

**CITY OF DELRAY BEACH**

**CONSULTING SERVICE AUTHORIZATION**

DATE: \_\_\_\_\_

SERVICE AUTHORIZATION NO. 12-20 FOR CONSULTING SERVICES

CITY P.O. NO. 16-073 CITY EXPENSE CODE: \_\_\_\_\_

CITY PROJECT NO. \_\_\_\_\_ MATHEWS CONSULT. PROJECT NO. 1851

TITLE: Reclaimed Water Expansion - Area 12C

This Service Authorization, when executed, shall be incorporated in and shall become an integral part of the Contract.

TITLE: Agreement for General Consulting Engineering Services

**I. PROJECT DESCRIPTION**

The City of Delray Beach has adopted a Reclaimed Water Master Plan (RWMP), (prepared by Mathews Consulting, Inc., October, 2003) which identifies areas of service for the City's new reclaimed water system. The purpose of the RWMP is to serve as a planning document from which a reclaimed water system can be developed in phases as capital improvements are budgeted and scheduled through a designated time frame.

The first project identified for implementation in the RWMP was "Area 1" and was placed in operation in 2005. The second project(s) identified for implementation in the RWMP were "Area 2" and "Area 3" and they were placed in operation in 2006. The third project identified for implementation in the RWMP was "Area 4" and was placed in operation in 2008. The fourth project identified for implementation was "Area 11". The Area 11 RWS was broken into Area 11A and Area 11B. The Area 11A RWS was placed in operation in late 2009 and the Area 11B RWS was placed in operation in August 2011. The fifth project identified for implementation was "Area 12". The Area 12 RWS will be broken into Area 12A (Phase 1 & 2), Area 12B and Area 12C. The Area 12A (Phase 1) was placed in operation in August 2013. The Area 12A (Phase 2) was placed in operation in August 2014. The Area 12B is was recently bid and will be placed in operation in 2016.

The proposed reclaimed water system for "Area 12C" is shown in **Figure 1**. This project involves providing engineering design, permitting, surveying, geotechnical investigations, utility locates (e.g. soft digs) and bidding services for the "Area 12C" reclaimed water transmission/distribution system.

The City has also recently experienced problems with aging water mains in the project area and standing water issues after heavy rainfall events. Therefore, the City has requested for MC to also replace the water mains, gravity sanitary sewers, and add drainage inlets and piping on the following roads in the project area:

- Brooks Lane
- White Drive
- Rhodes Villa Avenue
- Del Haven Drive

Project components consist of:

- Reclaimed water mains (ranging from 4-inch to 10-inch diameters), valves, fittings & reclaimed water meter boxes/services. The reclaimed water mains will either be designed as conventional open-cut method of construction and/or directional drill method of construction.
- Connection will be made to the existing reclaimed water main stub-out at Casuarina Road and Hibiscus Road.
- Provide 6-inch reclaimed water stub-outs as required for future connections.
- Water Mains (ranging from 6-inch to 8-inch diameters), valves, fire hydrants, fittings & water meter boxes/services. The water mains will be designed as conventional open-cut method of construction. Connections will be made to the existing water main along S.R. A1A.
- The existing cast iron water mains in the project area will be removed if located in the grass area or if located within 3-ft. of the new water main pavement trench. The existing water mains will be abandoned in place if located in the roadway and more than 3-ft. from the new water main pavement trench. Any existing transite water mains in the project area shall be abandoned in place.
- Replace the existing sanitary sewer system (gravity piping, manholes, and sewer laterals and clean-outs in kind).
- Add drainage catch basins and drainage piping. The new drainage piping will connect into the existing outfalls located on Brooks Lane, White Drive, Rhodes Villa Avenue and Del-Haven Drive. Note: no new drainage outfalls or replacement of existing drainage outfalls are included in this Service Authorization.
- Tideflex check valves will be designed to be installed on all existing drainage outfalls in the project area.
- Driveways will not be replaced unless the construction of a new pipeline disturbs the driveways.
- New swales will be located on both sides of the roadway.
- Asphalt parking areas in the grass areas will be removed and replaced, with a swale.
- Roadways – either reconstruction or trench repair w/ 1-inch mill and overlay. This will be determined after the 30% design has been laid out for the drainage improvements.



## II. SCOPE OF SERVICES

### Phase I – Study and Report Phase

Not Applicable.

### Phase II – Preliminary Design Phase

Not Applicable.

### Phase III – Final Design Phase

Consultant shall provide final design phase services in accordance with Article III.C of the Agreement for Engineering Services with the City, dated January 24, 2012.

1. **Field Investigation:** Field reconnaissance of the proposed pipeline alignment shall be performed. Photograph log walk-through will be included. In addition, potential underground existing utilities will be identified.
2. **Utility Coordination:** Coordination with utility agencies (electric, phone, gas, and cable TV) shall be performed to collect record information. This Subtask includes reconciling apparent discrepancies between record information and existing photographic and field-verification information.
3. **Design Drawings:** Consultant shall prepare construction drawings which shall include: cover sheet, general notes, civil plan/profile drawings, and detail sheets conforming to the requirements of the current City of Delray Beach Minimum Construction Standards. The drawing scale shall be 1" = 20' for plan and 1" = 2' for profile. Consultant shall prepare the engineering design elements on topographic survey information prepared by Consultant's surveyor using AutoCAD Release 2013 format and available As-Built Drawings. Consultant shall coordinate with the City in order to design the proposed reclaimed water transmission/distribution piping in accordance with the requirements and design standards of the City. Drawings (two copies) shall be submitted for City review at 30% (plan view only), 60%, 90% and 100% Stages (plan/profile).
4. **Specifications:** Contract documents consisting of "front-end" documents and technical specifications shall be prepared and shall conform to City of Delray Beach Standards and the FDOT Standard Specifications for road and bridge work. Specifications (two copies) shall be submitted for City review at the 60%, 90% and 100% stages.
5. **Cost Estimate:** At the 60%, 90% and 100% stages, Consultant shall prepare a detailed opinion of probable construction cost based upon the level of design drawings and specifications approved by the City. The cost opinion shall reflect changes in general scope, extent or character of design requirements incorporated during the various design review stages. Opinion of probable construction cost (two copies) shall be submitted for City review at the 60%, 90% and 100% stages.

6. **Meetings:** Consultant shall attend kick-off meeting and three (3) design meetings with the City and provide written summary of the issues discussed.
7. **QA/QC:** Consultant shall provide internal QA/QC reviews on the 30%, 60% and 90% Design Documents (e.g. drawings and specifications).

#### **Phase IV – Bidding/Negotiation Phase**

Consultant shall provide bidding phase services in accordance with Article III.D of the Agreement for Engineering Services with the City, dated January 24, 2012.

1. **Bid Advertisement:** Consultant shall assist City in advertising for and obtaining bids or negotiating proposals for construction (including materials, equipment and labor). It is anticipated that work shall be awarded under a single construction contract. Consultant shall provide up to four (4) sets of bidding documents to the City to issue bid package. The City shall receive and process deposits for bidding documents and shall maintain a record of prospective bidders to whom bidding documents have been issued.
2. **Demand Star Bid Submittal:** Consultant shall furnish the bidding information to the City in electronic format to be used in conjunction with “Demand Star”.
3. **Pre-Bid Conference:** Consultant shall attend pre-bid conference and provide a written summary of issues discussed.
4. **Bid Clarification:** Consultant shall issue addenda and shall provide supplemental information or clarification, as appropriate, to interpret, clarify, or expand the bidding documents to all prospective bidders during the bid period.
5. **Contract Award:** Consultant shall attend the bid opening, prepare bid tabulation sheets and assist City in evaluating bids and proposals, and in assembling and awarding contract for construction. Consultant shall submit to City a written recommendation concerning contract award.
6. **Final Deliverable:** After Contract Award, Consultant shall furnish the As-Bid design drawings, one (1) set of AutoCAD (Version 2013) files and one (1) set of pdf files in electronic format on CD. Consultant shall also provide one hard copy only of the Contract Documents (i.e. front-ends and technical specifications).

#### **Phase V – Construction Administration Phase**

Upon completion of the final design phase, the Consultant shall submit Addendum No. 1 to this service authorization for approval of fees for construction phase services to be provided in accordance with Section III-E of the Agreement with the City



### **Other – Permitting**

At the outset of the Design Phase, the Consultant shall meet with the appropriate permitting agencies to determine potential permitting requirements. Agencies anticipated to have jurisdiction over the project include: (1) FDOT for work within State Road A1A R-O-W; (2) Palm Beach County Health Department (PBCHD) for water main and gravity sewer replacement permit; and (3) South Florida Water Management District (SFWMD).

Permit applications shall be completed as required for FDOT, PBCHD and SFWMD. Associated permit application fees shall be determined by Consultant and paid by City.

- FDOT Utility Permit for work within State Road A1A right-of-ways, which is a State maintained road.
- PBCHD Water Main Construction Permit and Gravity Sewer Collection System Permit.
- SFWMD General Environmental Resource Permit.

In addition to preparing the permit applications for appropriate regulatory agencies, Consultant shall assist the City in consultations with the appropriate authorities. Consultation services shall include the following:

- Attend up to one (1) pre-application meeting with the staff of each of the regulatory agencies.
- Attend up to one (1) meeting with each of the regulatory agencies during review of the final permit applications.
- Respond to request(s) for additional information from each regulatory agency.

### **Other – Geotechnical**

Consultant shall furnish the services of a professional geotechnical engineer to provide subsurface investigations of the project area that will include:

- Perform up to fifteen (15) standard penetration test (SPT) borings to an average depth of ten (10) feet.
- Evaluate field data collected and provide geotechnical engineering evaluation report.

### **Other – Survey**

Consultant shall furnish the services of a professional surveyor to provide survey services consisting of field topography and horizontal locations referenced by baseline stationing. All existing facilities and utilities within the established project limits will be referenced by baseline station with an offset distance (left or right) from baseline for the project and will include the following:

1. Topography survey at 100-foot intervals and at major ground elevation changes to depict existing ground profile at proposed project area. This shall be accomplished

by creating a baseline in the field to collect pertinent data which shall include the following:

- a. Location of all visible fixed improvements within the project limits, including physical objects, roadway pavement, railway tracks, canals, driveways, sidewalks, curb, trees, signs, fences, power poles, buildings, and other encumbrances, including point of curvature and point of tangency.
- b. Location of all known above and below ground existing utilities: FP&L, BellSouth, Cable TV, Natural Gas, Potable Water (pipe diameter, TOP, valves, fire hydrants, and meters), Reclaimed Water Mains (pipe diameter, TOP and valves), Force Mains (pipe diameter, TOP, and valves), Sanitary Sewer (pipe diameter, manhole inverts and direction, rim elevations, laterals, and clean-outs), Storm Sewers (pipe diameter, manhole inverts and direction, catch basins, and rim/grate elevations), and **all** other accessible structures. This will include coordination with Sunshine and City of Delray Beach. Underground piping shall be pot-holed by City in a timely fashion.
- c. Identify platted rights-of-way (including bearing and distances for centerline), lot numbers, house address, ownership lines, block numbers and dedicated easements.
- d. Elevations shall be indicated every 100 feet, at a minimum, to indicate centerline grades, edge of pavement grades, and shoulder grades, low points, railway ditch bottoms, and all right-of-way lines. Intermediate grades shall be indicated at all grade breaks, driveways and sidewalks. Sufficient grades shall be indicated on the driveways and parking areas to indicate direction of grade.
- e. Provide and reference benchmarks at **maximum 600-foot intervals**. Elevations to be referenced to an existing established City or County Benchmark.
  - The above topographical survey data will be prepared in AutoCAD (Version 20013) format at a scale of 1"=20', as one continuous file. The City of Delray Beach standard layering system shall be followed.

#### **Other – Field Verification**

Consultant shall furnish the services of a professional underground services company to provide underground field locations of affected existing utilities. The work shall consist of measuring and recording the approximate horizontal location of affected utilities within the project limits. It is anticipated that approximately one hundred (100) utility locations will need to be pot-holed.

#### **ASSUMPTIONS**

Work described herein is based upon the assumptions listed below. If conditions differ from those assumed in a manner that will affect schedule of Scope of Work, Consultant shall advise



City in writing of the magnitude of the required adjustments. Changes in completion schedule or compensation to Consultant will be negotiated with City.

1. City will provide Consultant record drawings of all available existing facilities and proposed facilities, which shall serve as the basis of design in this project. The information will be provided to Consultant within 5 calendar days of NTP.
2. City personnel will assist in field verification of affected existing City facilities. This includes marking in field (in a timely manner) existing water mains, sanitary sewers & laterals, force mains, reclaimed water mains and drainage in the field for the Surveyor.
3. Consultant can assume that all existing and proposed reclaimed water main alignment is within City of Delray Beach and FDOT rights-of-way.
4. A1A is a State Road.
5. City is responsible for all permitting fees, including costs of public notification in local newspapers.
6. The Contract Documents will be prepared as a single contract. No pre-purchase of materials and/or equipment is presumed.
7. A single bidding effort for the project is assumed. Re-bidding of the project is considered Additional Services.
8. City will be responsible for preparation of any descriptions, sketches and acquisition of easements (including temporary construction easements) that may be required. Consultant will identify the location and dimensions of any easements or temporary construction easements required for use of the City to prepare the easement descriptions and deeds.
9. The design is to be based on the federal, state and local codes and standards in effect at the beginning of the project. Revisions required for compliance with any subsequent changes to those regulations is considered an Additional Services Item not currently included in this Scope of Work.
10. Consultant assumes that there are no contaminated soils or groundwater in the project area.

## **ADDITIONAL SERVICES**

Consultant shall provide additional engineering services relating to the provision of surveying, geotechnical, sanitary, water, reclaimed water, and drainage improvements to the project area that are not covered under this Service Authorization. These additional services may be required due to uncertainties discovered during survey, soils, investigations, field verification of existing facilities and conditions, and potential property or easement acquisitions.

Services performed under this task will be on as-directed basis in accordance with a written Notice-to-Proceed from the City Manager. The Notice-to-Proceed issued shall contain the following information and requirements:

- A detailed description of the work to be undertaken.
- A budget establishing the amount of the fee to be paid in accordance with the Agreement.
- A time established for completion of the work.

### III. TIME OF PERFORMANCE

The completion dates for this work will be as follows (starting at written notice-to-proceed). Refer to *Attachment A* for the project schedule.

<u>Engineering Services</u>	<u>Time per Phase</u>	<u>Cumulative Time</u>
Survey	60 days	60 days
Phase III – Final Design <sup>(1)</sup>	240 days	300 days
Permitting <sup>(2)</sup>	60 days	300 days
Phase IV – Bidding	60 days	360 days

<sup>(1)</sup> *Geotechnical, Surveying, and Field Verification will be completed during Final Design Phase.*

<sup>(2)</sup> *Permitting will overlap with 100% design time frame.*

\* The schedule is based upon conducting a review meeting within 14 calendar days after the City receives the design submittal. All review comments shall be provided to Consultant within 14 calendar days after the City receives the submittal. An adjustment to the overall schedule will be required in case the review meeting takes longer to be conducted and/or obtaining comments takes longer to receive.

### VI. COMPENSATION

The compensation for services provided shall be billed on an hourly basis plus reimbursable expenses for each phase of work in accordance with Article VII, Method II, up to the following not to exceed cost for each phase. Refer to *Attachment B* for budget summary.

<u>Engineering Services</u>	<u>Estimated Fees</u>
Phase III – Final Design Phase	\$ 95,155.00
Phase IV – Bidding Phase	\$ 6,492.00
Permitting	\$ 8,688.00
Surveying	\$ 42,896.00
Geotechnical	\$ 10,297.00
Field Verification	\$ 34,444.00
Out-of-Pocket Expenses	\$ 2,000.00 <sup>(1)</sup>
<b>TOTAL PROJECT COST</b>	<b>\$ 199,972.00</b>

Notes:

<sup>(1)</sup> *Out-of-Pocket Expenses include the following: printing/reproduction and postage.*



This Service Authorization is approved contingent upon the City's acceptance of and satisfaction of the completion of the services rendered in the previous phase whereas encompassed by the previous Service Authorization. If the City in its sole discretion is unsatisfied with the services provided in the previous phase or Service Authorization, the City may terminate the contract without incurring any further liability. The Consultant shall commence work upon City Commission approval and this Service Authorization to be included as part of the contract without any further notice to proceed.

Approve by:

CITY OF DELRAY BEACH:

Date: \_\_\_\_\_

\_\_\_\_\_  
Cary D. Glickstein, Mayor

MATHEWS CONSULTING, INC.

Date: 3-3-16

\_\_\_\_\_  
*[Signature]*

David Mathews, P.E., Vice President

\_\_\_\_\_  
*[Signature]*

Witness

Attest:

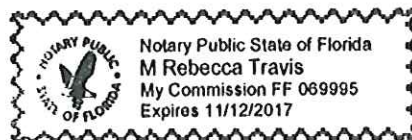
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Approved as to Legal Sufficiency  
and Form

STATE OF FLORIDA  
COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this 3<sup>rd</sup> day of March, 2016 by David Mathews, Vice President of Mathews Consulting, Inc., a Florida corporation, on behalf of the corporation. He/She is (personally known to me) or (has produced identification), Florida Driver's License \_\_\_\_\_ and (did/did not) take an oath.

\_\_\_\_\_  
*[Signature]*

Signature of person taking  
acknowledgement



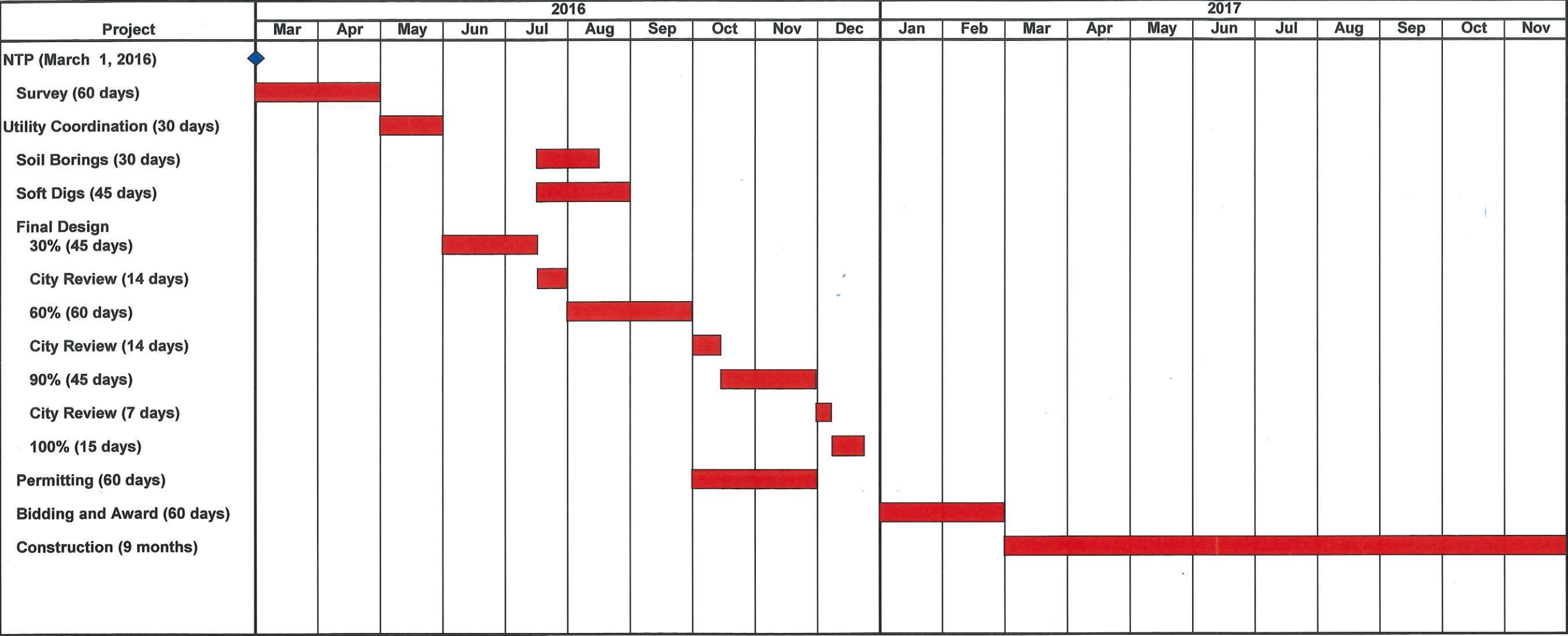
**ATTACHMENT B**  
*City of Delray Beach Reclaimed Water Expansion - Area 12C*

**Budget Summary**

Phase No.	Task Description	Labor Classification and Hourly Rates								Sub-Consultant Services
		Principal Engineer \$166.40	Senior Engineer \$144.86	Engineer I \$118.84	Construction Manager \$118.22	Senior Eng. Technician \$115.13	Senior Cadd Designer \$100.27	Clerical \$70.58	Total Labor	
<b>III</b>	<b>Final Design Phase</b>									
	Task 1 Field Investigation	2		8					\$1,284	
	Task 2 Utility Coordination	3		6		12		4	\$2,876	
	Task 3.1 30% Design Drawings	20		40		85			\$17,868	
	Task 3.2 60% Design Drawings	25		80		150			\$30,937	
	Task 3.3 90% Design Drawings	15		40		85			\$17,036	
	Task 3.4 100% Design Drawings	10		20		40			\$8,646	
	Task 4 Specifications	18						20	\$4,407	
	Task 5 Construction Cost Estimate	8		25					\$4,302	
	Task 6 Meetings	18		12				6	\$4,845	
	Task 7 Quality Assurance				25				\$2,956	
	<b>Subtotal</b>	<b>119</b>	<b>0</b>	<b>231</b>	<b>25</b>	<b>372</b>	<b>0</b>	<b>30</b>	<b>\$95,155</b>	
<b>IV</b>	<b>Bidding Phase</b>									
	Task 1 Bid Advertisement	4				2		1	\$966	
	Task 2 Demand Star Bid Submittal	2				3		8	\$1,243	
	Task 3 Pre-Bid Conference	4			2			2	\$1,043	
	Task 4 Bid Clarification	3			2	4		2	\$1,337	
	Task 5 Contract Award	2						3	\$545	
	Task 6 Conformed Drawings	3				5		4	\$1,357	
	<b>Subtotal</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>14</b>	<b>0</b>	<b>20</b>	<b>\$6,492</b>	
<b>Other</b>	<b>Permitting</b>	40		6		9		4	\$8,688	
	Surveying	1	4			4			\$1,206	\$37,900
	Geotechnical	1				2			\$397	\$9,000
	Field Verification	1		3		8			\$1,444	\$30,000
	<b>Subtotal</b>	<b>43</b>	<b>4</b>	<b>9</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>4</b>	<b>\$11,735</b>	<b>\$76,900</b>
	<b>Labor Subtotal Hours</b>	<b>180</b>	<b>4</b>	<b>240</b>	<b>29</b>	<b>409</b>	<b>0</b>	<b>54</b>	<b>\$113,381</b>	<b>\$76,900</b>
	<b>Labor Subtotal Costs</b>	<b>\$29,952</b>	<b>\$579</b>	<b>\$28,522</b>	<b>\$3,428</b>	<b>\$47,088</b>	<b>\$0</b>	<b>\$3,811</b>		
	<b>Labor Total Costs</b>	<b>\$113,381</b>								
	<b>Subconsultant Costs Total</b>	<b>\$76,900</b>								
	<b>Subconsultant Multiplier</b>	<b>1.1</b>								
	<b>Subconsultant Total</b>	<b>\$84,590</b>								
	<b>Reimbursable Expenses</b>	<b>\$2,000</b>								
	<b>Project Total</b>	<b>\$199,972</b>								



Reclaimed Water Expansion: Area 12C - Project Schedule





(SEE FIGURE 1)  
MATCHLINE 'A'



LEGEND

- SERVICE AREA
- EXIST. RECLAIMED WATER LINE & SIZE
- PROPOSED RECLAIMED WATER TRANSMISSION LINE & SIZE
- PROPOSED RECLAIMED WATER MAIN & SIZE