RESOLUTION 2016 - 25

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SUNNYSIDE, WASHINGTON, AUTHORIZING THE CITY MANAGER TO EXECUTE TASK ORDER 2016-06 FOR THE DESIGN AND ENGINEERING OF THE SCREW PRESS AT THE WASTE WATER TREATMENT PLANT WITH HUIBREGTSE LOUMAN, AND ASSOCIATES, INC.

WHEREAS, the City of Sunnyside operates and maintains the Waste Water Treatment Plant which processes all residential and commercial sanitary sewer; and

WHEREAS, City staff has been working with HLA to formulate a plan to reduce hauling costs associated with bio-solid management and has identified a solution; and

WHEREAS, a screw press assembly would allow city staff to process the bio-solids at their pace without having to adhere to the hauling schedule of a third party vendor, and would stock pile the material on site and haul it as needed; and

WHEREAS, City staff is proposing the design and engineering of a screw press be completed this year, and the construction of the screw press would begin in FY2017; and

WHEREAS, the City of Sunnyside City Council finds and determines that authorizing the City Manager to submit applications is in the best interest of the residents of the City of Sunnyside and will promote the general health, safety and welfare;

NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUNNYSIDE, WAHSINGTON, as follows:

SECTION 1. That the City Council of the City of Sunnyside hereby authorizes the City Manager to execute Task Order 2016-06, attached hereto as Exhibit "A" for the design and engineering of a screw press at the WWTP for and on behalf of the City of Sunnyside.

SECTION 2. This Resolution shall be effective upon passage, approval and signatures hereon in accordance with law.

PASSED this 12th day of September, 2016.

DEAN BROERSMA, DEPUTY MAYOR

ATTEST:

JACQUELINE RENTERIA,
DEPUTY CITY CLERK

APPROVED AS TO FORM:

KERR LAW GROUP
Attorneys for the City of Sunnyside

EXHIBIT A

TASK ORDER NO. 2016-06

REGARDING GENERAL AGREEMENT BETWEEN CITY OF SUNNYSIDE

AND

HLA ENGINEERING AND LAND SURVEYING, INC.

PROJECT DESCRIPTION:

Sludge Dewatering Improvements

The City of Sunnyside intends to install a new sludge dewatering system at the wastewater treatment facility. Liquid biosolids will be pumped from the existing sludge holding basin, dewatered, and conveyed to a dump truck for transport. Proposed improvements include a new screw press, polymer feed system and screw conveyor; new sludge pump, piping, blower and mixing tank; and electrical control system. An existing building will be remodeled to house the new dewatering system. All improvements will be funded from the City's sewer reserve fund.

SCOPE OF SERVICES:

At the direction of the City of Sunnyside (CITY), HLA Engineering and Land Surveying, Inc. (HLA), shall provide professional engineering and land surveying services for the PROJECT. HLA services shall include:

PHASE 1 – ENGINEERING DESIGN AND FINAL PLANS, SPECIFICATIONS, AND ESTIMATE

A. Perform field investigation necessary to design the identified improvements.

B. Provide and review 30 percent preliminary plans with CITY staff.

C. Provide and review 60 percent preliminary plans, specifications, and cost estimate with CITY staff.

D. Provide and review 90 percent preliminary plans, specifications, and cost estimate with CITY staff.

E. Submit plans and specifications to the Washington State Department of Ecology (Ecology) for review. Incorporate review comments and obtain Ecology approval.

F. Prepare final design, and complete plans and specifications for publicly-bid improvements, as authorized by the CITY.

G. Prepare and submit Construction Quality Assurance Plan to Ecology for approval.

H. Furnish thirty (30) copies of the final plans and specifications for bidding and construction. It is anticipated HLA will prepare one (1) complete set of plans and specifications for one bid call; additional bid packages will be considered additional services.

I. Prepare advertisement for bids and assist CITY with bidding process.

J. Answer and supply such information as requested by prospective bidders.

K. Prepare and issue addenda, if necessary.

L. Attend bid opening and evaluate bids received for responsiveness.

M. Prepare tabulation of all responsive bids received by the CITY and review bidder's qualifications.

N. Make recommendation to the CITY of construction contract award to the lowest responsible bidder.

PHASE 2 – SERVICES DURING CONSTRUCTION

A. Furnish a qualified resident engineer who shall make construction observations and be on the job site at all times that significant work is in progress, whose duty shall be to provide surveillance of project construction for substantial compliance with plans and specifications.

B. Prepare and file progress reports on the PROJECT with the CITY and provide monthly progress estimates to the CITY.

C. Consult and advise the CITY during construction and make a final report of the completed work.

D. Review Contractor's submission of samples and shop drawings, where applicable.

E. Recommend progress payments for the Contractor to the CITY.

F. Prepare and submit proposed contract change orders when applicable.

G. Prepare Operation and Maintenance Manual for Sludge Dewatering Improvements. Manual will reference WWTP manual for laboratory, recordkeeping, and safety procedures.

H. Prepare and furnish reproducible record drawings of all completed work from as-built drawings furnished by the resident engineer and Contractor. If as-built drawings from the Contractor are not received by HLA within thirty (30) calendar days from the date of the letter of recommendation of project acceptance, HLA will submit the reproducible record drawings to the CITY with a note stating that no as-built information was received by HLA.

I. Submit Ecology Declaration of Construction Completion.

J. Participate in the 11th month warranty inspection and make recommendations to the City for warranty work that needs to be addressed.

PHASE 3 – ADDITIONAL SERVICES

A. Provide professional engineering and land surveying services for additional work requested by the CITY that is not included in Phase 1 or Phase 2.

ITEMS TO BE FURNISHED AND RESPONSIBILITY OF CITY

The CITY will provide or perform the following:

A. Provide full information as to CITY requirements of the PROJECT.

B. Assist HLA by placing at their disposal all available information pertinent to the site of the PROJECT including previous reports, drawings, plats, surveys, utility records, and any other data relative to design and construction of the PROJECT.

C. Examine all studies, reports, sketches, estimates, specifications, drawings, proposals, and other documents presented by HLA and render in writing decisions pertaining thereto within a reasonable time so as not to delay the work of HLA.

D. Obtain approval of all governmental authorities having jurisdiction over the PROJECT and such approvals and consents from such other individuals or bodies as may be necessary for completion of the PROJECT.

EXHIBIT A

E. Pay for project bid advertisement costs.

TIME OF PERFORMANCE:

The services called for under the various phases of this Agreement shall be completed as follows:

PHASE 1 – ENGINEERING DESIGN AND FINAL PLANS, SPECIFICATIONS, AND ESTIMATE

Plans, specifications, and estimates for all project elements shall be provided within 130 calendar days following authorization to proceed.

PHASE 2 – SERVICES DURING CONSTRUCTION

Time of completion for work directed by the CITY under this phase shall begin following contract award by the CITY to the successful contractor. It is anticipated construction of improvements will occur in early 2017 and be completed within sixty (60) contract working days.

PHASE 3 – ADDITIONAL SERVICES

Time of completion for work directed by the CITY under this phase shall be negotiated and mutually agreed upon at the time of service requested by the CITY.

FEE FOR SERVICE:

For the services furnished by HLA as described under this Agreement, the CITY agrees to pay HLA the fees as set forth herein. The amounts listed below may be revised only by written agreement of both parties.

PHASE 1 – ENGINEERING DESIGN AND FINAL PLANS, SPECIFICATIONS, AND ESTIMATE 2016

All work for this phase shall be performed for the lump sum fee of $114,000.

~~PHASE 2 – SERVICES DURING CONSTRUCTION~~ construction in 2017

~~All work shall be performed on a time-spent basis at the normal hourly billing rates in affect at time of the contract award, for an estimated amount of $115,000.~~

PHASE 3 – ADDITIONAL SERVICES

Any additional work requested by the CITY that is not included in Phase 1 shall be authorized by the CITY and agreed to by HLA in writing prior to proceeding with the services. HLA shall perform the additional services as directed/authorized by the CITY on a time-spent basis at the hourly billing rates included in our General Agreement, plus reimbursement for direct non-salary expenses such as laboratory testing, reproduction expenses, out of town travel costs, and outside engineers.

Proposed: _____ 7/7/2016

HLA Engineering and Land Surveying, Inc.
Michael T. Battle, PE, President

Date

Approved: _____ 9/5/16

City of Sunnyside
Donald D. Day, City Manager

Date

CITY OF SUNNYSIDE
WASTEWATER TREATMENT FACILITY

PROJECT SUMMARY

SCREW PRESS DEWATERING ANALYSIS
July 22, 2016

BACKGROUND

The City of Sunnyside recognized the need to evaluate and update the sludge handling process at the wastewater treatment facility (WWTF). HLA Engineering and Land Surveying, Inc., (HLA) was authorized by the City of Sunnyside to prepare a Wastewater Facilities Plan, Addendum No. 1, Screw Press Dewatering Analysis. The purpose of the report was to examine capital costs and potential operational savings related to the installation of a new screw press for the City of Sunnyside WWTF.

Sludge (also known as biosolids) is the resulting organic matter produced from the biological treatment of wastewater. Usually, the term "sludge" applies to the biological solids generated by the wastewater treatment process before they have received some form of treatment. The term "biosolids" usually refers to solids that have received treatment to reduce the risk to public health and the environment, and that are suitable for beneficial reuse.

The City of Sunnyside currently pays Natural Selection Farms to dispose of the liquid biosolids from their lagoon. The biosolids are emptied from the lagoon and taken to local farms for land application. Because the City produces Class B biosolids, regulations state the biosolids must be incorporated into the soil within six hours of being land applied. Since local farming practices only perform tilling twice a year, this limits when the lagoon can be emptied. Additionally, the solids content of the biosolids is estimated at about 4%, meaning that the majority of the material hauled offsite is water. Dewatering the biosolids would reduce hauling and disposal costs, as well as provide more flexibility in the options available for disposal.

RECOMMENDATION

As shown in the table on the following page, the estimated initial expense for the screw press system is more than the construction of a new sludge lagoon, but the annual operating expenditures are lower. However, the combined costs included in the present worth analysis shows the long-term costs are lower for sludge dewatering. Aside from the financial benefits, dewatering the biosolids provides the City with more options for disposal. Therefore, a new screw press system is recommended for the City of Sunnyside. The system will include:

- Two sludge pumps with variable frequency drives, each with the ability to handle at least 50 gpm. One pump will convey biosolids from the existing lagoon to the mixing tank, and the other will supply the screw press. Space will be needed in the existing building proposed to house these items.

- 30,000-gallon mixing tank. The mixing tank will be located outside and will be placed out of the way of the proposed truck route. Mixing will be accomplished through coarse bubble aeration using a positive displacement blower with a capacity of at least 180 cfm.

- A new screw press. The screw press will be located inside and sized to handle at least 28 gpm and 560 pounds of dry solids per hour at 4% solids.

- Polymer feed system. This item will be supplied by the screw press manufacturer and located in the dewatering building.

- Sludge conveyor. The 30-foot long shaftless screw conveyor will need to be able to handle the biosolids discharged from the screw press at 60 cubic-feet per hour and convey the dewatered solids to a dump truck loading area.

- A pipeline for the pressate to be returned back into the activated sludge system through the intermediate pump station.

- The existing building proposed for biosolids dewatering has dimensions of roughly 32' by 40'. The building has the space to house the necessary items and adequate water and power utility service can be provided. Improvements to the building will include a new roof, new overhead door, lighting, painting, and ventilation.

Comparison of Capital and Operating Costs		
	Current System	Screw Press Operation
Initial Capital Cost (2016 Dollars)[1]	$1,065,100	$1,143,000
Annual Operating Costs (2016 Dollars)		
Biosolids Disposal	$45,300	$10,000
Fuel Surcharge	$34,000	$22,500
Polymer	-	$12,700
Labor	-	$19,500
Maintenance	-	$4,000
TOTAL ANNUAL COST	$79,300	$68,700
Present Worth[2]	$2,245,000	$2,165,000

Notes
[1]See attached table for break out of Capital Cost
[2]Present Worth, 2016 Dollars, 20 years, 3% interest

City of Sunnyside					HLA Project No. 16015
Sunnyside Wastewater Treatment Facility					July 22, 2016
ENGINEER'S OPINION OF PROBABLE COST					
Sludge Dewatering Improvements					
Item No.	Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$50,000	$50,000
2	Furnish and Install New Screw Press, Sludge Feed Pump, Polymer Feed System, Screw Conveyor	LS	1	$354,000	$354,000
3	Furnish and Install New Sludge Pump	LS	1	$30,000	$30,000
4	Piping Systems and Appurtenances, Complete	LS	1	$50,000	$50,000
5	New Mixing Tank and Access Platform, Complete	LS	1	$60,000	$60,000
6	New Blower and Mixer System, Complete	LS	1	$30,000	$30,000
7	Existing Building Improvements, Door, Roof, Lighting, Painting, Ventilation, Complete	LS	1	$50,000	$50,000
8	Electrical and Control System, Complete	LS	1	$80,000	$80,000
				Subtotal	**$704,000**
	Contingency	20%			$141,000
	Washington State Sales Tax	8.20%			$69,000
	Total Estimated Construction Cost			**Subtotal**	**$914,000**
	Engineering and Construction Administration Cost	25%			$229,000
	Total Estimated Cost				**$1,143,000**