MEETING MINUTES
March 12, 2024
In-Person Meeting

Attendees:

Name	Company	Email Address
Alexandra Watson	HydroScience Engineers	awatson@hydroscience.com
Amelia Taylor	Pullman SST, Inc	ataylor@pullman-services.com
Ashley Stalf	EBMUD	ashley.stalf@ebmud.com
Ben Wright	Black & Veatch	wrightb@bv.com
Bob Allen	Trident Environmental and Engineering, Inc.	ballen@Tridenteng.com
Casey Smith	SAK Construction, LLC	csmith@sakcon.com
Diego Soto Lopez	Central San	dsotolopez@centralsan.org
Dorothy Bechler	Central San	dbechler@centralsan.org
Dustin La Vallee	EBMUD	dustin.lavallee@ebmud.com
Esther Amoding	National Plant Services, Inc.	eamoding@nationalplant.com
Iris Yuen	CDM Smith	yuencc@cdmsmith.com
James Kohne	Woodard & Curran	jkohne@woodardcurran.com
Jodie Ma	NPS	jma@nationalplant.com
Joe Barnes	EBMUD	joseph.barnes@ebmud.com
John Joseph Figueroa	National Plant Services	jfigueroa@nationalplant.com
John Kenny	East Bay Municipal Utility District	john.kenny@ebmud.com
Kevin Randeni	Central San	krandeni@centralsan.org
Kyle Gourley	Carollo Engineers	kgourley@carollo.com
Lars Stenstedt	V&A	lstenstedt@vaengineering.com
Lisa Zou	CCCSD	lzou@centralsan.org
Manuel Najar	V&A	mnajar@vaengineering.com
Marc Angelo Matundan Jr.	Central San	mmatundan@centralsan.org
Michelle Beason	National Plant Services, Inc.	mbeason@nationalplant.com
Nancy McWilliams	Solano Irrigation District	nmcwilliams@sidwater.org
Nathaniel Johnson	CVSD	nathaniel@cvsan.org

Lennon		
Nohemi Sanchez	CCCSD	nsanchez@gmail.com
Patrick lam	Delve Underground	lam@delveunderground.com
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Seth Nickinson	Sewer AI	snickinson@sewerai.com
Simon Kobayashi	EBMUD	simon.kobayashi@ebmud.com
Turhan Bae	Stantec	turhan.bae@stantec.com
Victoria	Harris & Associates	victoria.orduno@weareharris.com
Yinu Guo	Central Contra Costa Sanitary District (CCCSD)	yguo@centralsan.org

Announcements and General Business:

Nancy opened the meeting and conducted the group's business.

1. Nancy thanked PUG members for a successful Annual Seminar held in February 2024.
2. Nancy reminded people about speaker slots for monthly meetings available for November, December, and January 2025.
3. Upcoming conference dates:
    a. CWEA Annual Conference (AC24) April 9-12, 2024, Sacramento, CA
    b. NASTT No-Dig Show, April 14-18. 2024, Providence, RI
    c. NASCO Conference - April 17-19, New Mexico
    d. AWWA Annual Conference (ACE 24) June 10-13, 2024, Anaheim, CA
    e. ASCE UESI Pipelines Conference, July 27-31, 2024 Calgary, Canada
    f. WEFTEC, New Orleans - October 5-9

Announcements:

1. Nancy mentioned that PUG board elections will be coming up in June and nominees will have a chance to introduce themselves at the May Board meeting.

2. Nancy mentioned that Solano Irrigation District is hiring an assistant/associate engineer, an engineering technician, and an intern.

Dustin La Vallee provided a recap of the January meeting minutes.

Alexandra Watson provided the financial summary report. The current total in the organization account as of February 29, 2024 was $90,452.59.

Project Discussions:

1. EBMUD provided an update on the Mokelumne Aqueduct Recoating project. There were 4 bids and the engineer's estimate was approximately $18.5M and the low bid was $15.2M. The project was awarded to the low bidder in February.
2. Nancy mentioned that large diameter HDPE pipe costs appear to be around half of PVC pipe costs and a third of the price of HDPE pipe two years ago.

Presentation:

"Data Driven Gravity Main Cleaning Optimization," Presenter: Lars Stenstedt, V&A Consulting Engineers.

Overview:

The presentation provided an overview on how data science and machine learning can be leveraged by small and medium sized collection systems for gravity main cleaning optimization. The presentation introduced and reviewed data science processes and best practices for collection systems and presented relevant case studies.

Highlights from the presentation include:

1. Sanitary Sewer Overflows (SSOs) have greatly reduced since 2008 due to stricter reporting requirements
2. Reactionary approach to optimize sewer cleaning
    a. Reactionary approach is based on manual adjustments and increasing frequency as needed
    b. Required good CMMS
    c. Does not leverage GIS attributes such as location, size, slope, material, etc
    d. Does not leverage or build on segment condition data (CCTV, etc)
3. Data is available for collection systems
    a. GIS data
    b. Cleaning crew observations
    c. CCTV
    d. SL-RAT
    e. Smart Cover
    f. SSO/Spills
4. Data Science and Machine Learning have created new options for using data
5. Technology progression:
    a. 1990's: IBM PC, Netscape Browser, Google Search Engine, 2010-present: iPhone, IBM Watson, Chat GPT
6. Steps to adding a data science process:
    a. Data - cleaning it, joining it, visualizing it
    b. Analytics - performing data quality assessment
    c. Using data in an application
7. Best Practices
    a. Verify each gravity sewer is cleaned or CCTV'd per plan / SSMP
    b. Gather Condition data during cleaning, be consistent / standardized

    c. Scrub and fine tune the hot spot segment cleaning list
    d. Incrementally add less frequently cleaned pipes
8. Cleaning crews can collect information during cleaning operations
    a. Rank 1 - 5 for FOG, roots and other potential SSO (debris, grit)
        i. Can be hard to get this data
        ii. Need to clean / join data
9. Case Study - Hillsborough
    a. Looked as CIWQS - collected past 5 years of data
    b. Cleaned data
    c. Assessed data and created a "Report Card"
    d. Used report card to generate GIS layer to color code pipes based on priority
    e. Created box plots showing "hot spots" and LOF scores
        i. Looked for patterns
        ii. Discussed segment by segment
10. Implementing data approach can prevent cleaning pipes that don't need it
    a. Key takeaway - verify that every gravity main is cleaned / CCTV'd per plan and gather condition data during cleanings.

Next Meeting:

The next general meeting is scheduled for Tuesday, April 9th, 2024 and will include a presentation by John Moody from Primus Liner. The presentation will focus on pressurized pipeline repairs. The April meeting will be held in-person at Brown and Caldwell's offices located at 201 North Civic Drive, Suite 300, Walnut Creek, CA 94596.

Please call Adam Brown at 831-521-9623 or email pugnorcal@gmail.com for additional information on this month's meeting minutes.