Project Management Plan

Date: November 10, 2010

Project Name: Stormwater Retrofit – McKay Creek Tributary – Sunset Manor

Engineering Project Number: 2007-03

Prepared By: Rafal Ceislak, EI, Engineer II

Approved by: Leland Dicus, PE, City Engineer
Carol Stricklin, AICP, Director Community Development
Brian Usher, Director Public Works
Mike Staffopoulos, PE, Assistant City Manager

Purpose:
The purpose of this project is to retrofit a segment of an upland cut stormwater conveyance ditch within the McKay Creek Watershed to improve water quality and maintain conveyance capacity.

Description:
The ditch section is approximately 900 feet in length and located between Barlow Lane to the west, Twin Lakes Drive to the east, Sunset Drive to the north and Bluffs Drive to the south. The ditch serves an upstream watershed of approximately 155 acres consisting of largely untreated residential and commercial land uses. The ditch outfalls to McKay Creek, which is a State of Florida Impaired Waterbody. The existing ditch banks are unstable, inundated with invasive vegetation and have incurred significant soil erosion. The proposed improvements will mitigate sediment and suspended solids pollution through bank stabilization and installation of a sediment trap. Nutrient removal will be enhanced through installation of native vegetation and construction of a series of cascading weirs to create littoral and wet detention zones.

Engineering Project Team Structure

- Design Mechanism – In-house
  - In-house staff will provide the engineering and environmental services for this project. A sub-consultant will be utilized for professional survey services.
  - This project is cooperatively funded with the SWFWMD, under the SWIM program.
  - The following table provides the project team structure for this project:
“Providing responsive, current and cost effective engineering solutions supporting the operation, maintenance and improvement of the City's stormwater, wastewater and transportation infrastructure”

Team Member | Project Role
--- | ---
Leland Dicus | Engineering PM/ EOR/ Division Review/ Client Services
Rafal Cieslak | Engineering Assistant PM/ Project Engineer
David McPherson | Engineering Plan Production-Lead
Myrna Anderson | Engineering Plans Production
Troy Tinch | Engineering Environmental Scientist/ NPDES Review
Greg Brown | RPA Landscape Design
Rick Daquanna | Engineering CM/ Construction Review
Marcello Tavernari | Engineering Peer Review
Brian Highnote | Engineering Construction Inspection
George Adriaansen | Engineering Plans Production - QA/QC
Karen Hadala | Engineering Clerical/Financials
Randy Smith | SWFWMD SWFWMD PM/ Funding Partner Review
Stephanie Waters | Admin Grant Review/Audit
Mary Hale | Admin Legal Review
Joan Wheaton | Admin Procurement Review
Carol Stricklin | CD Client Review
Brian Usher | PW O&M/Client Review
Bob Nowak | PW O&M Review
Mike Staffopoulos | Admin Admin Review

- Sub-Consultants
  - Survey –
    - Polaris

Scope of Services:

1. **Project management**

1.1. **Meetings** – project meetings will be held at key project milestones including the following:

   a) **Client Project Kick-off Meeting** – The purpose of this meeting is to review the proposed PMP with the client and client's designated project team.
b) **SWFWMD Coordination Meetings** – Initial and subsequent coordination meetings will be held with SWFWMD project manager to present and review the project deliverables. Three meetings are anticipated.

c) **Design Phase Meetings** – Hold review meetings with key project stakeholders as outlined in the Quality Assurance Project Plan (QAPP). Five meetings are anticipated.

d) **Internal Project Coordination Meetings** – Project manager will hold regular internal meeting to coordinate week to week design efforts and monitor progress.

1.2. **Project Schedule** – a detailed task by task project schedule will be developed and updated on a monthly basis.

1.3. **Project Financial** – internal project billing and sub-consultant invoicing will be reviewed on a bi-weekly basis and a status update provided on a monthly basis. Internal project billing will be invoiced on a quarterly basis.

1.4. **Quarterly Project Update Report** – project status report will be published on a quarterly basis and sent to project stakeholders.

1.5. **Project Update Center** – key project information will be maintained and updated on a monthly or more frequent basis on the Engineering Capital Project Program Intranet page.

2. **Evaluation Phase Services**

2.1. **Survey Acquisition** – topographic and boundary survey completed.

2.2. **Project Plan Sheet Conversion** – the existing project plan sheets produced in microstation shall be converted to the current CADD Standard.

2.3. **Conflict Utility Inquisition** – Project plan sheets will be sent to local utility providers for mark-up. After receiving utility mark-ups, conflict utilities will be incorporated into project plan sheets.

2.4. **Preliminary Engineering Analysis and Design** – perform a preliminary drainage design and analysis to identify the most cost effective retrofit configuration that will meet the goals of the project including:

   a) Evaluation and recommendations for up to three ditch bank stabilization techniques and stormwater treatment system configurations that will maximize treatment capacity improve existing conveyance, and meet the budgetary constraints of the project. A bank stabilization lunch and learn meeting will be held with construction and O&M staff to review past stabilization techniques and lessons learned.
b) Evaluation of stormwater best management practices to incorporate into the project design including a linear treatment train. This task will include nutrient removal estimates and determination of planting areas and species to be used.

c) Drainage basin map and ICPR model of existing conditions and proposed design options.

d) Engineer’s estimates will be generated for each project alternative including capital, operation and maintenance costs.

2.5. **Environmental Impact Analysis** – A pre-application meetings has already been held with SWFWMD. This task shall include UMAMS analysis of existing conditions and proposed design options. Additionally easements necessary to construct the project and facilitate operation and maintenance will be identified.

2.6. **Compile Basis of Design Report** – The basis of design report will summarize the findings of the PE&E analyses and include Engineering’s recommended design option. The retrofit design parameters to be used in the final design will also be identified.

2.7. **PE&E QA Review** – Complete internal quality assurance review of the PE&E documents including peer, construction, and division reviews.

2.8. **30% Engineering** – Engineering design calculations and plans production will be performed for the recommended design solution; utility conflicts and easement requirements will be called out; and a construction cost estimate and measurement and payment specification will be generated. Plans production at this phase will be limited to the plan, profile and typical cross section layout of the proposed improvements. Labeling, cross sections, planting plan, details and S&E plan will not be included in this submittal phase.

2.9. **30% QA Review** – Complete quality assurance review of the 30% engineering documents including peer, construction, and division reviews. The BODR and 30% documents will be revised if necessary and sent to individuals to be included in the PE&E stakeholder meeting, their comments to be discussed at the meeting.

2.10. **PE&E Project Stakeholder Meeting** – The purpose of this meeting is to present the findings of the PE&E analysis and Engineering’s recommended design option, and discuss and gain consensus on the final design option from the project stakeholders. Meeting attendees will be as identified in the Quality Assurance Project Plan.

3. **90% Design Phase Services**

3.1. **90% Engineering** – Perform engineering design calculations and make necessary adjustments to construction documents based on decisions made at PE&E meeting.
3.2. Technical Specifications – A complete set of technical specifications for the project will be prepared.

3.3. SWFWMD Permit Application – Prepare SWFWMD permit applications and supporting documentation.

3.4. Easement Acquisition – Required easement documents are submitted to Assistant City Attorney for review and approval. Approved easement documents are sent to grantors for signature. Meetings with grantors will be held as necessary.

3.5. 90% QA Review – Complete internal quality assurance review of the 90% engineering documents and permit applications, including peer, NPDES, construction, and division reviews. The 90% documents will be revised if necessary and sent to individuals to be included in the 90% project stakeholder meeting, their comments to be discussed at the meeting.

3.6. 90% Project Stakeholder Meeting – The purpose of this meeting is to provide the project personnel with the opportunity to provide comments on the 90% engineering documents prior to permit application and presentation to the public. Meeting attendees will be as identified in the Quality Assurance Project Plan.

3.7. Permit Acquisition – finalize permit applications and supporting documents, obtain signatures, and submit to permitting agencies. Respond to RFI and make necessary adjustments to plan sheets.

3.8. Utility Coordination Meeting – Meeting with representatives of utility company’s whose facilities will be in conflict with the projects proposed construction activities to discuss relocation options, temporary access, responsibilities and cost.

3.9. Public Information Workshop – Workshop/open house style meeting with members of the public in project area to present the project design and gain feedback on the project. Meetings will also be held with individual homeowners who may be uniquely impacted by the project.

4. 100% Design Phase Services

4.1. 100% Engineering – Make necessary adjustments based on permit requirements, public comment and utility coordination.

4.2. 100% QA Review – Complete internal quality assurance review of the 100% engineering documents including peer, construction, and division reviews.
4.3. **Finalize Construction Documents** – make changes to construction documents based on 100% reviews.  Engineer of Record signs and seals construction documents.  City Engineer will approve and sign final construction documents.

5. **Bid Phase Services**

5.1. **Prepare Contract Documents for Bid** – modify city front-end document template and attach technical specifications.  City Engineer will approve and sign final bid package.

5.2. **Review of Contract Documents by OMB** – Submit copy of contract documents to OMB and obtain signature on invitation to bid.

5.3. **Prepare Plan Sheets and Contract For Bid Advertisement**

5.4. **Advertise Project** – project is advertised for bid.

5.5. **Pre-Bid Meeting** – will be held minimum of two weeks prior to bid opening, as determined necessary depending on the project.  The pre-bid meetings shall be recorded and minutes generated immediately following.  Meeting attendance by prospective contractors will be made mandatory based on the complexity of the project.

5.6. **Questions, RFI's, Interpretations and Addenda** – Questions and RFI's will be answered and Interpretations and Addenda will be issued if deemed necessary up to ten (10) days prior to bid.  Addenda shall generally be issued when errors are found in contract documents or drawings, and when changes, additions or modifications are made to the contract documents or drawings.  Addenda should be issued when information is needed to ensure equal information and equal understanding of the project and bid requirements.

5.7. **Bid Opening** – sealed bids received on or before the due date and time will be opened and read aloud by office of management and budget.

5.8. **Review Bids and Bid Bonds** – the bid documents will be reviewed for completeness, bid prices will be tabulated and the references of the two lowest bidders will be checked.  The lowest qualified bidder ("most responsive and responsible") will be selected for contract award.  The signature page of the Contract Agreement is sent to selected bidder for signature.

5.9. **City Attorney Approval of Contract Documents** – The signed agreement page and the contract prices of the selected bidder will be inserted into the contract documents, and the contract is submitted to the City Attorney for review and signature.

5.10. **City Commission Approval of Project Award** – City Commission agenda memo is prepared for approval of contract award and item is taken to a regular commission meeting.  The Contract is updated as necessary to reflect the awarded bid items and contract amount.
5.11. **NOA and Contractor Signatures** – Signature of City manager is obtained on the notice of award (NOA) and two copies of the contract documents will be sent to contractor for signatures.

5.12. **Obtain Contract Signatures (City Admin)** – Contracts will be routed for execution by city staff. One original Contract is given to the contractor the other original is sent to the City Clerk.

6. **Construction Phase Services**

6.1. **Internal Construction Team Meeting** – a meeting will be held including the PM, CM and City Engineer to coordinate transfer of project management responsibility for the project from the design group to the construction group and to develop the preconstruction meeting agenda.

6.2. **Pre-construction Meeting and NTP** – a meeting is held with contractor, conflict utility representatives, and city staff to discuss construction schedule, payment methods, project safety, MOT, and submittal of shop drawings. The notice to proceed date is established at the meeting. Following the meeting the NTP document is executed and sent to the Contractor and City Clerk for inclusion in the original Contracts.

6.3. **Pre-construction Public Information Workshop** – Workshop with members of the public in project area to present the project design, introduce the City's construction team and present construction sequencing and schedule.

6.4. **Shop Drawing Review** – shop drawing submittals will be reviewed for conformance to construction plans and specifications.

6.5. **Construction** – During construction of the project the contractor’s work is inspected for conformance with construction plans and specifications, and quality of workmanship; requests for payment will be reviewed and processed; if necessary field adjustments will be made; change orders will be executed for any increases in the total contract time or price.

6.6. **Substantial Completion Walk-Through** – When the contractor notifies the City of substantial completion, an inspection of the work is made to determine status of completion and formulate a punch list.

6.7. **Record Drawing Review** – as-built drawings will be submitted by the contractor in accordance with the Contract and reviewed for approval by the CM, PM and EOR.

6.8. **Final Completion Walk-Through** – upon notification of the completion of substantial punch list items the city shall make a final inspection and formulate a final punch list to be executed immediately by contractor.
6.9. **Project Close-Out** – final payment, and other activities necessary to finalize the project will be completed. This work shall include transfer of ERP permit to operation and maintenance and development of an operation and maintenance manual.

6.10. **O&M Workshop** – Engineering will hold a workshop with PW staff to present the final operation and maintenance manual.

7. **Post Construction Monitoring**

7.1. **Post-Construction Monitoring** – a study will be conducted thru field observation to monitor the performance of the stormwater retrofit system after the project construction is completed for at least 2 months.

7.2. **Final Project Report** – a final project report will be generated. The report will contain a performance evaluation of the stormwater retrofit system based on the field observations. The final project report will also include possible recommendations for similar projects in the future.

**QAPP:**

<table>
<thead>
<tr>
<th>Reviewing Agent</th>
<th>Department / Division</th>
<th>Project Role</th>
<th>Review Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Staffopoulos</td>
<td>Admin</td>
<td>Admin Review</td>
<td>PMP, BODR, 90% Plans</td>
</tr>
<tr>
<td>Carol Stricklin</td>
<td>CD</td>
<td>Client Review</td>
<td>PMP, BODR, 90% Plans, Final Report</td>
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<tr>
<td>Brian Usher</td>
<td>PW</td>
<td>O&amp;M Review</td>
<td>PMP, BODR, 90% Plans, O&amp;M Manual</td>
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<tr>
<td>Leland Dicus</td>
<td>Engineering</td>
<td>Division Review</td>
<td>PMP, BODR, 30%, Permits, 90%, Tech Specs, 100%, Contract, Final Report, O&amp;M Manual</td>
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<tr>
<td>Rick Daquanna</td>
<td>Engineering</td>
<td>Construction Review</td>
<td>BODR, 30%, 90%, 100%, Tech Specs, Contract</td>
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<tr>
<td>Marcello Tavernari</td>
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<td>Peer Review</td>
<td>BODR, 30%, 90%, Permits, 100%, Tech Specs, Contract</td>
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<td>Bob Nowak</td>
<td>PW</td>
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<td>BODR, 30%, 90%, 100%, O&amp;M Manual</td>
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<td>Randy Smith</td>
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<td>BODR, 30%, 90%, 100%, Final Report</td>
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<td>Troy Tinch</td>
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<td>Invitation to Bid</td>
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<td>Stephanie Waters</td>
<td>OMB</td>
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<td>PMP, Final Report</td>
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</table>
“Providing responsive, current and cost effective engineering solutions supporting the operation, maintenance and improvement of the City’s stormwater, wastewater and transportation infrastructure”

City of Largo
Engineering Services Division
Telephone: (727) 587-6713
Facsimile: (727) 586-7413

Budget:

Funding for the project is included in the FY 2011 budget from the LOST fund in the amount of $1,475,800.00. A budget break-down by task is included in the table below.

<table>
<thead>
<tr>
<th>Task</th>
<th>Vendor</th>
<th>Budget</th>
<th>Fund</th>
<th>FY</th>
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<tbody>
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Schedule:

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<th>Project Milestone</th>
<th>Deliverable</th>
<th>Date</th>
<th>Date (SWFWMD N250)</th>
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<tr>
<td>Client Kick-Off Meeting</td>
<td>PMP</td>
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<td>PE&amp;E Project Meeting</td>
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<td>03/31/11</td>
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<td>QPR #2</td>
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