

Design Project Work Order Amendment No.3

Contract 00284
Laguna Treatment Plant Disinfection
Improvements Project

Board of Public Utilities
September 16, 2021

Tracy Duenas, PE
Supervising Engineer



OUR FUTURE IN EVERY DRÖP

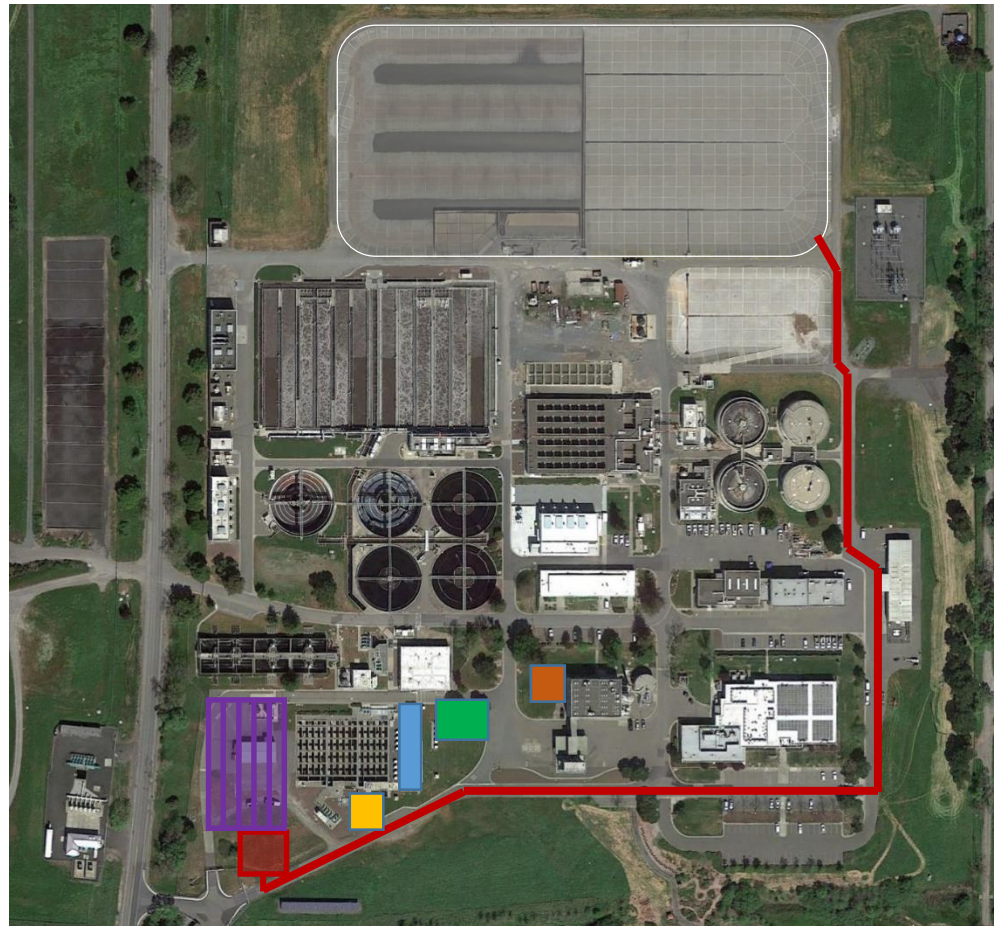
Presentation Outline

- Project history and status update
- PWO Amendment No. 3 for final design completion
- Recommendation

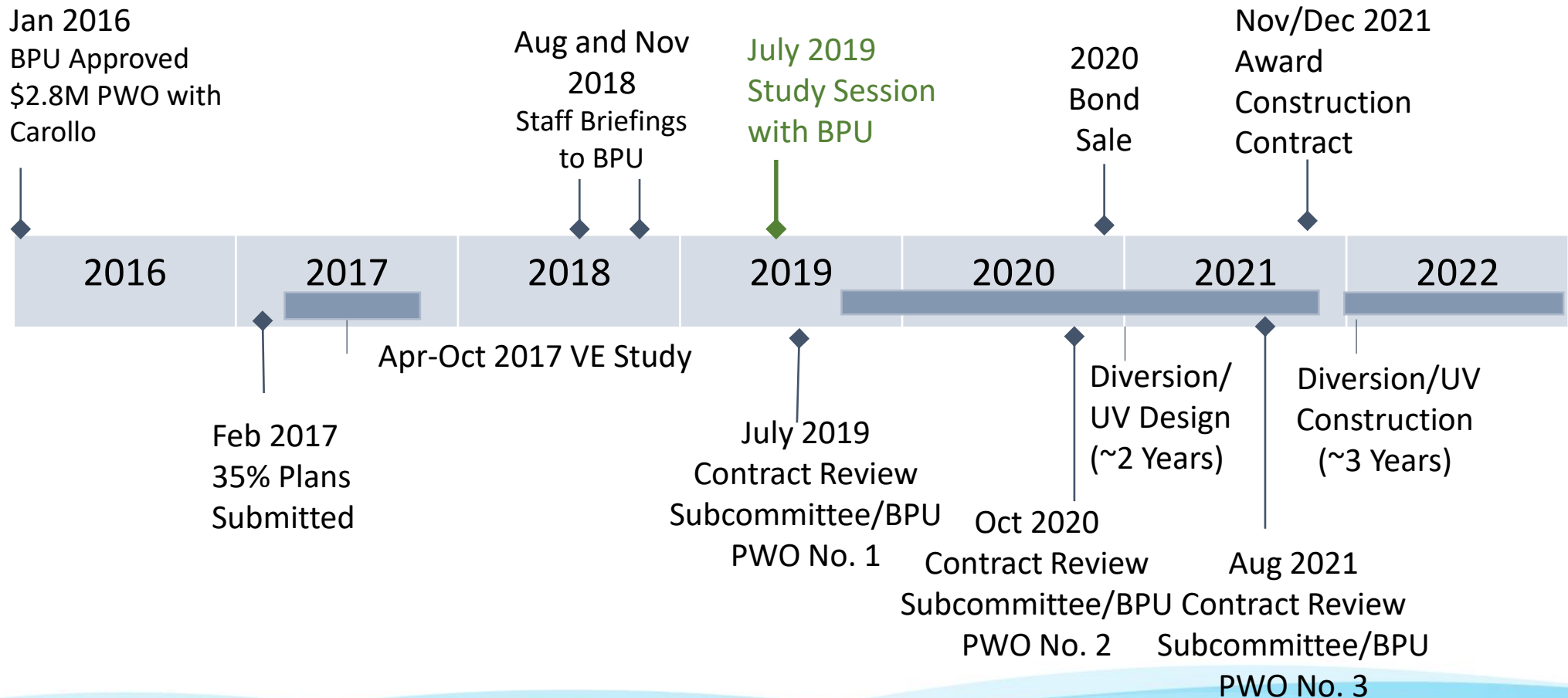


Project Purpose and Description

- Existing UV
- Proposed UV
- Proposed Diversion
- Proposed Hypochlorite
- Proposed Electrical
- Proposed Trailer



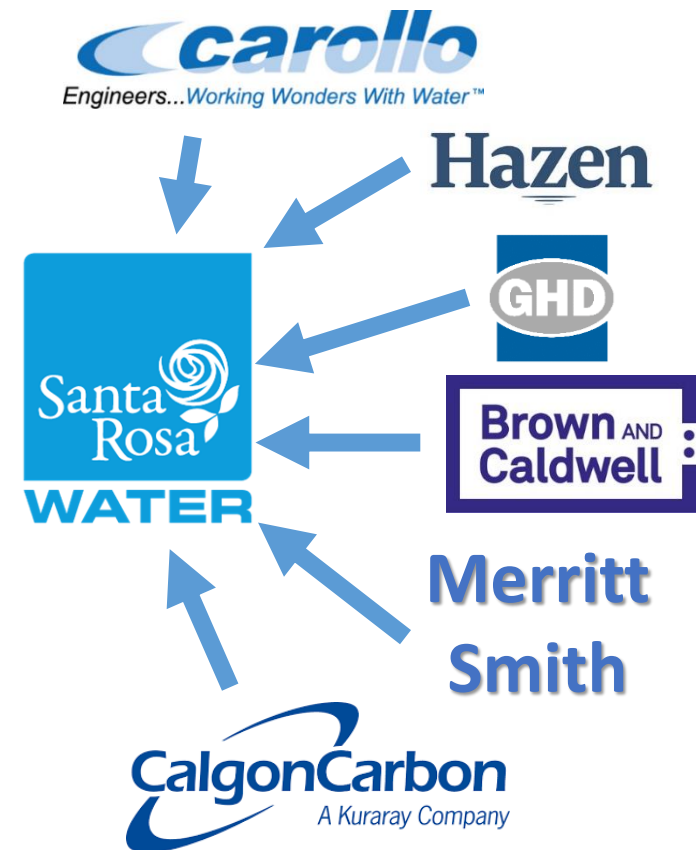
Project Timeline



Project Design History

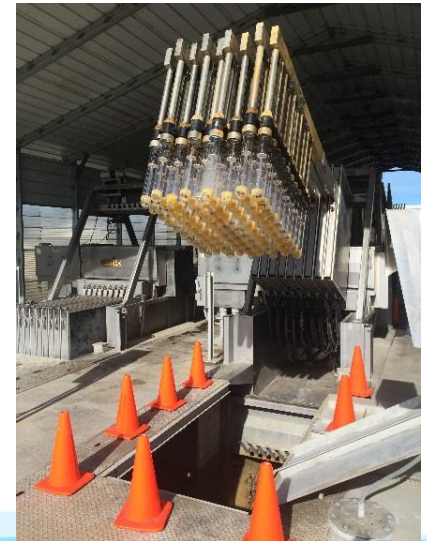


- (2012 – 2013) - Four pre-design analyses
- (2014) – Charrette to analyze 19 disinfection alternatives
- (2015 – 2016) – Seven technical memorandums
- (2016 – Present) – Ongoing Design



Carollo PWO History

- (2016) – PWO Professional Engineering Services (\$2.8M)
- (2017) – Value Engineering Study
- (2019) – PWO Amendment No 1 (\$1.6M)
- (2020) – PWO Amendment No. 2 ESDC (\$2.1M)
- **(2021) – PWO Amendment No. 3 (\$750k)**



PWO Amendment No.3

- (TASK 1) - Increased project management and pre-design tasks
- (TASK 5-6) – Increased UV/diversion design tasks
 - Revised UV design
 - Revised structural canopy design
 - Revised temporary or permanent power design
 - Revised PLC and SCADA design
 - Existing utility relocation (fiber and others)



PWO Amendment No.3

- (TASK 5-6) – Increased UV/diversion design tasks
 - UV supplier coordination and submittals
 - Revised sodium hypochlorite design
 - Revised replacement trailer design
 - Flood project coordination
 - Revised stormwater collection and pump station design
 - Revised access improvements
 - Constructability review



PWO Amendment No.3 (Fee)

PWO Design Tasks	Contract ⁽¹⁾ (\$)	Amendment (\$)	Total (\$)
Tasks 1: Project Management	820,079	75,000	895,079
Task 4: UV Equipment Selection	172,313	0	
Tasks 5-6: UV/Diversion Design	2,355,896	675,000	3,030,896
Tasks 7-8: Pre-bid/Bidding Services	218,109	0	218,109
Tasks 9-11: Regulatory and Start-up	365,366	0	365,366
Task 12: Geysers Pipeline	--	--	--
Task 13: Contingency	250,000	0	250,000
Task 14-15: VE Assessment	206,491	0	206,491
<u>Total Design Contract:</u>	<u>\$4.4M</u>	<u>\$0.75 M</u>	<u>\$5.2M</u> ⁽²⁾

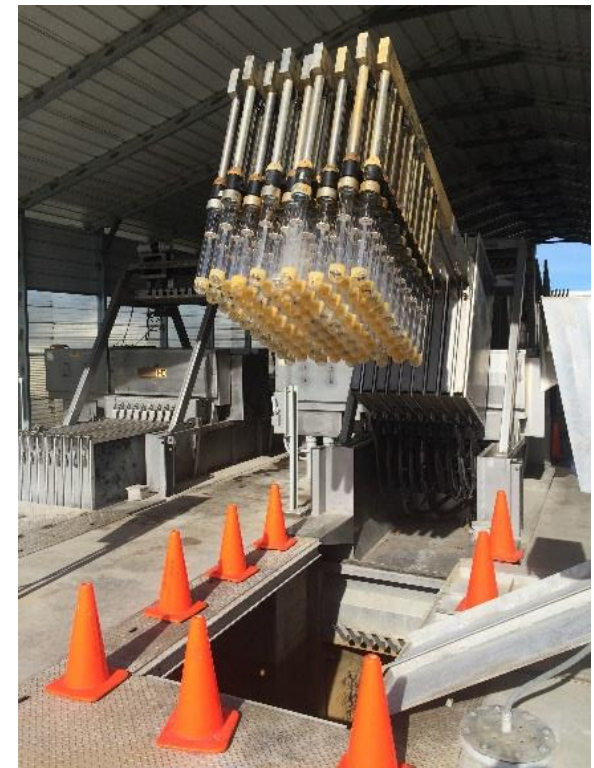
(1) Not including ESDC PWO Amendment No. 2

(2) 10.3% of Construction Cost Estimate

Estimated Total Project Costs

UV Disinfection	\$37M
Non-compliant Diversion	\$13M
Total Construction Cost	\$50M
Project Delivery Costs ⁽¹⁾	\$17.5M
Estimated Total Project Cost	\$67.5M

- (1) Project Delivery Cost represents 35% of Total Construction Cost, and Includes: Design, ESDC, CM/Inspection, Fees, In-House Labor, Overhead, and Overall Contingency



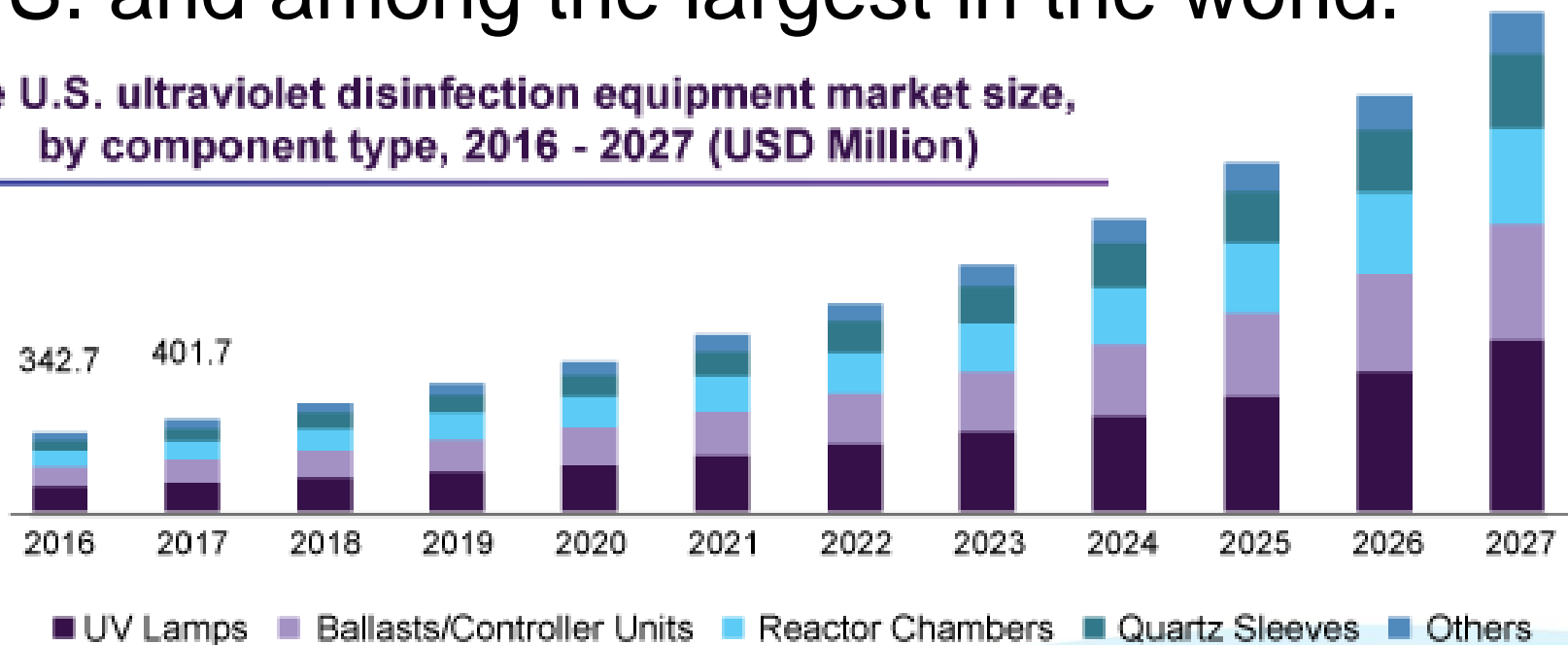
Design Fee Analysis

	Actual	City Goal	CIP Benchmark Study
Total Design Fee	\$5.2M	--	--
Design as a Percent of Construction Cost	10.3%	~10%	14% - 18%
Total Number of Drawing Sheets	240 Sheets	--	--
Total Design Cost per Drawing Sheet	\$12,700 Per Sheet	\$10,000 - \$15,000 Per Sheet	--

Project Showcase

- Largest Santa Rosa project since the Geysers Recharge
- Largest UV recycled water installation in the U.S. and among the largest in the world.

The U.S. ultraviolet disinfection equipment market size, by component type, 2016 - 2027 (USD Million)



Next Steps

- Fall 2021:
 - BPU Calgon MOU approval
 - Contract documents complete
 - Bid Contract
- Winter 2021: BPU construction contract Award
- Spring 2022: Notice to Proceed

Recommendation

It is recommended by the Santa Rosa Transportation and Public Works Department that the Board of Public Utilities, by motion, approve Amendment No. 3 to Project Work Order No. A010014-2011-09 under the Master Professional Services Agreement with Carollo Engineers, Inc. of Walnut Creek to provide Professional Engineering Services for the Laguna Treatment Plant Disinfection Improvements Project in the amount of \$750,000 for a total contract amount not to exceed \$7,269,386.

