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The City of Austin is committed to compliance with the Americans with Disabilities Act. Reasonable modifications and equal access to communications will be provided upon request. Please call Lia Warner at 974-1970 for information.

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NOTICE IS HEREBY GIVEN THAT THE SOLID WASTE ADVISORY COMMISSION WILL MEET ON MONDAY, OCTOBER 27, 2003, AT 6:30 P.M., at the Solid Waste Services Administration Building 2100 E. St. Elmo Road, Suite 200, Austin, Texas.

FOR THE FOLLOWING PURPOSES:

1. Citizen communications (limited to 3 minutes per individual, unless a majority of SWAC members agree to extend time).

2. Announcements.

3. Report from the Director (SWAC may adopt resolutions regarding any of these items).
   A. Council Items for October 30, 2003.

      1. Authorize execution of a 12-month service agreement with Browning-Ferris Industries BFI, Del Valle, TX for residential refuse collection services in an amount not to exceed $92,784, with two 12-month extension option.

      2. Authorize execution of a five-year contract with BFI Waste Systems of North America, Inc., in an estimated amount of $642840 per year for landfill disposal services, for an estimated total amount of $3,214,200 over the term of the contract.

      3. Authorize negotiation and execution of a 65-year contract with IESI TX Landfill L.P., Fort Worth, Texas, for the operation, maintenance and closure of the City of Austin FM 812 Landfill facility, for an estimated value to the City of $_____.

4. City of Austin Material Recovery Facility
5. Monthly Reports for July and August 2003

6. SWS Contract Resolution

7. Election of Officers

8. Annual Report for FY 03 and FY 04 Work Plan

9. Approval of minutes from previous meeting.

10. Future agenda items.

11. Adjourn.

Posted 10/21/03, 3:00 PM

William E. Rhodes, P.E., Staff Liaison

SOLICITATION NO. SA 04300021

Management & Operation of the City of Austin's Type IV Landfill; Permit No. 360A

Date Issued: March 15, 2004
Closing Date and Time: May 20, 2004, by 3:00 PM

Prepared by

Robert S. Kier Consulting

October 26, 2004

Background

The City of Austin (COA) issued a Request for Proposals (RFP) to privatize the management and operation of the FM 812 Landfill. The primary objectives stated in the COA's solicitation were: 1) to maximize revenue and minimize costs; 2) to reduce or eliminate environmental liability; 3) to assure continued capacity for Type IV wastes (brush and construction and demolition debris) for as long as possible; and 4) to have another entity close the landfill and manage post-closure care. To our knowledge, only two entities, Industrial Environmental Services Incorporated (IESI) and Texas Landfill Management, L.L.C., responded to the RFP.

IESI owns and operates a Type IV landfill immediately west of the COA's FM 812 Landfill. Texas Landfill Management, L.L.C., is wholly owned by Bob and Jim Gregory, who also own Texas Disposal Systems, Inc. and Texas Disposal Systems Landfill, Inc. Texas Landfill Management, L.L.C., is the operating entity for the Gregory's Type I landfill, composting operation, and recycling center in southern Travis County, approximately five miles southwest of the FM 812 Landfill, and all the Garden-Ville compost facilities. These three companies are together commonly known as Texas Disposal Systems (TDS).

Waste disposal at the FM 812 Landfill began in the 1950s or early 1960s in two wet-weather stream valleys, approximately fifty feet deep, that drained into Onion Creek immediately south of Bergstrom Airbase. This was long before there were any regulatory requirements for or state controls over the design and operation of municipal solid waste landfills. We are unaware of any liners or other barriers to leachate migration being constructed in the stream valleys or even any inspections of the landfill bottom and sidewalls for integrity by a licensed professional engineer before waste disposal; however, it has been reported that soil plugs were placed at the mouths of the stream valleys and raised upward (at least part way) as the valleys were filled.

With the advent of statewide permitting of landfills, however, in approximately 1973, the COA obtained Permit No. 360 from the Texas Department of Health, or its predecessor agency. The areal and vertical extent of the FM 812 Landfill was expanded in 1979 and again in 1983 through permit amendments [*Attachment 1*]. In 1994, design and operational requirements of the landfill were brought into compliance with the new federal RCRA Subtitle D rule through the permit modification process. Construction of a leachate collection system and a standard design, composite liner consisting of a flexible membrane over two feet of compacted, relatively impermeable clay was specified in the COA's application for the permit modification for the only remaining approved area within the permit that had not yet been filled [*Attachment 2*]. Certain other unfilled areas of the landfill (C, D-1, F, G, and parts of A-2 and E-1) were deleted from the permitted waste disposal area to conform to a state requirement that the capacity of the landfill not be increased in the process of meeting the Subtitle D rule through a simple permit modification [*Attachments 2 and 3*].

In 1997 the COA sought permission to install an alternate, performance-based liner in which the two feet of compacted clay of the composite liner was replaced by a thin (approximately one-quarter inch thick) manufactured geosynthetic clay liner. The alternate liner design and a revised Soil and Liner Quality Control Plan (SLQCP) incorporating the alternate liner design were approved by the Texas Natural Resource Conservation Commission (TNRCC), now the Texas Commission on Environmental

Quality (TCEQ), in mid 1997 [*Attachment 4*]. To our knowledge, this is the liner system now being used at the FM 812 Landfill [*Attachment 5*] and is the only Subtitle D liner system ever installed at the landfill. Such a liner system is not a composite liner system as defined in the TCEQ municipal solid waste regulations [30 TAC §330.200(a)(2) and (b)].

The COA was forced by the Federal Aviation Administration (FAA) to agree to cease accepting all putrescible waste at the FM 812 Landfill sixty days prior to the opening of the new Austin Bergstrom International Airport in 1999 [*Attachment 6*]. Because the landfill was too close to Austin's new commercial airport to meet federal and state location restrictions, the COA was required to close the FM 812 Landfill to the receipt of ordinary municipal solid waste containing putrescible garbage. The COA was, however, allowed to convert to a Type IV landfill operation and to continue to receive brush and construction and demolition debris. Exposed putrescible waste at municipal solid waste landfills attracts birds, which in large numbers and size, are inimical to the safety of commercial aircraft. Brush and construction and demolition debris do not have the same potential as putrecible garbage to attract birds, and Type IV landfills are prohibited from accepting putrescible waste for disposal.

Environmental and Regulatory Issues

Privatization and potential expansion of the FM 812 landfill raises several issues of environmental and regulatory concern:

- *The continued potential for erosion and instability of the steep north side of the FM 812 Landfill bordering Onion Creek and Travis County's Richard Moya Park under existing conditions and in the event of mismanagement and/or a vertical expansion (height increase).*

  The north slope of the landfill has failed once before. In 1991, a large volume of soil and formerly buried solid waste slide across Onion Creek and into the

adjacent park, partially blocking the creek and flooding the park. In addition, flood levels along Onion Creek, even for a flood with a ten percent probability of occurring in any one year (10-year flood), would be approximately twenty-two feet up the side of the landfill; flood levels for a 100-year flood would be approximately five feet higher. Flow velocities in Onion Creek along the north side of the landfill are estimated to be more than 8.5 feet per second, which is a sufficient velocity to erode any soil that could be placed there that is not sufficiently protected [*Attachment 7*].

No remedial attempts to prevent erosion or future slope failures have yet proven to be effective over the long-term. Gabions placed along the north side of the landfill to prevent erosion have not withstood the hydraulic forces of Onion Creek. Several wells and drainage facilities have been installed to remove leachate from the landfill to reduce hydrostatic pressure within the landfill and to prevent leachate seeps from entering Onion Creek [*Attachment 8*]; however, not all of these have been operated or are still operational. According to COA staff, implementation of these measures took ten years. and as recently as July 2003, approximately twelve years after a portion of the north slope of the FM 812 Landfill failed and slid across Onion Creek, the COA was still not controlling leachate depths as required, even in the small portion of the landfill with a leachate collection system [*Attachment 9*]. The most recent investigation of the stability of the older portion of the north slope of the FM 812 Landfill, which was performed by Camp Dresser & McKee Inc., was not made available to TDS to review and to address within its response to the COA's RFP [*Attachment 10*]. Furthermore, the current attempts to pump/drain landfill leachate from behind the north slope of the landfill to reduce hydrostatic pressure with disposal of the leachate in another part of the landfill violates state and federal municipal solid waste management regulations (see below).

Raising the height of the landfill to gain additional waste disposal capacity will tend to increase the length of the north slope, decreasing long-term stability. A repeat of the 1991 slope failure could potentially affect operations at Austin Bergstrom International Airport by once again exposing putrescible waste that attracts birds in close proximity to the airport runways. In the event the FM 812 Landfill posed a danger to commercial aircraft operations at the Austin Bergstrom International Airport, it is our understanding that the FAA will hold the COA responsible regardless of any contractual relations the COA might have with a private entity operating and managing the landfill. Prevention of another failure of the north slope of the FM 812 Landfill is critical to continued, uninterrupted operation of Austin's new airport.

- *The existence of ground water contamination, including chlorinated volatile organic compounds.*

Since 1984, fifteen monitoring wells, MW-1 through MW-15, have been installed at the FM 812 Landfill. Monitoring wells MW-4 and MW-5 have been decommissioned, and at least as of May 2004, monitoring well MW-13 did not produce sufficient water to yield a sample [*Attachment 11*].

Apparent ground water contamination has been detected and reported for samples from seven of the twelve monitoring wells yielding samples; monitoring wells MW-7, MW-8, MW-9, MW-10, MW-12, MW-14, and MW-15. Currently, these wells, all of which are downgradient wells, are in assessment monitoring [*Attachment 12*].

Corrective action is to be implemented at monitoring well MW 10, from which samples with excessive concentrations of nitrate have been persistent [*Attachment 13*]. Nitrate concentrations reported have ranged from 4.98 milligrams per liter (mg/L) to 260 mg/L (292 mg/L in Table 2-1 of the report provided in Attachment

13). Background nitrate concentrations are 6.98 mg/L and the ground water protection standard established by 40 CFR Title 40, Chapter 1, Part 141.51 is 10 mg/L. Ground water flow is toward Onion Creek.

Historically, several monitoring wells have yielded samples in which volatile organic compounds VOCs) have been detected [*Attachment 14*]. Monitoring wells at the FM 812 Landfill in which VOCs have been detected include MW-3, MW-8, and MW-14. VOCs detected include acetone, benzene, chlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, cis- and trans-1,2-dichloroethene (ethylene), and trichloroethene (ethylene). Elevated concentrations of total organic carbon (TOC), an indicator parameter for contamination by organic compounds, have been detected in monitoring well MW-10 and perhaps other, unspecified monitoring wells.

The monitoring wells from which contaminated samples have been reported are on the north and east sides of the landfill in a downgradient position with respect to ground water flow [*Attachment 13*]. Other than the currently planned corrective action related to nitrate contamination in samples from monitoring well MW-10 on the north side of the landfill, which is dependent on the ability to recirculate leachate into the landfill (see below), there appears to be nothing preventing contaminants emanating from the landfill from reaching Onion Creek. Potential contamination of ground and surface water because of leakage of leachate from the FM 812 Landfill must be minimized by proper control of leachate depths within the landfill.

- *Continued offsite migration of potentially explosive landfill gas, despite the installation of an active landfill gas collection system.*

As waste placed in a landfill degrades, landfill gas is generated, which consists of approximately fifty percent carbon dioxide and fifty percent methane.

Exceedance of potentially explosive concentrations of the methane component of landfill gas (approximately 5 percent methane in air and known as the lower explosive limit or LEL) has been a long-standing problem at the boundary of the FM 812 Landfill. Explosive concentrations of methane, especially if they occur in enclosed structures on or adjacent to the landfill present a serious worker and public safety issue.

The COA has made two major attempts to prevent excursions of landfill gas from the FM 812 Landfill. Most recently, the COA received approval of an application for a permit modification to "renovate and improve the landfill gas collection and control system" installed at the landfill [*Attachment 15*]. Complete control of landfill gas has apparently not yet been achieved, though. As recently as September 2004, the concentration of methane exceeded the LEL in ground water monitoring well MW-8 on the north side of the landfill. Earlier in 2004, exceedances of the LEL have been reported for monitoring well MW-3 at the northwest corner of the landfill, gas monitoring probe GP-10 on the east side of the landfill, and gas monitoring probe GP-9A, the location of which is not known with certainty, but appears to also be on the east side of the landfill somewhere near gas monitoring probe GP-9 [*Attachment 16*]. Although we have no documentation, it is our understanding from discussions with COA staff that the COA has purchased several properties on the east side of FM 973 that potentially could be affected by migration of landfill gas from the FM 812 Landfill. Control of the migration of landfill gas is essential if the COA is to minimize its liability related to the FM 812 Landfill.

- *The impermissible recirculation of landfill leachate and gas condensate derived from pre-Subtitle D portions of the landfill and water purged from ground water monitoring wells over performance-based, alternate liners.*

The COA has acknowledged verbally and in writing [*Attachment 17*] that leachate, landfill gas condensate, and even purge water from sampling of the ground water monitoring wells is recirculated into the Subtitle D portion of the FM 812 Landfill. Recirculation of these fluids violates state and federal rules and regulations. There are actually three forms of regulatory violation here:

1) Recirculation of leachate and landfill gas condensate is not allowed over performance-based, alternate liners, only over composite liners as defined in the TCEQ's municipal solid waste regulations and as originally specified in 1994 Subtitle D permit modification for the FM 812 Landfill [30 TAC §330.56(o)(2) and §330.200(a)(2) and (b); *Attachment 18*]; to our knowledge composite liners as defined in the municipal solid waste regulations were never installed at the FM 812 Landfill;

2) Leachate and landfill gas condensate can be recirculated only in the portion of the landfill from which the fluids are derived, and only if that portion has a standard design composite liner as described above, [30 TAC §330.5(e)(6)(A)(*ii*); *Attachment 18*]; and

3) Ground water purged from monitoring wells cannot be treated as leachate or landfill gas condensate; i.e., it cannot be introduced into the landfill regardless of the type of liner system in place [same cites as above; *Attachment 18*].

As has been indicated above, it appears that all methods by which the COA is attempting to control leachate migration and to maintain a stable north slope at the FM 812 Landfill are currently dependent on recirculating fluids back into the landfill. Thus, as the FM 812 Landfill is currently managed and operated, the COA is failing to meet the regulations with respect to disposal of fluids at the landfill. Were the COA to meet those regulations, its plans to meet other requirements, such as control of landfill gas and the corrective action associated with ground water contamination at monitoring well MW 10 could be impaired.

The COA cannot continue to attempt to solve environmental problems relatively simplistically by failing to adhere to or by ignoring the requirements of all the State's municipal solid waste regulations.

- *No documented plan to manage contaminated water generated at the site.*

In accordance with the TCEQ municipal solid waste regulations [30 TAC §330.56(o); *Attachment 18*], there must be a plan for the management of contaminated water – water that has come in contact with leachate or solid waste. We have been unable to find such a plan in any of the documents we have been able to review pertaining to the FM 812 Landfill. A plan to manage contaminated water generated at the landfill is a regulatory requirement.

- *The legality of operating as a Type IV landfill with a Type I permit.*

It is unclear whether the FM 812 Landfill may continue to be operated as a Type I landfill that simply does not receive putrescible wastes or must be permitted as a true Type IV landfill that can receive only a much more limited range of wastes [30 TAC §330.41; *Attachments 19 and 20*]. The regulations governing waste

disposal under the two types of permits are very different; e.g., waste disposed in Type I landfills must be covered at least daily and waste disposed in Type IV landfills normally need be covered only weekly [30 TAC §330.133(a); *Attachment 20*]. Documents available from TCEQ are conflicting as to whether the FM 812 Landfill: 1) may be operated under a Type I landfill permit, but simply not receive putrescible wastes; 2) may be operated under a Type I landfill permit, but in accordance with the regulations for a Type IV landfill, which are less restrictive; or 3) must actually be re-permitted (e.g., through a permit modification) as a Type IV landfill [*Attachment 19 and 21*]. Under the current situation, the COA has complied with the Federal Aviation Administration (FAA) requirement in order to receive funding and to open the Austin Bergstrom International Airport; however, the COA also has retained the potential to reopen the landfill as a Type I landfill accepting putrescible waste through demonstration to the TCEQ that its operation would pose no bird hazard 30 TAC §330.300; *Attachment 22*]. The COA must obtain a valid determination from the State as to which permitting and operating requirements apply to the FM 812 Landfill and modify its permit accordingly if needed.

- *The ability to expand the landfill vertically due to height limitations imposed by the FAA and due to the placement of final cover over most of the landfill.*

Much of the landfill appears to be at the currently permitted final height. It appears that landfill sectors areas A1 and A3, a portion of Sector B, Sector D2, and Sector E2 [*Attachment 23*] were all filled and covered prior to October 9, 1991, the date on which Subtitle D was promulgated. Thus, these portions of the landfill should be considered closed. It appears that only Sector A2 and other portions of Sector B were considered active as of the date on which the Subtitle D Rule was promulgated. It is not known, however, whether proper closure documents were ever filed or even whether, as of this date, such closure documents would be a regulatory necessity.

Proper closure procedures, in accordance with state regulations and the landfill's operating permit, for those portions of the landfill that were still active after October 9, 1991, may not have been followed. To our knowledge, the currently applicable closure plan for the FM 812 Landfill [*Attachment 24*] specifies that the maximum area that will ever require final cover at any one time is ten acres. Furthermore, in accordance with the TCEQ municipal solid waste regulations, once closure activities have commenced – e.g., placement of final cover – they must be completed within 180 days [30 TAC §330.252 and 253; *Attachment 25*]. COA staff have made contradictory statements as to whether the existing cover over all but the currently active portion of the landfill is final cover or some intermediate cover. If the current cover over most of the landfill is actually final cover, as defined in state and federal regulations, then disposal of more waste over this cover would require that new liners be installed over that cover. In addition, height limitations imposed by the FAA have been acknowledged, but not divulged [see question and response in *Attachment 26*].

A lateral expansion of the waste disposal area within the FM 812 Landfill appears to be less of a problem, but would still require a permit amendment. As indicated in the application for a permit modification in 1994 to meet the new federal Subtitle D rule, certain unfilled areas of the landfill (C, D-1, F, G, and parts of A-2 and E-1) were deleted from the permitted waste disposal area to conform to a state requirement that the capacity of the landfill not be increased in the process of meeting the Subtitle D rule through a simple permit modification. Despite representations of COA staff [see question and response No. 21 in *Attachment 25*], these areas cannot now be again considered part of the permitted area of the landfill [*Attachments 2, 3, 24 and 27*]. The COA should strictly control the expansion of the landfill to minimize its liability and to protect public health and safety.

- *The COA's requirement that the contracting entity assume complete ownership and liability for the waste currently disposed at the FM 812 Landfill.*

This requirement appears to be in contradiction with federal law [*Attachment 28*]. Ownership and liability for wastes disposed at the site by the COA over the last fifty years cannot be transferred by any means, let alone by simple contract. In short, regardless of what clauses the COA may place in a contract with whatever entity that may take over management and operation of the FM 812 Landfill [see question and response No. 14 in *Attachment 26*], the COA retains responsibility and ultimate liability for the waste already placed in the landfill and any emissions from those wastes. In reality, should the operating entity default on its responsibility for additional waste placed in or on top of the landfill, the COA would effectively become liable for any environmental impairment caused by this waste, too, because of the difficulty of determining exactly what waste caused the problem and because the liability is joint and several. Therefore, the COA should not lose control of the operation, expansion (if any), closure, and post-closure care of the FM 812 Landfill.

- *Additional Environmental and regulatory Concerns*

Limitation of the documents that potential contractors were allowed to view; most specifically:

- Maps of the property and the permit boundaries; are the boundaries coincident or is the permit boundary everywhere on or within the property boundary?
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- Maps of the actual waste unit boundaries; has any waste been placed outside of the property/permit boundaries?

- Documents related to liner certification and locations; what liner systems have been installed where and are there any gaps between the approved liner areas?

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- Copies of existing and continuing contractual relationships; have all existing contractual relationships related to operation and maintenance of the FM 812 Landfill been revealed?

Without detailed knowledge and understanding of these types of documents, no entity can submit a viable proposal to adequately protect the COA's interest as it manages and operates the FM 812 Landfill.

Based on the tour of the FM 812 Landfill on March 26, 2004, surface water drainage controls appear inadequate; however, this concern has not been researched.

The COA must provide much more information about existing conditions at the FM 812 Landfill. Evaluation of the proposals received in response to its RFP should be based on the contractor's proven ability to fully meet all regulations and to properly close the landfill. Only by fully disclosing information about existing conditions and by selecting a contractor based on its regulatory compliance history will the COA minimize its liability with respect to ground and surface water contamination, offsite migration of landfill gas, slope stability and leachate control, and prevention of catastrophic failures that could adversely affect operations at the Austin Bergstrom International Airport.