

## AGENDA ITEM SUMMARY

<b>Meeting Date:</b>	JULY 17, 2019
<b>Agenda Category:</b>	CONSENT BUSINESS
<b>Agenda Item Number:</b>	10 G
<b>Subject:</b>	DETAILED DESIGN AND ASSOCIATED ENGINEERING SERVICES, PLUCKEBAUM ROAD FORCE MAIN PHASE 2 (WATER TREATMENT DEPARTMENT)

<b>Attachments:</b>	Memorandum; proposal
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<b>Staff Contact:</b>	Wastewater Treatment Director Elmore
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<b>Background:</b>	The Wastewater Treatment Department is requesting authorization to proceed with the detailed design and associated engineering services for Phase 2 of the Pluckebaum Road Force Main. Jacobs Engineering Group has submitted a proposal in the amount of \$83,248.00, which would be allocated from Account No. 400-0037-535.6404.
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<b>Reference:</b>	
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<b>Suggested Action:</b>	Approve the proposal submitted by Jacobs Engineering Group in the amount of \$83,248.00 for detailed design and associated engineering services for Phase 2 of the Pluckebaum Road Force Main
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## MEMORANDUM

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**TO:** Dr. Brenda Fettrow  
**FROM:** Brian R. Smith, Asst. Director WWT *BRS*  
**DATE:** July 8, 2019  
**SUBJECT:** Pluckebaum Force Main Phase 2 Detailed Design

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*approved to  
go to Council.  
Dr. Fettrow  
7/9/2019*

The Wastewater Treatment Department would like to proceed with the Pluckebaum Road Force Main Design and associated Engineering Services by Jacob's.

I am recommending that we proceed with the proposed Professional Service Agreement for the Pluckebaum Road Force Main Detailed Design and associated engineering services from Jacob's at a cost of \$83,248 allocated from account No. 400-0037-535.6404.

Submitted for council approval.



11570 Rockledge Avenue  
Suite 100  
Rockledge, FL 32955

June 18, 2018

Mr. Jim Elmore  
Director  
City of Rockledge  
Wastewater Treatment & Water Reclamation  
1700 Jack Oates Blvd.  
Rockledge, FL 32955

**Subject: Pluckebaum Road Force Main  
Phase 2 - Detailed Design  
Scope and Fee Proposal**

Dear Mr. Elmore:

As requested during our meeting on May 30, 2019, Jacobs has prepared for the City of Rockledge a scope and fee proposal to provide professional engineering design services for Phase 2 of the Pluckebaum Road Force Main project. Services proposed herein by Jacobs Engineering Group, Inc (Jacobs) will be performed in accordance with the contract terms of the Agreement for Professional Services for the City of Rockledge (agreement approved by the City of Rockledge on November 7, 2018). Our project understanding, suggested scope of services, and proposed schedule and fee is presented below.

## **PROJECT UNDERSTANDING**

The City of Rockledge proposes to construct a new sanitary force main along Pluckebaum Road to support future residential development in newly annexed areas. The Phase 2 design scope and fee herein is to support an additional 250,000 gpd of sanitary flow from the Fischers Hammock development south and west of the intersection of Clearlake Road and Pluckebaum Road. This new development is immediately west of the Sierra Lakes subdivision. It is our understanding that developers in the newly annexed area(s) will be responsible for designing and integrating new residential lift station connections into the Pluckebaum Rd. Force Main.

The new force main will originate just west of Clearlake Road and route along Pluckebaum Road for approximately 4,100 feet and terminate into an existing 10-inch forcemain at South Fiske Blvd. and Pluckebaum Road. Existing Lift Station No. 49 discharge from Sierra Lakes (4-inch PVC) will be tied into the new Pluckebaum Road force main. We anticipate two culvert crossings along

Pluckebaum Road with the proposed force main route. Based on existing GIS information, our scope of services assumes we can cross over these existing culverts, so we are not planning for soil borings adjacent to the culverts. Should field survey determine we have to go under the culverts, additional borings may need to be added to supplement design of the culvert crossing(s).

The City would like to incorporate Lift Station No. 8 into the design as a standby wet weather lift station. This station located at the southeast corner of S. Fiske Blvd. and Barton Blvd., has a 14-inch discharge line that routes east along Barton Blvd. and pumps directly to the Wastewater Treatment/Water Reclamation Facility on Jack Oates Blvd. The discharge manifolds with another force main at Barton Blvd. and Jack Oates Blvd. prior to entering the wastewater treatment facility.

The City plans to activate the 10-inch dry line along Barton Blvd. This dry line originates just north of Lift Station No. 8 at the intersection of S. Fiske Blvd. and Barton Blvd. It parallels the existing Lift Station No. 8 discharge line along Barton Blvd. before terminating on the easternmost side of Jack Oates Blvd. just south of Barton Blvd. The dry line is currently capped at both ends. The city has requested to provide a new extension of the 10-inch dry line directly into the Wastewater Treatment/Water Reclamation Facility. The length of this new force main is estimated at 1,100 feet, with the final tie-in point at the treatment facility to be determined during the design following collaboration with the City.

Jacobs anticipates that integrating the 10-inch dry line will require piping and valving modifications near the intersection of S. Fiske Blvd. and Barton Blvd. We will further collaborate with the City during design on their preferred operational procedure for Lift Station No. 8 with the 10-inch dry line integrated.

We understand the City is evaluating additional annexation that may contribute future sanitary flow into the Pluckebaum Road Force Main. These additional flows previously identified by the City were assessed during Phase 1 hydraulic modeling efforts. Jacobs proposes to complete the initial Pluckebaum Rd. Force Main detailed design in conjunction with the hydraulic modeling results performed during Phase 1. Our anticipated scope of services for Phase 2 is provided following.

## **SCOPE OF SERVICES**

### **1. PHASE 2 – DETAILED DESIGN**

- Develop 60% and 100% detailed design submittals for the proposed improvements identified during Phase 1 and described herein.
- The 60% design submittal will include design drawings, specifications, and an AACE

Class 3 cost estimate.

- Participate in a 60% Design Review Meeting with the City and incorporate comments received into the 100% Design submittal.
- The 100% design submittal will include design drawings, specifications, and an AACE Class 1 cost estimate. Include a suggested sequence of construction in Division 1.
- Jacobs shall prepare for and conduct an internal Quality Assurance/Quality Control review for each detailed design submittal.
- Specifications shall be in the latest standard CSI format and drawings will be in AutoCAD 2017 or later with City standard details utilized as appropriate.
- During detailed design efforts, Jacobs shall consider constructability and maintenance issues with regard to location, access, and existing utilities.
- With the 100% Design submittal, prepare and submit a Notification for Construction of a Domestic Wastewater Collection/Transmission System to FDEP Central District. Anticipated permit fees are \$250.
- The City will be provided with one electronic copy (.pdf) and five sets of 11"x17" drawings and technical specifications (hard copy) at the completion of the 50% and 90% design. For 100% design, Jacobs will provide the above with two full-size (24" x 36") drawing sets and an electronic copy of the design drawings in original format.
- In providing opinions of cost, financial analyses, economic feasibility projections, for the project, Jacobs has no control over cost or price of labor and materials; unknown or latent conditions of existing equipment or structures that may affect operation or maintenance costs; competitive bidding procedures and market conditions; time or quality of performance by operating personnel or third parties; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, Jacobs makes no warranty that Client's actual project costs, financial aspects, economic feasibility, will not vary from Jacobs' opinions, analyses, projections, or estimates

## 2. SURVEY

- Develop a topographical survey and associated base mapping needed to support the force main design and vertical alignment based on the proposed improvements.
- Field survey will generate topographic and planimetric information and base mapping for drawings to support the force main design. Survey shall establish both horizontal and vertical alignment of the facilities and will note survey monuments, topographic features, surface features (pavements, curbs, retaining walls, trees, etc.), utilities, right-of-way limits, property lines, property information, and elevations.

- Surveying services shall include traffic control and access agreements if necessary.

### 3. GEOTECHNICAL SERVICES

- Geotechnical Engineering Services will be provided by a sub-consultant
- Jacobs anticipates a total of six borings - five borings along the proposed Pluckebaum Road corridor and one boring along Jack Oates Blvd. - to a depth of approximately 10 feet. It is expected that boring locations will be accessible with truck and ATV-mounted equipment. Traffic control will be provided if necessary for maintenance of traffic during boring operations.
- Additional borings along culvert crossings may be necessary if survey deems crossing over the culverts are not feasible.
- Prepare a geotechnical data report based on the results of field investigations. The geotechnical data report will provide recommendations for pipe bedding support, earthwork, excavation, and dewatering.
- The findings and recommendations detailed in the geotechnical data report will be addressed during the design phase
- In soils, foundation, groundwater, and other subsurface investigations, the actual characteristics may vary significantly between successive test points and sample intervals and at locations other than where observations, exploration, and investigations have been made. Because of the inherent uncertainties in subsurface evaluations, changed or unanticipated underground conditions may occur that could affect total project cost and/or execution. These conditions and cost/execution effects are not the responsibility of Jacobs

### 4. BIDDING SERVICES

- Bidding services will begin with the Advertisement For Bid. A period of sixty (60) days shall be included between Advertisement and Receipt of Bids.
- Attend Pre-Bid Meeting: Participate in a one-day Pre-Bid Meeting at City of Rockledge offices. Compile questions raised during the Pre-Bid Meeting from perspective contractors and address these questions in an addenda, if necessary.
- Questions Raised During Bidding: Review written questions from bidders and potential equipment suppliers on the Contract Documents to determine if there is a need to address. If it is determined that any questions require a response or clarification to the drawings or specifications, Jacobs shall prepare a written response to include in an addendum.
- Preparation of Addenda: Prepare up to two addenda during the bidding process

and distribute addenda.

- Review bids received by the City and provide a written evaluation of all bids and a proposed recommendation for contract award.

## 5. CONSTRUCTION ADMINISTRATION SUPPORT

- Prepare required number of contract documents for distribution as “Issued for Construction” sets.
- Attend the Pre-Construction Meeting and up to two construction progress meetings.
- Review and process project submittals and shop drawings
- Provide responses to Requests-for- Information (RFIs), as deemed necessary by the City
- Assist in review and processing of Change Orders and Contract Modifications.
- Conduct up to two site visits to observe construction progress and conformance with the Contract Documents.
- Assist in review of claims and disputes, upon request.

## SCHEDULE

Task Description	Calendar Days from NTP
60% Design Submittal	72
100% Design Submittal	102
Bidding Services	181
CA Support	271

## BASIS OF PAYMENT

For the Pluckebaum Road Force Main Project, Phase 2, we propose a time and materials contract with a not to exceed amount. Contract shall be based on labor billing rates with monthly billings determined by the actual work hours completed for the period and expenses reimbursed as occurred with no additional markup. Our proposed level of effort and billing rates for the scope of services described herein is provided in the table below. An allowance of 5% has been included in the total design fee for Owner initiated changes and unplanned provisions.



City of Rockledge Project  
Subcontract  
Citywide, FL 32701

Title/Role	Billing Rate	Hours	Price
Project Manager	\$181.00	100	\$18,100
Senior Project Engineer	\$161.00	48	\$7,728
Project Engineer	\$99.00	178	\$17,622
Senior CAD Designer	\$130.00	122	\$15,860
Senior Administrative	\$90.00	8	\$720
Quality Control Reviewer	\$200.00	6	\$1,200
<b>Total Labor</b>		<b>462</b>	<b>\$61,230</b>
Subconsultant Geotechnical	\$4,300.00	N/A	\$4,300
Subconsultant Surveying	\$13,000.00	N/A	\$13,000
Expenses	\$690.00	N/A	\$740
<b>Subtotal</b>			<b>\$79,270</b>
Allowance (5%)			\$3,978
<b>Total Fee</b>			<b>\$83,248</b>

We want to thank the City of Rockledge for the continued opportunity to provide professional engineering services. Our team is motivated to provide design services for the City of Rockledge to support the City's annexation and growth. We would be happy to discuss with you in further detail any questions you may have with our scope and fee proposal.

Yours sincerely,

**Cory J. Hooper, P.E.**  
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