CS-06-214

Agenda Request For:

February 8, 2006

Department:

Solid Waste Management

Background: See Golder proposal 993-3928.66 dated 1/23/06 entitled "Cost Proposal for Engineering Services Preliminary Assessment of Landfill Gas to Energy (LFGTE) Potential at the West Nassau Landfill."

Financial/Economic Impact to Future Years Budgeting Process or Effect on Citizens: Potential for developing a sustainable revenue stream form the energy derived from LFG extracted at the West Nassau Landfill. Will consider in future budgets as required.

Action requested and recommendation:

Request the Board consider approving Golder Associates cost proposal 993-3928.66 for \$9,201. Which consist of <u>Task 1</u> LFG Data Compilation & Review \$2,375, <u>Task 2</u> Response to Data Gap Needs \$3,387, <u>Task 3</u> Asses LFG Production Rates & Gas Qualities \$1,398 and <u>Task 4</u> Develop LFGTE Proformas (maximum three) \$2,042.

Is this action consistent with the Nassau County Comprehensive Land Use Plan? Public Facility Element Section 4

Funding Source: 70341534-531000 with budget transfer to new account entitled "PS-

Golder-.66 LFGTE

Crailable Budse \$2,000 at 4/66 befre atten 60/den

Place to be discussed 2/8/06.

Reviewed by:

Department Head

Legal

Administrator

Finance

Administrative Services

Grants

Revised 09/05

APPROVED

DATE 2/4/16

Agenda Request For:

February 8, 2006

Department:

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Golder66 LFGTE	
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Reviewed by:

Department Head Su Ach TV

Legal

Administrator

Administrative Services

Grants

Finance

Revised 09/05

01/24/2006 12:48:31

BOARD OF COMMISSIONERS YEAR TO DATE BUDGET REPORT EXPENDITURES

PAGE 1 glytdbud

FOR 2006 13

470	SOLID WASTE MGMT FUND	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
	ID WASTE MGMT FUND							
	4 LANDFILL OPERATIONS							
7034153	4 512000 REGULAR SALARIES AND WA	441,586	441,586	123,082.28	.00	.00	318,503.72	27.9
034153	4 513000 OTHER SALARIES/WAGES(NO	0	0	.00	. 00	.00	.00	. 0
034153	4 514000 OVERTIME	22,100	22,100	30,644.98	.00	.00	-8,544.98	138.7
334153	4 515000 SPECIAL PAY (NO RETIREM	0	0	.00	.00	.00	.00	. 0
034153	4 521010 FICA TAXES	28,749	28,749	9,301.41	. 00	.00	19,447.59	32.4
034153	4 521020 MEDICARE TAXES	6,724	6,724	2,175.34	. 00	.00	4,548.66	32.4
034153	4 522000 RETIREMENT	38,672	38,672	11,949.78	.00	.00	26,722.22	30.9
	4 523010 LIFE & HEALTH INSURANCE	72,890	72,890	20,710.66	.00	.00	52,179.34	28.4
	4 523020 RETIREE HEALTH INSURANC	4,945	4,945	398.91	. 00	.00	4,546.09	8.1
	4 524010 WORKERS' COMPENSATION	42,316	42,316	. 00	. 00	. 00	42,316.00	. (
	4 524021 WKRS COMP-GRIT	0	0	.00	.00	. 00	. 00	. (
	4 525000 UNEMPLOYMENT COMPENSATI	0	0	.00	.00	.00	.00	. (
	4 531000 PROFESSIONAL SERVICES	300,000	. 281,245	296.61	.00	1,147.14	279,801.25	. 5
	4 531031 EMPLOYEE PHYSICALS	130	130	.00	.00	.00	130.00	
	4 531035 DRUG TESTING	1,350 0	1,350 0	38.00	. 00	.00	1,312.00	2.8
	4 531201 PROF SERVICES-ATTORNEY 4 531302 PROF SERVICES-GOLDER	102,000	34,575	.00	.00	.00	.00	. (
	4 531302 PROF SERVICES-GOLDER 4 531307 PROF SVC-(IV)-ENG & SVY	102,000	34,373	.00	.00	.00		. (
	4 531311 PROF SERVICES-WEST NASS	53,000	54,703	.00	.00	54,703.00	.00	100.0
	4 531311 PROF SERVICES-WEST MASS	295,000	350,000	82,079.69	.00	117,063.03	150,857.28	56.9
	4 531323 PS-GOLDER 3928.38(IV)	0	0	.00	.00	.00	.00	. (
	4 531324 PS-GOLDER-CAR	5,000	5,000	.00	.00	.00	5,000.00	. (
	4 531325 PS-GOLDER-O&M LFG 3928.	11,000	35,425	.00	.00	.00	35,425.00	. (
34153	4 531326 PS-GOLDER 3928.42	2,000	2,000	.00	.00	.00	2,000.00	. (
34153	4 531327 GOLDER 3928.49 TASK 100	26,000	26,000	. 00	. 00	.00	26,000.00	. (
34153	4 531329 GOLDER 3928.49 TASK 200	0	0	.00	.00	.00	.00	. (
034153	4 531335 PS GOLDER 3928.64 PCAP	0	0	. 00	.00	.00	.00	. (
34153	4 531390 GOLDER 3928.49 TASK 400	0	0	.00	.00	.00	.00	. (
34153	4 531391 GOLDER 3928.49 TASK 300	0	0	.00	.00	.00	.00	. (
34153	4 531392 GOLDER 3928.49 TASK 500	0	0	.00	.00	.00	.00	. (
34153	4 531393 GOLDER 3928.49 TASK 600	0	0	.00	.00	.00	.00	. (
34153	4 531394 GOLDER 3928.50	0	0	.00	.00	.00	.00	. 0
034153	4 531395 GOLDER .51-EXPERT WITNE	0	0	.00	.00	.00	.00	. (
	4 531396 G-3928.53-PERMITING BOR	0	0	.00	.00	.00	.00	. (
034153	4 531397 GOLDER 3928.54 PERMIT W	0	0	.00	.00	. 00	.00	. (
	4 531398 GOLDER 3928.49 TASK 700	0	0	.00	.00	.00	.00	. 0
	4 531416 GOLDER .63 ODER CONTROL	0	43,000	.00	.00	.00	43,000.00	. 0
034153	4 531450 PS-OPERATIONAL & FIN AN	50,000	50,000	.00	.00	.00	50,000.00	. (

To: project 993-3928.66 (New acet) PS-Golder-.66 LFGTE

Golder Associates Inc.

8933 Western Way, Suite 12 Jacksonville, FL USA 32256 Telephone (904) 363-3430 Fax (904) 363-3445



VIA EMAIL ONLY

January 23, 2006

993-3928.66

Kerlon Strang

Nassau County Board of County Commissioners 96160 Nassau Place Yulee, Florida 32097

Attention: Mr. Mike Mahaney, Nassau County Administrator

RE: COST PROPOSAL FOR ENGINEERING SERVICES
PRELIMINARY ASSESSMENT OF LANDFILL GAS TO ENERGY
(LFGTE) POTENTIAL AT THE WEST NASSAU LANDFILL
NASSAU COUNTY, FLORIDA

Dear Mr. Mahaney:

Golder Associates Inc. (Golder) is pleased to provide the Nassau County Board of County Commissioners (Board) this cost proposal to prepare an assessment of the potential for development of an economically viable landfill gas to energy (LFGTE) project for the West Nassau Landfill located in Nassau County, Florida. This assessment will not be an in-depth market assessment as typically prepared for an energy prospectus; however, it will provide a preliminary analysis of the potential for developing a sustainable revenue stream from the energy derived from LFG extracted at the West Nassau Landfill.

SCOPE OF SERVICES

Golder will implement a five-phase assessment of the LFG production and development potential at the landfill. The phases, or tasks, are limited to the following activities:

- Task 1: LFG Data Compilation and Review;
- Task 2: Response to Data Gap Needs (includes Field Data Collection):
- Task 3: Estimated LFG Production Rates and Qualities; and
- Task 4: General Proformas for up to three LFGTE Options.

The preparation of the above will require information and cooperation from site personnel and County staff, as well as the collection of field data and the performance of calculations based on data obtained from the site.

Task 1 will include a review and summary of existing data from operation of the existing LFG management system. Golder understands that there is daily data collected from the flare station

on the flare operation and the LFG flowing through it. There is also limited data from previous laboratory tests on gas sampled from specific wells. Also, Golder will obtain information from landfill personnel on the waste disposal rates and composition. Golder will review this data, along with available wellfield monitoring data and determine what additional data is needed.

Task 2 will include additional field data collection activities to supplement the data collected under Task 1. These activities will include collecting a sample of the gas for laboratory analysis for parameters including, but not limited to, siloxanes, carbon dioxide, nitrogen, oxygen, methane, and sulfides. A simple gravity flow test of specific wells may be conducted to determine well characteristics such as shut-in head and temperature.1

Tasks 3 and 4 will comprise the major portion of the estimated project time. Task 3 will include up-to-date modeling of the long-term LFG production rates and gas quality expectations. Information obtained in Task 1 regarding waste composition and disposal rates will be used for this analysis.

Task 4 will use the completed task work products to develop gas utilization proformas such that the viability of pursuing a LFGTE project can be evaluated. Task 4 will also likely address direct energy use of the LFG (boiler, furnace, steam production, etc.), indirect use in internal reciprocating engines (ICE) to drive electrical generating systems, and treatment of the LFG-to-pipeline quality. However, the performance and results of Task 4 will depend upon the results of the Task 1 through Task 3 activities. A successful LFGTE program will hinge upon the positive results of the LFG production potential assessment and the long-term (at least 10 years) sustainability of a good-quality LFG.

A draft report will be submitted to the County for review. Upon receipt of review comments from County staff (anticipated to be returned to Golder within one week of first submittal), the final report will be prepared and resubmitted to the County for its use in evaluating the options for a LFGTE project at the site. It may be beneficial to set up a meeting with the County to present and discuss the proformas and results of the completed tasks The cost for a meeting is not included, however, Golder would consider that the presentation of this information, if positive for potentially moving forward with a RFP, could be considered preparation for the follow-on work and considered business development (i.e., no cost to the County).

SCHEDULE

Golder will commence Task 1 immediately upon receipt of approval of this task order from the Board. Tasks 2 and 3 will be implemented upon completion of Task 1, with Task 4 commencing upon completion of all previous tasks.

Golder anticipates that a draft report will require approximately 4 to 6 weeks to complete. Task 1 data compilation is expected to require minimal effort as Golder is already assisting the Board in the LFG management issues at the West Nassau Landfill. However, there may be areas where gas data is not readily available due to the focus of earlier LFG studies. We estimate that Task 1 can be completed in about one week.

¹ An informal performance evaluation of specific gas wells may also be appropriate. However, no gas well performance test is included in this proposed scope of services.

Task 2 is expected to take one week for the field data collection and an additional 2 weeks for sample analysis may be required. Tasks 3 and 4 together, will require a total of two weeks to complete.

COST ESTIMATE



Golder's cost estimate to complete the work as described in the above scope of services is \$9,201.00. A detailed breakdown of the costs for each task and the labor and expenses estimated are included in the attached Table 1. We propose to perform this work on a cost reimbursable not-to-exceed basis in accordance with labor and unit rates shown on the attached table. The County will only be billed actual hours and expenses incurred on the project for work within the agreed scope of services. Direct expenses will be marked-up 10 percent for administrative purposes. Photocopies, computer and AutoCAD time will be billed at agreed upon unit rates. Travel and communications costs (except for specific field activities) will not be billed to Nassau County as stated in our August 1998 proposal. The cost estimate will not be exceeded without prior authorization from Nassau County.

TERMS AND CONDITIONS

This work will be performed under the Agreement for Consulting Services between Golder and the County, dated February 22, 1999.

Golder appreciates this opportunity to provide continuing services to Nassau County. If you have any questions regarding this cost proposal, please do not hesitate to call.

Sincerely,

GOLDER ASSOCIATES INC.

Wendy D. Karably

Senior Consultant/Associate

cc: Mike Mahaney - Nassau County Administrator

Kevin Brown - Golder

William Clister - Golder

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TABLE 1 Cost Estimate LFGTE Assessment West Nassau Landfill Callahan, Nassau County, Florida

	and the state of t				LABOR CA	TEGORY	AND RATE		1.0	*	: ;		
LABOR		Principal Sr. Consult	Associate	Senior Proj. Mgr.	Senior Engineer	Project Engineer	Staff Engineer I	Staff Engineer II	Drafting	Semor Technician	Clerical	TOTAL	SUBTOTAL LABOR
TASK	DESCRIPTION	\$170	\$150	\$135	\$110	\$95	\$85	\$75	\$75		\$55		
	LFG Data Compilation & Review	0	8	6	0	0	0	0	D	4	0	18 14	\$2,270 \$1,390
3	Response to Data Gap Needs Assess LFG Production Rates & Gas Qualities Develop LFGTE Proformas	0 0	8 12	0	0 0	0	0	0	2 0	0	0 2	10	\$1,350 \$1,350 \$1,910
	TOTALS:	0	32	8	0	0	0	0	2	12	2	56	\$6,920

EXPEN:	DESCRIPTION	Field Vehicle (day) \$75	Per Diem (day) \$25	Commun- ications (est.)	Mileage \$0.49	Shipping/ Postage (est.)	Field Equipment (est.)	Office Computer (hr) \$10	AutoCAD Computer (hr) \$20	Photo- copying (each) \$0.15	Drawing Reproduction (est.)	Subcontractors (est.)	SUBTOTAL EXPENSES
2 3	LFG Data Compitation & Review Response to Data Gap Needs Assess LFG Production Rales & Gas Qualities Develop LFGTE Proformas (maximum three)	0 1 0 0	0 0 0	\$0 \$10 \$0 \$0	80 0	\$0	\$200 \$0	_	0 0 2 0	200 150 50 150	\$0 \$0	\$1,500	\$48
	TOTALS:	\$75	\$0	\$10	\$78	\$275	\$200	\$20	\$40	\$83	\$0	\$1,500	\$2,281

	COST SUMMA	RY		
TASK	DESCRIPTION	SUBTOTAL LABOR	SUBTOTAL EXPENSES	TASK TOTAL
1	LFG Data Compilation & Review	\$2,270	\$105	\$2,375
2	Response to Data Gap Needs	\$1,390	\$1,997	\$3,387
3	Assess LFG Production Rates & Gas Qualities	\$1,350	\$48	\$1,398
4	Develop LFGTE Proformas (maximum three)	\$1,910	\$132	\$2,042
	TOTALS	\$6,920	\$2,281	\$9,201

Golder Associates Inc.

8933 Western Way, Suite 12 Jacksonville, FL USA 32256 Telephone (904) 363-3430 Fax (904) 363-3445



VIA EMAIL ONLY

January 23, 2006

993-3928.66

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cc: Mike Mahaney - Nassau County Administrator

> Kevin Brown - Golder William Clister - Golder

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993-3928.66

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					LABOR CA	TEGORY	AND RATE						
LABOR		Principal	Associate	Senior	Senior	Project	Staff	Staff Engineer II	Drafting	Senior Technician	Clerical	TOTAL	SUBTOTAL LABOR
				Proj. Mgr.	Engineer	Engineer	Engineer I	1 1 1 1 1 1 1		Description of		попка	LABOR
TASK	DESCRIPTION	\$170	\$150	\$135	\$110	\$95	\$85	\$75	\$75	\$65	\$5 <u>5</u>		
								1					
1	LFG Data Compilation & Review	0	8	6	0	0	0	0	0	4	0	18	\$2,270
2	Response to Data Gap Needs	0	4	2	0	0	0	0	0	8	0	14	\$1,390
3	Assess LFG Production Rates & Gas Qualities	0	8	0	0	0	0) 0	2	0	0	10	\$1,350
4	Develop LFGTE Proformas	υ	12	0	0	0	0	0	0	0	2	14	\$1,910
	TOTALS:	0	32	8	0	0	0	0	2	12	2	56	\$6,920

EXPEN	SES	Field Vehicle (day)	Per Diem (day)	Commun- ications	Mileage	Shipping/ Postage	Field Equipment	Office Computer (hr)	AutoCAD Computer (hr)	Photo- copying (cach)	Drawing Reproduction	Subcon- tractors	SUBTOTAL EXPENSES
TASK	DESCRIPTION	\$75	\$25	(est.)	\$0.49	(est.)	(est.)	\$10	\$20	\$0.15	(est.)	(est.)	,
1	LFG Data Compilation & Review	0	0	\$0	0	\$ 75	\$0	0	U	200	\$0	\$ 0	\$105
2	Response to Data Gap Needs	1	0	\$10	80	\$150	\$200	0	U	150	\$0	\$1,500	\$1,997
3	Assess LFG Production Rates & Gas Qualities	0	0	\$0	0	\$0	\$0	0	2	50	\$0	\$0	\$48
4	Develop LFGTE Proformas (maximum three)	0	0	\$0	80	\$ 50	\$0	2	0	150	\$0	\$0	\$132
	TOTALS:	\$75	\$0	\$10	\$78	\$275	\$200	\$20	\$40	\$83	\$0	\$1,500	\$2,281

COST SUMMARY											
TASK	DESCRIPTION	SUBTOTAL LABOR	SUBTOTAL EXPENSES	TASK TOTAL							
1	LFG Data Compilation & Review	\$2,270	\$105	\$2,375							
2	Response to Data Gap Needs	\$1,390	\$1,997	\$3,387							
3	Assess LFG Production Rates & Gas Qualities	\$1,350	\$48	\$1,398							
4	Develop LFGTE Proformas (maximum three)	\$1,910	\$132	\$2,042							
-	TOTALS	\$6,920	\$2,281	\$9,201							