

**RESOLUTION AUTHORIZING CONTRACT MODIFICATION 2021-02 TO OPERATIONS MANAGEMENT INTERNATIONAL/JACOBS**

**MOTIONED BY:** Velazquez  
**SECONDED BY:** Guzman

**WHEREAS**, the North Hudson Sewerage Authority (hereinafter "Authority") is a public body, duly formed under the Sewerage Authorities law, constituting Chapter 138 of the Laws of New Jersey of 1946, as amended (Chapter 14A of Title 40 of the New Jersey Statutes Annotated) and possesses the powers set forth therein; and

**WHEREAS**, the Authority has contracted with Operations Management International, Inc., Denver, CO. in the amount of \$8,216,474.00 for the operation, maintenance and management of the Authority's sewerage collection and treatment facilities pursuant to the provisions of the Wastewater Treatment Privatization Act, N.J.S.A. 58:27-1 et seq; and

**WHEREAS**, Operations Management International, Inc., has submitted a proposal(Exhibit "A") for additional compensation in the amount of \$349,943.00 related to the Adams Street Ultraviolet Disinfection System Upgrades; and

**WHEREAS**, the Facilities Review Board has reviewed the proposal and recommends the approval of the requested contract.

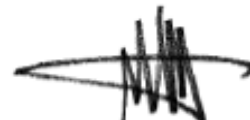
**NOW, THEREFORE, BE IT RESOLVED** that the Authority hereby authorizes the execution and implementation of said contract modification 2021-02 in the amount of \$349,943.00.

**DATED: SEPTEMBER 16, 2021**

**RECORD OF COMMISSIONERS' VOTE**

	<b>YES</b>	<b>NO</b>	<b>ABSENT</b>
Commissioner Soares	x		
Commissioner Kappock	x		
Commissioner Marotta			x
Commissioner Gardiner			x
Commissioner Friedrich	x		
Commissioner Guzman	x		
Commissioner Velazquez	x		
Commissioner Barrera	x		
Commissioner White	x		

**THIS IS TO CERTIFY THAT THIS RESOLUTION WAS DULY ADOPTED BY THE NORTH HUDSON BOARD OF COMMISSIONERS ON SEPTEMBER 16, 2021.**



\_\_\_\_\_  
**SECRETARY**



Operations & Maintenance  
NHSA Project  
1600 Adams Street  
Hoboken, NJ 07030  
T +1.201.795.1411  
F +1.201.420.6917  
www.jacobs.com

Mr. Fredric J. Pocci, P.E.  
Authority Engineer  
North Hudson Sewerage Authority  
1600 Adams Street  
Hoboken, New Jersey 07030

August 19, 2021

Subject: Proposed Out of Scope Project: OMI 2021-02  
Adams Street Ultraviolet Disinfection System Upgrades

Dear Mr. Pocci,

Operations Management International, Inc. ("JACOBS OMI") is pleased to provide North Hudson Sewerage Authority ("Authority") our proposal for Upgrades to the Trojan UV Disinfection System.

**Overview:**

The current Ultraviolet Disinfection (UV) system was installed at the Adams Street Wastewater Treatment Plant in 2012. Since that time, the system has been operating under stressed conditions, as the upstream PURAC filtration system began failing. Each time the PURAC system failed, it sent sand to the UV system which would pile up and cause damage to the automatic wiper system. After 10 years of operating under these stressed conditions, the UV system is in need of a rehabilitation. Specifically, the wiper system is currently failing causing the wipers not to clean the bulbs and resulting in higher effluent fecal results.

When first installed, the Trojan UV system project cost about Two Million Dollars, of which about One Million Dollars was for the cost of the UV equipment. A full replacement of the system under a capital project does not seem to be necessary at this time. If the system was replaced, it would likely be with the same Trojan UV3000Plus system that is currently installed. Instead of a wholesale replacement, we are recommending a system overhaul. This would include an upgrade of the SCADA components of the system, as well as replacement of the sensors, plugs, receptacles, and hydraulic wiping (cleaning) system. A full scope of services is provided below. With these repairs and replacement components, we believe the exiting UV system could see another 10 years of use at the cost of about \$350,000.

**Scope of Services and Specifics:**

The rehabilitation of the Trojan UV3000Plus system would include:



1. SCADA Upgrades to the System Control Center (SCC). This includes a replacement CompactLogix PLC Processor, Modbus, Screen, and programming. All programming and installation work will be performed by a Certified Trojan Technician.
2. SCADA Upgrades to the Hydraulic System Controller. This includes proving and installing a new Controller Kit for the hydraulic cleaning system. The new controller will work with the upgraded System Controller. All programming and installation work will be performed by a Certified Trojan Technician.
3. Replacement UV Intensity Sensors for each bank of bulbs. These six sensors are all required for automatic control of the UV intensity.
4. Replacement Plugs and Receptacles for all 78 racks of bulbs. These plugs are used each time a bank of bulbs is removed from cleaning. They have begun to fail due to age and use, and replacement is recommended.
5. Replacement Hydraulic Wiper Cylinders for all 78 racks of bulbs. These cylinders are currently failing and causing the automatic cleaning system to malfunction.
6. Replacement Hydraulic Pump Assembly. This is the entire pump assembly for the hydraulic cleaning system. The old pump is still operational, and will be rehabilitated and put into inventory for spare parts.
7. Power Delivery Controller (PDC) Controller Board Kits. This is the main control board for each of the six banks of bulbs. Replacement boards will ensure proper communication with the new SCADA system.

The majority of the work above will be completed by the Jacobs Regional Maintenance Team under the leadership of Regional Maintenance Director Kyle Arnold. The work will also be supervised by two Trojan Technicians who will be on site for three days. All of the SCADA work includes programming and installation by Trojan Technicians.

All of the equipment being purchased is directly through Trojan Technologies and is the direct upgrade replacement equipment for the existing Trojan UV3000Plus system.

**Schedule:**

Once the project is approved, the project is expected to take approximately 3 months to complete. The equipment lead times will take about 8-10 weeks, and then actual installation should be able to be completed in about 2-4 weeks.

**Cost:**

CH2M HILL OMI's proposed cost estimate for the project is \$349,943.00 (Three Hundred Forty Nine Thousand Nine Hundred Forty Three Dollars). This amount is based on the estimated direct costs and includes CH2M HILL OMI's markup of 15% to cover general and administrative costs, overhead, and profit. CH2M HILL OMI will invoice on a lump sum basis once the equipment is purchased and invoiced. A second Lump Sum payment will be requested once the project is complete.



The out of scope project costs are in addition to the Agreement's base fee and any other Agreement budget amounts.

<b>PROJECT COSTS - SUMMARY TABLE</b>		<b>COST (\$)</b>
<b>1</b>	SCC SCADA Upgrades - Parts	\$ 33,766.20
<b>2</b>	SCC SCADA Upgrades - Trojan Technician Labor	\$ 4,300.00
<b>3</b>	HSC Controller Upgrades - Parts	\$ 4,828.00
<b>4</b>	HSC Controller Upgrades - Trojan Technician Labor	\$ 1,460.00
<b>5</b>	Equipment – UV Intensity Sensors x 6	\$ 16,013.22
<b>6</b>	Equipment – Plugs and Receptacles x 78	\$ 15,225.60
<b>7</b>	Equipment – Wiper Cylinders x 78	\$ 167,854.44
<b>8</b>	Equipment - Hydraulic Pump Assembly	\$ 2,297.85
<b>9</b>	Equipment – PDC Controller Boards x 6	\$ 12,583.68
<b>10</b>	Trojan Technical Installation Labor and Expenses (2 Trojan Technicians for 3 days)	\$11,860.00
<b>11</b>	JACOBS OMI (15% O&P)	\$ 40,528.35
<b>12</b>	Jacobs Regional Support for Installation (1 Mechanics and 1 electrician for 2 weeks)	\$39,225.66
<b>TOTAL COST</b>		<b>\$ 349,943.00</b>

**TOTAL ESTIMATED COST: \$ 349,943.00**

If you are in agreement with this letter, please provide NHTSA Board approval in the form of a signed resolution. JACOBS OMI will proceed with the out of scope services in accordance with the above schedule.

JACOBS OMI appreciates the opportunity to provide these services. If you need additional information or have any questions regarding this letter, please feel free to contact me by phone at 201.795.1411 or by e-mail at Don.Conger@jacobs.com.

Thank you for your consideration regarding this proposed out of scope project.



Regards,

A handwritten signature in black ink, appearing to read "Donald R. Conger III".

Donald R. Conger III, P.E.  
Project Director

Cc: Richard Wolff, NHTSA Executive Director  
Kevin Dahl, Jacobs OM  
Phil Reeve, Jacobs OM

Attachments:

Trojan SCC Upgrade Proposal Dated 4/29/2021  
Trojan HSC Upgrade Proposal Dated 5/6/2021  
Trojan Parts Quote for Sensors Plugs Receptacles and Cylinders Dated 8/3/2021  
Trojan Parts Quote for Controller Board Dated 8/3/2021  
Trojan Quote for Travel and Labor for Technicians Dated 8/6/2021

# **UV3000PLUS™ DISINFECTION SYSTEM SCC UPGRADE RECOMMENDATIONS**

**For**

**NORTH HUDSON, NJ WWTP**

**Date: April 29, 2021**

**Report No: Project No 511620  
CT 141435**

## **NOTICE**

**This report is proprietary and may not be reproduced or  
distributed to parties not directly associated with the  
North Hudson, NJ WWTP  
without the express written permission of Trojan Technologies.**

### System Control Center (SCC) Scope of Supply: Parts \ Programming

The components to upgrade to an L33er, are detailed in the table below. The prices do not allow for site installation services. Site service is described separately. Trojan requests an uploaded copy of the existing program prior to conversion to ensure code and settings are up to date. If not, Trojan would use the latest copy posted to our servers.

QTY	DESCRIPTION	UNIT MODEL NUMBER / COMMENT
1	Processor: - AB CompactLogix L33er (Programmed)	Allen Bradley 1769-L33ER Processor Part # 916772
1	Prosoft MVI69E-MBS Modbus Serial Interface Module	Serial communications Part # 917411
1	PLC, AB HMI PV+7 12 512MB, HMI Adaptor Plate, 1GB SD Card	Kit Part # 917662-003
1	CF card for PLC	Included
1	PLC Programming, configuration & testing	Programmed and configured to site control philosophy
	<b>Total Parts Price USD\$</b>	<b>33,766.20</b>

### Site Service (Trojan Certified Technician)

Certified Trojan Technician required to commission the SCC upgrades. The following site service will be required to complete the inspection, commissioning and startup of the new L33er processor and associated hardware.

Description	Certified Trojan Technician	Total Price (US\$)
Travel Days	2	1840.00
Onsite days	1	1460.00
Airfare (US\$) if applicable	1	1200.00
<b>Total Service Price USD\$</b>		<b>4300.00</b>

**Site Responsibility:**

Site will be responsible for making the SCC available during processor switchover and allowing Trojan equipment to be put in Local for up to one 8-hour day

**Trojan Responsibility:**

Submittal drawing(s) for site approval (or approval as noted).

Installation (power, mounting, configuration, communications, etc.) of the new PLC, HMI and associated hardware;

Verifying correct SCC/PLC/HMI operation;

**Documentation:**

One electronic copy of the following documentation will be supplied by Trojan:

1. Appropriate corrected sections for the original O&M Manuals.

**Terms & Conditions:**

Trojan Technologies Terms and Conditions apply

Payment Net 30 days.

Quote validity- Dec 31, 2021

Delivery is 10-12 weeks to be confirmed at order placement.

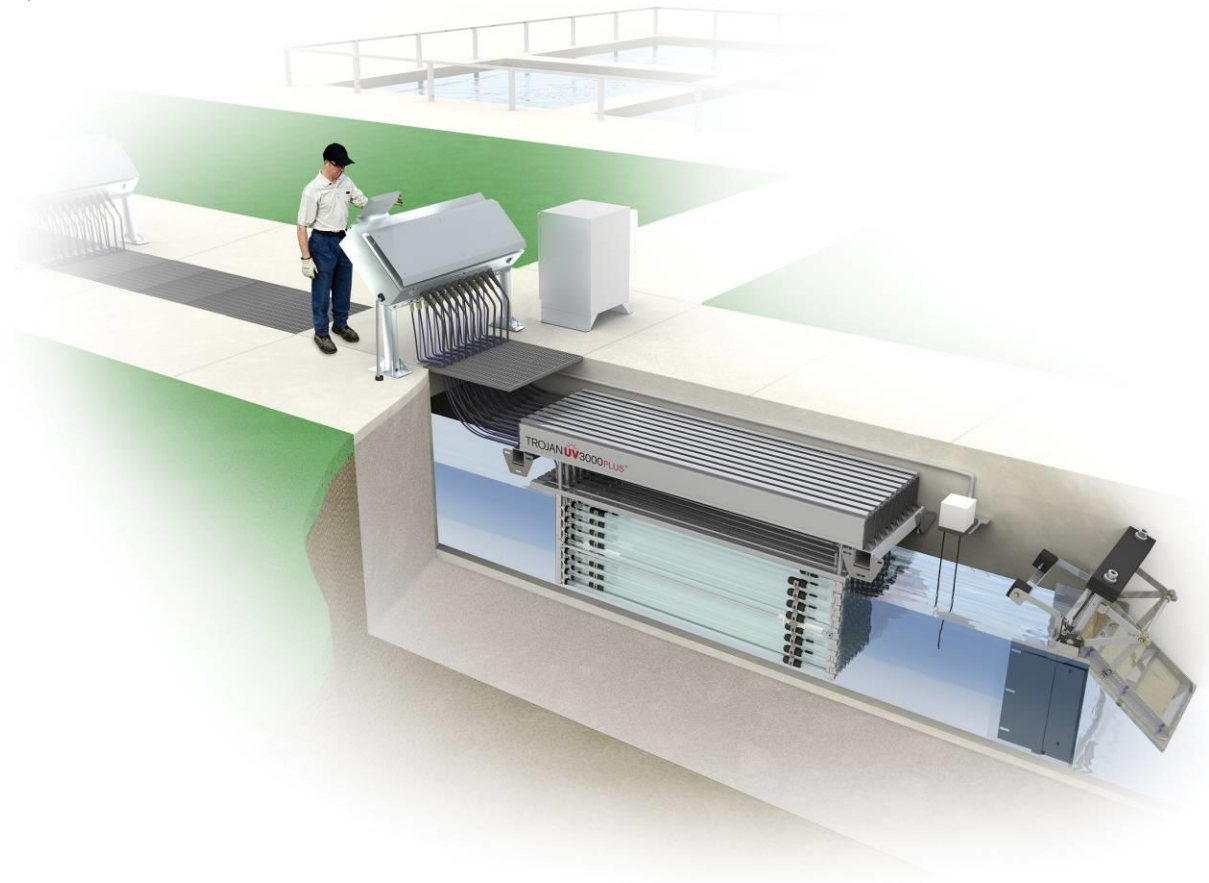
Hardware Warranty is one (1) year materials.



# TROJAN **UV3000PLUS**™

## Hydraulic System Controller upgrade

May 6, 2021



The TrojanUV3000Plus™ is operating in **over 1300** municipal wastewater plants around the world. Disinfecting **over 17 billion** gallons a day, the TrojanUV3000Plus™ has become the reference standard in the industry.



May 6, 2021

In response to the troubleshooting performed with Trojan Technical Assistance (CT141421), we are pleased to provide a quotation to upgrade the existing “TWIDO” controller to “WAGO” which is the current controller offering.

With best regards,

Mike D’Oria

3020 Gore Road  
 London, Ontario N5V 4T7  
 Canada  
 (519) 457-3400 ext.2556  
 easternus@trojantechnologies.com

**DESIGN CRITERIA**

North Hudson, NJ

Peak Design Flow:	<b>45 MGD</b>
UV Transmittance:	<b>65%</b> (minimum)
Total Suspended Solids:	<b>10 mg/l</b> (30 day average, grab sample)
Disinfection Limit:	<b>200 per 100 ml</b> , based 30 day geometric mean.
Validation Factors:	<b>0.98</b> end of lamp life factor (Low-Pressure Amalgam Lamps) <b>0.95</b> fouling factor (ActiClean-WW™ Chemical / Mechanical Cleaning System)

**Scope of Supply: HSC Backplate Controller Upgrade (TWIDO to WAGO)**

**G4 WAGO Hydraulic controller upgrade.**

- (1) ONE 917578-8B480 HSC KIT, COMPACT HSC TWIDO TO G4 WAGO
- Kit includes hardware and programmed controller.
  - Attached are the instructions for installation that will accompany the parts.

Parts and programming \$4,828.00

**Service:**

On-site Service – 4-6 hours minimum per HSC

Service \$1,460.00

Trojan Certified Service Controls Technician is responsible for:

1. Correct installation of the HSC controller/ Testing
2. Providing operator training.

**COMMERCIAL INFORMATION**

**Quotation value \$ 6,288.00 USD**

This price excludes any taxes that may be applicable and is valid for 90 days from the date of this letter.

Freight will be charged at time of delivery (regular ground service)

Terms: Net 30 days

**EQUIPMENT WARRANTIES**

1. Trojan Technologies warrants hydraulic system controller parts from 1 year from installation.
2. **In accordance with our terms & conditions refer to our website for details.**  
<https://www.trojantechnologies.com/sales-terms-conditions/>



**QUOTE**

A division of Trojan Technologies Group ULC  
 3020 GORE ROAD  
 LONDON, ONTARIO, CANADA N5V 4T7  
 T 519.457.3400 F 519.457.3030 www.trojanuv.com

**Original**

**QUOTE FOR:** OPERATIONS MANAGEMENT INTERNATIONAL  
 INC- JACOBS  
 125 BROADWAY AVENUE  
 OAK RIDGE, TN  
 37830  
 UNITED STATES

**SHIP TO:** OPERATIONS MANAGEMENT INTERNATIONAL  
 INC- JACOBS  
 1600 ADAMS STREET  
 HOBOKEN, NJ  
 07030  
 UNITED STATES

FOR CUSTOMER SERVICE, CONTACT MIKE D'ORIA  
 VOICE - 1-800-294-2150  
 FAX - 1-800-291-0205  
 EMAIL - southernus@trojanuv.com

**FORWARD AGENT:** EXW  
**CUSTOMER #:** 706404  
**QUOTE #:** 124553  
**QUOTE DATE:** 08-03-2021  
**REFERENCE:** PJ 511620  
**LOB:** W97 AFTERMARKET PARTS

**We thank you for your inquiry.**

QTY	UNIT	ITEM	PRICE	UNIT	AMOUNT
<b>ATTN: DEJAN DAVIDOVIC</b>					
<b>ALLOW 4 to 6 WEEKS TO SHIP ORDER COMPLETE</b>					
6.00	EA	931096	2097.28EA	NJT	12583.68
		SRV PCB KIT, 07UV3+ CCB MAIN			
6.00	EA	015239	154.78EA	NJT	928.68
		SLEEVE, SNSR UV3+ 25x28x1832			
6.00	EA	015393-S-158NB	2514.09EA	NJT	15084.54
		SENSOR ASSY, UV3+ NIST S-158NB			
78.00	EA	914374-006GF	124.97EA	NJT	9747.66
		PLUG, UV3+ PDC MODULE 6' GF			
78.00	EA	914343	70.23EA	NJT	5477.94
		RECEPTACLE, UV3+ PDC			
64.00	EA	326411	2027.59EA	NJT	129765.76
		CYLINDER, WIPER UV3+ GEN 2			
1.00	EA	907602-3646	2297.85EA	NJT	2297.85
		PUMP ASSY, 3.0GPM 460-480/3/60			



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<b>ATTN: DEJAN DAVIDOVIC</b>					
<b>ALLOW 4 to 6 WEEKS TO SHIP ORDER COMPLETE</b>					

GOODS	COSTS	TOTAL USD
175886.11		175886.11

**DELIVERY TERMS:** NO URGENCY FOR DELIVERY

**PAYMENT TERMS:**

**FREIGHT MAY BE ADDED TO THE TOTAL OF THIS QUOTE ONLY IF REQUESTED.**

**SUBJECT TO SALES TAX, WHERE APPLICABLE. Tax to be included if not tax exempt.**

**GST# R105405385**

**THIS QUOTE EXPIRES: 09-02-2021**

**U.S. CUSTOMERS MUST PROVIDE SHIP TO'S FEDERAL I.D. #'s**

**FOR SHIPPING PURPOSES UPON RECEIPT OF A FORMAL PURCHASE ORDER.**

**SOLD:**

**SHIP:**



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 07030  
 UNITED STATES

FOR CUSTOMER SERVICE, CONTACT **KATHY RODRIGUEZ**  
 VOICE - 1-800-291-0213  
 FAX - 1-800-291-6193  
 EMAIL - easterncan@trojanuv.com

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**QUOTE DATE:** 08-03-2021  
**REFERENCE:** PJ 511620  
**LOB:** W97 AFTERMARKET PARTS

**We thank you for your inquiry.**

QTY	UNIT	ITEM	PRICE	UNIT	AMOUNT
1.00	EA	931096 SRV PCB KIT, 07UV3+ CCB MAIN	2097.28	EA NJT	2097.28

GOODS	COSTS	TOTAL USD
2097.28		2097.28

**DELIVERY TERMS:** NO URGENCY FOR DELIVERY

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FOR CUSTOMER SERVICE, CONTACT MIKE D'ORIA  
 VOICE - 1-800-294-2150  
 FAX - 1-800-291-0205  
 EMAIL - southernus@trojanuv.com

**FORWARD AGENT:**  
**CUSTOMER #:** 706404  
**QUOTE #:** 124595  
**QUOTE DATE:** 08-06-2021  
**REFERENCE:** PJ 511620  
**LOB:** W97 AFTERMARKET PARTS

**We thank you for your inquiry.**

QTY	UNIT	ITEM	PRICE	UNIT	AMOUNT
<b>SERVICE QUOTE</b>					
6.00	EA	SRV VISIT EXPENS	1460.00EA	NJT	8760.00
2.00	EA	ONSITE SERVICE - 2 TECHNICIANS FOR 3 DAYS SRV VISIT TRAVEL	600.00EA	NJT	1200.00
2.00	EA	ESTIMATED FLIGHT SRV VISIT TRAVEL	950.00EA	NJT	1900.00
		2 DAYS TRAVEL FOR 2 TECHNICIANS			

GOODS	COSTS	TOTAL USD
0.00	11860.00	11860.00

**DELIVERY TERMS:** NO URGENCY FOR DELIVERY

**PAYMENT TERMS:**

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**GST# R105405385**

**THIS QUOTE EXPIRES: 09-05-2021**

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**FOR SHIPPING PURPOSES UPON RECEIPT OF A FORMAL PURCHASE ORDER.**

**SOLD:**

**SHIP:**