AGENDA

A G E N D A
REGULAR MEETING OF THE GOVERNING BOARD
OF THE GOLETA SANITARY DISTRICT
A PUBLIC AGENCY

One William Moffett Place
Goleta, California 93117

November 16, 2020

CALL TO ORDER: 6:30 p.m.

ROLL CALL OF MEMBERS

BOARD MEMBERS: Sharon Rose
Robert O. Wageneck
Jerry D. Smith
Steven T. Majoewsky
George W. Emerson

CONSIDERATION OF THE MINUTES OF THE BOARD MEETING

The Board will consider approval of the Minutes of the Regular Meeting of November 2, 2020.

PUBLIC COMMENTS - Members of the public may address the Board on items within the jurisdiction of the Board.

POSTING OF AGENDA – The agenda notice for this meeting was posted at the main gate of the Goleta Sanitary District and on the District's web site 72 hours in advance of the meeting.

BUSINESS:

1. CONSIDERATION OF AWARD OF CONTRACT FOR GSD 2020 CCTVI PROJECT
   (Board may take action on this item.)

2. CONSIDERATION OF AGREEMENT WITH FILIPPIN ENGINEERING, INC. FOR PROJECT MANAGEMENT AND INSPECTION SERVICES ON THE GSD 2020 CCTVI PROJECT
   (Board may take action on this item.)

3. REVIEW AND CONSIDERATION OF DESIGN AND ENGINEERING SERVICES PROPOSAL FOR BIOSOLIDS AND ENERGY STRATEGIC PLAN PHASE 1 IMPROVEMENTS
   (Board may take action on this item.)

4. GENERAL MANAGER'S REPORT

5. LEGAL COUNSEL'S REPORT

6. COMMITTEE/DIRECTOR'S REPORTS AND APPROVAL/RATIFICATION OF DIRECTOR'S ACTIVITIES

7. PRESIDENT'S REPORT

8. ITEMS FOR FUTURE MEETINGS

9. CORRESPONDENCE
   (The Board will consider correspondence received by and sent by the District since the last Board Meeting.)

10. APPROVAL OF BOARD COMPENSATION AND EXPENSES AND RATIFICATION OF CLAIMS PAID BY THE DISTRICT
    (The Board will be asked to ratify claims.)

ADJOURNMENT

Any public records which are distributed less than 72 hours prior to this meeting to all, or a majority of all, of the District's Board members in connection with any agenda item (other than closed sessions) will be available for public inspection at the time of such distribution at the District's office located at One William Moffett Place, Goleta, California 93117.

Persons with a disability who require any disability-related modification or accommodation, including auxiliary aids or services, in order to participate in the meeting are asked to contact the District's Finance & H.R. Manager at least (3) days prior to the meeting by telephone at (805) 967-4519 or by email at info@goletasanitary.org.

MINUTES

MINUTES
REGULAR MEETING OF THE GOVERNING BOARD
GOLETA SANITARY DISTRICT
A PUBLIC AGENCY
DISTRICT OFFICE CONFERENCE ROOM
ONE WILLIAM MOFFETT PLACE
GOLETA, CALIFORNIA 93117

November 2, 2020

CALL TO ORDER: President Rose called the meeting to order at 6:30 p.m.

BOARD MEMBERS PRESENT: Sharon Rose, Robert O. Wageneck, Jerry D. Smith, Steven T. Majoewsky, George W. Emerson

BOARD MEMBERS ABSENT: None

STAFF MEMBERS PRESENT: Steve Wagner, General Manager/District Engineer, Rob Mangus, Finance and Human Resources Manager/Board Secretary, Rich Rosenbaum, Safety and Regulatory Compliance Manager and Richard Battles, Legal Counsel from Howell Moore & Gough LLP.

OTHERS PRESENT: Tom Evans, Director, Goleta Water District

APPROVAL OF MINUTES: Director Smith made a motion, seconded by Director Wageneck, to approve the minutes of the Regular Board meeting of 10/19/20. The motion carried by the following vote:

(20/11/2139)

AYES:	5	Rose, Wageneck, Smith, Majoewsky Emerson
NOES:		None
ABSENT:		None
ABSTAIN:		None

POSTING OF AGENDA: The agenda notice for this meeting was posted at the main gate of the Goleta Sanitary District and on the District's website 72 hours in advance of the meeting.

PUBLIC COMMENTS: None

BUSINESS:

1. STATUS REPORT ON THE DISTRICT'S COMPETENCY BASED TRAINING PROGRAMS
   Mr. Wagner began the staff report and introduced Mr. Rosenbaum who presented a PowerPoint presentation and answered question from the Board on this update item. No Board action was taken.

2. REVIEW AND CONSIDERATION OF FISCAL YEAR 2020-2021 FIRST QUARTER BUDGET REPORT

Mr. Wagner began the staff report and Mr. Mangus answered questions from the Board on this presentation item. No Board action was taken.

3. PRESENTATION OF STREAMLINE EMPLOYEE ENGAGEMENT PORTAL

Mr. Wagner gave the staff report and presentation of the program. No Board action was taken.

4. GENERAL MANAGER'S REPORT

Mr. Wagner gave the report.

5. LEGAL COUNSEL'S REPORT

Mr. Battles reported on two items, the first was the Verizon Wireless class action and small settlement received on behalf of the District. The second item was regarding a Proposition 218 case involving Summerland Sanitary District related to two different causes of action, a Writ of Administrative Mandamus or a declaratory relief action.

6. COMMITTEE/DIRECTORS' REPORTS AND APPROVAL/RATIFICATION OF DIRECTORS' ACTIVITIES

Director Majoewsky – No report.

Director Emerson – No report.

Director Smith – No report.

Director Wageneck – Updated the board on the disinfecting lighting project.

8. PRESIDENT'S REPORT

President Rose – Reported the first part of her report on the Goleta Water District meeting she attended.

9. ITEMS FOR FUTURE MEETINGS

No Board action was taken to return with an item.

10. CORRESPONDENCE

The Board reviewed and discussed the list of correspondence to and from the District in the agenda.

11. APPROVAL OF BOARD COMPENSATION AND EXPENSES AND RATIFICATION OF CLAIMS PAID BY THE DISTRICT

Director Emerson made a motion, seconded by Director Wageneck, to ratify and approve the claims, for the period 10/20/20 to 11/02/20 as follows:

Running Expense Fund #4640	$ 332,739.42
Depreciation Replacement Reserve Fund #4655	$ 99,048.55
Retiree Health Insurance Sinking Fund #4660	$ 10,378.08

The motion carried by the following vote:

(20/11/2140)

AYES:	5	Rose, Wageneck, Smith, Majoewsky, Emerson
NOES:		None
ABSENT:		None
ABSTAIN:		None

ADJOURNMENT

There being no further business, the meeting was adjourned at 8:19 p.m.

Sharon Rose Governing Board President	Robert O. Mangus, Jr. Governing Board Secretary
Robert O. Wageneck	Jerry D. Smith
Steven T. Majoewsky	George W. Emerson

AGENDA ITEM #1

AGENDA ITEM: 1

MEETING DATE: November 16, 2020

I. NATURE OF ITEM

Consideration of Award of Contract for GSD 2020 CCTVI Project

II. BACKGROUND INFORMATION

The District has requested sealed proposals for the GSD 2020 Closed Circuit Television Inspection (CCTVI) Project for the inspection of approximately 183,000 linear feet of various sized sewer lines throughout the District. The information acquired by this project, combined with the information acquired by the ongoing CCTVI efforts by GSD staff will be used to complete a comprehensive assessment of the District's collection system so that future rehabilitation projects can be prioritized and included in the District's capital improvement plan.

This project includes cleaning and CCTV inspection of 6-inch to 15-inch sewer pipe located primarily in low speed, low volume residential areas within the City of Goleta and in unincorporated areas of Santa Barbara County. On October 26, 2020 a Request for Proposals was sent to various CCTVI contractors who have performed similar work for other public agencies. On November 10, 2020 we received proposals from three companies.

III. COMMENTS AND RECOMMENDATIONS

Staff has reviewed the proposals from the below-listed companies and found National Plant Services (National Plant) to be the lowest responsible bidder. A copy of the detailed bid tabulation is attached to this report. Staff found a minor discrepancy in the National Plant bid calculation in the amount of $3.07. This is a minor discrepancy which the Board can waive because it does not change the apparent low bidder. All other documents were found to be in order. National Plant is a qualified firm that has successfully completed similar projects in the past for various public agencies including the City of San Jose, Dublin San Ramon Services District and the City of Santa Clara.

BID SUMMARY:

National Plant Services	Long Beach, CA	$372,570 *
Performance Pipeline	Huntington Beach, CA	$382,839
Downstream Services	Escondido, CA	$496,702
Engineer's Estimate		$485,000

*corrected amount

The total estimated cost for the GSD 2020 CCTVI Project based on the National Plant proposal is shown below:

Design Engineering	MNS Engineers Inc.	$15,700
Project Costs	National Plant	$372,570
Construction Management	Filippin Engineering	$17,640
	Total:	**$405,910**

The approved FY 2020-21 budget includes $1,000,000 for this project. However, the total cost for the project was significantly reduced from the original FY 2020-21 budget estimate due to the ongoing CCTVI efforts by District staff since the start of the fiscal year. The total length of pipe to be inspected by contract forces has been reduced from the original estimated amount of 250,000 feet to the proposed amount of 183,000 feet. The cost savings on this project will increase the available fund balance for future capital projects.

Based on the review of proposals submitted for this project, staff recommends the Board waive the $3.07 discrepancy and authorize the General Manager to execute a contract with National Plant for the 2020 CCTVI Project in an amount not to exceed $372,570 and also authorize the General Manager to approve contract change orders as needed up to an amount not to exceed 5% of the contract amount or $18,628.

IV. REFERENCE MATERIAL

GSD 2020 CCTVI Project Bid Tabulation

National Plant Services Proposal

BID TABULATION
2020 CCTVI Project

			Engineer's Estimate		National Plant Services		Performance Pipeline		Downstream Services		Average Bid Item Cost	
Description	**Unit**	**Quantity**	**Unit Cost**	**Amount**	**Unit Cost**	**Amount**	**Unit Cost**	**Amount**	**Unit Cost**	**Amount**	**Unit Cost**	**Amount**
Mobilization, Demobilization & Insurance	LS	1	$10,000.00	$ 10,000.00	$ 24,900.00	$ 24,900.00	$ 42,500.00	$ 42,500.00	$ 141,325.00	$ 141,325.00	$ 69,575.00	$ 69,575.00
Hydraulic Jet Cleaning of 6-inch diameter pipes accessed from a paved roadway	LF	22,515	$1.15	$ 25,892.25	$ 0.87	$ 19,588.05	$ 0.60	$ 13,509.00	$ 0.86	$ 19,362.90	$ 0.78	$ 17,486.65
Hydraulic Jet Cleaning of 8-inch diameter pipes accessed from a paved roadway	LF	118,826	$1.00	$ 118,826.00	$ 0.65	$ 77,236.90	$ 0.60	$ 71,295.60	$ 0.86	$ 102,190.36	$ 0.70	$ 83,574.29
Hydraulic Jet Cleaning of 10- to 12-inch diameter pipes accessed from a paved roadway	LF	26,022	$1.35	$ 35,129.70	$ 0.85	$ 22,118.70	$ 0.75	$ 19,516.50	$ 1.23	$ 32,007.06	$ 0.94	$ 24,547.42
Hydraulic Jet Cleaning of 6-inch diameter pipes accessed from an easement	LF	1,209	$1.15	$ 1,390.35	$ 2.65	$ 3,203.85	$ 1.25	$ 1,511.25	$ 1.08	$ 1,305.72	$ 1.66	$ 2,006.94
Hydraulic Jet Cleaning of 8-inch diameter pipes accessed from an easement	LF	7,180	$1.10	$ 7,898.00	$ 1.50	$ 10,770.00	$ 1.25	$ 8,975.00	$ 1.08	$ 7,754.40	$ 1.28	$ 9,166.47
Hydraulic Jet Cleaning of 10- to 12-inch diameter pipes accessed from an easement	LF	7,357	$1.50	$ 11,035.50	$ 1.77	$ 13,020.12	$ 1.65	$ 12,139.05	$ 1.08	$ 7,945.56	$ 1.50	$ 11,034.91
Pipeline CCTV Inspection and Video Recording of 6-inch diameter pipe	LF	22,515	$1.05	$ 23,640.75	$ 1.25	$ 28,143.75	$ 0.80	$ 18,012.00	$ 0.80	$ 18,012.00	$ 0.95	$ 21,389.25
Pipeline CCTV Inspection and Video Recording of 8-inch diameter pipe	LF	118,826	$1.00	$ 118,826.00	$ 0.73	$ 86,742.98	$ 0.80	$ 95,060.80	$ 0.80	$ 95,060.80	$ 0.78	$ 92,288.19
Pipeline CCTV Inspection and Video Recording of 10- to 15-inch diameter pipe	LF	26,022	$1.25	$ 32,527.50	$ 0.79	$ 20,557.38	$ 0.80	$ 20,817.60	$ 0.80	$ 20,817.60	$ 0.80	$ 20,730.86
Pipeline CCTV Inspection and Video Recording of 6-inch diameter pipe accessed from an easement	LF	1,209	$1.20	$ 1,450.80	$ 1.50	$ 1,813.50	$ 1.50	$ 1,813.50	$ 1.00	$ 1,209.00	$ 1.33	$ 1,612.00
Pipeline CCTV Inspection and Video Recording of 8-inch diameter pipe accessed from an easement	LF	7,180	$1.10	$ 7,898.00	$ 1.30	$ 9,334.00	$ 1.25	$ 8,975.00	$ 1.00	$ 7,180.00	$ 1.18	$ 8,496.33
Pipeline CCTV Inspection and Video Recording of 10- to 15-inch diameter pipe accessed from an easement	LF	7,357	$1.35	$ 9,931.95	$ 1.30	$ 9,562.80	$ 2.00	$ 14,714.00	$ 1.00	$ 7,357.00	$ 1.43	$ 10,544.60
Reverse Set-up for Pipeline CCTV Inspection in Paved Roadway	EA	40	$150.00	$ 6,000.00	$ 150.00	$ 6,000.00	$ 150.00	$ 6,000.00	$ 65.00	$ 2,600.00	$ 121.67	$ 4,866.67
Reverse Set-up for Pipeline CCTV Inspection in Easement	EA	5	$250.00	$ 1,250.00	$ 315.00	$ 1,575.00	$ 300.00	$ 1,500.00	$ 65.00	$ 325.00	$ 226.67	$ 1,133.33
Development and Implementation of Engineered Traffic Control Plans, Postings and Notifications	EA	5	$4,500.00	$ 22,500.00	$ 2,400.00	$ 12,000.00	$ 1,800.00	$ 9,000.00	$ 1,000.00	$ 5,000.00	$ 1,733.33	$ 8,666.67
Handle Sewage Flows Bypass Pumping	EA	5	$5,000.00	$ 25,000.00	$ 200.00	$ 1,000.00	$ 2,500.00	$ 12,500.00	$ 450.00	$ 2,250.00	$ 1,050.00	$ 5,250.00
Contingency		1	$25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00
Computer Generated Bid Total				**$ 484,196.80**		**$ 372,567.03**		**$ 382,839.30**		**$ 496,702.40**		
Written Bid Total						$ 372,567.03		$ 382,839.30		$ 496,702.40		
Discrepancy						$ -		$ -		$ -		
NPS Item 7 - 7,356 LF was calculated vs. Quantity Amount of 7,357 LF						$ 13,021.89						
NPS Item 13 - 7,356 LF was calculated vs. Quantity Amount of 7,357 LF						$ 9,564.10						
NPS Corrected Computer Generated Bid Total						**$ 372,570.10**						
Discrepancy between written total on bid and corrected computer generated bid total						$ 3.07						
					Subcontractors: Management		Subcontractors: NONE		Subcontractors: NONE			
Addendum No. 2 included with proposal dated Oct 28, 2020 (Y/N)					yes		yes		yes			

GOLETA SANITARY
Water Resource Recovery District

REQUEST FOR PROPOSAL RESPONSE FOR HYDROCLEANING AND CCTV INSPECTION SERVICES

PROPOSAL CONTACT PERSON:
Michelle Beason, PE
Regional Manager
National Plant Services, Inc.
925-262-7366 **mbeason@nationalplant.com**

NATIONAL PLANT SERVICES, INC.
A TAYLOR COMPANY

1461 Harbor Avenue
Long Beach, CA 90813
www.nationalplant.com
800-445-3614
CA Contractor License # 351503

November 7, 2020

Luis Astorga
Goleta Sanitary District
1 William Moffett Place
Goleta, CA 93117

RE: RFP for GSD 2020 CCTVI Project

Dear Luis,

National Plant Services, Inc., is a wholly-owned affiliate of the Carylon Corporation with headquarters in Long Beach, CA. Founded in 1949, the Carylon Corporation is the largest and oldest environmental services corporation in the United States, with 15 wholly-owned affiliated companies, in 33 locations, throughout the United States. We have the best combination of experience, resources, equipment, and personnel capable of performing the Hydrojetting and CCTV work efficiently and safely.

National Plant Services (NPS) has been serving the inspection and cleaning needs for customers in the Western US since 1980. NPS clearly comprehends the project goals, and is prepared to perform this work utilizing our fleet of advanced equipment. **NPS will perform the services and adhere to the requirements described in this RFP.**

The Goleta Sanitary District has an immediate need for Cleaning and CCTV Assessment of 180,000 LF of 6" to 15" pipelines. National Plant Services (NPS) has 40 years of experience in the cleaning, closed-circuit television inspection, advanced inspections, and trenchless rehabilitation of sewer pipelines throughout California and the Western United States. NPS personnel are highly experienced in sanitary sewer cleaning and CCTV inspections, completing millions of feet per year for cities and agencies all over California.

Our cleaning operators are highly trained and experienced in proper sewer cleaning techniques using our fleet of 16 jet/vac units with rated cleaning power of up to 124 gpm. All sewer lines will be jetted with using a minimum of a two-pass cleaning process, with all debris vacuumed out of the sewer and disposed of at the GSD treatment plant. CCTV inspection will immediately follow all cleaning work.

All CCTV operators are PACP and MACP certified, and have the experience to provide accurate defect identification to our customers. They are experienced in the operation and maintenance of our numerous CCTV cameras (CUES, Aries, Envirosight), tractors, sonar units, and our 12 CCTV trucks. Therefore, if there is a mechanical or software issue on-site, our crews are adept at fixing any issues, or due to our large fleet can swap out equipment to prevent downtime and project delays, or bring in additional equipment to maintain the project schedule. Due to the 75 day deadline to complete all inspection work, we may place two crews on this project to finish on time.

Cleaning operations will begin first, with the CCTV inspections following closely behind. Both Cleaning and CCTV Operators will work as a team as they move throughout the inspection areas. This will ensure

the best quality video as the CCTV assessments will be completed quickly after cleaning work is finished. All operators are experienced in traffic control requirements per the MUTCD, and work requirements within the City of Goleta and City of Santa Barbara, and those rules will be followed, traffic control plans prepared, and encroachment permits obtained. Work in high traffic areas will be minimized by setting up in lighter traffic areas, and working underground into the higher traffic areas. Crews may also perform night deployments to reduce impacts to customers, or to take advantage of lower sewage flows in order to increase the quality of the CCTV inspections collected.

While entry into sewer manholes will be avoided whenever possible, all crews are confined space certified, and take great care in protecting the environment by preventing spills. Spill kits are provided on each vehicle in the rare event of a spill. NPS operators perform daily safety checks to make sure all equipment is in proper condition, and any required maintenance can be performed on site.

The NPS Project Manager, Michelle Beason, is a Professional Engineer with 28 years of water and wastewater asset management/maintenance/construction experience, and has worked for GSD and the City of Santa Barbara on previous projects and knows the area well. Ms. Beason will manage and track the project schedule via Microsoft Project during the project to ensure crews are maintaining production, and facilitate all communications between NPS and Goleta Sanitary District. She will also prepare the final project report with recommendations for maintenance and repair and present all results in an in person final review meeting. NPS will maintain a log of all work completed, which will be shared with the District weekly. Emergency situations, and any critical PACP defects discovered, will be reported to District staff immediately.

NPS takes great pride in working as a team to provide excellent customer service to our customers, and therefore, communication and superior work ethic will be maintained, and held at the highest importance, during the project.

We thank you for considering our proposal, and we look forward to becoming long-term partners in the maintenance of your sewer system. Michelle Beason, PE, will be the key contact person for this proposal and project, as well as the Project Engineer for this project, and my direct contact information is: 925-262-7366, mbeason@nationalplant.com .

Sincerely,

Michelle Beason, PE
National Plant Services, Inc.
HQ Mailing Address: 1461 Harbor Avenue, Long Beach, CA 90813
Phone 925-262-7366, fax 562-495-1528
mbeason@nationalplant.com

Table of Contents

EXPERIENCE AND REFERENCES

Firm History:

Founded in 1949, the Carylon Corporation is the largest and oldest environmental services corporation in the United States, comprised of 14 wholly-owned subsidiary companies located throughout the country. National Plant Services, Inc., one of the companies owned by the Carylon Corporation, will perform all work on this contract, with the exception of major traffic control, if needed. The Carylon Corporation and its companies are fiscally strong and carry no debt or external financial obligations.

National Plant Services is a Corporation that was established in 1980 in its current Long Beach, CA, location, and has been serving the wastewater inspection and maintenance needs of our valued clients in the Western United States for 40 years under the same company name and ownership. NPS has an active "A" Contractors license in California #351503.

National Plant Services (NPS) is an expert in the inspection, cleaning, and repair of sewer systems. NPS will be able to provide the best combination of experience, resources, equipment, and personnel capable of performing the work efficiently and safely, delivering accurate data, and meeting the scheduling demands of this project.

Financial Stability

Hiring a contractor that is financially strong, with regular employees, is very important for the success of a project. NPS is a fiscally strong company with the significant backing of the parent company, Carylon Corporation.

NPS has no pending bankruptcies, liens, stop payment notices, judgments, foreclosures, or any similar actions filed or resolved in the past seven (7) years**. A client has never terminated a contract with NPS for breach of contract or poor performance.**

We hereby guarantee that we have the financial resources to effectively manage and complete this project. We have the ability to maintain a staff of regular employees and can demonstrate that the equipment for this work is sufficient, adequate, and suitable. A certified financial statement is available if requested by the District.

Company Qualifications

As mentioned in the Introductory Letter, National Plant Services has been active in the sewer maintenance business for 40 years. We have an experienced and dedicated staff that will make this project a success. We have significant experience in all aspects of sewer system inspection, maintenance, and rehabilitation, which has made us true Sewer Experts.

We have 48 full time Cleaning and CCTV operators, and we guarantee that the appropriate resources will be available for this project throughout its duration. In relation to the needs of this project, NPS has completed over 10 million linear feet of pipeline and siphon cleaning and CCTV/Sonar/Laser inspection service work to our valued municipal/City customers over just the last 5 years. Through this experience, we have developed a comprehensive QA/QC plan, communication procedures, and a streamlined data flow. We own a significant fleet of CCTV trucks, CCTV cameras and tractors/floats, and combination

Jetter/Vacuum Trucks and nozzles that can handle any inspection need, cleaning need, and pipe condition**.**

A partial list of the larger projects that NPS has completed over the last few years can be found in Appendix A.

We guarantee that the appropriate resources will be available for this project throughout its duration. In relation to the needs of this project, NPS has completed over **20 million linear feet** of pipeline and siphon cleaning, and CCTV/Sonar/Laser inspection service work, to our valued municipal/City customers just in the last decade. Through this experience, we have developed a comprehensive QA/QC plan, communication procedures, and a streamlined data flow. We own a significant fleet of CCTV trucks (12), CCTV cameras and tractors/floats, and combination Jet/Vac Trucks (14) and nozzles that can handle any inspection need, cleaning need, and pipe condition. All of our CCTV operators are PACP/MACP certified.

PUBLIC AGENCY CLIENT 1: DUBLIN SAN RAMON SERVICES DISTRICT

1. **Dublin San Ramon Services District MSI Assessment, Sanitary Sewer Assessment, and Point Repair Project**
   Date of Service: Three Projects: June 2014-July 2015, 2016-June 2017, and 2018 for the point repair project. We are also currently on an on-call list for DSRSD.
2. **Project Team:** Michelle Beason, Dennis Keene, Daniel Solano
3. MSI Assessment Project: Bid Amount: $220,000
   Sanitary Sewer Assessment: Bid Amount: $415,576
   Point Repair Project: Bid Amount: $168,831, plus change order of $53,250 to add more locations.
4. **Reference Name:** Jacklyn Yee, yee@dsrsd.com, 7051 Dublin Blvd, Dublin, CA 94568, 925-875-2258
5. **Scope of Work:**
   a. The first project was 36,000 LF of large diameter CCTV, laser, and sonar inspections. Final engineering report was developed and presented to the District which included RUL and rehabilitation and repair recommendations.
   b. The second project included 370,000 LF of Clean and CCTV of sewers through easements and ROWs. Prepared a final summary report with repair, rehabilitation, & maintenance recommendations.
   c. The third project was a result of NPS' engineering report and recommendations provided in the second project. Our engineered reports include minor repairs that increase the RUL of the pipeline at the lowest cost. Several locations were recommended for CIPP point repair where there was localized structural issues in an otherwise serviceable pipeline. NPS won the point repair project and installed UV point repairs at 38 locations, and then more point repairs at an additional 8 locations as added by the change order.

PUBLIC AGENCY CLIENT 2: CITY OF SANTA CLARA

1. **Santa Clara Siphon Inspection Project, and Sanitary Sewer Assessment Phase 1**
   Date of Service: Two projects: July 2016-August 2017; May-July 2018, then extra work in 2019.
2. **Project Team: Michelle Beason, Daniel Solano, Zach Petit**
3. **Project Cost:** $777,000; and $500,000

4. **Reference Name:** Shilpa Mehta, smehta@SantaClaraCA.gov City of Santa Clara, 1500 Warburton, Santa Clara, CA
5. **Description of Work:**
    a. **Siphon Assessment**: Cleaning and CCTV inspection of 23 siphon assemblies that crossed various creeks in the City and County limits. The siphon assemblies were single, double and triple barrel, from 8" to 24" in diameter. NPS performed minor bypassing of flows for the smaller lines, and subcontracted to Sunbelt to bypass the larger lines. No spills or problems occurred during this project, even with the challenging staging locations and extensive bypassing near sensitive environmental areas. Provided remaining useful life, repair, and maintenance recommendations. Work took place in easements and sensitive creek crossings.
    b. **Phase 1 Assessment:** NPS also completed a second contract for the City of Santa Clara: "Sanitary Sewer Condition Assessment Phase 1" for 54,310 LF of 8" to 30" diameter pipelines in City and County of Santa Clara in 2018-2019. PACP database/export delivered, PACP scoring reports in PDF, final engineering report with repair, rehabilitation, and maintenance recommendations.

PUBLIC AGENCY CLIENT 3: CITY OF ROSEVILLE

1. **City of Roseville Interceptor Assessment Project Phase I and II, and Interceptor Cleaning Project**
   Date of Projects: Three Projects: November 2014 – April 2015, and 2017-2018, and September 2019.

2. **Project Team:** Michelle Beason, Dennis Keene, Daniel Solano
3. Assessment Project 1: Bid Amount: $130,825
   Cleaning Project: Bid Amount: $208,401.50
   Assessment Project 2: Bid Amount: $150,950
4. **Reference Name:** Dan Pruden 916-746-1892, dpruden@roseville.ca.us
5. **Scope of Work:**
    a. Project 1 was 28,000 L.F. of 30" to 66" Multi-Sensor Inspections with CCTV/LIDAR/Sonar. Prepared final PE stamped report with RUL and repair, rehabilitation, and maintenance recommendations.
    b. The second contract was a cleaning/TV/Sonar project in 33" to 66" sewer pipelines to remove debris discovered by Sonar inspections in the first phase of work.
    c. 21,885 LF of 27" to 66" Multi-Sensor Inspections. Prepared final PE Stamped report with RUL and repair, rehabilitation, and maintenance recommendations.

PUBLIC AGENCY CLIENT 4: CITY OF SAN JOSE

1. **Sewer Condition Assessment Projects, multiple projects.**
   Date of Service: 2016- Present, several annual phases
2. **Project Team:** Dennis Keene, Jeff Garcia, Daniel Solano, Zach Petit
3. **Reference Names:** City of San Jose, 200 E. Santa Clara Street, San Jose, CA 95113. Each project had a different project manager assigned: Michael Flores is the current PM, Michael.flores@sanjoseca.gov 408-535-5603

4. **Scope of Work:** NPS has competed multiple cleaning and CCTV projects of 6" and larger diameter sewer mains over the years. Projects have ranged in size from 250,000 LF to 400,000 LF, to be completed within a 1-year period. NPS has a project on-going, and is starting a new project with the City of San Jose on January 1, 2021, which will total 353,000 LF of 6"-10" sewer mains.

SATISFACTION GUARANTEE

NPS, and all of the Carylon Companies, have a satisfaction guarantee. We strive to provide excellent quality of work, and customer service, and our crews are trained to be diligent in the performance of their duties. Any cleaning or inspection work that is found to be unsatisfactory, will be re-cleaned or re-televised at no extra cost to GSD. All data will be reviewed by the NPS Project Manager and/or QA/QC Manager, who will also direct crews to re-clean or re-televise items as necessary.

PROJECT APPROACH

We will ensure that the necessary equipment and personnel are available for the project scope of work. As part of the Carylon Corporation, we can also utilize one of the hundreds of additional CCTV and Cleaning trucks located nationwide at our sister companies, and also borrow other Carylon Corporation personnel from our sister companies, if necessary (although not likely for this project). Therefore, we have essentially no limitations on resources (personnel or equipment) to complete this work on schedule. However, we guarantee that the Key Personnel described in this proposal will be available and assigned to this project. Field Personnel will be assigned based on availability on the project start date, however, all field personnel will be highly experienced and PACP/MACP certified.

Rate of production of cleaning will depend on the type and quantity of debris located in the sewer lines. However, we have the most powerful cleaning trucks that are commercially available, a large arsenal of nozzles that can handle any blockage or obstruction, and have experienced operators that know how to efficiently clean and inspect sewers and siphons.

***Kickoff, Project Planning, and Mobilization*:** The project will begin with a Kickoff Meeting at GSD offices to review the scope of work. Sewer maps, pipeline database, GIS, and all other information will be received by District and reviewed so the field crews and Project Manager get a complete picture of the project and surrounding area. Traffic Plans and permits will be submitted as soon as possible after NTP.

Safety

National Plant Services has a comprehensive Health and Safety and confined space plan to OSHA standards that governs all work performed by NPS staff.

Safety is of utmost importance on all of our project work. All crews are confined space trained and fit tested for respirator use, although entry is typically not necessary for most CCTV inspection work. We may only require confined space entry for large pipe inspections, manhole inspections, or to retrieve large debris items, but try not to enter unless necessary. Crews monitor gas and oxygen level before opening or entering confined spaces, and wear gas monitors during all confined space entry work. Safety checklists are reviewed and filled out each morning at the morning safety meetings, including relevant COVID-19 wellness checklists. We also carry spill kits in the event of a spill, or in the event crews observe conditions that may pose a threat to the environment. Our confined space entry plan is very lengthy and detailed and is available for review at your request.

Field Conditions

NPS crews take great measures to prevent damage to sewer structures and above-ground facilities and landscaping. Crews have taken before and after photographs for some projects at the request of our clients to prove there was no impact to sensitive areas. NPS crews are able to clean and inspect through multiple manholes, so will set up our work areas to minimize impacts to traffic, residents, or the environment.

Our crews are certified in traffic control procedures and carry cones, signage, and flags at all times. We are experienced in night work where necessary to avoid high traffic conditions, and to take advantage of lower sewage flows. Our operators are certified per MUTCD traffic control protocols and will follow all

traffic control plans. Our traffic control subcontractor, Traffic Management, may be brought in to handle major traffic control setups where flaggers or multiple lane closures are needed. They will place all signs and no parking notices per City requirements and will provide the necessary signs and flaggers for major traffic control setups.

Cleaning Operations

NPS has a large fleet of combination Jet Vac units from 80 to 125 gpm capacity, trailer mounted jetters for small line cleaning, and Recycling jet Vac trucks. The combination units have a pressurized water hose and nozzle to loosen debris, and we vacuum the debris with the integral vacuum hose as the nozzle pulls debris towards our crew at the downstream manhole.

We have 40 years of experience to help us understand what piece of equipment is best for a particular application. Our operators also understand proper operation of our combination jet vac units, whether cleaning small or large sewers. For large sewers, elevated skids are used to ensure we clean the entire pipe. For small diameter sewers, we reduce the pressure coming from the jetter hose to prevent backups into residential plumbing, and will be careful when cleaning known blow-out areas.

Cleaning take place from a downstream manhole to an upstream manhole, taking care not to over-pressurize the small diameter pipelines. The CCTV inspection will follow immediately after cleaning, with both operators working as a team to clean and inspect efficiently.

Any debris removed from the sewer pipes will be disposed of at the GSD Wastewater Treatment Plant.

We have a variety of nozzles to handle any type of debris, and powerful root cutting tools to remove light to heavy roots or hard-pack debris or deposits inside a sewer. The following table shows our cleaning nozzles that can handle any type of needed task/response.

CLEANING NOZZLE TOOLBOX

Condition		Response
General Cleaning	 	The Phantom Grenade is a superior design, Tier 3 nozzle which employs the most capable jet array available today. It's high efficiency design delivers the maximum possible energy to the pipe wall to clean more effectively than other similar designs. It is the "first nozzle" for most general conditions.
Severe Grease	 	The Warthog is a controlled rotation nozzle with laser-like jets, which will cut through hard deposits such as grease. Jet configuration options include a descaling version, which is designed to blast directly into deposits, pulverizing them on contact.
Severe Roots	 	Severe roots can require a "mechanical" solution such as the Spider 60 chain flail shown. The spinning barrel rotates at over 2000 rpm and roots are pulverized by the spinning chains. The chains cannot damage the pipe wall as they only "glance" the pipe wall.
Heavy Sediment	 	Heavy sediment requires specialized bottom cleaning nozzles which focus all their energy down and backward. Powerful jets work to emulsify and then "bulldoze" the sediment. Vast amounts of sediment are removed with the Bulldozer Nozzle depicted.
Varying Conditions		Varying and sometimes unforeseen conditions require experience and creativity in the approach to the challenge. We employ a sophisticated array of highly proficient tools to get the job done.
Proper Setup		Orientation of the nozzle in the pipe is often forgotten or ignored by some operators. The Proofing tool depicted helps our nozzles to impact the entire 360° of the pipe wall to clean the entire pipe.
		Larger lines require nozzle centralization also, as many pipe problems develop above the flow line. Roots and grease tend to collect on the top half of the pipe. Bringing the nozzle closer to the top half of the pipe assures proper and effective cleaning of the pipe crown. The adjustable centralizer depicted will center a nozzle in pipes up to 36" in diameter.
Advanced Technology		Our nozzles employ the most advanced technology available today. We use conical ceramic jets for example, which are highly efficient, allowing our operators to work at lower starting pressures, thus conserving fuel, reducing noise and air pollution and conserving precious water resources.

Flow Control

NPS is experienced and capable of using flow-through plugs, and in bypassing flows if needed to perform an inspection in smaller diameter pipelines.

Even though NPS is experienced in bypassing live flows, we also know how to implement creative measures that would eliminate the need for a bypass. NPS crews will often perform night work to take advantage of the low flows and/or use a jet/vac truck to draw down the flow to perform a CCTV inspection.

We do not anticipate needing to bypass, but instead will use flow through plugs when needed to slow or divert water as needed to achieve our 25% max flow limit during CCTV inspections.

While NPS takes great care to prevent spills, we do carry spill kits on our trucks, and have emergency contact numbers ready in the event of a spill.

CCTV Inspection of Sewers

NPS is prepared and highly experienced to complete PACP certified inspections of all sewer pipelines and facilities in the scope of work. The Project Team Leader, our technicians, and all our 16 CCTV Operators, are PACP, MACP, and LACP Certified. NPS has inspected millions of feet of piping over the last few years alone. We have a fleet of 14 CCTV trucks equipped with sophisticated and high-quality color cameras with rotational camera heads, IT Pipes, Granite, POSM, and WINCAN CCTV software, 2,000 linear feet of cable, 360-degree continuous sonar scanners, 3D laser systems, and tractors that can handle any pipe size or condition. We will bring various CCTV cameras and tractors/floats when we mobilize to the job so that we are prepared for any pipe size and conditions. We have various advanced color CCTV cameras with rotating heads including CUES, Aries, and Envirosight. Inspections will take place during periods when water level is reduced, whenever possible, to improve the quality of the delivered data. The inspections will follow all NASSCO CCTV Inspection guidelines. Operators will stop at all defects and code using PACP coding system. If an obstruction is encountered that prevents passage of the CCTV camera, the operators will relocate to the downstream manhole and provide a reverse inspection.

A partial list of our cleaning and inspection equipment is in the below table. We will also bring one of our traffic control trucks with arrow board to work in conjunction with the CCTV truck/s, as needed.

NPS EQUIPMENT & VEHICLE LIST

Quantity	Make, Model, and Description of Service Vehicles and Equipment	Age	Condition of Equipment
14	CCTV trucks (CUES, Aries, Rausch, Custom) with dozens of high-quality CCTV cameras (small and large tractor, and floating units) for any pipe condition.	2003-2013	Excellent
2	JHL RECycler 315 Jet Vac Unit that contains a 5-step automatic and continuous water recycling system. 124 gpm at 2175 PSI.	2015	Excellent
5	Laser Units: Carylon 3D Laser System, Rausch Diode Laser System, and Fly Eye Laser Rafts (3)	2009 - 2016	Excellent
2	Sonar Units Marine Electronics HD Submarine	2014, 2013	Excellent
12	Vactor, VacAll, Guzzler Combination Jet/Vac Units 80 – 170 gpm Jetting Pumps 18" – 27" Blowers 8 Yd debris boxes Arsenal of Nozzles Miscellaneous tools and equipment	2002 – 2014	Excellent
1	Trailer-Mounted Mini-jetter	2012	Excellent

QA/QC

NPS views data integrity and quality as the most important part of any condition assessment project. If the data isn't usable, it's useless. All CCTV inspections are viewed live in the field during each inspection, so any poor-quality video will be immediately corrected and re-televised, as necessary.

All CCTV videos are PACP coded using NASSCO certified software. We use several coding software systems (Granite, Wincan, ITPipes, POSM). This work is all performed by our experienced staff of PACP certified technicians who also review and QA/QC our field data for accuracy.

All data from the field is transferred weekly via our internal file share system for QA/QC by office staff. Any issues are corrected and then a submittal will be prepared for the District. All data is backed up and maintained on the CCTV truck, on an external hard drive, on the shared file transfer server, and then copied and stored in our data safe at both our Hayward and Long Beach locations. This ensures no data will ever be lost on one of our projects.

Communications/ Problem Resolution

NPS crews are accustomed to dealing with customer inquiries in the field and are prepared to handle in a courteous fashion. Any customer complaints received will be dealt with promptly by the crew foreman. All NPS personnel have mobile phones for ready access in the field. The field Supervisors and

Project Manager also have emails that connect directly to their smartphones. At the kickoff meeting, the Project Manager will prepare and review a Project Summary document that will list all NPS and the District personnel and contact information. A scenario-based communication tree will also be developed to streamline the communications between all parties.

Professional Affiliations and Accreditation

National Plant Services is a member of the CA Contractors State License Board, and an active member of many trade organizations including NASSCO, CWEA, Water Environment Federation, and the North American Society of Trenchless Technologies.

NPS, and the entire Carylon Corporation, have been very active members of NASSCO (National Association of Sewer Service Companies), which sets the standards in the industry for sewer maintenance and rehabilitation, and in particular, the CCTV inspection and PACP coding of pipeline defects.

Michelle Beason is one of the elected Board Members of NASSCO, and the Chair of the NASSCO Infrastructure Assessment Committee; chosen for both positions because of her knowledge and experience in the field of pipeline condition assessment and maintenance. She is tasked with ensuring that PACP coding is useful and relevant to our municipalities and contractors throughout the United States and Canada, and to evaluate and recommend improvements to PACP for future versions. Michelle has authored several sections in the NASSCO Manual of Practice, including "CCTV QAQC for Contractors, a best practices guideline available to help cities and contractors achieve a high-level of standard on PACP inspections and other maintenance and rehabilitation work. Michelle is an industry expert in condition assessment and rehabilitation planning of large diameter storm and sewer assets and has the experience to deliver high quality data and results to the District. She will be the Project Manager and Principal Engineer for the project, and will provide the final inspection report to the District.

Traffic Control: Michelle Beason is experienced with the City of Goleta and City of Santa Barbara traffic control policies and requirements, and will apply for the necessary Encroachment Permits, submit all required traffic control plans, and ensure NPS crews will follow all traffic control requirements, including restricted work hours on the high-traffic corridors. Our crews and traffic control subcontractors are certified in traffic control procedures and carry cones, signage, and flags at all times. We are experienced in night work where necessary to avoid high traffic conditions, and to take advantage of lower sewage flows. A traffic control subcontractor may be used on this project to assist with work in high-traffic areas, but no other subcontractors will be used for any other portion of this project.

QA/QC

QA/QC starts as soon as we get the asset information from the District. The operator will ensure a clean and unobstructed image, recorded at a high-quality recording setting. If the quality is not acceptable, the operator will abort the inspection, correct the deficiency, and start again.

As described above, data is kept in many locations to prevent loss of data. Data is delivered weekly to our office staff who will perform a rigorous quality check to ensure the PACP coding is done per NASSCO standards.

The data will then be transferred weekly through our secure web-based file transfer system to the Engineering staff who will perform an additional QA/QC as they review the data and begin to compile the PACP inspection results and prepare the final summary report with repair, rehabilitation, and maintenance recommendations.

NPS does something unique in our reporting that is not common in the industry; we organize the results by PACP Quick score, and present PACP defect codes in a detailed tabular format for each segment inspection. This provides the District with excellent summary information on the condition of their assets. These segments are categorized by like defect code, and recommendation for repair or rehabilitation are assigned. An example from a recent project is found below.

Upstream Manhole No:	Downstream Manhole No:	Structural Quick Rating	O_M Quick Rating	Overall Pipe Rating	PACP DEFECT CODE 1	PACP DEFECT CODE 2	PACP DEFECT CODE 3	PACP DEFECT CODE 4	PACP DEFECT CODE 5	PACP DEFECT CODE 6	PACP DEFECT CODE 7	PACP DEFECT CODE 8
2769	2770	512A	2200	2.2	D	DSC	DSF					
3002	90	5131	5131	4	MSA	MWL	CM	IS	BSV	DSC	ID	MSA
3090	3091	5131	4221	2.4	IW	BSV	IR x 2	FS	MWLS © x 2			
2787	2790	5126	2100	2.4	MWLS x 4	DAGS	DV 10%					
2748	2747	4121	0000	3	MWLS	D 5%						
2974	2973	4A00	0000	4	MWL	FM ©						
3086	3039	413A	0000	2.2	MWLS x 2	CC	CL x 2	CS x 3	CL	CM, CM©	FM	
2770	2771	412G	0000	2	MWLS ©	D, 5%						
10174	2971	352B	0000	2.2	MWLS	MWLS ©						
2733	3086	322G	4231	2.1	MWLS ©	IR X 2	CM X 2	IS X 4	ID			
2729	2728	312G	5445	2.4	CC	MWLS	CL	CS X 10	MWLS © X 2	CM	IG X 4	IR X 5
3091	2733	312C	4100	2.1	MWLS © X 2	CS	CM	IS X 2				
5416	5415	312A	5100	2.3	IG	MWLS ©	IS	CM				
3039	3002	3200	2600	2.2	DAGS ©	CM X 2	IS	DAE ©	MSA			
2772	2743	3126	0000	2.1	MWLS ©	MWLS 35%						
2742	3092	3100	4200	3.7	FS	IR X 2						
2747	SEAPORT PUMP STATION #2	3100	4100	3.5	MWLS	MCU	MSA					
8797	8746	3100	1100	2	LD	MWLS 45%						

A © after a defect code indicates a continuous defect. A defect with a "(Code) x 2, etc" indicates the number of incidences of a particular defect in a line segment.

We understand that most GIS systems contain errors, and are diligent in the review and correction of inaccurate asset information that we discover in the field. Crews will record the correct sewer length, diameter, and material for each inspection. This information will be presented at the end of the project in a discrepancy report so that the District can update their GIS records and as-builts.

Deliverables:

NPS will record all inspections using the PACP-certified software compatible with the Districts Wincan software. Status updates and spreadsheets will be mailed to GSD staff each Friday, discussing the sewers cleaned and televised that week, any issues encountered, and a plan and schedule of work for the next week. Any significant issues or defects discovered in the field will be reported to GSD staff immediately. NPS will provide a final report with PACP results for all pipelines inspected, along with recommendations for repair and maintenance. This will allow the District to quickly see what pipes are in poor condition, and if immediate repairs are needed. NPS' Project Manager will review all results with GSD personnel at a Final Data Review Meeting upon completion of all inspections.

Deliverables include:

- All sewer pipeline cleaning and CCTV inspections will be tracked on the Project Tracking Spreadsheet and delivered to the District.
- Weekly Updates provided to GSD including progress, and location schedule.
- GSD will receive CCTV videos in MPEG format showing defects identified in each sewer segment. Client will also receive a PDF inspection report, and a PACP compliant database.
- GIS Discrepancy report noting any differences in pipe size or material between the actual and the Districts GIS information.
- Summary Final Project Report, and Summary Spreadsheet, with repair and maintenance recommendations and remaining useful life estimates.

Engineering Summary Report

The Final Engineers Report will be worked on throughout the duration of the CCTV inspection project. As inspection data comes in, it will be reviewed, assessed, and prioritized so that the final recommendations report can be delivered soon after completion of all field work.

NPS is experienced in many methods of maintenance and trenchless rehabilitation, and therefore can recommend the latest innovations in pipe rehabilitation, and also simple repair methods that will maintain or improve the level of service at the lowest cost. NPS crews are highly experienced in CIPP point repairs and CIPP connection and lateral lining, injection grouting to stop infiltration, and centrifugally cast concrete pipe structural coatings (CCCP). We will recommend quick and low-cost repairs whenever possible that can go a long way toward restoring reliability and efficiency of the sewer system.

The condition scores for all assets will be compiled, and components of the Assessment and Recommendations Report will be generated and summarized based on the results of the condition assessment.

Michelle Beason, the Project Team Leader and Engineer, is a nationally recognized expert in pipeline inspection and analysis and has been performing sewer and storm pipeline inspection work and the subsequent RUL forecasting and rehabilitation planning for the majority of her 28-year career. Because of her extensive software, GIS, inspection, asset management, and rehabilitation experience, Michelle is uniquely qualified to manage the project.

GSD FIELD SUPPORT REQUIRED: We do not anticipate needing any District Field Support. We will only need keys to any locked gates, access to the WWTP to obtain recycled water and for dumping debris, and assistance obtaining access to any other restricted areas. We will also need a key (if any) to bolted manhole lids.

COST ESTIMATE

Encroachment permits will be required for the City of Santa Barbara and City of Goleta and we have experience with these requirements based on our past working relationship with GSD and the City of Santa Barbara. Minor traffic control is included in our prices, and includes cones and signage. Major traffic control, including preparation of traffic control plans, and flaggers/extensive signage will be subcontracted to Traffic Management. These extensive traffic control setups can be billed at actual cost plus 10%. This method of billing will result in the lowest traffic-related costs to the District.

The cleaning and inspection unit costs include all labor, material, and equipment to perform the duties effectively and efficiently. All CCTV inspections will be completed by PACP certified operators using the PACP-certified software. A final project summary report with recommendations will be prepared by Michelle Beason, a Professional Engineer with 28-years' experience in the Asset Management of wastewater and water facilities.

Appendix B includes the cost schedule and other required forms, and signed Addendums 1 and 2. We would like to clarify a few items in the cost proposal, and offer alternative methods that will save the District money.

Traffic Control:

- Minor traffic control including basic cones and signs are included in all setups at no extra charge.
- We will use MUTCD typical traffic control plans whenever possible.
- Site specific plans will be subcontracted to Traffic Management to prepare.
- Traffic control setup costs for major setups can vary, but the highest daily setup fee is listed in our cost schedule.
- All traffic control plans and setups will be billed at actual Cost plus 10%.

Bypass: Is not anticipated, but a small amount was placed to hand flow through plug rental expenses.

PROJECT SCHEDULE

Notice to proceed is estimated to be given on or after November 30, 2020, and we will work to finalize permits and start as quickly as possible after NTP. A detailed revised final schedule will be produced after the kickoff meeting, and that will be the Baseline schedule going forward. A simplified project schedule can be found below. We will supply 1 or 2 crews as needed to complete all work within the District's schedule of 75 calendar days.

Project Management will be a priority throughout this project to ensure that the assets are cleaned and inspected effectively, and on schedule. The Project Manager, Ms. Beason, will maintain the project schedule throughout the duration of the project and ensure that all project Milestones are met, reviewing the project status weekly with the District.

One of the many advantages of selecting NPS for this work is that we have a large fleet of jet/vac (14) and CCTV trucks (14), and we can easily bring additional resources and equipment to the project to help increase production to meet scheduling and completion demands.

Task Name	Duration	Start	Finish
Notice To Proceed (estimated)	1 day	Mon 11/30/20	Mon 11/30/20
Prepare Traffic Control Plans	7 days	Tue 12/1/20	Wed 12/9/20
Obtain Permits	7 days	Tue 12/1/20	Wed 12/9/20
Mobilization	1 day	Tue 12/8/20	Tue 12/8/20
Cleaning and CCTV Inspections (Provided by 1 or 2 crews)	50 days	Tue 12/8/20	Mon 2/15/21
QA/QC of Inspection Data and Final Report Preparation	50 days	Tue 12/8/20	Mon 2/15/21
Enineering Report and Recommendations	50 days	Tue 12/8/20	Mon 2/15/21
Final Project Review Meeting	1 day	Mon 2/22/21	Mon 2/22/21

APPENDIX A
REFERENCES

NATIONAL PLANT SERVICES RECENT PAST PROJECTS LIST (PARTIAL)

CLIENT	PROJECT DATES	SCOPE OF WORK	PROJECT SIZE	SIZE UNIT	PROJECT COST	CONTACT PERSON	CONTACT NUMBER	CONTACT EMAIL
Los Angeles County Flood Maintenance Division	2008-Present, On Call Contract	On Call Contract to perform all storm maintenance work	millions of feet	LF	$12,000,000 (over all years)	Rick Edwards	626-260-3151	redwards@dpw.lacounty.gov
DSRSD, Dublin, CA	2017-Present, On-Call Contract	On Call Contract to perform various clean and CCTV work	On Call		$50,000 per year	Ken Peterson	925-875-2252	peterson@dsrsd.com
San Francisco Public Utilities Commission, CA	2016-Present, On Call Contract	On Call Contract to perform cleaning, CCTV, injection grouting, and point repairs to reduce infiltration	On Call - 3 Year		$ 3,000,000	Hayden Kam	415-640-7527	hkam@sfwater.org
Redwood City, CA	2016-Present, On Call Contract	Various projects of various sizes. We just completed another clean and CCTV project of 78,000 LF of small diameter sewers. Final engineering reports are presented with repair, maintenance,and rehab recommendations.	On Call		various	Joel Evora	650-780-7328	jevora@redwoodcity.org
EBMUD Consent Decree Advisory Group Field Services Contract, CA	2016-Present, On Call Contract	Multi-Year on-call contract to provide cleaning, CCTV, smoke testing, and flow monitoring services to the 7 Cities that contribute to the EBMUD system.	On Call		$ 3,000,000	Kristina Zuniga		kristina.zuniga@ebmud.com
City of Alameda, CA	2017-Present	We have completed multiple projects under the EBMUD CDAG Project, with a current clean and inspection project under way.	Various projects over the years. Current Project is 50,000 LF of large diameter pipeline clean and CCTV		$ 493,000	Erin Smith		esmith@alamedaca.gov
City of Carlsbad, CA	December 2019-January 2020	Inspection of large diameter interceptors through easements and wetland areas	18,000	LF	$ 70,000	Stephanie Harrison		stephanie.harrison@carlsbadca.gov
West County Wastewater District	2019-Present	Cleaning and inspection of large diameter interceptors from 12"-48". This was an inspect to clean project and a daily rate was charged to save the District money. First phase complete and waiting for more work to be assigned.	10,076	LF	$ 500,000	Gordon Times		gtimes@wcwd.org
West Valley Sanitation District	2019-Present	Cleaning and inspection of 6" and 8" diameter sewer mains. Two annual phases of work. First phase completed March 2020, second phase to start after July 1, 2020.	132,618	LF		Alan Kam		akam@wvsd.org
City of Auburn, CA	November 2019-March 2020	Inspection of 60,000 LF of large diameter sewer interceptors	60,000	LF	$ 400,000	Robert Elwell		relwell@auburnwa.gov
City of Roseville, CA	Sept-Dec 2019	CCTV, Sonar, and 3D laser of large diameter interceptors; provide maintenance and rehab recommendations.	21,885	LF	$ 150,950	Chris Bracco	916-746-1892	cbracco@roseville.ca.us
City of Roseville, CA	2017-1018	Large diameter cleaning and CCTV project in 33"-66" pipelines	8,000	LF	$ 208,401	Chris Bracco	916-746-1892	cbracco@roseville.ca.us
Delridge Trunk Cleaning Project, King County, WA	2018	Cleaning, debris disposal, and CCTV inspection of 48" and 54" sewer interceptors containing 50% of hardpacked debris. The Recycling jet vac was used on this project.	3,000	LF	$ 285,000	Michael Sands		michael.sands@kingcounty.gov
City of Santa Clara, CA	May 2016-January 2017	Clean and Inspection of single, double, and triple barrel siphons from 8"-24"	19	siphon assemblies	$ 777,000	Shilpa Mehta	408.615.2011	smehta@santaclaraca.gov
DSRSD, Dublin, CA	April 12, 2016 - July 2017	Clean and CCTV inspection of 6"-27" sewer lines	370,000	LF	$ 450,000	Jackie Yee	925-875-2258	yee@dsrsd.com
City of El Cajon, CA	July 5, 2019	Clean and CCTV	15,000	LF	$ 91,000	David Keltner	619-441-1550	
City of Los Angeles, CA	2019 - Present	CCTV of sewer interceptors from 36" to 54" for City of LA through a contract with CDM	1,000,000	LF	$ 1,200,000	Scott Dellinger, CDM		sdellinger@cdmsmith.com

City of Wasco, CA	2016	Clean and CCTV	61,000	LF	$ 77,000	Jeremy Bowman	661-758-7223	jebowman@ci.wasco.ca.us
Ace Pipe Cleaning, for St. Louis, MO	2013-2016	Clean, CCTV inspection, and lateral lining services	2,000	services	$ 600,000	Steve Hontz	800-325-9372	shontz@acepipe.com
Cucamonga Valley Water District, CA	April 19-22, 2016	Cleaning and CCTV inspection; Lateral lining services	4	services	$ 19,600	Shawn Spromberg	909-912-4099	shawns@cvwdwater.com
Carpinteria Sanitary District, CA	April 22-25, 2016	Cleaning and CCTV inspection; Lateral lining services	3	services	$ 14,995	Matt Oliver	805-684-7214, ext 22	matto@carpsan.com
County of Los Angeles, CA	May 2015-March 2016	Clean and CCTV 6"-24"	1.2 Million	LF	$ 1,200,000	Del Ortega	562-861-0316 ext 231	dortega@dpw.lacounty.gov
City of San Jose, CA	2015-present	Sanitary Sewer Condition Assessment of small diameter sewer lines. Various annual projects of between 200,000-400,000. New project #9265 starting June 2020 of 353,000 LF 6"-10".	400,000	LF	$ 750,000	Titus Raceles, Mathew Nguyen, David Nguyen, Lorimer Ancheta, Amanda Lei		titus.raceles@sanjoseca.gov, matthew.nguyen@sanjoseca.gov, david.nguyen@sanjoseca.gov, lorimer.ancheta@sanjoseca.gov, amanda.lei@sanjoseca.gov
Shasta County, CA	February - March 2016	Clean and CCTV 6" - 12"	100,000	LF	$ 280,000	Troy Bartolomei	530-245-6827	tbartolomei@co.shasta.us
City of Alameda, CA	Feb 2015-Oct 2015, and 2014-2015	Clean and CCTV of sewer lines	370,000	LF	$ 146,000	Erin Smith	510-747-7938	
East Bay Municipal Utility District, Oakland, CA	Sept 2015-Oct 2015	Cleaning of 18"-36" interceptors using the Recycler jet vac	2,500	LF	$ 75,000	Dillon Cowan	510-287-1689	dcowan@ebmud.com
SFPUC, San Francisco, CA	December 2-19, 2015	Cleaning, CCTV, and Chemical grout injection to stop I&I in 12" to 54" sewers	6	segments	$ 100,000	Hayden Kam	415-695-7362	hkam@sfwater.org
City of Sacramento, CA	2015-2017	Three annual phases of work totaling 145,047 LF of Multi-Sensor inspection (CCTV, laser, sonar) of 24" to 120" sewer and combined system interceptors. Prepared final summary reports for each project that incorporated the PACP data, visual observations, and the laser and sonar data to determine RUL and repair and maintenance recommendations.	145,047	LF	$ 830,000	Quoc Nham (Now with City of Rancho Cordova)		qnham@cityofranchocordova.org
City of San Bruno, CA	May 2015-Sept 2015	CCTV inspection and PACP coding of 285 house laterals	285	laterals	$ 57,000	Jimmy Tan	(650) 616-7075	jtan@sanbruno.ca.gov
City of Roseville, CA	Nov 2014-Feb 2015	Multi sensor inspections (CCTV, Sonar, Laser) of 30"-66" interceptors	28,000	LF	$ 134,000	Jose Lopez	916-774-5688	jlopez@roseville.ca.us
City of Eugene, OR	Aug 2014-October 2014	Large diameter CCTV and sonar inspections of interceptors	60,100	LF	$ 237,000	Kevin Farthing	541-682-4894	Kevin.T.Farthing@ci.eugene.or.us
City of Tacoma, WA	Aug 2014 - Dec 2015	Multi sensor inspections (CCTV, Sonar, Laser) of 24"-72" interceptors	86,000	LF	$ 575,000	Rod Rossi	253-502-2127	rrossi@ci.tacoma.wa.us
DSRSD, Dublin, CA	May 2014-Jan 2015	Multi sensor inspections (CCTV, Sonar, Laser) of 18"-42" interceptors	36,000	LF	$ 220,000	Ken Peterson	925-875-2252	peterson@dsrsd.com
Harry Joh Construction, County of LA Public Works	2014	Clean and CCTV inspection of 8"-24" sewers	2,040,545	LF	$ 1,570,574	Edward Kim	562-630-3348	
City of Fullerton, CA	2009 - 2019	Clean double barrel siphons (33" and 36"), each 300' length. National Plant Services has been cleaning these siphons at least twice a year for over 10 years.	various		various	Anthony Reynoso	714-738-2916	

APPENDIX B
COST SCHEDULE, REQUIRED FORMS, ADDENDUMS

National Plant Services, Inc.

PROPOSAL FORM – BID SCHEDULE

ITEM	DESCRIPTION AND UNIT PRICE WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	TOTAL PRICE IN FIGURES
1	Mobilization, Demobilization & Insurance for the lump sum price of Twenty Four Thousand Nine Hundred dollars.	Lump Sum (L.S.)	1	$24,900	$24,900
2	Hydraulic Jet Cleaning of 6-inch diameter pipes accessed from a paved roadway, complete, for the unit price of Eighty Seven Cents ~~dollars~~ per linear foot.	Linear Feet (L.F.)	22,515	$0.87	$19,588.05
3	Hydraulic Jet Cleaning of 8-inch diameter pipes accessed from a paved roadway, complete, for the unit price of Sixty Five Cents	L.F.	118,826	$0.65	$77,236.90

ITEM	DESCRIPTION AND UNIT PRICE WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	TOTAL PRICE IN FIGURES
	_____ ~~dollars~~ per linear foot.				
4	Hydraulic Jet Cleaning of 10- to 15-inch diameter pipes accessed from a paved roadway, complete, for the unit price of _____ Eighty Five Cents _____ ~~dollars~~ per linear foot.	L.F.	26,022	$0.85	$22,118.70
5	Hydraulic Jet Cleaning of 6-inch diameter pipes accessed from an easement, complete, for the unit price of _____ Two Dollars and Sixty Five Cents ~~dollars~~ per linear foot.	L.F.	1,209	$2.65	$3,203.85
6	Hydraulic Jet Cleaning of 8-inch diameter pipes accessed from an easement, complete, for the unit price of One Dollar Fifty Cents _____	L.F.	7,180	$1.50	$10,770.00

ITEM	DESCRIPTION AND UNIT PRICE WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	TOTAL PRICE IN FIGURES
	_____ ~~dollars~~ per linear foot.				
7	Hydraulic Jet Cleaning of 10- to 15-inch diameter pipes accessed from an easement, complete, for the unit price of _____ One Dollar and Seventy Seven Cents ~~dollars~~ per linear foot.	L.F.	7,357	$1.77	$13,020.12
8	Pipeline CCTV Inspection and Video Recording of 6-inch diameter pipes from a paved roadway, complete, for the unit price of _____ One Dollar and Twenty Five Cents ~~dollars~~ per linear foot.	L.F.	22,515	$1.25	$28,143.75
9	Pipeline CCTV Inspection and Video Recording of 8-inch diameter pipes from a paved roadway, complete, for the unit price of Seventy Three Cents	L.F.	118,826	$0.73	$86,742.98

ITEM	DESCRIPTION AND UNIT PRICE WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	TOTAL PRICE IN FIGURES
	_____ _____ ~~dollars~~ per linear foot.				
10	Pipeline CCTV Inspection and Video Recording of 10- to 15-inch diameter pipes from a paved roadway, complete, for the unit price of _____ Seventy Nine Cents _____ ~~dollars~~ per linear foot.	L.F.	26,022	$0.79	$20,557.38
11	Pipeline CCTV Inspection and Video Recording of 6-inch diameter pipes accessed from an easement, complete, for the unit price of _____ One Dollar and fifty Cents ~~dollars~~ per linear foot.	L.F.	1,209	$1.50	$1,813.50
12	Pipeline CCTV Inspection and Video Recording of 8-inch diameter pipes accessed from an easement, complete, for the unit price of	L.F.	7,180		

ITEM	DESCRIPTION AND UNIT PRICE WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	TOTAL PRICE IN FIGURES
	One Dollar and Thirty Cents ~~dollars~~ per linear foot.			$1.30	$9,334.00
13	Pipeline CCTV Inspection and Video Recording of 10- to 15-inch diameter pipes accessed from an easement, complete, for the unit price of One Dollar and Thirty Cents ~~dollars~~ per linear foot.	L.F.	7,357	$1.30	$9,562.80
14	Reverse Set-up for Pipeline CCTV Inspection in Paved Roadway, complete, for the unit price of One Hundred and Fifty dollars per set-up.	Per Set-up	40	$150.00	$6,000.00

ITEM	DESCRIPTION AND UNIT PRICE WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	TOTAL PRICE IN FIGURES
15	Reverse Set-up for Pipeline CCTV Inspection in Easement, complete, for the unit price of Three Hundred and Fifteen dollars per set-up.	Per Set-up	5	$315.00	$1,575.00
16	Development and Implementation of Engineered Traffic Control Plans, Postings, and Notifications, complete, for the daily rate price of Two Thousand Four Hundred dollars.	Per Day	5	$2,400.00	$12,000.00
17	Handle Sewage Flows/Bypass Pumping, complete, for the unit price of Two Hundred Dollars	Per Set-up	5	$200.00	$1,000.00

ITEM	DESCRIPTION AND UNIT PRICE WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	TOTAL PRICE IN FIGURES
	_____ dollars per set-up.				
18	**Contingency Allowance**	Allowance	Allowance	$25,000	$25,000

TOTAL AMOUNT OF ITEMS 1-18: $ 372,567.03

TOTAL AMOUNT WRITTEN IN WORDS:

Three Hundred Seventy Two Thousand Five Hundred Sixty Seven & 03/100s

Bid amount of each of the above bid items must be filled in and completed in figures and written in words.

The above amount is for the work completed and includes any and all sales taxes and levies which may be applicable.

The undersigned has examined the location of the proposed Work and is familiar with the Specifications and the local conditions at the place where the Work is to be done. The undersigned has checked the above amount and understands that the District will not be responsible for any errors or omissions on the part of the undersigned in making up this proposal.

It is agreed that this proposal may not be withdrawn within a period of thirty (30) days after the date set for the opening thereof. The undersigned understands that the District reserves the right to reject any or all bids and to waive any informality in bids received that in the judgment of the District Board is to the best interest of the District.

In accordance with the specifications, the undersigned further agrees to so plan the Work and to prosecute it with such diligence that said work shall be commenced within ten (10) days after notice from the District to proceed with the work, and the entire project completed within 75 consecutive calendar days from the date of Notice to Proceed.

PROPOSAL FORM (CONTINUED)

Contractor License No. 351503

Classification A, C-33, C-42, C-61/D-38

License Expiration Date 11/30/21

The Bidder affirms or declares under penalty of perjury under the laws of the State of California that the foregoing licensing information is true and correct. Signed this 6 day of November, 2020.

Signature Michelle B

By: Michelle Beason

Title: Regional Manager

Business Address: 1461 Harbor Avenue
Long Beach, CA 90813

Business Tel.: 925-262-7366 / 562-436-7600

Dated 11/6/20

Home Office Address (if different from above):

Email Address: Mbeason@nationalplant.com

DESIGNATION OF SUBCONTRACTORS

Each bidder shall set forth below: (a) the name and the location of the place of business of each subcontractor who will perform work or labor, fabricate a portion of the work or improvement according to detailed drawings in the Project Plans, or render service to the Contractor in or about the site of the Work and (b) the portion of the Work which will be done by each such subcontractor. If the Contractor fails to specify a subcontractor for any portion of the work as above stated, the Contractor agrees to perform that Work himself.

Name: Subcontractors	Address Shop, Mill or Office	Class of Work	Portion of Work to be Done	Subcontractor's License No. and Class
Traffic Management	2435 Lemon Ave Signal Hill, CA 90755	Flaggers/ Major Traffic Control	TBD	C-31/C-61/D42 785804

EXPERIENCE QUALIFICATIONS

The bidder has been engaged in the contracting business, under the present business name for 40 years. Experience in work of a nature similar to that covered in the proposal extends over a period of 40 years.

The bidder, as a contractor, has never failed to satisfactorily complete a contract awarded to him, except as follows: N/A

The following contracts have been satisfactorily completed in the last three years for the persons, firm or authority indicated, and to whom reference is made:

*Please see extensive list of references in Appendix A

Year	Type of Work	Contract Amount	for Whom
2008-Present	Storm Cleaning	12,000,000 all years	LA County Flood Division
2017-Present	Sewer Clean & TV	$1,000,000 all contracts	City of Alameda
2015-Present	Sewer Clean & CCTV	Millions in multiple contracts	City of San Jose
2016-2017	Sewer Clean & TV	$450,000	DSRSD

The following is a list of plant and equipment owned by the bidder, which is definitely available for use on the proposed work as required.

Quantity	Name, Type and Capacity	Condition	Location
14	Cues CCTV trucks	Excellent	Long Beach
14	Vactor Combination Jetters	Excellent	Long Beach
1	Trailer Jetter for easements	Excellent	Long Beach
12	Pickup Trucks & arrow Board trucks	Excellent	Long Beach
Multiple	Grouting Trucks / Other Equip	Excellent	Long Beach

Signed Michelle B

Title Regional Manager

(Same signature as on Proposal)

SEWAGE BYPASSING QUALIFICATION FORM
(To be submitted with Bid)

Provide the following information for each foreman who will be responsible for bypassing of project sewage flow. Qualified foreman shall have a minimum of 5 years of supervisory field experience on at least 3 successfully completed projects and 3 years of supervisory field experience in flow diversion.

CONTRACTOR: National Plant Services

FOREMAN: Daniel Solano & Luis Figueroa

PROJECT: Multiple projects over 14+ years DATE COMPLETED: 2006 - present

NAME & ADDRESS OF OWNER: City of Vancouver, WA Lateral Unity
415 W. 6th Street, Vancouver, WA 98660

CONTACT PERSON: Jessie Uribe PHONE NUMBER: 360-798-5437

SUPERVISORY FIELD EXPERIENCE – FLOW DIVERSION: 4 years months.

PROJECT: Carpinteria Lateral Unity DATE COMPLETED: 2017

NAME & ADDRESS OF OWNER: Carpinteria Sanitary District
5300 Sixth Street, Carpinteria CA 93013

CONTACT PERSON: Craig Murray PHONE NUMBER: 805-684-7214

CCTV INSPECTION QUALIFICATION FORM
(To be submitted with Bid)

Provide the following information for each foreman who will be responsible for CCTV inspection. Qualified foreman shall have a minimum of 3 years of experience specializing in the televising of wastewater collection systems on at least 3 successfully completed projects. Provide current NASSCO PACP certification of all CCTV operators working on this project.

CONTRACTOR: National Plant Services

FOREMAN: Luis Figueroa

PROJECT: Mutple - over 14 years DATE COMPLETED: 2006-present

NAME & ADDRESS OF OWNER: City of Vancouver, 415 W 6th Street, Vancouver

CONTACT PERSON: Jessie Uribe PHONE NUMBER: 360 798 5437

SUPERVISORY FIELD EXPERIENCE – CCTV INSPECTION: 4 years months.

PROJECT: Carpinteria Lateral Line DATE COMPLETED: 2017

NAME & ADDRESS OF OWNER: Carpinteria Sanitary District 5300 6th Street, Carpinteria, CA 93013

CONTACT PERSON: Craig Murray PHONE NUMBER: 805-684-7214

CCTV INSPECTION QUALIFICATION FORM
(To be submitted with Bid)

Provide the following information for each foreman who will be responsible for CCTV inspection. Qualified foreman shall have a minimum of 3 years of experience specializing in the televising of wastewater collection systems on at least 3 successfully completed projects. Provide current NASSCO PACP certification of all CCTV operators working on this project.

CONTRACTOR: National Plant Services

FOREMAN: Franco Ornelas

PROJECT: Many DATE COMPLETED: 5 years experience

NAME & ADDRESS OF OWNER: City of San Jose - Current Job
San Jose, CA

CONTACT PERSON: Michael Flores PHONE NUMBER: 408-535-5603

SUPERVISORY FIELD EXPERIENCE – CCTV INSPECTION: Years months.

PROJECT: Los Angeles PW DATE COMPLETED: many years

NAME & ADDRESS OF OWNER: County of Los Angeles

CONTACT PERSON: Del Ortega PHONE NUMBER: 562-861-0316 x 231

GOLETA SANITARY
Water Resource Recovery District

ADDENDUM NO. 1

TO THE PROPOSAL FORMS AND SPECIFICATIONS FOR 2020 CCTVI PROJECT

Sewer Lines Cleaning, CCTV Inspection & Assessment

October 20, 2020

OWNER: Goleta Sanitary District
1 William Moffett Place
Goleta, CA 93117

TO: ALL BIDDERS

PROPOSAL OPENING DATE: November 10, 2020 10:00 AM

Notice is hereby given to prospective bidders that the Proposal Forms and Specifications for the above-referenced project has been modified as hereinafter set forth. This Addendum NO. 1 shall form a part of the Proposal Forms and Specifications and takes precedence over the original Proposal Forms and Specifications.

Bidders shall acknowledge receipt of Addendum NO. 1 in the space below. This page is attached to the Proposal.

BY _____
Goleta Sanitary District

Acknowledgement to be attached to the sealed proposal.

I have received two (2) pages of Addendum No. 1

Signed: _____

Date: 11/6/20

GOLETA SANITARY
Water Resource Recovery District

ADDENDUM NO. 2

TO THE PROPOSAL FORMS AND SPECIFICATIONS FOR

2020 CCTVI PROJECT

Sewer Lines Cleaning, CCTV Inspection & Assessment

October 20, 2020

OWNER: Goleta Sanitary District
1 William Moffett Place
Goleta, CA 93117

TO: All Bidders

PROPOSAL OPENING DATE: November 10, 2020 10:00 AM

Notice is hereby given to prospective bidders that the Proposal Forms and Specifications for the above-referenced project has been modified as hereinafter set forth. **This Addendum No. 2 shall replace the project Proposal Forms and Specifications in their entirety** and takes precedence over the original Proposal Forms and Specifications.

Bidders shall acknowledge receipt of Addendum No. 2 in the space below. This page is attached to the Proposal.

BY _____
Goleta Sanitary District

Acknowledgement to be attached to the sealed proposal.

I have received two (2) pages of Addendum No. 2

Signed: Michele D

Date: 11/6/20

Rcb Michel

Request for Proposals
GSD 2020 CCTVI Project
Informational Bulletin
November 2, 2020

The following information is provided as the District response to these questions presented to the District. The District's response in provided in **bold** immediately after each concern. There are no changes to the Proposal Forms and Specifications as part of this bulletin.

Item 1: We would like to confirm contract footage 180,000 LF or 183,000 LF? Page 2 section 1.2 states 180,000 LF., page 13 section IB-01 states 183,000 LF and page 77 section 2-1 scope of work says 183,000 LF.

See Page 72-74, I-93 Description of Bid Items, Measurement of Payment Linear Foot, Hydraulic Jet Cleaning, Pipeline CCTV Inspection and Video Recording. Please note that the referenced footage is prefaced with the word "approximately" in each of the sections.

Item 2: For the 75 calendar days to complete the work, does that include weekends, and the work moratorium December 21, 2020 to January 1, 2021?

See Page 37, General Conditions Section 1-02 Contract Time.

Item 3: Is night and weekend work acceptable?

See Page 59 Section I-52 Night Work.

See Page 43 Section I-18 Compliance with Laws Paragraph O. Overtime and Shiftwork.

Item 4: Will you be requiring cleaning reports?

Cleaning Reports are not listed as a required submittal.

Item 5: Will the City provide GIS shape files for mapping purposes that will include all layers showing manhole id numbers, drop connections, cleanouts, divided flow manholes, junction structures and pump stations?

The District may provide GIS shape files to the contractor selected for this work.

Item 6: Is the contractor allowed to perform multiple runs from one manhole?

Yes, with the understanding that each pipe segment shall be CCTV inspected individually in accordance with the Proposal Forms and Specifications.

Item 7: When a CCTV reverse pull is required and the contractor notifies the district, what will be the response time for the district to authorize the reverse pull?

The District intends to respond to such notifications at the time the notification is made to the District.

AGENDA ITEM #2

AGENDA ITEM: 2

MEETING DATE: NOVEMBER 16, 2020

I. NATURE OF ITEM

Consideration of Agreement with Filippin Engineering, Inc. for Project Management and Inspection Services on the GSD 2020 CCTVI Project.

II. BACKGROUND INFORMATION

The District previously approved the solicitation of sealed proposals for the GSD 2020 Closed Circuit Television Inspection (CCTVI) Project. The project consists of CCTV inspection of approximately 183,000 linear feet of 6-inch to 15-inch diameter sewer lines throughout the District. This project will be combined with the ongoing CCTVI efforts by GSD staff to allow a complete assessment of all District Collection System pipe segments by Spring of 2021. The assessment will provide the basis of the District 10-year Capital Improvement Projects list.

The Request for Proposals was sent to various CCTVI contractors. Sealed proposals were opened on November 10, 2020 and a recommendation for project award is included under a separate agenda item for tonight's Governing Board meeting.

Filippin Engineering, Inc. (FE) has submitted a proposal for Project Management Services for this project. The attached proposal is presented herein for Board consideration.

III. COMMENTS AND RECOMMENDATIONS

FE is a local engineering firm that specializes in construction management (CM) for public works projects. They have worked on similar projects for public agencies throughout the Central Coast and have excellent references. They recently completed CM services for the GSD Robin Hill Road Sewer Improvement Project. District staff met with FE to review their proposal.

The attached proposal details the project management services to be provided as required by the project in an amount not to exceed $17,640 on a time and materials basis. The FY 2020-21 Budget includes $1,000,000 for this project. Of this amount $900,000 is budgeted for the work. The total cost for CM services as proposed by FE is approximately 2% of the estimated work cost which is in line with industry standards for this type of project.

The Governing Board Engineering Committee reviewed the attached proposal on November 12, 2020 and recommends that the Board approve an agreement with FE for project management services in the amount of $17,640.

IV. REFERENCE MATERIAL

FE Proposal for Project Management Services for the GSD 2020 CCTVI Project

November 9, 2020 W.O. 203601

Goleta Sanitary District
One William Moffett Place
Goleta, CA 93117
Attn: Steve Wagner, General Manager

SUBJECT: PROPOSAL TO PROVIDE CONSTRUCTION MANAGEMENT SERVICES FOR THE 2020 CCTVI PROJECT

Dear Mr. Wagner,

Filippin Engineering, Inc. (FE) is pleased to submit our proposal to provide Construction Management services to the Goleta Sanitary Water Resource Recovery District for its 2020 CCTVI Project. Filippin Engineering and its staff have completed numerous projects of similar scope and are especially well qualified to assist the District with all aspects of the project through the construction phase.

PROJECT UNDERSTANDING / ASSUMPTIONS

We understand the District seeks to have approximately 180,000 linear feet of various sized gravity sewer pipes cleaned, CCTV inspected and assessed for rehabilitation and repair. The sewer pipes to be inspected and assessed consist primarily of Vitrified Clay and PVC with some HDPE and previously CIPP lined VCP pipe.

FE's understanding of the project is based upon our review of the contract documents provided by the District and discussions with District staff. We understand FE will manage the overall construction contract and the District will provide the CCTVI service observation and inspection. This proposal assumes the District's estimate of 75 calendar days to complete the project and that construction is scheduled to begin in early December. FE estimates there are 20 working days per month and within 75 calendar days, there are 40 working days. FE estimates the management of the contract can be accomplished in an average of 2 hours/day.

Our staffing, approach, and proposed services are based on our understanding of these documents and conversations. We are flexible in working with the District to meet the specific needs of this project and welcome any suggestions to our approach in this proposal or throughout the performance of the work. Filippin Engineering understands that payment of prevailing wage is required for the project and we will comply with all prevailing wage requirements for inspection of the work including the preparation of certified payrolls.

PROJECT TEAM AND OVERVIEW

FILIPPIN ENGINEERING – CONSTRUCTION MANAGEMENT

Tyler Beets Associate Construction Manager/Senior Construction Inspector: Mr. Beets has an extensive background in public works construction and over 10 years of direct experience including water and sewer pipelines, underground utilities, drainage, structures, roads, and pavement maintenance. Previously employed with Allen Construction, Tyler served as the operations and production manager, project manager and estimator during his tenure. Tyler's depth of hands-on experience and breadth of knowledge through a range of projects and roles has developed an exceptional skill set in a Senior Construction Inspector. Tyler excels at understanding the construction work as well as the engineering details and design intent. He is as adept at resolving potential field conflicts as he is at communicating with designers or Agency staff. Tyler is apt at providing all manner of Field Inspection tasks, such as daily records and

photos, quality acceptance management, calculation of pay quantities for process billing, tracking extra work or changes, RFI and Submittal participation, and coordination with all manner of project stakeholders.

CONSTRUCTION SUPPORT COSTS

The construction period for this project is estimated to be 75 calendar days. We have assumed management will be required part-time (2 hrs/day) for 40 working days, part-time (4hrs/day) during the 5-day pre-construction phase, and part-time (4hrs/day) during the 5-day post-construction phase.

Our proposed services will be performed on a time and materials basis and shall be billed monthly at the rates then in effect. Charges for "time" include professional, technical, and clerical support services provided by FE. "Materials" include reimbursable expenses, such as outside consultant fees. Based on our understanding of your requirements, we estimate that the fee required for our services will be **$17,640.00.** A breakdown of our services is provided in the following table.

Task	Construction Manager $147	Estimated Fee
Pre-Construction Phase (5 working days @ 4 hrs/day)	20	2,940.00
Construction Phase (40 working days @ 2 hrs/day)	80	11,760.00
Post-Construction Phase (5 working days @ 4 hrs/day)	20	2,940.00
TOTAL BASE FEE	**120**	**17,640.00**

We have estimated the cost of our services based on our understanding at this time of the scope and complexity of the work. However, because our services will be performed on a time and materials basis, and it is possible that our actual charges could exceed the amount we have estimated. During the performance of our services, the need for additional or expanded services will be monitored and communicated by the Project Manager. At the start of the job, we will also prepare a cost projection worksheet that will be used to track costs throughout the project to ensure we keep control of our budget.

We look forward to working with you on this project. If you have any questions or would like to discuss our proposal further, please don't hesitate to call me at (805) 729-0041.

Very truly yours,
FILIPPIN ENGINEERING

Gino P. Filippin, P.E.
Principal Engineer

AGENDA ITEM #3

AGENDA ITEM: 3

MEETING DATE: November 16, 2020

I. NATURE OF ITEM

Review and Consideration of Design and Engineering Services Proposal for Biosolids and Energy Strategic Plan Phase 1 Improvements

II. BACKGROUND INFORMATION

On September 3, 2019, the District adopted a comprehensive Biosolids and Energy Strategic Plan (BESP) to determine the best combination of biosolids treatment, disposal and energy recovery improvements to move the District towards its vision of energy sustainability. The final list of recommended BESP improvements were grouped into the following three phases:

1. Install a new digester to resolve firm capacity issue and install 1st phase of a combined heat and power (CHP) system to convert the existing biogas to energy
2. Install a high strength waste receiving station to increase biogas production and install the 2nd phase of the CHP system to convert additional biogas to energy
3. Install a thermal dryer to produce class A biosolids and reduce hauling costs

On January 6, 2020 the District approved a professional services agreement with Hazen & Sayer (Hazen) for the preparation of a preliminary design report (PDR) on the recommended phase 1 improvements along with a conceptual design of phase 2. The purpose of the PDR was to define the overall scope of the project and identify any potential design and/or environmental issues that would need to be resolved as part of the engineering design and environmental review phase of the project. The PDR was completed and presented to the Board on September 3, 2020.

Over the last 2 months District staff has worked closely with the Hazen team to develop a scope of work for the design engineering and environmental review of the phase 1 improvements based on the PDR. The scope of work is divided into the following 7 tasks:

1. Project Management
2. Investigations/Data Acquisition
   - Geotech Investigation
   - Survey to Support Design
3. Regulatory/Permitting
   - APCD Permit

- CEQA – Mitigated Negative Declaration
- Archeological Mitigation
- Coastal Development Permit
- FAA Notice

4. Grant Funding Application Support
5. Construction Contract Documents
6. Bid Phase Services
7. Engineering Services During Construction (Optional)

The optional services included in task #7 above are not needed for the design phase and can be considered later during the construction phase of the project.

Attached to this report is a copy of the proposal. A presentation on the proposal will be provided at the Board meeting.

III. COMMENTS AND RECOMMENDATIONS

The completion of this first phase of the BESP will result in an ongoing cost savings due to the storage and conversion of biogas to electricity. The timing of this project also aligns with current energy incentives and grants that could significantly reduce the overall cost of the project.

The FY 2020-21 budget includes $400,000 for this effort through the end of the fiscal year. The completion of the proposed design and engineering services is expected to take approximately 12 months. As such, an additional $500,000 was to be included in the FY 2021-22 budget to complete the design and environmental review phase of the project. Funds for the completion of this phase of the project are available in the District's capital reserve funds.

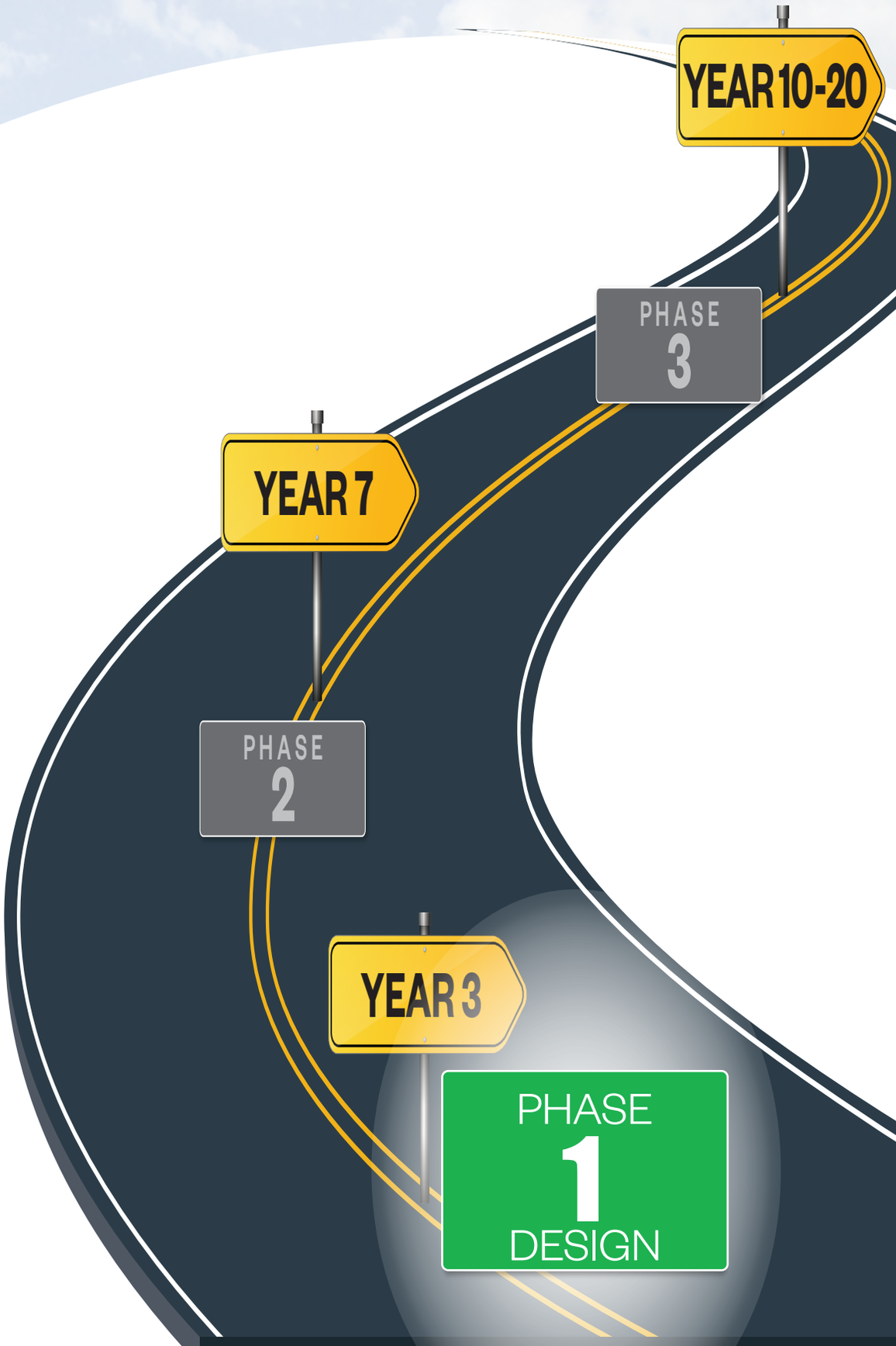
The total cost for tasks 1-6 based on the Hazen proposal is $917,500. The proposed work schedule shows much of the work being completed by the end of the current fiscal year. However, since this project will require review by the Santa Barbara County Air Pollution Control District and the California Coastal Commission for issuance of various permits, the effort will likely take longer than shown.

The Board's Engineering Committee reviewed the attached proposal on November 12, 2020 and recommends moving forward with the design and engineering services as identified in the Hazen proposal. Staff recommends the Board authorize the General Manager to execute a professional services agreement in the form of an addendum to proposal with Hazen for the BESP Phase 1 Design and Engineering Services in an amount not to exceed $917,500.

IV. REFERENCE MATERIAL

Hazen Biosolids & Energy Phase 1 Design and Engineering Services Proposal

Hazen



GOLETA SANITARY
Water Resource Recovery District

Proposal for

Biosolids & Energy Phase 1 Design and Engineering Services

November 5, 2020

Table of Contents

Hazen and Sawyer
11260 El Camino Real, Suite 102
San Diego, CA, 92130 • 858.764.5522

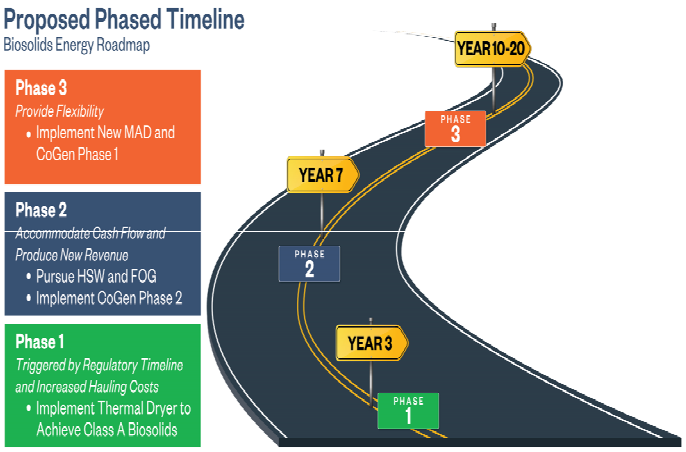
November 5, 2020

Mr. Steve Wagner, PE
General Manager
Goleta Sanitary District
One William Moffett Place
Goleta, CA 93117

Ref: Biosolids and Energy Phase 1 Design and Engineering Services

Dear Steve,

The Biosolids and Energy Strategic Plan provided an opportunity for Goleta Sanitary District (GSD) to set a dynamic vision of biosolids beneficial reuse and energy self-sufficiency for the future. This vision injected fresh thinking, solidly based in business reality to develop a roadmap for GSD to build on its efforts to be good stewards of precious resources. **The Hazen Team embraces the opportunity to continue to implement practical solutions that make sense for GSD - now and into the future.**



Selecting Hazen for the design of a new Digester and Combined Heat and Power (CHP) system provides GSD with continuity from the earlier projects that set the foundation for design of Phase 1 of GSD's Biosolids and Energy Strategic Plan (BESP). GSD has worked with Hazen on numerous projects in the past. We understand your expectations and goals for this project and you are familiar with our management style, which we have adapted to fit GSD's style. Hazen is committed to technical excellence, attention to detail, and superior client service and we will bring this same level of service to GSD's Phase 1 Biosolids and Energy Design project.

Hazen views this project as another opportunity to continue to build our successful partnership with Goleta Sanitary District.

I am pleased to provide GSD with a team with superior technical expertise that will deliver the project in a well- organized, objective and collaborative manner.

1008-399

Hazen

Vision. We will work diligently to comprehend **your needs** and **vision** for this project just as we have strived to do throughout the Biosolids and Energy Strategic Plan and the Phase 1 Preliminary Design.

Design with operations in mind. We recognize that the ultimate success of any engineered solution rests with the individuals who are responsible for the day-to-day operation. Therefore, we will work closely with operations to develop implementable solutions.

Best value path forward. Hazen consistently works with our clients to find solutions which balance capital investment and ongoing costs of operations to come up with the most overall cost effective solution. The Hazen team's combination of technical expertise, experience and knowledge gained from the previous planning and preliminary design that set the foundation for this project provides GSD with the best balance of practical and innovative solutions.

The partnership begins and ends with your vision. Throughout this project, Hazen and our team partners will work collaboratively to truly ***realize more*** from the BESP Phase 1 design and construction. Hazen is committed to providing the leadership and resources necessary to ensure a successful outcome for your project. Should you have any questions about this proposal, please do not hesitate to contact Dawn Guendert at (858) 764-5523, or at dguendert@hazenandsawyer.com.

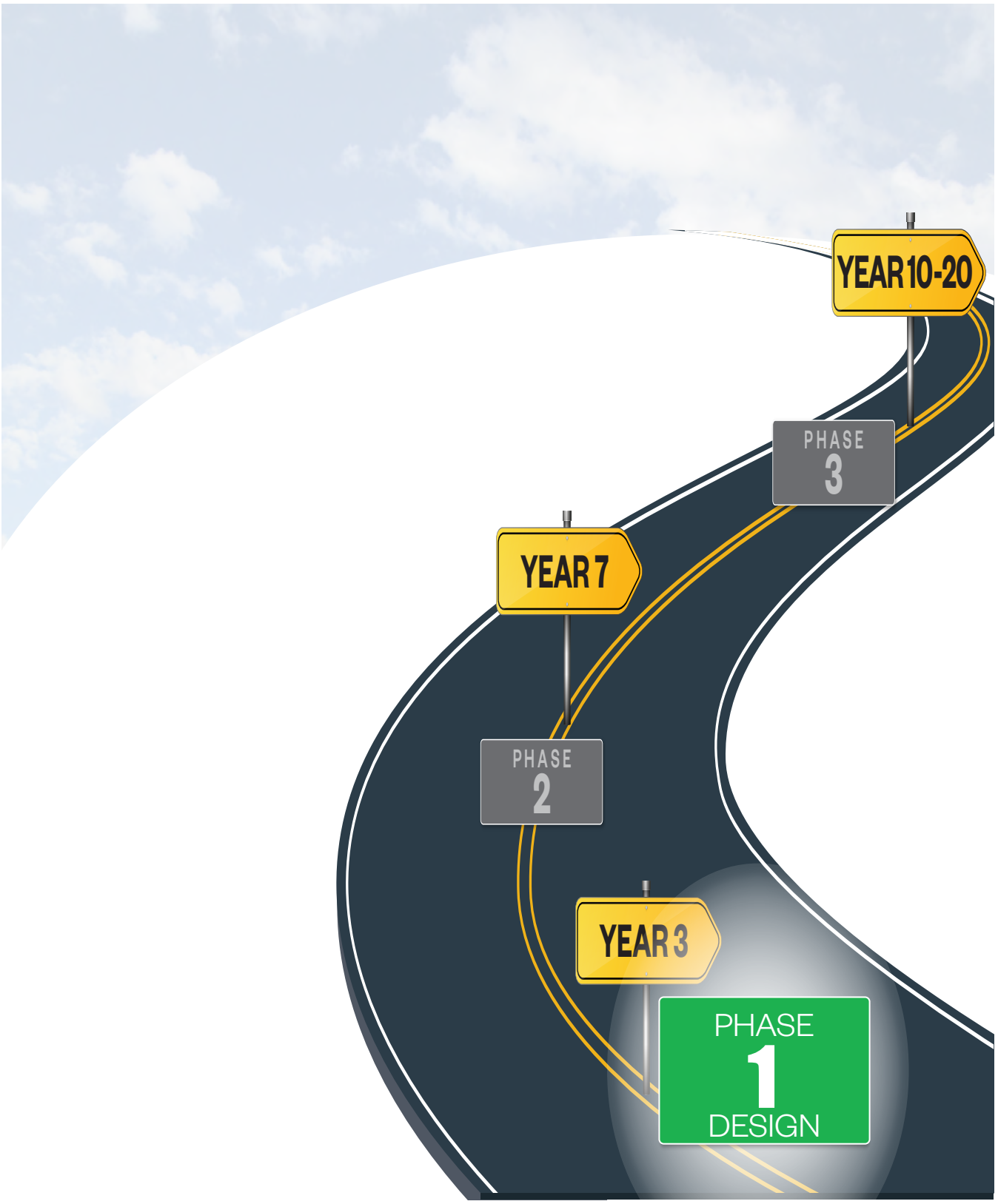
Sincerely,

Dawn Guendert
Project Director

Tim Suydam, PE
Project Manager

Section 1

Background



Section No. 1

Background

Hazen embraces the opportunity to implement the most cost effective solutions for Goleta Sanitary District which balance capital investment and ongoing costs of operations.

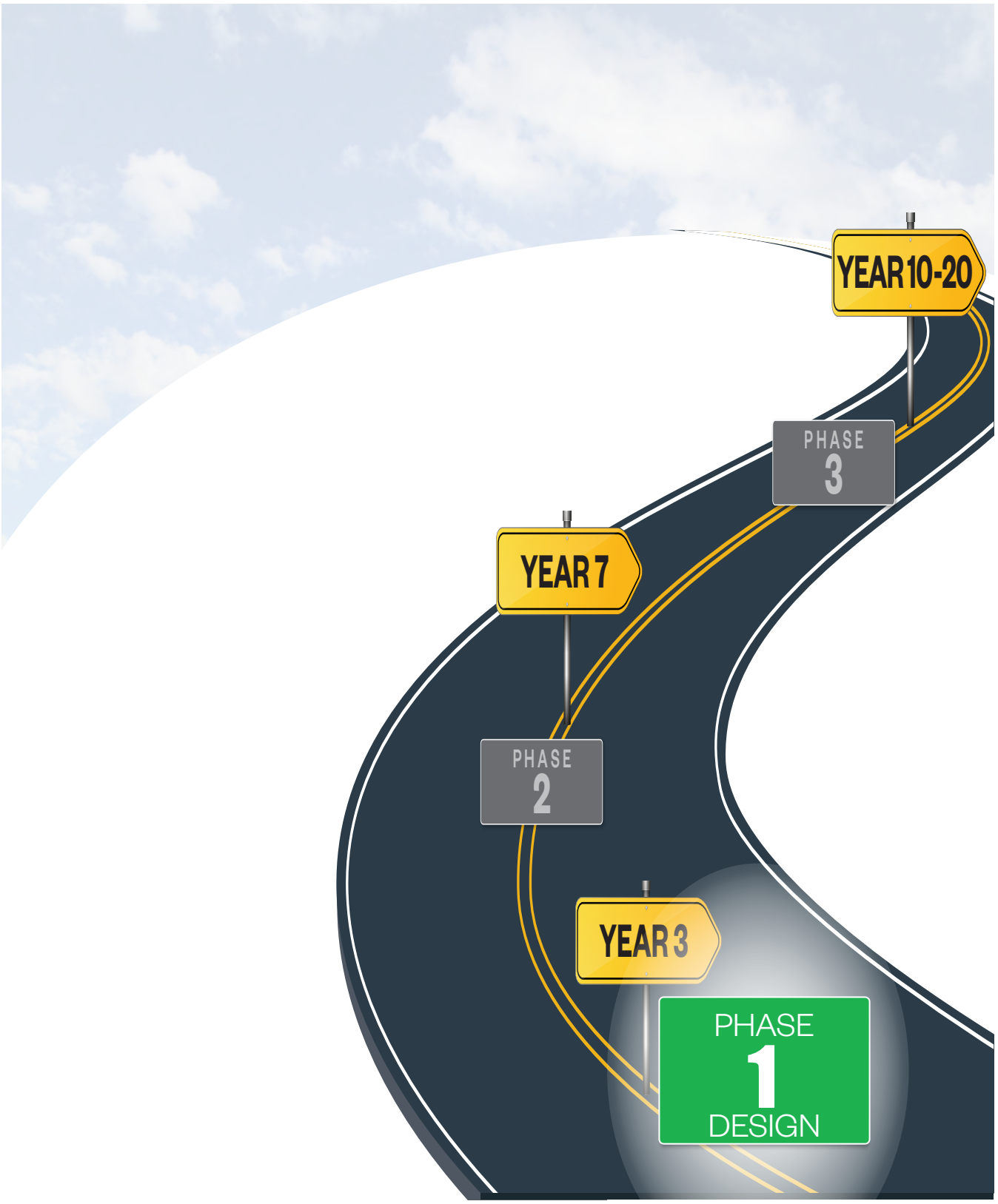
Goleta Sanitary District's (GSD) Biosolids and Energy Strategic Plan (BESP) developed a roadmap for future sustainability to be implemented in a phased timeline. GSD is now moving forward with Phase 1 improvements at its water resource recovery facility (WRRF), which includes adding a new anaerobic digester, a combined heat and power (CHP) system, and converting the existing Digester 1 for biogas storage. The installation of a new, larger digester will restore firm capacity and provide additional capacity for future High Strength Waste (HSW) co-digestion. The increased digester capacity combined with the addition of a new (CHP) system for digester gas beneficial use is the first step towards GSD's strategic goal of energy neutrality.

Hazen and GSD recently completed the Preliminary Design Report which included conducting design calculations for the new anaerobic digester and CHP system; evaluating alternative technologies auxiliary units such as digester covers, mixing and heating systems; sizing new systems and contacting technology vendors, evaluation of regulatory and permitting requirements, archaeological analysis, preparing a preliminary site layout and development of budgetary cost estimates. The collaboration resulted in recommendations that will form the foundation for moving forward with the final design and construction of GSD's Biosolids and Energy Phase 1 project (Project).

The following provides GSD with Hazen's proposed Scope of Services for final design, bid and award services and engineering services during construction (optional).

Section 2

Scope of Services



Section No. 2

Scope of Services

We have developed a thorough plan of how to deliver your project. Working with you in a collaborative setting, we will be forward-looking to anticipate and mitigate project challenges that may potentially arise.

Task 1 - Project Management and Administration

Upon award of contract, Hazen's Project Manager will submit an updated Project schedule to the GSD for review. We understand the importance of schedule and budget management on your Project and will use our project controls expertise to track and control budget and schedule. This enables us to identify issues and options for resolution as early as possible to ensure that high quality deliverables are submitted on time and within budget.

Project Coordination. Hazen will develop a Project Plan to ensure Hazen, GSD, and subconsultant staff understand their roles and responsibilities, project objectives, schedule, and deliverables. Hazen will develop and execute the subcontracts, manage the subconsultants, update scheduling, conduct internal design progress meetings, and associated communications.

Timely, frequent, and detailed communication. Communication is an essential component to project success. Hazen utilizes Microsoft Teams for coordination, progress calls, and presentations. With remote work measures in place since March 2020, our engineering and scientific teams have continued to maintain schedules and productivity. At Hazen, having focused and efficient meetings to keep projects on track is a regular part of our workday.

Progress Reporting

Hazen's Project Manager, Tim Suydam, will lead the monitoring and reporting of progress, with a focus on maintaining the project schedule and cost as well as early identification of any issues which may lead to scope, cost, or schedule variances. We utilize several management tools including critical path scheduling, budget projections, and monthly project budget updates, proven to benefit project delivery.

Hazen proposes the following approach to progress reporting:

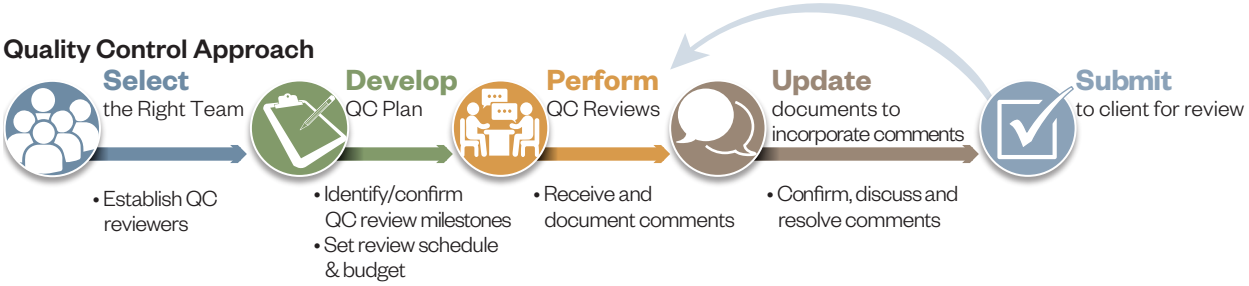
- **A Kick-off Meeting** will be held to introduce key team members and review Project objectives, deliverables, schedule, and QA/QC plan.
- **Workshops and Facilitated Meetings** are specifically designed to maintain GSD staff engagement throughout the process and has proven successful on previous projects with GSD. This workshop approach is designed to gain early consensus on subjective elements such as the overall vision, evaluation criteria, weighting factors, and other program concepts.
- **Monthly Progress Reporting:** Our Project Manager, Tim Suydam, will submit Monthly Progress Reports and Invoices. The Progress Reports include information related to work completed that month, work expected for the next month, important upcoming milestones, and updates on schedule and budget. The actual percent complete, budget expended and any scope, budget, or schedule issues for each task would be included. Invoices will include billing for work completed in the prior month.

At the time of preparing this proposal, it is assumed most, if not all, workshops and meetings will be conducted virtually.

Quality Assurance/Quality Control (QA/QC)

We build quality into everything we do at Hazen. A Quality Culture is an attitude that touches the entire project team, establishes the quality standards the team works to and builds the quality process that guides the day-to-day work. We start by ensuring we have assembled the right team to deliver a high-quality product and then we task the right person for each assignment. We then account for QC in the development of every deliverable schedule and make sure the QC review is assigned to a person with the appropriate technical expertise for the subject matter.

Lastly, we take our QC reviews very seriously, knowing the reputation of the Firm rests on the quality of our deliverables, whether those originate with Hazen staff or with a subconsultant. The result is that GSD will receive work of the highest quality each and every time.



Deliverables:

- Kick-off Meeting Agenda and Summary
- Workshops and Facilitated Meetings (Virtual)
- Workshop Agendas and Summaries
- Monthly Progress Reports and Invoices
- Project Close-out Meeting and Summary (Virtual)

Task 2 – Data Acquisition/Investigations

Most of the existing information that will be required for design has been provided to Hazen from previous project phases and therefore additional data requests will be limited to design background files. Information that will be requested includes:

- As-built drawings in CAD format for design background layers
- As-built specifications for conduit and wiring schedules to aid in re-routing ductbanks
- GSD contract documents
- Digester 1 Condition Assessment report

A site survey and base mapping, along with a geotechnical investigation, including soil corrosivity analysis will be conducted. Hazen will review any previous geological studies and identify locations for potholing of existing utilities based on PDR layouts. Underground utility investigations, if needed, will be provided by GSD.

Task 3 Regulatory/Permitting

As part of the Hazen team during the development of the PDR, Yorke analyzed the expected air quality permitting and CEQA requirements for the Project and Dudek analyzed the archeological and tribal culture resources. Yorke will now assist Hazen by preparing the required air permit application package for submittal to the SBCAPCD and the CEQA Initial Study/Mitigated Negative Declaration (IS/MND) for submittal to GSD, the Lead Agency for the Project. Additionally, Dudek will continue to assist with the tribal culture resources, but also assist Yorke with other topics required for CEQA and coordinate the application process for the Local Coastal Development permit.

The scope of work includes the effort to prepare an Authority to Construct (ATC) permit application package for submittal to the SBCAPCD for the Project. Because our preliminary heath risk screening analysis prepared for the PDR indicated a potential for health risk impacts, we propose preparation of a health risk assessment (HRA) as part of the permitting process. The HRA will include the use of a refined air dispersion model and HRA software tool, as required by SBCAPCD guidelines. Our proposed effort includes a pre-application meeting with the SBCAPCD, as well as follow-up with SBCAPCD staff to facilitate timely processing of the ATC applications.

Yorke will also prepare the IS/MND for GSD, including coordination and incorporation of the Project description and specific impact discussions prepared by Hazen and Dudek into the IS/MND document format. For this IS/MND, we will use the current CEQA Checklist from Appendix G of California's CEQA Guidelines, which was updated starting January 2019.

3.1 Prepare SBCAPCD Air Permit Application Package

Subject to confirmation, an Authority to Construct (ATC) application package will be prepared for the following equipment:

- A new lean-burn, spark-ignited biogas fueled combined heat and power system.
- An existing modified enclosed flare.

The application package will discuss the new digester and the converted digester, but it is our understanding that digesters are not SBCAPCD permitted units.

Pre-Application Meeting with the SBCAPCD

Based on input from GSD, we propose to coordinate and attend a pre-application meeting with GSD, Hazen, and the SBCAPCD. The primary purpose of the meeting will be to present the plans for the Project and obtain input on proposed equipment and emissions control planned and to obtain concurrence to the extent possible that the proposal will meet the SBCAPCD Best Available Control Technology (BACT) requirements. The potential requirement for a facility wide health risk assessment (HRA) will also be discussed. If in-person meetings are allowed by the SBCAPCD and GSD, Yorke proposes to have one staff at the meeting and up to two other staff participating virtually, otherwise, all three staff will participate virtually.

Calculate Emissions

Using the data collected, Yorke will quantify the criteria pollutant emissions on an hourly, daily, and annual basis for use in the permit applications. We will also calculate emissions of toxic air contaminants (TACs). Emission calculations were prepared for the regulatory analysis in the PDR, but some alterations based on updated data, flare specifications, and the proposed gas pre-treatment and any emissions control systems may be required. TAC emissions for the entire existing facility, if required for a facility wide HRA, are not included and a supplemental cost proposal will be provided.

Prepare Health Risk Assessment

Yorke will prepare the HRA for the proposed new equipment noted above in accordance with SBCAPCD guidelines. The primary goal of the HRA is to generate acceptable health risk values that are compliant with SBCAPCD health risk criteria.

In order to demonstrate acceptable cumulative health risks, the SBCAPCD may require that an HRA be performed for the existing facility, as well as for the proposed new Project TAC emissions. However, completing a facility-wide HRA would be a substantial undertaking, and hence we propose to discuss this topic with the SBCAPCD during the pre-application meeting and, if required, to propose potential alternative approaches. Should a facility-wide HRA be required in addition to an HRA for the new equipment, a supplemental cost proposal will be provided.

As part of the ATC application package, Yorke will summarize the methodology used and results for the HRA, including the Cancer Risk, Chronic Hazard Index (HIC), and Acute Hazard Index (HIC) for the nearest residential and off-site workplace receptors.

Prepare ATC Permit Application Package to SBCAPCD Standards

Yorke will prepare an ATC permit application package to SBCAPCD standards. The application package will include the emission calculations, the HRA, and an analysis of SBCAPCD regulations to show compliance with the relevant rules. Based on the PDR analysis, we assume Project emissions will not trigger the need for offsets or AQIA, and that BACT requirements will be met by the proposed configuration. Yorke will complete the SBCAPCD application forms, including general and source-specific forms. A draft permit application package will be submitted to Hazen and GSD for review and comment. Following incorporation of comments, a final application document will be provided to GSD for signature and submittal to the SBCAPCD. It is assumed that payment of the application fees will be provided by GSD.

After application submittal, Yorke will follow up with the SBCAPCD to answer questions and track the status of the applications. We will work closely with GSD and SBCAPCD staff to facilitate processing of the permit applications. Since the required level of effort is difficult to estimate at this stage, this effort is limited to 20 hours. Should additional effort be needed to negotiate permit conditions or address more detailed SBCAPCD questions, Hazen and Yorke will propose that effort separately for your approval.

3.2 Prepare CEQA IS/MND

For the proposed Project, it has been decided that an IS/MND will be prepared with GSD as the Lead Agency. Only Phase 1 of the Biosolids and Energy Project will be addressed in the IS/MND at this time. In order to qualify as an IS/MND, impacts must be determined to have No Impact, Less Than Significant Impact, or Less Than Significant Impact with Mitigation Incorporated for all topics.

Air Quality Analysis

The IS/MND Checklist and significance discussions will be prepared for air quality. The air quality impact analysis will include both construction and operational emissions, health risk analysis based on the HRA, odor impact analysis, regulatory analysis, and consistency with air quality plans.

To address the four air quality-related CEQA Checklist questions, the operations emissions will be compared to the CEQA significance thresholds. The SBCAPCD considers all construction emissions to be significant and requires that various best management practices and dust control measures be implemented. A description of

the background air quality and status of the air quality management plans will be included. Odor impacts will be addressed qualitatively based on a presumed reduction in odorous compounds related to the gas pre-treatment and thermal destruction of the biogas in the CHP engine. The results of the HRA from Task 3.1 will be summarized.

In addition to the above air quality discussion in the IS/MND section, a brief Air Quality Technical Report will be prepared to provide the detailed emission calculations and analyses, as needed.

Noise Analysis

The IS/MND Checklist and significance discussions for noise will be prepared. Yorke will perform a screening-level noise analysis for Project construction based on methodology developed by the U.S. Department of Transportation (DOT) Federal Highway Administration (FHWA) at the John A. Volpe National Transportation Systems Center and other technical references.

For operational noise, published reference data will be used to assess localized impacts from stationary equipment, streets, roads, and highways. For projects located in urban settings, the incremental effect of project operation (possibility of a slight increase in traffic) may not be quantifiable against existing traffic noise (background) in the project vicinity. This is due to the logarithmic nature of sound attenuation.

Noise impacts for construction will be evaluated against applicable zoning thresholds to determine whether the Project would have a significant impact at nearby receptors. Since the Project site is an existing heavy industrial land use, no significant operational noise impacts are expected with regard to stationary source equipment, i.e., plant noise will be about the same and there will be no new receptors. Furthermore, since this is an existing land use, we assume that an analysis of the noise from the airport on the facility will not be needed.

Other CEQA Topic Analyses

The IS/MND Checklist and significance discussions will be prepared for Aesthetics, Agriculture and Forestry, Energy, Hazards and Hazardous Materials, Land Use/Planning, Recreation, Population/Housing, Public Services, Transportation/Traffic, Utilities/Service Systems, and Wildfires. It is expected that the Project will have No Impact or Less Than Significant Impact in all of these topics, and that they can be readily dismissed as not a concern. We will use the information and reasoning from past GSD IS/MNDs, if possible, and will update and rely on information provided in the Project description to address these topics.

CEQA Environmental Checklist Form Topics		
Aesthetics	Agriculture / Forestry Resources	Air Quality
Biological Resources	Cultural Resources	Energy
Geology / Soils	Greenhouse Gas Emissions	Hazards and Hazardous Materials
Hydrology / Water Quality	Land Use / Planning	Mineral Resources
Noise	Population / Housing	Public Services
Recreation	Transportation	Tribal Cultural Resources
Utilities / Service Systems	Wildfire	Mandatory Findings of Significance

Dudek will support Yorke in quantification of other CEQA topics such as Biological Resources, Tribal Culture Resources, Geology/Soils, Hydrology/Water Quality and Mineral Resources for preparation of the IS/MND.

Biological Resources

Prior to conducting field work, Dudek will conduct a review of standard data sources and literature, to better inform our field observations.

A Dudek biologist will conduct a field reconnaissance survey to better understand the biological resources at GSD's WRRF potentially impacted by the Project. The biologist will map vegetation communities in Project areas, including the work area and parking and trailer area. Vegetation community mapping includes mapping of sensitive vegetation communities and the location of any protected trees (such as oak trees). Dudek will also note the location of potential habitat for special-status plant and wildlife species, if any occur. All plant species and wildlife species observed during the visit will be recorded. Dudek will map the edges of potential wetlands, if any occur near the location of Project activities.

After completion of the reconnaissance field survey and vegetation mapping, Dudek will prepare the biological resources section of the IS/MND, describing the literature review, survey methods, survey results, and the potential for impacts to biological resources. Results will include descriptions of any vegetation communities and land covers in the survey area, potentially jurisdictional resources (wetlands), and a brief discussion of the potential for special-status plant and wildlife species to occur in the survey area. The discussion of potential impacts will include recommendations of avoidance, minimization, and mitigation measures, if necessary based on the impact analysis.

Assumptions

- A formal aquatic resources delineation, which also involves inspection of the presence of specific criteria for the three wetland parameters (wetland hydrology, hydrophytic vegetation, and hydric soils), is not included in this scope or cost. (Note that these three parameters apply to federal wetlands under jurisdiction of the Army Corps of Engineers, but under the California Coastal Act, an area needs to meet the criteria for only one of the three wetland parameters for wetlands to be considered present). At the request of GSD, Dudek and Hazen will provide a scope of work and cost for this task, if there is potential for impacts to aquatic resources.
- This scope does not include focused surveys for special-status plant species or special-status wildlife species, and the likelihood such species occur is probably low. However, in the unlikely event that the field visit determines that focused surveys are necessary prior to preparation of the IS/MND, GSD will be informed upon completion of the literature review and field reconnaissance and GSD will be provided a scope of work and cost for this task, if there is potential for impacts to special-status plant or wildlife species.

Cultural and Tribal Cultural Resources

Based on the results from the PDR, Dudek will prepare the cultural resources and Tribal cultural resources sections of the IS/MND, describing the records search results, literature review, survey methods and results, all Tribal consultation efforts and communication and the potential for impacts to cultural and Tribal cultural resources. The discussion of potential impacts will include recommendations of avoidance, minimization, and mitigation measures based on the impact analysis.

Geological/Soils

The project site is located on relatively flat to gently sloping topography, with no nearby slopes susceptible to failure. Dudek will use information available from the California Geological Survey; U.S. Geological Survey; applicant provided, site-specific geotechnical reports; and the County of Santa Barbara Comprehensive Plan,

Seismic Safety and Safety Element and Environmental Resource Management Element. Impacts will be evaluated based on the most current version of Appendix G of the CEQA Guidelines, with respect to both construction and operations. Construction impacts are typically short-term, erosion related, and less than significant with implementation of the Construction General Permit, which includes implementation of a Storm Water Pollution Prevention Plan and associated Best Management Practices (BMPs). Long-term operational impacts associated with construction of new structures would be primarily related to structural stability in relation to faulting, seismicity, and associated ground failure following construction. However, impacts would only be considered significant in the event that project construction and operation would exacerbate the potential for geologic hazards to occur.

Hydrology/Water Quality

Surface water quality at the project site is regulated in accordance with the Santa Barbara County Storm Water Management Program, pursuant to State Water Resources Control Board Water Quality Order No. 2003-005-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS0000004 Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (General Permit). The project site is not located within a Federal Emergency Management Agency 100-year flood zone. For the IS/MND, Dudek will use information available from the California Department of Water Resources and U.S. Geological Survey; applicant provided, site-specific geotechnical reports; applicant provided hydrology/hydraulics report and water quality report, if available; the 2015 Goleta Water District Urban Water Management Plan; and the County of Santa Barbara Comprehensive Plan, Conservation Element and Environmental Resource Management Element.

Dudek will evaluate short-term construction impacts and long-term operational impacts with respect to Appendix G – Environmental Checklist, of the most recent CEQA guidelines. Short-term impacts would likely be related to potential erosion of exposed sediments; potentially encountering shallow groundwater during excavations; and potential incidental spills of minor amounts of petroleum products and hazardous substances leaking from construction equipment and vehicles. It will be assumed that grading and construction would occur in accordance with a project-specific Erosion Sediment Control Plan (ESCP, which would include BMPs to minimize potential water quality impacts. Potential long-term impacts would be related to conformance with water quality standards and waste discharge requirements. The project site is generally currently paved and/or is within drainage areas that drain to on-site stabilization basins where the water evaporates or flows to the main pump station for treatment through the entire wastewater treatment process and is discharged to the Pacific Ocean. The project design includes plans for civil grading to allow for the entire project area to be included within the drainage areas that drain to on-site stabilization basins. This includes the area where the CHP system is located. This may require a revision to GSD's Industrial Stormwater Pollution Prevention Plan and fees for this are not included here. Accordingly, the proposed project would not substantially increase the amount of impervious surfaces and associated increased runoff and Low Impact Development requirements are not anticipated.

Mineral Resources

Oil wells in the vicinity of the project site, if any, will be identified using the California Geologic Energy Management Division (CALGem) (formerly the Division of Oil, Gas, and Geothermal Resources) online Well Finder mapping application. In addition, the potential for sand and gravel mining potential in the vicinity of the site will be evaluated. Impacts will be evaluated based on the most current version of Appendix G of the CEQA Guidelines. Impacts will focus on potential loss of known mineral resources that would be of value to the region or the residents of the State.

Paleontology Analysis within the Geology/Soils

As per CEQA, Dudek's qualified paleontologists will complete a paleontological resources inventory and assessment, which will include a paleontological records search through the Natural History Museum of Los Angeles County (LACM), geological and paleontological literature and map review and documentation of results in the geology and soils chapter of the Initial Study/Mitigated Negative Declaration.

Dudek's qualified paleontologists will begin with a paleontological records search through the LACM. The purpose of the records search is to determine the location of any previously recorded fossil discoveries within and nearby the project site. We assume direct fees for the LACM records search will not be more than $600.

Dudek will prepare a Paleontological resources write-up within the geology and soils chapter of the IS/MND that will satisfy CEQA and Society of Vertebrate Paleontology requirements. The paleontological portion of the CEQA document will summarize the results of the paleontological resources records search and geological map and paleontological literature review, regulatory framework, and recommendations for appropriate management. For the purposes of this scope of work and cost estimate, Dudek assumes that the write-up for the CEQA document will be sufficient to document the negative results. Should resources be encountered requiring recordation and a stand-alone technical report be necessary, Hazen and Dudek will work with you to augment this scope and cost as appropriate to prepare a full paleontological survey report.

Draft IS/MND and MMRP Preparation

Yorke will incorporate the information, sections, and technical reports prepared by the Hazen and Dudek team members into the complete preliminary draft IS/MND document. Yorke will also prepare the MMRP as needed for these sections. The complete draft will be provided to Hazen and GSD for review. Comments from Hazen/GSD will be incorporated as needed and a final draft IS/MND and MMRP will be prepared for distribution to the Responsible Agencies and the public for a 30-day public comment period. Yorke has included effort to assist with preparation of the Notice of Intent (NOI) if requested by GSD.

Response to Public Comments

Yorke will also work with Hazen/GSD to address Responsible Agency and public comments on each section following the public comment period. Attendance for up to one public meeting/hearing has been included. A final IS/MND that incorporates necessary changes identified during the public comment period will be prepared. Since it is unknown to what extent other agency or public comments will be received, the time allotted to this task is limited to 40 hours.

3.3 Mitigation – Data Recovery (Phase III) Excavations

Dudek will conduct a Phase III data recovery study pursuant to CEQA requirements and regulations after approval of the MND. The general tasks required to conduct and prepare a Phase III Archaeological Data Recovery Investigation include:

- Research design, literature review and background research
  - A research design will be developed and include a series of research questions to ensure that the appropriate amount and nature of data will be collected and analyzed in order to "yield information important in prehistory," pursuant to CEQA Guidelines Section 15064.5(a)(3)(d).
  - All relevant literature and historical data will be examined and incorporated into both the research design and ultimately into the Phase III Data Recovery Report.

- Excavation field work
  - No more than six (6) hand-excavated 1 by 1 meter units associated with the proposed ground disturbances will occur within intact midden identified as a result of the impact analysis and in consideration of previous excavations.
  - A column sample 0.20 meters square shall be excavated within each 1 by 1 meter unit to recover detailed subsistence data. All soils recovered will be collected, screened and labeled separately from other excavated soils.
  - If any unexpected features or other significant sources of data are encountered during the course of this Phase 3 Data Recovery, excavation units will be extended to recover the potential data within these deposits.
  - Excavation units within the intact midden will be excavated by hand, in 4-inch (10-centimeter) levels.
  - Excavated soil (with the exception of column soils) will be screened in the field through 1/8-inch wire mesh. If needed, an onsite temporary water screening area prearranged with the client or off-site at Dudek's laboratory, will be conducted. All excavated soil recovered from the column samples will be screened through 1/16-inch mesh to allow for more specific analyses of food remains and to recover very small artifacts.
- Artifact analysis
- Screened cultural material sorting. Archaeologists will sort the screened material to isolate all cultural materials including: shellfish; animal bone; stone tool making flakes; stone tools; ground stone tools used for food processing; beads used as currency; and other materials such as asphaltum used for waterproofing baskets and canoes.
  - Food Remains (Fauna). Dudek Bioarchaeologist will undertake analyses of shellfish, animal bone, and fish bone to determine what habitats the CA-SBA-58 occupants were exploiting, and if this changed over time.
  - Stone Tool Analyses. Dudek Lithic Analysis Expert will analyze the chipped stone tools and manufacturing flakes to determine dating of the site and trade activity.
  - Beads. Dr. John Johnson, Santa Barbara Museum of Natural History, or his designee will analyze the beads that are recovered from the 1/8-inch and 1/16-inch screen residue. The beads are excellent indicators of when CA-SBA-46 was occupied, and if beads were being manufactured at this site
  - Seeds and Plant (Macrobotanical or Floral) Remains. Dudek Botanical Analysis Expert will undertake the analysis of seeds and plant remains that are recovered in the soils samples to be collected.
  - Radiocarbon Dating. Up to ten radiocarbon dates will be analyzed by DirectAMS.
  - Obsidian Sourcing. If obsidian tools or flakes are recovered, up to four specimens will be analyzed by Northwest Obsidian Research to determine the source of the material that was traded to Santa Barbara.
- The Draft Phase III Data Recovery Report will assemble and synthesize the results of all background research, literature review, impact analysis, fieldwork and laboratory analyses, addressing the research questions presented in the Research Design.

Assumptions:

- Dudek and Hazen assume Native American monitoring will be contracted directly between GSD and Tribal entities and that Dudek is not responsible for procuring, arranging and contracting of Native American monitoring for any archaeological excavation activities associated with this Project.
- Dudek and Hazen assume no more six 1x1-meter excavation units are necessary to accomplish an appropriate level of data from the archaeological site CA-SBA-46.
- Dudek and Hazen assume curation fees included in the scope/cost and charged by the local federally recognized facility (UCSB) for perpetual storage of recovered artifacts will not exceed $5,000.

3.4 County of Santa Barbara Coastal Development Permit

The proposed project is located entirely within the County of Santa Barbara's (County) Coastal Development Permit (CDP) jurisdiction (and the California Coastal Commission's (CCC) appeals jurisdiction). Therefore, the standard of review for this project are the policies of the County's certified Local Coastal Program (LCP).

Dudek will coordinate with GSD and County staff throughout the CDP application process. Dudek will assemble the CDP application package, including completing the CDP application form, compiling all required attachments and public noticing materials, including a Stormwater Control Plan, and preparing a submittal letter that summarizes environmental information and technical studies to demonstrate compliance with applicable LCP policies. This submittal letter, in particular, is utilized by County staff to write their staff report and thereby ensures a more efficient review process and hearing scheduling. As part of this effort, Dudek will assume the project meets the requirements for a Tier 1 Stormwater Control Plan for Small (Tier 1) Projects and site civil grading will allow for the entire project area to drain to drainage areas that drain to on-site stabilization basins where the water evaporates or flows to the main pump station for treatment through the entire wastewater treatment process and is discharged to the Pacific Ocean. Dudek coastal planners will review project information, any correspondence between GSD and the County, CCC, or other regulatory agencies, and other relevant documents provided by GSD and the County, including technical studies and information generated in support of past CDP's. Dudek coastal planners will print and mail a hard copy of the application submittal to the County planning office and can either (1) provide an electronic version (PDF) for GSD to submit to County staff, or (2) submit the electronic version to County staff on GSD's behalf.

Following County staff's initial review of the application submittal, Dudek coastal planners will review any requests for additional project information and provide recommendations to deem the application complete and prepare for a County Planning Commission (PC) hearing. Based on our understanding of the project, this scope assumes one 30-day County review cycle to thoroughly address staff requests for additional information and potential impacts to coastal resources.

After the CDP application is formally filed, Dudek will coordinate with County staff during development of the staff recommendation. Prior to the public PC hearing on the CDP application, Dudek will review the final County staff report/recommendation and discuss the findings with GSD. As needed, Dudek will support GSD in preparing a presentation to address the staff recommendation and any specific special conditions. In addition, Dudek will attend the PC hearing (remotely or in person depending on COVID-19) and be available to answer questions that come up during the hearing.

Assuming that the County approves the CDP and GSD is supportive of the approved conditions and wants to seek release of the permit, Dudek will help GSD compile all of the materials needed to satisfy the special conditions of the permit. Dudek will coordinate with County staff, as necessary, to oversee issuance of the permit.

In summary, CDP support services include the following:

- Preparation of a CDP application package (hard copy and electronic);
- Preparation of one response to County incomplete letter (electronic);
- Review of County staff report, including conditions of approval and findings;
- Preparation for and attendance of PC hearing to support GSD's presentation, if necessary; and
- Compilation of condition compliance materials.

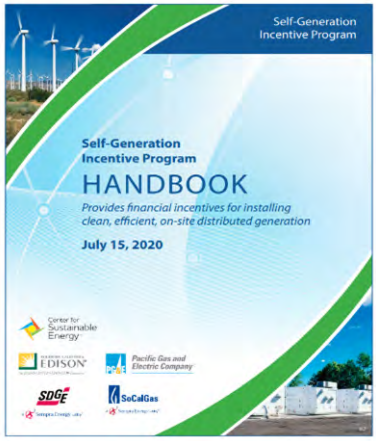
Given the level of uncertainty that exists in obtaining a CDP, including unanticipated data needs and technical study following review of application materials and the level of support required at the public hearing, additional work authorization may be required and would be subject to separate scope and fees.

3.5 Federal Aviation Administration (FAA) Notice

Hazen will assist GSD in the preparation of the FAA Form 7460-1 Notice of Proposed Construction or Alternation. This form must be submitted 45 days before proposed construction or alternation or the date an application for a construction permit has been filed, whichever is earliest.

Task 4 Grant Funding Application Support

Hazen will assess guidelines for each of the local, state and federal grant programs, and identify which, if any, might be a good fit for GSD's project. Effective, full-circle strategies like this are key to obtaining the largest possible grant award funding for GSD's efforts to make beneficial use of digester gas and reduce greenhouse gas emissions. A TM identifying funding opportunities such as the California Public Utilities Commission's Self Generation Incentive Program (SGIP), Environmental Protection Agency's Clean Water State Revolving Fund – Green Project Reserve and Renewable Energy Credits, application requirements and application deadlines will be provided to GSD.



For any viable grant program(s) identified, Hazen will collaborate with GSD to gather the necessary background information and applicable documents necessary for the grant and loan applications.

Task 5 Construction Contract Documents

Based on the Preliminary Design Report developed by Hazen and approved by GSD, Hazen shall prepare construction contract documents including bidding documents, general and supplementary conditions, technical specifications, and drawings that detail the character and extent of the project.

At each design milestone as identified in Subtasks 5.1 through 5.5, Hazen shall provide GSD with one electronic copy (PDF format) of construction contract documents for that milestone. Hazen's schedule allows 2 weeks for GSD review of submittals. Hazen shall meet with GSD to receive and discuss GSD's review comments. Hazen shall incorporate into the construction contract documents the review comments of GSD as required. Meeting notes shall be prepared by Hazen and distributed electronically to attendees.

5.1 30% Design Submittal and Workshop

The 30% design will advance the preliminary design to include additional detail items such as:

- Process and instrumentation diagrams (P&ID)
- Civil grading, paving, piping, demolition
- Structural plans and sections
- Mechanical plans sections
- Architectural notes as required
- Electrical plans and one-lines
- A list of technical specifications
- Updated construction schedule and cost estimates

The 30% design drawings and specifications will follow Hazen's design standards. A 30% workshop will be conducted to gather GSD's input and gain consensus on the design before proceeding to the 60% design level. It is assumed GSD will provide a single set of coordinated comments at each review milestone.

5.2 60% Design Submittal and Workshop

The 60% design will advance the 30% design submittal with additional detail for review and will address the GSD's comments provided during 30% design review. Drawing sets will be expanded to include sections, details and plan and profile drawings for pipelines. Draft specifications will be provided for major equipment. Updated cost estimates will be provided with this submittal as well.

5.3 90% Design Submittal and Workshop

The 90% design will provide additional detail for review and will address the GSD's comments provided during 60% design review. The 90% design submittal will include a full package of drawing sheets and specifications. The Hazen Team will review and provide input to the front-end bidding documents (Division 0 and 1) which will be provided by GSD . The 90% design will also incorporate CEQA mitigation measures. A 90% workshop will be conducted to gather GSD's input and gain consensus on the design before proceeding to the 100% design level.

5.4 100% Design Submittal

The 100% design will address GSD's comments from the 90% design review. The 100% design documents will include all construction drawings and technical specifications signed and sealed by professional engineers registered in the State of California. This submittal will also include updated project schedules and the final construction sequencing and plant shutdown constraints. Drawings will be provided in AutoCAD Revit utilizing Hazen CAD standards.

All operations permits will be obtained by GSD or contractor.

5.5 Equipment Pre-Procurement

During the final design phase, Hazen will develop procurement documents including drawings and specifications for the submersible mixer only (no installation requirements). Hazen will assist GSD with the procurement proposal review and equipment shop drawing review during the procurement period. The final contract documents will require the installation contractor to install all equipment pre-procured by GSD.

Optional Task

As an Optional Task, if required to qualify for funding, Hazen will expedite the design of the CHP and the gas conveyance/pretreatment facilities so that GSD can pre-procure the CHP and gas conveyance/pretreatment facilities to demonstrate the appropriate procurement milestones to the funding agencies. Hazen will develop procurement documents including drawings and specifications for the equipment procurement only (no installation requirements). Hazen will assist GSD with the procurement proposal review and equipment shop drawing review during the procurement period. The final contract documents will require the installation contractor to install all equipment pre-procured by GSD.

5.6 Preparation of Probable Construction Cost Estimate

Hazen shall develop an opinion of probable cost of construction based on the 30%, 60% and 90% design milestone stages of the project.

At the 30% design milestone, Hazen shall provide a budget level opinion of probable cost as defined by the Association for Advancement of Cost Engineering International (AACE International). An estimate of this type is normally expected to be accurate within +30% and -15%.

At the 60% design milestone, Hazen shall update the budget level opinion of probable cost. An estimate of this type is normally expected to be accurate within +30% and -15%.

At the 90% design milestone, Hazen shall provide a definitive level opinion of probable cost (+15%, -5%) as defined by AACE International.

Task 6 Bid and Award Support Services

Hazen will provide support services to GSD during the bid contract award period.

6.1 Preparation of Final Bid Documents

Hazen shall make final revisions to the documents based on review comments received by permitting agencies and GSD. Hazen shall provide construction contract documents in electronic format to GSD for distribution to potential bidders.

6.2 Pre-Bid Conference and Job Walk Through

Hazen shall attend one pre-bid conference and job walk prior to the advertised bid date. Hazen shall prepare meeting minutes and distribute to attendees as an addendum to the bid documents.

6.3 Issue Bid Documents and Addenda

GSD shall reproduce and distribute bid documents to construction contractors requesting documents and

maintain a list of plan holders. Queries will be transmitted to GSD. Hazen shall support GSD by providing timely responses to the inquiries of potential bidders through written addenda that shall be distributed by GSD. Hazen's compensation has been based on preparing two addenda for GSD.

6.4 Bid Evaluation

GSD shall forward all construction bids to Hazen. Hazen shall evaluate bids for technical and non-technical compliance and shall make a recommendation to GSD in regard to the award of the contract. Non-technical bid requirements shall be evaluated by GSD.

This Scope of Services does not include time for Hazen to assist GSD in the event of a bid protest.

Task 7 Engineering Services during Construction (Optional)

Hazen will provide engineering support of during construction of the new digester and CHP system.

- Two staff (mechanical and electrical engineers) will attend a preconstruction meeting and up to 18 monthly construction meetings at GSD. The Construction Manager (CM) will lead meetings and provide minutes.
- Respond to up to 50 contractor requests for information (RFIs).
- Review up to 95 submittals and 45 resubmittals at an average of 6 hours per submittal and 3 hours per resubmittal.
- Review up to 5 design changes.
- Change order evaluation and processing. Assume 5 change orders.
- Inspection of CHP equipment upon delivery .
- Prepare a startup plan and participate in 40 hours (20 hours each of mechanical and electrical engineers) of start-up activities.
- Develop Standard Operating Procedures (SOPs) for new Unit Processes.
- Prepare record drawings.
- Contract closeout.

Mitigation – Archaeological Monitoring

Dudek will provide archaeological monitoring for all initial ground disturbance activities throughout the duration of Project construction. The costs associated with this task assume a six week (30 days) construction monitoring schedule and include up to 40 hours per week for a total of 240 hours of archaeological monitoring. Dudek will also provide management of archaeological monitoring including communication and coordination with construction personnel, Native American monitoring personnel and district staff; development of a Construction Monitoring and Treatment Plan (CMTP) presented electronically, in pdf format prior to the commencement of ground disturbing activities; facilitation of a preconstruction cultural resources awareness training for project personnel; as well as periodic and as-needed site visits by Dudek's Senior Archaeologist. The costs associated with monitoring management assume a six week (30 days) construction monitoring schedule and includes up to 4 hours per week and 2 hours for the preconstruction training meeting for a total of 26 hours to accomplish monitoring management tasks. If additional hours are necessary, Dudek will be pleased to provide an adjusted scope and cost for authorization prior to commencement of any tasks not covered in this scope.

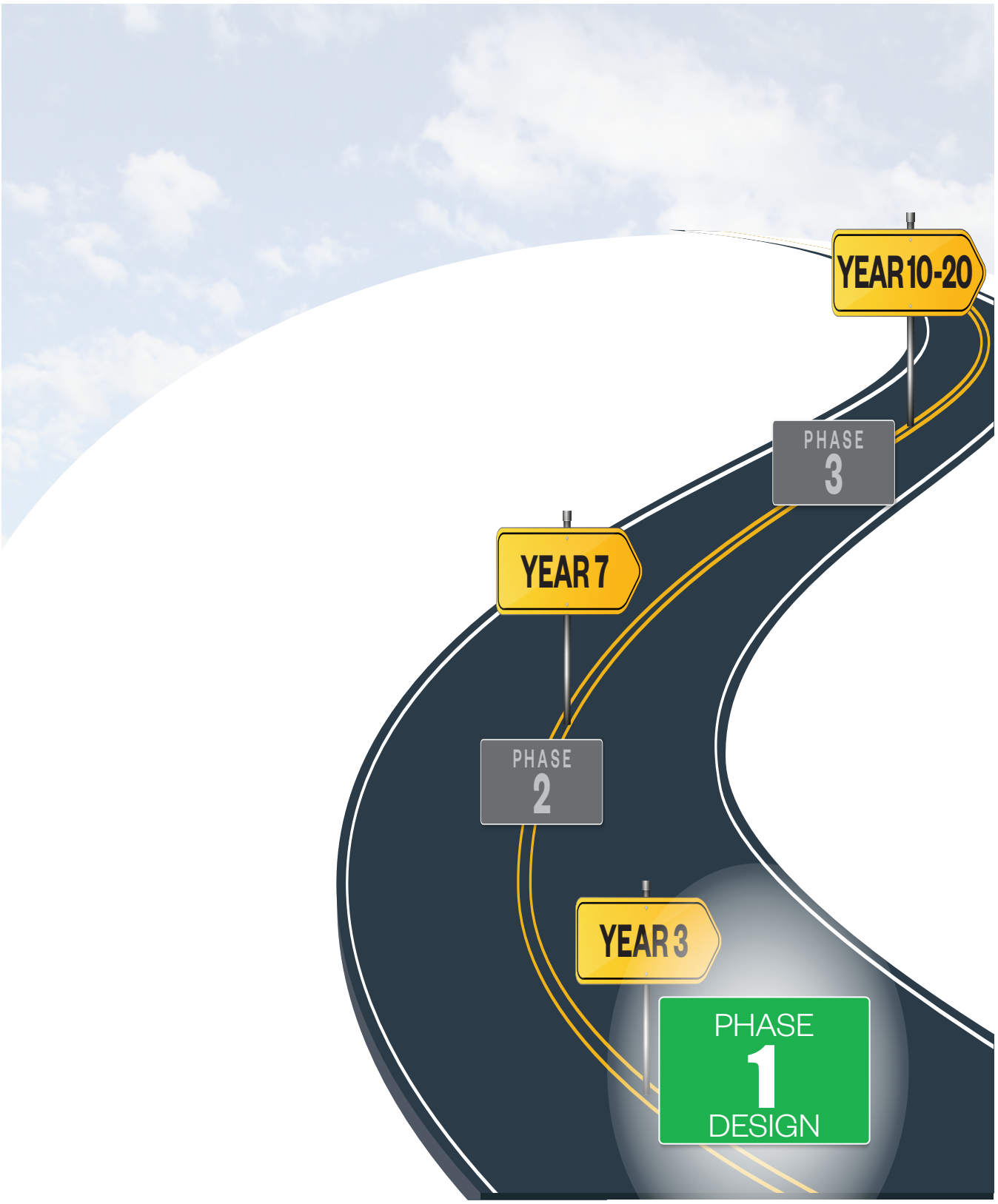
Assumptions:

- With the exception of the two (2) days of preconstruction Geotech borings, Dudek and Hazen have assumed Native American monitoring will be contracted separately by GSD from this scope and associated costs.
- Dudek assumes that monitoring staff will be informed at least 48 hours before the start of each week (Monday) and at the end of each workday whether ground disturbing activities requiring archaeological monitoring, pursuant to the Conditions of Approval, will be occurring the next business day.
- Dudek assumes that a workday consists of 8 hours. However, we will be pleased to provide monitoring for half days. The archaeological monitor will not bill less than 4 hours.
- Dudek assumes all ground disturbing activities requiring archaeological pursuant to the Conditions of Approval, will occur no more than 8 hours in any given day. However, we will be pleased to provide monitoring greater than 8 hours per day, if desired, for an augmented rate of those rates provided in this proposal.
- Dudek assumes all ground disturbing activities requiring archaeological pursuant to the Conditions of Approval, will occur during the day (anytime between 6:00 am and 6:00 pm) However, we will be pleased to provide evening monitoring, if desired, for an augmented rate of those rates provided in this proposal.

Dudek assumes all ground disturbing activities requiring archaeological pursuant to the Conditions of Approval, will occur during regular business days (Monday-Friday). However, we will be pleased to provide weekend monitoring, if desired, for an augmented rate of those rates provided in this proposal.

Section 3

Firm and Project Team Qualifications



Section No. 3

Firm and Project Team Qualifications

Hazen's collaborative approach with a focus on the business/financial implications and delivery of superior technical expertise in a well-organized, holistic process will provide the best solutions for moving forward with design and construction of Phase 1 of Goleta Sanitary District's Biosolids and Energy Management Strategic Plan.

Since 1951, Hazen has had a singular focus on "All Things Water". According to ENR, Hazen has ranked as one of the top firms devoted entirely to water and wastewater. Our strength is in our deep project experience gained through years of designing, constructing, and helping agencies operate their systems. In the last five years alone, we have completed over 1,300 water and wastewater projects around the globe, providing planning, modeling, assessment, design, program and construction management, process diagnostics and operations assistance services. We inherently consider O&M concerns from the outset of a project. We are able to do this because our key team members bring a working background in operations, having worked at wastewater and water treatment plants. Thus, our team has the unique advantage of **designing with operations in mind.**

Hazen will be the lead firm for this project. We will supply all management and technical and local leadership, leveraging our industry-leading expertise for the District's benefit. Our project partners have been selected to embody a focus on collaboration and leveraging of technical excellence.

Subconsultants

Hazen will be joined by Yorke Engineering, Dudek, Earth Systems and Tartaglia. Each firm has specific expertise and experience that will ensure the Hazen team can provide all services needed to successfully deliver this project for GSD.

Yorke ENGINEERING, LLC

SBCAPCD Air Permit/ CEQA

Yorke Engineering, LLC (Yorke) is a California based firm was founded in 1996 to provide professional air quality and environmental services to clients in government and industry. Yorke specializes in air quality and environmental permitting and compliance under the Santa Barbara County Air Pollution Control jurisdiction of and other California air districts. Yorke's CEQA specialists assist clients with all their CEQA need, including development of Technical Report on those topics and/or the preparation of CEQA documents ranging from Categorical Exemptions (CatX) and Initial Studies (IS) to Mitigated Negative Declarations (MNDs) and Environmental Impact Reports (EIRs). Yorke staff has extensive experience in developing these documents for project applications and developers, as well as City, County, and Water and Wastewater Lead Agencies.

"We Have Teamed with Hazen Before"

Goleta Sanitary District
Biosolids and Energy Phase 1 PDR

Eastern Municipal Water District
Digester Gas Utilization Study

Coachella Valley Water District
Chromium-6 Removal Project

DUDEK

Archeological / Coastal Commission

Founded in 1980, Dudek is a California based firm that has grown to 600+ environmental planners, scientists and engineers who help clients plan, design and build projects that improve communities' built and natural infrastructure. Dudek's registered professional archaeologists (RPAs) specialize in identifying resources that may cause project constraints and understanding their historical significance.

"We worked for GSD and Hazen on the Biosolids and Energy Phase 1 PDR"

Dudek staff have a deep knowledge of California's coastal laws, regulations, procedures, and policy interpretation. Our experienced coastal planners facilitate project planning, CCC approvals and permitting, Local Coastal Program (LCP) development, environmental documentation, and public outreach; as well as represent projects at local government and CCC proceedings. Drawing on positive, long-term working relationships with CCC staff, our coastal planners help clients efficiently navigate CCC review.

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Geotechnical

Ninyo & Moore is an ENR Top 500 Design Firm, is a professional geotechnical and environmental sciences consulting firm providing services in geotechnical engineering, engineering geology, geophysics, hydrogeology, soil and materials testing, special inspection, soil and groundwater contamination assessment, site remediation, hazardous building materials, industrial hygiene, and occupational safety.

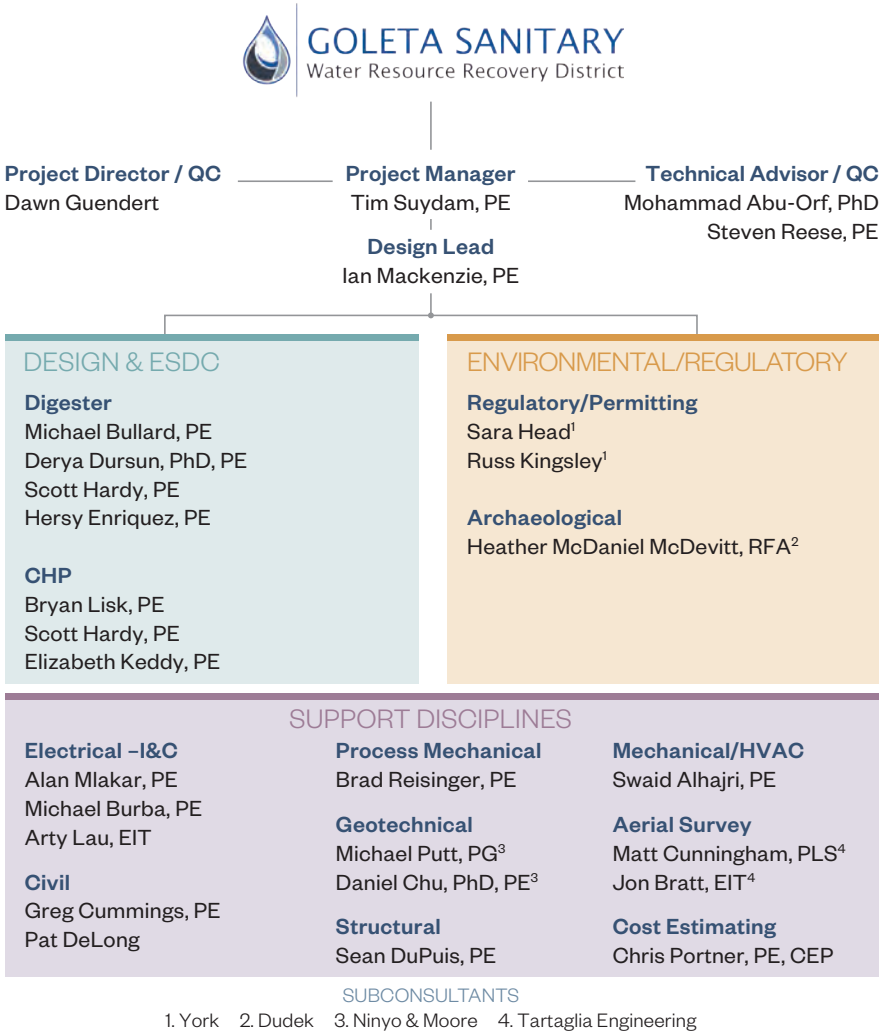
TARTAGLIA ENGINEERING

Survey

Since 1996, the Tartaglia Team has provided consulting engineering, topographic surveying, mapping, construction staking, facilities analysis, and construction support services including contract administration and construction observation for hundreds of private and municipal clients. Tartaglia's staff consists of registered civil engineers, licensed land surveyors and surveyor technicians, construction inspectors, construction site environmental coordinators, Cad technicians and clerical staff.

Team Structure

Hazen has brought together a team that has a history of helping clients transform their visions into reality. Our team members have been selected for their past collaboration on related GSD projects, technical expertise and track record of successfully planning and implementing digester and biogas beneficial use projects.



Leadership Team

To ensure this project has the leadership needed to meet the project objectives on schedule and within budget, we are proposing a strong and experienced management team. Our Design and Environmental /Regulatory Leads have all successfully collaborated together on GSD's Biosolids and Energy Strategic Plan and the Phase 1 Preliminary Design. The following provides brief biographies of key team members. Resumes for all team members in provided in Appendix A.

Tim Suydam, PE

Project Manager

Mr. Suydam served as the Project Manager for GSD's Biosolids and Energy Phase 1 PDR and has served as project manager for numerous major wastewater and water treatment projects. His experience ranges from planning, pre-design, design and construction management services. A number of projects have included the coordination of multi-discipline, multi-location and multi-firm teams delivering complex projects on time and within budget.

Dawn Guendert

Project Director

Ms. Guendert has served as Project Manager and Project Director on several projects ranging from asset management to process modeling, greenhouse gas emission baseline inventory and preliminary design of Phase 1 of the Biosolids and Energy project for GSD. Through these projects, she has had the opportunity to collaborate with GSD's management and operations staff and become familiar with GSD staff's level of engagement in projects and the expected quality of deliverables.

Mohammad Abu-Orf , PhD

Technical Advisor / Quality Control

Dr. Abu-Orf is Hazen's National Residuals and Biosolids Practice Leader. His diverse experience ranges from research and development, project planning, preliminary design, operations and technical services. He applies his expertise to find opportunities for process optimization, evaluation of innovative technologies and conceptual design in the areas of sludge dewatering, stabilization, and energy recovery. Dr. Mo served as Technical Advisor and QC reviewer for both GSD's Biosolids and Energy Strategic Plan and Biosolids and Energy Phase 1 PDR.

Steven Reese, PE

Technical Advisor / Quality Control

Mr. Reese is Hazen's expert in digester systems and gas storage with over 15 years of experience including over 10 flare designs projects. His technical experience ranges from the design of the anaerobic digested sludge pumping system, sludge heating system including dual fuel boiler, heat exchangers and sludge recirculation pumps, sludge storage tanks to gas holding, waste gas flare, and digester gas safety equipment, among many others.

Ian Mackenzie, PE

Design Lead

Mr. Mackenzie has extensive experience in the design and construction of wastewater treatment facilities. Ian provided technical guidance and quality assurance review for GSD's Biosolids and Energy Phase 1 PDR. He is currently the design lead for the Plant 3A Biosolids Handling Improvements project for Moulton Niguel Water District and previously SOCWA's J.B. Latham and Coastal Treatment Plant Facilities Improvement project.

Michael Bullard, PE

Digester Design Lead

Mr. Bullard is Hazen's National Residuals and Biosolids Practice Leader and has extensive experience in the full range of residuals and biosolids thickening, stabilization, dewatering, biogas utilization and treatment systems and ultimate residuals management processes from a planning, design and operational perspective.

Derya Dursun, PhD, PE

Digester Design

Dr. Dursun specializes in biosolids treatment and handling and digester gas treatment and management with a focus on maximizing energy recovery. She has broad knowledge of anaerobic digestion, co-digestion, gas production and waste-to-energy facilities. Derya is currently working on several projects related to digester gas beneficial use and was the lead process biosolids engineer for GSD's Biosolids and Energy Strategic Plan and Biosolids and Energy Phase 1 PDR.

Bryan Lisk, PE

Cogeneration Design

Mr. Lisk has worked on a number of alternative energy and biogas utilization projects for wastewater and water reclamation treatment facilities including GSD's Biogas Utilization Preliminary Study, Biosolids and Energy Strategic Plan and Biosolids and Energy Phase 1 PDR. Bryan currently serves as Hazen's National Energy Services Lead, is a Certified Energy Manager with the Association of Energy Engineers (AEE) and has extensive experience in projects involving generating electricity from alternative renewable energy sources. These projects include Combined Heat and Power (CHP) studies and design, biogas utilization master planning, energy optimization studies and master planning, energy modeling, energy procurement optimizations, and electric utility interconnection coordination.

Sara Head

Regulatory / Permitting

Ms. Head will lead the air quality and CEQA permitting efforts. She is an experienced air quality, environmental compliance and permitting professional with years of experience working with a number of regulatory agencies. Her experience encompasses Annual Emissions Report (AER) preparation, Continuous Emission Monitoring Systems (CEMS), New Source Review (NSR) permitting, Best Available Control Technology (BACT) and Environmental Impact Reports (EIRs). Sara provided environmental compliance review for GSD's Biosolids and Energy Phase 1 PDR.

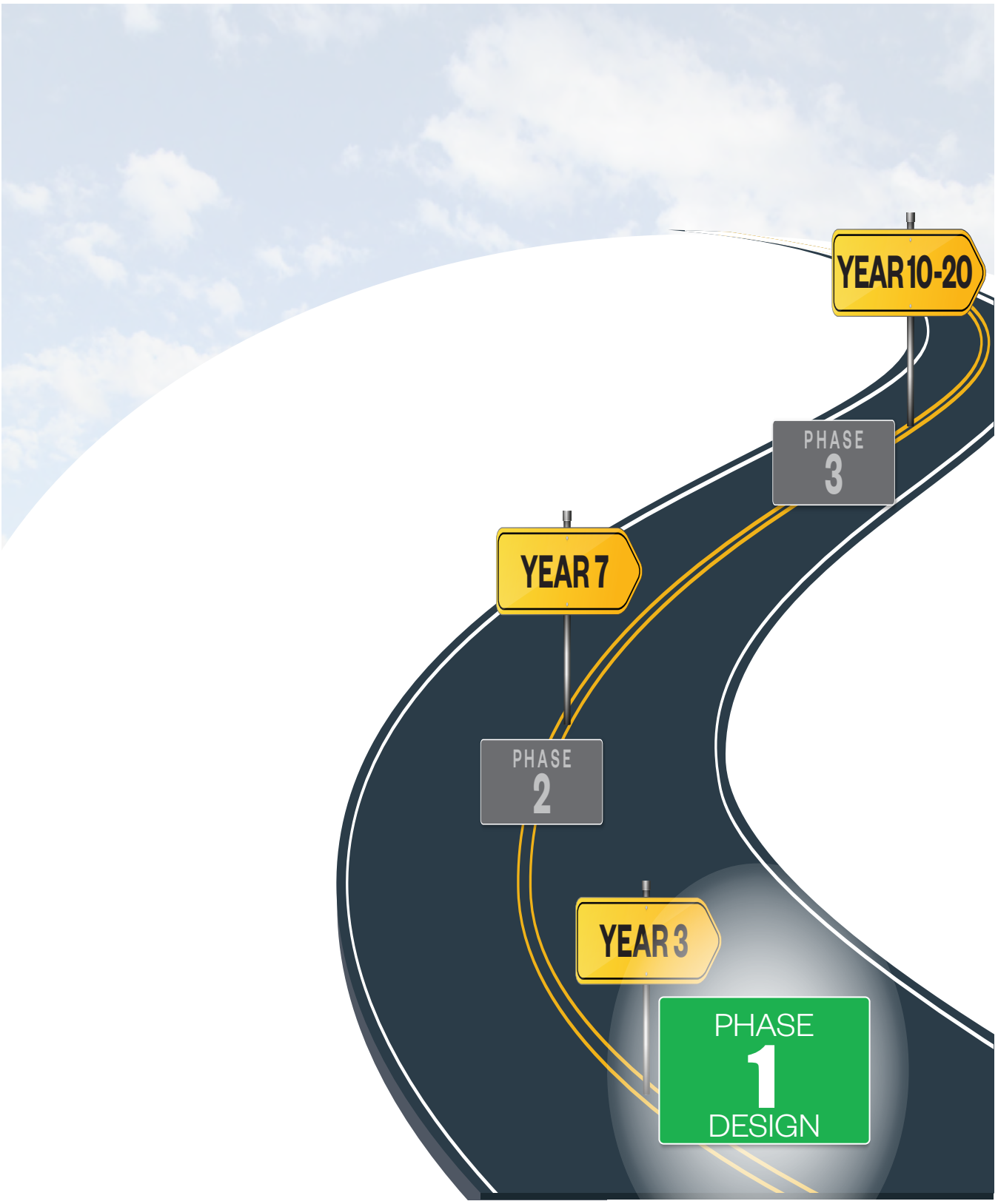
Heather McDaniel McDevitt

Archaeological

Heather McDaniel McDevitt is an archaeologist and cultural resources lead with 13 years' cultural resource management (CRM) experience throughout California and Baja California. Ms. McDaniel McDevitt has served as a field supervisor, lab director, principal investigator and project manager on Phase I, Extended Phase I, Phase II, and Phase III projects conducting surveys, testing, site significance evaluations and recordation, data recovery and laboratory analysis. Heather provided archaeologist services for GSD's Biosolids and Energy Phase 1 PDR.

Section 4

Drawing List



Section No. 4

Drawing List

As part of our effort to prepare our proposal and fee, Hazen developed the drawing list shown below to estimate our design hours. This is based on our familiarity with the project facilities and our experience with similar projects.

General	
G-01	COVER SHEET
G-02	SHEET INDEX
G-03	GENERAL NOTES
G-04	PROCESS FLOW DIAGRAM
Civil	
C-01	KEY SITE PLAN
C-02	SURVEY CONTROL, CONTRACTOR ACCESS, AND STAGING PLAN
C-03	SITE GRADING AND PAVING PLAN
C-04	YARD PIPING PLAN
C-05	PLAN AND PROFILES I
C-06	PLAN AND PROFILES II
C-07	DIGESTER SITE PLAN
C-08	CIVIL DETAILS I
C-09	CIVIL DETAILS II
L-1	LANDSCAPING PLAN
L-2	IRRIGATION PLAN
D-1	DEMOLITION SITE PLAN
D-2	DEMOLITION DETAILS I
D-3	DEMOLITION DETAILS II
Structural	
S-01	GENERAL STRUCTURAL NOTES 1
S-02	GENERAL STRUCTURAL NOTES 2
S-03	SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS 1
S-04	SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS 2
S-05	STRUCTURAL DETAILS
S-06	STRUCTURAL STANDARD DETAILS 1
S-07	STRUCTURAL STANDARD DETAILS 2
S-08	STRUCTURAL STANDARD DETAILS 3
S-501	DIGESTER FOUNDATION PLAN
S-502	DIGESTER ROOF PLAN
S-503	DIGESTER SECTION AND DETAILS
S-504	DIGESTER GAS STORAGE PLAN AND DETAILS
S-650	BIOGAS SYSTEM PLAN AND SECTION

Mechanical	
M-01	OVERALL PLAN
M-02	MECHANICAL DETAILS 1
M-03	MECHANICAL DETAILS 2
M-04	MECHANICAL DETAILS 3
M-351	PRIMARY EFFLUENT FLOW METER AND CONTROL VALVE VAULT RELOCATION PLAN AND DETAILS
M-501	DIGESTER 4 FOUNDATION PLAN AND SECTIONS
M-502	DIGESTER 4 ROOF PLAN AND SECTIONS
M-503	DIGESTER 4 SECTIONS
M-504	DIGESTER 4 SECTIONS AND DETAILS
M-505	DIGESTER 4 EQUIPMENT PLAN, SECTIONS AND DETAILS
M-506	DIGESTER 4 EQUIPMENT SECTIONS AND DETAILS
M-507	DIGESTER 1 DEMOLITION PLAN
M-508	DIGESTER 1 FOUNDATION PLAN, SECTIONS AND DETAILS
M-509	DIGESTER 1 ROOF PLAN, SECTIONS AND DETAILS
M-651	CHP FOUNDATION PLANS
M-652	CHP SECTIONS AND DETAILS
M-653	CHP BIOGAS PRETREATMENT PLAN, SECTIONS AND DETAILS
M-654	FLARE ORIFICE AND PILOT SYSTEM MODIFICATIONS
M-671	CHP HEAT RECOVERY AND EXCHANGE PLAN
M-672	CHP HEAT RECOVERY AND EXCHANGE SECTIONS AND DETAILS

Electrical	
E-01	LEGEND
E-02	GENERAL NOTES AND ABBREVIATIONS
E-03	OVERALL SITE PLAN
E-04	PARTIAL SITE PLAN
E-05	DUCTBANK SCHEDULES
E-06	MAIN SWITCHGEAR SINGLE LINE
E-07	MAIN SWITCHGEAR ELEVATION
E-08	MCC-B SINGLE LINE AND ELEVATION
E-09	CONTROL SCHEMATICS-I
E-10	CONTROL SCHEMATICS-II
E-11	CONTROL ONE LINES-I
E-12	CONTROL ONE LINES-II
E-13	PANEL SCHEDULES
E-14	CONDUIT AND WIRE SCHEDULES - I
E-15	CONDUIT AND WIRE SCHEDULES - II
E-16	DETAILS - I
E-17	DETAILS - II
E-18	DETAILS - III
E-201	HEADWORKS BUILDING
E-351	EFFLUENT PUMP STATION
E-401	BIOFILTER PLAN
E-420	BLOWER BUILDING
E-501	DIGESTER 4 AREA OF CLASSIFICATIONS
E-502	DIGESTER 4 POWER PLAN
E-503	DIGESTER 4 LIGHTING PLAN
E-504	DIGESTER 1 DEMOLITION PLAN
E-505	DIGESTER GAS STORAGE AREA OF CLASSIFICATIONS
E-506	DIGESTER GAS STORAGE PLAN
E-601	POWER AND MAINTENANCE BUILDING PLAN
E-651	CHP BIOGAS PRETREATMENT PLAN
E-671	CHP HEAT RECOVERY AND EXCHANGE PLAN

Instrumentation and Control (I&C)	
I-01	SYMBOLS AND LEGEND
I-02	PLC PANEL LAYOUT
I-03	NETWORK ARCHITECTURE
I-04	DETAILS
I-501	DIGESTER 4 - I P&ID
I-502	DIGESTER 4 - SLUDGE RECIRCULATION P&ID
I-503	DIGESTER 4 - SLUDGE TRANSFER P&ID
I-504	DIGESTER 4 - HEAT EXCHANGE P&ID
I-505	DIGESTER GAS STORAGE P&ID
I-651	MSG BOOSTER BLOWER AND GAS PRETREATMENT P&ID
I-671	CHP GENERATOR - I P&ID
I-672	CHP GENERATOR - II P&ID

Section No. 5

Schedule

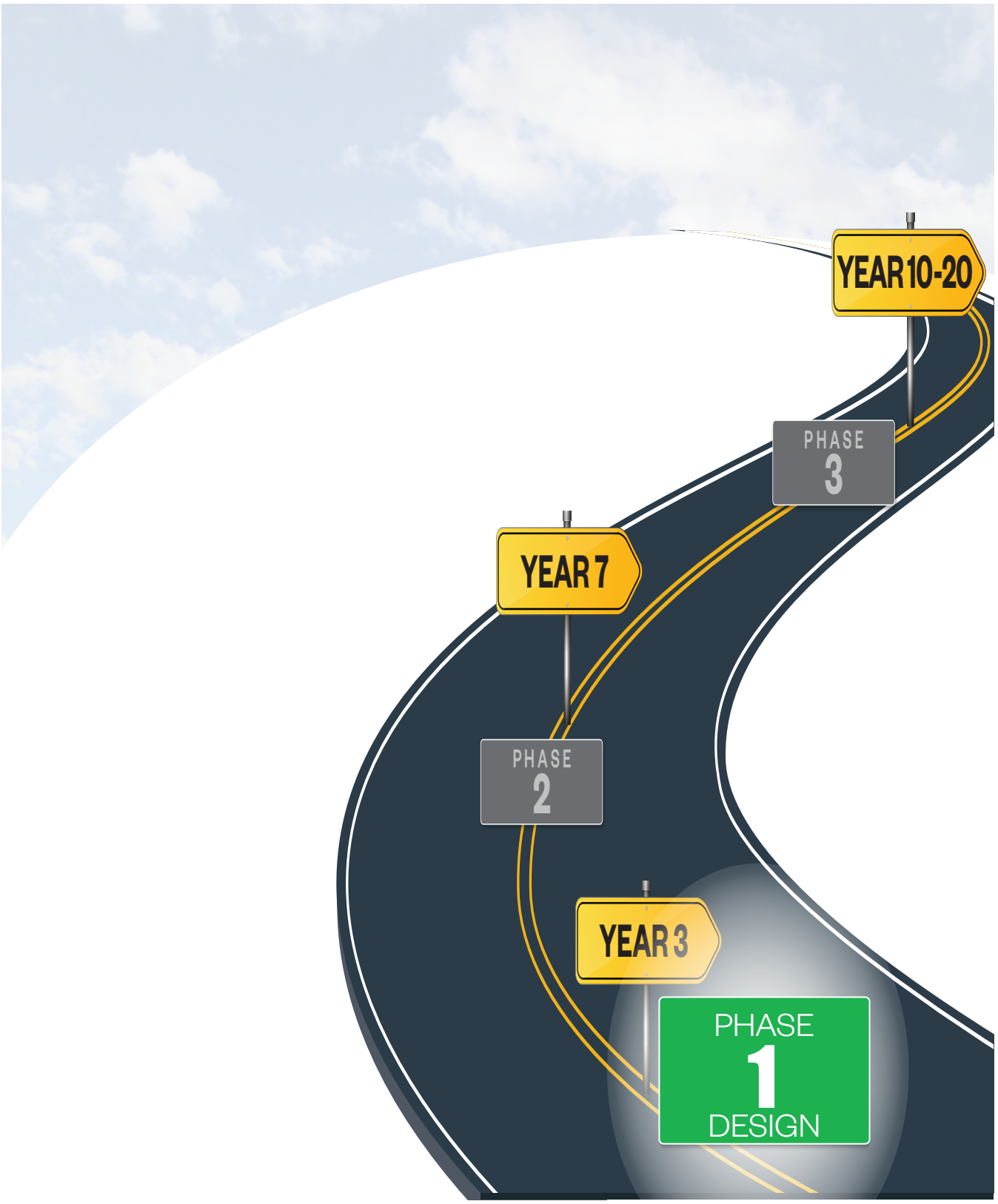
Hazen is committed to proactive cost and schedule control. Our experience with these types of projects has shown us how addressing potential issues early can minimize their overall disruption to the project.

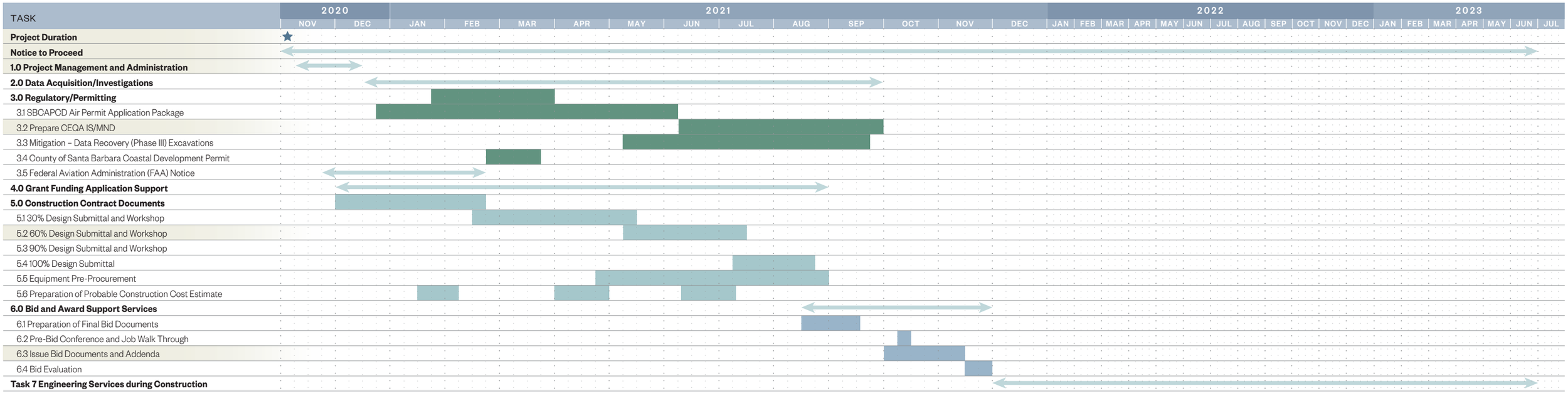
Our Project Manager, Tim Suydam, will maintain an updated schedule as the project progresses. Actual progress will be checked against the baseline schedule monthly to identify any variances in tasks as well as coordinate resources for upcoming deliverables. When variances are identified, Tim will work with the GSD's Project Manager to develop mitigation strategies.

Based on receipt of a Notice to Proceed from GSD by November 18, 2020, the full-scale facilities design will be completed by September 2021 as shown in Figure 1 schedule. Although an Optional Task, the schedule also includes Engineering Services during Construction.

Section 5

Schedule




TASK
2020
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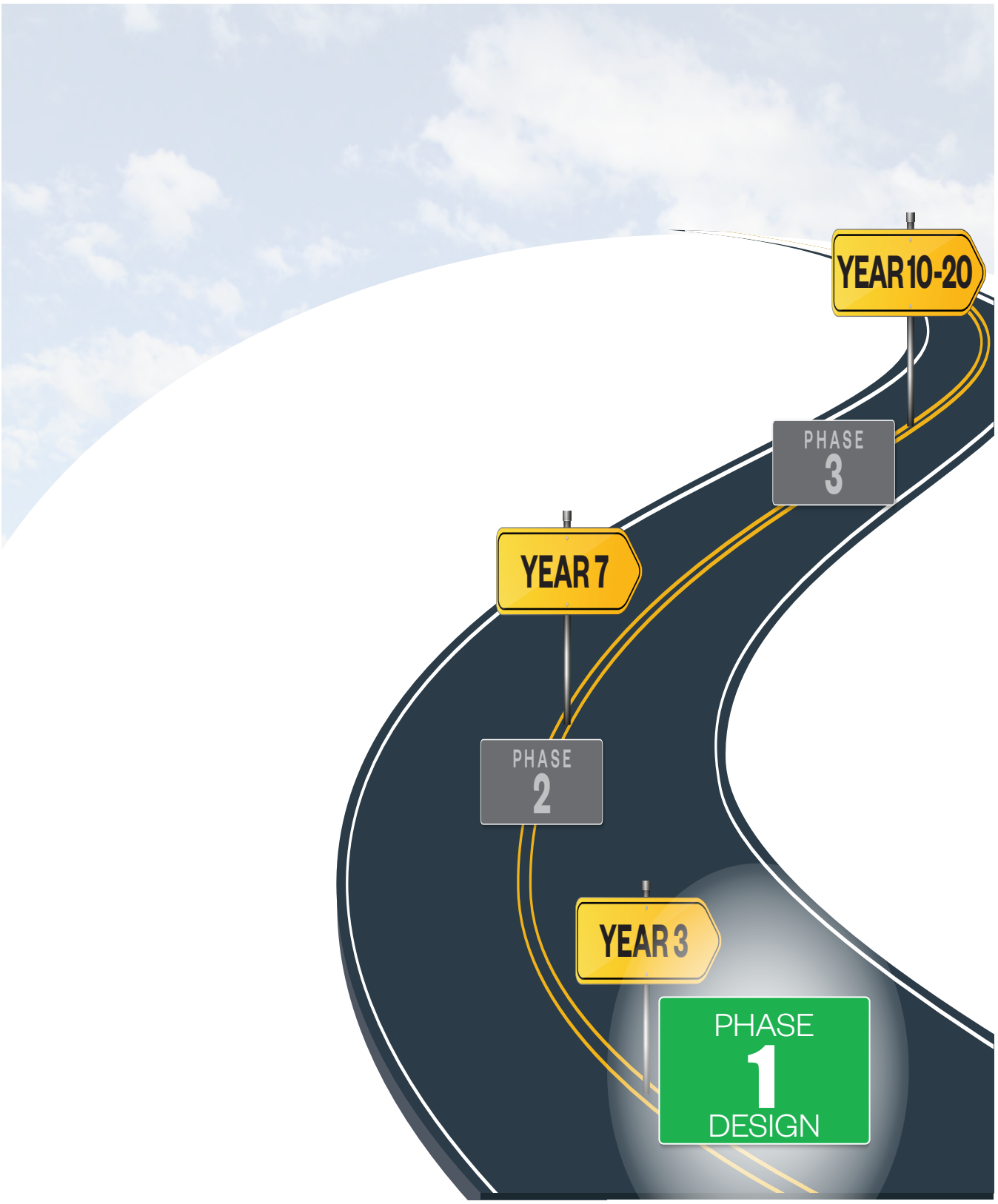
Project Duration
Notice to Proceed
1.0 Project Management and Administration
2.0 Data Acquisition/Investigations
3.0 Regulatory/Permitting
3.1 SBCAPCD Air Permit Application Package
3.2 Prepare CEQA IS/MND
3.3 Mitigation – Data Recovery (Phase III) Excavations
3.4 County of Santa Barbara Coastal Development Permit
3.5 Federal Aviation Administration (FAA) Notice
4.0 Grant Funding Application Support
5.0 Construction Contract Documents
5.1 30% Design Submittal and Workshop
5.2 60% Design Submittal and Workshop
5.3 90% Design Submittal and Workshop
5.4 100% Design Submittal
5.5 Equipment Pre-Procurement
5.6 Preparation of Probable Construction Cost Estimate
6.0 Bid and Award Support Services
6.1 Preparation of Final Bid Documents
6.2 Pre-Bid Conference and Job Walk Through
6.3 Issue Bid Documents and Addenda
6.4 Bid Evaluation
Task 7 Engineering Services during Construction

Section 6

Fee



Section No. 6

Fee

		Technical Advisor	Technical Advisor	Technical Lead Cogeneration	HVAC Mechanical Lead	Civil Lead	Project Director	CHP Technical Advisor	Design Manager	Project Manager	Structural Lead	Biosoloids Lead	Cogeneration Lead	Technical Advisor	Senior Principal Engineer	Senior Principal Engineer	Cost Estimator	Principal Engineer	Civil Engineer	Electrical Engineer	CAD II	CAD I	Total				Ninyo & Moore	Tartaglia	Yorke	Dudek	Grand Total
		Abu-Orf, Mohammad	Bullard, Michael	Lisk, Bryan	Alhajri, Swaid	Cummings, Greg	Guendert, Dawn	Hardy, Scott	Mackenzie, Ian	Suydam, Tim	DuPuis, Sean	Dursun Balci, Derya	Keddy, Elizabeth	Reese, Steven	MlakarAlan	Reisinger, Brad	Portner, Chris	Enriquez, Hersy	Pat DeLong	Lau, Arty	CAD II	CAD I	Total								
No.	**Task**	$ 275.00	$ 275.00	$ 265.00	$ 250.00	$ 250.00	$ 250.00	$ 250.00	$ 250.00	$ 250.00	$ 205.00	$ 205.00	$ 205.00	$ 205.00	$ 200.00	$ 200.00	$ 185.00	$ 170.00	$ 130.00	$ 130.00	$ 125.00	$ 110.00	Hours	**Labor**	**ODCs**	**Total**					
1	**Project Management**																													
1.1	**Kickoff Meeting**	2		3			4		2	5		3			3			1					23	$ 5,480	$ 137	$ 5,617					
1.2	**Project Coordination**		4	7		6	10	4	31	52		7			7	6							134	$ 32,740	$ 819	$ 33,559			$ 14,000		
1.3	**Monthly Progress Reports**						16			48													64	$ 16,000	$ 400	$ 16,400					
1.4	**Design Milestone Workshop Coordination**			3		3		3		3	3	3	3		3	3		3					30	$ 6,600	$ 165	$ 6,765					
1.5	**QA/QC Program**						2			2													4	$ 1,000	$ 25	$ 1,025					
	Task 1 Totals	**2**	**4**	**13**		**9**	**32**	**7**	**33**	**110**	**3**	**13**	**3**		**13**	**9**		**4**					**255**	**$ 61,820**	**$ 1,546**	**$ 63,366**	**$ -**	**$ -**	**$ 14,000**	**$ -**	**$ 77,366**
2	**Data Acquisition, Basemapping, Investigations**																													
2.1	**Document Review**					4	2		4	2	2	2			4			4	4	8			36	$ 6,860	$ 172	$ 7,032				$ -	
2.2	**Basemapping and site survey**					3					1								6		2	7	19	$ 2,755	$ 69	$ 2,824		$ 15,990			
2.3	**Geotechnical Investigation**					3					4							2					9	$ 1,910	$ 48	$ 1,958	$ 29,360			$ 2,400	
	Task 2 Totals					**10**	**2**		**4**	**2**	**7**	**2**			**4**			**6**	**10**	**8**	**2**	**7**	**64**	**$ 11,525**	**$ 288**	**$ 11,813**	**$ 29,360**	**$ 15,990**	**$ -**	**$ 2,400**	**$ 59,563**
3	**Regulatory/Permitting**																													
3.1	**SBAPCD Permit Application**			4			6		8	8		4	16					12					58	$ 12,700	$ 318	$ 13,018			$ 35,000		
3.2	**Initial Study/MND**			4		6	2		10	18		4	8	2				10	12		4	16	96	$ 18,450	$ 461	$ 18,911			$ 46,700	$ 26,500	
3.3	**Archeological Data Recovery Plan**						2		4	4		2						2					14	$ 3,250	$ 81	$ 3,331				$ 115,000	
3.4	**Coastal Commission Permit**						12		12	16											4	8	52	$ 11,380	$ 285	$ 11,665				$ 27,900	
3.5	**FAA Permit**								1	1		1						1					4	$ 875	$ 22	$ 897					
	Task 3 Totals			**8**		**6**	**22**		**35**	**47**		**11**	**24**	**2**				**25**	**12**		**8**	**24**	**224**	**$ 46,655**	**$ 1,166**	**$ 47,821**	**$ -**	**$ -**	**$ 81,700**	**$ 169,400**	**$ 298,921**
4	**Grant Funding Support**																													
4.1	**Grant Funding Support**			18			2		2	2			20										44	$ 10,370	$ 259	$ 10,629					
	Task 4 Totals			**18**			**2**		**2**	**2**			**20**										**44**	**$ 10,370**	**$ 259**	**$ 10,629**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 10,629**
5	**Preparation of Contract Documents (Plans and Specifications)**																													
5.1	**30% Design Submittal and Workshop**	18	12	22	10	28	6	24	40	24	34	40	38	20	66	78		76	76	76	70	140	898	$ 159,770	$ 3,994	$ 163,764	$ 2,000				
5.2	**60% Design Submittal and Workshop**	24	24	18	10	30	16	12	36	28	37	30	50	40	72	62		70	72	124	32	210	997	$ 174,435	$ 4,361	$ 178,796					
5.3	**90% Design Submittal and Workshop**	24		8		6	8		18	6	8	20	20	24	62	22		8	12	60	10	10	326	$ 62,850	$ 1,571	$ 64,421					
5.4	**100% Design Submittal**	8		2		2			12		2	4	12	8	12	12		12	4	12	3	6	111	$ 21,515	$ 538	$ 22,053					
5.5	**Construction Cost Estimates**																52						52	$ 9,620	$ 241	$ 9,861					
5.6	**Pre-Procurement Documents**			6								6	12	4	4	2		12		2			48	$ 9,600	$ 240	$ 9,840					
	Task 5 Totals	**74**	**36**	**56**	**20**	**66**	**30**	**36**	**106**	**58**	**81**	**100**	**132**	**96**	**216**	**176**	**52**	**178**	**164**	**274**	**115**	**366**	**2,432**	**$ 437,790**	**$ 10,945**	**$ 448,735**	**$ 2,000**	**$ -**	**$ -**	**$ -**	**$ 450,735**
6	**Bid Phase Services**																													
6.1	**Prepare Final Bid Documents**			1		2	2		2	2		2	2		2			8	8				31	$ 5,885	$ 147	$ 6,032					
6.2	**Pre-Bid Conference and Job Walk**								4	4									12				20	$ 3,560	$ 89	$ 3,649					
6.3	**Bid Documents and Addenda**			2		4	2		4	4	2	2	2		2	2		2	4	4	2	4	42	$ 8,130	$ 203	$ 8,333					
6.4	**Bid Evaluation**								2	2								4	4				12	$ 2,200	$ 55	$ 2,255					
	Task 6 Totals			**3**		**6**	**4**		**12**	**12**	**2**	**4**	**4**		**4**	**2**		**14**	**28**	**4**	**2**	**4**	**105**	**$ 19,775**	**$ 494**	**$ 20,269**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 20,269**
7	**Engineering Services During Construtions (Optional)**																													
7.1	**Engineering Services During Construction**			36			20		234	28		44	68		194	132		284		617	34	84	1775	$ 310,180	$ 7,755	$ 317,935				$ 20,320	
	Task 7 Totals			**36**			**20**		**234**	**28**		**44**	**68**		**194**	**132**		**284**		**617**	**34**	**84**	**1,775**	**$ 310,180**	**$ 7,755**	**$ 317,935**	**$ -**	**$ -**	**$ -**	**$ 20,320**	**$ 338,255**
	Totals with Optional Task 7	**76**	**40**	**134**	**20**	**97**	**112**	**43**	**426**	**259**	**93**	**174**	**251**	**98**	**431**	**319**	**52**	**511**	**214**	**903**	**161**	**485**	**4,899**	**$ 898,115**	**$ 22,453**	**$ 920,568**	**$ 31,360**	**$ 15,990**	**$ 95,700**	**$ 192,120**	**$ 1,255,738**
	Totals without Optional Task 7	**76**	**40**	**98**	**20**	**97**	**92**	**43**	**192**	**231**	**93**	**130**	**183**	**98**	**237**	**187**	**52**	**227**	**214**	**286**	**127**	**401**	**3,124**	**$ 587,935**	**$ 14,698**	**$ 602,633**	**$ 31,360**	**$ 15,990**	**$ 95,700**	**$ 171,800**	**$ 917,483**

Notes and Assumptions:

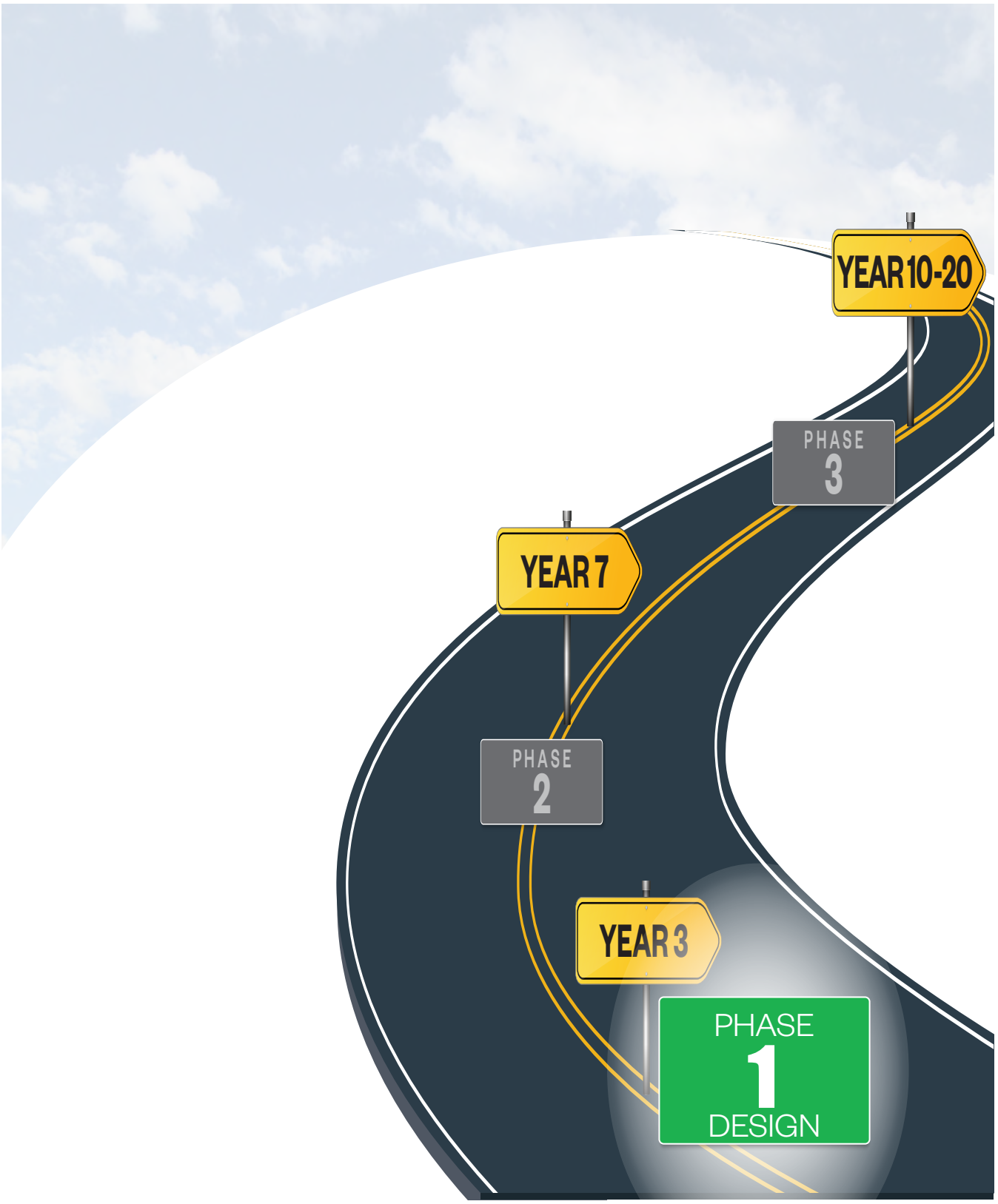
1 Potholing is not being performed

2 Geotech Investigation requires 2 days and archaelogical monitors will be provided.

3 Construction Manager will provide specialty inspection services including geotech if required.

Appendix

Resumes



Tim Suydam

Project Manager

Mr. Suydam serves as Hazen and Sawyer's West Coast Design-Build Lead. He has over 30 years of experience in recycled water, wastewater and drinking water projects. He has spent the last 20 years specializing in alternative procurement of drinking water projects in the San Diego Region. He also specializes in treated water quality, has significant experience in groundwater and soil remediation, and industrial wastewater permitting and treatment.

Education

B.S., Chemical Engineering, University of California, San Diego, CA

Certification/License

Professional Engineer

Areas of Expertise

- Water Treatment
- Design-Build
- Construction Management
- Remediation

Technical Publications & Presentations

Weinberg, Ken, Yamada, Robert, Callahan, Neil V., Bianes, Vic, Chamberlain, Dave, Suydam, Tim, Eaton, Gary, San Diego County Water Authority. "Integrating Desalinated Seawater with existing Supplies and Delivery Systems." American Water Works Association,- Journal, February 2014, Volume 106, Issue 2.

Jesus Garcia-Aleman, CH2M Hill, 2012, Tim Suydam, San Diego County Water Authority, James Lozier, CH2M Hill, 2012, Brian MacDonald, CH2M Hill 2012, Jim Imrie, GE Water Technologies, Eric Savage, GE Water Technologies, 2012. "Treatment Optimization to Address Water Quality Challenges in a ZLD Scheme—5 Years of Operation of the Twin Oaks Valley WTP" to be presented at the AMTA/ AWWA 2013 Membrane Technology Conference, February 2013.

Ufuk Erdal, CH2M Hill, 2012, Tim Suydam, San Diego County Water Authority, James Lozier, CH2M Hill, 2012. "A Comprehensive Bench-Scale Study to Evaluate Chloramine Stability and DBP Formation for the Desalinated Seawater and Blends of Desalinated Seawater and Treated Surface Water"

Biosolids and Energy Phase I: Preliminary Design, Goleta Sanitary District (GSD), Goleta, CA

Project Manager. This project is developing a Preliminary Design Report that includes preliminary design of a new digester and CHP facility, develop cost estimate for these facilities, conduct regulatory and environmental assessment, and provide conceptual layout of all expected facilities for construction.

Carlsbad Desalination Plant, San Diego County Water Authority; San Diego, CA

As Water Quality Operations Manager, Commissioning and Design-Build Lead for the Design-Build-Operate-Own-Transfer (DBOOT) 54 mgd Carlsbad Desalination Plant negotiated design, construction and water quality requirements with Poseidon Resource Corporation for the Water Purchase Agreement. Oversaw design and construction for the desalination plant and ensured successful commissioning and integration into the Water Authority's Aqueduct System.

TOVWTP Desalination Upgrades, San Diego County Water Authority, San Diego, CA

Based on knowledge and experience of Tampa Bay Water's DBOOT desalination project a chloramine decay and mixing study was implemented. The results of this study led to chloramine boosting and treated surface water mixing facilities to minimize/eliminate the effects of chloramine decay resulting from high bromide levels in desalinated seawater. Responsible for planning, drafting, executing a change order to the TOVWTP DBO Service Contract to implement a capital modification to accept, blend and process desalinated seawater from the Carlsbad

to be presented at the AMTA/AWWA 2013 Membrane Technology Conference, February 2013.

T. Suydam, San Diego County Water Authority, San Diego, CA. (AWWA). Standards Committee on Membranes: American Water Works Association/ American National Standards Institute, Membrane Systems Standard, B110-09, March 1, 2010.

Tim Suydam, Senior Engineer, San Diego County Water Authority, John Economides, Director of Engineering, San Diego County Water Authority, Jerome B. Gilbert, Consulting Engineer, 2007. "Managing a Large Alternative Procurement: Optimizing Treatment Plant Delivery in the 21st Century" presented at the AWWA Annual Conference and Exposition, June 2007.

Ashley Currey, P.E., CH2M HILL, Tim Suydam, P.E., San Diego County Water Authority, Dan Wetstein, P.E., CH2M HILL, 2007. "World's Largest UF Facility a Model of Efficiency and Sustainability" presented at the AWWA Annual Conference and Exposition, June 2007.

Jesus Garcia-Aleman, P.E., CH2M HILL; Tim Suydam, P.E., San Diego County Water Authority; Jeremy Crutchfield, San Diego County Water Authority; Dan Wetstein, P.E., CH2M HILL; James Lozier P.E., CH2M HILL, 2007. "From 0 to 100-MGD in 30 Months - How the San Diego County Water Authority is Implementing the Largest Ultrafiltration Membrane Water Treatment Plant at Twin Oaks Valley with the Design-Build-Operate Process" presented at the AWWA Membrane Technology Conference, March 2007.

Zaid Chowdhury, Tim Suydam, Sunil Kommineni and Rich Pyle, 2005. "Process and Planning Considerations for a Zero Liquid Discharge Low-Pressure Membrane Treatment Plant" presented at the AWWA Annual Conference and Exposition, June 2005.

Suydam, T.A., R. Pyle, Z. Chowdhury, and S. Kommineni, 2004. "Comparison of Conventional and Membrane Technologies for Surface Water Treatment" presented at the American Water Works Association 2004 Water Quality Technology Conference. November 14 – 18, 2004. San Antonio, Texas.

Seawater Desalination Facility. This change order included piping to connect to the Water Authority's Pipeline 3 to the TOVWTP clearwells, chlorine and ammonia dosing systems to boost chloramine, monitoring systems, associated operations and maintenance, and revisions to the monthly invoicing. To date no issues with chloramine decay have been encountered and the Carlsbad desalinated seawater has been successfully integrated into San Diego regional supplies.

Design Build Operate Twin Oaks Valley Water Treatment Plant, San Diego County Water Authority, San Diego, CA

Project Manager for the Design-Build-Operate Twin Oaks Valley Water Treatment Plant Project: Managed all aspects of schedule, budget, and scope for this capital improvement at the Water Authority, including a project team of more than 10 people. This project was delivered on-time and under budget by approximately $8 million. Management included retaining an Owner's Advisor consultant, Hawkins, Delafield, Wood as outside legal counsel and a Board of Senior Consultants, conducting conventional and membrane WTP conceptual designs, submerged membrane and DAF pilot testing, surveying, CEQA documentation, significant public outreach, due diligence evaluation for membrane treatment plants, due diligence evaluations for alternative procurement, DBO solicitation (RFQ/RFP), property acquisition, legal coordination, coordination with eight other departments within the Water Authority, coordination with California Department of Public Health to permit the Water Authority's entire system and the WTP, coordination with SDG&E, Deer Springs Fire Protection District and Vallecitos Water District. In order to manage this project a very strong understanding of principles of alternative procurement including design-build and design-build-operate and water treatment processes was required. Project management also included significant interaction with and presentations to the Water Authority's Board of Directors. An Ad Hoc Committee of the Board provided guidance to project staff during contract negotiations. Numerous presentations were provided to the Board of Directors and ultimately led to DBO contract approval on schedule. Subsequent to contract approval management included design reviews, submittal reviews, construction administration, claims administration, change orders, permitting, and coordination with all internal and external stakeholders for successful project implementation and resolution of all claims.

Dawn Guendert

Project Director / QC

Ms. Guendert uses her extensive experience with water and wastewater systems to lead teams in all elements of asset management including asset inventory, condition assessment, risk assessment, operational performance efficiency improvement, and implementation of asset management programs to help clients better manage their assets, understand future funding needs, and improve productivity.

Education

BA, Political Science, University of California, San Diego

Areas of Expertise

- Advanced Water and Wastewater Treatment
- Desalination
- Operational Efficiency
- Asset Management Strategic Plan

Professional Activities

American Water Works Association

Biosolids and Energy Phase I: Preliminary Design, Goleta Sanitary District (GSD), Goleta, CA
Project Director. This project is developing a Preliminary Design Report that includes preliminary design of a new digester and CHP facility, develop cost estimate for these facilities, conduct regulatory and environmental assessment, and provide conceptual layout of all expected facilities for construction.

Asset Management Plan, Goleta Sanitary District, Goleta, CA
Leading a phased approach to the development of an asset management program for Goleta Sanitary District's wastewater treatment plant, water reclamation plant, collection system and ocean outfall. Project includes staff training, a pilot project expandable District-wide, development of an asset management implementation plan and assistance with integration of the asset management plan with a new Computer Management Maintenance System (CMMS).

10-Year Capital Improvement Plan, Goleta Sanitary District, Goleta, CA
Project Director. Assisting the Project Manager is the development of a 10-year CIP utilizing the outcome of the projected rehabilitation and replacement projects identified in the Asset Management Plan AMP and incorporating new projects. Dashboards will be developed to integrate both the AMP and CIP.

Water Reclamation Facility 1110.2 Resultant Projects, City of San Bernardino Municipal Water Department, CA
The City of San Bernardino Municipal Water Department (SBMWD) produces digester gas (DG) from the anaerobic digestion process and beneficially utilizes that gas as a fuel source for engines and boilers. The air quality regulatory agency has amended regulations, Rule 1110.2, in efforts to reduce oxides of nitrogen, volatile organic compounds and carbon

Hazen

Publications

Greg Finlayson, David de Haas, Dawn Guendert, "Comparing Desalination and Recycling for Water Supply Augmentation", International Desalination and Water Reuse Quarterly, 2014

Al Bazzi, Slavica Hammond, Kenneth Redd, Michael Sarullo, Roshanak Aflaki , Dawn Guendert; "Microfiltration and Reverse Osmosis Membrane Replacement Understanding Operating Process Data and Autopsy Data Projection of Useful Remaining Life"; presented at WEFTEC 2011

Robert Huehmer, Lisa Henthorne, Dawn Guendert, "Increasing MF/UF Reliability in Seawater Desalination Pretreatment Applications using Enhanced Pre-filtration", presented at IDA World Congress, Singapore 2005

Dawn Guendert; "Orange County's Innovative Water Reuse Project to Purify 70 mgd in 2007", AWWA Journal, July 2004

Dawn Guendert, Ed Jordan; "Urban Reuse: Bringing Water Treatment Where It's Needed Most"; AWWA Journal, June 2004

Kevin Alexander, Dawn Guendert, Tom Pankratz, "Comparing MF/RO Performance on Secondary and Tertiary Effluents in Reclamation Applications", presented at IDA Conference, Bahamas 2003

Dawn Guendert, "Carmichael Bajamont Way WTP Treats Backwash to Maximize Recovery and Minimize Waste Disposal", AMTA Journal, Fall 2004

Marek Mierzejewski, Dawn Guendert, "Membranes for Reuse: Industrial Applications using Microfiltration as RO Pretreatment", Ultrapure Magazine, October 2004

Dawn Guendert, "Case Study" Bendigo – 33 MWD WTP Successfully Meets the Challenge"; AMTA Journal, Spring 2004

Dawn Guendert, "Membrane Filtration Conquers Water Quality at Australian Plant, Water & Wastewater Asia Journal, 2004

Dawn Guendert, "Utility Turns to Integrated Membrane System for Wastewater Reclamation, "Water World Magazine, March 2003

monoxide from stationary emission sources (like engines and flares). Hazen assisted SBMWD with design of beneficial reuse of DG and alternatives for improvements necessary to meet the Rule 1110.2 amendments. The design included a DG storage facility that will serve to accumulate DG and maintain a more constant gas supply for the proposed fuel cell and reduce wasting DG to the flare system. The evaluation included review of DG storage alternatives, future DG production, and impacts of DG production due to fats, oils and greases. The DG storage was effectively designed in coordination with fuel cell manufacturers and flare system improvements including a new ultra-low emission flare.

Coastal Treatment Plant Facility Plan Improvements Engineering Services, South Orange County Wastewater Authority, Dana Point, CA
Project Director. This project included the design of substantial upgrades, repairs and replacement to the aeration, electrical and other systems that are critical to maintaining operation of the facility.

Piedmont Creek Asset Management Plan, Santa Clara Valley Water District, Santa Clara, CA
Leading a team that is utilizing Santa Clara Valley Water District's (SCVWD) watershed assessment management plan as a foundation for developing an asset management plan (AMP) for Piedmont Creek by utilizing the USEPA 10-step asset management planning model (AMPM). The project includes updating the asset register, documenting the status of the assets, identifying the critical assets, developing strategies to manage the assets and projecting future investments required for Piedmont Creek to provide flood risk management within the watershed. GIS mapping (including photo links where possible) was used for ease of exhibit creation for decision-makers use and public review.

Asset Management As-Needed Services Contract, Otay Water District, Spring Valley, CA
Principal-in-Charge. As part of Otay Water District's (OWD) Asset Management On-Call Contract, Hazen conducted an asset management data gap analysis and developed a data gap closure strategy. Benefits derived from the consolidation of the assets owned and managed by OWD in a centralized asset register included improved quality of asset information for operational and strategic asset management decisions, enhanced business process efficiency, improved customer service in providing accurate asset information, reduced capital and maintenance costs by effectively managing infrastructure assets.

Vertical Facilities Asset Inventory and AM Framework Pilot Project, Moulton Niguel Water District, Laguna Hills, CA
Led a team that developed an asset register framework and populated it with asset data, conducted a condition assessment and determined remaining useful life of facilities selected for the pilot project.

Mohammad M. Abu-Orf, PhD

Technical Advisor / QC

Dr. Abu-Orf "Mo" is Hazen's Residuals Group Practice Leader and has over 25 years of experience in the areas of solids dewatering, drying, stabilization, and energy recovery.

Education

PhD, Environmental Engineering, University of Delaware

MS, Environmental Engineering, University of Delaware

BS, Civil Engineering, Birzeit University, West Bank, Palestine

Areas of Expertise

- Residuals
- Biosolids master planning
- Process optimization
- Sludge dewatering
- Energy recovery

Technical Publications

Five patents as the main inventor
More than 125 peer-reviewed and conference publications, and book chapters

Co-author of the fifth edition of the textbook "Wastewater Engineering: Treatment and Resource Recovery," published by McGraw Hill, October 2014

Projects experience involve directing biosolids master planning, biosolids management plans, preliminary and conceptual design of recommended processes, and applying innovative biosolids processing technologies that provide cost effective solids processing, and high quality product. Mo's experience also includes academia, research and development and providing high technical services for a major wastewater private operating corporation. Dr. Abu-Orf has more than 120 publications and 5 patents to his credit. Dr. Abu-Orf co-authored the Fifth Edition of the Textbook "Wastewater Engineering: Treatment and Resource Recovery," published by McGraw Hill in 2014.

Biosolids and Energy Phase I: Preliminary Design, Goleta Sanitary District (GSD), Goleta, CA
Technical Advisor. This project is developing a Preliminary Design Report that includes preliminary design of a new digester and CHP facility, develop cost estimate for these facilities, conduct regulatory and environmental assessment, and provide conceptual layout of all expected facilities for construction.

Biosolids and Energy Strategic Plan, Goleta Sanitary District, Goleta, CA
Technical Director responsible for evaluating high strength waste available for co-digestion at GSD (Phase I) and assessing plant capacity for additional solids loading to anaerobic digesters (Phase II). In addition, the subsequent work from Phase I and II evaluates various technology to enhance digestion and biogas production. The project ultimately leads to developing a strategic plan for GSD in handling biosolids to meet future state regulatory requirement. Additional roles include conducting field interview for market assessment for biosolids residuals from GSD.

Broward County North Regional WWTP Facility Improvements, Broward Water and Wastewater Services, FL
Quality Control Reviewer. Provided quality control review services for the current design of the Phase III (3) Solids project, with an estimated construction cost of $64 million. Improvements include replacement of aging solids thickening, digestion and dewatering equipment, and facilities. The design consists of rehabilitation of the existing, dissolved air flotation system equipment, replacement of five anaerobic digester covers, digester gas mixing systems and piping, and replacement of three belt filter dewatering presses with new belt presses and/or centrifuges.

Hazen

Beneficial Use of Digester Gas at Regional Water Reclamation Facilities, Eastern Municipal Water District, CA
QA/QC for the biogas utilization study.

San Francisco Public Utilities Commission, Program Management and Owner's Representative, San Francisco, CA
Three main responsibilities.

- **Biosolids Facility Design Project, Southeast Plant.** Since the selection of the design team for the biosolids project at the Southeast plan in November 2013, responsibilities include: 1) reviewing documents produced by the design team and provide comments for the SFPUC engineering staff, and 2) participating in meetings and decision making workshop for reviewing and selecting biosolids process alternatives.
- **South East Plant Biosolids Project, Preplanning Task Orders, San Francisco, CA.** Overall technical Director for the four biosolids project planning tasks, 1) Biosolids Project Needs Assessment, 2) Biosolids End Use Market Study, 3) Biogas Beneficial Use Study and 4) Project Description. Lead the technical and economic feasibility assessment of co-digesting high strength waste (Fats oils, and grease, green bin and black bin) with the new biosolids digestion facility.
- **San Francisco Public Utilities Commission, Evaluation and Validation of Sewer System Improvement Program, San Francisco, CA.** Technical Director and Task Leader for the biosolids process evaluation and program validation for the San Francisco Public Utility Commission Sewer System Improvement Program. The process evaluation includes reviewing capacity of solids processes at the Bayside and Oceanside Plants including thickening, digestion, and dewatering, and recommending short term process improvement until the biosolids new facility is implemented. Program validation includes evaluating the existing biosolids program management plan and validating long term recommendations.

East Central Regional WWTP, East Central Regional Operations Board, West Palm Beach, FL
Startup Senior Technical Advisor. Provided technical assistance of the startup of the of two-phase, temperature-phased anaerobic digestion (TPAD). TPAD digestion operates as a thermophilic-mesophilic digestion system, or alternatively can operate in conventional all mesophilic mode. Facilities included two fixed-cover thermophilic digesters and four floating cover mesophilic digesters. Digester heating accomplished with hot water boilers and external tube-in-tube heat exchangers and sludge-to-sludge heat recovery HEX units. The project also included rehabilitation of existing GBT thickening building and installation of a new dewatering facility including high solids centrifuges and FOG and Septage receiving and handling facilities.

PAR 1304 2018 Facility Plan, Metro Wastewater Reclamation District, Denver, CO
Technical Director for Solids Stream Processes. Served as a technical director on the 2018 Facility Plan focused on the identification and evaluation of solid stream process alternatives at the 220 mgd Robert W. Hite Treatment Facility (RWHTF) and the 24 mgd Northern Treatment Plant (NTP). Identified with MWRD stakeholders' innovative solutions to capacity constraints and developed a vision toward the future that will provide the greatest benefit to MWRD and their customers. The Facility Plan is a District-wide planning document that encompasses the collection system, treatment plants, and biosolids land application facilities. It was created to identify improvements necessary to meet the planning and regulatory drivers for a 20-year planning period and beyond.

Steven Reese, PE

Technical Advisor/QC

Mr. Reese is an associate with experience in planning, design and construction of wastewater treatment facilities. His areas of specific expertise includes biosolids dewatering improvements, digester gas and flares for digester gas.

Education

M.S. Environmental Engineering, University of Cincinnati

B.S. Civil Engineering, University of Cincinnati,

Certification/License

Professional Engineer

Areas of Expertise

- Wastewater Facility Planning and Design
- Biosolids

Professional Activities

Water Environmental Federation

SWOWEA Executive Committee Member

OWEA Biosolids Committee Member

Water Reclamation Facility 1110.2 Resultant Projects, City of San Bernardino Municipal Water Department, CA

The City of San Bernardino Municipal Water Department (SBMWD) produces digester gas (DG) from the anaerobic digestion process and beneficially utilizes that gas as a fuel source for engines and boilers. The air quality regulatory agency has amended regulations, Rule 1110.2, in efforts to reduce oxides of nitrogen, volatile organic compounds and carbon monoxide from stationary emission sources (like engines and flares). Hazen assisted SBMWD with design of beneficial reuse of DG and alternatives for improvements necessary to meet the Rule 1110.2 amendments. The design included a DG storage facility that will serve to accumulate DG and maintain a more constant gas supply for the proposed fuel cell and reduce wasting DG to the flare system. The evaluation included review of DG storage alternatives, future DG production, and impacts of DG production due to fats, oils and greases. The DG storage was effectively designed in coordination with fuel cell manufacturers and flare system improvements including a new ultra-low emission flare.

Dry Creek WWTP Headworks, Hydraulics, and Odor Control Improvements, Sanitation District No. 1 of Northern Kentucky, KY

A new headworks of 100 MGD capacity is under construction at the Dry Creek WWTP to provide additional wet weather capacity at the plant and increase overall plant influent hydraulic capacity to 160 MGD. This facility is the focus of $15M in improvements that are the first in a series of future wet weather improvements at the plant. Mr. Reese served as the lead engineer for the facilities design. The facility includes perforated plate screens, stacked plate grit removal, cyclones and classifiers for grit washing and dewatering, and Parshall Flume flow measurement. Mr. Reese also served as the project engineer to further review and develop the bioretention basin from the SD1 BMP Manual. This included coordinating with SD1 on design updates to water entries, bed depths, filter material and plantings. This bioretention basin will serve as a BMP model of storm water treatment for SD1. Mr. Reese has continued to serve as lead engineer during construction, coordinating Hazen and Sawyer's construction services for this project.

Hazen

Sidney WWTP Improvements, Sidney, OH
Project technical leader for preliminary engineering on solids management and technical advisor for solids improvements as part of wet weather improvements at the Sidney WWTP. Technical responsibilities included advising on the design of the anaerobic digested sludge pumping system, sludge heating system including dual fuel boiler, heat exchangers and sludge recirculation pumps, sludge storage tanks, gas holding, waste gas flare, and digester gas safety equipment.

Miamisburg WRF Improvements, Miamisburg, OH
Project lead engineer and technical lead for preliminary and detailed design of $15M of WRF improvements in Miamisburg, Ohio. Planning included consideration of upgrades to increase plant capacity, wet weather handling, and future nutrient removal using Biowin simulations. Detailed design efforts included new grit removal and loadout, flow splitting, replacing primary clarifiers and solids handling, innovative RAS holding tank with aeration and mixing for solids storage during wet weather, new high speed turbo blower, new aeration membrane diffusers, replacing chlorine with UV disinfection, overhaul of the anaerobic digestion system including new flare, and new dewatering equipment.

Anaerobic Digester Upgrade, Newark, OH
Project lead engineer and technical lead for the anaerobic digester upgrade project. Mr. Reese lead the evaluation and replacement of the anaerobic digester covers, mixing, heating and gas handling and storage to determine the most efficient and cost effective processes for implementation. The alternative analysis and preliminary design included an evaluation of the flexible membrane storage, fixed, or floating covers on the 3, 60-ft anaerobic digester, gas storage alternatives within a gas membrane system or within the digester tanks, gas handling and waste gas disposal to flare digester gas and gas cleaning skid reject waste, digester tank mixing, digester heating and solids pumping alternatives.

Clarksville Wastewater Treatment Plant Improvements, Clarksville, TN
Design engineer for the wastewater treatment plant improvements project. The improvements will restore annual average plant capacity to 25 MGD and peak flow capacity to 75 MGD as follow up to the 2010 flood recovery effort. Design areas of responsibility include solids process improvements including solids holding and mixing, transfer, dewatering and loadout disposal options. The project included new RAS/WAS pump station, new primary and thickened WAS sludge storage and mixing, new centrifuge dewatering system. The solids loadout design includes eight new shafted screw conveyors up to 80–feet in length for loadout from four new high solids centrifuges to two semi-trucks. Design also included process improvements to polymer storage, dilution, aging and dosing.

North Olmsted WWTP Plant Improvements, North Olmsted, OH
Phase 2 Plant Improvements Project design which included a new standby power and medium voltage distribution system, new Preliminary Treatment Facility, modifications to the Equalization Basin, conversion of the existing Aeration Basins to Vertical Loop Reactors, modifications to the existing Blower Building, new Final Clarifiers, RAS/WAS Pump Station, Effluent Building including tertiary disc filters and UV disinfection, and modifications to the existing Solids Handling Facility including replacement of the back drive and controls for the existing centrifuge and the installation of a new centrifuge and associated sludge conveyance equipment.

Ian Mackenzie, PE

Design Lead

Mr. Mackenzie is a civil engineer with 30 years experience in water and wastewater projects. He has managed projects for water supply and wastewater treatment including the design and construction of wastewater systems, water treatment works and reservoirs.

Education

B.Sc., Civil Engineering, Queen's University (Canada)

Certification/License

Professional Engineer

Area of Expertise

- Design and construction of wastewater/water treatment plants
- Design and construction of wastewater collection systems
- Preparation of construction contracts

Professional Activities

California Water Environment Association – WEF Delegate Director

Biosolids and Energy Phase I: Preliminary Design, Goleta Sanitary District, Goleta, CA
This project is developing a Preliminary Design Report that includes preliminary design of a new digester and CHP facility, develop cost estimate for these facilities, conduct regulatory and environmental assessment, and provide conceptual layout of all expected facilities for construction.

Solids Handling Improvements at Plant 3A, Moulton Niguel Water District, Aliso Viejo, CA
Design Manager for this project which will provide a comprehensive upgrade of the solids handling facilities at a 6 mgd wastewater facility. The scope includes digester rehabilitation and equipment replacement for solids thickening, dewatering, gas handling and digester heating as well as associated electrical and controls improvements. Mr. Mackenzie is leading the Hazen team designing these improvements.

Coastal Treatment Plant Facility Improvements, South Orange County Wastewater Authority, Dana Point, CA
Design Manager. The project will provide equipment replacement and structural and architectural repairs to improve the performance and reliability of the Coastal Treatment Plant. The scope includes structural repairs, safety improvements and replacement of mechanical and electrical equipment. Mr. Mackenzie is leading the Hazen team designing these improvements.

JB Latham Treatment Plant Miscellaneous Improvements, South Orange County Wastewater Authority, Dana Point, CA
Process Mechanical Lead. Mr. Mackenzie was responsible for process mechanical design condition of improvements to this 13 mgd wastewater treatment facility. The project included structural and mechanical rehabilitation of the existing grit basins, replacement of the plant standby generator, effluent valves and effluent flow meters. The project was carefully coordinated with plant maintenance and operating staff to ensure that all improvements could be carried out with minimal impact on operations.

Hazen

Goleta Wastewater Treatment Plant Asset Management Program, Goleta Sanitary District, Goleta, CA
Wastewater Engineer. This project conducted an asset valuation and condition survey of all assets at the Goleta Sanitary District's wastewater Treatment Plant. Mr. Mackenzie provided expertise for condition surveys and asset criticality ranking carried out under this project.

Landfill Gas Disposal Improvements, City of Riverside, Riverside, CA
Project Engineer. This study reviewed the existing arrangements for disposal of landfill gas at a closed landfill. The study evaluated the existing ground flare and gas handling equipment including compressors and gas cleaning equipment. Mr. Mackenzie conducted the investigation.

Digester Crack Remediation, City of Simi Valley, CA
Project Engineer. This project developed a solution to digester gas leakage problems on the existing anaerobic digesters at this wastewater facility. The project team conducted water testing to identify gas leaks on the roof of the digesters and recommended remediation measrues to seal the leaks. Remedial works were performed by a term contractor. Mr. Mackenzie participated in the testing and developed the remediation scope and cost estimate.

Water Quality Control Plant Expansion (WQCP), City of Riverside, Riverside, CA
Technical Review. The WQCP Expansion project will provide 26-mgd of MBR capacity to feed the City of Riverside's recycled water system. The addition replaced the previous 20-mgd Plant 1 and serves in parallel with the 20-mgd Plant 2 at the site. Mr. Mackenzie provided a technical review of the design including reviewing the construction sequence of the replacement of existing anaerobic digesters.

Hyperion Treatment Plant, Digester Gas Flares Control System Improvements, City of Los Angeles, CA
Project Engineer. Mr. Mackenzie prepared the predesign report and oversaw the preparation of design drawings and specifications by structural, mechanical, electrical and I&C engineers. This project examined options for improving the control systems of the digester gas flare system at Hyperion Treatment Plant. In addition to control system hardware the improvements included replacement of the burners and pilot systems. As a critical safety system, the flares needed to start and operate reliability during a complete power failure. The design development process included identifying a construction sequence that would allow the system to remain in service throughout the upgrade.

Simi Valley Water Quality Control Plant Nitrification-Denitrification Upgrades, City of Simi Valley, CA
Project Engineer. This project upgraded the plant to convert the existing aeration basins to the MLE process. The scope of work included new mixed liquor recycle pumps, anoxic zone mixers and fiberglass partitions as well as related modifications to the process blowers, diffusers and related control systems. As project engineer Mr. Mackenzie was responsible for coordinating the design process including the production of plans and specifications.

Influent WetWell and Headworks Screening Project, Town of Windsor, CA
Process Engineer. Mr. Mackenzie served as process lead for this project which upgraded the 2mgd Windsor Wastewater Reclamation Plant. The project evaluated replacement of the facility's existing fine screen and grit removal facilities as well additional upstream protection to resolve clogging issues at the influent pumping station.

Oxygen Plant Demolition at Plant No. 2, Orange County Sanitation District, CA.
Project Manager. Mr. Mackenzie served as Project Manager for this project which will remove disused Air Separation Facilities. Mr. Mackenzie's role includes both technical and financial management of the project. This project removed existing redundant oxygen generation equipment, provided improvements to oxygen piping, upgraded the part of plant electrical system and converted an existing blower building for use as a maintenance and parts storage facility. Key issues include identifying means of safely removing existing equipment without affecting the treatment process or endangering adjacent high purity oxygen facilities and dealing with hazardous materials such as asbestos and lead.

Michael Bullard, PE

Digester

Mr. Bullard is a national expert in digester gas generation, biogas storage and utilization, as well as, residuals management processes from a planning, design, and operational perspective.

Education

MCE, North Carolina State University

BSCE, North Carolina State University

Certification/License

Professional Engineer

Areas of Expertise

- Residuals and biosolids management
- Digester gas utilization and energy production
- Wastewater treatment facility design
- Wastewater operations process optimization

Professional Activities

Water Environment Federation

- Residuals and Biosolids Committee (Active)
- Specialty Conference Planning Group (2012-2013)

Technical Practice Committee

- MOP-11 – 4th Edition (Reviewer)
- MOP-11 – 5th Edition (Chapter Author)
- WEFTEC Program Committee
- Facility Operations Symposia: 2002-08 (Past Chair)
- Residuals and Biosolids Symposia – 2008 - Current

East Central Regional WWTP Solids Handling Improvements, City of West Palm Beach, FL

Senior Technical Advisor and QA/QC Review. Work included facilities for recapitalization and expansion of gravity belt thickening; installation of new temperature phased (thermophilic – mesophilic) anaerobic digestion stabilization infrastructure to replace aerobic stabilization process infrastructure; new high solids centrifuge dewatering to replace belt filter press dewatering along with FOG and septage receiving and handling facilities.

Hominy Creek WWTP Solids Handling Facility Upgrades, City of Wilson, NC

Project Engineer. Project at the 17-mgd WWTP included gravity belt thickener mechanical thickening for waste activated sludge stream; rehabilitation of existing anaerobic digestion facilities including new digester gas utilization facilities, digester heating and pumping, and mixing systems; and installation of belt filter press sludge dewatering facilities with a Class A alkaline stabilization unit treatment process.

East Central Regional WWTP Biosolids Master Plan Update, City of West Palm Beach, FL

Senior Technical Leader and Engineer. Preparation of an updated biosolids management master plan. Work included the development of raw sludge generation rates for liquid treatment train process configurations both with and without primary clarification for a range from process flow rates from 45 to 70 mgd process flow rates. Solids handling alternatives for thickening, digestion, dewatering and ultimate disposal were evaluated for the full range of process configurations and flow conditions, stabilization alternatives, energy recovery alternatives, and ultimate disposal resulting in the assessment of over 25 different combinations of solids handling and management configurations. The resultant recommended facilities included retaining activated sludge treatment without primary clarification; a recapitalization and expansion of gravity belt thickening; installation of new anaerobic digestion stabilization infrastructure to replace aerobic stabilization process infrastructure; new high solids centrifuge dewatering to replace belt filter press dewatering; and on-site thermal drying.

Hazen

Technical Papers

Bullard. C. M., Lisk, B. R, and Hardy, S. A., *On-site Energy Production: using Digester Gas in Combined Heat and Power Systems*, Indiana Water Environment Association 76th Annual Meeting, Indianapolis, IN, November, 2012

Bruton, T., Bullard, C. M., Rogers, P., Hardy, S. A., Latimer, R. L., and Porter, R., *Debottlenecking Anaerobic Digester Capacity – Sometimes WAS Thickening Isn't Enough*, Proceedings of the 2012 Water Environment Federation Technical Exposition and Conference (WEFTEC-2012), New Orleans, LA, October 2012

Bullard, C. M. and Van Horne, M. A., *Coming Full Circle: Moving Wastewater Treatment Plants Toward Energy Neutrality*, 2012 Kentucky-Tennessee Water Professionals Conference, Memphis, TN, July 2012

Rohrbacher, J. A., Lisk, B. R., Bullard, C. M., Whitaker, J., Wichser, R. C. , and Frederick, T., *Digester Gas Energy Recovery – Deciding Between Driving Blowers or Making Electricity*, Proceedings of the 2012 WEF Residuals and Biosolids Specialty Conference, Raleigh, NC, March 2012

Lisk, B. R., Dodson, J. J., and Bullard, C. M., *Coordinating Utility Billing Structures to Maximize the Benefit from Biogas Fueled Combined Heat and Power Systems*, Proceedings of the 2012 WEF Residuals and Biosolids Specialty Conference, Raleigh, NC, March 2012

Van Horne, M, Grandstaff, J., Chapman, M., Stone, A. L., Bullard, C. M., Peplinski, D, Long, H., *From Grease to Green: FOG Receiving, Co-Digestion and Combined Heat and Power Generation at the Henrico County, VA Water Reclamation Facility*, 2011 Chesapeake Water Environment Association "TRICON 2011" Meeting, Ocean City, MD, August 2011.

Van Horne, M., Bruton, T., Hardy, S., Bullard, C. M., and Long, H., From Grease to Green: Two Case Studies of FOG Receiving, Co-Digestion, and Combined Heat and Power Generation, Proceedings of the 2011 Water Environment Federation (WEF) Energy and Water Conference, Chicago, IL, August 2011.

M'Kean Maffitt WWTP Improvements and Expansion, Cape Fear Public Utility Authority, Wilmington, NC

Senior Technical Advisor and QA/QC. Detailed design of solids handling facilities for expansion to 24 mgd. Project included rehabilitation of existing digesters and construction of new anaerobic digestion facilities; digester gas utilization facilities; and a combined thickening and dewatering facility for centralized solids processing operations.

Henrico County WWTP Digester Gas Utilization Evaluation, Henrico County, VA

Senior Technical Advisor and QA/QC Reviewer. Evaluation of digester gas utilization and FOG receiving and handling facilities for the 75-mgd WWTP. Evaluated digester gas utilization alternatives with and without additional digester gas derived from FOG receiving and handling. Estimated that electrical power production of up to 1,600 kW could be reasonably developed on the treatment facility site with existing anaerobic digestion infrastructure.

F. Wayne Hill WRC Digester Gas Utilization Project, Gwinnett County, GA

Senior Technical Advisor and QA/QC. Development of a 2.145 MW combined heat and power at the 60-mgd that was delivered as a D/B project. Project included digester gas sampling and analysis, digester gas treatment for hydrogen sulfide and siloxane removal in addition to the engine-generator system and integration with existing digester heating infrastructure. A separate project included the design and construction by the same D/B team of a FOG and high strength waste receiving facility.

Village Creek WWTP Solids Handling and Treatment Upgrades, Jefferson County, AL

Senior Technical Advisor and QA/QC. Work included the design of a new FOG receiving system, new digester hot water boiler system building, new digester heating and mixing system improvements retrofitted into an existing digester control building facility, digester gas handling system improvements, and anaerobically digested sludge dewatering system improvements.

James A. Loughlin (Northside) WWTP Digester Gas Utilization Study, CFPUA, Wilmington, NC

Project Engineer. Evaluated multiple process configurations for digester gas utilization and determined that development of a combined-heat and power process configuration provided the best return on invested capital. Recommended development of up to 350kW on-site generation capacity.

Derya Dursun Balci, PhD, PE

Digester

Dr. Dursun has over 15 years of experience as an environmental engineer. She has broad knowledge of solid/ liquid separation techniques for water and wastewater treatment. Her environmental expertise spans from advanced treatment technologies to process modeling.

Education

Ph.D, Civil/Environmental Engineering, University of Delaware, Newark, DE

M.S., Environmental Engineering, Dokuz Eylul University, Izmir, Turkey

B.S., Environmental Engineering, Dokuz Eylul University, Izmir, Turkey

Certification/License

Professional Engineer

Areas of Expertise

- Solid/liquid separation
- Wastewater treatment
- Biosolids management

Professional Activities

Water Environment Federation (WEF)

International Water Association (IWA)

Book Chapters

Coauthor of Water Environment Federation's (WEF) Manual of Practice – Conditioning Section (2010)

Coauthor of Environmental Protection Agency's (EPA) Process Design Manual for Sludge Treatment and Disposal – Sludge Transport and Conveyance Section (2012)

Dr. Dursun has provided detailed process design for water and wastewater treatment plants, onsite testing and optimization studies by using process models, particularly the BioWin® process modeling, including anaerobic digester modeling and mass balances. She has several publications on conditioning and dewatering of biosolids, which include peer, reviewed papers, and presentations at scientific conferences, a thesis, and a PhD dissertation. She is also coauthor of Water Environment Federation's (WEF) Manual of Practice Conditioning Section and Environmental Protection Agency's (EPA) Process Design Manual for Sludge Treatment and Disposal – Sludge Transport and Conveyance Section.

Biosolids and Energy Phase I: Preliminary Design, Goleta Sanitary District, Goleta, CA

Digester Lead. This project is developing a Preliminary Design Report that includes preliminary design of a new digester and CHP facility, develop cost estimate for these facilities, conduct regulatory and environmental assessment, and provide conceptual layout of all expected facilities for construction.

Goleta Biosolids & Energy Strategic Plan, Goleta Sanitary District, Goleta, CA

Dr. Dursun was task lead for Biosolids Plan working in collaboration with energy group. She has evaluated High Strength Waste availability and conducted capacity assessments for 10 mgd facility for current and future demands including high strength waste additions. As the assessment engineer, she has conducted the analysis of organic waste sources and evaluating various alternatives for energy production.

Water Reclamation Facility 1110.2 Resultant Projects, City of San Bernardino Municipal Water Department, CA

Dr. Dursun is leading the Flare Replacement task working to enhance Digester Gas Management in the facility and meet ultra low emission (ULE) limits proposed in Rule 1118.1. She has evaluated current and future digester gas generation for 30 mgd facility and also impact of including high strength waste addition. Her tasks included identifying the design criteria for the ULE flares, evaluating the location for a new flare and also determining the upgrades in the existing digester gas system.

Hazen

Refereed Journals

Dursun D., Ozkul S., Yuksel R., Unalan E. (2016) Enhancing capacitive deionization technology as an effective method for water treatment using commercially available graphene. Water Science and Technology 76(8),

Ebil M.T., Dursun D., Dentel S. K. (2014). Enhancement of Odor Removal and Dewaterability of Anaerobically Digested Sludge by Protease Addition. Journal of Residuals Science and Technology 11 (2), 55-64.

Dentel, S.K., Dursun, D. (2009). Shear Sensitivity of Digested Sludge: Comparison of Methods and Application in Conditioning and Dewatering. Water Research 43, 4617-4625.

Dursun D., Dentel S.K. (2009). Toward the Conceptual and Quantitative Understanding of Biosolids Conditioning: The Gel Approach. Water Science and Technology 59(9), 1679-1685.

Dursun D., Dentel S.K. (2007). The importance of structural and gel fractions in determining shear sensitivity of sludge. Water Science and Technology 56(9), 75-86.

Dursun, D., Turkmen, M., Abu-Orf M., Dentel S.K. (2006). Enhanced Sludge Conditioning by Enzyme Pretreatment: Comparison of Laboratory and Pilot Scale Dewatering Results. Water Science and Technology, 54(5), 33-41.

Dursun, D., Sengul, F. (2006). Waste Minimization Study in a Solvent Based Paint Manufacturing Study. Resources, Conservation and Recycling, 47(4), 316-331.

Dursun, D., Ayol, A., Dentel, S.K. (2004). Physical Characteristics of a Waste Activated Sludge. Water Science and Technology, 50 (9), 129-136.

Dr. Derya Dursun also has over 30 conference proceedings presented at international conferences.

East Central Regional Water Reclamation Facility Biosolids Improvement Project, West Palm Beach, FL

Dr. Dursun provided technical support in the development of a start-up plan for mesophilic digesters. The 70 mgd facility includes TPAD process including co-digestion facility with FOG addition. The facility was designed and built by Hazen and currently in the development of methods to initiate the start up in new biosolids.

Biosolids and Yard Waste to Energy Project – Feasibility Study, City of St. Petersburg, Florida, FL

Process Engineer responsible for developing the basis of design for different waste streams, evaluated alternatives including various anaerobic digestion options for the energy recovery. This feasibility study resulted in a design project.

Lynchburg Biosolids Masterplan, City of Lynchburg, VA

Dr. Dursun conducted process modeling for liquid & solid stream to evaluate the impact of digestate into liquid train. She also assessed various side stream treatment/management options to reduce nutrient loads into WWTP.

San Jose/Santa Clara Water Pollution Control Plant, City of San Jose, CA

As a process engineer, she worked on process modeling of anaerobic digesters to simulate and evaluate the performance of the existing digesters under various operating scenarios for current and future design loads.

Marlay Taylor Water Reclamation Facility, Hollywood, MD

Dr Dursun did complete process analyses and evaluations of existing facility to meet future effluent requirements. Several alternatives including IFAS technology were assessed. Detailed process simulation modeling -BioWin® - was used to evaluate 7.5 mgd plant's process configurations.

Greeley Water Pollution Control Facility, City of Greeley, CO

As a process engineer, she was responsible for the design and optimization of the WWTP to meet future nitrogen requirements. Performed on-site special sampling, BioWin® process modeling, evaluated alternatives and assessed capacity of the existing plant.

Scott Hardy, PE, PMP

CHP

With over 25 wastewater solids process field and design projects, Mr. Hardy is the local, responsive lead for solids process support and training. He has performed anaerobic process training, including digester gas handling and hot water systems with heat recovery.

Education

MS, Georgia Institute of Technology

BS, Rensselaer Polytechnic Institute

Certification/License

Professional Engineer

Areas of Expertise

- Thickening/dewatering
- Anerobic digestion
- Codigestion
- Combined heat and power systems

Professional Activities

- Texas American Water Works Association
- Water Environment Association of Texas
- American Water Works Association
- Water Environment Federation

Publications

Hardy, Scott, et al, *"Holistic Approach To Residuals Handling At F. Wayne Hill Water Resources Center: Did The Upgrades Work?"* WEF Residuals and Biosolids Conference, Milwaukee, WI, 2016

F. Wayne Hill WRC Solids Process Evaluation & Training, Gwinnett County, GA

Project Engineer who performed evaluation of the solids treatment processes including co-thickening of primary sludge and WAS, anaerobic digestion, digester gas utilization, combined heat and power system, and centrifuge dewatering. Project also included field optimization of the rotary drum thickeners. Trained both management and operations staff for the nutrient recovery, digester gas handling and treatment, and FOG & HSW co-digestion processes at the 60 mgd advanced WWTP.

T.P. Smith Anaerobic Digester and Thermal Dryer Facilities, City of Tallahassee, FL

Lead Design Engineer who designed and led operations training for a new anaerobic digestion facility consisting of two 1.5 MG anaerobic digesters including hot water heating and digester gas handling systems. Mr. Hardy designed the upgrade of two existing anaerobic digesters and new 11,0000 evaporative lbs/day thermal dryer facility.

Phase II Improvement Study, Rowlett Creek Regional WWTP, North Texas Municipal Water District, Plano, TX

Solids Treatment Technical Lead for evaluating operation and performance of the existing solids treatment train that showed good WAS gravity belt thickening performance and higher than typical solids loading on the existing belt filter presses. Evaluated thickening and dewatering alternatives for optimized landfill hauling operations, reduced odors, cost effectiveness and reliability.

Village Creek WWTP Solids Process Evaluation, Jefferson County, AL

Lead Project Engineer for the evaluation of thickening, anaerobic digesters, centrifuge dewatering and FOG co-digestion. Centrifuge dewatering optimization included evaluation and optimization of feed pumps, polymer system, cake conveyors, cake pumping, and lime stabilization system. The digester upgrades included new hot water and digester heating systems, new pumped jet mixing system, digester gas piping replacement, and electrical/HVAC upgrades to meet current building codes.

Hazen

East Central Regional Water Reclamation Facility (WRF) Biosolids Improvement Project, Palm Beach County, FL
Senior Technical Reviewer for the design of a new FOG and septage receiving facility. FOG receiving facility includes terminal access software, pumped truck unloading with rock trap and grinder, storage, mixing, heating and feeding FOG to digested sludge recirculation system. Septage receiving consists of terminal access software, two complete plants consisting of screening and grit removal. Both facilities are odor controlled.

PTAR Cañaveralejo Wastewater Treatment Plant (WWTP) Upgrade, City of Cali, Columbia
Lead Solids Process Engineer for the evaluation and expansion of the existing solids treatment train with the addition of secondary process train at this 120 mgd primary treatment only WWTP. Mr. Hardy evaluated the current primary sludge treatment process of gravity thickening, anaerobic digestion with two 1,000 kW combined heat and power systems, belt filter press dewatering and solar greenhouse drying. With the addition of secondary treatment process, Mr. Hardy also evaluated expansion of solids train with waste activated sludge pre-treatment alternative analysis to increase digester gas production for greater power production.

Valley Creek Wastewater Treatment Plant (WWTP) Energy and Process Optimization Study, Jefferson County, AL
Principal Investigator for the anaerobic digester optimization study. The seven existing digesters showed limited volatile solids destruction and foaming issues. Mr. Hardy recommended cleaning the digesters and installing a pumped mixing system to help restore and maintain active digester volume, installing automatic feed system with automatic valve and magnetic flow meters to evenly load the digesters and improvements to the hot water system control to provide uniform digester heating.

Willow Lake Water Pollution Control Facility – FOG Codigestion Feasibility Study, Salem, OR
Lead technical engineer for the preliminary design of hauled waste (FOG and septage) receiving facility, including card access system, screening, analyzers for pH. Evaluated multiple locations at the Willow Lake WPCF taking into account traffic patterns, truck staging areas, operator access, security, and distance to discharge. Project also include digester capacity evaluation,

Heat Tracing and Insulation Project, Denton Creek Regional Wastewater System, Trinity River Authority of Texas, Roanoke, TX
Project Manager for the assessment, preliminary and detail design, and bidding of heat tracing and insulation systems at the wastewater treatment facility. Includes updating controls, thermostat locations, and positive feedback tied to SCADA to confirm heat tracing operation.

Vindobona Wastewater Treatment Plant (WWTP), Quito, Ecuador
Lead Design Engineer for the design of a new anaerobic digestion facility for the 270 mgd peak flow wastewater treatment plant that includes eight 6,500 m3 anaerobic silo digesters, pumped mixing system, heating system, gas storage, and waste gas burners.

Crooked Creek WRF Upgrades Phase 4 - Septage Receiving, Gwinnett County, GA
Project Engineer for the design of a sepatge receiving system with ID code access, pH monitoring, rock trap, drum screen with debris bagging system, and billing software system. Part of $132M plant upgrade.

Hersy Enriquez, EIT

Digester

Ms. Enriquez has extensive experience in water treatment operation and design, and stormwater best management practices (BMP) operation and optimization. She also worked on digester gas utilization projects as a client representative.

Education

MS, Civil Engineering, Kansas State University

BS, Civil Engineering, California State Polytechnic University, Pomona

Certification/License

Engineer in Training

Areas of Expertise

- Groundwater contamination
- Stormwater BMP System Operation and Optimization
- Water Treatment Plant Process
- Waste water Process

Professional Activities

California Water Environment Association

American Water Works Association

Biosolids and Energy Strategic Plan, Goleta Sanitary District (GSD), Goleta, CA

Engineer responsible for evaluating high strength waste available for co-digestion at GSD (Phase I) and assessing plant capacity for additional solids loading to anaerobic digesters (Phase II). In addition, the subsequent work from Phase I and II evaluates various technology to enhance digestion and biogas production. The project ultimately leads to developing a strategic plan for GSD in handling biosolids to meet future state regulatory requirement. Additional roles include conducting field interview for market assessment for biosolids residuals from GSD.

Goleta Sanitary District Wastewater Treatment Plant Process Modeling, Goleta, CA

Process engineer responsible for reviewing process data using plant historical data, as-built drawings and verification of data by field visit. Additional role includes developing a sampling plan and assisting in model development.

Coastal Treatment Plant Facility Plan Improvements, South Orange County Wastewater Authority, Dana Point, CA

Process engineer responsible for assisting in developing basis of design report, drawings and specifications on diffused aeration and secondary sedimentation equipment replacement. Additional roles include assisting in miscellaneous tasks including civil design work and budget tracking as part of the project management task.

Water Reclamation Facility 1110.2 Resultant Projects, City of San Bernardino Municipal Water Department, CA

Process engineer responsible for assisting in developing preliminary design report for digester gas flare system and blower decentralization and electrification to meet regulatory objectives mandated by the South Coast Air Quality Management District (SCAQMD) Rule 1110.2 and 1118.2.

Hazen

Blower Electrification Project at EMWD RWRFs, Eastern Municipal Water District, Perris, CA
Process engineer responsible developing design drawings and reviewing technical specifications to convert of existing engine blowers at three wastewater treatment facility; MVRWRF, TVRWRF and SJVRWRF. Additional roles include assisting in evaluating and identifying automated control sequence and construction sequence while maintaining plant operation.

Conversion of Engine Driven Blowers to Electric Blowers at the EMWD RWRFs, Eastern Municipal Water District, Perris, CA
Process engineer assisting in developing basis of design report, preliminary drawings on modification of existing blowers at three wastewater treatment facility; MVRWRF, TVRWRF and SJVRWRF. Additional roles include assisting in evaluating and identifying automated control sequence and construction sequence while maintaining plant operation.

City of Los Angeles, Bureau of Engineering (LABOE), Digester Gas Utilization Project (DGUP) Staff Augmentation Program
Resident Engineer. Assisted LABOE in reviewing contract drawings and documents for the DGUP project at Hyperion Water Reclamation Plant. The LABOE DGUP project is a design-build project to construct co-generation plant using digester gas at Hyperion Water Reclamation Plant.

Centralized Groundwater Treatment Facility for the City of Monterey Park, JR Filanc (Design-Build), Monterey Park
Process Engineer responsible in developing Title 22 Engineering Report and Start-up and Commissioning Plan for the UV/AOP and Catalytic GAC Groundwater Treatment Facility. This design-build project include installation of new UV/AOP treatment process and conversion of existing ion exchange vessels to catalytic GAC vessels.

Indio Water Authority/Coachella Water Authority, Recycled Water Program Development Feasibility Study
Assisted in running the pilot study to evaluate the filterability of secondary effluent of three different WWTP through UF membrane. The study includes investigating water quality and fluorescence excitation emission matrix to determine fouling propensity of the secondary effluent.

Olivenhain Municipal Water District, Optimization and Reliability Study for the David C McCollom Water Treatment Plant
Assisted engineers in evaluating different grit removal technologies and process flor to optimize the plant flow capacity. The project's objective is to improve the capacity reliability of the treatment plant by identifying opportunities to optimize existing processes.

West Basin Municipal Water District, Operations Support Contract
Staff Professional. Lead the effort in evaluating optimization opportunities for existing instrumentation and controls each process at the Edward C Little Water Recycling Facility including Biofor®, Densadeg®, Title 22 filters, solids handling, ozone and UV disinfection. A technical memorandum was submitted to the West Basin with the recommended instrumentation to optimize operation.

City of Los Angeles (LABOE), Terminal Island Advanced Water Purification Facility
Staff Professional. Assisted engineers in updating the Standard Operating Procedure (SOP) for the new equipment at the Advanced Water Purification Facility including RO membranes.

Bryan R. Lisk, PE, CEM

CHP Lead

Mr. Lisk is the firm's Energy Management lead with 20 years of water and wastewater energy management and design experience. Mr. Lisk has been involved in nearly all of Hazen's water and wastewater energy management projects.

Education

B.S. Electrical Engineer, North Carolina State University

Certification/License

Professional Engineer

Certified Energy Manager (CEM) – Association of Energy Engineers

Areas of Expertise

- Water and Wastewater Energy Management
- Water and Wastewater Electrical Engineering and Design

Professional Activities

Water Environment Federation

Association of Energy Engineers

Mr. Lisk's energy management experience includes biogas fueled combined heat and power (CHP) system evaluation and design, biogas to pipeline and vehicle fueling, biogas utilization modeling, interconnection and billing negotiations with natural gas and electric utilities, energy monitoring system, and energy management master planning. Mr. Lisk also has extensive experience with low- and medium-voltage power distribution systems, motor control systems, combined heat and power systems, standby power generation and peak shaving systems, lighting design, and variable frequency drive systems. Bryan is a Certified Energy Manager with the Association of Energy Engineers.

Biosolids and Energy Phase I: Preliminary Design, Goleta Sanitary District (GSD), Goleta, CA

CHP Lead. This project is developing a Preliminary Design Report that includes preliminary design of a new digester and CHP facility, develop cost estimate for these facilities, conduct regulatory and environmental assessment, and provide conceptual layout of all expected facilities for construction.

Biogas Utilization Studies for the Goleta Sanitation District, Santa Barbara, CA

Lead Engineer. Provided preliminary biogas utilization studies for the Goleta Sanitation District (GSD) to identify feasible biogas utilization strategies that warranted further evaluations. This study included energy balance modeling to evaluate multiple long term biogas utilization strategies including CHP and RNG pipeline injection. Mr. Lisk is currently serving as the energy management technical lead on a detailed Energy and Biosolids Strategic Master Plan for the GSD.

Biogas Utilization Master Planning for the Eastern Municipal Water District (EMWD), CA

Mr. Lisk served as the project manager for a biogas utilization master plan for EMWD's four (4) water reclamation facilities. This project includes

Hazen

Technical Publications

Lisk, B. R., Dodson, J. J.,and Bullard, C. M., "Coordinating Utility Billing Rate to Maximize the Benefit from On-Site Energy Generation and Combined Heat and Power Systems", Proceedings of the 2011 Water Environment Federation (WEF) Energy and Water Conference, Chicago, IL, August 2011.

Rohrabacher, J. W., Lisk, B. R., Szoch, C., Bullard, C. M., Whitaker, J., Wichser, R., and Frederick, T. "Bigger Savings From Biogas", WE&T Magazine, April 2012.

Bullard, C. M., Lisk, B. R., and Hardy, S. A., "Micro-constituents in Digester Gas – Sweating the Small Stuff", Proceedings of the 2011 Water Environment Federation (WEF) Energy and Water Conference, Chicago, IL, August 2011.

Bullard, C. M., Lisk, B. R., and Hardy, S. A., "Achieving Economic and Environmental Sustainability Objectives through On-Site Energy Production from Digester Gas", Ohio Water Environment Association Annual Conference, Sandusky, OH, June 2011.

Bullard, C. M., Fishman, M. A., Lisk, B. R., and Hardy, S. A., "Putting Digester Gas to Work: Economic and Environmental Sustainability Via on-Site Energy Production", 2010 NC AWWA-WEA 90th Annual Conference, Winston-Salem, NC, November 2010.

plant energy balance modeling to evaluate multiple long term biogas utilization strategies including CHP, RNG pipeline injection, fuel cells, and biogas fueled blowers. This projected included a detailed assessment of current and future air emission regulations and renewable energy market assessments.

Moreno Valley RWRF TEPS MCC Replacement, Eastern Municipal Water District, Riverside County, CA

Sequencing and Operations Engineer for the TEPS MCC replacement project which includes the replacement of existing switchboards, motor control centers, variable frequency drives, and reduced voltage solid state starters that have deteriorated from exposure to chlorine gas. The new distribution and control equipment will be installed in a remote electrical building where it will not be exposed to the corrosive environment.

Energy Management Master Plan for the Town of Cary, Cary NC

Mr. Lisk was the project manager for the Town of Cary energy management master plan. This plan included long term and near term energy optimization recommendations for the Town's three (3) WWTP and one (1) WTP. This plan included energy modeling, process optimization, energy billing/procurement, and energy data management evaluations. Specific opportunities include energy monitoring expansions, aeration improvements, demand management, and DO control improvements.

Energy Management Master Plans for the North and South Durham Water Reclamation Facilities, City of Durham, NC

Mr. Lisk served as the Project Engineer for the North and South Durham energy management master plans. The master plans consisted of a series of projects to develop a long-term plan in coordination with the facilities' master plans to reduce energy usage and cost, and maximize the usage of renewable energy resources for each facility. Specific projects include biogas utilization, zone dissolved oxygen control, and influent pumping optimization.

Energy Management Master Plan for the Broad Run WRF, Loudoun Water, VA

Mr. Lisk served as the Energy Management master planning lead for the Broad Run WRF Master Plan. This visionary plan included long term strategies for biogas utilization, energy procurement, power monitoring program development, and programs to optimize energy performance through monitoring key performance indicators. The energy management master plan included the development of a graphical road map that identified future plant and market conditions that would trigger a change in energy management strategies.

Elizabeth Keddy, PE, LEED AP

CHP

Ms. Keddy, has 13 years of experience leading the development of energy management plans, investment grade energy audits, and resource recovery projects for utilities throughout the county, including several within Massachusetts.

Education

ME, Environmental Engineering, University of Florida

BS, Environmental Engineering, University of Florida

Certification/License

Professional Engineer

Leadership in Energy and Environmental Design Accredited Professional (LEED AP)

US Green Building Council

Areas of Expertise

- Energy management program
- Asset management
- Process energy audits
- Sustainability
- Renewable energy
- Energy recovery

Professional Activities

American Water Works Association

Florida Water Environment Association

Combined Heat and Power Preliminary Design, Goleta Sanitary District, CA

Conducted the preliminary design of a 450 kW combined heat and power (CHP) system that maximizes the use of the current biogas production while accommodating additional biogas generated from high strength waste (HSW) and population growth. The 7.5-mgd facility will achieve their goal of energy neutrality by operating the CHP system with HSW. Worked with a multidisciplinary team to coordinate pumping, piping, and existing tanks.

Energy and Carbon Neutrality Plan, New York City Department of Environmental Protection, New York, NY

Establishing baselines, identifying energy saving opportunities, and integrating multiple studies into a comprehensive road map to achieve energy and carbon neutrality across all City operations, including water, wastewater, pumping, buildings, and vehicle fleets. Plan goals include 20% reduction in energy consumption by 2025, 80% reduction in greenhouse gas emissions by 2050, and biosolids optimization and beneficial use.

Lee Water Treatment Plant Energy Efficiency, Town of Lee, MA

Provided technical and project management assistance on the design and construction of upgrades to the Lee Water Treatment Plant (WTP). The upgrade consisted of installing solar photovoltaic (PV) panels on the water treatment plant roof and grounds, modifying an existing hydroturbine to produce more power, and installing premium efficiency motors, energy efficient lighting, and programmable thermostats.

Energy Audit, City of Cambridge, MA

Participated in a comprehensive process energy audit of the Walter J. Sullivan WTP in Cambridge. In addition to assisting with evaluations to integrate demand response the process operations, identified several funding opportunities and recommended alternative electricity rate classes to leverage the facilities' new demand response capabilities.

Hazen

Energy Audit and Aeration Control, City of Springfield, MA
Led the implementation of an investment grade energy audit of a 67-mgd wastewater facility, including 43 pump, blower, and fan efficiency tests. The audit identified $825,000 of annual electricity savings with an average payback of less than 3 years. Based on the results of the audit, completed the preliminary design of an advanced ammonia-based aeration control system for nitrification, denitrification, sludge retention time and most open valves. The design also included an innovative automatic control system to modulate the blowers based on time of day electric costs. The $215K project is estimated to save $200K of annual electric costs.

Haworth WTP Lighting Replacements, SUEZ Water, NJ
Led the design and installation of 2200 LED lighting fixtures at the Haworth WTP and Hackensack Yard. The project involved specifying the fixtures with equipment representatives, drafting electrical and architectural drawings, and overseeing the construction of new equipment. Secured a $170,000 incentive from the state energy program to offset the project cost. The project resulted in $70,000 of annual savings.

Westerly Wastewater Treatment Plant Energy Management and Sustainable Design, City of Marlborough MA
Evaluated and recommended energy efficient, renewable energy, and sustainable design and construction components for the City of Marlborough's Westerly Wastewater Treatment Facility Improvements project. Evaluated several renewable energy technologies including deep heat mining, geothermal wells, effluent-driven turbines, plant water source heat pumps, Rabtherm® sewer heat recovery, solar photovoltaic (PV), solar thermal hot water, and wind turbines. The evaluation determined that a plant water source heat pump heating and cooling the administration building and solar PV arrays constructed and maintained by a 3rd party made the most technical and financial sense. Coordinated the final design of the recommended components and secured rebates from the local electric and gas utilities for the equipment.

Energy Audit, First District Water Department, Norwalk, CT
Conducted an energy audit of five facilities owned and operated by the First District Water Department. The energy audit identified thousands of dollars of annual energy savings through energy conservation and retrofit measures (ECRMs). The measures included energy efficient lighting, HVAC retro-commissioning and upgrades, time of day pumping optimization, premium efficient motors, and variable frequency drives. Coordinated with the Water Department's electric utility, CL&P, to secure over $50,000 of incentives for installing the ECRMs recommended as part of the audit.

SARA J. HEAD, QEP

Principal Scientist

Yorke ENGINEERING, LLC
www.YorkeEngr.com

AREAS OF EXPERTISE

- Major Capital Projects and Renewable Energy Permitting and Impact Assessment
- Impact Mitigation Planning
- Air Quality Compliance Design, Implementation, and Management
- Environmental Impact Assessments, Reports, and Statements
- Federal, State, Province, and Local Regulatory Interface and Negotiation
- New Source Review Regulatory Consulting
- PSD Permitting
- Program Management for Project Permitting
- Project Feasibility, Siting, and Planning

EXPERIENCE

- Yorke Engineering, LLC Principal Scientist, 2016-Present
- AECOM, Vice President/Project Director, 2005-2016
- ENSR, Air Quality Department Manager, 1992-2005
- AeroVironment, Air Quality Specialist, 1976-1992

PROFESSIONAL CERTIFICATIONS/ ASSOCIATIONS

- Qualified Environmental Professional
- Air and Waste Management Association, Fellow Member and Past President
- Ventura County Air Pollution Control District (VCAPCD) Advisory Committee, Chair

EDUCATION

- B.S., Atmospheric Sciences, University of California at Davis

OVERVIEW

Ms. Head has 40 years of experience in environmental permitting and compliance. She has worked with many sanitation districts and water agencies to provide feasibility studies, California Environmental Quality Act (CEQA) analyses, and air permitting support. Air quality permitting is her expertise, and she has obtained Permits to Construct (PTCs), Prevention of Significant Deterioration (PSD) permits, and/or Title V permits for many sources, including water treatment plants, fossil fuel and renewable power plants, manufacturing facilities, refineries, and others. She has assisted with feasibility studies to investigate the use of biogas and biomass as a fuel for power generation, including performing regulatory analyses for these projects. She has also done many projects that require environmental review documents under CEQA and/or the National Environmental Policy Act (NEPA), in addition to preparing air quality impact analyses for these documents. Ms. Head is the co-author of an article on "Sailing Through CEQA" in the Winter 2017 issue of *Source*, the magazine of the California-Nevada Section of the American Water Works Association (AWWA). She has worked with clients within the South Coast Air Quality Management District (SCAQMD), including permitting and projects to prepare CEQA documents for many source types. She is currently the Chair of the VCAPCD Advisory Committee, where she has served for over 25 years, giving her a deep understanding of the air district rulemaking and ambient air quality standards attainment planning process.

REPRESENTATIVE PROJECT EXPERIENCE

Eastern Municipal Water District (EMWD)/Hazen and Sawyer, Biogas Utilization Study for Water Treatment Facilities, Riverside County, CA

Ms. Head led Yorke Engineering, LLC's (Yorke's) efforts to support a review of options for biogas utilization of four wastewater treatment facilities within the SCAQMD. The study looked at options for biogas utilization to reduce flaring and meet SCAQMD rules related to engines. The options included power generation and pipelining the biogas. Yorke's role focused on estimating baseline and projected emissions for each alternative for the facilities, current and projected emissions control technology requirements, regulatory planning implications, and air permitting feasibility.

Coachella Valley Water District (CVWD)/Hazen and Sawyer, HRA and Permitting of Water Treatment Facilities, Riverside County, CA

Under a new State law, CVWD was required to implement additional water treatment for the removal of chromium-6 from the groundwater. Ms. Head assisted with the preparation of a health risk assessment (HRA), using the Office of Environmental Health Hazard Assessment (OEHHA) guidelines, and a Technical Report to support the Environmental Impact Report (EIR) that was prepared for the project. Ms. Head also assisted with the preparation of PTC applications for the proposed new equipment, including process tanks, scrubbers, emergency generator engines, crystallizer, and control technology.

Delta Diablo, Feasibility Study and Wastewater Treatment Facility Permitting, Antioch, CA

Due to State regulations that require a reduction in the amount of waste going to landfills, Delta Diablo investigated options to generate and utilize biogas for energy production at its facility. Ms. Head led a study to investigate the feasibility of obtaining air permits from the Bay Area Air Quality Management District (BAAQMD) for several alternatives under consideration. Various alternatives for the processing of different wastes, including food, biomass, and biosolids/sludge, were reviewed in detail. The feasibility study included the calculation of emissions [including greenhouse gases (GHGs)], review of control technologies, determination of offset requirements, and other BAAQMD and federal rule applicability. An analysis showing the GHG emissions reduction benefits of the alternatives was performed. An HRA of a 500-tons-per-day food waste processing operation was prepared and used for the project Mitigated Negative Declaration (MND). Upon completion of the study, she oversaw the preparation of an air permit application submitted to the BAAQMD to obtain a permit for the selected configuration.

City of San Diego/Dudek, CEQA Air Quality Modeling and HRA Technical Report, San Diego, CA

The City of San Diego looked to implement the first phase of its Pure Water Program, including the addition of power generation equipment to its North County Water Reclamation Facility. Ms. Head managed Yorke's support on the project and assisted with the preparation of the Air Quality and HRA Technical Report used to support the project EIR.

Los Angeles Department of Water and Power (LADWP)/Dudek, Technical Report, Los Angeles, CA

LADWP proposed to install new paint booths, emergency generators, and other equipment at its Mid-Valley Water Facility. Ms. Head managed Yorke's tasks on the project and assisted with the preparation of an HRA Technical Report to support an MND being prepared for this project.

Southern California Edison (SCE), CEQA Addendums and Permitting, Southern California

SCE proposed to upgrade its five (5) power generation peaking plants located in Los Angeles, Orange, San Bernardino, and Ventura Counties. The projects were originally permitted with MNDs in 2007. CEQA Addendums were required to implement the four projects within the SCAQMD. Ms. Head managed Yorke's support on the project and assisted with the preparation of the Addendums. Major issues addressed in the Addendums included air quality impacts during commissioning, GHG emissions, and impacts related to the storage and transport of aqueous ammonia at a higher concentration than previously utilized. She also assisted with the preparation of Title V air permit applications for the modifications to be submitted to the SCAQMD for two of these facilities.

Ventura Regional Sanitation District (VRSD), Air Permitting Support, Ventura County, CA

Ms. Head provided air permitting support to VRSD for the Toland Road Landfill. The landfill includes microturbines fueled with landfill gas, a flare, and a biosolids processing facility. For this project, Ms. Head directed an update of the HRA to include the recently revised OEHHA risk factors, as well as updating the sulfur dioxide (SO_2) and hydrogen sulfide (H_2S) modeling to demonstrate compliance with VCAPCD Rule 54. These analyses were used in the application to increase the capacity of the flare.

RUSSELL J. KINGSLEY, C.P.P.

Principal Engineer

Yorke ENGINEERING, LLC
www.YorkeEngr.com

AREAS OF EXPERTISE

- Air Quality Permitting & Compliance
- CEQA Studies & Compliance
- Emission Inventories/Annual Emissions Reports
- Air Quality Auditing
- Project Management

EXPERIENCE

- Yorke Engineering, LLC
  Principal Engineer
  2011-Present
- AECOM/ENSR Corporation
  Project Manager, 2000-2011
- PGP Industries, Process Engineer, 1996-2000
- Kwikset Corporation
  Environmental Manager
  1985-1996

PROFESSIONAL CERTIFICATIONS

- Certified Permitting Professional, South Coast Air Quality Management District, 1996
- Certification of Air Permitting Professionals, San Joaquin Valley Air Pollution Control District, 2012

EDUCATION

- B.S., Chemical Engineering, University of California, San Diego, 1983

OVERVIEW

Mr. Kingsley is an experienced Project Manager specializing in air quality permitting, California Environmental Quality Act (CEQA) compliance, regulatory compliance support, and air quality and multi-media compliance audits.

Mr. Kingsley's air permitting experience includes Title V permit applications and compliance, Regional Clean Air Incentives Market (RECLAIM) compliance, air emission calculations and Best Available Control Technology (BACT) determinations for a wide variety of industrial processes, and preparation of health risk assessments for air permit applications. He has prepared hundreds of air permit applications for processes and equipment ranging from simple sand blast cabinets and spray booths to hydrogen plants and delayed cokers. He routinely works in the South Coast Air Quality Management District (SCAQMD), the Bay Area Air Quality Management District (BAAQMD), several other California jurisdictions, Arizona, and Nevada.

Mr. Kingsley has extensive experience with the preparation of CEQA Initial Studies (ISs) and Environmental Impact Reports (EIRs), as well as the CEQA equivalent process for power plant permitting with the California Energy Commission. He has conducted more than 50 air quality and multi-media compliance audits, including air quality audits for refinery operations, Benzene Waste Operations National Emission Standards for Hazardous Air Pollutants (NESHAP), power plants, waste-to-energy plants, terminal operations, and chemical plants. In addition to air quality work, he has experience with Risk Management Plans (RMPs), Storm Water Pollution Prevention Plans, Hazardous Materials Business Plans, and Toxics Release Inventory reporting.

Mr. Kingsley has experience in many industry sectors, including refineries, breweries, cement manufacturing, chemical plants, light and heavy industrial manufacturing, power plants, and utilities.

FIELDS OF EXPERIENCE

Air Permitting and Compliance

Mr. Kingsley provided technical guidance for air permitting and a Prevention of Significant Deterioration (PSD) non-applicability determination for the Chevron Product Reliability and Optimization (PRO) Project at the El Segundo Refinery. The work involved preparing permit applications for modifications to approximately 20 process units at the refinery. Process units included the Isomerization Unit, Sour Water Stripper, Crude Unit, Sulfur Recovery Unit, Tail Gas Unit, storage tanks, and many others.

In addition, Mr. Kingsley was included as an outside member of a team that evaluated the PSD applicability of the project and prepared the technical document for submittal to the Environmental Protection Agency (EPA) that demonstrated that the project was not subject to PSD requirements. The PSD determination required the development of a netting analysis and involved frequent interaction with Chevron staff and attorneys to develop the emissions analysis for the project, including evaluating upstream and downstream impacts, de-bottlenecking, aggregation of projects, historic actual emissions, future actual emission calculations, and potential to emit calculations.

Mr. Kingsley was the Team Leader for the preparation of an air quality permit application for the installation of a new delayed coker at the Tesoro Golden Eagle Refinery in the BAAQMD. There was a significant reduction in emissions of many criteria pollutants, which simplified the regulatory compliance analysis; however, the application required the evaluation of upstream and downstream impacts from the modifications for determination of compliance with federal PSD requirements and a health risk assessment to address toxic air contaminant emissions from fugitive components. The permit application included solids handling facilities and coker heaters with associated air pollution control equipment, fugitive components, and miscellaneous support equipment. Although exempt from evaluation under CEQA, he prepared or supervised the preparation of various studies and evaluations for submittal to the BAAQMD to support this determination. Mr. Kingsley assisted Tesoro and the BAAQMD in the development of permit conditions and the BAAQMD's engineering evaluation.

Mr. Kingsley prepared BAAQMD air permit applications for several refinery modifications at the Shell Oil Products, US, Martinez Refinery, including a new ethanol storage tank, a new asphalt storage tank, efficiency improvements in the Naphtha Hydrotreater, and a project involving fuel gas recovery from the flare header.

Mr. Kingsley prepared air permit applications for submittal to the SCAQMD for a variety of refinery operations for the ExxonMobil Refinery in Torrance, California, including vacuum trucks, wastewater sumps, waste storage tanks, and a biotreatment system. Work included conducting or supervising the development of innovative emission estimation methodologies and performing screening health risk assessments.

CEQA Studies and Compliance

Mr. Kingsley served as Project Manager for the preparation of five CEQA ISs/Mitigated Negative Declarations (MNDs) for 45-megawatt peaker power plants for Southern California Edison. Four of the five plants are in the SCAQMD, and one is in the City of Oxnard and subject to regulation under the Ventura County Air Pollution Control District. From project kick-off to the beginning of the public comment period for the SCAQMD projects was just over 3 months. The projects were certified shortly after the conclusion of the public comment period and were under construction in less than 6 months following project kick-off. Mr. Kingsley was directly responsible for writing the project description, air quality, energy, hazardous materials, and water sections of the ISs, and he managed the overall project, including technical editing and document preparation.

GENERAL MANAGER'S REPORT

GOLETA SANITARY DISTRICT
GENERAL MANAGER'S REPORT

The following summary report describes the District's activities from November 3, 2020 through November 16, 2020. It provides updated information on significant activities under three major categories: Collection System, Treatment/Reclamation and Disposal Facilities, and General and Administration Items.

1. COLLECTION SYSTEM REPORT

LINES CLEANING

Staff is conducting priority areas lines cleaning throughout the District.

CCTV INSPECTION

Staff continues routine Closed-Circuit Television (CCTV) inspections in the Atascadero Creek easement areas between the south end of Walnut Drive and S. Patterson Avenue.

2020 CCTVI PROJECT

The proposals were opened on November 10, 2020 and reviewed by staff and the Engineering Committee. The recommendation to award the project and a recommendation to enter into agreement for project management services is presented to the Board for consideration under separate agenda reports.

REPAIR AND MAINTENANCE

The Fall 2020 Santa Barbara County paving project is complete. 43 sewer manhole frame and covers were adjusted to grade as part of this project. Duke's Root Control completed the Fall 2020 application of root treatment for 16,000 linear feet (LF) of 6-inch and 8-inch sewer lines throughout the District.

GREASE AND OIL INSPECTIONS

Staff continues with follow-up inspections on Food Service Establishments (FSE) which had high grease and oil concentrations in previous inspections.

COMPETENCY-BASED TRAINING (CBT)

Staff continues work on the CBT project with DKF Solutions staff.

WINTER STORM PREPARATION

Staff sent force account request letters to various local contractors and has begun the inspection of creek and bridge crossings. Inventory of critical items is being updated and refresher training on emergency response procedures is underway.

2. TREATMENT, RECLAMATION AND DISPOSAL FACILITIES REPORT

Plant flows have leveled off at about 4.2 million gallons per day (MGD) with no further reopening of businesses and services within the district. Reclamation demand has decreased to 0.5 MGD with the cooler temperatures and shorter days.

District staff met with MNS Engineering to discuss comments on the Lift Station Rehab Project 50% design, 90% drawings and specifications should be available for review by District staff by the end of the 2020 calendar year.

The Lystek digestor refeed pilot project to quantify increased solids destruction and gas production has moved into the final phase with an approximate 50% refeed. The treatment and digester processes are working well and are healthy so far in this final phase.

Centrifuge operations continue as planned. Dredging operations have made it across about 65% of the lagoon.

A leak in the plant service air was identified, found and repaired. The leak was caused by a failure in an adjacent drain line that caused excessive corrosion in the air line. The air line on either side of the problem was inspected and no excessive corrosion was observed.

The District is onboarding our new Senior Plant Operator, Marc Ciarlo. This position supports Operations as a technical expert and can fill the role of Chief Plant Operator in the absence of the Plant Operations Supervisor and Plant Operations Manager.

3. GENERAL AND ADMINISTRATIVE ITEMS

Financial Report

The District account balances as of November 16, 2020 shown below are approximations to the nearest dollar and indicate the overall funds available to the District at this time.

Operating Checking Accounts:	$ 1,322,110
Investment Accounts:	$ 25,210,231
Total District Funds:	$ 26,532,341

The following transactions are reported herein for the period 11/03/20 – 11/16/20.

Regular, Overtime, Cash-outs and Net Payroll:	$ 119,419
Claims:	$ 253,892
Total Expenditures:	$ 373,310
Total Deposits:	$ 733,635

Transfers of funds:

Community West Bank (CWB) to LAIF:	$ - 0 -
CWB Operational to CWB Money Market:	$ - 0 -
CWB Money Market to CWB Operational:	$ - 0 -

The District's investments comply with the District's Investment Policy adopted per Resolution No. 16-606. The District has adequate funds to meet the next six months of normal operating expenses.

Local Agency Investment Fund (LAIF)

LAIF Monthly Statement – October, 2020.
LAIF Quarterly Report – Previously submitted.

PMIA/LAIF Performance – October, 2020.
PMIA Effective Yield – October, 2020.

Community West Bank (CWB)
CWB Money Market Account – October, 2020.

Deferred Compensation Accounts
CalPERS 457 Deferred Compensation Plan – Previously submitted.
Lincoln 457 Deferred Compensation Plan – October, 2020.

COVID-19 Response Plan Update
A verbal update will be provided at the meeting.

Personnel Update
A verbal report will be provided at the meeting.

California State Treasurer
Fiona Ma, CPA

Local Agency Investment Fund
P.O. Box 942809
Sacramento, CA 94209-0001
(916) 653-3001

November 02, 2020

LAIF Home
PMIA Average Monthly Yields

GOLETA SANITARY DISTRICT

GENERAL MANAGER
ONE WILLIAM MOFFETT PLACE
GOLETA, CA 93117

Tran Type Definitions

Account Number: 70-42-002

October 2020 Statement

Effective Date	Transaction Date	Tran Type	Confirm Number	Web Confirm Number	Authorized Caller	Amount
10/15/2020	10/14/2020	QRD	1656971	N/A	SYSTEM	31,532.84

Account Summary

Total Deposit:	31,532.84	Beginning Balance:	17,942,848.20
Total Withdrawal:	0.00	Ending Balance:	17,974,381.04

PMIA/LAIF Performance Report as of 11/04/20

PMIA Average Monthly Effective Yields[1]

Oct	**0.620**
Sep	0.685
Aug	0.784

Quarterly Performance Quarter Ended 09/30/20

LAIF Apportionment Rate[2]:	0.84
LAIF Earnings Ratio[2]:	0.00002309407394024
LAIF Fair Value Factor[1]:	1.004114534
PMIA Daily[1]:	0.65%
PMIA Quarter to Date[1]:	0.80%
PMIA Average Life[1]:	169

Pooled Money Investment Account Monthly Portfolio Composition [1] 09/30/20 $109.2 billion

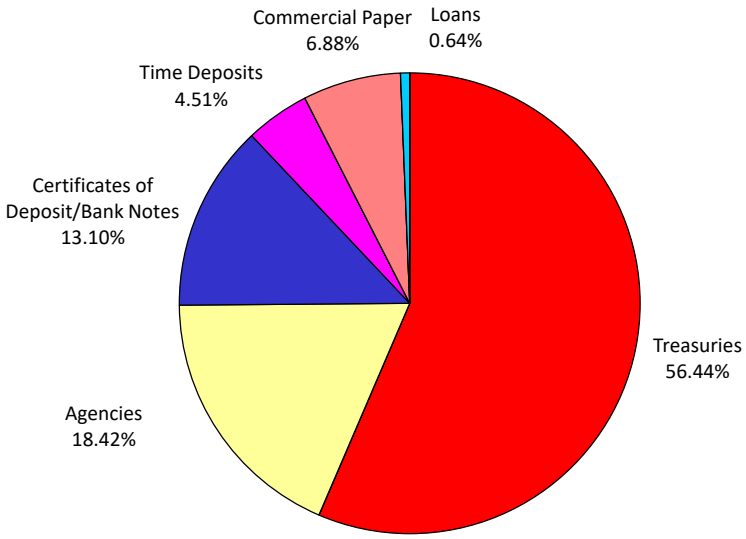


Chart does not include 0.01% of mortgages. Percentages may not total 100% due to rounding.

Daily rates are now available here. **View PMIA Daily Rates**

Notes: The apportionment rate includes interest earned on the CalPERS Supplemental Pension Payment pursuant to Government Code 20825 (c)(1) and interest earned on the Wildfire Fund loan pursuant to Public Utility Code 3288 (a).

Source:
[1] State of California, Office of the Treasurer
[2] State of Calfiornia, Office of the Controller

11/05/20

POOLED MONEY INVESTMENT ACCOUNT

PMIA Average Monthly Effective Yields

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	8.571	8.538	8.506	8.497	8.531	8.538	8.517	8.382	8.333	8.321	8.269	8.279
1991	8.164	8.002	7.775	7.666	7.374	7.169	7.098	7.072	6.859	6.719	6.591	6.318
1992	6.122	5.863	5.680	5.692	5.379	5.323	5.235	4.958	4.760	4.730	4.659	4.647
1993	4.678	4.649	4.624	4.605	4.427	4.554	4.438	4.472	4.430	4.380	4.365	4.384
1994	4.359	4.176	4.248	4.333	4.434	4.623	4.823	4.989	5.106	5.243	5.380	5.528
1995	5.612	5.779	5.934	5.960	6.008	5.997	5.972	5.910	5.832	5.784	5.805	5.748
1996	5.698	5.643	5.557	5.538	5.502	5.548	5.587	5.566	5.601	5.601	5.599	5.574
1997	5.583	5.575	5.580	5.612	5.634	5.667	5.679	5.690	5.707	5.705	5.715	5.744
1998	5.742	5.720	5.680	5.672	5.673	5.671	5.652	5.652	5.639	5.557	5.492	5.374
1999	5.265	5.210	5.136	5.119	5.086	5.095	5.178	5.225	5.274	5.391	5.484	5.639
2000	5.760	5.824	5.851	6.014	6.190	6.349	6.443	6.505	6.502	6.517	6.538	6.535
2001	6.372	6.169	5.976	5.760	5.328	4.958	4.635	4.502	4.288	3.785	3.526	3.261
2002	3.068	2.967	2.861	2.845	2.740	2.687	2.714	2.594	2.604	2.487	2.301	2.201
2003	2.103	1.945	1.904	1.858	1.769	1.697	1.653	1.632	1.635	1.596	1.572	1.545
2004	1.528	1.440	1.474	1.445	1.426	1.469	1.604	1.672	1.771	1.890	2.003	2.134
2005	2.264	2.368	2.542	2.724	2.856	2.967	3.083	3.179	3.324	3.458	3.636	3.808
2006	3.955	4.043	4.142	4.305	4.563	4.700	4.849	4.946	5.023	5.098	5.125	5.129
2007	5.156	5.181	5.214	5.222	5.248	5.250	5.255	5.253	5.231	5.137	4.962	4.801
2008	4.620	4.161	3.777	3.400	3.072	2.894	2.787	2.779	2.774	2.709	2.568	2.353
2009	2.046	1.869	1.822	1.607	1.530	1.377	1.035	0.925	0.750	0.646	0.611	0.569
2010	0.558	0.577	0.547	0.588	0.560	0.528	0.531	0.513	0.500	0.480	0.454	0.462
2011	0.538	0.512	0.500	0.588	0.413	0.448	0.381	0.408	0.378	0.385	0.401	0.382
2012	0.385	0.389	0.383	0.367	0.363	0.358	0.363	0.377	0.348	0.340	0.324	0.326
2013	0.300	0.286	0.285	0.264	0.245	0.244	0.267	0.271	0.257	0.266	0.263	0.264
2014	0.244	0.236	0.236	0.233	0.228	0.228	0.244	0.260	0.246	0.261	0.261	0.267
2015	0.262	0.266	0.278	0.283	0.290	0.299	0.320	0.330	0.337	0.357	0.374	0.400
2016	0.446	0.467	0.506	0.525	0.552	0.576	0.588	0.614	0.634	0.654	0.678	0.719
2017	0.751	0.777	0.821	0.884	0.925	0.978	1.051	1.084	1.111	1.143	1.172	1.239
2018	1.350	1.412	1.524	1.661	1.755	1.854	1.944	1.998	2.063	2.144	2.208	2.291
2019	2.355	2.392	2.436	2.445	2.449	2.428	2.379	2.341	2.280	2.190	2.103	2.043
2020	1.967	1.912	1.787	1.648	1.363	1.217	0.920	0.784	0.685	0.620		

Community West Bank

445 Pine Avenue
Goleta, CA 93117

RETURN SERVICE REQUESTED

GOLETA SANITARY DISTRICT
MONEY MARKET
1 WILLIAM MOFFETT PL
GOLETA CA 93117-3901

Statement Ending 10/30/2020

Customer Number: XXXXXXXX5554

All Community West Bank branch offices are open to serve you Monday through Friday, 9:00 am to 5:00 pm.

Notice of Change to our Transaction Processing and Posting

Community West Bank changed the way end-of business-day transactions are processed and posted to your account, generally following this order: 1) Deposits and Credits; 2) Cash Withdrawals, In-Person Transactions; 3) Debit Card Transactions; 4) Scheduled Transfers, Online Transfers; 5) ACH Debits; 6) Checks, posting in ascending dollar amount order; 7) Bank Fees; 8) Service Charges.

If you have questions about how transactions are processed and posted to your account, please contact the Community West Bank office most convenient to you, or call (888) 831-5295, Monday – Friday, 8am to 5pm.

Summary of Accounts

Account Type	Account Number	Ending Balance
PUBLIC AGENCY-MMDA	XXXXXXXX5554	$7,235,850.25

PUBLIC AGENCY-MMDA - XXXXXXXX5554

Account Summary

Date	Description	Amount		
10/01/2020	**Beginning Balance**	**$7,231,631.34**	Average Ledger Balance	$7,231,631.34
	1 Credit(s) This Period	$4,218.91		
	0 Debit(s) This Period	$0.00		
10/30/2020	**Ending Balance**	**$7,235,850.25**		

Account Activity

Post Date	Description	Debits	Credits	Balance
10/01/2020	**Beginning Balance**			**$7,231,631.34**
10/30/2020	INTEREST AT .7098 %		$4,218.91	$7,235,850.25
10/30/2020	**Ending Balance**			**$7,235,850.25**

Daily Balances

Date	Amount
10/30/2020	$7,235,850.25

EQUAL HOUSING LENDER Member FDIC

Lincoln Financial Group℠

Multi-Fund®

Performance Update

MultiFund

Quoted performance data represents past performance. Past performance does not guarantee nor predict future performance. Current performance may be lower or higher than the performance data quoted. Please keep in mind that double-digit returns are highly unusual and cannot be sustained.

Variable products are sold by prospectus. Consider the investment objectives, risks, charges, and expenses of the variable product and its underlying investment options carefully before investing. The prospectus contains this and other information about the variable product and its underlying investment options. Please review the prospectus available online for additional information. Read it carefully before investing.

Investment return and principal value of an investment will fluctuate so that an investor's unit values, when redeemed, may be worth more or less than their original cost.

Monthly hypothetical performance adjusted for contract fees *

						Average Annual Total Return (%) as of 10/30/2020						
Investment Option		Inception Date	Change from Previous Day	YTD as of 11/04/2020	YTD as of 10/30/2020	1 Mo	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr	Since Incep.
Risk Managed												
DWS Equity 500 Index VIP Portfolio - Class A[11]	RM	10/01/1997	2.19	7.06	1.69	-2.77	0.07	8.35	9.04	10.30	11.57	6.13
DWS Small Cap Index VIP Portfolio - Class A[8, 11]	RM	08/25/1997	0.07	-3.30	-7.92	2.03	3.90	-1.58	0.87	5.90	8.31	5.74
Fidelity® VIP Freedom 2055 Portfolio℠ - Service Class[7, 9]	RM	04/11/2019	1.91	5.97	1.01	-1.49	0.29	7.25	N/A	N/A	N/A	7.61
Fidelity® VIP Freedom 2060 Portfolio℠ - Service Class[7, 9]	RM	04/11/2019	1.99	6.08	1.13	-1.40	0.38	7.40	N/A	N/A	N/A	7.71
Neuberger Berman AMT Mid Cap Growth Portfolio (I Class)[8]	RM	11/03/1997	3.74	25.58	18.38	2.03	4.01	25.75	14.24	12.39	12.27	8.90
Maximum Capital Appreciation												
AB VPS Global Thematic Growth Portfolio - Class B[1, 2]	MCA	01/11/1996	1.96	27.20	21.02	-0.17	5.42	30.33	12.61	12.67	7.95	5.54
Delaware VIP® Smid Cap Core Series - Standard Class[4, 8]	MCA	07/12/1991	-0.62	-6.24	-9.92	3.55	1.76	-4.62	1.03	5.40	9.57	8.45
DWS Alternative Asset Allocation VIP Portfolio - Class A[1, 2, 3, 9, 10]	MCA	02/02/2009	0.95	-2.68	-5.19	-0.72	-0.33	-3.47	-0.58	0.83	0.69	3.44
LVIP Baron Growth Opportunities Fund - Service Class[8]	MCA	10/01/1998	2.83	16.18	8.43	-1.62	2.77	13.94	12.42	12.33	13.03	10.79
LVIP SSGA Emerging Markets 100 Fund - Standard Class[1, 19]	MCA	06/18/2008	0.39	-14.91	-17.84	0.34	-1.10	-12.18	-8.18	-0.45	-2.21	0.47
LVIP SSGA Small-Cap Index Fund - Standard Class[8, 11]	MCA	04/18/1986	0.02	-3.54	-8.09	1.99	3.90	-1.77	0.67	5.71	8.07	6.43
LVIP T. Rowe Price Structured Mid-Cap Growth Fund - Standard Class[8]	MCA	02/03/1994	3.67	17.14	9.55	0.44	1.60	16.74	13.96	13.06	12.97	6.87

Performance Update

MultiFund

Monthly hypothetical performance adjusted for contract fees *

Investment Option		Inception Date	Change from Previous Day	YTD as of 11/04/2020	YTD as of 10/30/2020	Average Annual Total Return (%) as of 10/30/2020 1 Mo	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr	Since Incep.
Long Term Growth												
American Funds Global Growth Fund - Class 2[1]	LTG	04/30/1997	3.71	18.00	11.26	-1.76	1.63	20.73	10.65	11.42	10.49	9.01
American Funds Growth Fund - Class 2	LTG	02/08/1984	2.95	30.93	23.20	-2.76	3.04	33.34	17.17	16.57	14.16	11.85
American Funds International Fund - Class 2[1]	LTG	05/01/1990	2.16	-2.81	-6.91	0.18	1.95	-1.85	-0.20	4.71	3.74	6.41
Delaware VIP Small Cap Value[4, 8]	LTG	12/27/1993	-2.00	-21.59	-23.66	4.20	1.34	-18.61	-6.51	1.63	5.94	7.87
Fidelity® VIP Contrafund® Portfolio - Service Class	LTG	01/03/1995	4.14	23.54	16.11	-3.23	0.22	23.77	12.80	12.22	11.94	10.31
Fidelity® VIP Growth Portfolio - Service Class	LTG	10/09/1986	4.57	33.02	24.52	-1.66	2.77	34.22	18.12	17.03	15.36	9.82
LVIP BlackRock Global Real Estate Fund - Standard Class[1, 2, 7]	LTG	04/30/2007	0.50	-13.69	-17.46	-3.59	-3.96	-17.41	-0.98	-0.02	2.68	-0.43
LVIP Delaware Mid Cap Value Fund - Standard Class[4, 8]	LTG	12/28/1981	-1.19	-15.42	-17.96	1.81	3.87	-12.80	-2.54	3.67	7.41	9.62
LVIP Delaware Social Awareness Fund - Standard Class[4]	LTG	05/02/1988	1.91	8.18	2.94	-1.84	1.89	10.28	9.83	9.12	11.25	9.56
LVIP Dimensional U.S. Core Equity 1 Fund - Standard Class	LTG	12/28/1981	1.29	2.45	-2.27	-1.28	1.19	4.18	6.46	8.82	10.65	9.31
LVIP Mondrian International Value Fund - Standard Class[1]	LTG	05/01/1991	0.45	-18.96	-22.60	-3.53	-3.69	-19.09	-7.06	-1.44	1.09	4.48
LVIP SSGA International Index Fund - Standard Class[1, 11, 20]	LTG	04/30/2008	1.11	-6.67	-11.34	-4.06	-1.82	-7.85	-2.35	1.68	2.46	0.01
LVIP SSGA S&P 500 Index Fund - Standard Class[11, 21]	LTG	05/01/2000	2.21	7.01	1.62	-2.76	0.06	8.27	9.03	10.33	11.60	4.75
LVIP Vanguard Domestic Equity ETF Fund - Service Class[9, 22]	LTG	04/29/2011	2.03	7.12	1.86	-2.21	0.79	8.13	8.56	9.72	N/A	9.46
LVIP Vanguard International Equity ETF Fund - Service Class[1, 9, 22]	LTG	04/29/2011	1.49	-3.67	-8.03	-2.47	0.29	-3.04	-1.43	3.32	N/A	1.58
MFS® VIT Utilities Series - Initial Class[2]	LTG	01/03/1995	-0.18	-1.62	-4.28	3.69	0.66	-2.84	5.61	6.85	7.47	9.82
Growth and Income												
American Funds Growth-Income Fund - Class 2	GI	02/08/1984	2.64	3.16	-2.26	-3.08	-1.50	4.30	7.06	9.27	10.64	9.73
BlackRock Global Allocation V.I. Fund - Class I[1, 3]	GI	02/28/1992	1.68	9.55	5.29	-1.94	0.14	9.13	4.64	5.23	4.77	6.10

Performance Update

MultiFund

Monthly hypothetical performance adjusted for contract fees *

Investment Option		Inception Date	Change from Previous Day	YTD as of 11/04/2020	YTD as of 10/30/2020	Average Annual Total Return (%) as of 10/30/2020 1 Mo	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr	Since Incep.
Delaware VIP REIT[2, 4, 7]	GI	05/04/1998	0.09	-17.26	-21.15	-2.71	-5.53	-23.01	-2.34	-0.61	5.17	6.52
Delaware VIP Value[4]	GI	07/28/1988	0.31	-12.49	-15.94	-3.07	-2.80	-11.13	0.52	4.00	9.01	7.22
Fidelity® VIP Freedom 2020 Portfolio℠ - Service Class[9, 12]	GI	04/26/2005	1.35	6.48	3.34	-0.87	-0.18	7.01	5.25	6.35	6.34	5.49
Fidelity® VIP Freedom 2025 Portfolio℠ - Service Class[9, 12]	GI	04/26/2005	1.47	6.55	3.06	-0.99	-0.12	7.20	5.48	6.69	7.02	5.95
Fidelity® VIP Freedom 2030 Portfolio℠ - Service Class[9, 12]	GI	04/26/2005	1.62	6.46	2.60	-1.13	-0.05	7.41	5.72	7.37	7.54	6.11
Fidelity® VIP Freedom 2035 Portfolio℠ - Service Class[9, 12]	GI	04/08/2009	1.79	6.07	1.55	-1.32	0.17	7.37	5.76	7.77	8.05	10.87
Fidelity® VIP Freedom 2040 Portfolio℠ - Service Class[9, 12]	GI	04/08/2009	1.94	6.03	1.09	-1.44	0.29	7.36	5.69	7.75	8.09	10.99
Fidelity® VIP Freedom 2045 Portfolio℠ - Service Class[9, 12]	GI	04/08/2009	1.93	6.07	1.12	-1.43	0.28	7.35	5.69	7.75	8.17	11.08
Fidelity® VIP Freedom 2050 Portfolio℠ - Service Class[9, 12]	GI	04/08/2009	1.91	6.07	1.10	-1.44	0.25	7.33	5.65	7.73	8.20	11.19
LVIP BlackRock Advantage Allocation Fund - Standard Class[3, 4, 13]	GI	07/28/1988	1.38	6.04	3.13	-1.71	-0.50	5.57	4.43	5.16	5.29	5.61
LVIP Delaware Wealth Builder Fund - Standard Class[3, 4, 13]	GI	08/03/1987	0.60	-2.27	-4.79	-1.81	-1.83	-2.37	1.41	3.19	4.88	5.72
LVIP JPMorgan Retirement Income Fund - Standard Class[3, 4, 13]	GI	04/27/1983	0.99	3.12	0.80	-0.92	-0.33	2.62	2.88	3.76	4.20	6.46
Income												
Delaware VIP Diversified Income[4, 5]	I	05/16/2003	0.71	8.01	6.97	-0.35	-0.95	6.69	4.37	3.57	2.91	4.50
Delaware VIP High Yield[4, 5, 6]	I	07/28/1988	0.82	2.37	0.93	0.33	0.17	2.99	3.25	4.41	4.44	5.57
LVIP BlackRock Inflation Protected Bond Fund - Standard Class[5]	I	04/30/2010	0.08	2.87	2.75	-0.27	0.15	3.10	2.39	1.79	1.10	1.57
LVIP Delaware Bond Fund - Standard Class[4, 5]	I	12/28/1981	0.58	7.71	6.89	-0.39	-1.06	6.52	4.36	3.40	2.87	6.71
LVIP Delaware Diversified Floating Rate Fund[4, 16]	I	04/30/2010	0.09	-0.39	-0.51	-0.08	-0.01	-0.11	0.59	0.70	0.26	0.28
LVIP Global Income Fund - Standard Class[1, 5, 13, 15]	I	05/04/2009	0.30	4.44	4.01	-0.12	-0.52	3.07	3.57	2.57	1.29	2.81
LVIP SSGA Bond Index Fund - Standard Class[5, 11]	I	04/30/2008	0.60	6.08	5.35	-0.60	-1.72	4.88	3.70	2.70	2.16	2.77

Performance Update

MultiFund

Monthly hypothetical performance adjusted for contract fees *

Investment Option		Inception Date	Change from Previous Day	YTD as of 11/04/2020	YTD as of 10/30/2020	Average Annual Total Return (%) as of 10/30/2020 1 Mo	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr	Since Incep.
PIMCO VIT Total Return Portfolio - Administrative Class[5]	I	12/31/1997	0.53	6.77	6.12	-0.52	-0.82	5.40	3.91	3.29	2.56	4.40
Preservation of Capital												
LVIP Government Money Market Fund - Standard Class[13, 18]	PC	01/07/1982	0.00	-0.57	-0.56	-0.08	-0.25	-0.51	0.18	-0.23	-0.60	2.79
Risk Managed - Asset Allocation												
LVIP Global Conservative Allocation Managed Risk Fund - Standard Class[1, 3, 9, 13, 17]	RM	05/03/2005	0.92	0.72	-1.53	-1.05	-0.63	0.69	2.43	3.40	4.15	4.47
LVIP Global Growth Allocation Managed Risk Fund - Standard Class[1, 3, 9, 13, 17]	RM	05/03/2005	0.86	-2.84	-5.28	-2.08	-1.25	-1.65	0.98	3.17	3.77	3.82
LVIP Global Moderate Allocation Managed Risk Fund - Standard Class[1, 3, 9, 13, 17]	RM	05/03/2005	0.83	-1.60	-3.81	-1.81	-1.14	-0.58	1.47	3.24	3.85	4.16
LVIP SSGA Global Tactical Allocation Managed Volatility Fund - Standard Class[1, 3, 9, 13, 14, 15]	RM	05/03/2005	0.65	-3.28	-6.22	-1.41	-0.26	-3.11	-0.05	2.47	3.01	2.86
Risk Managed - US Large Cap												
LVIP BlackRock Dividend Value Managed Volatility Fund - Standard Class[13, 14]	RM	02/03/1994	-0.08	-12.53	-15.81	-1.45	-1.78	-11.17	-2.23	2.66	4.28	5.66
LVIP Blended Large Cap Growth Managed Volatility Fund - Standard Class[13, 14, 15]	RM	02/03/1994	3.31	14.72	8.29	-2.71	0.01	15.05	7.90	8.20	7.95	6.51
Asset Allocation												
LVIP T. Rowe Price 2010 Fund (Standard Class)[9, 12, 13]	AsA	05/01/2007	0.95	4.83	2.26	-0.88	-0.25	4.83	4.00	4.18	4.12	3.47
LVIP T. Rowe Price 2020 Fund (Standard Class)[9, 12, 13]	AsA	05/01/2007	1.13	4.56	1.42	-1.07	-0.13	4.84	4.29	4.68	4.42	3.38
LVIP T. Rowe Price 2030 Fund (Standard Class)[9, 12, 13]	AsA	05/01/2007	1.39	4.51	0.52	-1.34	0.03	4.90	4.19	4.69	4.55	3.31
LVIP T. Rowe Price 2040 Fund (Standard Class)[9, 12, 13]	AsA	05/01/2007	1.55	4.28	-0.28	-1.54	0.18	4.79	4.22	4.80	4.72	2.96
LVIP T. Rowe Price 2050 Fund (Standard Class)[9, 12, 13]	AsA	04/29/2011	1.60	4.06	-0.69	-1.59	0.29	4.64	4.50	5.42	N/A	3.81
LVIP T. Rowe Price 2060 Fund - Standard Class[9, 12, 13]	AsA	04/30/2020	1.66	N/A	N/A	-1.71	0.39	N/A	N/A	N/A	N/A	13.16

Performance Update

MultiFund

Monthly hypothetical performance adjusted for contract fees *

Investment Option		Inception Date	Change from Previous Day	YTD as of 11/04/2020	YTD as of 10/30/2020	Average Annual Total Return (%) as of 10/30/2020 1 Mo	3 Mo	1 Yr	3 Yr	5 Yr	10 Yr	Since Incep.
Risk Managed - US Mid Cap												
LVIP Blended Mid Cap Managed Volatility Fund - Standard Class[8, 13, 14, 15]	RM	05/01/2001	3.53	14.67	7.38	-0.66	0.97	13.96	11.10	10.12	6.77	4.11
LVIP JPMorgan Select Mid Cap Value Managed Volatility Fund - Standard Class[8, 13, 14, 15]	RM	05/01/2001	-0.59	-11.33	-14.75	0.45	0.95	-10.51	-3.83	0.55	4.48	4.65
Risk Managed - Global/International												
LVIP Franklin Templeton Global Equity Managed Volatility Fund - Standard Class[1, 13, 14]	RM	08/01/1985	1.28	-0.94	-5.48	-2.91	-0.97	-0.45	-0.93	2.16	3.68	6.54
LVIP SSGA International Managed Volatility Fund - Standard Class[1, 9, 13, 14]	RM	12/31/2013	1.15	-14.37	-18.67	-4.12	-1.99	-15.49	-5.32	-1.06	N/A	-2.14

* These returns are measured from the inception date of the fund and predate its availability as an investment option in the variable annuity (separate account). This hypothetical representation depicts how the investment option would have performed had the fund been available in the variable annuity during the time period. It includes deductions for the M&E charge, the contract administrative fee and a pro rata deduction for the annual contract charge. If selected above, the cost for a feature or death benefit will be reflected. No surrender charge is reflected.

Performance Update

[1] International
Investing internationally involves risks not associated with investing solely in the United States, such as currency fluctuation, political or regulatory risk, currency exchange rate changes, differences in accounting and the limited availability of information.

[2] Sector Funds
Funds that target exposure to one region or industry may carry greater risk and higher volatility than more broadly diversified funds.

[3] Asset Allocation Portfolios
Asset allocation does not ensure a profit, nor protect against loss in a declining market.

[4] Macquarie Investment Management
Investments in Delaware VIP Series, Delaware Funds, LVIP Delaware Funds or Lincoln Life accounts managed by Macquarie Investment Management Advisers, a series of Macquarie Investments Management Business Trust, are not and will not be deposits with or liabilities of Macquarie Bank Limited ABN 46 008 583 542 and its holding companies, including their subsidiaries or related companies, and are subject to investment risk, including possible delays in repayment and loss of income and capital invested. No Macquarie Group company guarantees or will guarantee the performance of the fund, the repayment of capital from the fund, or any particular rate of return.

[5] Bonds
The return of principal in bond funds is not guaranteed. Bond funds have the same interest rate, inflation, credit, duration, prepayment and market risks that are associated with the underlying bonds owned by the fund or account.

[6] High-yield or mortgage-backed funds
High-yield funds may invest in high-yield or lower rated fixed income securities (junk bonds) or mortgage-backed securities with exposure to subprime mortgages, which may experience higher volatility and increased risk of nonpayment or default.

[7] REIT
A real estate investment trust (REIT) involves risks such as refinancing, economic conditions in the real estate industry, declines in property values, dependency on real estate management, changes in property taxes, changes in interest rates and other risks associated with a portfolio that concentrates its investments in one sector or geographic region.

[8] Small & Mid Cap
Funds that invest in small and/or midsize company stocks may be more volatile and involve greater risk, particularly in the short term, than those investing in larger, more established companies.

[9] Fund of funds
Each fund is operated as a fund of funds that invests primarily in one or more other funds, rather than in individual securities. A fund of this nature may be more expensive than other investment options because it has additional levels of expenses. From time to time, the Fund's advisor may modify the asset allocation to the underlying funds and may add new funds. A Fund's actual allocation may vary from the target strategic allocation at any point in time. Additionally, the Fund's advisor may directly manage assets of the underlying funds for a variety of purposes.

[10] Alternative Funds
Certain funds (sometimes called "alternative funds") expect to invest in (or may invest in some) positions that emphasize alternative investment strategies and/or nontraditional asset classes and, as a result, are subject to the risk factors of those asset classes and/or investment strategies. Some of those risks may include general economic risk, geopolitical risk, commodity-price volatility, counterparty and settlement risk, currency risk, derivatives risk, emerging markets risk, foreign securities risk, high-yield bond exposure, index investing risk, exchange-traded notes risk, industry concentration risk, leveraging risk, real estate investment risk, master limited partnership risk, master limited partnership tax risk, energy infrastructure companies risk, sector risk, short sale risk, direct investment risk, hard assets sector risk, active trading and "overlay" risks, event-driven investing risk, global macro strategies risk, temporary defensive positions and large cash positions. If you are considering investing in alternative investment funds, you should ensure that you understand the complex investment strategies sometimes employed and be prepared to tolerate the risks of such asset classes. For a complete list of risks, as well as a discussion of risk and investment strategies, please refer to the fund's prospectus. The fund may invest in derivatives, including futures, options, forwards and swaps. Investments in derivatives may cause the fund's losses to be greater than if it invested only in conventional securities and can cause the fund to be more volatile. Derivatives involve risks different from, or possibly greater than, the risks associated with other investments. The fund's use of derivatives may cause the fund's investment returns to be impacted by the performance of securities the fund does not own and may result in the fund's total investment exposure exceeding the value of its portfolio.

[11] Index
An index is unmanaged, and one cannot invest directly in an index. Indices do not reflect the deduction of any fees.

[12] Target-date funds
The target date is the approximate date when investors plan to retire or start withdrawing their money. Some target-date funds make no changes in asset allocation after the target date is reached; other target-date funds continue to make asset allocation changes following the target date. (See the prospectus for the funds allocation strategy.) The principal value is not guaranteed at any time, including at the target date. An asset allocation strategy does not guarantee performance or protect against investment losses. A "fund of funds" may be more expensive than other types of investment options because it has additional levels of expenses.

[13] Manager of managers funds
Subject to approval of the fund's board, Lincoln Investment Advisors Corporation (LIAC) has the right to engage or terminate a subadvisor at any time, without a shareholder vote, based on an exemptive order from the Securities and Exchange Commission. LIAC is responsible for overseeing all subadvisors for funds relying on this exemptive order.

[14] Managed Volatility Strategy
The fund's managed volatility strategy is not a guarantee, and the fund's shareholders may experience losses. The fund employs hedging strategies designed to reduce overall portfolio volatility. The use of these hedging strategies may limit the upside participation of the fund in rising equity markets relative to unhedged funds, and the effectiveness of such strategies may be impacted during periods of rapid or extreme market events.

[15] Multimanager
For those funds that employ a multimanager structure, the funds advisor is responsible for overseeing the subadvisors. While the investment styles employed by the funds subadvisors are intended to be complementary, they may not, in fact, be complementary. A multimanager approach may result in more exposure to certain types of securities risks and in higher portfolio turnover.

Performance Update

[16] Floating rate funds
Floating rate funds should not be considered alternatives to CDs or money market funds and should not be considered as cash alternatives.

[17] Risk Management Strategy
The fund's risk management strategy is not a guarantee, and the funds shareholders may experience losses. The fund employs hedging strategies designed to provide downside protection during sharp downward movements in equity markets. The use of these hedging strategies may limit the upside participation of the fund in rising equity markets relative to other unhedged funds, and the effectiveness of such strategies may be impacted during periods of rapid or extreme market events.

[18] Money Market Funds
You can lose money by investing in the fund. Although the fund seeks to preserve the value of your investment at $1.00 per share (or, for the LVIP Government Money Market Fund, at $10.00 per share), it cannot guarantee it will do so. An investment in the fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. The funds sponsor has no legal obligation to provide financial support to the fund, and you should not expect that the sponsor will provide financial support to the fund at any time.

[19] Emerging Markets
Investing in emerging markets can be riskier than investing in well-established foreign markets. International investing involves special risks not found in domestic investing, including increased political, social and economic instability, all of which are magnified in emerging markets.

[20] MSCI
The fund described herein is indexed to an MSCI® index. It is not sponsored, endorsed, or promoted by MSCI®, and MSCI®; bears no liability with respect to any such fund or to an index on which a fund is based. The prospectus and statement of additional information contain a more detailed description of the limited relationship MSCI®; has with Lincoln Investment Advisors Corporation and any related funds.

[21] S&P
The Index to which this fund is managed is a product of S&P Dow Jones Indices LLC (SPDJI) and has been licensed for use by one or more of the portfolio's service providers (licensee). Standard & Poor's®; and S&P® are registered trademarks of Standard & Poor's Financial Services LLC (S&P); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC (Dow Jones); and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by the licensee. S&P®, S&P GSCI® and the Index are trademarks of S&P and have been licensed for use by SPDJI and its affiliates and sublicensed for certain purposes by the licensee. The Index is not owned, endorsed, or approved by or associated with any additional third party. The licensee's products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates, or their third party licensors, and none of these parties or their respective affiliates or third party licensors make any representation regarding the advisability of investing in such products, nor do they have liability for any errors, omissions, or interruptions of the Index®.

[22] Exchange-traded funds
Exchange-traded funds (ETFs) in this lineup are available through collective trusts or mutual funds. Investors cannot invest directly in an ETF.

Important Disclosures

Variable products are issued by The Lincoln National Life Insurance Company, Fort Wayne, IN, distributed by Lincoln Financial Distributors, Inc., and offered by broker/dealers with an effective selling agreement. The Lincoln National Life Insurance Company is not authorized nor does it solicit business in the state of New York. **Contractual obligations are backed by the claims-paying ability of The Lincoln National Life Insurance Company.**

Limitations and exclusions may apply.

Lincoln Financial Group is the marketing name for Lincoln National Corporation and its affiliates. Affiliates are separately responsible for their own financial and contractual obligations.

Asset Categories

- RM = Risk Managed
- MCA = Maximum Capital Appreciation
- LTG = Long Term Growth
- GI = Growth and Income
- I = Income
- PC = Preservation of Capital
- RM = Risk Managed - Asset Allocation
- RM = Risk Managed - US Large Cap
- AsA = Asset Allocation
- RM = Risk Managed - US Mid Cap
- RM = Risk Managed - Global/International

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DISTRICT
CORRESPONDENCE
Board Meeting of November 16, 2020

	Date:	Correspondence Sent To:
1.	11/03/2020	Plan Rooms and Contractor Associations **Subject:** Notice Inviting Interested Contractors to be Included on the Goleta Sanitary District's List of Qualified Contractors
2.	11/04/2020	Blair Douglas Tierra Contracting, Inc. **Subject:** Notice Inviting Contractors and Vendors to be included in the Goleta Sanitary District Emergency Response Plan for Force Account Services

	Date:	Correspondence Received From:
1.	11/12/2020	California Public Employees' Retirement System **Subject:** Notice of Addition of Information to Rulemaking File, Second Addendum to The Initial Statement of Reasons

Hard Copies of the Correspondence are available at the District's Office for review