

Appendix A

Background and Demographics

INTRODUCTION AND DEMOGRAPHICS

The City of San Angelo (City) is a home-rule municipal corporation with a Council-Manager form of government. The 2012 population, as reported by the U.S. Census Bureau, was 95,887; an increase of 8.4% and 2.8% from the 2000 and 2012 Census, respectively.

Republic Waste Services of Texas, a Texas Limited Partnership, dba Trashaway Services holds the contract for waste collection and disposal and landfill lease and operation with the City of San Angelo. The San Angelo City Council approved the current contract for 10 years, effective August 1, 2004, expiring on July 31, 2014. Republic Services is responsible for the collection of residential and commercial municipal solid waste and brush. The disposal of municipal solid waste collected within the City from residences and commercial accounts is directed by contract to the San Angelo Landfill.

Landfill

The following information provides background information regarding the City of San Angelo Landfill, its operational history, and current operations.

GENERAL INFORMATION

The San Angelo Landfill is an existing 259-acre, Type I Municipal Solid Waste Disposal Facility (TCEQ MSW Permit No. 79) owned by the City of San Angelo. The San Angelo Landfill is located in Tom Green County, Texas and provides waste disposal capacity for residences and businesses within the City, Tom Green, Coke, Irion, and Runnels Counties; and other surrounding areas. The facility is located approximately 3 miles northeast of the downtown area at 3002 Old Ballinger Highway. The facility is located within the city limits of San Angelo.

The City is the owner and permit holder of existing TCEQ MSW Permit No. 79. The primary function of the facility is municipal solid waste disposal. Support facilities include a compost facility, liquid waste stabilization, uncontaminated wood waste processing area, large item/white goods storage area, and tire storage located within the permit boundary.

The entrance facilities includes a gatehouse, scales, equipment maintenance and storage area, office, and site entrance road which are located outside the permit boundary on property owned by Trashaway Services, Inc. This property is fenced as though it is part of the permit boundary.

The City also owns an approximate 320-acre property located north of the existing landfill. This property is designated as a potential soil borrow source for the existing landfill operations and a potential landfill expansion property.

Refer to the following drawings for general facility location maps and general site plan:

- Figure A1 – Aerial Map
- Figure A2 – General Topographic Map

WASTE ACCEPTANCE

The San Angelo Landfill has projected a waste acceptance rate that varies from 500 tons per day or approximately 143,000 tons per year increasing to a waste acceptance rate of about 700 tons per day or 200,200 tons per year. The facility accepts wastes 5.5 days per week from the City of San Angelo Municipal boundary, Tom Green County, and surrounding counties. The San Angelo Landfill accepted 183,426 tons of municipal solid waste in FY 2013. Table A3 provides the waste disposed at the San Angelo Landfill over the past 6-years, as reported in the TCEQ MSW Annual Reports for the TCEQ Fiscal Year beginning on September 1 and ending August 31 of each year.

Table A3: San Angelo Landfill Waste Accepted

	2013	2012	2011	2010	2009	2008
Diversion Yard Waste or Brush (tons)	201	244	2,296	1,225	199	544
Composting (tons)	4.55	13.3	293			
Liquid Waste Processing Septage (gallons)	216,720	135,720	83,414	1,802,177	2,075,498	2,406,155
Landfill Disposal (total tons)	183,426	171,508	146,612	137,256	141,290	152,691

The San Angelo Landfill is a Type I municipal solid waste disposal facility authorized to accept municipal solid waste, special wastes, and Class 2 and Class 3 industrial wastes, and wastes that are classified as Class 1 only because of asbestos content as defined by the TCEQ. Special wastes authorized with no additional TCEQ authorization include dead animals, regulated asbestos containing material (RACM), Non-RACM, empty containers, municipal hazardous waste from a conditionally exempt small quantity generator, and sludges, grease trap waste, grit trap waste, or liquid waste from municipal sources.

SITE HISTORY

The San Angelo Landfill was originally owned by Angelo Waste Services and began accepting municipal solid waste in the late 1960s. The landfill was originally permitted by the State of Texas in 1975 as the City of San Angelo Landfill, owned and operated by the City. Trashaway Waste Services of San Angelo began operating the facility in 1979 under contract with the City. The City expanded the landfill in 1985 with a major permit amendment that expanded the permit boundary from approximately 131 acres to the present permit boundary of approximately 259 acres. The older areas of the landfill are generally the west half of the permit boundary, with the expansion area consisting of the east half of the facility. In 1994, a Permit Modification was approved by the Texas Natural Resources Conservation Commission (TNRCC) to upgrade the landfill to comply with the Environmental Protection Agency (EPA) Subtitle D Regulations. The San Angelo Landfill is currently operating under the 1984 permit requirements, the 1994 Subtitle D permit modification upgrades, and any subsequent modifications or authorizations.

Groundwater Corrective Action

The Subtitle D upgrade provided for a certified groundwater monitoring system and an approved Landfill Gas (LFG) monitoring program. The facility began groundwater sampling and LFG monitoring consistent with TCEQ regulations upon installation of these systems. Beginning with the initial Subtitle D monitoring event in 1994, the groundwater monitoring system began detecting volatile organic compounds (VOCs) above National primary maximum contaminant levels (MCLs) at several groundwater monitoring wells and methane levels above the regulatory limit at several of the LFG monitoring probes. The San Angelo Landfill was placed in corrective action (Corrective Action Program) in the late 1990's with a public meeting held in August 2000 that included installation of passive landfill gas vent trenches.

The San Angelo Landfill is in corrective action because of statistically significant levels of VOCs above groundwater protection standards at some of the site monitoring well locations. The current corrective action was initiated by TCEQ, Region 8 with issuance of an enforcement action in January 2005. The 2005 Corrective Action permit modification and the 2006 Hydrogeologic Evaluation established that the source of the VOCs in the groundwater monitoring wells was landfill gas migration, and the selected remedy was an extensive landfill gas (LFG) collection and control system that was installed and became operational in October 2006.

Since the LFG system became operational, ongoing improvement in groundwater quality has been documented at the San Angelo Landfill, apparently in response to the successful control of LFG. However, the most significant improvements in VOCs have occurred in the last two years. At the end of 2011, there were VOC detections above groundwater protection standards at 12 of the site wells. At the end of 2013, there were only two site wells with one VOC detection each, only slightly above the groundwater protection standard. If the recent decreasing trends in VOCs continue, the landfill should observe a continued improvement in the statistical analysis results at the upcoming sampling events.

Because the landfill continues to observe improvements in the groundwater quality, it is recommended that the LFG extraction system continue operating under its current configuration and that the effectiveness of the system in removing volatile organic compounds from the groundwater be evaluated annually, as part of the annual corrective action monitoring report. Quarterly monitoring for VOCs and semiannual monitoring for Appendix I total metals at the 22 site wells and 3 offsite wells will continue. The site will remain in the Corrective Action Program until all Appendix II constituents have not statistically exceeded the groundwater protection standards for three consecutive years.

LANDFILL CONDITIONS

The San Angelo Landfill has an approximate permit boundary of 259-acres. The landfill is bounded on the north by 50th Street, the east by Covington Road, the west by adjacent property owned by local industry, and the south by Old Ballinger Highway. Refer to Figure A4 – General Site Plan for a depiction of current landfill conditions.

As previously noted, the City has landfilled waste on this site since the 1960's. The original location of waste placement was the northwest corner of the site. This area is separated from the active waste disposal area by an Atmos Energy gas line and easement. The approximate 31.9-acres area was closed prior to implementation of Subtitle D and final cover was constructed, however, this fill area has not been officially closed and placed in post-closure care. An active landfill gas collection system was installed within this closed area as part of the corrective action process. The active waste disposal area is south of the Atmos Energy easement. The active disposal area consists of a Phase I and Phase II Area. The Phase I Area is generally the west half of the site, Phase II is the east half of the site.

The Phase I Area consists of both pre-Subtitle D areas and a Subtitle D lined area as depicted on Drawing A4. Waste has been placed within the entire limits of Phase I with final cover constructed over an approximate 42.5-acre area as depicted. There remains some disposal capacity available over the remainder of the Phase I Area. Some of the remaining disposal capacity in this area is limited to construction and demolition debris wastes. An active landfill gas collection system was constructed in the closed 42.5-acre area as part of the corrective action process.

The Phase II Area consists of Subtitle D lined areas, with the exception of a small area located adjacent to Cell 9A that received emergency storm debris in the 1990's. Cells 9A thru 10C have been constructed and have received waste. The active waste disposal area includes these areas as well as the eastern portion of Phase I. The remaining waste disposal footprint consists of Cells 11 thru 14, approximately 63.3 acres. Refer to Drawing A4.

The TCEQ approved Subtitle D alternate liner system consists of a geosynthetic clay liner (gcl), 60-mil HDPE geomembrane liner, drainage geocomposite leachate collection system, and 24-inches of protective cover. The leachate collection system includes 6-inch perforated collection pipe, non-perforated header pipe, and leachate collection sumps. The Phase I and Phase II connection is a pre-Subtitle D to Subtitle D liner connection.

The TCEQ approved alternate final cover system consists of a geosynthetic clay liner (gcl), 40-mil LLDPE geomembrane liner, drainage geocomposite system, and 24-inches of erosion layer cover. Additional final cover construction items include drainage swales and downchutes, and establishment of vegetation for erosion control. It is anticipated that expansion of the active landfill gas collection system may be required, pending the resolution of the corrective action process.

The monitoring systems consist of 22 groundwater monitoring wells, 2 upgradient wells and 20 downgradient wells along the permit boundary, and three offsite groundwater monitoring wells; and 14 landfill gas perimeter probes.

REMAINING DISPOSAL CAPACITY

The landfill completed construction of Cell 10C in January 2013 and is conducting disposal operations within existing lined areas (Cells 10A, 10B, and 10C). Cells 11 thru 14 have not been constructed. The remaining disposal capacity evaluation is based on the aerial topography provided by Republic Services, flown February 6, 2013; and a ground survey conducted by Landtec Engineers on December 4, 2013.

Total Remaining Capacity

The total waste disposal capacity for the San Angelo Landfill has been determined to be 15,770,000 cubic yards. Based on the December 4, 2013 ground survey, the waste in-place is 10,276,500 cubic yards. The total remaining capacity between the top of protective cover and bottom of final cover is approximately 5,493,500 cubic yards. The volume includes waste and daily cover. The calculated waste capacity consumption rate between February 6, 2013 and December 4, 2013 is approximately 26,600 cubic yards per month. Based on this consumption rate, the remaining site life for the San Angelo Landfill is approximately 17 years. This is an estimated remaining site life and varies based on waste acceptance rate, compaction achieved, and daily / intermediate cover soil usage.

Constructed Remaining Airspace

The total remaining airspace over constructed lined areas is approximately 742,000 cubic yards, as of the December 2013 ground survey. However, this includes airspace located in Phase I, along the future tie-in between Phase I and II, which may be difficult to access, until additional lined areas are constructed. The remaining airspace over Cells 10A, 10B, and 10C is approximately 236,000 cubic yards. Based on the consumption rate of 26,600 cubic yards

per month, there is about 8 to 9 months of airspace remaining, which would provide capacity thru July 2014.

However, there is an existing 131,400 cubic yards of overfill over existing lined areas, primarily within Cell 9 and exterior side slopes of Cells 9 and 10A. This overfill must be removed and placed prior to the end of the current operational contract of July 31, 2014. Should this overfill be placed within Cell 10A thru 10C, the constructed remaining capacity would be reduced to 104,500 cubic yards. Based on the consumption rate of 26,600 cubic yards per month, the remaining capacity in Cells 10A thru 10C will be consumed in about 4 months by March 2014.

Cell 11A Airspace

Based on the remaining airspace available, the City will provide funding for the engineering design, construction, quality assurance, and cell construction for Cell 11A (about 6.5 acres). With the City funding construction, there will be available airspace to continue beyond the current contractual end date of July 31, 2014. Construction of Cell 11A would provide approximately 712,500 cubic yards of available capacity. Based on 26,600 cubic yards per month, construction of Cell 11A would provide capacity through about January 2016.

SOIL BALANCE

The remaining waste disposal footprint (Cells 11 thru 14) has been excavated to approximate liner subgrade throughout the majority of this area. There only remains approximately 100,000 cubic yards of soil available for landfill operations, based on the December 4, 2013 ground survey.

Waste disposal operations within Cell 10A thru 10C will require approximately 50,000 cubic yards of soil for daily cover and intermediate cover. Construction of Cell 11A will require a total of about 25,000 cubic yards of soil. These soil requirements total approximately 75,000 cubic yards. Based on the soil needs and availability, a source of soil is required from outside the San Angelo Landfill permit boundary, within about 6 months, by May 2014.

The City owns about 320-acres north of the existing landfill. This property may provide a suitable source for the soil borrow required to provide sufficient soils for continued operations. This will require development of a soil borrow and negotiated compensation plan for the property and a permit modification for access to the landfill.

FINAL COVER CONSTRUCTION

The terms of the existing agreement require Republic Waste Services to construct final cover over any waste disposal area operated by Republic Waste Services. At this time, there are a total of 87.5-acres that would require construction of final cover, consistent with the terms of this agreement. However, not all of the 87.5-acres have reached final top of waste grades, and would not be ready for final closure or final cover construction at this time. The City will determine the approach to resolve required final cover construction over the 87.5-acre final waste disposal area with Republic Services.

PERMIT DOCUMENTS PROVIDED

Electronic PDF copies of the TCEQ MSW Permit No. 79, the Part III Site Development Plan as updated with approved TCEQ permit modifications, the 2012 Corrective Action Report and correspondence associated with the 2012 report, and other applicable documents can be accessed by Respondents by contacting the Purchasing Division Manager or can be found online at www.cosatx.us/departments-services/purchasing/bid-information.

Waste Collections

The following information provides background information regarding the City of San Angelo municipal and commercial waste collections services, its operational history, and current operations.

GENERAL INFORMATION

The City of San Angelo municipal waste collections encompasses solid waste and yard waste collection services within the municipal boundaries. Collections services are performed for approximately 32,200 customers, dispersed as indicated in Table A5. Waste disposal is directed to the City of San Angelo Landfill located at 3002 Old Ballinger Highway, San Angelo, TX.

CURRENT COLLECTION SERVICES

Currently, the City contracts with Republic Waste Services of Texas, a Texas Limited Partnership, dba Trashaway Services for collection services for residential and commercial customers. The City's private contractor provides the following collection services for residential service units:

- *Solid Waste Collection Service:* Twice per week for residential customers using manual collection via customer-provided containers at curbside or alley access
- *Yard Waste Collection Service:* Twice per week, unlimited manual collection for residential customers via bags, bundled, or customer-provided containers

Republic Waste Services provides the following services for commercial and industrial units:

- *Solid Waste Collection Service:* Minimum of once per week using automated collection of contractor-provided containers
- *Billing Services:* Monthly billing of commercial and industrial customers using manual, online, or automated billing

Recycling and bulk waste collections are not currently performed as a contracted service through the City.

HISTORICAL COLLECTION DATA

This section provides historical data pertaining to waste collections services. To the best of the City's knowledge, the information contained herein is accurate as stated and can be used by proposers as applicable. However, the information does not constitute a guarantee by the City as to the exact number or quantities to be served or collected.

Historical Tonnage Information

Table A5 represents historical solid waste, bulk waste, and diversion tonnage by generator received at the Landfill during the last operational year:

Table A5: Annual Collection Data-2013

	Number of Customers	Solid Waste Tonnage (annual qty)	Bulk Waste Tonnage (annual qty)	Diversion Tonnage (Tires, Mulch/Compost) (annual qty)
Residential	29,886	34,727 TN	0	0
Commercial	2,163	36,768 TN	0	582 TN
Roll-Off	163	16,869 TN	1 Unit	88 Tires, 684 TN
City of San Angelo	1	21,507 TN	0	595 TN
Non-City Landfill & Gate Customers**	-----	68,200 TN	216 Units	983 Tires, 1,100 TN
Citizen Free Dumping Program**	12,433 Annual Tickets	5,968 TN	486 Units	2,061 Tires, 663 TN

**Not included in contracted collection services. Data included for Landfill information purposes.

ROUTING MAP

Figures A6-A8 detail the collections sectors and routes used by the current contractor.

Figures And Maps

Figure A1: Aerial Map

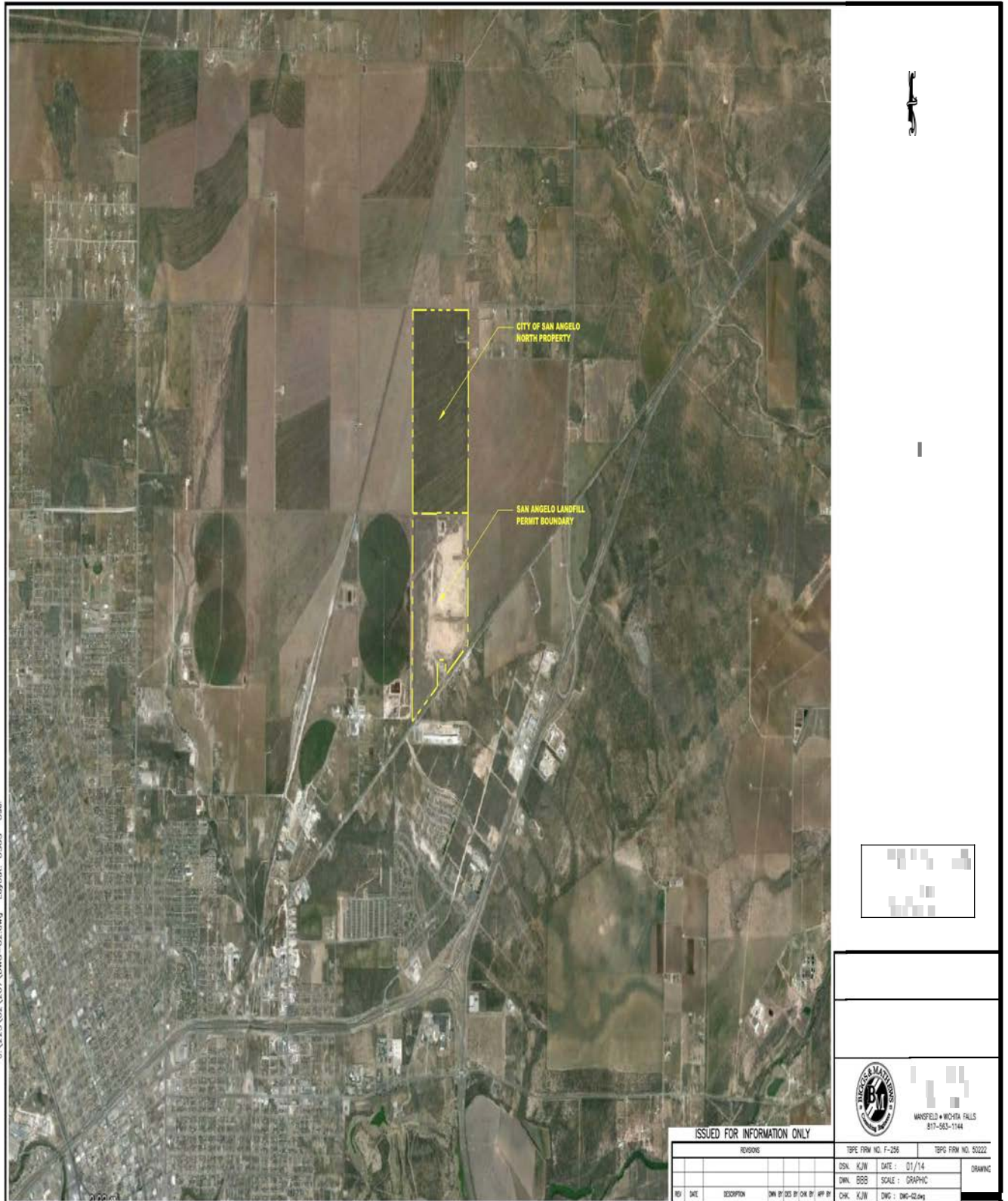


Figure A2: General Topographic

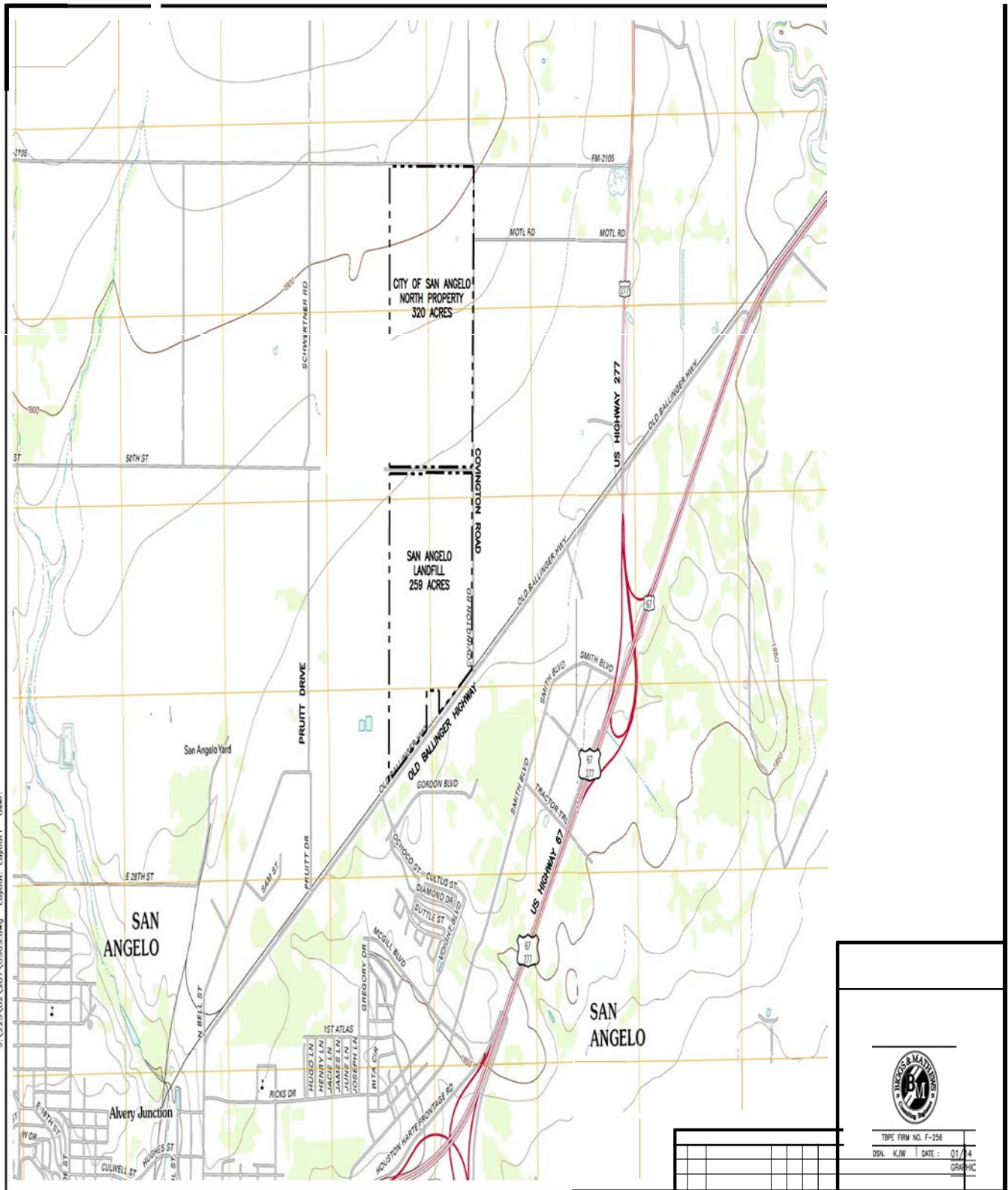


Figure A4: General Site Plan

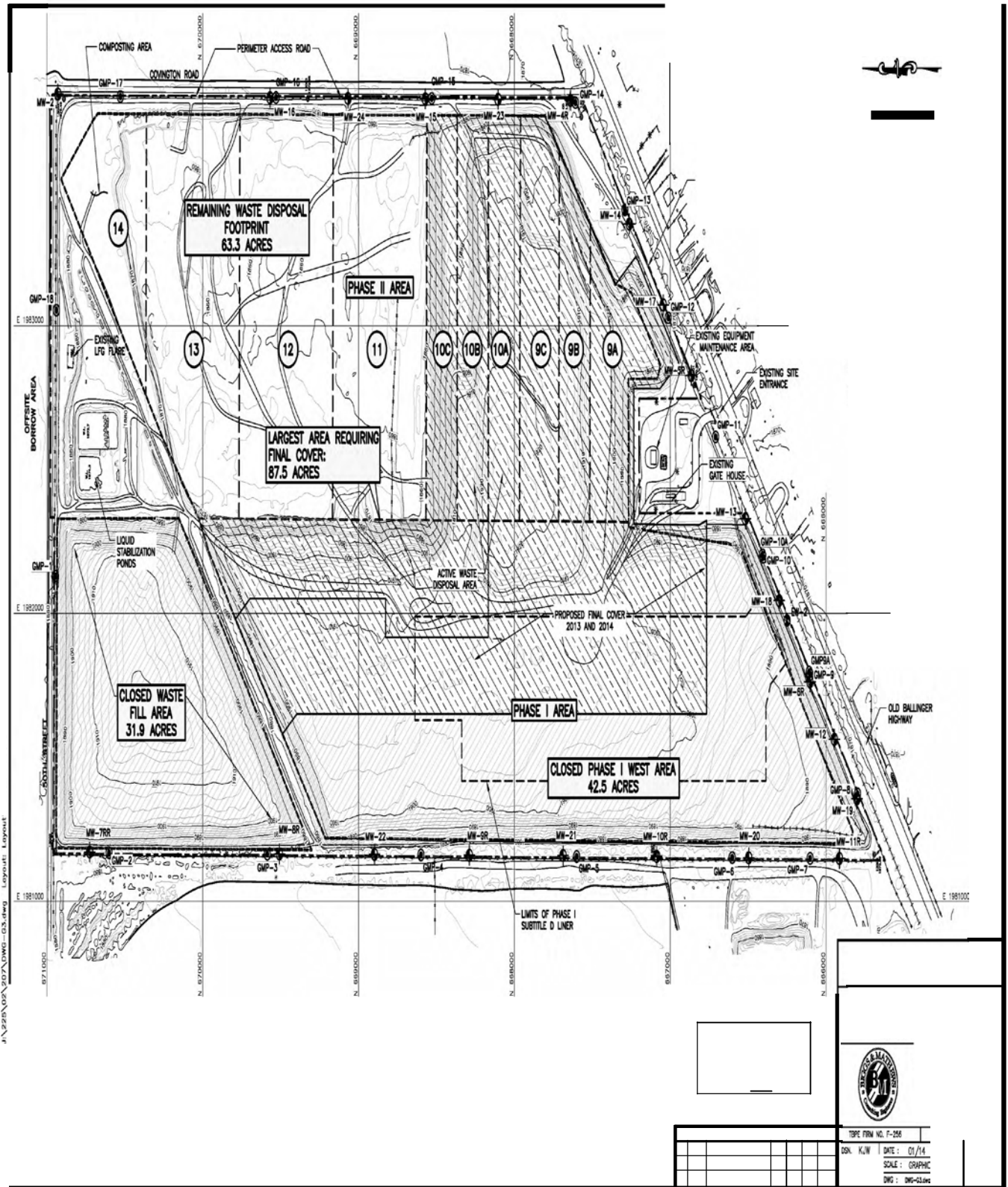


Figure A7: Waste Collections Routes

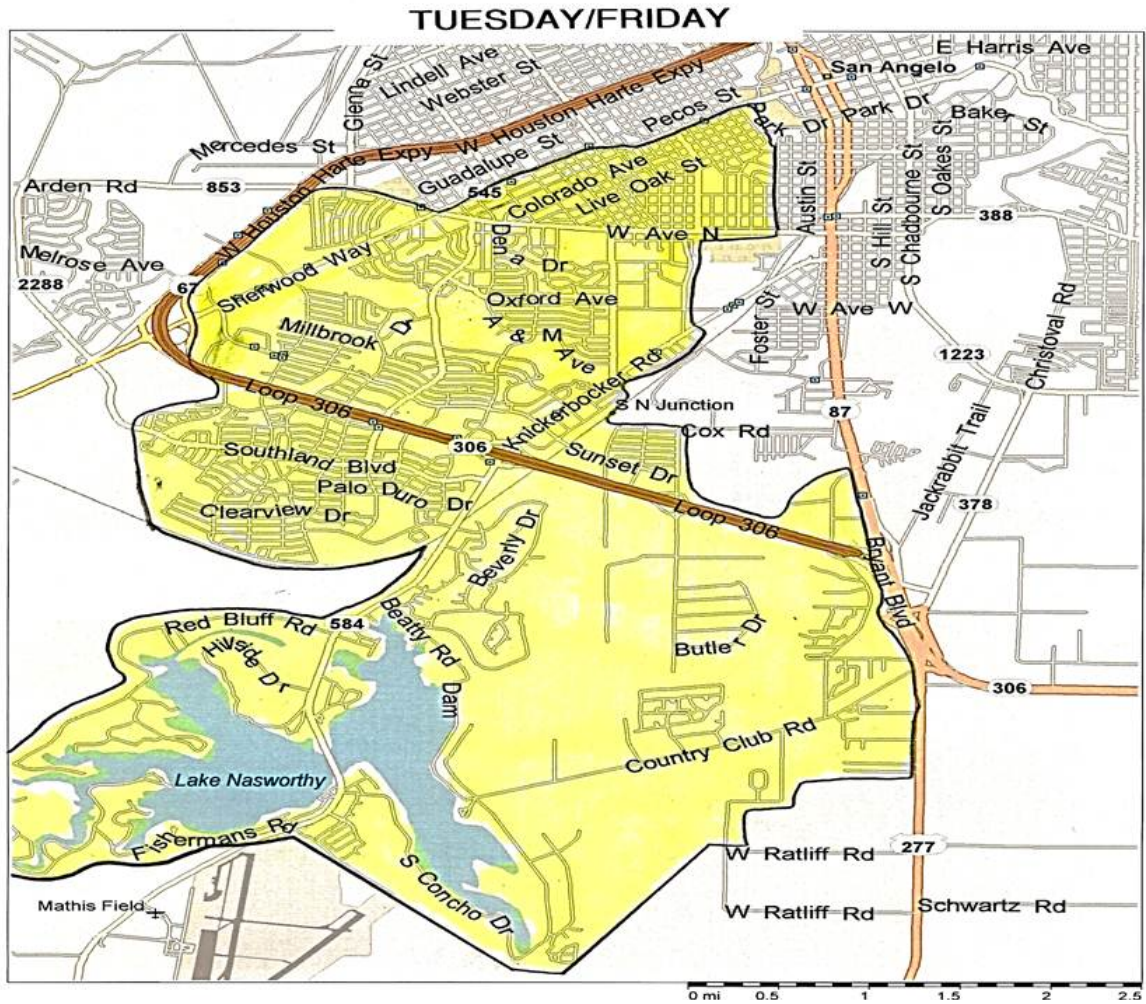


Figure A8: Waste Collections Routes

