

Meeting Date
10/21/2014



AGENDA	
Section	Consent
Item No.	II.A.7

AGENDA REPORT
 BREVARD COUNTY BOARD OF COUNTY COMMISSIONERS

SUBJECT:	Request Approval of S2Li Task Order 00-84 Re: Preparation of Wetland Mitigation, Wetland Adaptive Management, Site Grading and Drainage Plans for US 192 Solid Waste Management Facility.
DEPT/OFFICE:	Solid Waste Management Department

Requested Action:

It is requested that the Board of County Commissioners approve S2Li, Inc. Task Order 00-84 in the amount of \$372,446 to: (1) prepare onsite wetland mitigation, wetland adaptive management, site grading and drainage plans and stormwater modeling for the US-192 solid waste management facility to meet requirements of FDEP environmental resource permit, and (2) authorize the Board Chairman to execute the same.

Summary Explanation & Background:

The County has acquired a solid waste construction permit for the US-192 Solid Waste Management Facility (facility) from the Florida Department of Environmental Protection (FDEP) and negotiated a settlement agreement for the same with Deseret Ranches.

The County's engineering consultant, S2L Inc., has subsequently submitted an application for an Environmental Resource Permit (ERP) for the facility to FDEP and the U.S. Army Corps of Engineers (USACOE) for the proposed stormwater management system and to address wetland impacts on the site. The County has responded to the additional questions from the USACOE related to wetlands and wildlife management and has entered into an agreement with the Mary A Mitigation Bank to purchase offsite wetland mitigation bank credits for the purpose of mitigating for all the USACOE wetland and surface water impacts. The County is finalizing the Biological Assessment and Wildlife Management Plan for the property and anticipates the Biological Opinion from the U.S. Fish and Wildlife Service within the next several weeks.

A portion of the FDEP wetland impacts will also be mitigated using the Mary A Mitigation Bank, however, in addition to offsite mitigation; the FDEP is requiring supplemental onsite wetland mitigation. The County has developed a conceptual wetland mitigation plan which includes the creation of 110 acres of wetlands onsite. The plan generally meets the requirements of FDEP; however, they have requested additional information to support the plan. Under Task Order 00-84, the engineer will prepare a final wetland mitigation plan, along with an adaptive wetlands management plan. They will also prepare site grading and drainage plans and perform further stormwater modeling of the wetlands and stormwater system to provide the FDEP with assurance that the master stormwater plan does not adversely affect onsite and offsite wetland resources after site development.

Fiscal Impact:

Funds for this project have been budgeted under the Board approved Department's five-year CIP and are available in Fund 4011, Cost Center 352130.

Contact: Euripides Rodriguez, Solid Waste Director

Phone: (321) 633-2042

Exhibits Attached: Task Order 00-84 (3)

Contract /Agreement (If attached): Reviewed by County Attorney		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	PR	<input type="checkbox"/>
County Manager		Assistant County Manager: Mel Scott			Department Director: Euripides Rodriguez (52042)		
Stockton Whitten							



Tammy Etheridge, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972

October 22, 2014

MEMORANDUM

TO: Euri Rodriguez, Solid Waste Management Director

RE: Item II.A.7., Task Order No. 00-84 with S2L, Inc. for Preparation of Wetland Mitigation, Wetland Adaptive Management, Site Grading, and Drainage Plans for the U.S. 192 Solid Waste Management Facility

The Board of County Commissioners, in regular session on October 21, 2014, executed Task Order No. 00-84 with S2L, Inc., in the amount of \$372,446, for preparing onsite wetland mitigation, wetland adaptive management, site grading and drainage plans, and Stormwater modeling for the U.S. 192 Solid Waste Management facility to meet requirement of the Florida Department of Environmental Protection (FDEP) environmental resource permit. Enclosed are two fully-executed copies of Task Order No. 00-84 for your action.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
SCOTT ELLIS, CLERK

Tammy Etheridge, Deputy Clerk

/ds

Encls. (2)

cc: Contracts Administration
Finance
Budget

**TASK ORDER NUMBER 00-84
FOR THE
PROFESSIONAL ENGINEERING SERVICES AGREEMENT
BREVARD COUNTY SOLID WASTE MANAGEMENT SYSTEM**

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**Wetland Mitigation, Wetland Adaptive Management,
Site Grading and Drainage Plans
US-192 Solid Waste Management Facility**

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**Board of County Commissioners
Solid Waste Management Department**

S2L, Incorporated

This TASK ORDER NO. 00-84, dated this _____ day of _____, 2014 by and between the BOARD OF COUNTY COMMISSIONERS OF BREVARD COUNTY, FLORIDA, a political subdivision of the State of Florida, hereinafter referred to as "County," and S2L, Incorporated, a Florida Corporation, whose local address is 531 Versailles Drive, Suite 202, Maitland, Florida 32751, hereinafter referred to as "Consultant" amending that certain Agreement between the parties dated May 23, 2000.

WITNESSETH:

WHEREAS, the County is authorized to construct, acquire, improve, maintain, and operate its Solid Waste Management Facilities in the County; and

WHEREAS, the Solid Waste Management Department is charged with meeting the existing and future solid waste disposal needs of Brevard County; and

WHEREAS, the County desires to implement the recommendations of the Capital Improvements Program for continued operation of existing Solid Waste Management Facilities and other projects; and

WHEREAS, the Consultant has experience in the planning, procurement, preparation of permit applications, design, financing, construction administration, and operation of similar systems, facilities and tasks required; and

WHEREAS, the County has retained the services of the Consultant to provide consulting and engineering services for the permitting and development of the County's new South County Solid Waste

Management Facility located at the US-192 site ("South County Solid Waste Management Facility" or "site"); and

WHEREAS, the United States Army Corps of Engineers (USACOE) and Florida Department of Environmental Protection (FDEP) have required Brevard County to provide wetland mitigation at the US-192 site; and

WHEREAS, the County has begun to purchase off-site wetland mitigation bank credits at the Mary A Mitigation Bank in south Brevard County for the purpose of mitigating wetland impacts at the new solid waste management facility; and

WHEREAS, once all of the off-site credits are purchased, the credits will address all of the required project wetland impacts for the USACOE, and will address a majority of the required wetland impact credits for the FDEP; and

WHEREAS, FDEP will require supplemental on-site wetland mitigation to off-set proposed impacts that will not be addressed through the off-site Mitigation Bank purchase; and

WHEREAS, the County desires the Consultant to prepare plans to meet the onsite wetland mitigation requirements for FDEP as part of the ERP process. Additionally, with the grading and drainage design plans and stormwater modeling, these design plans are intended to provide assurance that the master stormwater plan does not adversely affect onsite or offsite wetland resources after site development; and

WHEREAS, the County desires to amend that certain "Agreement" between the parties dated May 23, 2000.

NOW, THEREFORE, in consideration of the premises and mutual promises and conditions contained herein, it is mutually agreed between the parties as follows:

SECTION 1. Scope of Services: The Scope of Services agreed to be performed by the Consultant pursuant to the continuing agreement between the parties, dated May 23, 2000, is hereby amended to include the services shown on Attachment "A", attached hereto.

SECTION 2. Compensation: Compensation shall be in accordance with "SECTION 3, COMPENSATION" of the continuing agreement between the parties dated May 23, 2000. The Consultant shall be paid for this Task Order 00-84 a not-to-exceed amount of Three Hundred Seventy-Two Thousand Four Hundred Forty-Six Dollars and no cents (\$372,446.00), payable as deliverables are accepted by the County for the services as set forth in Attachment "A-1" of this task order.

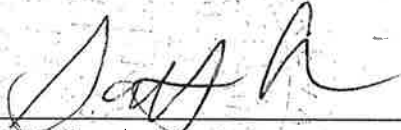
SECTION 3. Continuing Effect of Agreement: Except as otherwise provided herein, the continuing Agreement dated May 23, 2000 shall remain in full force and effect.

SECTION 4. Time for Performance: Consultant shall complete the work required in this Task Order within 150 days of receipt of the County's Notice to Proceed.

IN WITNESS WHEREOF, the parties hereunto set their hands and seal the day and year first above written.

ATTEST:

**BOARD OF COUNTY COMMISSIONERS
OF BREVARD COUNTY, FLORIDA**



Scott Ellis, Clerk




Mary Bolin Lewis, Chairman

As Approved by the Board on 10-21-2014

ATTEST:

**CONSULTANT:
S2L, INCORPORATED**





Samuel B. Levin, P.E.
President

Task Order No. 00-84

**Wetland Mitigation, Wetland Adaptive Management, Site Grading and Drainage Plans
US-192 Solid Waste Management Facility**

Attachment A-1

Task Order No. 00-84

**Preparation of
Wetland Mitigation, Wetland Adaptive Management, Site Grading
and Drainage Plans**

**for the
US-192 Solid Waste Management Facility**

**Solid Waste Management Department
Board of County Commissioners
Brevard County, Florida**

SCOPE OF SERVICES

INTRODUCTION

Brevard County ("County"), S2L, Incorporated ("Consultant") and its team of sub-consultants ("Consulting Team") have submitted both Conceptual and Phase I Construction Environmental Resource Permit ("ERP") applications to the Florida Department of Environmental Protection ("FDEP") and to the United States Army Corps of Engineers ("USACOE") for the new solid waste management facility to be located at the US-192 Site ("South County Solid Waste Management Facility" or "Site"). An initial Request for Additional Information (RAI) was received on August 30, 2010 and a response package was submitted to FDEP on August 24, 2011. Subsequently a second RAI was received from FDEP on October 28, 2011 requesting additional information including a wetland mitigation and adaptive management plan.

The County has entered into an agreement with the Mary A Mitigation Bank to purchase offsite wetland mitigation bank credits for the purpose of mitigating wetland USACOE wetland and surface water impacts for the Project. A portion of these bank credits will apply to mitigation for project wetland impacts for the FDEP, however, supplemental onsite wetland mitigation and adaptive management is required by FDEP to off-set proposed wetlands impacts that will not be addressed as a result of the offsite Mitigation Bank purchase.

A proposed conceptual onsite wetland mitigation plan ("Conceptual Design Plan") has been prepared to generally meet the requirements of FDEP. The USACOE will only review the plan with respect to maintaining the enhanced wetlands. The Conceptual Design Plan has been presented to the FDEP for their review. FDEP indicated that they found the approach to be reasonable, but noted that formal review will be conducted when detail design plans are officially submitted.

Based on the proposed project wetland impacts, approximately 110 acres of onsite wetland creation are going to be required to provide mitigation to meet FDEP requirements. The Consulting Team has prepared this task order to prepare the onsite wetland mitigation, site grading, and drainage design plans to be submitted to FDEP. The primary purpose of the plans is to meet the onsite wetland mitigation requirements for FDEP as part of the ERP process. Additionally, relative to the grading and drainage design plans and stormwater modeling, these design plans are intended to provide assurance that the master stormwater plan does not adversely affect onsite or offsite wetland resources after site development. The plans developed under this task order will be utilized for future permitting, bidding and construction efforts.

In addition, the overall amount of wetland creation areas required has been reduced since the completion of Task Order No. 79, which will require the Phase I stormwater model to be modified and re-simulated based on the reconfiguration of onsite wetland creation areas.

Task 1 – Data Collection and Evaluation

The Consulting Team will collect and evaluate additional data as needed to support the wetlands mitigation design and adaptive management plan, wave run-up analyses, and additional stormwater modeling. This data is expected to include the following:

- Confirmation of additional existing topographic information associated with existing onsite wetlands systems.
- Modifications to proposed wetlands creation area.
- Changes to the previously provided site layout.
- Wind speed data for the area.

Task 2 – Preparation of Full Site Drawings

The Consulting Team will prepare and/or update full site drawings previously prepared for the Site. This includes:

- Cover Sheet
- Key Sheet
- Site Plan – Total Buildout
- Wetland Plan – FDEP and USACOE Jurisdictional wetland lines
- Conservation Area Plan

Task 3 – Preparation of Grading and Drainage Design Plans

3.1 The Consulting Team will prepare and develop approximately 26 sheets grading and drainage plan for the Site for use in the obtaining the ERP. The work will involve the site grading and contouring of:

- roads (north-south access, landfill perimeter, stormwater basin perimeter, soil borrow perimeter, haul, fence line, miscellaneous site access);

- stormwater control ditches and related berms;
- stormwater basins and berms;
- soil borrow ponds and berms;
- multiuse area contours;
- scale/scalehouse area;
- vehicle turnaround area;
- Hazardous Household Waste/Citizens Convenience Center area;
- leachate storage tank area;
- general use areas;
- temporary storm debris management area; and
- fire department access areas.

The plans will show 1 foot contours and spot elevations as needed. In addition, call outs will be made showing material types, e.g. limerock, borrow soil, asphalt, concrete.

3.2 The Consulting Team will include plans for the demucking of wetlands that are taken, depicting backfill elevations, and muck storage locations on the plan set developed under Subtask 3.1.

3.3 The Consulting Team will assume that the area within and surrounding the pens at the cattle station are contaminated and the soil will need to be removed for offsite management. The grading plans will show a preliminary area and depth of soil that needs to be removed and backfilled with clean material based on information obtained from the Project Team's Environmental Assessment Consultant.

Task 4 – Development of Wetland Mitigation Plan

4.1 Utilizing the updated grading and drainage plans developed under Task 3 and the 26 Conceptual Wetland Mitigation Base Drawings, the Consulting Team will prepare up to six wetland mitigation drawings as required to support both the Phase I Construction ERP and the Conceptual Build-out ERP RAI response submittals to the FDEP. The drawings will show the following:

- Aerial Topographic Survey;
- Ground-Truthing Surveys to date;
- Wetland Lines – FDEP and USACOE;
- Site Grading and Drainage as developed under Task 3;
- Stormwater Structures as provided by the Project Team's Stormwater Consultant;
- Temporary and Permanent Wetland Impact Lines;
- Setbacks from Property Boundary, Utility (Gas) Easement, Wetlands;
- Cabbage Palm Removal and Relocation Points as provided by the Project Team's Wetland and Habitat Consultant;
- US-192 Highway Florida Department of Transportation (FDOT) Right-of-Way (R-O-W) topographic maps (along southern end of site);

- Proposed fencing including gates (cut off of existing roads, utility (gas) easement, and entranceway).
- 4.2 The Consulting Team will provide additional drawings or additional information to the drawing set developed under Subtask 4.1 showing:
- Stormwater structure schedules;
 - Land Use areas and calculations;
 - Wetland Planting Locations and Schedule;
 - General information notes; and
 - Stormwater management system and wetland creation area cross-sections.
- 4.3 The Consulting Team will provide an updated wetland creation area construction cost estimate based upon the drawings developed under Subtask 4.
- 4.4 The Consulting Team will provide parameters outlining typical hydrologic regimes (hydroperiods) associated with the created wetland communities, including:
- Typical hydroperiods associated with various wetland community types proposed for the wetland creation areas including target maximum, minimum, and normal water levels, and typical periods of inundation in an average year; and
 - Topographic design constraints pertaining to depth of system and proposed wetland/upland interface target elevations.
- 4.5 The Consulting Team will assist in the development of a plan for the establishment of wetland vegetation in the creation areas that will include:
- A qualitative review of the wetlands proposed to be impacted to assess suitability for use as donor areas for seed bank establishment in wetland creation areas;
 - Recommendations on methodology for transfer and placement of the seed bank material to the excavated wetland creation areas;
 - Recommended planting schedules for portions of the created wetlands where the target plant community contains species that may not be represented in the seed bank material;
 - Plan notes and tables outlining the materials and methods for the proposed wetlands creation area community types.
- 4.6 The Consulting Team has provided an outline of an approximately 879 acre Conservation Tract which will contain existing wetlands, created wetlands, and other vegetative communities that will be maintained within a Conservation easement. In conjunction with establishing the limits of the Conservation Tract, the Consulting Team has prepared a Baseline Vegetation Monitoring Report (Task Order 00-82) that summarizes the existing conditions within wetlands proposed to be preserved onsite. This report, in conjunction with post-development hydroperiod analyses, will be used to assist with recommendations for enhancement of preserved wetlands including:

- Recommendations on areas where removal of rim ditches and/or ditch blocking may improve the quality of the preserved wetlands through hydroperiod enhancement;
- Assistance with addressing those wetlands where hydroperiod modeling indicates that the post-development master stormwater system may affect the hydroperiod within specific preserved wetlands;
- Recommendation where nuisance and/or exotic species treatment may be required;
- Assisting with erosion control plans for mitigation construction, as well as for construction within areas adjacent to preserved wetlands.

Task 5 – Engineering Analyses and Stormwater Modeling

5.1 The Consulting Team’s stormwater engineer will perform analyses to assess the wind set-up and associated wave run-up for the slopes on up to three borrow ponds and two stormwater ponds to determine the berm height needed to address the wind/wave run-up and freeboard requirements. The computer programs STWAVE and ACES will be used in the wave run-up analyses. Wave run-up is dependent upon several factors including pond design depth, design wind speed, fetch distance, slope angle, and slope surface (erosion protection). Wind set-up, or wind tide, is the increase in water surface level on the windward side of an embankment due to the wind shear force on the water surface. The analyses will be performed in accordance with applicable design criteria, and will be based on one combination of a single design rainfall event and wind speed resulting in a single wind set-up and wave run-up value for each facility evaluated. Based on the results of the wave run-up and wind set-up, an assessment of potential slope protection methods will be performed and recommendations provided on potential modifications to the design berm elevations around the ponds.

5.2 The Consulting Team’s geotechnical engineer will perform a geotechnical analysis of the perimeter dikes for the proposed borrow ponds including the following services:

- Provide geotechnical recommendations for design of the perimeter dike for each of the three proposed borrow ponds.
- Establish aquifer profile and properties for use in the seepage study.
- Analyze seepage rates for three soil borrow ponds through their perimeter dikes and evaluate the potential for seepage breakouts on the downstream slope of the dikes when the pond water levels are at the normal design elevations, and at the peak stages under the 25-year and 100-year storm events, considering the hydraulic conductivity of the perimeter dike material to be 5×10^{-3} , 5×10^{-4} , and 5×10^{-5} cm/sec, for a total of 27 scenarios.
- Prepare a letter report to document the data used in the evaluation, results of the seepage analyses, and the geotechnical recommendations for design of the perimeter dikes for the proposed borrow ponds.

5.3 Activities performed by Consulting Team's stormwater engineer under this subtask consist of those functions required to update the project Hydrological Simulation Program – Fortran (HSPF) and Interconnected Channel and Pond Routing (ICPR) Phase I stormwater model to represent the storage and connectivity associated with the removal of the one wetland creation area. The updated model will be used to perform design storm event and long-term continuous simulations. These services will refine the current Phase I conditions model to evaluate the proposed modifications to the layout of the revised wetland creation area (removal of Wetland Creation Area E) and the associated stormwater infrastructure needed to regulate the hydrology and hydraulics in the overall system. In order to support the design of the onsite wetland creation areas and demonstrate that the proposed project will remain in compliance with applicable peak stage and discharge criteria, each of the previously developed stormwater models depicting Phase I conditions will be updated to reflect the proposed modification to the wetlands creation area (a *single* wetland creation area, Wetland Creation Area E, will be eliminated and the layout of the remaining creation areas will be unchanged).

5.3.1. The current system hydrology in the Phase I model will be updated by the Consulting Team's stormwater engineer to allow for representation of the proposed onsite mitigation wetlands. This will allow for analysis of the wetland hydroperiods during the period of simulation. Based on elimination of a single wetland creation area, the affected area will be modified to represent Phase I conditions prior to the addition of the wetland creation area. Up to five basins will be modified to account for the shift in area and storage due to the elimination of the creation wetland. The hydrogeologic modifications will be made following the same protocols applied for the continuous simulations previously performed.

5.3.2 In order to account for the movement of runoff into and out of the existing and proposed features, the system hydraulics will be updated to account for the changes in connectivity in the area of the removed creation wetland with the surrounding areas. Low-level connectivity via the existing ditches as well as upper level overflows will be represented in the Phase I model. Site specific survey information will be used to identify which of the existing hydraulic conveyances are to remain. Up to ten total hydraulic connections will be modified.

Evaporation rating curves will be modified by the Consulting Team for each of the storage areas affected by the removal of the creation wetland. Up to five rating curves will be modified for the Phase I model, based on groundwater levels to account for site infiltration using the same protocols previously developed.

The Consulting Team's stormwater engineer will summarize the model refinements in a Wetlands Mitigation Plan Modeling Report section.

5.4 To simulate wetlands hydrology across the entire range of site conditions, the updated model representative of Phase I Construction conditions will be run by the Consulting Team's stormwater engineer for up to three different 18-month periods, representative of an average water year, a wet year, and a dry year, respectively. The models will be run representative of a wells-off condition. The existing conditions modeling previously performed will be used as a baseline against which future success criteria will be measured. The results of the modeling simulations will be compared by the

Consulting Team in tabular and graphical form for each of the 16 indicator wetlands systems previously added to the models as well as for four onsite wetland creation areas.

5.4.1 After the hydrologic and hydraulic updates are complete, continuous simulations will be performed by the Consulting Team's stormwater engineer. The three discrete continuous simulation periods will consist of the year 1964: an average hydrologic year with consideration of a dry period; as well as a wet year and a dry year. The years 1991 and 2012, representative of a "wet" and a "dry" year respectively, will be simulated as well. Rainfall inputs will be based on the long term rainfall data available from the National Oceanic and Atmospheric Administration (NOAA) rainfall gage at Melbourne, Florida (Melbourne WFO, 5612). Continuous simulations of each representative year will be performed for up to 18 months to allow for initial model stabilization for up to six months prior to the period of interest. The model representative of Phase I Construction conditions – wells off scenario, having been updated under previous tasks, will be used to simulate the three selected periods of record.

A single design revision will be accounted for under this task order (the removal of a single proposed onsite wetland mitigation area with the configuration of the remaining areas to remain unchanged). Additional design configuration revisions are not included in this task order. In the event that additional simulations are required, they will be addressed under a separate task order.

5.4.2 After the aforementioned hydrologic and hydraulic detail is added to the Phase I model, it will be used by the Consulting Team's stormwater engineer to simulate the Mean Annual, 10-year, 25-year, and 100-year 24 hour design storms. The removal of Wetland Creation Area E will potentially result in the reconfiguration of the previously designed onsite stage-area-storage relationships and stormwater control structures servicing the proposed stormwater and borrow ponds along with those regulating offsite discharges for Phase I conditions. These structures will be modified as needed to demonstrate that the proposed system remains in regulatory compliance while providing the required hydroperiods to existing and proposed wetlands areas.

The model updates and refinements will be summarized with the design layouts in the Subtask 5.5 report section.

5.5 After the model simulations have been performed, the continuous simulation results will be quantified by the Consulting Team's stormwater engineer in both tabular and graphical format for each of the 16 indicator wetlands as well as the four remaining proposed onsite wetlands creation areas. The results from the existing conditions simulation will be used as a baseline against which the Phase I scenario will be compared. Additionally, the design storm results will be compiled in tabular format to demonstrate that the proposed project is in compliance with applicable regulatory criteria with respect to peak stages and discharges.

The model simulations results narrative previously developed under Task Order No. 00-79 shall be updated with the results of the new modeling by the Consulting Team's stormwater engineer and then submitted to the County for review and comment.

Task 6 – Development of the Adaptive Management Plan

The Consulting Team's Wetland Scientist will develop a draft of an adaptive management plan for the created and enhanced wetlands that may include:

1. Monitoring and Maintenance Plan: Recommendations on how to develop the system during construction activities, and how to control the system through the first three years of operation, and then the long-term monitoring plan.
2. Vegetation Develop Plan: Recommendations of planting locations, seed bank development, management of desirable and undesirable species, and water level regimes for maximizing vegetation establishment and community composition.
3. Initial Water Management Plan: Recommendations for water level management (i.e. water levels, velocity, etc.) to minimize erosion of the seed bank, to control the germination rate of undesirable species, to minimize the potential for scouring, and to reduce the potential for algae blooms and other situations that may adversely impact the created wetland areas.
4. Adaptive Water Management Indicators: Recommendations for water level management (i.e. water levels, velocity, etc.) during the first three years of wetland establishment to maximize vegetative community diversity and minimize the potential for conditions that may result in degraded wetland conditions.
5. Acceptable Community Successional Patterns: Recommendations for monitoring to identify vegetative successional patterns to minimize the coverage and invasion by undesirable vegetative species that may affect the long-term viability of the created wetland. Additionally, this portion of the plan will identify areas where significant use by protected wildlife species may need be incorporated into management and monitoring of created wetlands.

Task 7 – Project Meetings, Coordination, and Reviews

- 7.1 Consulting Team will submit to County three draft copies of the design drawings for review and comments at the 60 percent and 90 percent completion level.
- 7.2 Consulting Team members will provide and attend internal coordination and progress meeting for planning and review during the project duration.
- 7.3 Consulting Team's Wetland Scientist will prepare for and meet with the FDEP to review the draft wetland mitigation and adaptive management plans and solicit their feedback prior to submission. Based on comments received, the Plans will be revised and finalized under Tasks 4 and 6 in preparation for submittal to FDEP in conjunction with future RAI response(s).

ADDITIONAL SERVICES

The services listed in this Task Order No. 00-84 may not be all-inclusive of the services required during the wetland mitigation and drainage plan preparation process. Services that can presently be identified as not included within this Task Order No. 00-84 are as follows:

- 1) any additional illustrations, investigations, reports, analyses, testing, design, or research required beyond the fee estimate of the Tasks provided in this scope of services;
- 2) preparing any FDEP and USACOE RAI responses;
- 3) design and details for the landfill cells, supporting facilities, utilities, and related infrastructure;
- 4) design of roads, crossovers, bridges;
- 5) discussions, planning, permitting, or design related to the natural gas pipeline easement;
- 6) preparation of permit applications or regulatory agency responses;
- 7) final design, bidding documents, and construction services;
- 8) modifications to the Existing Conditions or the Conceptual Build-out stormwater model;
- 9) preparing for, attending, or conducting any public hearings, Brevard County Board of County Commissioners' meetings, or solid waste workshops; and
- 10) any additional meetings (whether inside or outside Brevard County) or negotiations requested by USACOE, USEPA, FDEP, Farmland Reserve, the County, Legal Counsel or any other regulatory agency.

Consultant will perform additional services only after receipt of written approval of a new Task Order from the County.

**TASK ORDER NUMBER 00-84
FOR THE
PROFESSIONAL ENGINEERING SERVICES AGREEMENT
BREVARD COUNTY SOLID WASTE MANAGEMENT SYSTEM**

--

**Wetland Mitigation, Wetland Adaptive Management,
Site Grading and Drainage Plans
US-192 Solid Waste Management Facility**

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WHEREAS, the County desires to implement the recommendations of the Capital Improvements Program for continued operation of existing Solid Waste Management Facilities and other projects; and

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Management Facility located at the US-192 site ("South County Solid Waste Management Facility" or "site"); and

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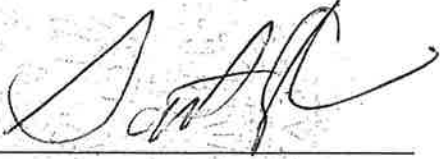
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SECTION 3. Continuing Effect of Agreement: Except as otherwise provided herein, the continuing Agreement dated May 23, 2000 shall remain in full force and effect.

SECTION 4. Time for Performance: Consultant shall complete the work required in this Task Order within 150 days of receipt of the County's Notice to Proceed.

IN WITNESS WHEREOF, the parties hereunto set their hands and seal the day and year first above written.

ATTEST:



Scott Ellis, Clerk

**BOARD OF COUNTY COMMISSIONERS
OF BREVARD COUNTY, FLORIDA**



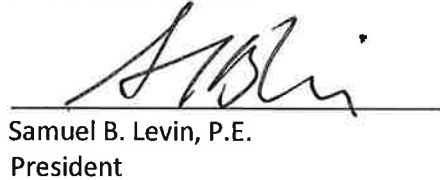
Mary Bolin Lewis, Chairman

As Approved by the Board on 10-21-2014

ATTEST:



**CONSULTANT:
S2L, INCORPORATED**



Samuel B. Levin, P.E.
President

Task Order No. 00-84

**Wetland Mitigation, Wetland Adaptive Management, Site Grading and Drainage Plans
US-192 Solid Waste Management Facility**

Attachment A-1

Task Order No. 00-84

**Preparation of
Wetland Mitigation, Wetland Adaptive Management, Site Grading
and Drainage Plans**

for the

US-192 Solid Waste Management Facility

Solid Waste Management Department

Board of County Commissioners

Brevard County, Florida

SCOPE OF SERVICES

INTRODUCTION

Brevard County ("County"), S2L, Incorporated ("Consultant") and its team of sub-consultants ("Consulting Team") have submitted both Conceptual and Phase I Construction Environmental Resource Permit ("ERP") applications to the Florida Department of Environmental Protection ("FDEP") and to the United States Army Corps of Engineers ("USACOE") for the new solid waste management facility to be located at the US-192 Site ("South County Solid Waste Management Facility" or "Site"). An initial Request for Additional Information (RAI) was received on August 30, 2010 and a response package was submitted to FDEP on August 24, 2011. Subsequently a second RAI was received from FDEP on October 28, 2011 requesting additional information including a wetland mitigation and adaptive management plan.

The County has entered into an agreement with the Mary A Mitigation Bank to purchase offsite wetland mitigation bank credits for the purpose of mitigating wetland USACOE wetland and surface water impacts for the Project. A portion of these bank credits will apply to mitigation for project wetland impacts for the FDEP, however, supplemental onsite wetland mitigation and adaptive management is required by FDEP to off-set proposed wetlands impacts that will not be addressed as a result of the offsite Mitigation Bank purchase.

A proposed conceptual onsite wetland mitigation plan ("Conceptual Design Plan") has been prepared to generally meet the requirements of FDEP. The USACOE will only review the plan with respect to maintaining the enhanced wetlands. The Conceptual Design Plan has been presented to the FDEP for their review. FDEP indicated that they found the approach to be reasonable, but noted that formal review will be conducted when detail design plans are officially submitted.

Based on the proposed project wetland impacts, approximately 110 acres of onsite wetland creation are going to be required to provide mitigation to meet FDEP requirements. The Consulting Team has prepared this task order to prepare the onsite wetland mitigation, site grading, and drainage design plans to be submitted to FDEP. The primary purpose of the plans is to meet the onsite wetland mitigation requirements for FDEP as part of the ERP process. Additionally, relative to the grading and drainage design plans and stormwater modeling, these design plans are intended to provide assurance that the master stormwater plan does not adversely affect onsite or offsite wetland resources after site development. The plans developed under this task order will be utilized for future permitting, bidding and construction efforts.

In addition, the overall amount of wetland creation areas required has been reduced since the completion of Task Order No. 79, which will require the Phase I stormwater model to be modified and re-simulated based on the reconfiguration of onsite wetland creation areas.

Task 1 – Data Collection and Evaluation

The Consulting Team will collect and evaluate additional data as needed to support the wetlands mitigation design and adaptive management plan, wave run-up analyses, and additional stormwater modeling. This data is expected to include the following:

- Confirmation of additional existing topographic information associated with existing onsite wetlands systems.
- Modifications to proposed wetlands creation area.
- Changes to the previously provided site layout.
- Wind speed data for the area.

Task 2 – Preparation of Full Site Drawings

The Consulting Team will prepare and/or update full site drawings previously prepared for the Site. This includes:

- Cover Sheet
- Key Sheet
- Site Plan – Total Buildout
- Wetland Plan – FDEP and USACOE Jurisdictional wetland lines
- Conservation Area Plan

Task 3 – Preparation of Grading and Drainage Design Plans

3.1 The Consulting Team will prepare and develop approximately 26 sheets grading and drainage plan for the Site for use in the obtaining the ERP. The work will involve the site grading and contouring of:

- roads (north-south access, landfill perimeter, stormwater basin perimeter, soil borrow perimeter, haul, fence line, miscellaneous site access);

- stormwater control ditches and related berms;
- stormwater basins and berms;
- soil borrow ponds and berms;
- multiuse area contours;
- scale/scalehouse area;
- vehicle turnaround area;
- Hazardous Household Waste/Citizens Convenience Center area;
- leachate storage tank area;
- general use areas;
- temporary storm debris management area; and
- fire department access areas.

The plans will show 1 foot contours and spot elevations as needed. In addition, call outs will be made showing material types, e.g. limerock, borrow soil, asphalt, concrete.

3.2 The Consulting Team will include plans for the demucking of wetlands that are taken, depicting backfill elevations, and muck storage locations on the plan set developed under Subtask 3.1.

3.3 The Consulting Team will assume that the area within and surrounding the pens at the cattle station are contaminated and the soil will need to be removed for offsite management. The grading plans will show a preliminary area and depth of soil that needs to be removed and backfilled with clean material based on information obtained from the Project Team's Environmental Assessment Consultant.

Task 4 – Development of Wetland Mitigation Plan

4.1 Utilizing the updated grading and drainage plans developed under Task 3 and the 26 Conceptual Wetland Mitigation Base Drawings, the Consulting Team will prepare up to six wetland mitigation drawings as required to support both the Phase I Construction ERP and the Conceptual Build-out ERP RAI response submittals to the FDEP. The drawings will show the following:

- Aerial Topographic Survey;
- Ground-Truthing Surveys to date;
- Wetland Lines – FDEP and USACOE;
- Site Grading and Drainage as developed under Task 3;
- Stormwater Structures as provided by the Project Team's Stormwater Consultant;
- Temporary and Permanent Wetland Impact Lines;
- Setbacks from Property Boundary, Utility (Gas) Easement, Wetlands;
- Cabbage Palm Removal and Relocation Points as provided by the Project Team's Wetland and Habitat Consultant;
- US-192 Highway Florida Department of Transportation (FDOT) Right-of-Way (R-O-W) topographic maps (along southern end of site);

- Proposed fencing including gates (cut off of existing roads, utility (gas) easement, and entranceway).
- 4.2 The Consulting Team will provide additional drawings or additional information to the drawing set developed under Subtask 4.1 showing:
- Stormwater structure schedules;
 - Land Use areas and calculations;
 - Wetland Planting Locations and Schedule;
 - General information notes; and
 - Stormwater management system and wetland creation area cross-sections.
- 4.3 The Consulting Team will provide an updated wetland creation area construction cost estimate based upon the drawings developed under Subtask 4.
- 4.4 The Consulting Team will provide parameters outlining typical hydrologic regimes (hydroperiods) associated with the created wetland communities, including:
- Typical hydroperiods associated with various wetland community types proposed for the wetland creation areas including target maximum, minimum, and normal water levels, and typical periods of inundation in an average year; and
 - Topographic design constraints pertaining to depth of system and proposed wetland/upland interface target elevations.
- 4.5 The Consulting Team will assist in the development of a plan for the establishment of wetland vegetation in the creation areas that will include:
- A qualitative review of the wetlands proposed to be impacted to assess suitability for use as donor areas for seed bank establishment in wetland creation areas;
 - Recommendations on methodology for transfer and placement of the seed bank material to the excavated wetland creation areas;
 - Recommended planting schedules for portions of the created wetlands where the target plant community contains species that may not be represented in the seed bank material;
 - Plan notes and tables outlining the materials and methods for the proposed wetlands creation area community types.
- 4.6 The Consulting Team has provided an outline of an approximately 879 acre Conservation Tract which will contain existing wetlands, created wetlands, and other vegetative communities that will be maintained within a Conservation easement. In conjunction with establishing the limits of the Conservation Tract, the Consulting Team has prepared a Baseline Vegetation Monitoring Report (Task Order 00-82) that summarizes the existing conditions within wetlands proposed to be preserved onsite. This report, in conjunction with post-development hydroperiod analyses, will be used to assist with recommendations for enhancement of preserved wetlands including:

- Recommendations on areas where removal of rim ditches and/or ditch blocking may improve the quality of the preserved wetlands through hydroperiod enhancement;
- Assistance with addressing those wetlands where hydroperiod modeling indicates that the post-development master stormwater system may affect the hydroperiod within specific preserved wetlands;
- Recommendation where nuisance and/or exotic species treatment may be required;
- Assisting with erosion control plans for mitigation construction, as well as for construction within areas adjacent to preserved wetlands.

Task 5 – Engineering Analyses and Stormwater Modeling

5.1 The Consulting Team’s stormwater engineer will perform analyses to assess the wind set-up and associated wave run-up for the slopes on up to three borrow ponds and two stormwater ponds to determine the berm height needed to address the wind/wave run-up and freeboard requirements. The computer programs STWAVE and ACES will be used in the wave run-up analyses. Wave run-up is dependent upon several factors including pond design depth, design wind speed, fetch distance, slope angle, and slope surface (erosion protection). Wind set-up, or wind tide, is the increase in water surface level on the windward side of an embankment due to the wind shear force on the water surface. The analyses will be performed in accordance with applicable design criteria, and will be based on one combination of a single design rainfall event and wind speed resulting in a single wind set-up and wave run-up value for each facility evaluated. Based on the results of the wave run-up and wind set-up, an assessment of potential slope protection methods will be performed and recommendations provided on potential modifications to the design berm elevations around the ponds.

5.2 The Consulting Team’s geotechnical engineer will perform a geotechnical analysis of the perimeter dikes for the proposed borrow ponds including the following services:

- Provide geotechnical recommendations for design of the perimeter dike for each of the three proposed borrow ponds.
- Establish aquifer profile and properties for use in the seepage study.
- Analyze seepage rates for three soil borrow ponds through their perimeter dikes and evaluate the potential for seepage breakouts on the downstream slope of the dikes when the pond water levels are at the normal design elevations, and at the peak stages under the 25-year and 100-year storm events, considering the hydraulic conductivity of the perimeter dike material to be 5×10^{-3} , 5×10^{-4} , and 5×10^{-5} cm/sec, for a total of 27 scenarios.
- Prepare a letter report to document the data used in the evaluation, results of the seepage analyses, and the geotechnical recommendations for design of the perimeter dikes for the proposed borrow ponds.

5.3 Activities performed by Consulting Team's stormwater engineer under this subtask consist of those functions required to update the project Hydrological Simulation Program – Fortran (HSPF) and Interconnected Channel and Pond Routing (ICPR) Phase I stormwater model to represent the storage and connectivity associated with the removal of the one wetland creation area. The updated model will be used to perform design storm event and long-term continuous simulations. These services will refine the current Phase I conditions model to evaluate the proposed modifications to the layout of the revised wetland creation area (removal of Wetland Creation Area E) and the associated stormwater infrastructure needed to regulate the hydrology and hydraulics in the overall system. In order to support the design of the onsite wetland creation areas and demonstrate that the proposed project will remain in compliance with applicable peak stage and discharge criteria, each of the previously developed stormwater models depicting Phase I conditions will be updated to reflect the proposed modification to the wetlands creation area (a single wetland creation area, Wetland Creation Area E, will be eliminated and the layout of the remaining creation areas will be unchanged).

5.3.1. The current system hydrology in the Phase I model will be updated by the Consulting Team's stormwater engineer to allow for representation of the proposed onsite mitigation wetlands. This will allow for analysis of the wetland hydroperiods during the period of simulation. Based on elimination of a single wetland creation area, the affected area will be modified to represent Phase I conditions prior to the addition of the wetland creation area. Up to five basins will be modified to account for the shift in area and storage due to the elimination of the creation wetland. The hydrogeologic modifications will be made following the same protocols applied for the continuous simulations previously performed.

5.3.2 In order to account for the movement of runoff into and out of the existing and proposed features, the system hydraulics will be updated to account for the changes in connectivity in the area of the removed creation wetland with the surrounding areas. Low-level connectivity via the existing ditches as well as upper level overflows will be represented in the Phase I model. Site specific survey information will be used to identify which of the existing hydraulic conveyances are to remain. Up to ten total hydraulic connections will be modified,

Evaporation rating curves will be modified by the Consulting Team for each of the storage areas affected by the removal of the creation wetland. Up to five rating curves will be modified for the Phase I model, based on groundwater levels to account for site infiltration using the same protocols previously developed.

The Consulting Team's stormwater engineer will summarize the model refinements in a Wetlands Mitigation Plan Modeling Report section.

5.4 To simulate wetlands hydrology across the entire range of site conditions, the updated model representative of Phase I Construction conditions will be run by the Consulting Team's stormwater engineer for up to three different 18-month periods, representative of an average water year, a wet year, and a dry year, respectively. The models will be run representative of a wells-off condition. The existing conditions modeling previously performed will be used as a baseline against which future success criteria will be measured. The results of the modeling simulations will be compared by the

Consulting Team in tabular and graphical form for each of the 16 indicator wetlands systems previously added to the models as well as for four onsite wetland creation areas.

5.4.1 After the hydrologic and hydraulic updates are complete, continuous simulations will be performed by the Consulting Team's stormwater engineer. The three discrete continuous simulation periods will consist of the year 1964: an average hydrologic year with consideration of a dry period; as well as a wet year and a dry year. The years 1991 and 2012, representative of a "wet" and a "dry" year respectively, will be simulated as well. Rainfall inputs will be based on the long term rainfall data available from the National Oceanic and Atmospheric Administration (NOAA) rainfall gage at Melbourne, Florida (Melbourne WFO, 5612). Continuous simulations of each representative year will be performed for up to 18 months to allow for initial model stabilization for up to six months prior to the period of interest. The model representative of Phase I Construction conditions – wells off scenario, having been updated under previous tasks, will be used to simulate the three selected periods of record.

A single design revision will be accounted for under this task order (the removal of a single proposed onsite wetland mitigation area with the configuration of the remaining areas to remain unchanged). Additional design configuration revisions are not included in this task order. In the event that additional simulations are required, they will be addressed under a separate task order.

5.4.2 After the aforementioned hydrologic and hydraulic detail is added to the Phase I model, it will be used by the Consulting Team's stormwater engineer to simulate the Mean Annual, 10-year, 25-year, and 100-year 24 hour design storms. The removal of Wetland Creation Area E will potentially result in the reconfiguration of the previously designed onsite stage-area-storage relationships and stormwater control structures servicing the proposed stormwater and borrow ponds along with those regulating offsite discharges for Phase I conditions. These structures will be modified as needed to demonstrate that the proposed system remains in regulatory compliance while providing the required hydroperiods to existing and proposed wetlands areas.

The model updates and refinements will be summarized with the design layouts in the Subtask 5.5 report section.

5.5 After the model simulations have been performed, the continuous simulation results will be quantified by the Consulting Team's stormwater engineer in both tabular and graphical format for each of the 16 indicator wetlands as well as the four remaining proposed onsite wetlands creation areas. The results from the existing conditions simulation will be used as a baseline against which the Phase I scenario will be compared. Additionally, the design storm results will be compiled in tabular format to demonstrate that the proposed project is in compliance with applicable regulatory criteria with respect to peak stages and discharges.

The model simulations results narrative previously developed under Task Order No. 00-79 shall be updated with the results of the new modeling by the Consulting Team's stormwater engineer and then submitted to the County for review and comment.

Task 6 – Development of the Adaptive Management Plan

The Consulting Team's Wetland Scientist will develop a draft of an adaptive management plan for the created and enhanced wetlands that may include:

1. Monitoring and Maintenance Plan: Recommendations on how to develop the system during construction activities, and how to control the system through the first three years of operation, and then the long-term monitoring plan.
2. Vegetation Develop Plan: Recommendations of planting locations, seed bank development, management of desirable and undesirable species, and water level regimes for maximizing vegetation establishment and community composition.
3. Initial Water Management Plan: Recommendations for water level management (i.e. water levels, velocity, etc.) to minimize erosion of the seed bank, to control the germination rate of undesirable species, to minimize the potential for scouring, and to reduce the potential for algae blooms and other situations that may adversely impact the created wetland areas.
4. Adaptive Water Management Indicators: Recommendations for water level management (i.e. water levels, velocity, etc.) during the first three years of wetland establishment to maximize vegetative community diversity and minimize the potential for conditions that may result in degraded wetland conditions.
5. Acceptable Community Successional Patterns: Recommendations for monitoring to identify vegetative successional patterns to minimize the coverage and invasion by undesirable vegetative species that may affect the long-term viability of the created wetland. Additionally, this portion of the plan will identify areas where significant use by protected wildlife species may need be incorporated into management and monitoring of created wetlands.

Task 7 – Project Meetings, Coordination, and Reviews

- 7.1 Consulting Team will submit to County three draft copies of the design drawings for review and comments at the 60 percent and 90 percent completion level.
- 7.2 Consulting Team members will provide and attend internal coordination and progress meeting for planning and review during the project duration.
- 7.3 Consulting Team's Wetland Scientist will prepare for and meet with the FDEP to review the draft wetland mitigation and adaptive management plans and solicit their feedback prior to submission. Based on comments received, the Plans will be revised and finalized under Tasks 4 and 6 in preparation for submittal to FDEP in conjunction with future RAI response(s).

ADDITIONAL SERVICES

The services listed in this Task Order No. 00-84 may not be all-inclusive of the services required during the wetland mitigation and drainage plan preparation process. Services that can presently be identified as not included within this Task Order No. 00-84 are as follows:

- 1) any additional illustrations, investigations, reports, analyses, testing, design, or research required beyond the fee estimate of the Tasks provided in this scope of services;
- 2) preparing any FDEP and USACOE RAI responses;
- 3) design and details for the landfill cells, supporting facilities, utilities, and related infrastructure;
- 4) design of roads, crossovers, bridges;
- 5) discussions, planning, permitting, or design related to the natural gas pipeline easement;
- 6) preparation of permit applications or regulatory agency responses;
- 7) final design, bidding documents, and construction services;
- 8) modifications to the Existing Conditions or the Conceptual Build-out stormwater model;
- 9) preparing for, attending, or conducting any public hearings, Brevard County Board of County Commissioners' meetings, or solid waste workshops; and
- 10) any additional meetings (whether inside or outside Brevard County) or negotiations requested by USACOE, USEPA, FDEP, Farmland Reserve, the County, Legal Counsel or any other regulatory agency.

Consultant will perform additional services only after receipt of written approval of a new Task Order from the County.
