AGENDA MEMORANDUM
Future Item for the City Council Meeting of August 22, 2017
Action Item (Tabled) for the City Council Meeting of August 29, 2017
Action Item for the City Council Meeting of September 12, 2017

DATE: August 8, 2017

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Construction Contract
O.N. Stevens Water Treatment Plant
Intermediate Sludge Removal Phase 1 FY 2018
(Capital Improvement Program)

CAPTION:

Motion authorizing the City Manager, or designee, to execute a construction contract with American Process Group, Inc., of Tacoma, Washington in the amount of $3,750,000 for the O.N. Stevens Water Treatment Plant (ONSWTP) Intermediate Sludge Removal Phase 1 FY 2018 for Base Bid Part A plus Additive Alternate No. 1. (Capital Improvement Program) (CIP)

PURPOSE:

The purpose of this agenda item is to obtain authority to execute a construction contract.

BACKGROUND AND FINDINGS:

Sludge is a result of the water treatment process to remove suspended solids from the raw water. ONSWTP introduces a thickening agent, alum, to accelerate the precipitation and removal of the suspended solids. This result in “alum sludge” that accumulates in the lagoons (5, 6 and 7) until appropriate dredging and final disposition of the alum sludge.

FY 2018 Proposed CIP Description: O.N. Stevens Water Treatment Plant Interim Sludge Management Improvements

"This project provides an interim solution to address an accumulation of water plant residuals (solids) in Lagoon 7 and the North and South Lagoons. The implementation of this project will remove solids from the North/South Lagoons by dredging and will dispose of the solids either at the Cefé Valenzuela landfill or by land application."

This item is the second construction contract under the ONSWTP Interim Sludge Management Improvements CIP to develop the most cost effective short and long-term strategies to address sludge accumulation. The previous construction contract was awarded by City Council on December 20, 2016 to dredge the lagoons to reduce the critical levels of sludge accumulation. At the award of the previous dredging contract, City Council directed staff to develop alternative strategies that includes the "Land Application" process that includes dredging, hauling and spreading the sludge on a Texas Commission on Environmental Quality (TCEQ) approved property. This project was specifically developed with the two options; A) Reuse at Cefe Landfill for Alternate Daily Cover and B) Land Application on private property approved by TCEQ.

The previous contract included dewatering the sludge and hauling it to the Cefe Landfill. The sludge residuals were planned for reuse by mixing the sludge residuals with mulch that can be used for alternative daily cover (ADC) reducing the need for clean fill dirt for the landfill. TCEQ granted a Temporary Allowance to the City's Landfill Permit to allow this application pending further evaluation and testing. The Temporary Allowance is for an initial six-month duration with a second six-month duration for final evaluation and approval of a permit modification. With the previous construction contract it was determined that truck hauling impacts begins impacting operations at ONSWTP with 40 trucks per day. Additionally, the Cefe Landfill cannot receive and process over 25 trucks per day without additional equipment and crews to mix and stage the sludge residual/mulch ADC.

This project was developed to allow both options; Part A with reuse as ADC, and Part B with Land Application. The bid documents include alternatives identify and capture indirect cost and benefits in addition to the direct construction cost with options to the truck volumes. This strategy allows more equivalent comparison of both alternatives and the determination of long-term sludge management strategies. Table 2 below presents the indirect cost evaluation factors.

Project Scope:

This project includes dredging the ONSWTP lagoons, dewatering the sludge (as applicable), hauling and disposal of approximately 18,000 dry tons (DT) of water treatment plant residuals (sludge) from existing on-site storage lagoons. The quantities included in the bid documents were the minimum levels required to ensure continued plant operations while the long-term sludge management solution is implemented. The two base bid options with additive alternatives are as follows:

Base Bid Option A – Includes dredging, dewatering and hauling the sludge to Cefé Valenzuela Landfill, to be mixed with mulch and used as alternative daily cover.

Additive Alternative No.1 (Option A only) – Requires earth moving equipment and crew to receive and mix the sludge residuals at the Cefe Landfill to allow increasing the truck loads from 25 trucks to 40 trucks per day.

Base Bid Option B – Includes dredging, limited dewatering, and hauling of the material to a land application site certified with TCEQ, by the Bidder.

Additive Alternative No.1 (Option B only) – Energy Consumption to dewater sludge before hauling to approved Land Application property.

On August 2, 2017, the City received proposals from six bidders (6) bidders with one bid rejected as non-responsive. Bids are as follows:

Table 1. Bid Tab Calculations

CONTRACTOR	**American Process Group, Inc. Tacoma, WA**	Denali Water Solutions, LLC Russellville, AR	Environmental Solutions (US) Ltd Tonawanda, NY	DRT Biosolids Bloomer, WI	Synagro of Texas – CDR Inc. Baltimore, MD
BASE BID - OPTION A	2,864,779.12	No Bid	2,805,878.33	2,946,183.60	4,115,337.03
ADD. ALT NO. 1 (OPTION A ONLY)	(184,389.00)	No Bid	No Bid	No Bid	16,205.00
TOTAL BASE BID OPTION A (+) ADD. ALT No. 1 **	**2,640,640.12**	No Bid	2,805,878.33	2,946,183.60	4,132,322.03
BASE BID - OPTION B	No Bid	2,753,326.61	No Bid	No Bid	No Bid
ADD. ALT NO. 1 (OPTION B ONLY)	No Bid	35,820.00	No Bid	No Bid	No Bid
TOTAL BASE BID OPTION B **	No Bid	2,753,326.61	No Bid	No Bid	No Bid
Engineer's Opinion of Probable Cost	**3,750,000**				

** The table reflects the construction cost with the indirect cost factors for both Base Bid Options. Actual award was planned at $3,750,000 to achieve maximum benefit of the proposed unit cost and benefits.

TABLE 2. INDIRECT COST EVALUATION FACTORS (Evaluation is based on removal of 18,000 dry tons and bids submitted by the two lowest bidders)	**CEFE LANDFILL REUSE (Option A)**	**LAND APPLICATION (Option B)**
Extended construction durations resulting in extended City construction oversight/inspection. The land application process without dewatering requires over 5 times the truck loads and therefore additional time to achieve an equivalent "dry ton" removal and processing.	150 days $265/day $39,750	160 days $265/day $42,400
Water loss of occurs during the dredging of the lagoons. The initial dredging captures approximately 90 million gallons of water/sludge. Based on the two low bidders; the Cefe Landfill ADC process requires dewatering resulting in a water loss of approximately 14 million gallons, the land application water loss is approximately 41 million gallons. The apparent low bidder for the Land Application elected not to use a similar dewatering process.	13,516,000 gal $1.07/1,000 gal $14,462	40,687,000 gal $1.07/1,000 gal $43,535
Energy consumption cost is estimated at $35,820 billed directly to the City for dewatering the sludge at ONSWTP.	$35,820	$0
Cost Benefit for reuse of the sludge residuals that are mixed with mulch and applied as ADC reduces need for clean fill and future land purchase for borrow pits at the Cefe Landfill.	144,692 CY $0.50 per CY ($72,346)	$0
Street Impact factor to consider increased truck volume and distances for hauling routes. Over 5 times as many trucks are required for the land application without dewatering. Based on the apparent low bidders, one for Cefe Landfill ADC reuse that is a 38-mile roundtrip and the land application that was only 10 miles. A rate of $0.09 per vehicle mile was used based on state wide toll averages.	110,000 miles $0.09/mi $9,900	216,000 miles $0.09/mi $19,440

The bid package was advertised to award in the amount of $3,750,000 to maximize the cost effectiveness and efficiencies and benefits for the City. The bid evaluation process considered both the direct cost and indirect cost factors. The City's Engineer, LNV, Inc., and staff evaluated the bids and required qualifications submitted by the bidders and determined only 5 of 6 bidders were responsive in accordance with the bid documents and responsible bidders based on experience, past performance, and qualifications. Based on the bid evaluation pricing factors the lowest bid was from American Process Group, Inc. and was determined to be in the best interest of the City.

ALTERNATIVES:

1. Authorize execution of construction contract. (Recommended)
2. Do not authorize execution of construction contract. (Not Recommended)

OTHER CONSIDERATIONS:

None

CONFORMITY TO CITY POLICY:

Conforms to City Fiscal Policy.

EMERGENCY / NON-EMERGENCY:

Non-Emergency

DEPARTMENTAL CLEARANCES:

Water Utilities Department

FINANCIAL IMPACT:

□ Operating □ Revenue ☒Capital □ Not applicable

Fiscal Year 2016-2017	Project to Date Expenditures	Current Year	Future Years	TOTALS
Line Item Budget (CIP)	4,163,853	463,182	5,000,000	9,627,035
Encumbered / Expended Amount	4,163,853			4,163,853
This Item		**325,000**	**3,425,000**	**3,750,000**
Future Anticipated Expenditures This Project		138,182	923,558	1,061,740
BALANCE	0	0	651,442	651,442

Fund(s): Water CIP #8

Comments: This project duration is based on contractor stated durations as required by the bid documents. The schedule for removal of the 18,000 dry tons is calendar day for substantial completion of the Part A and 160 days for Part B, as proposed by the respective two apparent lowest contractor bid. The construction contract will result in the expenditure of an amount not to exceed $3,750,000. Additional dry tons and durations will be administratively authorized by the City Manager or designee within the authorized funds.

RECOMMENDATION:

City staff and LNV Engineering, recommend the construction contract be awarded to American Process Group, Inc. from Tacoma, WA, in the amount of $3,750,000 for the Base Bid Option A plus Additive Alternative No. 1 for the O.N. Stevens Water Treatment Plant Intermediate Sludge Removal Phase 1 FY 2018.

LIST OF SUPPORTING DOCUMENTS:

Project Budget
Location Map
Presentation
Form 1295
Letter of Recommendation