



PROJECT QUOTATION:

DPU IT

360water, Inc.
965 W. Third Avenue
Columbus, OH 43212
Phone: 614.294.3600
Fax: 614.294.3601

Job Name:	DPU Training UPDATE	Date:	February 6, 2020
Project Manager:	Gordon Baugh	Client:	DPU-IT
Client Contact:	Laura Tegethoff	Project:	New OS, Transfer, Cornerstone Re-integration

PROJECT OVERVIEW

For the purposes of this proposal, the City of Columbus DPU will be referred to as DPU. 360water will be providing a new Operating System for DPU and transferring their existing courseware to the new operating system. The OS will be hosted on 360water's cloud application. Training will be accessed at <https://DPU.360water.com>. This site will only be accessible by DPU's employees who are issued passwords by their supervisor.

DELIVERABLES

New Operating System: 360water will provide on a cloud application the most current system architecture. The new OS meets current internet standards, runs on any mobile device, has 360pacer (curriculum feature), graphical interface (Maps capability), and an updated dashboard. This new 2020 system is designated by product name CETO and has additional features from 2019, such as reference mode, and client editing capabilities.

Cornerstone Re-integration: After the DPU training website is migrated to the new cloud solution, 360water will work with Cornerstone to re-establish integration.

Course Re-programming: About 5 % of courseware will require some level of partial re-programming for full functionality in the new system.

Course Uploads: Existing course objects will be transferred/uploaded to the new system. As the courses are uploaded they will also be tested for compatibility with the new system. This is required QAQC for operability. Some courses will require partial re-programming, per task description above.

A: Southerly

Headworks

Bar Rack Climber Screen

IDI Bar Rack Climber Screen Course

IDI Hydraulic Power Pack Course

Bar Rack Screenings Conveyor

JMS Bar Rack Screenings Conveyor Course

Raw Sewage Pumps



Flowserve Raw Sewage Pumps, Course #1

Flowserve Raw Sewage Pumps, Course #2

Fine Screen

Andritz Fine Screen, Course #1

Andritz Fine Screen, Course #2

Fine Screenings Press

Vulcan Screenings Press Course

Grit Tanks

Eimco Grit Tanks Course

Grit Pumps

Wemco Grit Pumps Course

Grit Cyclone and Classifier

Wemco Grit Cyclone and Classifier, Course #1

Wemco Grit Cyclone and Classifier, Course #2

Screenings and Grit Conveyor

Fairfield Screenings and Grit Conveyor System, Course #1

Fairfield Screenings and Grit Conveyor System, Course #2

Spirac Screenings Screw Conveyor Course

Odor Control Fans

New York Blower Odor Control Fans Course

Odor Control System

Bioway Odor Control System Course

Samplers

Hach Automatic Sampler Course

Sluice Gates

Rodney Hunt Hydraulic Sluice Gates, Course #1

Rodney Hunt Hydraulic Sluice Gates, Course #2

Primary Treatment

Primary Pumps

WEMCO 3X3 Model C Torque-Flow Pump, Course #1

WEMCO 3X3 Model C Torque-Flow Pump, Course #2

Primary Rectangular Collector

Hitachi Primary Clarifier, Course #1

Hitachi Primary Clarifier, Course #2

Hitachi Primary Clarifier, Course #3

Siemens Primary Clarifiers Course

Aeration

Blowers

Roots Dresser Blowers, Course #1

Roots Dresser Blowers, Course #2

**Air
Filters**

American Air Filters Course

Fine Bubble Diffusers

Siemens Fine Bubble Membrane Diffusers Course

Coarse Bubble Diffusers

Sanitaire Coarse Bubble Diffuser System Course

Tank Transfer Pumps

Flygt Aeration Tank Transfer Pumps Course

Recirculation Propeller Pumps

Flygt Mixed Liquor Recycle Pumps Course

Secondary Treatment**Secondary Clarifiers**

Eimco Clarifiers Course

Flygt Drain Pumps Course

RAS/WAS Pumping

Morris RAS / WAS Pumps Course

RAS Well Mixing

Flygt RAS Mixers Course

Centrifugal Thickening**Centrifuge Feed Well Mixer Pumps**

Vaughan Centrifuge Feed Well Mixer Pumps Course

Centrifuge Feed Pumps

Hayward Gordon Centrifugal Screw Impeller Pumps Course

Polymer System

Moyno Polymer Pumps Course

Thickening Centrifuges

Andritz Thickening Centrifuges, Course #1

Andritz Thickening Centrifuges, Course #2

Screw Conveyor System

BioSec Screw Conveyor System Course

Thickened Sludge Pumps

Lobeline Rotary Pumps Course

Seal Water System

VC Systems Seal Water System Course

Flushing Water Strainers

Kinney Self-Cleaning Flushing Water Strainers Course

Automatic Samplers

Sentry Automatic Samplers Course

Sump Pumps

Vaughan Chopper Sump Pumps Course

Digesters**Digester Covers**

WesTech Digester Covers Course

Feed Pumps

Moyno Sludge Feed Pumps Course

Grinders

JWC In-Line Grinders Course

Mixing Pumps

Vaughan Rotomix Digester Mixer Pumps Course

Steam Injectors

Hydro-Thermal Steam Injection System Course

Boilers

Cleaver Brooks Boilers Course

Digester Gas Compressor

Spencer Digester Gas Compressors Course

Waste Gas Burner

Varec Waste Gas Burner Course

Gas Handling Equipment

Varec Gas Handling Equipment Course

Skimmings Concentration**Macerators**

Vogelsang Skimmings Macerator Course

Skimmings Concentrator

Tenco Hydro Skimming Concentrator Course

Concentrated Skimmings Tanks

Tenco Hydro Concentrated Skimmings Tanks Course

Hot Water System

Tenco Hydro Skimmings Hot Water System Course

Pressure Washer

Alkota Pressure Washer Course

Odor Control**Foul Air Fans**

New York Blower Odor Control Fans Course

Centrifugal Dewatering**Dewatering Centrifuges SOP**

Southerly Centrifuge Dewatering System Overview Course

Southerly Centrifuge Dewatering System Process Optimization Course

Southerly Centrifuge Dewatering System Startup and Shutdown Course

Centrifuges

Andritz Dewatering Centrifuge, Course #1

Andritz Dewatering Centrifuge, Course #2

Feed Pumps

Moyno Progressive Cavity Pump, Course #1

Moyno Progressive Cavity Pump, Course #2

Polymer System

AES Polymer System, Course #1

AES Polymer System, Course #2

Cake Pump

Schwing Sludge Cake Pump System, Course #1

Schwing Sludge Cake Pump System, Course #2

Cake Lubrication

Milton Roy Metered Pump, Course #1

Milton Roy Metered Pump, Course #2

Ferric Chloride

Ferric Chloride Equipment Course

Ferric Chloride System Course

Effluent Disinfection

Chemical Metering Pumps

Pulsafeeder Chemical Feed Equipment, Course #1

Pulsafeeder Chemical Feed Equipment, Course #2

Chemical Mixer

Siemens Chemical Induction Unit Course

Flushing Water Pumps

Deming Flushing Water Booster Pumps Course

Post Aeration Blowers

Hoffman Post Aeration Blowers Course

Sump Pump

Myers Sump Pump Course

Vanton Wet Pit Sump Pump Course

Effluent Pumping

Effluent Pumps

Flygt Submersible Propeller Pump Course

Flushing Water Pumps

Peerless Vertical Turbine Flushing Water Pumps Course

Flushing Water Strainer

Kinney Self-Cleaning Strainers Course

Sample Pump

Myers Sample Pump Course

Sampler

Teledyne Refrigerated Samplers Course

Dewatering Pump

Flygt Submersible Sump Pump Course

Water Tower

Circulation Pump

Grundfos Centrifugal Pump, Course #1

Grundfos Centrifugal Pump, Course #2

Biosolids Land Application Facility

Facility Overview

Biosolids Land Application Facility Overview Course

Biosolids Centrifuge Operation

Biosolids Centrifuge Process Optimization Course

Truck Loading Platform

Biosolids Truck Loading Platform Course

Biosolids Pumps

Moyno Biosolids Truck Loading Pumps Course

Moyno Thickening Biosolids Pumps Course

Odor Control

Biofilter Odor Control System Course

Sump Pumps

Flygt Heavy Duty Sump Pumps Course

B: Jackson Pike

Headworks

Grit Removal

Waste-Tech Grit Removal System, Course #1

Waste-Tech Grit Removal System, Course #2

Grit Removal Classifier

Coffing Trolley Hoist Course

Wemco Hydrogritter Separator, Course #1

Wemco Hydrogritter Separator, Course #2

Grit Pumps

WEMCO 4X4 Model C Torque-Flow Pump, Course #1

WEMCO 4X4 Model C Torque-Flow Pump, Course #2

Grit Removal SOP

JP Grit Removal System Overview Course

JP Grit Removal System Process Optimization Course

Fine Screen

Parkson Aquaguard Screen, Course #1

Parkson Aquaguard Screen, Course #2

Fine Screen Conveyor

US Filter Shaftless Screw Conveyor, Course #1

US Filter Shaftless Screw Conveyor, Course #2

Fine Screening Press

Vulcan Screenings Press Course

Raw Sewage Pumping

Flowserve Raw Sewage Pumps

Screenings and Raw Sewage Pumping SOP

JP Raw Sewage Pump System Overview Course

JP Screening System Overview Course

JP Screening and Raw Sewage Pump Process Optimization Course

JP Screening and Raw Sewage Pump Start-Up and Shutdown Course

Primary Treatment

Primary Rectangular Collector

Envirex Primary Clarifier, Course #1

Envirex Primary Clarifier, Course #2

Envirex Primary Clarifier, Course #3

Primary Pumps

WEMCO 3X3 Model C Torque-Flow Pump, Course #1

WEMCO 3X3 Model C Torque-Flow Pump, Course #2

Aeration

Centrifugal Blowers

Roots Dresser Blowers, Course #1

Roots Dresser Blowers, Course #2

Fine Bubble Diffusers

Fine and Coarse Bubble Diffusers Course

RAS Pumping

Fairbanks Morse RAS Pumps Course

Secondary Clarification

Secondary Clarifiers

Siemens Secondary Clarifiers Course

Skimmings Concentration

Skimmings Vault

JWC Muffin Monster Inline Grinder Course

Penn Valley Skimmings Pumps Course

Wemco Recirculation Pumps Course

Skimmings Concentrators

Siemens Skimmings Concentrator, Course #1

Siemens Skimmings Concentrator, Course #2

Skimming Pumps

Moyno Skimmings Pumps, Course #1

Moyno Skimmings Pumps, Course #2

Centrifuge Polymer Equipment

Siemens/FDI Poly Blending Units Course

Wright Flow Polymer Pumps Course

Sludge Thickening

Centrifuges

Westfalia Thickening Centrifuges, Course #1

Westfalia Thickening Centrifuges, Course #2

Westfalia Thickening Centrifuges, Course #3

Feed Pumps

Wemco Thickening Feed and Centrate Pumps Course

Polymer System

US Filter Thickening Polymer System, Course #1

US Filter Thickening Polymer System, Course #2

TWAS Pumps

Moyno TWAS Pumps, Course #1

Moyno TWAS Pumps, Course #2

Process Courses

Thickening Centrifuge Startup Course

Anaerobic Digestion

Digester Covers

Dystor Digester Covers, Course #1

Dystor Digester Covers, Course #2

Sludge Pumping

Goulds Anaerobic Digester Sludge Pumps Course

Centrifugal Dewatering

Centrifuges

Andritz Centrifuge, Course #1

Andritz Centrifuge, Course #2

Feed Pumps

Moyno Progressive Cavity Pump, Course #1

Moyno Progressive Cavity Pump, Course #2

Polymer System

US Filter Polymer System, Course #1

US Filter Polymer System, Course #2

Cake Pumps

Schwing Sludge Cake Pump System, Course #1

Schwing Sludge Cake Pump System, Course #2

Cake Lubrication

Milton Roy Metered Pump, Course #1

Milton Roy Metered Pump, Course #2

Sludge Disposal**Sludge Load-Out**

Schwing Sludge Load-out, Course #1

Schwing Sludge Load-out, Course #2

Effluent Disinfection**Chemical Feed**

Disinfection Chemical Storage and Conveyance System Course

Chemical Induction Unit

Siemens Chemical Induction Unit Course

Sump Pumps

Fybroc Chemical Sump Pumps Course

Flushing Water

Fairbanks Morse Flushing Water Pumps Course

Kinney Flushing Water Strainers Course

Seal Water

VC Systems Seal Water System Course

Effluent Pumps

Flygt Effluent Propeller Pumps Course

Support Equipment**Pressure Washer**

Alkota Pressure Washer Course

Tunnel Sump Pumps

Weil Sump Pumps Course

Material Lift

Pflow Material Lift Course

OSIS Augmentation Relief Sewer (OARS)**OARS Standard Operating Procedures**

Overview- OARS Overview Course

SCADA Operation- OARS SCADA Operation Course

Operation- OARS Operation Course

OARS Screen Structure

OARS Tunnel Screen System Course

OARS Diversion Structure

OARS Pumps and Grit Pump- ITT Flygt OARS Pumps Course
Shaft Mixing System- Evoqua Shaft Mixing System Course
Deep Lift System- CraneWerks Bridge Crane Course
Shaft Access Platform- Sky Climber Shaft Access Platform Course
Scissor Lift- Man Lift Scissor Lift Course

OARS Electrical Buildings

HVAC- OARS Electrical Buildings HVAC Course

Gates and Stop Logs

OARS Gates and Stop Logs Course

Shafts 5 and 6 Biofilters

Biofilters

OARS Shafts 5 and 6 Biofilters Course 1

OARS Shafts 5 and 6 Biofilters Course 2

Blowers

Biofilter Blowers Course

Adjustable Frequency Drives (AFDs)

Biofilter Blower AFD's Course

C. Fairwood Maintenance Facility:

SPCC / Oil Handling Procedures

Fairwood Facility SPCC/EMS Oil Handling Procedures Course

SWPPP / Stormwater BMP

Fairwood Facility and Grit Pad SWPPP Course

Regulatory Plan Training

Overflow Emergency Response and Notification Plan Training Course

Franklinton Floodwall Emergency Action Plan

Franklinton Floodwall Emergency Action Plan Training Course 1

Franklinton Floodwall Emergency Action Plan Training Course 2 for Sandbag Construction Boss

Franklinton Floodwall Emergency Action Plan Training Course 2 for Sandbag Coordinator

Franklinton Floodwall Emergency Action Plan Training Course 2 for Watch Crew Manager

Franklinton Floodwall Emergency Action Plan Training Course 3

Franklinton Floodwall Emergency Action Plan Training Course 4 for Watch Crews

COTA Conrail West Gate Closure

COTA Conrail West Gate Closure Course

Maintenance Tools

Godwin 4 and 6 inch Dri-Prime Trash Pumps

Kohler Generator Set Model 200REOZJC

Vac-Con Sewer Cleaning Machine Maintenance Course

Vac-Con Sewer Cleaning Machine Operations Course

Vactor 2100 Truck: Operations Course

Vactor 2100 Truck: Operator Maintenance Course

Diamond Products CC2500 Walk-Behind Concrete Saw

Honda 2" Water/Trash Pump

Husqvarna 340, 345, and 350 Chain Saws
K950 Handheld Concrete Saw

D. Dublin Rd.:

SPCC / Oil Handling Procedures

Dublin Road Water Plant SPCC/EMS Oil Handling Procedures
Course

Upground Reservoir and Pump Station

Upground Reservoir and Raw Water Pump Station SOP Course 1
Upground Reservoir and Raw Water Pump Station SOP Course 2
Hydraulic Gates Course
Pneumatic Weir Course 1
Pneumatic Weir Course 2
Gripper Rake Course
Wash Water Pumps Course
Floodbox Pumps Course
Traveling Water Screens Course 1
Traveling Water Screens Course 2
Cone Valves Course
Motor Soft Starter for Raw Water Pumps Course
Raw Water Pumps: Maintenance Course
Raw Water Pumps: Operations Course

Sludge Pump Station

Sludge Pump Station Course

Recarbonation

Recarbonation System Overview Course
Recarbonation System Operations Course

Ozone Treatment

Ozone Process Control Course 1
Ozone Process Control Course 2
Ozone Process Control Course 3
Ozone Process Control Course 4
Ozone System Controls Course
Ozone System Daily Checklist Course
Dissolved Ozone Sampling Course
GOX Flowmeter Calibration Course
Ozone Gas Leak Detection Course
Ozone Contact Basin Draining Course
Ozone Process Chemicals Controls and Unloading Course
Liquid Oxygen System Controls and Unloading Course

Filtration

Filtration Process Overview Course
Filtration Backwash Procedure Course
Filtration Maintenance and Troubleshooting Course

Ion Exchange System

- Ion Exchange System Overview Course
- Ion Exchange System Chemical Handling Course
- Ion Exchange System Start-up Course
- Ion Exchange System Operation Course
- Ion Exchange System Shutdown Course

E: Hap Cremean

Chlorination

- Siemens Chlorinator Course
- Chlorination Sampling Pumps Course
- Chlorination SOP Course
- Severn Trent Chlorine Induction Units Course

Recarbonation

- TOMCO2 Carbon Dioxide Storage Course
- TOMCO2 Carbonic Solution Feed and Diffusers Course
- Goulds Recarbonation Carrier Water Pumps Course
- Recarbonation System SOP Course

Ozonation

- Ozone Gas Injection System Course
- Ozone Generation System Course
- Ozone Nitrogen Boost System Course
- Ozone Off-Gas Destruct System Course
- Ozone Cooling Water System Course
- Ozonation System SOP Overview Course
- Ozonation System SOP Operations Course
- Ozone Leak Detection Course
- LOX Equipment Course
- Calcium Thiosulfate Feed Course

Filtration

- Gardner Denver Air Scour Blower Course
- Dual Media Biologically Active Filters Course
- Filtration SOP Course
- Sodium Hydroxide Feed Course
- Sodium Hydroxide SOP Course

F: Parson's Road

Solids Contact Clarifiers

- Westech Solids Contact Clarifiers Course

Recarbonation

- TOMCO2 Carbon Dioxide Storage Course
- TOMCO2 Gas Feed Control Panels and Diffusers Course
- Gorman-Rupp Solids Handling Pump Course

Gates and Valves

- DeZurik Butterfly Valves and Pneumatic Actuators Course
- Rodney Hunt Slide Gates and Rotork Actuators Course

Lime and Soda Ash

Chemco Blower Packages Course
Chemco Rotary Feeders and Dust Collectors Course
Quincy Air Compressor System Course
Dry-Air VFB Dehumidifiers Course

Electrical Building

Electrical Building Process Course
Eaton Switchgear and Transformers Overview Course
Liebert and Reznor Air Handling Units Course

REQUIRED MATERIALS

Currently this is not needed.

PROJECT TIMELINE

Once a Contract is issued referencing this proposal, 360water will work with the Contractor to develop a specific timeline for project deliverables along with major and minor milestones. 360water estimates that this project can be completed within 6 months. 360water will host the online training for a period of 5-years. This project should begin after June, 2020.

BROWSER REQUIREMENTS

360water, Inc. officially supports the latest versions Google Chrome, Mozilla Firefox, Microsoft Edge

PRODUCTION ENVIRONMENT

The production environment specifications below outline the hardware and software that will be used to serve the completed website.

Web Address	https://dpu.360water.com
Platform:	Redhat Linux
Web Server:	Apache
Programming/Scripting	PHP 7
Database:	MySQL 7

PROJECT DETAILS

PROJECT PLANNING

360water will coordinate the overall implementation of the training website. This includes consulting on the technical aspects of different implementations and coordination of milestones and deliverables. When needed, 360water will develop a timeline for 360water's portion of the project with major milestones and deliverables. As 360water produces the website details, someone from HR and DOSD will review and provide feedback. DPU will work with Cornerstone to get an API for 360water to use, if available.

DEVELOPMENT IMPLEMENTATION

Since the core components for the site have already been developed, 360water will need to implement modifications and enhancements to these components into the training website for this project.

The training website by nature is dynamic and will pull viewable web content from a database. Each task listed below outlines the necessary objective to completely implement the website according to the project specifications.

WEB SITE IMPLEMENTATION

SUMMARY

The website will require customized PHP solutions as described below.

COURSE OFFERING

Once logged in, users will be presented with a listing of operations and maintenance courses. The course list will be dynamic and organized in categories (usually based on process or equipment type). Users will also be able to search courses by title and see their completed and in progress courses.

LOGIN / ADMINISTRATION

DPU and 360water will be able to access the website on an administrative level. DPU administrators will be able to create accounts and update user passwords. 360water will implement a set of administrative screens specifically for the client to manage their user activities. Specific administrative functions are as follows: What's New, People Page, Association links, Manufacturer links, Certificate Search (to see user activity in courses, filterable by users, courses, and dates), and Broadcast Email.

GLOBAL MANAGEMENT

DPU will be provided with a username and password to an administration area that will allow a manager to modify Facility Administration Data such as usernames, passwords, and run reports. Regarding user activity. 360water will be able to modify usernames and passwords as well as manage contact information for each Facility. Regarding Course Management, 360water associates will be able to manage courses based on manufacturer and equipment.

COST SUMMARY

Job Name: DPU Training UPDATE **Date:** February 6, 2020
Project Manager: Gordon Baugh **Client:** DPU-IT
Client Contract: Laura Tegethoff **Project:** New OS, Transfer, Cornerstone Re-integration

Function	Quantity	Cost	Total Cost
New CETO Website: OS-cloud hosting, security upgrade for DPU, all new features <i>MAPS, REFERENCE MODE, EDIT, Dashboard.</i>	1		\$25,000
Course Re-programming 5 % Budget, billed as used	1		\$15,000
Cornerstone Re-integration Budget, billed as used	1		\$3,000
Course Uploads and QC Testing	240	\$150.00	\$36,000

Sales Tax on Professional Fees if required 5.75 %

TOTAL: \$79,000

PAYMENT SCHEDULE

Work will be billed as it is completed.

OTHER SERVICES

360water will make changes at NO additional cost up to a year after project completion. Changes will only be done quarterly on written order by an authorized DPU representative. After the first year any changes will be done quarterly on written order from an authorized DPU representative but will be billed at \$110.00 per hour.

AUTHORIZATION

The undersigned represent they are authorized to enter into this agreement and acknowledge they have read and understand all terms set forth herein. By affixing their signatures below, the parties evidence their intent to be bound hereto.

For 360water, Inc.

For: DPU IT

Signature/ Date

Laura Tegethoff, President
360water, Inc.

Signature

Printed Name and Title

Date