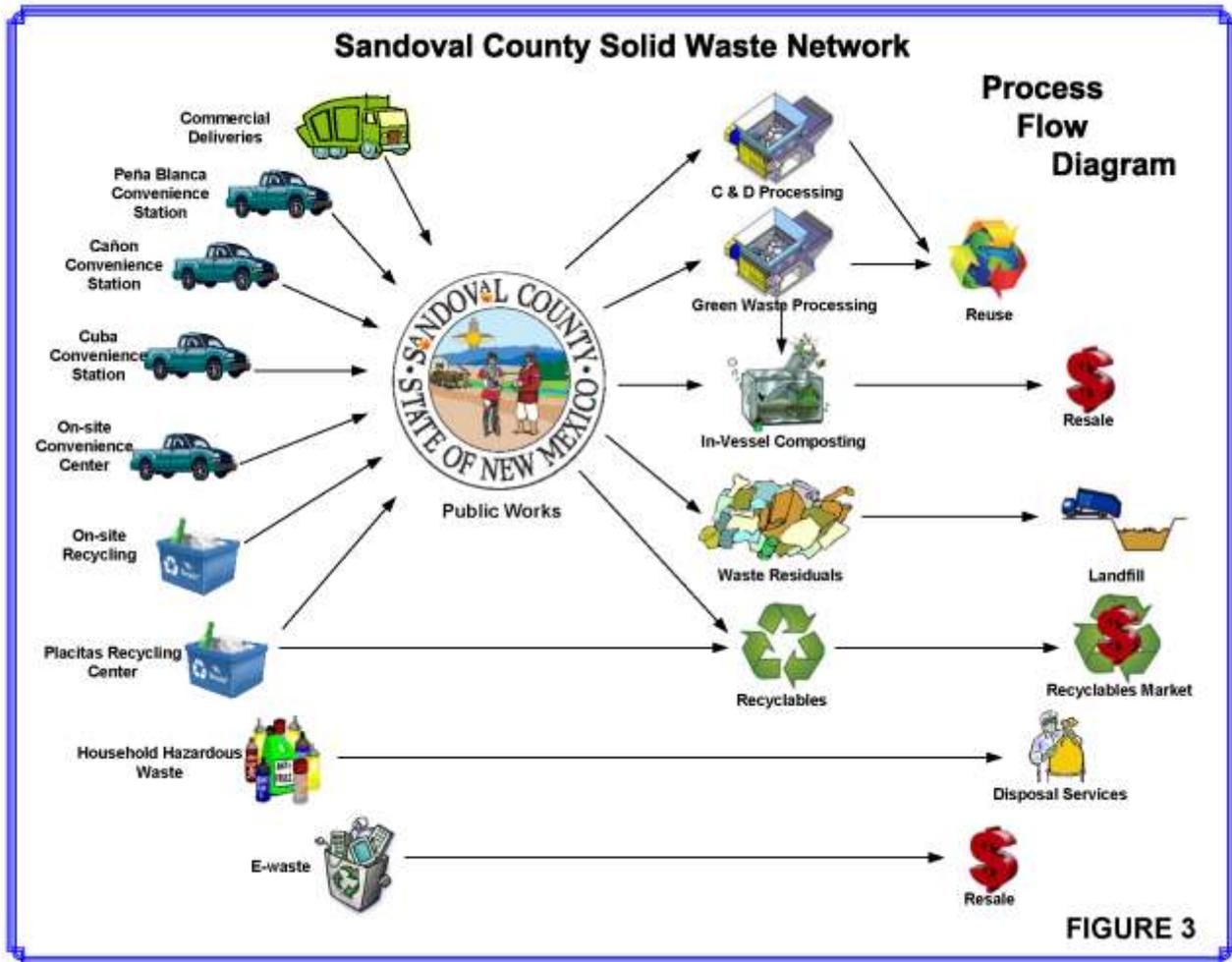
**Figure 3** is a Process Flow Diagram which illustrates the synergy of the Network deployed to serve the public's needs.

The Network serves all 3,700 square miles of Sandoval County, and a population of approximately 131,000± (**Table 1**). The population is widely distributed throughout small, rural agricultural communities and unincorporated areas.



**Figure 2.** Sandoval County Public Works – Site Plan

## PART 1: SYSTEM OVERVIEW AND PERFORMANCE



The great distances between population centers necessitates economically feasible and environmentally sound waste management in order to prevent illegal dumping; and promote responsible waste management practices by County residents. The County promotes community involvement through special waste collection events, and by educational materials distributed through utility bills, at acceptance facilities and gate houses, and during community meetings and workshops.

Reliable and effective waste management is achieved through implementation of a system of state-of-the-art technologies; as detailed in Section 1.2. The “hub-

and-spoke” design of the Network (**Figure 3**) provides necessary solid waste services to remote communities; while centralizing waste receiving, diversion, processing and disposal near the population centers. This minimizes hauling costs, air emissions, fuel consumption, etc.

Sandoval County, driven by 69 percent growth in Rio Rancho was the biggest winner. ...well above the state's overall 13 percent growth rate.

*Albuquerque Journal*  
3/16/2011

# PART 1: SYSTEM OVERVIEW AND PERFORMANCE

**Table 1**  
**Sandoval County**  
**Population Change 1970 - 2010**

Census Year	Population	% Change
1970	17,492	N/A
1980	34,400	97%
1990	63,319	84%
2000	90,584	43%
2010	131,000	45%
<b>Total Population Growth:</b>		<b>649%</b>

The configuration of the Network, public outreach, and education make the system a full-service, integrated solid waste management network. It is designed to continue growing with the surrounding population and the demands placed on the system, while still having a minimal impact on the surrounding environment. The Network benefits all citizens of Sandoval County, and helps to preserve the natural resources of central New Mexico for future generations.

## 1.2 System Elements

### 1.2.1 Sandoval County Landfill

The Sandoval County Landfill is a “Subtitle D” facility with a composite liner, leachate collection system, and environmental monitoring networks for groundwater quality and landfill gas.

The 177±-acre site began operations in 1972; was originally registered with the New Mexico Environment Department (NMED) in 1983; and was initially permitted in 1998. The facility’s permit was renewed for a period of 20 years in 2005 as part of a 100-acre expansion to extend the life of the facility for an additional 20+ years. A majority of the disposal activity is confined to Unit III, the newest lined Unit of the site. It is comprised of 37-acres of the original permitted facility, and a 63-acre expansion that was approved by NMED during the 2005 application for renewal (**Figure 2**).

The Landfill currently processes approximately 165,000 tons of waste annually, of which over 8,000 tons are diverted for reuse, composting, or recycling annually. This rate does not include diversion and recycling conducted at the point of generation. Disposal rates at the Landfill are approximately \$24 per ton for in-county residents, and \$25 per ton for out-of-county residents; and the Landfill is open Monday through Saturday 8:00 am until 4:00 pm. The Landfill also operates an on-site Customer Convenience Center for use by private citizens with loads of MSW, recyclables and green waste. Convenience Center customers are charged \$4.75 for in-county residents and \$5.25 for out-of-county per truckload.



**Figure 4.** In-Vessel® Composting Operation

The Landfill also serves as a platform for waste processing and on-site size reduction, including green waste chipping, woody waste shredding, concrete crushing, the in-vessel composting operation (**Figure 4**), and recyclables collection. These activities utilize several pieces of specialized equipment:

- Doppstadt® DW3060SA Rock Crusher/Waste Shredder (**Figure 5**)
- Morbark® Woodhog 3600 Chipper
- Fecon® Compost Screen
- Renewable Carbon Management In-vessel® Composting Operation

# PART 1: SYSTEM OVERVIEW AND PERFORMANCE



Figure 5. Doppsstadt® DW3060SA Crusher/Shredder

## 1.2.2 Convenience Stations and Recycling Centers

The County operates three remote Convenience Stations and one Recycling Center in Sandoval County: the Cañon Convenience Station (36 miles north of the Landfill); the Peña Blanca Convenience Station (33 miles northeast of the Landfill); the Cuba Convenience Station (67 miles north of the Landfill); and the Placitas Recycling Center (9 miles east of the Landfill). These facilities are centrally located in rural population centers of the County (Figure 1) for use by residents for the disposal of general MSW and other select materials (i.e., white goods, bulky woody waste, recyclables). Customers with oversize waste items or large loads, however, are directed to the Landfill to conserve Convenience Station space for smaller loads. All three Convenience Stations operate Wednesdays and Saturdays from 8:00 am to 4:00 pm, and consist of a gatehouse, portable restroom, and two to five 40 yd<sup>3</sup> containers for the collection of MSW, bulky waste or white goods.

As part of PWD’s constantly expanding services, the Cuba and Peña Blanca Convenience Stations also provide recyclable materials collection trailers for single stream paper, plastic, cardboard, and

aluminum. The trailers were purchased by PWD using “RAID” (Recycling and Illegal Dumping) Grant funds from NMED Solid Waste Bureau (SWB) awarded in 2010 and 2011. When filled, trailers are transported by the County to the Landfill, and the recyclable materials are combined with those at the Landfill for baling and transport to various markets. The County plans to purchase additional collection trailers for the other Convenience Stations and communities in the near future. Figure 1 shows the position of the Convenience Stations and Recycling Center, relative to other County facilities and towns; and Figure 6 represents a typical Convenience Station layout.



Figure 6. Typical Convenience Station Layout

## Placitas Recycling Center

The Placitas Recycling Center (cover sheet) is a volunteer-staffed facility that is open every Saturday from 8:00 am until 11:00 am and is used by residents of Placitas, Bernalillo, Algodones, and other nearby

# PART 1: SYSTEM OVERVIEW AND PERFORMANCE

unincorporated areas. PWD provides trailers and hauling services to the Recycling Center, as well as disposal of any MSW residuals mixed with the recyclable materials. Revenues from the sale of recyclable materials are used to maintain the facility and its dedicated equipment, and pay for advertising.

## PWD/City of Rio Rancho Recycling Center

A 2011 draft Memorandum of Understanding (MOU) has been developed between the City of Rio Rancho and PWD to construct, operate and manage a Recycling Center at the Landfill (**Figure 7**). The new facility is located at the former on-site Convenience Center. The Recycling Center was opened on April 22, 2011 (Earth Day 2011), and operates on Saturdays from 8:00 am to 1:00 pm. The Center accepts select recyclable and reusable materials, tires and appliances at no cost to customers. In 2011, the Recycling Center processed more than 19 tons per month of recyclable materials. The list of source-separated materials is provided on **Figure 7**.

**“The Public Works Department works closely with surrounding communities to make sure residents all know they have a place to dispose of their waste legally and responsibly.”**

*Juan Vigil, Sandoval County Manager.*

## 1.2.3 Waste Diversion, Recycling and Composting Activities

Between 2006 and 2011, the amount of waste diverted at the Landfill averaged just over 6% with the exception of 2007, which saw a construction boom, and approximately 10% of the waste delivered to the Landfill was diverted for beneficial use.

The County has established a goal to divert an additional 5% each year. The opening of the PWD/Rio Rancho Recycling Center at the Landfill, and the addition of recycling trailers at the Convenience Stations, will help to achieve this goal.

The County’s purchase and permitting of the Doppstadt® crusher/shredder (**Figure 5**) have enabled the Landfill to process reusable materials, as well as to densify waste before it is landfilled. The process rate of the crusher/shredder is up to 50 tons/hour depending on material type and loading rate. The unit is primarily used at the Landfill for size reduction of larger woody debris (i.e., stumps, railroad ties, large logs up to 10’ long) and tires, as well as the crushing of concrete and asphalt waste diverted from the solid waste stream. Suitable crushed and shredded woody material is either sold to customers as mulch,



List of Acceptable Material

- |                                     |                          |
|-------------------------------------|--------------------------|
| 1. Clothing/Household Donation Bins | 6. Tires                 |
| 2. White Paper/Mixed Paper          | 7. Electronic Waste/TV's |
| 3. Newsprint                        | 8. Appliances            |
| 4. Plastic                          | 9. Freon Appliances      |
| 5. Aluminum                         | 10. Cardboard and Baler  |

**Figure 7.** PWD/City of Rio Rancho Recycling Center

# PART 1: SYSTEM OVERVIEW AND PERFORMANCE

or stockpiled for later use as feedstock in the In-Vessel<sup>®</sup> Composting Operation (IVCO); and reduced-size concrete and asphalt debris are used for temporary road construction.

The crusher/shredder is also available for use at the active fill face to reduce bulky MSW such as mattresses and C&D debris. By processing bulky materials through the crusher/shredder, maximum compaction is achieved, conserving valuable airspace and extending the life of the Landfill.

## Green and Woody Waste Diversion

Loads of green and select woody waste (i.e., woody C&D debris, pallets, stumps, land clearing vegetation) are diverted to the Landfill's Morbark<sup>®</sup> chipper (**Figure 8**) or crusher/shredder for processing depending on their size and system demands. The chipper and crusher/shredder serve as extremely effective methods to reduce the volume and particle size of green and woody waste, as well as assisting in the production of feedstock for the facility's IVCO. The diversion of green and woody waste is also pivotal to the extension of the Landfill's longevity. By diverting green and woody waste from the waste stream, the life of the site will be extended as much as 5 years.



**Figure 8.** Morbark Woodhog<sup>®</sup> 3600 Chipper

## Concrete and Asphalt Diversion

The community in which the Landfill is located, Rio Rancho, is the fastest-growing city in New Mexico, producing a high quantity of C&D debris and other construction-related wastes. Much of this waste stream consists of concrete and asphalt debris produced during road building and infrastructure modification (i.e., curb and gutter) projects. These wastes are diverted from the Landfill MSW stream and processed using the crusher/shredder. The processed product is then utilized at the Landfill as basecourse for facility roads, which reduces dust emissions from vehicle travel. The Public Works Road Department also utilizes the product for erosion control projects.

## Recyclables Diversion

In addition to the weekly free services to be offered at the new PWD/City of Rio Rancho Recycling Center, the Landfill currently accepts certain recyclable materials at the Customer Convenience Center located at the Landfill Operations Center (**Figure 2**). The Convenience Center is open 6 days per week from 8:00 am until 4:00 pm. Recyclables delivered to the Center are sorted by Landfill personnel as they arrive. Materials destined for various recycling markets (paper, plastics and scrap metal) are segregated into containers. E-waste is palletized and shrink-wrapped for pickup; green waste is transported to the green waste chipping operation; and cellular telephones are boxed and shipped to Call 2 Recycle<sup>®</sup>.

## White Goods

The Landfill also accepts appliances for crushing, baling and sale to a metal recycler who visits the facility as a sufficient amount is collected. The recycler retains a percentage of the sale price to

## PART 1: SYSTEM OVERVIEW AND PERFORMANCE

cover operating costs, and the remaining income from this recycling activity is used to support Landfill operations and community involvement initiatives.

**“It will give people the opportunity to dispose of these things responsibly.”**

Jay Hart, Rio Rancho Parks Dept.  
(said of the new Landfill Recycling Center)

The opening of the new PWD/City of Rio Rancho Recycling Center, combined with public education, County Convenience Stations, and special waste events (i.e., hazardous household waste days) further strengthens the County’s efforts to prevent illegal dumping in unincorporated areas by offering County residents a place to dispose of waste in proper fashion rather than an empty lot or arroyo.

### In-Vessel Composting

In 2005, Sandoval County awarded Renewable Carbon Management a contract to design, develop, and construct the In-Vessel<sup>®</sup> Composting Operation (IVCO) at the Landfill (**Figure 4**). The IVCO uses diverted green and woody C & D waste that would otherwise be landfilled and consume valuable airspace. The system is operated by Landfill personnel, and is capable of processing up to 50 tons of green waste per day.

In the IVCO, green and woody waste are processed through the Morbark<sup>®</sup> chipper, mixed with water and horse manure, and placed in enclosed digesters. The mixture is allowed to reach a temperature of 141° F in order to eliminate pathogens. This temperature is maintained for 14 to 21 days, at which point the composted mixture is emptied and allowed to cure for up to 180 days on a concrete or compacted soil pad.

Mature compost is either sold to customers for \$12 per load, or used by the County in revegetation projects. Mature compost may also be used as a soil amendment for revegetation of closed landfill cells.

For customers who prefer a more refined final product (i.e., finer particle size), the Landfill uses a Fecon<sup>®</sup> compost screen (**Figure 9**) to separate the coarse fraction of the mature compost from the finer fraction. The coarser fraction that remains is returned to the composting operation to be reprocessed.



The IVCO is also permitted by NMED to process biosolids from wastewater treatment plants (sludge) as part of the composting operation feedstock. The County will incorporate sludge into the IVCO feedstock stream in the future as part of a Phase II composting operation. Even the biofilters that treat the air exhaust use renewable organic green waste.

The IVCO is unique in that it is the only large-scale installation of its kind within the 4-Corners region (NM, AZ, CO, UT). The IVCO serves as a model operation in the success of sustainable in-vessel composting and waste diversion for the purpose of airspace preservation and beneficial use.

# PART 1: SYSTEM OVERVIEW AND PERFORMANCE

**“The Sandoval County In-Vessel Composting Operation is the premier composting operation in New Mexico, if not the entire Southwest, and it has provided a great benefit to the County’s citizens and extended the longevity of the Landfill.”**

*Phillip Rios,  
Director of Sandoval County Public Works*

## 1.3 Long-Term System Availability

The current components of the Network, as well as future improvements, are all designed as permanent installations. The only variable is the available airspace of the existing landfill. Capacity is being preserved via the waste diversion efforts; and relocating utilities at the site could extend its longevity by over 10 years. The County is also actively researching potential landfill sites located further from populated areas.

All of the other remote and centralized operations are designed to be updated and revised at their current locations in response to demand and changing technologies. The on-site activities at the Landfill will continue after closure; including the Customer Convenience Center, recycling, green waste composting, waste processing, etc., with waste transfer to the new disposal site. As the ongoing waste management activities only occupy a limited footprint, there have been several proposals for recreational and passive final uses for the remainder of the finished Landfill footprint.

## 1.4 Customer Service

The Network provides a multitude of benefits to area residents. In-county residents who utilize Landfill services are offered discounted rates for disposal, and regular commercial customers are given the

opportunity to create customer accounts to expedite the waste receiving process.

The newly constructed Landfill Operations Center (**Figure 2**) utilizes a state-of-the-art computerized scale system to record receipts, establish tare weights, and facilitate regulatory reporting. Deliveries are monitored using the highly flexible and efficient Cardinal Mfg. Waste Tracking software. The software is connected directly to the facility’s scales, and is also programmed to track waste types. The system offers the Landfill an extremely flexible tool to use in establishing metrics to monitor the effectiveness of waste diversion initiatives, track changes in the waste stream, calculate waste compaction at the Landfill, etc. This information assists Landfill management in planning ahead for the busiest times of the day; allowing them to operate their disposal, recycling, and waste diversion activities more efficiently.

The Public Works Division also provides support in the form of vehicle loans and/or materials transport for community recycling operations. The Villages of Placitas, Corrales and Jemez Springs also operate volunteer-run recycling centers, for which the County provides transportation services, residuals disposal, and support as needed. Sandoval County is continually seeking feedback from the citizens and communities that it serves in handouts, mailers, and workshops. The best measure of the program’s success is the increased collaboration with the public, community groups, and other government agencies as service opportunities have been expanded.



# PART 1: SYSTEM OVERVIEW AND PERFORMANCE

“Our goal for Sandoval County is to use the appropriate tools and support for approaching illegal dumping issues by community outreach, field operations, tracking procedures, implementing our ordinances, site maintenance, violation procedures, and education.”

Keep Our Sandoval County Beautiful!

10/2008, Sandoval County  
Illegal Dumping Symposium

## 1.5 Safety, Environmental Protection, and Compliance

All of the Sandoval County Public Works facilities are designed and managed to protect the environment in compliance with a vast array of federal, state, and local regulations. The safety of customers and staff is the No. 1 priority.

Landfill operations are directed in a manner such that customer utilization of the facility is streamlined by resident use of the Customer Convenience Center for smaller loads; and vehicle travel to the fill face is reserved for heavier commercial vehicles, collection vehicles and larger private loads. Segregation of private vehicles from truck traffic has historically proven effective at maintaining public safety. A dedicated weather station is maintained at the facility to track wind speed and precipitation during operating hours. The Landfill may be temporarily closed, or deliveries restricted, in the event of high winds in order to minimize windblown dust and litter.

The Sandoval County Landfill must meet all of the federal regulatory standards under USEPA Subtitle D and NPDES; as well as the more stringent requirements of NMED’s multiple environmental Bureaus. The Convenience Centers, recycling operations, composting and waste processing

activities are also subjected to NMED registration; as well as stormwater and air quality permitting.

The Landfill is necessarily subject to the most stringent array of regulatory standards, as summarized on **Table 2**:

**Table 2**  
**Environmental Protection Standards**

- The design includes composite geosynthetic liners and leachate collection systems.
- Due to the arid climate, very low volumes of leachate are collected; and the leachate evaporation basin provides a sustainable and cost-effective technique for disposal.
- The Landfill must maintain compliance with a set of 10 approved “Management Plans”; including waste screening, contingencies, special waste, daily operations, recordkeeping, etc.
- Even though groundwater is over 330’ below the site, six monitoring wells are routinely sampled for potential water quality impacts (none detected).
- Monitoring for landfill gas migration is conducted at 16 permanent subsurface probes, and 7 temporary stations which will be converted to permanent probes as filling progresses. Landfill gas has never been detected above regulatory limits in any permanent or temporary probe.
- Stormwater quality protection is ensured via compliance with the federal National Pollution Discharge Elimination System (NPDES). Stormwater Pollution Prevention Plans (SWPPP’s) are approved for the Landfill and all remote facilities; and Spill Prevention, Control and Countermeasures (SPCC) Plans are in-place for the Landfill and PWD Fleet Maintenance facilities.
- The Landfill and waste processing units are also subject to federal “Title V” air quality permitting standards to address the potential for emissions (i.e., dust).
- All of the Network facilities are subject to routine inspections by NMED, including documentation on recordkeeping and mandatory employee training. All solid waste facilities in NM must have a “certified operator” in charge; having met NMED and SWANA training standards.



## PART 2: FINANCIAL AND BUSINESS MANAGEMENT

### 2.1 Funding Sources and Budgeting

The Sandoval County Public Works Division is funded by a combination of tax dollars, disposal fees collected at County facilities, recycling and material sales revenues (i.e., compost, mulch, aggregate), and grants and loans from the New Mexico Environment Department. The PWD solid waste services program is designed to be self-supporting, including funding for post-closure care of the Landfill.

The estimated 2011 solid waste services operating budget is approximately \$2,500,000. Revenues in 2010, including grants, recyclable materials, mulch, and compost sales were approximately \$2,400,000. More than 45% of the Network's operating budget is reserved for 19 solid waste employee salaries, health insurance, retiree health insurance and other benefits, with another 11% for fuel costs to operate facility vehicles and heavy equipment.

The County takes strategic advantage of funding options dedicated to the state's solid waste management infrastructure, and has received 2 grants and one loan from NMED Construction Programs Bureau (CPB) since 2008 to be used for infrastructure improvement and public education. Under the CPB Rural Infrastructure Program, a 3% interest Loan was granted for construction of Cell 5A (\$890,000) and the purchase of a new roll-off truck (\$132,000). Cell 5A has been constructed successfully, and is the current active area of the Landfill. Recycling and Illegal Dumping (RAID) grants were awarded in 2008 and 2010 to be used for recycling equipment purchases; and public education and outreach related to prevention of illegal dumping and recycling awareness:

- **2008: \$25,000 RAID Grant awarded.** Funds were used to fund an Integrated Solid Waste Management Plan for Sandoval County.
- **2010: \$11,950 RAID Grant awarded.** Funds were used to purchase a recycling collection trailer for the Cuba Convenience Station, cardboard recycling container for the Sandoval County Administration Building, and recycling bins for area schools.
- **2011: \$11,190 RAID Grant awarded.** Funds were used to purchase an additional recycling collection trailer for the Peña Blanca Convenience Station.

Figure 10. 2010 Revenues

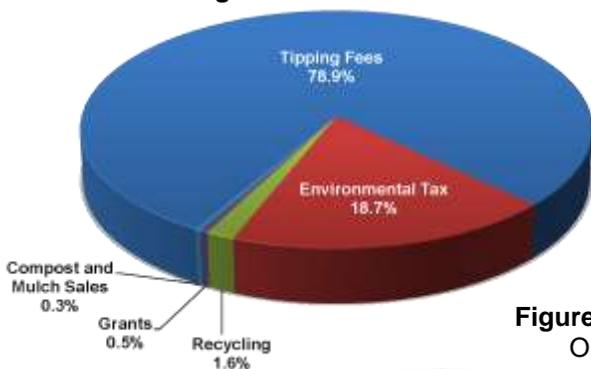
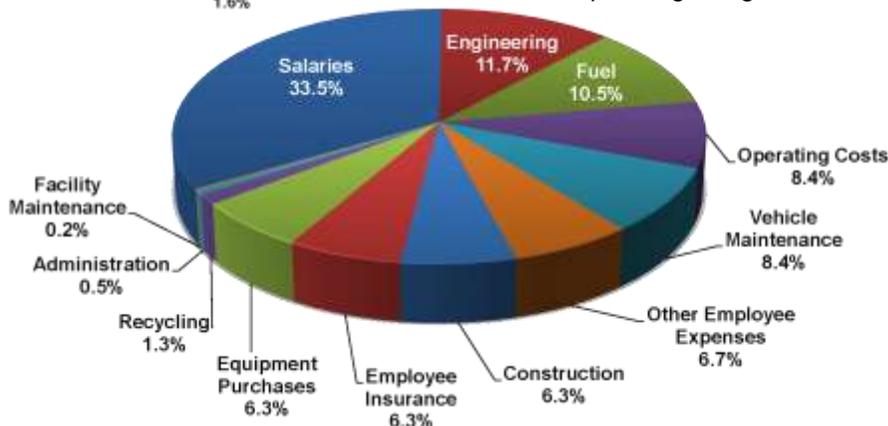


Figure 11. 2011 Estimated Operating Budget



PWD plans to submit an application for a 2012 grant under the NMED RAID Program to support the purchase of additional recycling containers for its Convenience Stations, area schools, and nearby communities; and to support the purchase an additional cardboard bailer to expand the capacity of the PWD/City of Rio Rancho Recycling Center. Also included is the

## PART 2: FINANCIAL AND BUSINESS MANAGEMENT

implementation of education programs in local school districts, to adopt a recycling plan to address the collection, processing, marketing, disposition and sale of recyclable materials.

### 2.2 Management and Operational

**“Sandoval County is committed to educating the public about illegal dumping, and to do everything within their power to remediate existing dump sites.”**

*Robert (Bert) Sanchez,  
Assistant Director of Solid Waste*

#### Goals

Until late 2011, Sandoval County Public Works was managed by Mr. Phillip Rios. Mr. Rios managed the PWD since 2004, and served as the County Community Services Director from 1999 until 2004. Mr. Rios has more than 20 years of experience in public administration, has been recognized by the Sandoval County Commission for his achievements, and was promoted to the position of County Manager in the 4<sup>th</sup> quarter of 2011. Mr. Rios remains an active member of SWANA, the American Public Works Association, the Mid-region Council of Governments Transportation Coordinating Committee and Regional Planning Organization, and the US Composting Council. The new deputy manager of PWD is Mr. Tommy Mora Jr.

**“Mr. Phillip Rios has gone above and beyond the call of duty in all of his activities and responsibilities as the director of public works.”**

*Joshua Madalena,  
Sandoval County Commission Chairman.  
Excerpt from Rio Rancho Observer, 10/20/08*

The Assistant Director of Solid Waste is Mr. Robert (Bert) Sanchez. Mr. Sanchez has 26 years of management experience, and has worked for Sandoval County since 2006. Mr. Sanchez has been an active member of SWANA's New Mexico Chapter since 2007, and oversees the operation of all County solid waste collection facilities and personnel.

Operational goals set by the Sandoval County Public Works office for 2011/2012 include:

**Table 3  
Planning Goals**

- Increase diversion of reusable and recyclable materials at a rate of at least 5%/yr.
- Continue preparation for next cell (7A) construction and certification.
- Increase Landfill revenue to cover future expenses, closure costs, new diversion initiatives, and inflation.
- Apply for grant money through New Mexico's 2012 RAID Grant program to supplement additional recycling efforts through the purchase of equipment and, a media campaign on illegal dumping.
- Continue the process for new landfill site exploration; and define options for maximizing capacity at the existing facility.
- Implement closure procedures for Units I and II, using stockpiled material, to Closure/Post-Closure Plan and Permit specifications.

In addition to these goals, the Landfill and Convenience Stations will continue efforts to identify efficiencies and technologies targeted at waste reduction and re-use.

Use of crushed material (i.e., asphalt, concrete) as a basecourse on haul roads has proven very effective in reducing fugitive dust emissions from vehicle travel. Application of recycled basecourse allows for an 80% fugitive dust control efficiency as opposed to the 60% efficiency allowed for water use alone for air quality permitting. This, in turn, enables more truck travel to and from the active fill face, and increased truck traffic

## PART 2: FINANCIAL AND BUSINESS MANAGEMENT

brings a larger revenue stream to the County while keeping the facility within the emissions thresholds specified by the NMED Air Quality Bureau.

On-site, the application of mature compost and shredded green waste to areas which have received intermediate or final cover provides wind and water erosion protection and moisture retention. This encourages the establishment of vegetation which ultimately binds cover soils. Well-established cover vegetation also impedes infiltration of moisture into the landfill mass, allowing it to evaporate or be utilized by the vegetation, thereby minimizing leachate production and associated collection and disposal costs.

Two notable financial gains are realized by composting of green and woody waste rather than direct disposal in the Landfill. First, by diverting green and woody waste to the facility's composting operation, the Landfill is able to conserve valuable airspace. Second, by selling chipped woody wastes and compost, the Landfill realizes an additional income stream from a material that would have normally been landfilled. The Landfill received approximately \$7,000 in income from sales of compost and mulch in 2010; and those revenues are projected to increase as a result of the opening of the new Recycling Center. The County also provides a

**“Sandoval County Public Works strives to be the leader in partnerships with local communities and the creation of innovative, efficient, environmentally safe waste diversion methods to benefit the County, its citizens, and the environment.”**

*Robert (Bert) Sanchez,  
Assistant Director of Solid Waste*

significant volume of mature compost and processed

woody C & D wastes to local government entities for park maintenance, erosion control, special projects, etc.

The Landfill is one of six permitted MSW landfills within a 50-mile radius of PWD. Disposal rates vary by waste type and county of origin for some facilities, but at \$24.50/ton, the Landfill has the most competitive disposal rates for MSW overall. **Table 4** compares MSW disposal rates between PWD and surrounding facilities:

**Table 4  
Regional Disposal Rate Comparison**

Facility	Distance to the Landfill (Road Miles)	Cost per Ton (Typical)
Estancia Valley Regional Landfill	49	\$36.00
Cerro Colorado Landfill	25	\$30.00
Valencia Regional Landfill & Recycling Facility	47	\$29.00
Rio Rancho Landfill	3.2	\$30.50
Caja del Rio Landfill	40	\$32.50
<b>Sandoval County Landfill</b>	<b>0</b>	<b>\$24.50</b>

### 2.3 Employee Relations

Well-trained and courteous employees are an essential component of a successful, safe, and customer-friendly waste management system. Sandoval County Public Works offers its staff of 65 medical, dental and vision benefits, as well as holidays and accrued vacation time, which is based on length of employment. Other events, such as County-run barbecues and holiday dinners are also regularly held.

Employee advancement is offered on a merit and qualifications basis. Employees' qualifications are reviewed and utilized to the best of the employer's ability. Employees are offered regular training courses offered by NMED and SWANA; and the County also

## PART 2: FINANCIAL AND BUSINESS MANAGEMENT

holds defensive driving courses, monthly safety talks/seminars, and waste inspection training events.

### Workplace Safety

Sandoval County Public Works Division's No. 1 goal is to ensure a clean and safe working environment for all County employees. In order to ensure a safe and productive work environment, all Public Works employees must undergo pre-employment drug testing, as well as quarterly tests following employment. The County is also dedicated to ensuring that employees are afforded training to perform their jobs in an effective, efficient and timely manner. Public Works employees are encouraged to attend periodic State and SWANA-sponsored training courses at the County's expense. This continuous training ensures that employees and managers are kept up-to-date on the most current solid waste issues and technologies, which in turn, creates a much safer work environment, and elevates morale.

### 2.4 Change Management

The Landfill is situated in an area of Sandoval County that was, until ten years ago, very sparsely populated. Since 2000, explosive development has occurred in this area of Rio Rancho, and residential housing has begun to encroach on the Landfill. These homes have been built closer and closer to the facility with full knowledge of its presence and longevity, yet little objection from prospective or current residents has arisen. At the 2005 public hearing for the Landfill's Permit Application Renewal, no objections were voiced to pending NMED approval. This acceptance of the Landfill points to excellent management practices and a clean facility. The County has, however, prepared to relocate certain elements of the Landfill operation. The IVCO may be relocated to the

north as it transitions to using wastewater treatment plant biosolids as feedstock. This relocation would shield the operation from view, and make the potential migration of odors from this feedstock less likely to concern neighbors.

The Sandoval County Landfill has an estimated remaining life of 12 to 15 years, while the next nearest solid waste disposal facility, the Rio Rancho Landfill (**Table 4**), is only expected to continue accepting waste for less than 10 years. When the Rio Rancho Landfill ceases waste acceptance, the Sandoval County facility will be the only MSW landfill in a 25-mile radius available for disposal. PWD has taken this into consideration when planning for future landfill expansion, such as the proposed relocation of on-site utilities. In anticipation of the eventual closure of the existing Landfill, the County has also begun the process of conducting the siting studies for a new landfill.

The core elements of managing change will be to augment efforts to reduce waste generation, divert recyclable and reusable materials, and deploy strategies to maximize the available disposal capacity. The current infrastructure and recent improvements, are designed to be adaptable to changes in conditions and technologies



## PART 3: COMMUNITY RELATIONS

“Illegal dumping is a major problem that raises concerns in regard to safety, property values and quality of life.”

10/2008, Sandoval County  
Illegal Dumping Symposium

### 3.1 Special Collection Events

Sandoval County has a vested interest in minimizing illegal dumping. Raising community awareness and conducting free waste collection events is essential to promote proper disposal of household waste, hazardous or otherwise. Community involvement is encouraged through outreach programs; and these events are used to gather feedback on community needs and priorities. This ensures that these events and programs will be utilized to their full potential and are well attended.

### HHW Collection Events

The County regularly partners with Keep Rio Rancho Beautiful (KRRB), an affiliate of Keep America Beautiful, to host annual household hazardous waste (HHW) collection days for all County residents. These events have been held at the Santa Ana Star Casino parking lot in Rio Rancho, are free to the public, and are widely advertised by both the County and the City of Rio Rancho. Individuals must



provide proof of County residency to take advantage of these events.

### Community Cleanup Events

The County also partners with local communities for annual open space trash collection events. The events include annual Mesa Cleanup Day (Figure 12) conducted with the City of Rio Rancho, and the annual Rio Puerco Cleanup Campaign, conducted in cooperation with the Village of Cuba. Annual Free Disposal Days are held at the Landfill to allow all area residents to dispose of waste free of charge one day out of the year. PWD also provides cleanup support to the State Land Office and NM Department of Transportation.



Figure 12. Mesa Clean-up Day in Rio Rancho

## PART 3: COMMUNITY RELATIONS

### Albuquerque Community Bike Recycling Program

Sandoval County Landfill diverts bicycles in any condition from the solid waste stream to be collected by the Albuquerque Community Bike Recycling Program. This program dismantles bicycles for the purpose of reclaiming the remaining usable parts; and then builds rideable bicycles for those in need (i.e., elementary schools, homeless assistance organizations, church groups).

### Improved Recycling Services

During past cleanup events, HHW collection events, and Free Disposal Days, PWD has distributed surveys to area residents to gauge interest in expanded recycling and special waste collection services. The results of these surveys indicate a strong desire among citizens for more recycling services, and acceptance of certain HHW items such as batteries and paint. In response, the County agreed to construct and manage the new recyclables dropoff center with the City of Rio Rancho at the

Landfill. The services provided are free to customers, and the center is open Saturdays from 8:00 am to 1:00 pm. The planned recycling center received positive press from local papers and the Rio Rancho Parks Department (Figure 13).

### 3.2 Public Education

#### 2008 Sandoval County Recycling & Illegal Dumping Symposium

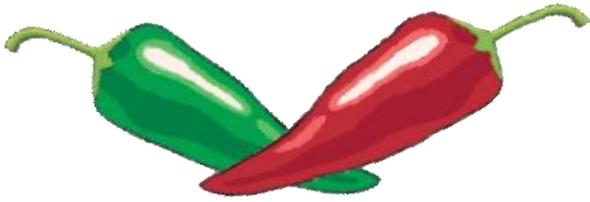
Concerns about the increased potential for illegal dumping due to economic conditions and increasing population prompted the County to host a Recycling and Illegal Dumping Symposium in October 2008. The Symposium was held jointly with the City of Rio Rancho and NMED, was widely advertised, and was attended by approximately 80 individuals, counties, municipalities, and organizations. The Symposium covered a wide variety of issues addressing the prevention of illegal dumping in Sandoval County and the environmental damage caused. Also discussed were waste diversion and recycling programs already in existence, and initiatives planned for the future.



Albuquerque Journal, 02/19/2011

Figure 13. PWD/City of Rio Rancho Recycling Center News Article

## PART 3: COMMUNITY RELATIONS



### Continuing Education

Sandoval County has a vested interest in maintaining the beauty and environmental health of the public and privately-owned lands within the County, and will continue to develop initiatives on illegal dumping and recycling for the residents of the County.

The county continues to collaborate with local school districts to adopt recycling plans for the collection, processing, and disposition of recyclable materials from public schools. Sandoval County will assist area public schools in achieving these goals by providing collection bins, educational materials to the schools, workshops, etc.

### 3.3 Host Community Considerations

Few concerns have been voiced in the past regarding the visibility of the Landfill, or its proximity to homes and schools. In order to continue to be a good neighbor, the Landfill is engineered to ensure that all operations that occur as part of normal business are conducted in a responsible manner that does not produce unnecessary dust, noise or odors. Haul roads are watered regularly, and equipment is maintained so as not to produce excess exhaust or noise. The Landfill voluntarily closes during periods of high wind to prevent excess blowing debris and/or dust, and any litter that does become airborne is collected regularly by Landfill personnel.

The Sandoval County IVCO provides compost to the Rio Rancho City Parks Department, and also

provides free mature compost and mulch to the Sandoval County Roads Department for revegetation and erosion control projects.

Sandoval County participates in local recycling awareness training in schools in the Town of Bernalillo and rural communities. The County also delivers empty collection bins to the schools, and transports the materials to the recyclables market in Albuquerque (typically Masterfibers, Inc.). Other special considerations provided to local organizations include discounted rates to organizations or service groups, such as the Casa De Rosa Assisted Living Center, which is given a special reduced disposal rate for its residents.

The Landfill is also proposing to close and revegetate Units I and II (**Figure 2**) in the near future. This effort will enhance the aesthetics, and help to minimize erosion of the cover. There have been several proposals for beneficial final uses of the completed facility, including a “go-cart” track.

### Conclusions

Sandoval County has successfully responded to a unique set of challenges presented both by dramatic population growth, and the diversity of urban and rural landscapes. By implementing both proven and innovative technologies, and adapting continuously to changing conditions, the Public Works Division has stayed ahead of the growing demand for solid waste services.

