

CITY OF WEST CHICAGO

WHERE HISTORY & PROGRESS MEET

INFRASTRUCTURE COMMITTEE

**Thursday, July 2, 2020
7:00 P.M. – Committee Room A**

During the COVID-19 Pandemic, those wishing to attend public meetings of the Infrastructure Committee are welcome to do so at City Hall. You may attend in person and listen to the audio of the meeting, or via teleconference from home or another location on the Zoom app. Downloading Zoom from zoom.us will provide the audio link to the meeting. Anyone wishing to provide comment on a topic or an agenda item may address the Infrastructure Committee by 4:00 p.m. the day of the meeting. You may do so by either an online form on the City's website, email to publicworks@westchicago.org, or voicemail message at (630) 293-2255. Your comment to the Infrastructure Committee will be read during the Public Participation portion of the agenda.

Meeting ID: 957 1753 0021

Password: 3ZYXM8

AGENDA

1. Call to Order, Roll Call, and Establishment of a Quorum
2. Approval of Minutes
 - A. Infrastructure Committee of May 7, 2020
3. Public Participation / Presentations
4. Items for Consent
 - A. Resolution No. 20-R-0030 – Contract Award – Boller Construction Company for the Digester #1 Improvements Project
 - B. Resolution No. 20-R-0032 – Professional Engineering Services Agreement – Donohue & Associates, Inc. for SCADA Integration Services Associated with the Digester #1 Improvements Project
 - C. Ordinance No. 20-O-0012 – Authorizing the Disposal of Surplus Equipment, Stock Inventory, and/or Personal Property Owned By the City of West Chicago
 - D. Purchase of Rock Salt from Compass Minerals America, Inc., Overland Park, Kansas, for the 2019-2020 Winter Season – Change Order No. 1 and Final
5. Items for Discussion
6. Unfinished Business
7. New Business
8. Reports from Staff
9. Adjournment

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Ruben Pineda
MAYOR
Nancy M. Smith
CITY CLERK

Michael L. Guttman
CITY ADMINISTRATOR



WHERE HISTORY & PROGRESS MEET

Draft

MINUTES

INFRASTRUCTURE COMMITTEE

May 7, 2020 7:00 P.M.

1. **Call to Order, Roll Call, and Establishment of a Quorum.** Chairman Beifuss called the meeting to order at 7:00 P.M. Roll call found Aldermen James Beifuss and Matt Garling present in-person, and Aldermen Heather Brown, Sandra Dimas, Alton Hallett, Noreen Ligino-Kubinski, and Jeanne Short present via Zoom teleconference.

Staff present in-person included Director of Public Works Robert Flatter and Administrative Assistant Ashley Heidorn.

2. Approval of Minutes

A. **Infrastructure Committee Minutes of March 5, 2020.** Alderman Garling made a motion, seconded by Alderman Brown to approve the Meeting Minutes of March 5, 2020.

Voting Yea: Aldermen Beifuss, Brown, Dimas, Garling, Hallett, Ligino-Kubinski, and Short. **Voting Nay:** 0.

3. Public Participation / Presentations. None.

4. **Items for Consent.** Alderman Brown requested discussion on Consent Item C. **Alderman Dimas made a motion, seconded by Alderman Brown to approve:**

- A. Resolution No. 20-R-0019 – Contract Award – Procurement of Coarse and Fine Aggregate Material Delivered for FY 2020
- B. 2020 Asphalt Materials Procurement – DuPage County Joint Purchasing Program – Plote Construction, Inc.
- D. Procurement of Unleaded and Diesel Fuel from Gas Depot through DuPage County Joint Purchasing Program

Roll call found the vote unanimous for approval. Voting Yea: Aldermen Beifuss, Brown, Dimas, Garling, Hallett, Ligino-Kubinski, and Short. **Voting Nay:** 0.

5. Items for Discussion.

4.C. Purchase of Rock Salt from Compass Minerals America, Inc., Overland Park, Kansas, for the 2020-2021 Winter Season. Alderman Brown inquired if the City is required to purchase the maximum amount of 3,900 tons of salt or if the City could purchase the minimum amount of 2,400 tons to ease some of the financial burden on the City during the COVID-19 pandemic. Mr. Flatter explained that the City will only purchase what it needs, but at least 2,400 tons must be purchased under this contract with Compass Minerals America, Inc., and as much as 3,900 tons may be purchased at the \$81.13 per ton price. **Alderman Brown made a motion, seconded by Alderman Garling to approve.**

Roll call found the vote unanimous for approval. Voting Yea: Aldermen Beifuss, Brown, Dimas, Garling, Hallett, Ligino-Kubinski, and Short. Voting Nay: 0.

6. Unfinished Business. Alderman Brown inquired if the City should be halting work on the proposed bike path connectivity plan in hopes of cutting costs during the pandemic. Mr. Flatter explained that the bike path connectivity plan is about 70% complete, though because of the pandemic he has been unable to meet with the engineering consultant to complete the report. Discussion of the report would likely be difficult over teleconference, which is another reason why staff has not aggressively moved forward with the plan. The expenditure to finalize the report and get it before the Committee for review is quite minimal, so Mr. Flatter recommends proceeding with the report for the Committee to consider, and any construction related to the plan would be based on future budgets and road construction projects.

7. New Business. None.

8. Reports from Staff. Alderman Beifuss requested an update on the Washington Street Reconstruction Project. Mr. Flatter indicated that Phase V is currently underway, which involves the north half of the intersection of Fremont and Washington Streets. The concrete sidewalk and curb has been poured, and once the binder level of pavement is laid down work will proceed on the second half of the intersection; the second half is anticipated to be completed around the first week or so of June.

9. Adjournment. At 7:16 P.M., Alderman Hallett made a motion to adjourn, seconded by Alderman Dimas. Motion was unanimously approved by voice vote.

Respectfully submitted,

Ashley Heidorn
Administrative Assistant of Public Works

CITY OF WEST CHICAGO

INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

ITEM TITLE:

Resolution No. 20-R-0030 – Contract Award – Boller Construction Company for the Digester #1 Improvements Project

AGENDA ITEM NUMBER:4.A.**FILE NUMBER:** _____**COMMITTEE AGENDA DATE:** July 2, 2020**COUNCIL AGENDA DATE:** July 20, 2020**STAFF REVIEW:** Robert E. Flatter, P.E., Director of Public Works**SIGNATURE** **APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE** _____**ITEM SUMMARY:**

Under permit from the EPA, the West Chicago/Winfield Regional Wastewater Treatment Plant has three digesters to manage incoming flows and solid loadings at the WWTP. The first two anaerobic digesters (i.e., #1 and #2) are considered the primary digesters and are used to heat and mix the waste solid (sludge) during the digestion process before it is dewatered, using belt filter presses, and taken to a landfill. Digester #3 is not heated or mixed and is used as a secondary digester and storage. The primary digesters each have three heater-mixer guns with a total heating capacity of 2,100,000 BTU and mixing capacity of 11,400 gpm. Detention time in the primary digesters is 30 days.

In 2010, Digester #3 was cleaned and inspected; no issues were observed at that time. In 2012, all internal digestion system equipment and components, including all gas safety equipment, within Digester #2 were contractually replaced. Once repairs were completed within Digester #2, the anaerobically digested sludge was transferred from Digester #1 into Digester #2, and the interior of Digester #1 was cleaned. Once cleaned, all internal digestion system equipment and components, including all gas safety equipment, were inspected and found to be in poor condition and in need of replacement. Digester #1 was then filled with water and has been out of service since 2012. The internal digestion system equipment and components are approximately thirty-four (34) years old and have out performed their useful life, which is typically 15-20 years.

Being very familiar with the City's Wastewater Treatment Plant and its digestion treatment process, the City hired Clark Dietz, Inc. (CDI) to perform Phase II engineering design services and prepare bidding documents for the necessary improvements/upgrades to Digester #1, and to provide assistance during the bidding process. With engineering plans, specifications, and bid documents finalized, the request for bids was advertised in the Daily Herald on February 25, 2020. All bid documents and plans were made available electronically to interested parties via Quest Construction Data Network. Bids were opened June 16, 2020. The City received six (6) bids with Boller Construction Company, Inc. of Waukegan, Illinois, submitting the lowest responsible bidder at \$638,900.00. The second lowest bid received was for \$708,490.00 from Independent Mechanical Industries, Inc. (see attached bid tabulation sheet for additional clarification). The engineer's estimate for this project was \$1,200,000.00.

The Digester #1 Improvements Project will be paid for by the West Chicago/Winfield Wastewater Authority in which \$1,200,000.00 has been budgeted.

CITY OF WEST CHICAGO

Boller Construction Company, Inc. previously completed work associated with the City's Digester #2 Improvement Project at a cost of \$781,000.00; its performance was satisfactory. CDI reports that they have had positive experiences with Boller as a contractor, stating that they have demonstrated adequate experience with comparably sized work. Therefore, it is staff's recommendation that a contract be awarded to Boller Construction Company Inc. of Waukegan, Illinois, for the Digester #1 Improvements Project, in an amount not to exceed \$638,900.00.

ACTIONS PROPOSED:

Approve Resolution No. 20-R-0030 authorizing the Mayor to execute a contract with the lowest responsible bidder, Boller Construction Company, Inc., for an amount not to exceed \$638,900.00, for service related to the Digester #1 Improvements Project.

RESOLUTION NO. 20-R-0030

**A RESOLUTION AUTHORIZING THE MAYOR TO
EXECUTE A CONTRACT AGREEMENT WITH BOLLER CONSTRUCTION
COMPANY, INC, FOR SERVICES RELATED TO THE DIGESTER #1
IMPROVEMENTS PROJECT**

BE IT RESOLVED by the City Council of the City of West Chicago, in regular session assembled, that the Mayor is hereby authorized to execute a Contract Agreement for Services related to the Digester #1 Improvements Project, between Boller Construction Company, Inc., and the City of West Chicago, in an amount not to exceed \$638,900.00, a copy of which is attached hereto and incorporated herein as Exhibit "A".

APPROVED this 20th day of July, 2020

AYES: _____

NAYES: _____

ABSTAIN: _____

ABSENT: _____

Mayor

ATTEST:

City Clerk

BID TABULATION - DIGESTER NO. 1 IMPROVEMENTS PROJECT				Bid Opening: June 16, 2020 @ 10:00 a.m.		
Item	Mechanical, Inc. P.O. Box 690 2279 Yellow Creek Road Freeport, Illinois 61032	Broadway Electric, Inc. 831 Oakton Street Elk Grove Village, Illinois 60007	Paul Borg Construction Company 2007 South Marshall Boulevard Chicago, Illinois 60623	Independent Mechanical Industries, Inc. 2671 United Lane Elk Grove Village, Illinois 60007	Boller Construction Company, Inc. 3045 West Washington Street Waukegan, Illinois 60085	Joseph J. Henderson & Son, Inc. 4288 Old Grand Avenue Gurnee, Illinois 60031
1. General Cost Items (mobilization, bonds, insurance, field supervision)	\$141,085.00	\$388,000.00	\$232,757.00	\$28,200.00	\$90,500.00	\$112,000.00
2. Bolt, nut, and gasket replacement on Digester No. 1 Lid	\$5,000.00	\$40,000.00	\$9,350.00	\$6,700.00	\$3,800.00	\$10,000.00
3. Digester No. 1 Dewatering	\$22,770.00	\$35,000.00	\$27,280.00	\$24,717.00	\$10,900.00	\$20,000.00
4. Sludge Recirculation Pump						
* Equipment - Vaughan	\$23,730.00	\$60,000.00	\$24,200.00	\$21,000.00	\$24,000.00	\$22,000.00
* Installation	\$2,760.00	\$27,000.00	\$10,450.00	\$58,379.00	\$29,000.00	\$92,000.00
5. Sludge Mixing Pump						
* Equipment - Vaughan	\$32,770.00	\$70,000.00	\$31,900.00	\$29,000.00	\$32,700.00	\$30,000.00
* Installation	\$4,600.00	\$98,000.00	\$48,290.00	\$58,379.00	\$47,900.00	\$91,000.00
6. Heat Exchanger						
* Equipment - Alfa Laval	\$68,591.00	\$40,000.00	\$64,900.00	\$58,716.00	\$67,100.00	\$57,000.00
* Installation	\$3,680.00	\$17,000.00	\$25,850.00	\$58,379.00	\$53,800.00	\$53,000.00
7. Mixing System						
* Equipment - Rotamix	\$53,110.00	\$60,000.00	\$51,700.00	\$47,000.00	\$51,200.00	\$49,000.00
* Installation	\$5,520.00	\$18,000.00	\$194,348.00	\$58,379.00	\$10,900.00	\$192,000.00
8. Hydronic System	\$285,900.00	\$39,000.00	\$31,020.00	\$38,800.00	\$15,200.00	\$157,000.00
9. Electrical Work	\$82,800.00	\$160,000.00	\$79,640.00	\$78,396.00	\$64,900.00	\$69,000.00
10. Gas Safety Equipment						
* Equipment - Shand & Jurs	\$70,060.00	\$85,000.00	\$68,200.00	\$62,000.00	\$67,500.00	\$65,000.00
* Installation	\$2,700.00	\$25,000.00	\$22,770.00	\$26,520.00	\$8,700.00	\$25,000.00
11. Painting	\$73,224.00	\$80,000.00	\$59,400.00	\$30,100.00	\$22,000.00	\$31,000.00
12. Sludge Transfer Pump Plug Valves (Seven (7) total)	\$11,700.00	\$15,000.00	\$32,560.00	\$11,400.00	\$8,400.00	\$10,000.00
13. Radar Level Meters (Vega)	\$8,900.00	\$15,000.00	\$27,170.00	\$12,425.00	\$30,400.00	\$13,000.00
Total Base Bid Amount (As Read)	\$898,900.00	\$1,272,000.00	\$1,041,785.00	\$708,850.00	\$639,600.00	\$1,098,000.00
Total Base Bid Amount (As Corrected)	\$898,900.00	\$1,272,000.00	\$1,041,785.00	\$708,490.00	\$638,900.00	\$1,098,000.00
 Bid Deduction No. 1	 \$11,700.00	 \$12,000.00	 \$27,000.00	 \$11,400.00	 \$8,400.00	 \$14,000.00
 Bid Deduction No. 2	 \$12,700.00	 \$25,000.00	 \$25,000.00	 \$22,225.00	 \$30,400.00	 \$15,000.00

Prepared by: Robert E. Flatter, Director of Public Works, City of West Chicago
Checked by: Ashley Heidom, Administrative Assistant, City of West Chicago

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INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

ITEM TITLE:

Resolution No. 20-R-0032 – Professional Engineering Services Agreement - Donohue & Associates, Inc. for SCADA Integration Services Associated with the Digester #1 Improvements Project

AGENDA ITEM NUMBER:4.B.**COMMITTEE AGENDA DATE:** July 2, 2020**COUNCIL AGENDA DATE:** July 20, 2020**STAFF REVIEW:** Robert E. Flatter, P.E., Director of Public Works**SIGNATURE****APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE****ITEM SUMMARY:**

The 2018 Waste Water Treatment Plant SCADA System Improvement Project, which was completed by Donohue & Associates, Inc. (Donohue) as a design-build project, consisted of furnishing all parts, labor, materials, equipment and engineering services necessary to upgrade the Supervisory Control and Data Acquisition (SCADA) system (i.e., process control network, Programmable Logic Controller (PLC) hardware, communication equipment, security equipment, etc.) at the City's Waste Water Treatment Plant (WWTP) with a more reliable, non-proprietary industry standard control system. SCADA is a computer controlled system that monitors and controls the operations of the WWTP's pumps and equipment, and is used to monitor sanitary waste flows in and out of the WWTP.

Under separate contract award, Boller Construction Company, Inc. will soon commence on the Digester #1 Improvements Project. Once improvements are substantially complete, Digester #1 will need to be integrated into the WWTP's SCADA system. Being most familiar with the SCADA system at the WWTP, staff sought and obtained a cost proposal from Donohue, for said integration services, for an amount not to exceed \$53,105.00.

Services to be provided by Donohue are summarized below:

- Provide modifications to the existing Digester Control Panel to incorporate the Digester #1 Improvements provided by Boller Construction Company; and,
- Provide PLC programming modifications, Panelview OIT modifications, and SCADA modifications; and,
- Provide Startup Services, testing, and training; and,
- Provide copies of Training Program to be used in Operations Training; and,
- Provide electronic modifiable control panel drawings; and,
- Provide electronic copies of all PLC, OIT, and SCADA applications.

Staff recommends that City Council approve a Professional Engineering Services Agreement with Donohue & Associates, Inc., for an amount not to exceed \$53,105.00, for SCADA Integration Services associated with Digester #1 Improvements Project.

Donohue's services will be paid for by the West Chicago/Winfield Wastewater Authority where adequate funds are budgeted to cover services related to the Digester #1 Improvements Project.

CITY OF WEST CHICAGO

ACTIONS PROPOSED:

Approve Resolution No. 20-R-0032 authorizing the Mayor to execute a Professional Engineering Services Agreement with Donohue & Associates, Inc., for an amount not to exceed \$53,105.00, for SCADA Integration Services associated with the Digester #1 Improvements Project.

COMMITTEE RECOMMENDATION:

RESOLUTION NO. 20-R-0032

**A RESOLUTION AUTHORIZING THE MAYOR TO EXECUTE A
PROFESSIONAL ENGINEERING SERVICES AGREEMENT WITH DONOHUE
& ASSOCIATES, INC. FOR SCADA INTEGRATION SERVICES ASSOCIATED
WITH THE DIGESTER #1 IMPROVEMENTS PROJECT**

BE IT RESOLVED by the City Council of the City of West Chicago, in regular session assembled, that the Mayor is hereby authorized to execute a Professional Engineering Services Agreement for SCADA integration services associated with the Digester #1 Improvements Project, between the City of West Chicago and Donohue & Associates, Inc., for an amount not to exceed \$53,105.00, in substantially the form attached hereto and incorporated herein as Exhibit "A".

APPROVED this 20th day of July, 2020.

AYES: _____

NAYES: _____

ABSTAIN: _____

ABSENT: _____

Mayor Ruben Pineda

ATTEST:

City Clerk Nancy M. Smith



ENGINEERING SERVICES AGREEMENT

Digester No. 1 Improvements Integration (Project)

This Agreement is by and between:

West Chicago Winfield Wastewater Authority (Owner)
475 Main Street
West Chicago, IL 60185

and

Donohue & Associates, Inc. (Donohue)
230 West Monroe Street
Suite 2925
Chicago, IL 60606

Who agree as follows:

Owner hereby engages Donohue to perform the Services set forth in Part I for the compensation set forth in Part III. Donohue will be authorized to commence the Services upon execution and receipt of this Agreement from Owner. Owner and Donohue agree that this signature page, together with Parts I through IV attached, constitute the entire agreement for this Project.

APPROVED FOR OWNER

By: _____

Printed Name: _____

Title: _____

Date: _____

APPROVED FOR DONOHUE

By: _____

Printed Name: _____

Title: _____

Date: _____

PART I
PROJECT DESCRIPTION/SCOPE OF SERVICES/TIMING

A. PROJECT DESCRIPTION

Under a separate project, the Owner is bidding a construction project for Digester No. 1 Improvements consisting of work related to the rehabilitation of Digester No. 1 including the furnishing and installation of one (1) digester mixing pump; one (1) mechanical mixing system; one (1) sludge recirculation pump; one (1) spiral heat exchanger; gas safety equipment; piping and valves; electrical equipment and controls; Digester No. 1 dewatering; and associated site, mechanical, painting and appurtenant work.

Under a previous construction project for Digester No. 2 Improvements, provisions for controlling Digester 1 were partially installed. Under this Project, the existing Digester Control Panel will be modified to incorporate the Digester No. 1 Improvements provided by the Contractor. Additional programming will be provided under this project to replicate the functional control of Digester No. 2.

B. SCOPE OF SERVICES

Services to be provided by Donohue for this Project under this Agreement are specified in Section 26 95 00 of the Bidding Documents and are defined as follows:

1. Modifications to existing Digester Control Panel
 - a. Provide field installation of front of panel devices as follows:
 - i. Quantity 3 – Elapsed Time Meters
 - ii. Quantity 5 – Hand-Off-Auto Selector Switches
 - iii. Quantity 5 – Green, Running Indicator Lights
 - iv. Quantity 5 – Red, Fail Indicator Lights
 - v. Quantity 4 – Red, Abnormal Pressure Indicator Lights
 - vi. Quantity 2 – Speed Potentiometers
 - vii. Legend Plates as required on Drawing E-302
 - b. Provide field wiring of door-mounted devices
 - c. Provide control panel drawing modifications to incorporate six new digester level signals into existing PLC inputs
 - d. Provide control panel drawing modifications to incorporate sludge transfer pumping into existing PLC inputs and output
 - e. Provide installation of Contractor-provided intrinsically safe (IS) barriers for radar level transmitters. Provide installation of control panel wiring from IS barriers to existing analog inputs in control panel
2. Programming Modifications
 - a. Provide PLC programming and Panelview OIT modifications to incorporate Digester 1 Mixing Improvements
 - b. Provide Panelview OIT modifications to incorporate Sludge Transfer Pumping
 - i. Provide operator selectable pump suction and discharge setpoints on OIT graphic screens. Front-of-panel hardwired selector switches for pump suction and pump discharge are not included in this Project.

- c. Provide PLC programming to incorporate Sludge Transfer Pumping
 - d. Provide SCADA modifications in incorporate Digester 1 Improvements
 - e. Provide SCADA modifications to incorporate monitoring and control of Sludge Transfer Pumping
3. Startup Services
- a. Coordinate with Contractor to identify termination points for field wiring. Field wiring is provided by the Contractor.
 - b. Provide onsite field I/O testing with Contractor to verify functionality of field signals.
 - c. Provide field programming modifications as required to incorporate Contractor provided instruments and scaling into PLC, OIT, and SCADA systems.
 - d. Provide functional testing of control system to verify operation meets design requirements.
 - e. Provide one 1/2 day Operations Training Session to instruct Owner's personnel on operation of Digester Improvements. Training shall cover Local Control, Remote Manual Control, as well as Remote Automatic Control from the OIT and SCADA system.
4. Documentation
- a. Provide 5 hard copies of Training Program to be used in Operations Training.
 - b. Provide to Owner electronic modifiable control panel drawings for the Digester Control Panel in PDF and AutoCAD format.
 - c. Provide to Owner electronic copies of all PLC, OIT, and SCADA applications.
5. Exclusions
- a. Network Enclosures, Network Equipment, Fiber, communication cabling, and associated networking labor.
 - b. Permits
 - c. Installation of equipment, control panels, MCCs, and instrumentation.
 - d. Installation materials such as mounting hardware, brackets, stands, or hangers, unless specifically noted in this proposal.
 - e. Mechanical equipment or piping such as instrument tubing, valves, flanges, pipe taps, weldolets, threadolets, or joint accessories needed to install equipment in this proposal.
 - f. Off-loading of equipment delivered to the project site.
 - g. Conduit and field wire.
 - h. Control wiring external to equipment included in this proposal.
 - i. Terminations of field wiring or fiber optic connections in control panels or at the field device.
 - j. Communication cabling external to the control panels provided in this proposal.
 - k. Testing of fiber optic or Category 5/6 cabling systems.
 - l. Cable raceways.
 - m. Demolition of equipment.
 - n. Equipment pads.
 - o. Bypass pumping.
 - p. Ground resistance testing
 - q. Electrical studies or third party testing.
 - r. Junction boxes, unless specifically noted in this proposal.
 - s. Field Wiring.
 - t. Mechanical Installation.

- u. Pumps, Piping, and Fittings.
- v. Valves, unless specifically noted in this proposal.
- w. Heating, ventilating, and air conditioning equipment or temperature controls.

C. PROJECT TIMING

1. Donohue shall be authorized to commence the Services set forth herein upon execution of this Agreement. Project shall be completed in accordance with Owner's and Contractor's construction schedule.
2. Donohue's services under this Agreement will be considered complete when Donohue has delivered to Owner the Documentation Phase deliverables defined under Scope of Services.

**PART II
OWNER RESPONSIBILITIES**

A. In addition to other responsibilities of Owner set forth in this Agreement, Owner shall:

1. Identify a person authorized to act as the Owner's representative to respond to questions and make decisions on behalf of Owner, accept completed documents, approve payments to Donohue, and serve as liaison with Donohue as necessary for Donohue to complete its Services.
2. Furnish to Donohue copies of existing documents and data pertinent to Donohue's Scope of Services, including but not limited to and where applicable: design and record drawings for existing facilities; property descriptions, land use restrictions, surveys, geotechnical and environmental studies, or assessments.
3. Owner shall be responsible for all requirements and instructions that it furnishes to Donohue pursuant to this Agreement, and for the accuracy and completeness of all reports, data, programs, and other information furnished by Owner to Donohue pursuant to this Agreement. Donohue may use and rely upon such requirements, instructions, reports, data, programs, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations provided by Owner applicable to the furnished items.
4. Provide to Donohue existing information regarding the existence and locations of utilities and underground facilities.
5. Provide Donohue safe access to premises necessary for Donohue to provide the Services.
6. Inform Donohue whenever Owner observes or becomes aware of a Hazardous Environmental Conditions, as defined in Part IV.3. of this Agreement, that may affect Donohue's Scope of Services or time for performance.

PART III
COMPENSATION, BILLING AND PAYMENT

- A. Compensation for the work as defined in the Scope of Services (Part I) of this Agreement shall be a lump sum of \$53,105.00. Further breakdown of the fees is shown below.
- B. Donohue will bill Owner monthly, with net payment due in 30 days. The invoice will contain a calculation of the amount of lump sum due based on percentage of Project completed during the billing period.
- C. Donohue will notify Owner if Project scope changes require modifications to the above-stated contract value. Services relative to scope changes will not be initiated without written authorization from Owner.

West Chicago / Winfield Wastewater Authority
Digester Improvements Project Systems Integration
Fee Estimate Summary
Donohue & Associates, Inc.

Task	Sr Application Engineering Specialist \$ 195	Jr Application Engineering Specialist \$ 130	Admin Assistant \$ 80	Total Hours	Total Labor	Expenses	Materials	Total Cost
Project Management / Contractor Coordination	24		4	28	\$ 5,000	\$ 350		\$ 5,350
Control Panel Drawings		40		40	\$ 5,200			\$ 5,200
Control Panel Modifications	24	24		48	\$ 7,800	\$ 2,100	\$ 9,800	\$ 19,700
PLC, OIT, SCADA Programming	48			48	\$ 9,360			\$ 9,360
Startup and Functional Testing	32			32	\$ 6,240	\$ 1,400		\$ 7,640
Operations & Personnel Training	8		2	10	\$ 1,720	\$ 438	\$ 50	\$ 2,208
Documentation & O&M Manual	8	8	2	18	\$ 2,760	\$ 788	\$ 100	\$ 3,648
				-	\$ -			\$ -
Total	144	72	8	224	\$ 38,080	\$ 5,075	\$ 9,950	\$ 53,105
Total Labor Dollars by Labor Class	\$ 28,080	\$ 9,360	\$ 640					

SECTION 26 95 00

DIGESTER HEATING AND MIXING CONTROL PANEL

PART 1 GENERAL

1.1 SUMMARY

- A. Provide and install the hardware, software, and programming for all components to the existing Digester Heating and Mixing Control Panel and PLC and Digester SCADA Panel for Digester No. 1 Improvements. The existing PLCs are capable of being controlled by a software-driven Human Machine Interface (HMI). The existing Digester Heating and Mixing Control Panel and the Digester SCADA Panel will provide control process to interrelated equipment in accordance with the functional description and as shown on the Drawings.
- B. The Digester Heating and Mixing Control Panel and the Digester SCADA Panel shall be comprised of all components required to make a functional and complete operating system including, but not limited to:
 - 1. Sludge Recirculation Pumps
 - 2. Sludge Mixing Pumps
 - 3. Hydronic Pumps
 - 4. Hydronic Control Valves
 - 5. Radar Level Sensors
 - 6. Sludge Transfer Pumps
- C. All controls shall be capable of controlling the pumps and equipment associated with the current Digester No. 1 Improvements and the existing Digester No. 2 equipment.
- D. The original drawings for the existing Digester Heating and Mixing Control Panel are available upon request. The contractor shall utilize Donahue and Associates for the project controls integration and SCADA programming work associated with the Digester No. 1 Improvements per the scope of services contained within the Contract Documents. Contact: Brady Bell at (765-426-3910).

1.2 RELATED WORK

- A. Section 23 21 16: Hydronic Piping Specialties
- B. Section 23 21 23: Hydronic Pumps
- C. Section 26 24 19: Motor Control Centers
- D. Section 40 72 23: Radar Level Meters
- E. Section 42 13 19: Sludge Spiral Heat Exchangers
- F. Section 43 46 19: Sludge Recirculation Pumps
- G. Section 43 46 20: Sludge Mixing Pumps
- H. Section 46 73 32: Mixing System

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

1.4 QUALITY ASSURANCE

- A. System Responsibility: The Contract Documents are intended to describe all details of the complete Digester Heating, Mixing and Sludge Transfer control system, its program, and installation for the purpose specified; however, the Contractor shall be responsible for all details necessary to properly install, test, and place into operation, a working system.
- B. Qualified suppliers shall have a minimum five (5) years of experience at programming and manufacturing control panel systems for similar applications. Upon request, supplier shall provide a list of names and dates of installations for verification by the Engineer.
- C. The Supplier shall be a firm that is engaged in the manufacturing of process control systems. The system shall be in regular production with pre-designed hardware and software for process control systems. When the specification conflicts with a manufacturer's standard system, the standard system may be furnished if the intention of the specification is met.
- D. All of the equipment listed herein shall be furnished by a single source supplier.
- E. Supplier shall provide the services of a factory-trained representative to check the installation and to start-up each pump, drive, and control system. The factory representative shall have complete knowledge of proper installation, operation, and maintenance of equipment supplied. Representative shall inspect the final installation and supervise a start-up test of the equipment.

1.5 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00. They should include shop drawing submittals and quality control submittals.
- B. Shop Drawing Submittals
 - 1. All significant equipment including hardware and software to be supplied shall be listed followed by descriptive data sheets. The equipment list shall include each component name, manufacturer, model number, a description of the operation, quantity supplied, and any special setup, operation, and maintenance characteristics.
 - 2. Submit wiring diagrams for all components including, but not limited to, control panels, relays, sensors, switches, and breakers. Interconnection details shall be shown for all field mounted instrumentation.
 - 3. Drawings of equipment to be supplied including overall dimension details for each unit including installation arrangements and door mounted operator devices including nameplate designations. Field device connections shall be included and specific installation wiring responsibilities identified. Wiring diagrams shall include wiring schematics of motor control and control systems indicating termination points.
 - 4. Description of Operation shall be provided detailing the operation of the complete system, including the control and alarm handling.
- C. Quality Control Submittals:
 - 1. Special shipping, storage and protection, and handling instructions.
 - 2. Manufacturer's printed installation instructions.
 - 3. One-year warranty.
 - 4. Startup and implementation plan and/or training program.
 - 5. Operation and maintenance manual. Include replacement part numbers, PLC program on CD-ROM including all passwords. System one-line diagram including field modifications made at system startup.
- D. Submit record documents in accordance with Section 01 70 00.
 - 1. A detailed written description of system hardware, software, and system operation shall be provided. Control loops as they currently exist at the end of the warranty shall be fully

- described in the O & M manual. A detailed description of programmed features such as I/O and local control loops shall be included.
2. O & M Manuals shall contain a separately bound, detailed operator's manual for each operator interface and a step by step description of system operation describing how to change set points and system parameters.
 3. O & M Manuals shall include all internal parameter settings.

PART 2 PRODUCTS

2.1 DIGESTER HEATING AND MIXING CONTROL PANEL

- A. The existing Digester Heating and Mixing Control Panel is located as shown on the Contract Drawings.
- B. The existing Digester Heating and Mixing Control Panel is housed in a NEMA 12 free standing enclosure.
- C. The existing Digester SCADA Panel is located as shown on the Contract Drawings and housed NEMA 12 free standing enclosure.
- D. The existing Digester Heating and Mixing Control Panel includes an existing programmable logic controller (PLC), operator interface touchscreen (OIT), indicator lights, relays, and switches.
- E. The existing Digester Heating and Mixing Control Panel incorporates local PLC and relay logic for control of digester heating and mixing equipment as specified below:
 1. Control panel shall be for a 6-pump system with each pump controlled by an HOA switch. In Hand "H" position, selected pump(s) shall run continuously. In Off "O" position, selected pump(s) shall not function. In Auto "A" position, selected pump(s) shall operate dependent on control programming.
 2. The Contractor shall be responsible for coordination between the Control Panel/SCADA system integrator for connections between the Control Panel and the Plant's existing SCADA system.
- F. The Digester Heating and Mixing Control Panel makes a hardwire connection to the Plant's existing SCADA system.
 1. An Ethernet connection port is available connection to the Plant's SCADA system.
 2. The Contractor shall work with Donohue & Associates, Inc to make the terminations in the existing SCADA panel and modifications to the existing SCADA system programming for the cost as listed in the Bid Form. Donohue & Associates, Inc contact: Brady Bell, email: bbel@donohue-associates.com.

2.2 DIGESTER HEATING AND MIXING CONTROL PANEL COMPONENTS

- A. The existing control panel includes the following major components, and other minor components as necessary even though not specifically listed:
 1. Hand-Off-Auto selector switch for each pump.
 2. Pilot lights, minimum 1" diameter, push-to-test, operated from starter auxiliary contact. For each pump motor: 1 green, and 1 red.
 3. Control panel is U.L. Listed and labeled for use as industrial control panel equipment with protection for installed environments.
 4. Electrical interface wiring shall be provided to interface pump control equipment with existing supervisory control equipment. All alarms shall be transmitted to the existing SCADA system through a dry output contact and hard wired connection.
 5. 1/2 hr. battery backup.

2.3 ENCLOSURE

- A. The existing control panel shall be modified in accordance with the layouts shown on the Drawings. The control panel shall include all necessary accessories such as: PLCs, power supplies, mounting hardware, terminal blocks, labels, and plug strips which may be required to complete the system.
- B. Face mounted equipment shall be flush or semi-flush mounted with flat-black escutcheons. Utilize existing space for equipment as shown on the Drawings. Door operation tag names shall be identified on the panel front as indicated on drawings. All major components and sub-assemblies shall be identified as to function with laminated engraved Bakelite nameplates. Engraved nameplates shall be secured by screws or rivets to the panel face. Instruments shall be mounted in a manner that allows ease of access to all components for removal and/or servicing.
- C. Panel submittal drawings shall indicate approximate clearance lines of major instruments with suitable section views. Control panels and cabinets shall be enclosed in NEMA 12 cabinets. Mounting hardware shall not protrude through panel surfaces. Panels shall be constructed of 14 gauge steel and have a suitable structural steel frame to provide a durable rigid structure.
- D. Panels and cabinets shall be treated with zinc phosphate, bonderized, or otherwise given a rust preventive treatment, primed, and painted with durable enamel. Any scratches or blemishes in panel faces shall be filled prior to finishing. Interiors shall be painted white, exteriors ANSI 61, light gray, unless otherwise noted.
- E. All conduits, fittings, or connections shall enter enclosure only through areas clearly marked by the manufacturer as acceptable.
- F. Control panel shall be assembled to be in compliance with Underwriters laboratories (UL) industrial control panel 508A listing, ISO 9001, and U.L. 913 for intrinsically safe panels (where required).
- G. All wiring shall have not less than 600-volt insulation. Power wiring and bus shall be in conformance with National Electrical Code (NEC) and state, local, and NEMA electrical standards. Control wiring shall be color-coded. Terminal blocks with engraved marker strips shall be used for convenient replacement of control components.
- H. All operator interface controls shall be mounted on the front of the panel or cabinet.
 - 1. See drawings for detail of door elevation.

2.4 RADAR LEVEL SENSOR CONTROLS

- A. The existing Digester Control Panel HMI shall be modified to include read-outs of the six (6) new radar level sensors, two (2) for each digester lid and operator adjustable level set points for differential between the two sensors and operator adjustable setpoints for high and low alarms.

2.5 PUMP CONTROL SELECTOR SWITCHES AND "RUN" LIGHTS

- A. The control panel shall have three-position selector switches mounted on the front door for Hand-Off-Auto operation of each pump. In the Hand position the motor shall be called to operate. In the Off mode the motor shall not be allowed to operate. In the Auto mode, the motor shall operate in response to control signals from the PLC.
- B. All panel mounted push buttons and rotary selector switches shall be of oil-tight design, with screw-type termination. Hand-Off-Automatic selector switches shall be of the rotary, oil-tight design.
- C. All indicator lights shall be of LED design and shall be provided with a basic bulb rated for 100,000-hour operating life.

- D. All pilot devices specified herein are to be Square D, Type K, Heavy Duty.
- E. Pilot Lights shall be push-to-test type to permit operator testing of bulb condition.

2.6 PUMP RUNNING TIME METERS

- A. A door mounted, 120 VAC powered running time meter measuring hours and tenths of hours of operation up to 99999.9 hours shall be furnished for each pump motor indicated.

2.7 ELECTRICAL INTERFACE WIRING

- A. Provide analog and digital inputs as indicated on the Input/Output schedule from the PLC to provide SCADA system interface connections. All points shall be hardwired to an isolated terminal block with isolation relays provided as necessary by control panel manufacturer.

2.8 PROGRAMMABLE LOGIC CONTROLLERS

- A. The following list specifies the capacity/features of the existing PLC's used at the system site. The existing PLC is an:
 - 1. Allen Bradley Micrologix 1400.
- B. Random access CMOS memory (RAM) for program. Provide electrically-erasable programmable read-only memory (EEPROM) so that PLC does not require batteries.
- C. Auto start-up after power failure. Retain program and set points so that system starts automatically when power is restored.
- D. Provide four each live spare inputs/outputs for nonfixed I/O PLC's. Confirm existing rack has sufficient empty slots to accommodate future input/output modules as specified in the functional description.
- E. Programmable ladder logic using IBM-compatible computer. Provide programming software that is a standard product of the PLC manufacturer. Software shall allow on-line program editing without interrupting PLC operation. Provide all necessary programming to meet owner's requirements.
- F. PLC shall have data port to allow communication between PLC and other PLC's or PC's. Ethernet data shall be 10/100 and serial communication shall be RS-485 or faster.

2.9 INSTRUMENTATION

- A. All field mounted instrumentation shall be standard cataloged represented by the specified instrument supplier and provided by the control panel manufacturer to insure single source responsibility for all aspects of the control panel, service, replacement parts, trouble shooting assistance, and contract services. All instruments shall be calibrated on-site by a factory employed field representative.
- B. All field-mounted devices shall be manufactured to ISO 9001 standards to insure optimum quality, performance, serviceability, and minimal maintenance requirements. Field mount devices not manufactured to ISO 9001 standards will not be acceptable. Certifications will be required at time of submittal and shall be included with O & M Manuals.
- C. All instruments, except where noted otherwise in contract documents, shall have integral transient voltage surge suppression and shall have two hour battery backup.

- D. Regardless of where located on contract documents, field mounted instrumentation shall be repositioned as required to provide optimum signal to PLC.
- E. Temperature sensors: Provide platinum, 100ohm, resistance temperature detector (RTD) sensor. Install temperature sensors in thermowells where indicated on drawings. RTD shall be Omega Model PR-14-2-100-*-E-SL. Probe diameter and length shall be sized and consistent with Omega recommendations for installation in thermowells being furnished with the Sludge Spiral Heat Exchanger. Confirm thermowell dimensions with Sludge Spiral Heat Exchanger manufacturer.

2.10 OPERATOR INTERFACE MODULE KEYPAD AND DISPLAY UNIT

- A. The existing operator interface provides programmable menus, data entry, data display, security passwords, bargraphs, and interactive alarms.
- B. The existing operator interface connects directly to the existing programmable controller of the PLC data communications module and requires no programming within the PLC.
- C. The existing operator interface has programmable menu screens which allows the operator to quickly access any portion of the control system. Unit shall be able to restrict an operator's access to pre-defined screens.
- D. The existing operator interface module continuously collects the required data from the PLC, scale it and display the process information in real-time.
- E. Character configuration is 6" color touch enabled. The LCD display is LED backlit for easy viewing from wide angles in all lighting conditions.
- F. Printer port option and real-time clock/calendar option is provided with the unit.
- G. Unit is capable of expandable user memory.
- H. The existing unit is an Allen-Bradley PanelView Plus 600.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work. Verify that required utilities are available, in proper location, and ready for use. Beginning of installation means installer accepts existing conditions.

3.2 INSTALLATION

- A. Install selector switches, elapsed time meters and pilot lights on the front of existing free-standing control panel as shown on drawings. Provide stainless steel mounting accessories for all remote devices.

3.3 CONTROL LOOPS

- A. All existing Control Loops for Digester No. 2 shall remain as presently installed in the existing Digester Heating and Mixing Control Panel.
- B. All Control Loops for Digester No. 1 shall match those installed for Digester No. 2 as specified below.

- C. Control Loop 1-1: Digester No. 1 Sludge Mixing Pump
1. When Digester No. 1 Sludge Mixing Pump's hand/off/auto selector switch is in the "hand" position, Digester No. 1 Sludge Mixing Pump shall run continuously. When Digester No. 1 Sludge Mixing Pump's hand/off/auto selector switch is in the "off" position, Digester No. 1 Sludge Mixing Pump shall be off. When Digester No. 1 Sludge Mixing Pump's hand/off/auto selector switch is in the "auto" position, Digester No. 1 Sludge Mixing Pump will be called to run based upon a sludge mixing timer with operator adjustable on and off cycles.
 2. When Digester No. 1 Sludge Mixing pump is called to run (whether the hand/off/auto switch is in "hand" or "auto" position), a user adjustable time delay shall be started to prevent the shutting down of the pump due to a "Low Pressure Alarm" as sensed by Digester No. 1 Sludge Mixing Pressure Switch while the pump is starting.
 3. A running Digester No. 1 Sludge Mixing Pump shall be indicated locally on the control panel (visually), and remotely at the existing SCADA system.
 4. If Digester No. 1 Sludge Mixing Pump returns a fail signal from the motor controller in the motor control center, a "Digester No. 1 Sludge Mixing Pump Common Fail" alarm shall be activated locally on control panel (visually), and remotely at the existing SCADA system.
 5. If Digester No. 1 Sludge Mixing Pump returns a winding overtemperature signal from the motor controller in the motor control center, a "Digester No. 1 Sludge Mixing Pump Common Fail" alarm shall be activated locally on control panel (visually), and remotely at the existing SCADA system.
 6. If Digester No. 1 Sludge Mixing Pump is called to run and the pump fails to returns a "run" signal from the motor controller in the motor control center, in an operator adjustable time period, a "Digester No. 1 Sludge Mixing Pump Common Fail" alarm shall be activated locally on control panel (visually), and remotely at the existing SCADA system.
- D. Control Loop 1-2: Digester No. 1 Sludge Recirculation Pump
1. When Digester No. 1 Sludge Recirculation Pump's hand/off/auto selector switch is in the "hand" position, Digester No. 1 Sludge Recirculation Pump shall run continuously. When Digester No. 1 Sludge Recirculation Pump's hand/off/auto selector switch is in the "off" position, Digester No. 1 Sludge Recirculation Pump shall be off. When Digester No. 1 Sludge Recirculation Pump's hand/off/auto selector switch is in the "auto" position, Digester No. 1 Sludge Recirculation Pump will be called to run based upon sludge recirculation timer with operator adjustable on and off cycles.
 2. When Digester No. 1 Sludge Recirculation pump is called to run (whether the hand/off/auto switch is in "hand" or "auto" position), a user adjustable time delay shall be started to prevent the shutting down of the pump due to a "Sludge Low Pressure Alarm" as sensed by Digester No. 1 Sludge Recirculation Pressure Switch while the pump is starting.
 3. A running Digester No. 1 Sludge Recirculation Pump shall be indicated locally on control panel (visually), and remotely at the existing SCADA system.
 4. If Digester No. 1 Sludge Recirculation Pump returns a fail signal from the motor controller in the motor control center, a "Digester No. 1 Sludge Recirculation Pump Common Fail" alarm shall be activated locally on control panel (visually), and remotely at the existing SCADA system.
 5. If Digester No. 1 Sludge Recirculation Pump returns a winding overtemperature signal from the motor controller in the motor control center, a "Digester No. 1 Sludge Recirculation Pump Common Fail" alarm shall be activated locally on control panel (visually), and remotely at the existing SCADA system.
 6. If Digester No. 1 Sludge Recirculation Pump is called to run and the pump fails to returns a "run" signal from the motor controller in the motor control center, in an operator adjustable time period, a "Digester No. 1 Sludge Recirculation Pump Common Fail" alarm shall be activated locally on control panel (visually), and remotely at the existing SCADA system.
- E. Control Loop 1-3: Digester No. 1 Hot Water Recirculation Pump
1. When Digester No. 1 Hot Water Recirculation Pump's hand/off/auto selector switch is in the "hand" position, Digester No. 1 Hot Water Recirculation Pump shall run continuously. When Digester No. 1 Hot Water Recirculation Pump's hand/off/auto selector switch is in the "off" position, Digester No. 1 Hot Water Recirculation Pump shall be off. When Digester No. 1 Hot

Water Recirculation Pump's hand/off/auto selector switch is in the "auto" position, Digester No. 1 Hot Water Recirculation Pump will be called to run based upon a "pump running" signal from Digester No. 1 Sludge Recirculation Pump.

2. A running Digester No. 1 Hot Water Recirculation Pump shall be indicated locally on control panel (visually), and remotely at the existing SCADA system.
 3. If Digester No. 1 Hot Water Recirculation Pump returns a fail signal from the motor controller in the motor control center, a "Digester No. 2 Hot Water Recirculation Pump Common Fail" alarm shall be activated locally on control panel (visually), and remotely at the existing SCADA system.
 4. If Digester No. 1 Hot Water Recirculation Pump is called to run and the pump fails to return a "run" signal from the motor controller in the motor control center, in an operator adjustable time period, a "Digester No. 1 Hot Water Recirculation Pump Common Fail" alarm shall be activated locally on control panel (visually), and remotely at the existing SCADA system.
- F. Control Loop 1-4: Digester No. 1 Hot Water Recirculation 3-way Modulating Valve
1. The Digester No. 1 Hot Water Recirculation 3-way modulating valve shall modulate to maintain the "Digester No. 1 Sludge Recirculation" temperature at the Digester No. 1 heat exchanger sludge recirculation inlet, as measured by the Digester No. 1 Sludge Recirculation Temperature sensor, to an operator adjustable set point.
 2. The temperature of the recirculating hot water at the Digester No. 1 heat exchanger recirculating hot water inlet should be limited, as measured by the Digester No. 1 Hot Water Recirculation Temperature sensor, to an operator adjustable high limit set point to prevent the water entering the heat exchanger from exceeding the high limit.
 3. The control valve will be of a diverting configuration to recirculate hot water to the heat exchanger or return it to the boiler.
 4. The initial set point for Digester No. 1 Sludge Recirculation Temperature shall be 98.6°F. The set point shall be operator selectable at the control panel.
 5. The initial high limit set point for Digester No. 1 Hot Water Recirculation Temperature shall be 155°F. The high limit set point shall be operator selectable at the control panel.
- G. Control Loop 1-5: Digester No. 1 Sludge Mixing Pressure Switch
1. When the pressure switch in Digester No. 1 Sludge Mixing Pump discharge piping is activated due to high pressure, a user adjustable time delay shall be started. If after the user adjustable time delay has expired the pressure switch is not activated because of high pressure, Digester No. 1 Sludge Mixing Pump shall continue to run. If after the user adjustable time delay has expired the pressure switch is still activated due to high pressure, Digester No. 1 Sludge Mixing Pump shall be shut down (shutting down of Digester No. 1 Sludge Mixing Pump because of high pressure shall occur whether the hand/off/auto switch is in "hand" or "auto" position).
 2. In addition to shutting down Digester No. 1 Sludge Mixing pump, a "Digester No. 1 Sludge Mixing Pump High Pressure" alarm shall be activated locally at the control panel (visually) and a "Common Sludge Mixing Pump Fail" alarm shall be activated remotely at the existing SCADA system.
 3. When the pressure switch in Digester No. 1 Sludge Mixing Pump discharge piping is activated due to low pressure, Digester No. 1 Sludge Mixing pump shall be shut down (shutting down of Digester No. 2 Sludge Mixing Pump because of low pressure shall occur whether the hand/off/auto switch is in "hand" or "auto" position).
 4. In addition to shutting down Digester No. 1 Sludge Mixing pump, a "Digester No. 1 Sludge Mixing Pump Low Pressure" alarm shall be activated locally at the control panel (visually) and a "Common Sludge Mixing Pump Fail" alarm shall be activated remotely at the existing SCADA system.
- H. Control Loop 1-6: Digester No. 1 Sludge Recirculation Pressure Switch
1. When the pressure switch in Digester No. 2 Sludge Recirculation Pump discharge piping is activated due to high pressure, a user adjustable time delay shall be started. If after the user adjustable time delay has expired the pressure switch is not activated because of high

- pressure, Digester No. 1 Sludge Recirculation Pump shall continue to run. If after the user adjustable time delay has expired the pressure switch is still activated due to high pressure, Digester No. 1 Sludge Recirculation Pump shall be shut down (shutting down of Digester No. 1 Sludge Recirculation Pump because of high pressure shall occur whether the hand/off/auto switch is in "hand" or "auto" position).
2. In addition to shutting down Digester No. 1 Sludge Recirculation Pump, a "Digester No. 1 Sludge Recirculation Pump High Pressure" alarm shall be activated locally at the control panel (visually) and a "Common Sludge Recirculation Pump Fail" alarm shall be activated remotely at the existing SCADA system.
 3. When the pressure switch in Digester No. 1 Sludge Recirculation Pump discharge piping is activated due to low pressure, Digester No. 1 Sludge Recirculation pump shall be shut down (shutting down of Digester No. 1 Sludge Recirculation Pump because of low pressure shall occur whether the hand/off/auto switch is in "hand" or "auto" position).
 4. In addition to shutting down Digester No. 1 Sludge Recirculation pump, a "Digester No. 1 Sludge Recirculation Pump Low Pressure" alarm shall be activated locally at the control panel (visually) and a "Common Sludge Recirculation Pump Fail" alarm shall be activated remotely at the existing SCADA system.
- I. Control Loop 1-8: Digester No. 1 Sludge Recirculation Temperature
1. The temperature of the recirculating sludge at the inlet to the Digester No. 1 Heat Exchanger, as measured by the Digester No. 1 Sludge Recirculation Temperature Sensor shall be indicated locally at the control panel touchscreen.
- J. Control Loop 1-9: Digester No. 1 Hot Water Recirculation Temperature
1. The temperature of the recirculating hot water at the inlet to the Digester No. 1 Heat Exchanger, as measured by the Digester No. 1 Hot Water Recirculation Temperature Sensor shall be indicated locally at the control panel touchscreen.
- K. Control Loop 1-10: Radar Level Sensor
1. Six (6) radar level sensors, two on each Digester shall be installed as specified in Section 40 72 23.
 2. Each radar level sensor shall indicate the digester lid level elevation at the control panel touchscreen. The Contractor shall be responsible for programming the radar sensor to display the lid elevation of each digester.
 3. Low level and high-level alarm shall be activated in the event of exceeding operator adjustable low or high lid level setpoints.
 4. Differential setpoint alarm shall be activated when the lid level falls below the operator adjustable differential setpoint.
 5. The Control Panel and SCADA System integrator is responsible for programming the cover setpoints into the Digester Control Panel HMI and integrating the levels with the Digester Sludge Transfer Pump Controls (Control Loop 1-11)
- L. Control Loop 1-11: Sludge Transfer Pump No.1
1. When Sludge Transfer Pump's hand/off/auto selector switch is in the "hand" position, Sludge Transfer Pump shall run continuously. When Sludge Transfer Pump's hand/off/auto selector switch is in the "off" position, Sludge transfer Pump shall be off. When Sludge Transfer Pump's hand/off/auto selector switch is in the "auto" position, Sludge Transfer Pump will be called to run based upon operator adjustable level setpoint.
 2. A running Sludge Transfer Pump No.1 shall be indicated locally at the Digester Control Panel (visually), and remotely at the existing SCADA system. The Digester Control Panel PLC and HMI is to be programmed as follows:
 - a. Sludge Transfer Pump 1-2-3 suction selector switch and 1-2-3-ext discharge selector switch are operator selector switches to transfer sludge from Digester No.1, Digester No.2, or Digester No.3 to Digester No.1, Digester No.2, Digester No.3, or an external location.

- b. Sludge Transfer pump shall transfer sludge from Digester No.1/Digester No.2/Digester No.3 to Digester No.1/Digester No.2/Digester No.3/Ext (to an external location) based on operator selection on 1-2-3 Suction selector switch and 1-2-3-ext Discharge selector switch respectively.
- c. When Digester No.1 to Digester No.2 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.1 to Digester No.2 until a minimum level in Digester No.1, a maximum level in Digester No.2, or operator setpoint is reached.
- d. When Digester No.1 to Digester No.3 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.1 to Digester No.3 until a minimum level in Digester No.1, a maximum level in Digester No.3, or operator setpoint is reached.
- e. When Digester No.1 to Ext. sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.1 to an external location until a minimum level in Digester No.1, a maximum level in external location, or operator setpoint is reached.
- f. When Digester No.2 to Digester No.1 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.2 to Digester No.1 until a minimum level in Digester No.2, a maximum level in Digester No.1, or operator setpoint is reached.
- g. When Digester No.2 to Digester No.3 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.2 to Digester No.3 until a minimum level in Digester No.2, a maximum level in Digester No.3, or operator setpoint is reached.
- h. When Digester No.2 to Ext. sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.2 to an external location until a minimum level in Digester No.2, a maximum level in external location, or operator setpoint is reached.
- i. When Digester No.3 to Digester No.1 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.3 to Digester No.1 until a minimum level in Digester No.3, a maximum level in Digester No.1, or operator setpoint is reached.
- j. When Digester No.3 to Digester No.2 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.3 to Digester No.2 until a minimum level in Digester No.3, a maximum level in Digester No.2, or operator setpoint is reached.
- k. When Digester No.3 to Ext. sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.3 to an external location until a minimum level in Digester No.3, a maximum level in external location, or operator setpoint is reached.
- 3. If Sludge Transfer Pump returns a fail signal from the motor controller in the motor control center, a "Sludge Transfer Pump No.1 Common Fail" alarm shall be activated locally on the Digester Control (visually), and remotely at the existing SCADA system.

M. Control Loop 1-12: Sludge Transfer Pump No.2

- 1. When Sludge Transfer Pump's hand/off/auto selector switch is in the "hand" position, Sludge Transfer Pump shall run continuously. When Sludge Transfer Pump's hand/off/auto selector switch is in the "off" position, Sludge transfer Pump shall be off. When Sludge Transfer Pump's hand/off/auto selector switch is in the "auto" position, Sludge Transfer Pump will be called to run based upon operator adjustable level setpoint.
- 2. A running Sludge Transfer Pump No.2 shall be indicated locally on the Digester Control Panel (visually), and remotely at the existing SCADA system.
- 3. The Digester Control Panel PLC and HMI is to be programmed as follows:
 - a. Sludge Transfer Pump 1-2-3 suction selector switch and 1-2-3-ext discharge selector switch are operator selector switches to transfer sludge from Digester No.1, Digester No.2, or Digester No.3 to Digester No.1, Digester No.2, Digester No.3, or an external location.
 - b. Sludge Transfer pump shall transfer sludge from Digester No.1/Digester No.2/Digester No.3 to Digester No.1/Digester No.2/Digester No.3/Ext (to an external location) based on operator selection on 1-2-3 Suction selector switch and 1-2-3-ext Discharge selector switch respectively.
 - c. When Digester No.1 to Digester No.2 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.1 to Digester No.2 until a minimum level in Digester No.1, a maximum level in Digester No.2, or operator setpoint is reached.

- d. When Digester No.1 to Digester No.3 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.1 to Digester No.3 until a minimum level in Digester No.1, a maximum level in Digester No.3, or operator setpoint is reached.
- e. When Digester No.1 to Ext. sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.1 to an external location until a minimum level in Digester No.1, a maximum level in external location, or operator setpoint is reached.
- f. When Digester No.2 to Digester No.1 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.2 to Digester No.1 until a minimum level in Digester No.2, a maximum level in Digester No.1, or operator setpoint is reached.
- g. When Digester No.2 to Digester No.3 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.2 to Digester No.3 until a minimum level in Digester No.2, a maximum level in Digester No.3, or operator setpoint is reached.
- h. When Digester No.2 to Ext. sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.2 to an external location until a minimum level in Digester No.2, a maximum level in external location, or operator setpoint is reached.
- i. When Digester No.3 to Digester No.1 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.3 to Digester No.1 until a minimum level in Digester No.3, a maximum level in Digester No.1, or operator setpoint is reached.
- j. When Digester No.3 to Digester No.2 sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.3 to Digester No.2 until a minimum level in Digester No.3, a maximum level in Digester No.2, or operator setpoint is reached.
- k. When Digester No.3 to Ext. sludge transfer option is selected by the user, the pump shall transfer sludge from Digester No.3 to an external location until a minimum level in Digester No.3, a maximum level in external location, or operator setpoint is reached.
- 4. If Sludge Transfer Pump returns a fail signal from the motor controller in the motor control center, a "Sludge Transfer Pump No.2 Common Fail" alarm shall be activated locally on the Digester Control (visually), and remotely at the existing SCADA system.

3.4 DEMONSTRATION

- A. Provide systems demonstration under the provisions of Section 01 70 00.
- B. Demonstrate proper operation of system.

3.5 MANUFACTURER SERVICES

- A. Supplier of controls and instrumentation shall provide services of a factory- trained representative to review installation, to check and adjust equipment when ready for operation, and to observe field tests of equipment. Train Owner's operators in operation and maintenance of equipment, inspect thoroughly for damage and missing items, check integral equipment supplied by other manufacturers, and make any necessary adjustments. Notify Engineer and Owner when this initial service will be performed.
- B. Prior to plant start-up, service representative shall furnish a letter to Engineer and Owner confirming that installation is in accordance with manufacturer recommendations, necessary alignments and adjustments have been made, and equipment is ready for operation.
- C. In addition to initial services, the manufacturer shall provide for inspection trips after 1 month and 6 months of operation to inspect and adjust system.

3.6 TRAINING

- A. Provide (4) hours of on-site training for operators. Training to be done by the Control Panel and SCADA systems integrator qualified representative.

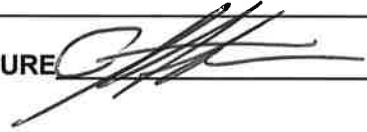
END OF SECTION

CITY OF WEST CHICAGO

INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

ITEM TITLE:

Ordinance No. 20-O-0012 – Authorizing the Disposal of Surplus Equipment, Stock Inventory, and/or Personal Property Owned By the City Of West Chicago

AGENDA ITEM NUMBER:4.C.**COMMITTEE AGENDA DATE:** July 2, 2020**COUNCIL AGENDA DATE:** July 20, 2020**STAFF REVIEW:** Robert E. Flatter, P.E., Public Works Director**SIGNATURE****APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE****ITEM SUMMARY:**

City staff has identified surplus equipment, stock inventory, and/or personal property that has no useful life and is no longer useful to the City, has little or no salvage value, and should be properly disposed of (please refer to Ordinance No. 20-O-0012 and Attachment A for additional information).

Therefore, staff is requesting that these items be declared surplus so that they may be traded in, disposed of through auction, disposed of through the City's contractual waste hauler, recycled, or sold to a local scrap dealer for scrap value; in a manner deemed appropriate by the City Administrator, with or without consideration.

ACTIONS PROPOSED:

Adopt Ordinance No. 20-O-0012 for the disposal or sale of surplus equipment, stock inventory, and/or personal property owned by the City of West Chicago.

COMMITTEE RECOMMENDATION:

ORDINANCE NO. 20-O-0012

**AN ORDINANCE AUTHORIZING THE DISPOSAL OR SALE OF SURPLUS EQUIPMENT,
STOCK INVENTORY, AND/OR PERSONAL PROPERTY OWNED
BY THE CITY OF WEST CHICAGO**

WHEREAS, in the opinion of the corporate authorities of the City of West Chicago, it is no longer necessary or useful to or for the best interests of the City of West Chicago, to retain ownership of the surplus equipment, stock inventory, and/or personal property hereinafter described; and,

WHEREAS, it has been determined by the City Council of the City of West Chicago to properly dispose of said surplus equipment, stock inventory, and/or personal property.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of West Chicago, Illinois, in regular session assembled as follows:

SECTION 1. Pursuant to 65 ILCS 5/11-76-4, the City Council of the City of West Chicago finds that the surplus equipment, stock inventory, and/or personal property listed on Attachment A are no longer necessary or useful to the City of West Chicago and the best interests of the City of West Chicago will be served by their disposal.

SECTION 2. Pursuant to said Statute, the City Administrator is hereby authorized and directed to dispose of the aforementioned surplus equipment, stock inventory, and/or personal property in any manner deemed appropriate, with or without consideration.

SECTION 3. All ordinances and resolutions, or parts thereof, in conflict with the provisions of this Ordinance are, to the extent of such conflict, hereby repealed.

SECTION 4. That this Ordinance shall be in full force and effect ten (10) days from and after its passage, approval, and publication in pamphlet form as provided by law.

PASSED this 20th day of July 2020.

Alderman J. Beifuss _____

Alderman L. Chassee _____

Alderman J. Sheahan _____

Alderman H. Brown _____

Alderman A. Hallett _____

Alderman M. Ferguson _____

Alderman Birch-Ferguson _____

Alderman S. Dimas _____

Alderman C. Swiatek _____

Alderman M. Garling _____

Alderman R. Stout _____

Alderman J. Short _____

Alderman N. Ligino-Kubinski _____

Alderman J. Jakabcsin _____

APPROVED as to form: _____
City Attorney

ADOPTED this 6th day of July 2020.

Mayor Ruben Pineda

ATTEST:

City Clerk, Nancy M. Smith

PUBLISHED: _____

Ordinance 20-O-0012

ATTACHMENT "A"
LISTING OF SURPLUS ITEMS
ORDINANCE NO. 20-O-00xx

[illegible]

CITY OF WEST CHICAGO

INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

ITEM TITLE:

Purchase of Rock Salt from Compass Minerals America, Inc., Overland Park, Kansas, for the 2019-2020 Winter Season – Change Order No. 1 and Final

AGENDA ITEM NUMBER:4.D.**COMMITTEE AGENDA DATE:** July 2, 2020**COUNCIL AGENDA DATE:** July 20, 2020**STAFF REVIEW:** Robert E. Flatter, P.E., Director of Public Works**SIGNATURE****APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE**

ITEM SUMMARY:

On Monday, May 20, 2019, City Council authorized the purchase of up to 4,600 tons of rock salt, at the price of \$82.96 per ton delivered, from Compass Minerals America, Inc. of Overland Park, Kansas under the DuPage County Rock Salt Joint Purchasing Program for the 2019-2020 winter season.

Deliveries were hauled/received via semi-truck(s). Loads range from 19 to 26 tons per truck, with an average truck hauling approximately 22 tons. Despite ordering only 4,600 tons, actual deliveries received for the 2019-2020 winter season totaled 4,655.75 tons. The 55.75 ton overage results in the need for City Council approval of Change Order No. 1 and Final in the amount of \$4,625.02,

ACTIONS PROPOSED:

Approve Change Order No. 1 and Final authorizing the additional purchase of 55.75 tons of rock salt, at the price of \$82.96 per ton delivered, from Compass Minerals America, Inc. of Overland Park, Kansas under the DuPage County Rock Salt Joint Purchasing Program for the 2019-2020 winter season; resulting in a total approved purchase quantity of 4,655.75 tons.

COMMITTEE RECOMMENDATION:

CITY OF WEST CHICAGO
PUBLIC WORKS
REQUEST FOR
AUTHORIZATION FOR CHANGE ORDERS

TO: Michael Guttman
City Administrator

Authorization No. 1

Project: Purchase of Rock Salt for 2019-2020 Winter Season

Date: 6/26/2020

Contractor: Compass Minerals America, Inc.

Dear Sir:

I recommend that a change be made as follows to the above contract:

An (addition, extension, deduction) will be made from Station _____ to Station _____,
a net length of _____ miles. This change revises the total length to _____ miles.

The estimated quantities are shown below. The first addition of an item not in the original contract under the fund type is indicated by asterisk (*).

ITEM NO.	* ITEM DESCRIPTION AND UNIT	QUANTITY	UNIT	UNIT PRICE	TOTAL ADDITION/REDUCTION
1	Additional purchase of Rock Salt for 2019-2020 winter season	55.75	Tons	\$82.96	\$4,625.02

Totals \$4,625.02

Amount of Original Contract: \$381,616.00
Previous Change Orders:
Net Change to Date: \$4,625.02
% of Original Contract Price: 1.21%

State fully the nature and reason for the change:

Actual quantities delivered and received.

When the net increase or decrease to the contract exceeds \$10,000 or the time of completion is increased or decreased by 30 days or more, one of the following statements shall be checked.

- ☐ The undersigned determine that the circumstances that necessitate this change were not reasonably foreseeable at the time of the original contract.
- ☐ The undersigned determine that the circumstances that necessitate this change were not within the contemplation of the contract as signed.
- ☒ The undersigned determine that this change is in the best interest of the local agency and is authorized by law.

Date: July 20, 2020

Approved:

Date: July 20, 2020

Attest:

Mayor Ruben Pineda

City Clerk Nancy M. Smith