Proposal to Provide
WRF – Clarifier 1 and 3
RAS/WAS Pump Replacement and Electrical Upgrades
Work Order No. 2023-01

Services to be provided by: Hazen and Sawyer (Hazen)

Services provided to ("Village"): Village of Wellington (Village)

Proposal Date: October 14, 2022

Proposal Terms

PROJECT DESCRIPTION

In 2018, the Village of Wellington (Village) completed a condition assessment of the Wellington Water Reclamation Facility (WRF) as part of the WRF Master Plan, to identify repair and replacement (R&R) projects considered necessary to maintain operation of the Wellington WRF within the next 10 years. The condition assessment identified that the recessed impeller Return Activated Sludge (RAS) and Waste Activated Sludge (WAS) pumps are at the end of their service life and recommended replacement of the existing pumps with new, more energy efficient, screw centrifugal pumps.

A preliminary design report was completed by Hazen and Sawyer (Hazen) in February 2022, entitled "Wellington WRF – RAS / WAS Pump Replacement". The purpose of the report was to determine the preliminary pump design criteria and the necessary related civil, mechanical, electrical, and instrumentation improvements. This report also determined that MCC-1, MCC-2, and the electrical ductbank to Clarifiers 1 through 3 have reached the end of their service life. This Work Order will address the design of the replacement and rehabilitation of the Clarifier 1 and Clarifier 3 RAS / WAS pumps, and the aged electrical infrastructure servicing all clarifiers. This Work Order serves as the first stage within a sequenced improvement approach to accomplish the replacement and rehabilitation elements of all existing WRF RAS / WAS pumps.

SCOPE OF SERVICES

This Work Order will address the design of the replacement and rehabilitation of the RAS/WAS pumps at Clarifier 1 and Clarifier 3 and the aged electrical infrastructure servicing all clarifiers. The design is based upon the implementation of a sequenced construction approach to accomplish the replacement and rehabilitation of all WRF RAS / WAS pumps. It is assumed that improvements will be sequenced by the CMAR contractor. The proposed sequence may be combined, or further

subdivided, by the Village and CMAR contractor to meet scheduling and budgetary needs. The following summarizes the primary design items associated with the sequenced approach that is included in this Work Order:

1. Sequence 1 – RAS / WAS Pump Replacement at Clarifier 3, including rerouting electrical and controls ductbank for Clarifier 3 and RAS/WAS pumps from MCC 6 in old Administration Building, to MCC 300X and PLC MCP-2 Room in Generator Building (currently powered by MCC-1 and controlled by PLC CP-1).

2. Sequence 2 – MCC-1 and MCC-2 Replacement (includes consolidation of loads from both MCCs into a common new MCC-1), including replacement of electrical conduit and repowering of loads at Clarifier 1 and 2. Temporary electrical power will be provided to Clarifier 2 drive, RAS pump, and scum pump to maintain operations during construction.

3. Sequence 3 – RAS/WAS Pump Replacement at Clarifier 1.

Specific discipline elements that will be included in the design of the replacement and rehabilitation of the RAS/WAS pumps and associated electrical infrastructure are summarized as follows:

<u>Mechanical Improvements</u>

- Addition of a RAS chlorination assembly for filamentous control, comprising PVC piping, PVC ball valves, and plastic rotameter, at discharge to Clarifier 3 and No. 4 RAS pump station.

- Demolition of existing RAS Pump 1 and 2 at Clarifier 1, and RAS Pump 5 and 6 and WAS Pump 3 at Clarifier 3.

- Replacement of existing RAS Pump 1 and 2 at Clarifier 1, and RAS Pump 5 and 6 and WAS Pump 3 at Clarifier 3 with a like number of more efficient screw centrifugal pumps.

- Replacement of piping, valves, fittings, air relief valves, and accessories for each pumps dedicated suction and discharge piping. Common manifolded suction and discharge piping, valves, and fittings to remain in place.

- Minor reconfiguration of piping at the flowmeter for RAS Pumps 1-2, to achieve adequate upstream and downstream straight pipe length as recommended by flow meter manufacturer.

- Installation of backflow preventer and potable water connections at each pump station.

<u>Electrical Improvements</u>

Hazen will engage Hillers Electrical Engineering, Inc. (Subconsultant) to perform electrical engineering work associated with the proposed improvements.

- Rerouting electrical and controls, including rerouting electrical and controls ductbank for Clarifier 3 and RAS/WAS pumps from MCC 6 in old Administration Building to MCC 300X and PLC MCP-2 Room in Generator Building (currently powered by MCC-1 and controlled by PLC CP-1).

- MCC-1 and MCC-2 Replacement (includes consolidation of loads from both MCCs into a common new MCC-1), including replacement of electrical conduit and repowering of loads at Clarifier 1 and No. 2, Plant Lift Station, and Plant Service Water Pumps.

- Provision of temporary electrical power to Clarifier 2 drive, RAS pump, and scum pump to maintain operation during construction.

- Replacement of starters at motor control centers (MCCs), variable frequency drives (VFDs), and electrical and control wiring and conduits, for RAS Pumps 1-6, and WAS Pump 3.

- Installation of new hand-off-auto (HOA) and disconnect switches at each pump being replaced.

- Powering of two (1) WAS and two (2) RAS flowmeters, and pressure indicating transmitter at the common discharge header for RAS Pumps 5-8.

- Powering of seal water assemblies to each new pump, with hard-wired solenoid valves and flow switches to turn on seal water when pump in operation.

<u>Instrumentation and Control Improvements</u>

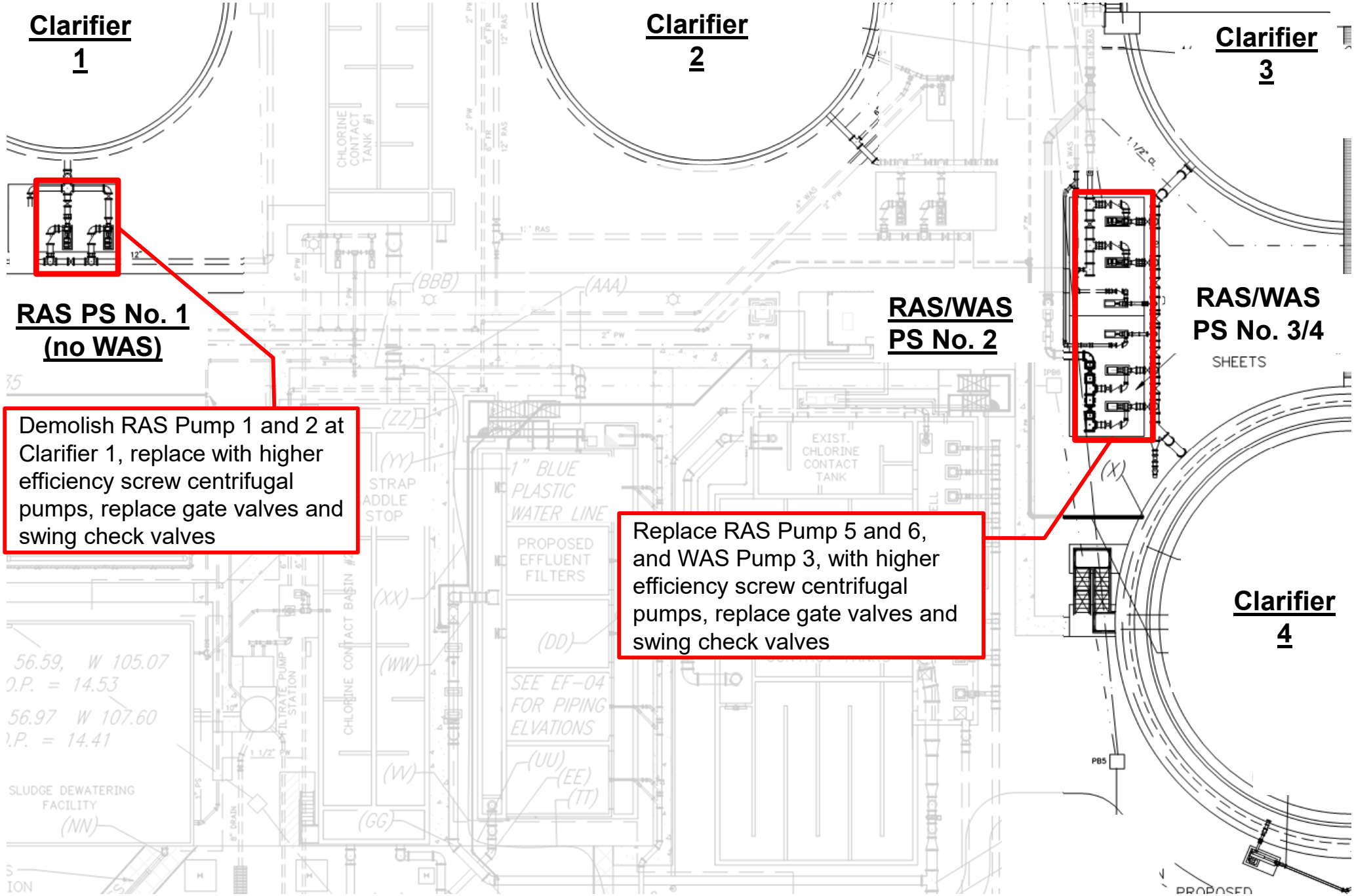
- Functional control description and process and instrumentation control diagram (P&ID) describing monitoring and control of the RAS pumps and flow meters.

- Replacement of one (1) WAS and two (2) RAS flowmeters with electromagnetic flow meter technology.

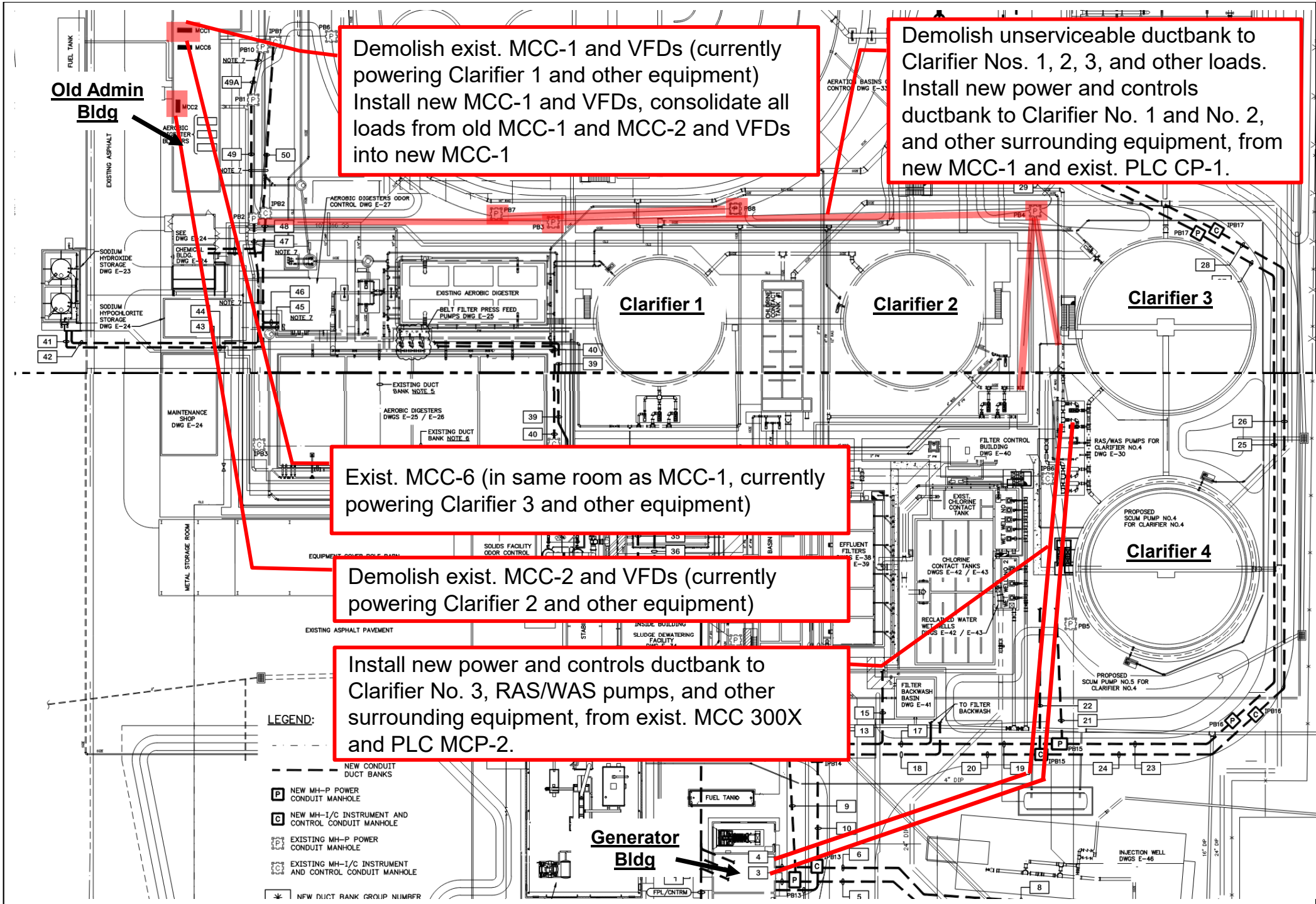
- Installation of seal water assemblies to each new pump, with hard-wired solenoid valves and flow switches to turn on seal water when pump in operation.

- Instrumentation at each individual pump is limited to manual pressure gauges and pressure switches at pump discharge. Pressure indicating transmitter shall be replaced at the common discharge header for RAS Pumps 5-8.

A conceptual site plan demonstrating the main proposed mechanical improvements are provided in **Figure 1**. A conceptual site plan demonstrating the main proposed electrical improvements are provided in **Figure 2**.



Hazen	Project Name: Village of Wellington Clarifier 1 and 3 RAS/WAS Pump Replacement and Electrical Upgrades	Site Plan	
		H&S Project Number:	Figure 1



Hazen	Project Name: Village of Wellington Clarifier 1 and 3 RAS/WAS Pump Replacement and Electrical Upgrades	Electrical Site Plan	
		H&S Project Number:	Figure 2

The preliminary list of drawings anticipated for design are as follows:

Sheet	Drawing	Title
1	G1	Title Sheet
2	G2	List of Drawings
3	G3	Symbols and Abbreviations
4	G4	General Notes
5	G5	Key Plan
6	C1	Civil Site Demolition Plan
7	C2	Civil Site Plan
8	M1	Clarifier 1 Pump Station – Demolition - Plan
9	M2	Clarifier 1 Pump Station – Demolition – Sections/Details
10	M3	Clarifier 1 Pump Station – Improvements - Plan
11	M4	Clarifier 1 Pump Station – Improvements – Sections/Details
12	M5	Clarifier 1 Flow Meter – Improvements - Plan and Sections
13	M6	Clarifier 3 Pump Station – Demolition - Plan
14	M7	Clarifier 3 Pump Station – Demolition – Sections/Details
15	M8	Clarifier 3 Pump Station – Improvements - Plan
16	M9	Clarifier 3 Pump Station – Improvements – Sections/Details
17	M10	Clarifier 3 Flow Meter – Improvements - Plan and Sections
18	M11	RAS Chlorination Assembly – Plan and Details
19	M12	Mechanical Details – Sheet 1
20	M13	Mechanical Details – Sheet 2
21	M14	Mechanical Details – Sheet 3
22	M15	Mechanical Details – Sheet 4
23	I1	Instrumentation Symbols and Legend
24	I2	Clarifier 1 - P&ID
25	I3	Clarifier 3 – P&ID
26	I4	Instrumentation Details – Sheet 1
27	I5	Instrumentation Details – Sheet 2
28	I6	Instrumentation Details – Sheet 3
29	E1	Clarifier 3 - Electrical Site Plan Sheet 1
30	E2	Clarifier 3 - Electrical Site Plan Sheet 2

Sheet	Drawing	Title
31	E3	Clarifier 3 - Existing Administration Building Electrical Demolition Plan
32	E4	Clarifier 3 - Electrical Demolition Plan
33	E5	Clarifier 3 - Modified Electrical Plan
34	E6	Clarifier 3 - RAS/WAS Pump Station No.3 Electrical Demolition Plan
35	E7	Clarifier 3 - RAS/WAS Pump Station No.3 Modified Electrical Plan
36	E8	Clarifier 3 - MCC-1 One Line Diagram-Demolition
37	E9	Clarifier 3 - MCC-3001 (or 3002) One Line Diagram- Demolition
38	E10	Clarifier 3 - MCC-3001 (or 3002) One Line Diagram- Modified
39	E11	Clarifier 3 - Schematic Diagrams
40	E12	Clarifier 3 - Electrical Riser Diagrams
41	E13	Clarifier 3 - Schedules
42	E14	MCC1/2 Replacement - Electrical Site Plan Sheet 1
43	E15	MCC1/2 Replacement - Electrical Site Plan Sheet 2
44	E16	MCC1/2 Replacement – Existing Admin. Building Electrical Demolition Plan
45	E17	MCC1/2 Replacement - Existing Admin Building Modified Electrical Plan
46	E18	MCC1/2 Replacement - RAS/WAS Pump Station No.1 Electrical Demolition Plan
47	E19	MCC1/2 Replacement - RAS/WAS Pump Station No.1 Modified Electrical Plan
48	E20	MCC1/2 Replacement - RAS/WAS Pump Station No.2 Electrical Demolition Plan
49	E21	MCC1/2 Replacement - RAS/WAS Pump Station No.2 Modified Electrical Plan
50	E22	MCC1/2 Replacement - MCC-1 One Line Diagram-Demolition
51	E23	MCC1/2 Replacement - MCC-2 One Line Diagram - Demolition
52	E24	MCC1/2 Replacement - MCC-1/2 Consolidated One Line Diagram-Modified
53	E25	MCC1/2 Replacement - Schematic Diagrams
54	E26	MCC1/2 Replacement - Electrical Riser Diagrams
55	E27	MCC1/2 Replacement - Schedules
56	E28	Clarifier 1 - Electrical Site Plan
57	E29	Clarifier 1 - RAS/WAS Pump Station No.1 Electrical Plan
58	E30	Clarifier 1 - MCC-1/2 Consolidated One Line Diagram-Modified
59	E31	Clarifier 2 - Electrical Site Plan
60	E32	Clarifier 2 - RAS/WAS Pump Station No.2 Electrical Plan
61	E33	Clarifier 2 - MCC-1/2 Consolidated One Line Diagram-Modified
62	E34	Clarifier 4 - Electrical Site Plan

Sheet	Drawing	Title
63	E35	Clarifier 4 - RAS/WAS Pump Station No.4 Electrical Plan
64	E36	Clarifier 4 - MCC-3001 One Line Diagram-Modified
65	E37	Electrical Legend and Symbols
66	E38	Electrical General Notes and Specifications
67	E39	Electrical Details-Sheet 1
68	E40	Electrical Details-Sheet 2
69	E41	Electrical Details-Sheet 3

Task 1 – Project Initiation and Meetings

Hazen will hold meetings with the Village during the design of the described improvements. The anticipated meetings are listed below:

- Kickoff meeting to discuss the project details
- Meeting to review 60% design submittal materials, and constructability review with CMAR
- Meetings to review 90% design submittal materials, and constructability review with CMAR

Hazen will organize and lead meetings with Village staff and key members of the project team. During the project initiation kickoff meeting, the overall work plan, project goals, and schedule will be discussed, lines of communication will be established, and data needs will be assessed.

Minutes for each meeting will be prepared and distributed by Hazen.

Deliverable(s):

Minutes from project kick-off meeting, 60% design review meeting, and 90% design meeting

Task 2 – Final Design

Task 2.1 – Prepare 60% Contract Documents

Hazen will prepare 60% design completion contract documents (i.e., drawings and technical specifications). The documents will be prepared for the project to be bid as one project. Content of the 60% drawings and specifications shall meet the following criteria:

Process / Mechanical:

1. Detailed mechanical drawings, including layouts and dimensions for major equipment

and piping (ancillary equipment and support piping will not be included until 90% submittal)

2. Size control valves and other valves and piping; select all valve types
3. Process equipment sizing and selection
4. Select all piping materials
5. Specifications for major process equipment (clarifier mechanisms, pumps MCCs) are substantially complete
6. Equipment schedule

Civil / Site:

1. Preliminary yard piping drawings showing major process piping: electrical duct-banks and manholes

Electrical:

1. Develop project specific single-line diagrams of power distribution systems with equipment elevations as appropriate.
2. Plan view drawings of process areas and electrical rooms indicating locations of electrical equipment (motor control centers, PLC panels, etc.) and process equipment energized by the electrical power distribution system
3. Electrical Site Plan
4. Schematic diagrams
5. Schedules
6. Riser diagrams
7. Details

Instrumentation and Control:

1. Equipment/instrument tagging, naming, and abbreviation conventions
2. Preliminary control strategies
3. P&ID drawings, including loop numbers, instrumentation, and I/O signals
4. Instruments
5. Instrument schedule

6. Sizing of control panels, control system enclosures, and uninterruptible power supplies as appropriate

7. Locate control panels, PLC panels and instruments on mechanical and electrical drawings as appropriate

Permitting Agency Coordination:

1. Coordinate with the Florida Department of Environmental Protection (FDEP) to verify that no permit is required

Prepare a 60% design completion cost estimate that represents an up to date progress estimate of projected probable construction costs. A 60% submittal of plans and specifications will be submitted to the Village for review and comment. Hazen will meet with Village representatives and CMAR to discuss recommendations and to receive Village comments.

Task 2.2 – Prepare 90% Contract Documents

Upon resolution of Village staff 60% design review meeting and CMAR comments, the Hazen shall prepare 90% design completion drawings, specifications and an estimate of probable construction cost. Key specific elements for each discipline are as follows:

Process / Mechanical:

1. Final mechanical plans, sections and details

2. Final specifications for process equipment, piping, valves and other mechanical items

3. Equipment schedule/list

Civil / Site:

1. Final site plans, including limits of site demolition and construction staging areas

2. Final yard piping plans, including horizontal and vertical alignment of utility systems in plan view

3. Soft digs and design of yard piping and electrical duct-bank conflicts

Electrical:

1. Final project specific single-line diagrams of power distribution systems with equipment elevations as appropriate.

2. Final Plan view drawings of process areas and electrical rooms indicating locations of electrical equipment (motor control centers, PLC panels, etc.) and process equipment energized by the electrical power distribution system

3. Final Electrical Site Plan
4. Final Schematic diagrams
5. Final Riser diagrams
6. Final Schedules
7. Final Details

Instrumentation and Control:

1. Final equipment/instrument tagging, naming, and abbreviation conventions
2. Final control strategies
3. Final P&ID drawings, including loop numbers, instrumentation, and I/O signals
4. Final instruments
5. Final schedules (instruments and I/O)
6. Final sizing of control panels, control system enclosures, and uninterruptible power supplies as appropriate
7. Final locations of control panels, PLC panels and instruments on mechanical and electrical drawings as appropriate

A 90% design completion set of construction drawings and specifications will be submitted to the Village for review and comment. Hazen will meet with Village representatives to discuss recommendations and to receive Village comments on the 90% submittal. Upon receipt of 90% comments from the Village, Hazen will proceed with the final Bid Set documents.

Task 2.3 – Prepare 100% Contract Documents

Upon resolution of Village staff 90% design review meeting and CMAR comments, the Hazen shall prepare 100% (Bid Set) design drawings, specifications and an estimate of probable construction cost. The level of accuracy for the 100% design opinion of probable construction will be a Class 2 estimate in accordance with the Association for the Advancement of Cost Estimating (AACE).

Deliverable(s):

2.1 – Preliminary (60%) Construction Documents: Two (2) 22” x 34” hard copy plans, two (2) 11” x 17” hard copy plans, and two (2) hard copies of the Specifications will be provided. One (1) electronic version of the plans will also be provided

2.2 – Class 3 OPCC (60%): Two (2) hard copies and one (1) electronic version of the OPCC will be provided.

2.3 90% Construction Documents: Two (2) 22" x 34" hard copy plans, two (2) 11" x 17" hard copy plans, and two (2) hard copies of the Specifications will be provided. One (1) electronic version of the plans and Specifications will also be provided

2.4 – Class 2 OPCC (90%): Two (2) hard copies and one (1) electronic version of the OPCC will be provided.

2.5 – 100% (Bid Set) Construction Documents: Two (2) 22" x 34" hard copy plans, two (2) 11" x 17" hard copy plans, and two (2) hard copies of the Technical Specifications will be provided. One (1) electronic version of the plans and Technical Specifications will also be provided, in both .pdf and word .doc format.

2.6 – Class 2 OPCC (100%): Two (2) hard copies and one (1) electronic version of the OPCC will be provided.

Task 3 – Coordination With CMAR

It is assumed that the Village will procure this project through a Construction Manager At Risk (CMAR) arrangement with a third party contractor. Hazen shall assist the Village in the following ways related to coordination with the CMAR:

- Hazen shall attend constructability review meetings at the 60% and 90% review milestones.
- Hazen shall receive constructability comments from the CMAR, and implement comments as agreed by the Village and CMAR.
- Hazen shall review guaranteed maximum price (GMP) proposal for first sequence and provide a recommendation of award.

Deliverable(s):

3.1 – Recommendation of Award for First Sequence: Following evaluation of the lowest qualified bidder's proposal, Hazen shall submit to the Village the recommendation for award.

ASSUMPTIONS

1. Site information including, but not limited to, existing as-built drawings will be provided to Hazen by the Village. Drawings available in .dwg format will be obtained by Village and provided electronically.
2. Permit fees will be the responsibility of the Village or CMAR.
3. Standard Front End Documents will be prepared/provided by the Village.

4. Topographical survey information required will be provided by the Village.

5. Ground penetrating radar (GPR) for identification of unknown utilities will be performed by the Village if necessary.

6. SCADA HMI screens will be programmed by Village third-party consultant.

7. All of the work should be considered repair and replacement; therefore, no permits are required through FDEP. However, informal verification of no permit required will be obtained from FDEP.

8. Village of Wellington Building Department dry-run permit review will not be completed.

9. Additional Hazen coordination efforts to accommodate the CMAR's desire to implement additional segments of the project beyond the primary design elements previously identified as included in this Work Order will be performed under another work order or work order amendment.

10. The level of accuracy for the 60% design opinion of probable construction will be a Class 3 estimate in accordance with the Association for the Advancement of Cost Estimating (AACE). The level of accuracy for the 90% and 100% design opinion of probable construction will be a Class 2 estimate in accordance with the Association for the Advancement of Cost Estimating (AACE).

SCHEDULE

Task	Description	Time of Completion from NTP
1	Meeting Minutes	As Applicable
2	60% Drawings and Specifications, Class 3 OPCC	16 weeks
2	90% Drawings and Specifications, Class 2 OPCC	28 weeks
2	100% (Bid Set) Drawings and Specifications, Class 2 OPCC	36 weeks
3	Coordination With CMAR	As needed

COMPENSATION

Compensation for all tasks, unless specifically noted below, will be billed on a lump sum basis based on percent of work complete and total project fees presented in **Attachment A**.

AUTHORIZATION

Work described in this proposal will commence upon authorization to proceed and receipt of a signed agreement.

Hazen and Sawyer, D.P.C.

Signed: Albert Muniz

Name: Albert Muniz, PE

Title: Vice President

Date: 10/14/2022

ATTACHMENT A

BUDGET SUMMARY - Lump Sum

Task No.	Description	BUDGET SUMMARY for Work Order No. 2023-01										
		Vice President	Senior Associate	Associate	Senior Principal Engineer	Senior Principal Engineer	Engineer/ Asst Engr	Principal Designer	Designer	Office	Total Labor	Sub-Consultant
1	**Project Initiation/Meetings**	6	11	9	0	0	14	0	0	0	40	$0
2	**Contract Documents**	16	150	76	120	0	190	82	134	32	800	$88,506
3	**CMAR Coordination**	8	24	4	4	0	24	8	8	8	88	$0
	SUB-TOTAL	**30**	**185**	**89**	**124**	**0**	**228**	**90**	**142**	**40**	**928**	**$88,506**
	Labor Raw Costs	**$245**	**$220**	**$185**	**$163**	**$135**	**$118**	**$128**	**$107**	**$82**		
	Labor Sub-Total	$7,350	$40,700	$16,465	$20,212	$0	$26,904	$11,520	$15,194	$3,280		
	Labor Total										**$141,625**	
	Subconsultant Labor Total											$88,506
	Subconsultant Multiplier											1.0
	Subconsultant Total											**$88,506**
	Reimbursable Expenses											$0
	Project Total											**$230,131**

SUBCONSULTANT PROPOSAL

HILLERS ELECTRICAL ENGINEERING, INC.

October 6, 2022

Mr. Eric Stanley, PE
Senior Principle Engineer
Hazen and Sawyer, PC
2101 Corporate Blvd
Boca Raton, FL. 33431

Subject: Village of Wellington Water Reclamation Facility – Clarifier 1 and 3 RAS/WAS Pump Replacement and Electrical Upgrades Design

Dear Eric:

Hillers Electrical Engineering, Inc. (HEE) is pleased to provide Hazen and Sawyer, PC (Hazen) this proposal for electrical engineering services for the above referenced project. A recently completed master plan for the Water Reclamation Facility identified the Return Activated Sludge (RAS) and Waste Activated Sludge (WAS) pumps to be at the end of their useful lives and recommended replacement with new, more energy efficient, screw centrifugal pumps. Hazen prepared a preliminary design report in February 2022 that determined the preliminary pump design criteria, together with necessary related civil, mechanical, electrical, and instrumentation improvements including replacement of existing MCC-1/MCC-2, and the associated underground electrical ductbanks and wiring to Clarifiers 1 through 3 that have reached the end of their service life.

The Village will implement construction of the project through the Village's Construction Manager At Risk (CMAR).

The design will assume a phased construction approach will be taken; and the proposed phasing, outlined below, may be combined, or further subdivided, by the Village and CMAR contractor to meet scheduling and budgetary needs:

1. *Phase 1* - RAS/WAS Pump Station No. 3 (at Clarifier 3) including rerouting electrical and controls ductbanks for Clarifier 3 electrical and control and RAS/WAS pumps from MCC's 1 and 6 in the old Administration Building, to MCC 3001 or 3002 and controls from PLC CP-1 in the old Administration Building to PLC MCP-2 in Generator Building.
2. *Phase 2* - MCC-1 and MCC-2 Replacement (includes consolidation of loads from both MCCs into a common new MCC-1)
3. *Phase 3* - RAS/WAS Pump Replacement at Clarifier No.1.

Anticipated electrical improvements for each RAS/WAS Pump Station include:

- Design demolition of existing variable frequency drives (VFD's) and motor starters at existing motor control centers (MCCs) and replace with new (VFDs).
- Design of new electrical, instrumentation and control raceways and wiring for each pump, control element and instrument.
- Design of new hand-off-auto (HOA) and disconnect switches at each pump.
- Design the power of one (1) WAS and two (2) RAS magnetic flowmeters, design signal

interface wiring and raceway to plant process control system.

- Design the interface of seal water assemblies to each new pump VFD consisting of hard-wired solenoid valves and flow switches to enable seal water flow when pump in operation.
- The Village has performed an inspection of existing underground raceways for viability for re-use in routing new wiring from power and control sources to the RAS/WAS Pump Station(s) and has determined that the existing underground raceway is not viable to be used in routing new conductors/cables; the Village has indicated that the project shall design new underground power, control, and signal ductbank raceways, manholes and pull boxes.
- Relocation of Clarifier No.3, including RAS Pump Nos. 5 and 6 and WAS Pump No.3, power, and control raceway, wiring and controllers to MCC 3001 (or 3002) and PLC MCP-2 in the Generator/Electrical Building.
- Replacement of existing Motor Control Center MCC-2; including wiring and raceway to the load served and to the appropriate process control panel. Existing RAS Pumps No. 3 and 4 and WAS Pump No.2 (Clarifier 2) will be relocated in a follow up project and will remain on existing MCC 2. The abandoned MCC 2 will be demolished and removed under the follow up project.
- Replacement of existing Motor Control Center MCC-1 (1A/1B); RAS Pump Nos. 1 and 2 (Clarifier No.1) and other connected loads including wiring and raceway to the load served and to the appropriate process control panel. MCC-1 also powers MCC-2 and will be demolished in the follow up project when all remaining MCC-2 loads are removed.

Task 1 – Project Initiation and Meetings

HEE will attend meetings with Hazen and the Village during the design of the described improvements. All meetings will be held at the Village WRF. The anticipated meetings are listed below;

- Project Kickoff
- 60% design review meeting /constructability review meeting with CMAR
- 90% design review meeting/constructability review meeting with CMAR

Hazen will organize and lead meetings, take and issue meeting minutes.

Task 2 – Final Design

HEE will prepare design drawings for electrical systems, as appropriate, for the project elements described previously. Submittals are anticipated to be 60% design, 90%, and 100% Final/Permit Documents.

Task 3 – Coordination with CMAR Contractor

HEE will assist Hazen with CMAR constructability reviews at the 60% and 90% design milestone review meetings including:

- Implementation of CMAR upon review comments as agreed upon by the Village.
- Answer CMAR questions on the 100%/Permit documents with regards to finalizing CMAR pricing.

- Review final CMAR pricing related to electrical systems for input to Hazen and the Village in determining to move forward with the construction phase.

Anticipated Drawings:

Phase 1: RAS/WAS Pump Station No. 3 (at Clarifier 3):
Electrical:
Clarifier No.3 Electrical Demolition Plan
Clarifier No.3 Modified Electrical Plan
RAS/WAS Pump Station No.3 Electrical Demolition Plan
RAS/WAS Pump Station No.3 Modified Electrical Plan
MCC-3001 (or 3002) One Line Diagram- Demolition
MCC-3001 (or 3002) One Line Diagram- Modified
Schematic Diagrams
Electrical Riser Diagrams
Schedules

Phase 2: MCC 1 /2 Replacement:
Electrical:
Existing Administration Building Electrical Demolition Plan
Existing Administration Building Modified Electrical Plan
MCC-1 One Line Diagram-Demolition
MCC-2 One Line Diagram - Demolition
MCC-1/2 Consolidated One Line Diagram-Modified
Schematic Diagrams
Electrical Riser Diagrams
Schedules

Phase 3: RAS/WAS Pump Replacement at Clarifier No.1:
Electrical:
RAS/WAS Pump Station No.1 Electrical Plan
MCC-1/2 Consolidated One Line Diagram-Modified
Electrical Riser Diagrams
Schedules

Common Drawings:
Electrical Legend and Symbols
Electrical General Notes and Specifications
Electrical Site Plan Sheet 1
Electrical Site Plan Sheet 2
Electrical Details-Sheet 1
Electrical Details-Sheet 2
Electrical Details-Sheet 3

Assumptions:

- All background drawings will be furnished by H&S/Village in AutoCAD format.
- HEE will furnish electronic files to Hazen for deliverables. All reproduction of necessary submittal deliverable documents to the Village will be by Hazen.
- Site information including, but not limited to, existing as-built drawings will be provided to Hazen/Village to HEE. Drawings available in .dwg format will be obtained by Hazen/Village and provided electronically.
- Instrumentation and control design is by Hazen.
- No Permit fees are included with this proposal and are the responsibility of others.
- Any topographical survey information required will be provided by the Hazen/Village.
- Record drawings will be relied upon for identification and location of underground utilities. No fees for underground exploration (pot-holing, soft-digs) are included with this proposal.
- Drawings will be grouped by phases within the overall design package; there will be one set of specifications for the design.
- CMAR will review the submittals and provide costs for the design phases. No opinions of probable construction cost are included in this proposal.
- No construction phase services are included in this proposal.

Our proposed lump sum Engineering Design fee is: $88,506.00

HEE wishes to thank Hazen for the opportunity to assist with this project. Please do not hesitate to call me if you have any questions regarding this proposal or any other related matter.
Sincerely,

Mark E. Luther, PE
MEL/mel

Village of Wellington WRF Clarifier 1 and Clarifier 3 RAS-WAS Pump Replacement and Electrical Upgrades
Hazen & Sawyer
HILLERS ELECTRICAL ENGINEERING, INC.
Scope Fee Breakdown - Design Phase
Date: 10/06/22

Rate	**$225.00**	**$192.00**	**$153.00**	**$147.00**	**$129.00**	**$93.50**	**$90.00**	**$81.00**	**$138.00**	**$78.00**				
	Principal	Chief Engineer	Project Manager	Professional Engineer	Lead Engineer	Programmer	Designer	CADD/ Technician	Construction Coordinator	Adminisrative	Total Task	Expenses	SUBTOTAL	TASK TOTAL
PHASE OF WORK	Hours	Hours	Hours	Hours	Hours			Hours	Hours	Hours	Hours	Cost	Cost	Cost
Task 1: Project Initiation and Meetings														**$3,720.00**
Kickoff Meeting	2			2							4		$744.00	
60% Design/CMAR Constructability Review Meeting	4			4							8		$1,488.00	
90% Design/CMAR Constructability Review Meeting	4			4							8		$1,488.00	
Task 2: Final Design														**$77,970.00**
60% Design (Drawings, Specs)	12			175			140				327		$41,025.00	
90% Design (Drawings, Specs)	8			125			80				213		$27,375.00	
100% Design - Permit (Drawings, Specs)	6			40			26				72		$9,570.00	
Task 3: Coordination with CMAR Contractor														**$6,816.00**
60% CMAR Review Comments	3			8							11		$1,851.00	
90% CMAR Review Comments	3			8							11		$1,851.00	
Final Pricing Question Responses	3			6							9		$1,557.00	
Final Pricing Review Assistance	3			6							9		$1,557.00	
Proposal Total	48			378			246				672		**$88,506.00**	**$88,506.00**