



Gregory L. Geist  
Director

Board of County Commissioners  
Clackamas County

Members of the Board:

Approval of Amendment #4 to the Contract Documents with CH2M Hill Engineers Inc.  
for Tri-City Water Resource Recovery Facilities  
Solids Handling Improvements Project for Additional Integration Services

<b>Purpose/Outcomes</b>	Tri-City Solids Handling Improvement (TCSHI) Project for additional oversight and support associated with system integration and start-up..
<b>Dollar Amount and Fiscal Impact</b>	Funding is available in the FY 2019-2020 budget. This amendment increases contract by \$78,295 for a new total contract value of not to exceed \$7,308,908.
<b>Funding Source</b>	Water Environment Service FY 2019-2020 annual budget with SRF loan. No General Funds impacted.
<b>Duration</b>	March 30, 2017 to June 30, 2021
<b>Previous Board Action</b>	Approval of Original Contract with CH2M Hill 033017 IV. 1 & 2 Approval of Amendment #1, Phase 1 Engineering Services 091717 V2. Approval of Amendment #3 Engineering Services during construction of Tri-City Water Resources Recovery Facility Solids Handling Improvements Project 081618 V1
<b>Strategic Plan Assignment</b>	1. This project supports the WES Strategic Plan to provide partner communities with reliable wastewater infrastructure to serve existing customers and support future growth. 2. This project supports the County Strategic Plan of building a strong infrastructure that delivers services to customers.
<b>Counsel Review</b>	Approved as to form 12/23/2019
<b>Contact Person</b>	Lynne Chicoine, Capital Program Manager – Water Environment Services – 503-742-4559

**BACKGROUND:**


The Solids Handling Project was identified in the 2008 Tri-City Master Plan as required to meet capacity requirements for growing service areas. Design of the facilities began in late 2015 with conceptual design being completed by MWH Global. In March 2017, WES contracted with CH2M Hill Consulting Engineers to complete the design. Design of the facilities was completed in May 2018. The project was bid and awarded to a construction contractor on July 2018 for \$33.5 million.

This Amendment includes additional oversight and support associated with system integration and start-up by CH2M Hill Consulting Engineers, Inc. and Portland Engineering, Inc. Services include meetings to review additional scope items and coordinate schedules and activities, performance of additional tasks associated with review of testing procedures, protocols and forms, and preparing written reviews, factory demonstration testing, quality assurance activities, functional testing, Part 2 Observation and Package control System review.

**RECOMMENDATION:**

Staff recommends that the Board of County Commissioners of Clackamas County, acting as the governing body of Water Environment Services, approve and execute the Amendment #4 to the TCSHI Project for additional oversight support associated with system integration and startup. for \$78,295 for a total contract value not to exceed \$7,308,908.

Respectfully submitted,



Lynne Chicoine, Capital Program Manager  
Water Environment Services

Placed on the \_\_\_\_\_ agenda by Procurement.

AMENDMENT #4

TO THE CONTRACT DOCUMENTS WITH CH2M HILL ENGINEERS, INC. FOR THE TRI-CITY WATER RESOURCE RECOVERY FACILITY SOLIDS HANDLING IMPROVEMENT PROJECT Contract #2274

This Amendment #4 is entered into between CH2M Hill Engineers, Inc. ("Contractor") and Water Environment Services ("District") and it shall become part of the Contract documents entered into between both parties on March 30, 2017 ("Contract").

The Purpose of the Amendment #4 is to make the following changes to the Contract:

- 1. ARTICLE 2 - SERVICES OF THE CONSULTANT is hereby changed as follows: District requires additional time to oversee panel testing and more time in the field during Start up and PEI integration. District is also requiring more formal documentation during testing. The additional Scope of Services for PEI integration services is attached as Attachment D and hereby incorporated by reference.
2. ARTICLE 6 - PAYMENTS TO CONSULTANT is hereby changed as follows: Additional PEI integration services is approved for \$78,295.00. The updated fee schedule is included at the end of Attachment D. The maximum compensation authorized under this Contract shall not exceed \$7,308,908.00.

Table with 2 columns: Description and Amount. Rows include Original Contract (\$580,000.00), Amendment #1 (\$2,267,500.00), Amendment #2 (\$47,813.00), Amendment #3 (\$4,335,300.00), Amendment #4 (\$78,295.00), and Total Amended Contract (\$7,308,908.00).

Except as expressly amended above, all other terms and conditions of the Contract shall remain in full force and effect. By signature below, the parties agree to this Amendment #4, effective upon the date of the last signature below.

CH2M Hill Engineers, Inc.
2020 SW 4th Avenue, Ste. 300
Portland OR 97021

Water Environment Services

R Brady Fuller
Authorized Signature

Chair

R BRADY FULLER
Name / Title (Printed) CLIENT ACCT MANAGER

Recording Secretary

DECEMBER 16, 2019
Date

Date

193470-95 FBC / Colorado
Oregon Business Registry Number

Approved as to Form:

County Counsel
Date 12/23/19

**ATTACHMENT D**

**ADDITIONAL SCOPE OF WORK FOR PEI INTEGRATION SERVICES**

EXHIBIT A – SCOPE OF WORK  
 Water Environment Services of Clackamas County  
 Tri-City WRRF Solids Handling Improvements– P632162  
 Additional Integration Services

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## Background

Water Environment Services of Clackamas County (District) and CH2M (now Jacobs) (Consultant) recently completed design of the solids handling improvements at the Tri-City Water Resource Recovery Facility (TCWRRF). District prefers that Consultant provide additional oversight and integration support to Portland Engineering, the District's Integrator of Record to whom District requested Consultant contract to provide integration services.

## Assumptions – General

No changes to previously authorized work.

## District-provided Services

No changes to previously authorized work.

## Task 1 Project Management

### 1.1 Project Management

Provide project management services for these additional services.

**Task 1 Deliverables:** No new deliverables.

## Task 2 Partnering Workshops

No changes to previously authorized work.

## Task 3 Engineering Services During Construction

No changes to previously authorized work.

## Task 4 Public Outreach Support

No changes to previously authorized work.

## Task 5 Control System Software Services

### 5.9 Additional Integration Services

- 1) **Kickoff Meeting.** Attend kickoff meeting between PEI and Jacobs to review additional scope items and coordinate schedules and activities.

Deliverables: Meeting agenda and notes.

- 2) **Review PEI Factory Testing Procedures.** PEI will develop testing protocols and forms to be performed during Factory Demonstration Testing (testing of all HMI and PLC code in PEI's office as contemplated in the Factory Software Acceptance Testing Task 5.5 of the authorized scope). Jacobs will perform the following additional tasks associated with reviewing testing procedures.
  - a) Participate in meeting with PEI to review testing protocols and forms. Complete by December 15, 2019.

- b) Prepare written review comments.

Deliverables: Written review comments.

- 3) **Additional Quality Assurance Activities.** Jacobs will review PLC codes developed by PEI, including spot check review and coordination with PEI regarding testing approach, and agree on approach. Review format, review templates for HMI and PLC.

Deliverables: Written review comments.

- 4) **Factory Demonstration Testing (FDT).** During the already-scoped Task 5.5 Factory Software Acceptance Testing (where participation solely by District and not Jacobs was anticipated), Jacobs will participate in FDT as active participant and prepare written notes summarizing observations and action items for PEI to implement. Jacobs will verify every block is tested, and each loop is tested.

Deliverables: Brief written daily FDT observations.

- 5) **Schedule Review and Management.** As part of current scope, Jacobs will perform monthly review of PEI's project schedule, and compare to monthly schedule updates from Contractor.

Deliverables: None.

- 6) **Functional Testing Part 2 Observation.** Jacobs will provide observation of FT2 activities on-site, starting with initial tasks. Jacobs will provide daily written summaries for Owner and Construction Manager and noting actions required by PEI to respond to items observed in FT2.

Deliverables: Brief written daily FT2 observations.

- 7) **Package Control Systems Review.** Provide additional review of package control systems beyond that assumed for submittal review process. Additional review will consist of review of PLC interface parameters furnished by vendor, HMI, functional descriptions, alarms, and operator adjustable parameters. Provide review of PEI work to interface plant HMI to vendor package control system.

Deliverables: Brief written review comments of package system integration approaches.

## Task 6 Construction Management/Field Services

No changes to previously authorized work.

## Task 7 O&M Manual and Startup Support

No changes to previously authorized work.

## Task 8 Post Construction, Construction Closeout and Documentation

No changes to previously authorized work.

## Task 9 Safety

No changes to previously authorized work.

## Task 10 Utility Management Systems

No changes to previously authorized work.

## Additional Services

No changes.

## Project Schedule

In coordination with ongoing Construction Management Services.

## Budget

Staff (except Project Manager, Construction Manager and Resident Engineer) will bill at a raw labor multiplier of 3.15. Field staff, (Project Manager, Construction Manager and Resident Engineer) will bill at a raw labor multiplier of 2.7.

Labor billing rates are current at the time of the execution of the agreement and will be adjusted annually (January 1) per the Bureau of Labor and Statistics Consumer Price Index – Seattle Area CPI-All Urban Consumers.

The current authorized compensation limit for services performed under this scope of work shall not exceed the amount shown in Exhibit B. Exhibit B also shows the basis for labor and expenses used to develop the fee.



Exhibit B

Tri-City WRRF Solids Handling Improvements- Additional Integration Services	Project Manager	Design Manager		Labor Hours	Labor Dollars	PEI	Expenses	TOTAL LABOR & EXPENSES
	Brody Fuller	Ben Herman	Jerry Nordal					
Rate	\$229.00	\$229.00	\$217.23	\$115.79				
<b>1.0 Project Management</b>								
1.1 Project Management	12				12 \$ 2,748	\$0	\$0	\$ 2,748
<b>5.9 Additional Integration Services</b>								
5.9.1 Kickoff meeting	1	1	4	1	7 \$ 1,443	\$0	\$0	\$ 1,443
5.9.2 Review PEI Factory Testing Procedures			16		16 \$ 3,476	\$2,620	\$0	\$ 6,096
5.9.3 Additional Quality Assurance Activities			80		80 \$ 17,378	\$0	\$0	\$ 17,378
5.9.4 Factory Demonstration Testing (FDT)			24		24 \$ 5,214	\$0	\$510	\$ 5,724
5.9.5 Schedule Review and Management					0 \$ -	\$0	\$0	\$ -
5.9.6 Functional Testing Part 2 Observation			60	60	180 \$ 26,642	\$0	\$5,109	\$ 31,742
5.9.7 Package Control Systems Review			60		60 \$ 13,034	\$0	\$0	\$ 13,034
<b>Total Hours</b>	<b>13</b>	<b>1</b>	<b>264</b>	<b>81</b>	<b>358 \$ 69,934</b>	<b>\$0</b>	<b>\$0</b>	<b>\$ 78,164</b>
	\$ 2,977	\$ 229	\$ 57,249	\$ 9,379	\$ -	\$ 69,934	\$ 2,620	\$ 5,610
								Labor \$69,934
								Expenses \$8,230
								5% markup on Subconsultants \$131
								<b>\$78,295</b>
All staff billed at 3.15 raw labor multiplier except as noted in scope of work.								