

**Phase 1 - Segment 3 Expansion, Segment 2 Partial Closure And Landfill Gas  
System Expansion**

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This Indian River County (IRC) Landfill Work Order Number 1 is entered into as of this \_\_\_\_ day of \_\_\_\_\_, 201\_, in accordance with FS 287.055, Consultant's Competitive Negotiation Act per the Request for Qualification #2017048 for Engineering Consulting Services for Landfill Closure, Landfill Gas System Expansion, and Cell Construction, dated July 18, 2017 (referred to as the "Agreement"), by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida ("COUNTY") and CDM Smith Inc. ("Consultant").

The COUNTY has selected the Consultant to perform the professional services set forth on Exhibit A (Scope of Work), attached to this Work Order and made part hereof by this reference. The professional services will be performed by the Consultant for the fee schedule set forth in Exhibit B (Fee Schedule), attached to this Work Order and made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit A (Time Schedule), attached to this Work Order and made a part hereof by this reference all in accordance with the terms and provisions set forth in the Agreement. Pursuant to Section 1 of the Agreement, nothing contained in any Work Order shall conflict with the terms of the Agreement and the terms of the Agreement shall be deemed to be incorporated in each individual Work Order as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this Work Order as of the date first written above.

**CONSULTANT:**  
CDM Smith Inc.

**BOARD OF COUNTY COMMISSIONERS  
OF INDIAN RIVER COUNTY**

By: \_\_\_\_\_



By: \_\_\_\_\_

, Chairman

Print Name: \_\_\_\_\_

Eric J. Grotke

BCC Approved Date: \_\_\_\_\_

Title: \_\_\_\_\_

Vice President

Attest: Jeffrey R. Smith, Clerk of Court and Comptroller

By: \_\_\_\_\_

Deputy Clerk

Approved: \_\_\_\_\_

Jason E. Brown, County Administrator

Approved as to form and legal sufficiency: \_\_\_\_\_

Dylan T. Reingold, County Attorney

## **EXHIBIT A**

### **WORK ORDER NO. 1**

#### **INDIAN RIVER COUNTY LANDFILL SEGMENT 3 CELL 2 EXPANSION, SEGMENT 2 PARTIAL CLOSURE, AND LANDFILL GAS SYSTEM EXPANSION PHASE I - MEETINGS, DESIGN DUE DILIGENCE, SURVEY, AND GEOTECHNICAL INVESTIGATION**

This Work Order, when executed, shall be incorporated in and become part of the Agreement for Engineering Consulting Services for Indian River County Landfill between Indian River County Solid Waste Disposal District (SWDD) and CDM Smith Inc., (CONSULTANT), dated July \_\_\_\_, 2017 hereafter referred to as the CONTRACT.

#### **BACKGROUND**

The SWDD, the owner and operator of the Indian River County Landfill, has requested that CONSULTANT prepare this Work Order to provide professional engineering services for the proposed Class I Landfill Segment 3 Cell 2 expansion, partial closure of Segment 2, and expansion of the landfill gas collection system (Project). The proposed new cell is Cell 2 of Segment 3 (approximately 10.6 acres in size), as shown on Drawing No. 5 of the 20-Year Permit Drawings dated September 2015. Segment 3 Cell 2 will be located immediately to the east of the existing Segment 3 Cell 1. The proposed partial closure of Segment 2 (approximately 25 acres in size) includes closure of the Segment 1/Infill vertical expansion area and the final elevations of Segment 2, which has been historically been referred to as the Segment 2C area. Expansion of the landfill gas system within Segment 2 is proposed to be constructed concurrently with the partial closure of Segment 2 so that the final components can be installed prior to the closure cap being constructed.

This Project will be completed in multiple phases. Phase I includes evaluation of available information and developing sufficient information to update/revise existing permit design drawings and complete the final design and specifications that will be used for procurement. Subsequent phases will include preparation of the final design and bid package, permitting/regulatory agency support, bidding assistance, and engineering services during construction. The Scope of Services for Phase I of this Project is described below:

#### **SCOPE OF SERVICES**

CONSULTANT will undertake the design, bidding, permitting, and engineering services during construction of the Class I Landfill Segment 3 Cell 2 expansion, Segment 2 partial closure, and landfill gas system expansion located at the Indian River County Landfill. The design will include the Segment 3 Cell 2 bottom liner system, leachate collection and conveyance systems, and stormwater management facilities; Segment 2 partial closure cap liner system and stormwater management facilities, and the Segment 2 landfill gas system expansion. This scope of services includes work necessary to revise the existing permit drawings as necessary and to prepare final design drawings and specifications suitable for procurement of construction services by the SWDD.

Based on recent discussions with SWDD staff and our familiarity with the landfill site, the proposed Scope of Services in this Work Order includes the following tasks:



## **TASK 1.0 - MEETINGS, DATA COLLECTION, SURVEY, AND GEOTECHNICAL INVESTIGATION**

This task focuses on obtaining the necessary preliminary information to prepare detailed engineering plans and construction specifications.

### **Subtask 1.1 Meeting and Site Visit**

CONSULTANT will attend a meeting with SWDD to discuss the proposed cell expansion, partial closure, landfill gas system expansion, and associated infrastructure and utility work. SWDD shall further define their requirements of the project. This subtask includes a site visit by the CONSULTANT to observe pertinent site features and conditions. CONSULTANT will prepare and distribute meeting minutes.

### **Subtask 1.2 Previous Design Due Diligence**

CONSULTANT will collect and review available existing data and information already obtained including as-built/record drawings, site surveys, previously performed design calculations, analysis, drawings, permits and applications, and reports that were prepared by SWDD's previous engineering consultant and their subconsultants for both the cell expansion, partial closure, and landfill gas expansion portions of the project. Upon review of available existing data, CONSULTANT will prepare a data request letter for any additional data that is needed and submit it to SWDD for assistance with obtaining the additional data. If the requested additional data is not available, CONSULTANT will provide a list to SWDD to determine the appropriate manner to obtain it, which may include an amendment to this Work Order.

### **Subtask 1.3 Survey**

CONSULTANT will subcontract with Masteller, Moler & Taylor, Inc. (MMT) to collect detailed field and topographic survey information necessary to refine the existing permit designs of the proposed Segment 3 Cell 2, the proposed partial closure and landfill gas system expansion of Segment 2, and the associated infrastructure and utility work. MMT will also confirm the depth of cover over the existing Segment 1 and Segment 2 closure caps at the points of tie-in, and collect the geotechnical investigation auger boring locations. This subtask includes obtaining survey information in the area where the proposed leachate pump station will be located. CONSULTANT will assist MMT in the field with confirming the depth of cover over the existing caps. This proposal does not include any field verification activities other than those specifically defined in the task.

### **Subtask 1.4 Geotechnical Investigation**

CONSULTANT will perform a review of the Segment 3 expansion geotechnical reports, analyses, and data that were prepared by SWDD's previous engineering consultant and their subconsultants. This includes checking and verifying the previously performed settlement, bearing capacity, and global stability analyses. This proposal assumes that there are no major issues with the previously prepared and approved geotechnical design, and that the previous analyses will not have to be performed again. If additional analysis is determined to be required, CONSULTANT reserves the right to seek additional compensation.

CONSULTANT will also perform an additional geotechnical site investigation for the partial closure portion of this project consisting of hand auger borings on the proposed Segment 2 partial closure area to confirm the thickness and type of the existing intermediate cover material. CONSULTANT will subcontract with Keller, Schleicher and MacWilliam (KSM) Engineering and Testing to perform an estimated total of up to 25 auger borings. CONSULTANT will stake all the expected boring locations in the field before KSM Engineering and Testing arrives at the site. Once the samples have been collected and classified in the field, they will be placed in appropriate sample containers for transport to a geotechnical laboratory. Up to 12 of the collected samples will be tested in the geotechnical laboratory and evaluated by a professional geotechnical engineer licensed in the State of Florida to determine the nature of the intermediate cover (e.g., particle size, plasticity, and organic content). The proposed number of hand augers and laboratory tests are based on the anticipated variability of the composition of the intermediate cover material. This information will be logged on the existing topographic survey and used during final cover and slope stability design.

This subtask also includes one SPT boring to 30-feet below grade at the location of the proposed Segment 3 leachate pump station, SPT sampling will be performed continuously within the top 10-feet, and then at 5-feet intervals thereafter. The boring will be field located based on the boring location plan provided by CONSULTANT. Four grain size analyses will be performed and a boring log with laboratory data will be provided.

Based on the results of the evaluation, an engineering design memo will be prepared that includes the following:

- Summary of previous geotechnical investigations and available data;
- Results of the additional testing performed;
- Logs of the test holes;
- Diagram of the site/boring layout;
- Veneer slope stability analyses;
- Geocomposite drainage transmissivity analyses;
- Global slope stability analyses; and
- Settlement analyses.

#### **Subtask 1.5 Initial Coordination with the Florida Department of Environmental Protection**

This subtask includes the initial coordination with FDEP to discuss the procedure to notify them of the intent to finalize design and construct the previously permitted cell expansion and confirm permitting or notification of the final design and construction of the Segment 2 partial closure and landfill gas expansion. CONSULTANT will prepare for and attend a telephone conference with SWDD and FDEP. Results of this initial coordination will be used to define the regulatory support/permitting assistance services that will be needed and performed under a subsequent phase of this project. Included in this subtask are discussions of what will be required for the Environmental Resource Permit and NPDES permit. CONSULTANT will prepare and distribute meeting minutes after the conference call.



### **Subtask 1.6 Initial Alternative Cover Evaluation**

This subtask includes an initial evaluation of an alternative geosynthetic closure cover system for the partial closure of Segment 2, such as a closure turf type product/technology. The evaluation will vet the potential risks of using a closure turf type product/technology, permitting procedures, and impact on the overall schedule if this design alternative was selected by SWDD. The evaluation will include a comparison of the anticipated design, permitting, short and long-term maintenance, and construction costs. CONSULTANT will prepare a Technical Memorandum documenting the evaluation and recommendations.

## **TASK 2 - PROJECT QUALITY MANAGEMENT**

Activities performed under this task consist of those generally administrative functions required to maintain the project on schedule, within budget, and that the quality of the work products defined within this scope is consistent with CONSULTANT's standards and SWDD's requirements. CONSULTANT will meet with SWDD staff as necessary for project planning and coordination. CONSULTANT's project manager will prepare and submit monthly invoices and attend status reporting meetings throughout the life of the project. It is estimated that meetings will be held on the average of once a month. Preparation of a health and safety plan, project administration, and an internal project quality planning meeting will also be performed under this task.

CONSULTANT maintains a quality management system (QMS) on its projects. This task includes performing a technical specialist review on the technical reports and memos prepared by the CONSULTANT under this Work Order.

### **ASSUMPTIONS**

- No design, permitting assistance, bidding assistance, and/or engineering services during construction are included in this Work Order. Subsequent phases of this project will include these services.
- SWDD will provide all available existing data, as-built/record drawings, site surveys, previously performed design calculations, analysis, drawings, permits and applications, and reports.
- All previously performed design calculations, analysis, drawings, and reports that were prepared by Geosyntec Consultants or their subconsultants as part of, and/or referenced in, the 20-Year Renewal Permit Application and Drawings (dated September 2015), are complete, sufficient, accurate, and do not require any revisions/corrections. If CONSULTANT determines that the previously prepared design calculations, analysis, drawings, and reports are incomplete or require revisions/corrections, CONSULTANT reserves the right to seek additional compensation.
- No sinkhole evaluation is included in this Work Order. It is assumed that this was addressed during the 20-Year Renewal Permit Application process.
- New survey will be obtained of the area where the proposed leachate pump station will be construction. However, the existing survey along the route of the proposed 6-inch leachate forcemain is assumed to be sufficient. If it is determined that additional survey is needed along this route, it will be added under the next phase/work order.
- CONSULTANT reserves the right to seek additional compensation for work performed, as agreed to by SWDD, beyond what is described in this Work Order.

- CONSULTANT and subcontractors shall have access to the site for field investigations, surveying, and the geotechnical investigation.
- The initial alternative cover evaluation does not include a detailed technical analysis or any design calculations.

### **PROJECT SCHEDULE**

The following preliminary project schedule has been developed based on authorization for Work Order No. 1 being received by July 18, 2017.

Milestone	Completion Date
Work Order No. 1 Authorized	July 18, 2017
Receive Notice to Proceed	July 25, 2017
Initial Meeting and Site Visit	August 4, 2017
Data Collection and Review	August 25, 2017
Initial Coordination With FDEP	August 25, 2017
Survey	September 22, 2017
Geotechnical Design Memo	October 13, 2017

\*Project schedule will be dependent on field activities and receipt of laboratory results. Schedule will be adjusted accordingly.

### **PAYMENT AND COMPENSATION**

Compensation for this Work Order No. 1 described herein shall be made in accordance with the Contract between SWDD and CONSULTANT on the basis of a lump sum. The Lump Sum amount for this Work Order No. 1 is \$131,820. CONSULTANT will submit monthly invoices for services rendered in accordance with this Contract. Payments for the Scope of Services described in this Work Order shall be made based on the percentage of work completed.

EXHIBIT B-1

ESTIMATED LABOR HOUR REQUIREMENTS

INDIAN RIVER COUNTY LANDFILL  
SEGMENT 3 EXPANSION, SEGMENT 2 PARTIAL CLOSURE, AND  
LANDFILL GAS SYSTEM EXPANSION  
PHASE I - MEETINGS, DATA COLLECTION, SURVEY, AND GEOTECHNICAL INVESTIGATION

	Sr. Officer	Officer	Associate	Principal	Senior Professional	Professional II	Professional I	Sr. Technical Expert	Senior Support Services	Staff Support Services	Document Control Specialist	Hours By Task
Task 1 - Meetings, Data Collection, Survey, and Geotechnical Investigation												
Subtask 1.1 Meeting and Site Visit	4	0	4	0	6	6	6	4	0	0	2	32
Subtask 1.2 Previous Design Due Diligence	0	0	2	10	20	30	30	2	2	4	4	104
Subtask 1.3 Survey	0	0	2	4	16	4	16	0	2	6	2	52
Subtask 1.4 Geotechnical Investigation	8	2	2	24	16	120	16	2	0	0	8	198
Subtask 1.5 Initial Coordination with FDEP	0	0	4	0	4	4	4	0	0	0	2	18
Subtask 1.6 Initial Alternative Cover Evaluation	2	2	10	4	10	10	30	2	0	0	2	72
<b>Subtotal =</b>	<b>14</b>	<b>4</b>	<b>24</b>	<b>42</b>	<b>72</b>	<b>174</b>	<b>102</b>	<b>10</b>	<b>4</b>	<b>10</b>	<b>20</b>	<b>476</b>
Task 2 - Project Quality Management	4	0	48	0	0	0	0	8	0	0	8	68
<b>Total =</b>	<b>18</b>	<b>4</b>	<b>72</b>	<b>42</b>	<b>72</b>	<b>174</b>	<b>102</b>	<b>18</b>	<b>4</b>	<b>10</b>	<b>28</b>	<b>544</b>



## EXHIBIT B-2

### BUDGET

PROJECT: Indian River County Landfill  
Segment 3 Expansion, Segment 2 Partial Closure, and Landfill Gas System Expansion  
Phase 1 – Meetings, Data Collection, Survey, and Geotechnical Investigation

PROJECT

DESCRIPTION: As Outlined in the Scope of Services, Attachment A

REFERENCE: Agreement between Indian River County Solid Waste Disposal District and CDM  
Smith Inc.

<u>Labor Category</u>	<u>Hours</u>	<u>Rate</u>	<u>Labor</u>
Sr. Officer	18	\$240	\$4,320
Officer	4	\$230	\$920
Associate	72	\$215	\$15,480
Principal	42	\$210	\$8,820
Senior Professional	72	\$175	\$12,600
Professional II	174	\$140	\$24,360
Professional I	102	\$120	\$12,240
Senior Technical Expert	18	\$235	\$4,230
Senior Support Services	4	\$130	\$520
Staff Support Services	10	\$95	\$950
Document Control Specialist	<u>28</u>	\$90	<u>\$2,520</u>
TOTAL HOURS	544		

TOTAL LABOR COST \$86,960

OUTSIDE PROFESSIONAL SERVICES

Survey	\$17,380
Geotechnical	\$18,150
Regulatory	<u>\$3,850</u>

\$39,380

OTHER DIRECT COSTS

\$5,480

(Prints, field supplies, field safety equipment, field vehicle, etc.)

TOTAL PROJECT AMOUNT (LUMP SUM) \$131,820