SVCW's RESCU Program:

Implementing a Collaborative CIP

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NorCal PUG 2020 Annual Sharing Technologies Seminar

February 20, 2020

SVCW
Silicon Valley Clean Water
One Drop at a Time

Importance of Culture in Capital Projects

Create a Collaborative Culture

HIRE COLLABORATIVE-MINDED PEOPLE

REWARD COOPERATIVE BEHAVIOR

TREAT PEOPLE FAIRLY

HAVE FUN!

REINFORCE/REPEAT

How did we build the CIP culture at SVCW?

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One Drop at a Time

Way back in 2008…

HIRE COLLABORATIVE-MINDED PEOPLE

REWARD COOPERATIVE BEHAVIOR

- Developed CIP Program
  - 131 Projects
  - $339 Million
- Hired Design and PM Consultants
  - Emphasis placed on consultants' ability to work collaboratively

Approach to Design Work

- Split up the Design Work based on strengths of designers
- Commitment to distribute work amongst firms
- Encourage collaborative discussions amongst designers through workshops
- Provide honest feedback

REWARD COOPERATIVE BEHAVIOR

TREAT PEOPLE FAIRLY

Approach to Construction Work

- Treat contractors fairly
- Expect fair treatment in return
  - Yes! Even in a low bid environment!
- Align CM and SVCW Management philosophies

TREAT PEOPLE FAIRLY

Then in 2014…

- Conveyance System Planning Hit a Snag
- SVCW initiated a Multi-Disciplinary Planning Effort to Evaluate Alternatives

REWARD COOPERATIVE BEHAVIOR

TREAT PEOPLE FAIRLY

Conveyance System Planning Group

- SVCW Engineering
- SVCW O&M
- Design Consultants
- Construction Managers
- Permitting Consultants
- CEQA Consultants
- Legal/Land Acquisition Consultants
- Public Outreach Consultants

Cost	Schedule	Environmental Impact
Stakeholder Impact	Operability	Maintainability

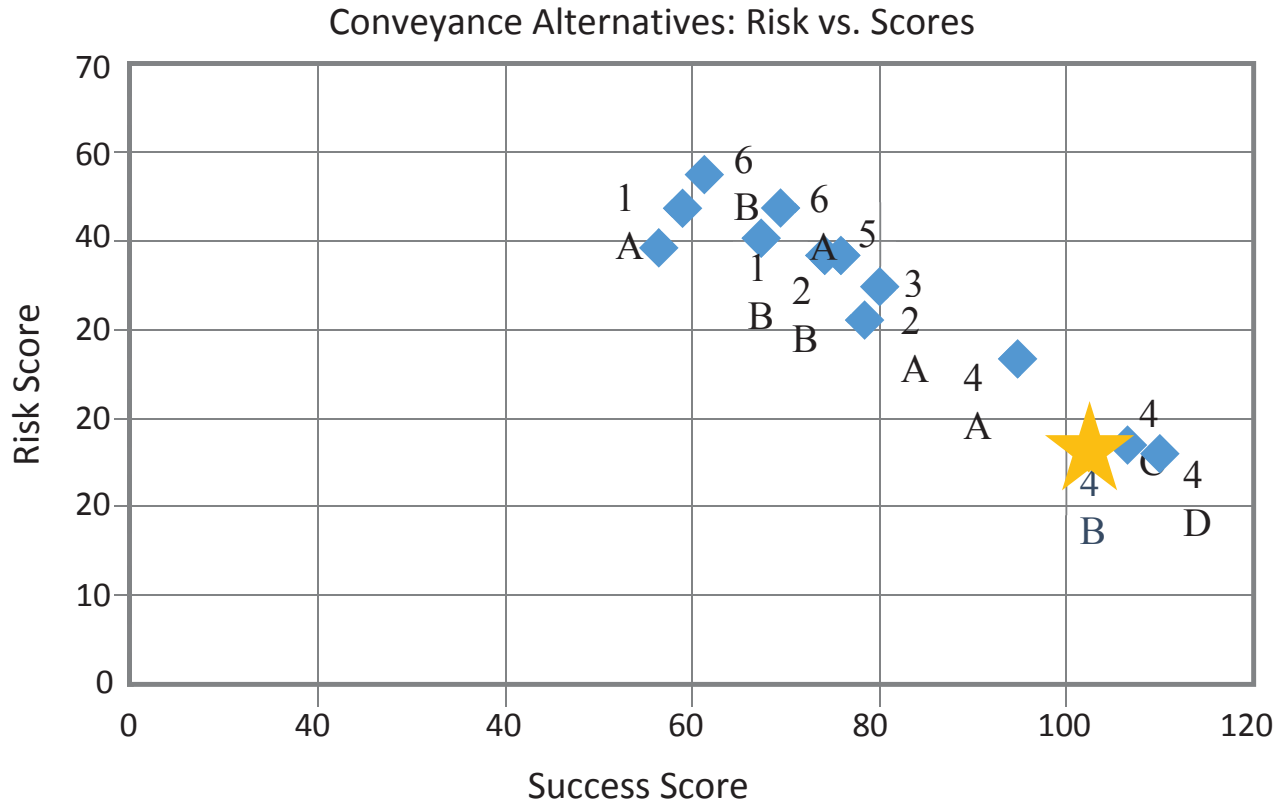
Success Criteria

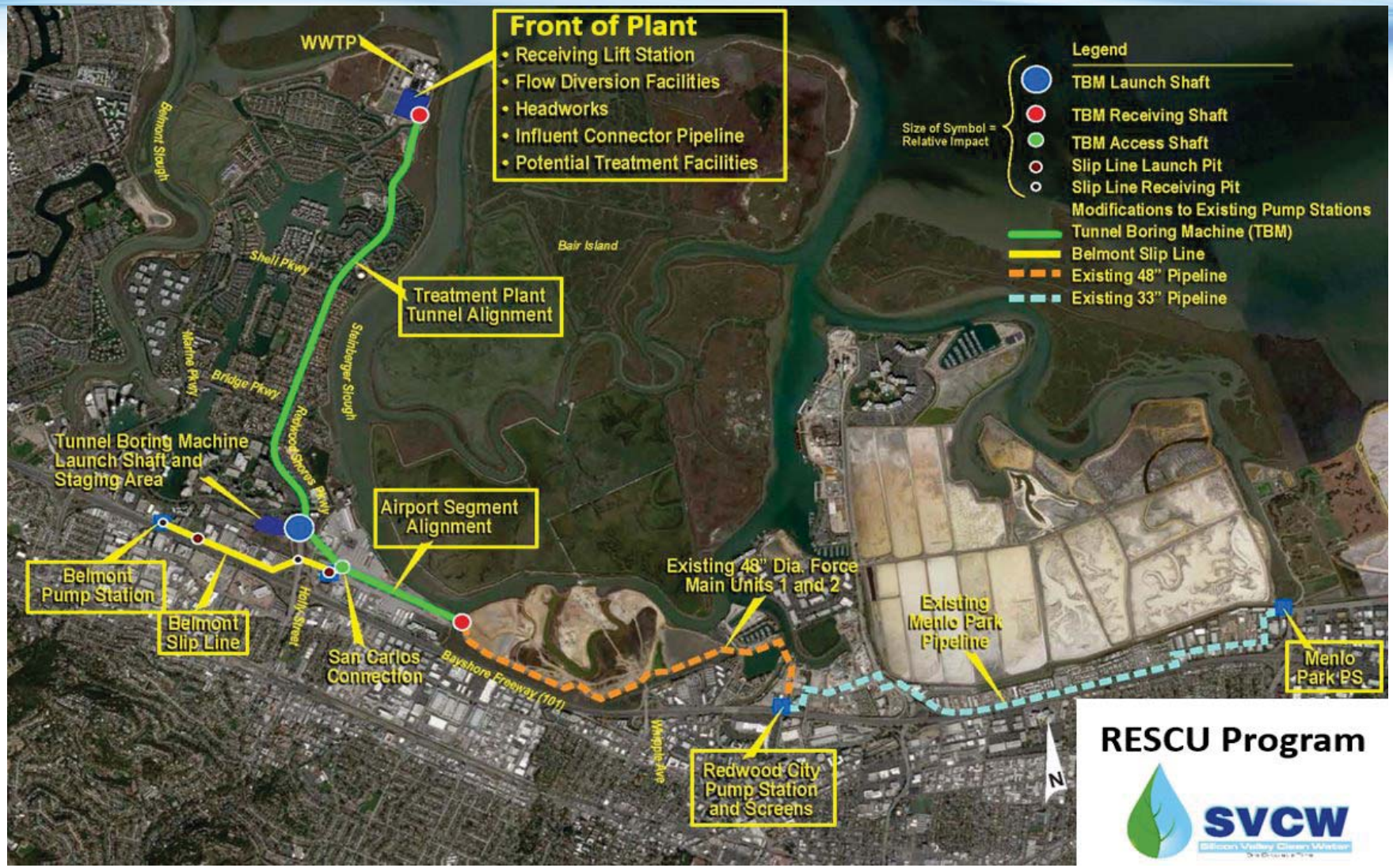
- **Operations //** Complexity of the facilities to operate, seismic event impacts, depth of pump station, and changes from current operating conditions.
- **Maintenance //** Maintenance success is dependent on equipment layout and access.
- **Safety //** Safety considerations include gravity pipeline length, access, construction traffic, road closures during construction, suitable work areas during construction.
- **Schedule //** Schedule considerations include timing of new facility operation, construction duration, PG&E coordination, duration of pre-construction activities, acquisition of permits, and easement acquisition.
- **Stakeholder Impacts //** Stakeholder success is dependent upon impacts to the community during construction, impact on private property value, visual impacts of above grade facilities, and acceptability by the public and impacted agencies.

Risk Criteria

- **Cost //** Cost risks include potential risks based on construction method, unforeseen circumstances, and future environmental impact.
- **Operations //** Operational risks include system failure, pump station failure and/or spills.
- **Safety //** Safety risks include leaks, spills, environmental damage, or damage caused by unforeseen circumstances.
- **Schedule //** Schedule risks include potential delays due to environmental review, permit acquisition, and property acquisition.
- **Stakeholder Impacts //** Stakeholder risks include conflict with regulatory agencies, jurisdictional areas, the general public, and private property owners within the vicinity of the conveyance system facilities.

Path to Deep Gravity Pipeline – Success vs. Risk Analysis




Front of Plant
• Receiving Lift Station
• Flow Diversion Facilities
• Headworks
• Influent Connector Pipeline
• Potential Treatment Facilities
WWTP
Legend
TBM Launch Shaft
TBM Receiving Shaft
TBM Access Shaft
Slip Line Launch Pit
Slip Line Receiving Pit
Size of Symbol = Relative Impact
Modifications to Existing Pump Stations
Tunnel Boring Machine (TBM)
Belmont Slip Line
Existing 48" Pipeline
Existing 33" Pipeline
Belmont Slough
Bair Island
Shell Pkwy
Treatment Plant Tunnel Alignment
Marine Pkwy
Bridge Pkwy
Redwood Shores Pkwy
Steinberger Slough
Tunnel Boring Machine Launch Shaft and Staging Area
Airport Segment Alignment
Belmont Pump Station
Belmont Slip Line
Holly Street
San Carlos Connection
Bayshore Freeway (101)
Existing 48" Dia. Force Main Units 1 and 2
Existing Menlo Park Pipeline
Menlo Park PS
Redwood City Pump Station and Screens
Maple Ave
N
RESCU Program
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Three Major CIP Projects

>$400M in construction costs

Front of Plant

- 80 MGD, 90-ft deep lift station
- Preliminary treatment
- $120M USD

Gravity Pipeline

- 17,200 LF gravity pipeline
- 11-ft inside diameter
- $220M USD

Pump Stations

- Rehab/replace two pump stations
- New gravity pipeline
- $65M USD

Brown AND Caldwell

FREYER & LAURETA, INC.

HIRE COLLABORATIVE-MINDED PEOPLE

CDM Smith

Kennedy Jenks

Shout Outs

WEST YOST ASSOCIATES

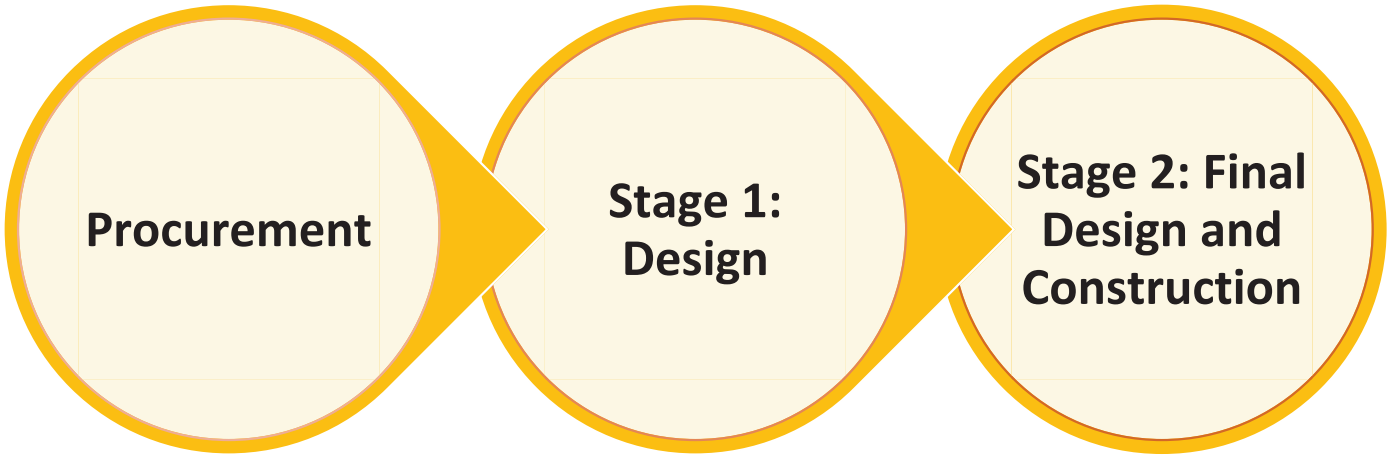
TANNER PACIFIC

HIRE COLLABORATIVE-MINDED PEOPLE

A New Opportunity for Collaboration

- California SB 785 went into effect Jan 1, 2015
  - Allowed for Design-Build Contracting Method

Progressive Design-Build



- Team selection
- Qualifications
- Project approach
- Price component

- Collaborative design with designer, builder, and Owner (O&M, Engineering, etc.)
- Design deliverables: BODR, 30%, 60%
- Cost estimates at major milestones

- Complete the design
- Construct facilities
- Startup, testing, and joint operation

Why did SVCW Choose Design-Build?

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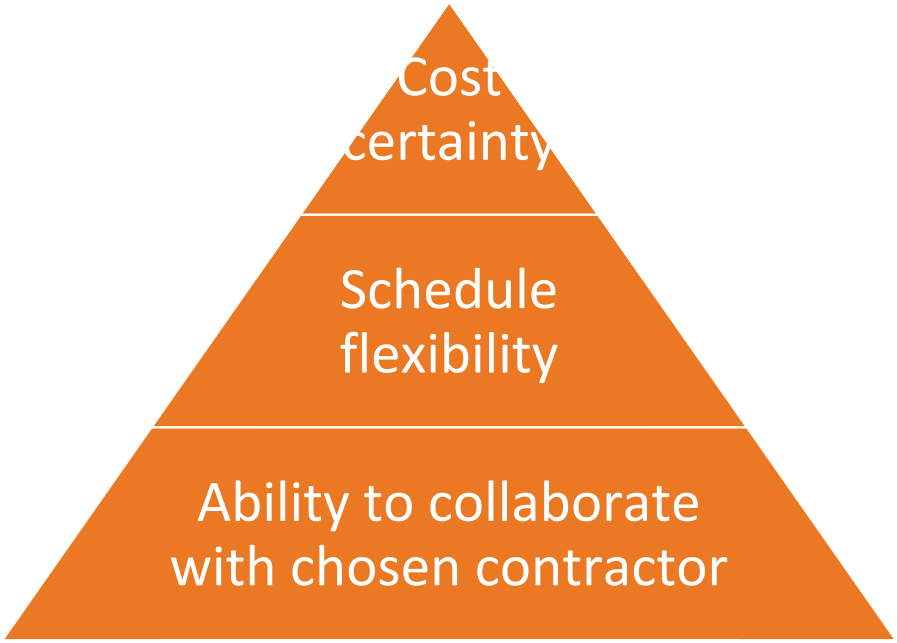
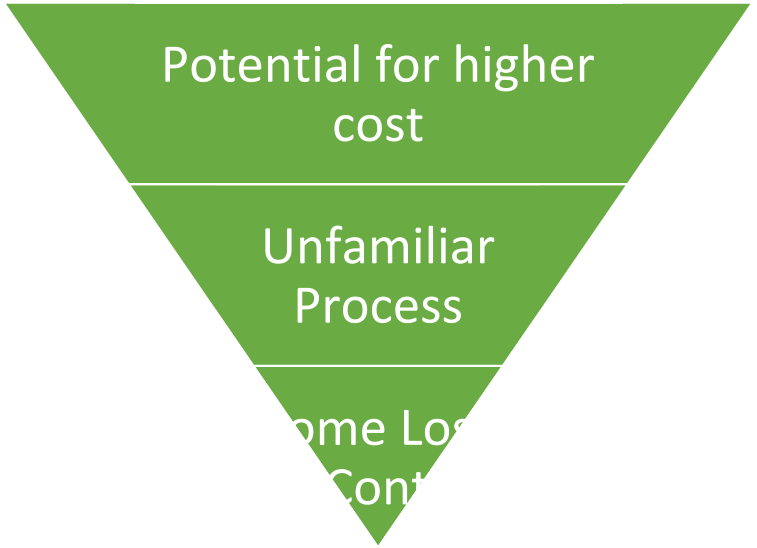
Pros



Cons



HIRE COLLABORATIVE-MINDED PEOPLE

Procuring the Right Team

- **Step 1: RFQ and Short-Listing**
  - Score references
  - Short-list respondents
- **Step 2: RFP and Selection**
  - Review proposals
  - Conduct site visits to reference facilities
  - Conduct interviews
  - Select and negotiate


SVCW

Partnering for our Water Future — One Drop at a Time

Notice to Prospective Designers and Contractors

Silicon Valley Clean Water (SVCW) will be initiating a selection process for the progressive design build (PDB) of two major projects (construction estimate of $80 to $150 million each). SVCW is a regional joint powers authority in the San Francisco Bay Area region of California. The current SVCW wastewater conveyance system consists of four pumping stations and a long force main that conveys all the wastewater from SVCW's four member agencies to the wastewater treatment plant. The currently failing system will be replaced with a new conveyance system consisting of three pump stations, a deep gravity sewer constructed by tunnelling (Gravity Pipeline), Receiving Lift Station/Headworks (screening and grit removal)/Interconnection Pipeline/ Odor Control/Electrical Infrastructure (Front of the Plant).

The Gravity Pipeline (GP) and the Front of the Plant (FoP) projects will each be designed and constructed using a Progressive Design Build (PDB) project delivery method. Separate PDB procurement processes will be used for the GP and FoP projects. PDB team selection will use a two-step process with Requests for Qualifications and Requests for Proposals. SVCW will shortlist three PDB teams after the RFQ step then issue an RFP to the three short-listed PDB teams. PDB firms interested in SVCW's projects are invited to submit SOQs for either or both projects.

Requests for Qualifications are anticipated to be issued by SVCW in mid to late April 2017.

Requests for Proposals are anticipated to be issued by SVCW in June/July 2017.

A Draft Environmental Impact Report has been prepared for the overall conveyance system project and is available for viewing at **www.svcw.org**. Interested parties are encouraged to view the document to become acquainted with the projects.

Outreach Meetings

Outreach meetings to provide information and respond to questions about the projects will be as follows:
1400 Radio Road, Redwood City, CA
Time is 0900 to 1200
- **Gravity Pipeline, March 22, 2017**
- **Front of the Plant, April 5, 2017**

Excluded Firms

A group of consultants are currently involved in work related to the PDB effort as consultants or advisors to SVCW and are excluded from participating in these projects as part of a PDB team. A list of these excluded consultants is available on the SVCW website.

SVCW will require all respondents to use a named firm for System Integration services. The firm and contact information is available on the SVCW website.

Contact Information

For more information related to these projects prior to the RFQ being issued, contact:
Ms. Teresa Herrera
Owner's Representative
650-832-6220 or therrera@svcw.org

Gravity Pipeline

Front of Plant

Silicon Valley Clean Water • www.svcw.org
1400 Radio Road, Redwood City, CA 94065-1220 • Phone: (650) 591-7121, Fax: (650) 591-7122

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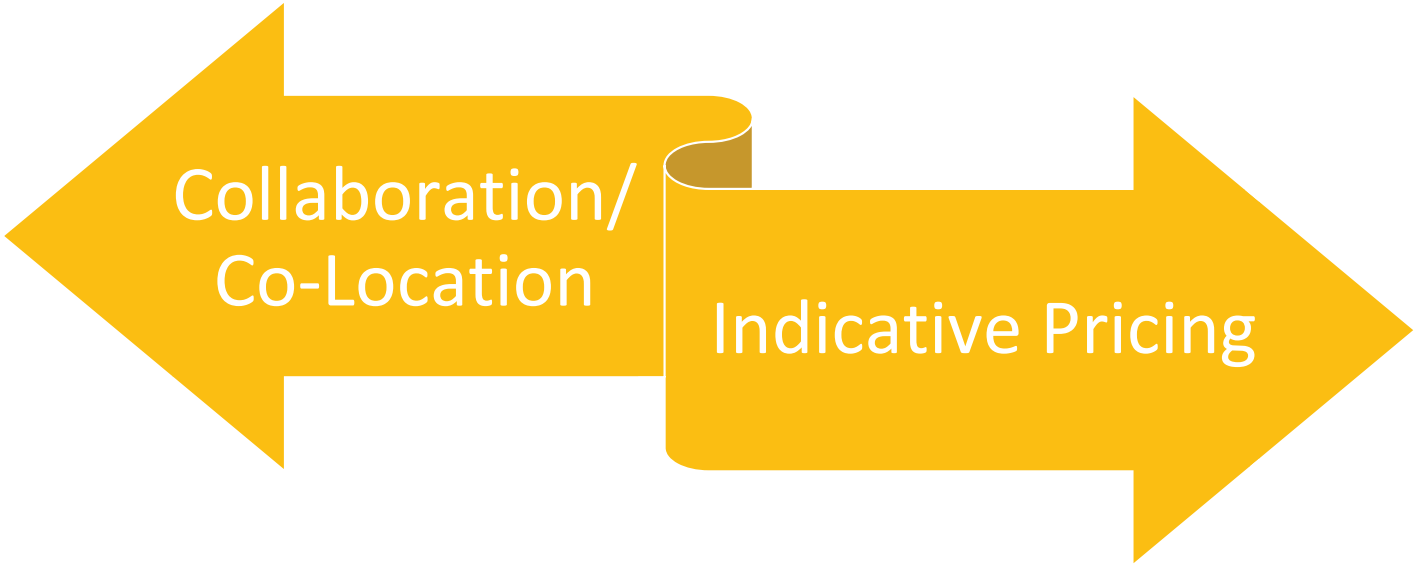
Unique Aspects of Procurement



HIRE COLLABORATIVE-MINDED PEOPLE

Collaborative Team Ready to Co-Locate

- **Face-to-face contact during procurement process**
  - Pre-SOQ meetings
  - SOQ interviews
  - Confidential meetings
  - Proposal interviews
- **Reference Site Visits**
  - Unique perspective on how teams interacted with Owner's staff
  - Insight on different stages of project
  - Sometimes mixed feedback
  - Direct contact with SVCW O&M staff and owner's staff

HIRE COLLABORATIVE-MINDED PEOPLE

Indicative Pricing

- Indicative pricing a requirement for all proposers
- Cost estimate evaluated by an independent committee to determine:
  - Understanding of the project
  - Transparency of Design-Builder
  - Basis of negotiation for subsequent cost iterations

Current Program Status

Gravity Pipeline Project

- Stage 2 Contract Signed with Barnard Bessac JV in 2018
- Approximately 2,000 feet tunneled so far

Front of Plant Project

- Stage 2 Contract Signed with Shea/Parsons JV in 2018
- Construction about 30% complete

Pump Station Improvement Project

- Stage 1 Contract Deliverables in Review
- Stage 2 Contract expected in April/May with Shea/Parsons JV

Did we Create a Collaborative Culture?

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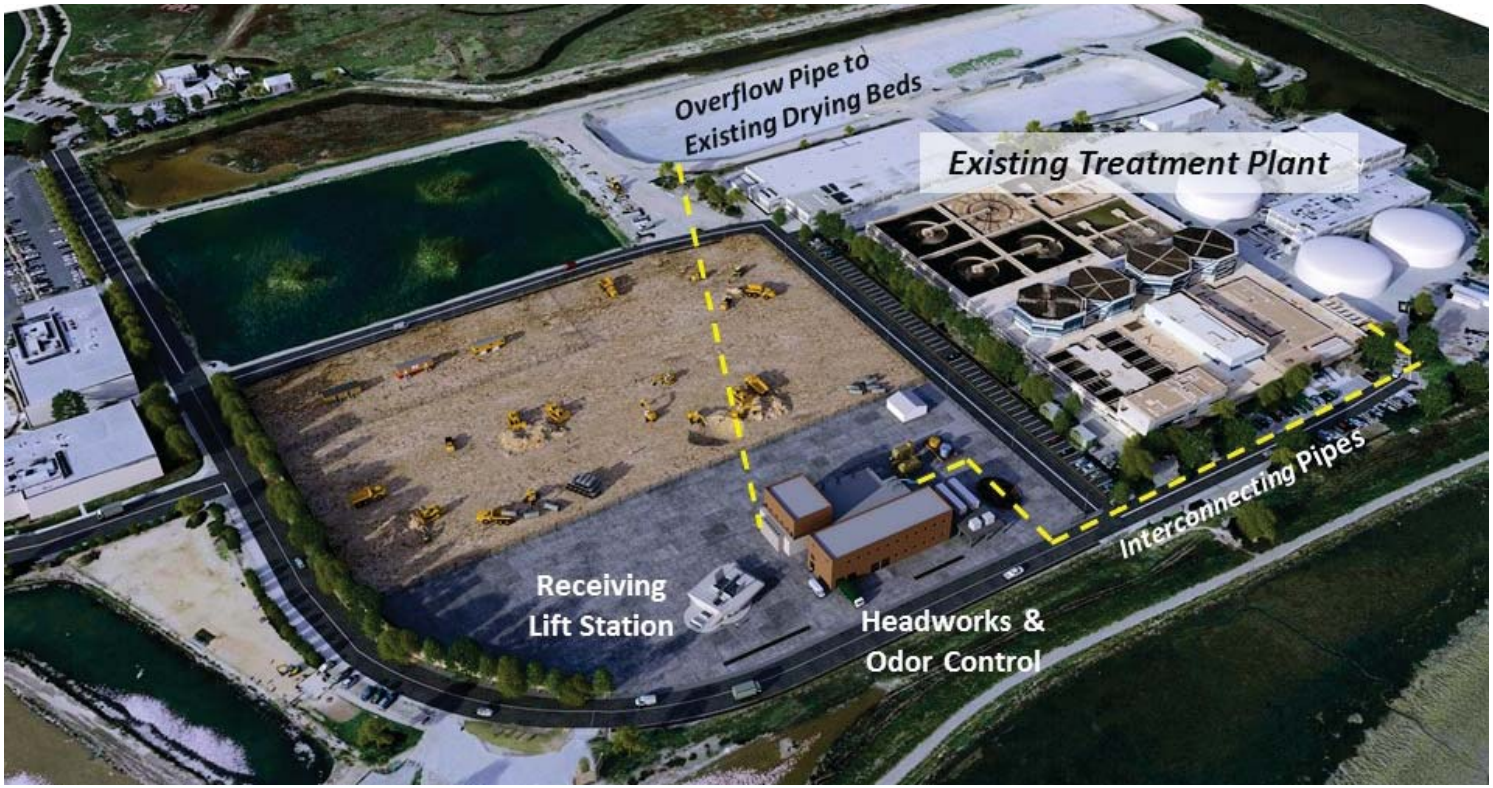
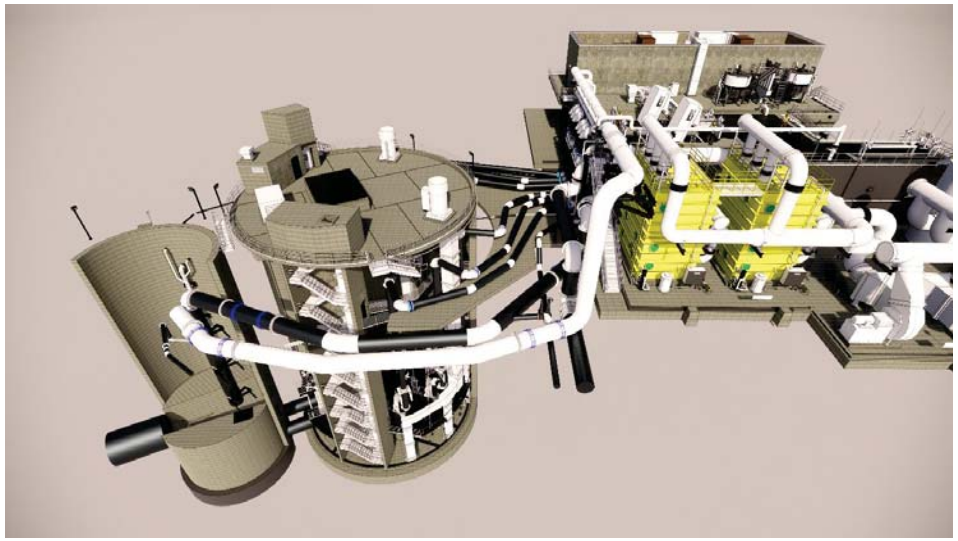
Front of Plant



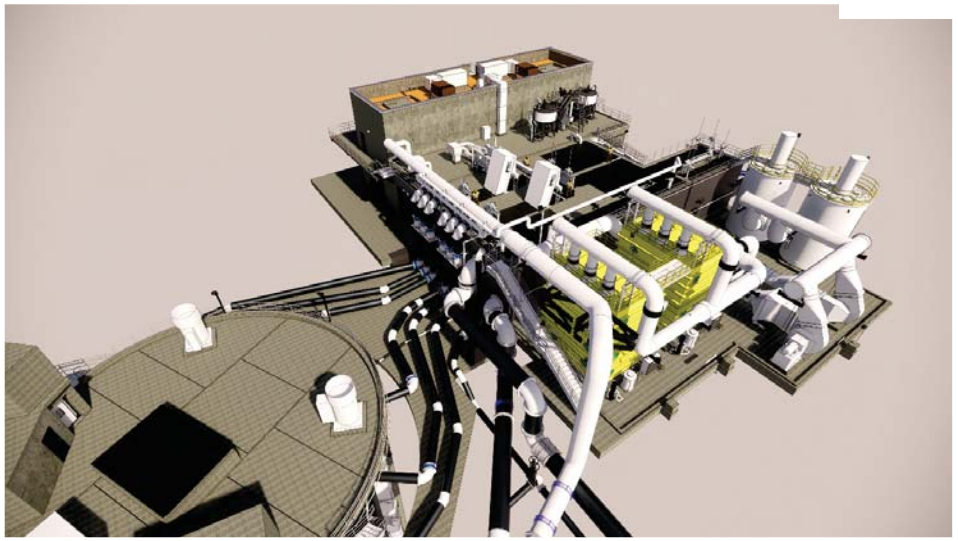
HAVE FUN!

Progress of Front of Plant Project

HAVE FUN!

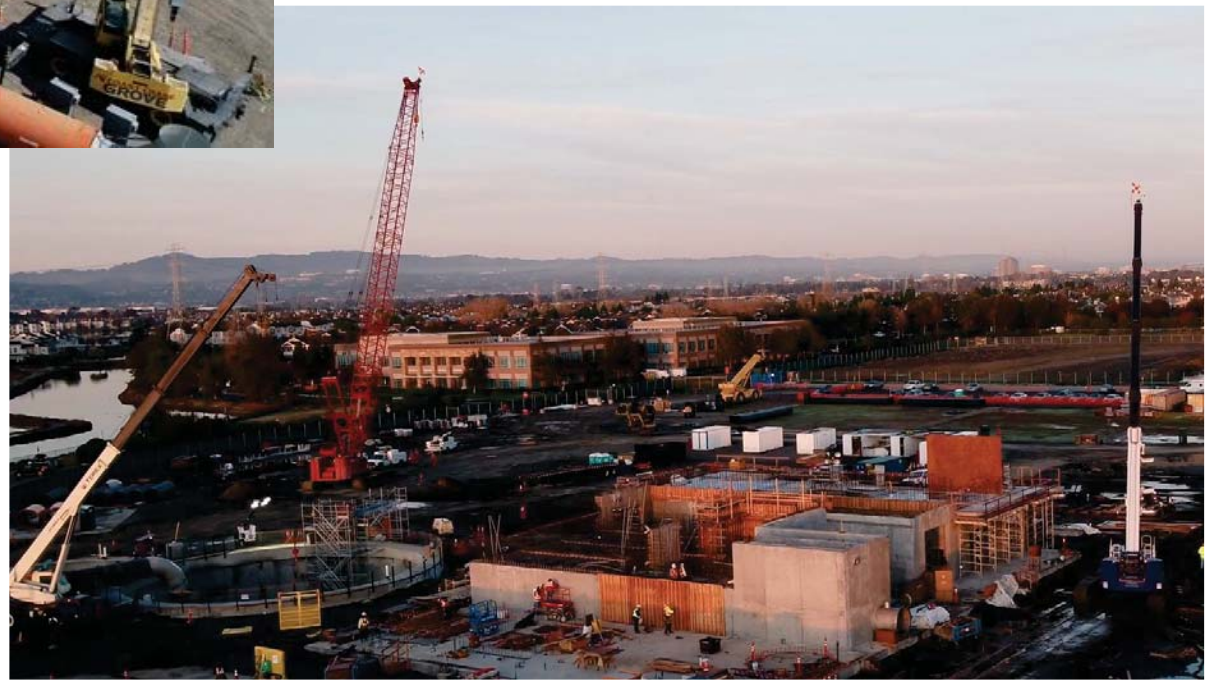


Section View of Receiving Lift Station (Stage 1 Design) – Dual manifold-based pump station with dry-pit submersible pumps (under design by Shea-Parsons JV)



Two screen channels, two grit separators, and two grit washer/dewatering units in a consolidated structure (under design by Shea-Parsons JV)

HAVE FUN!

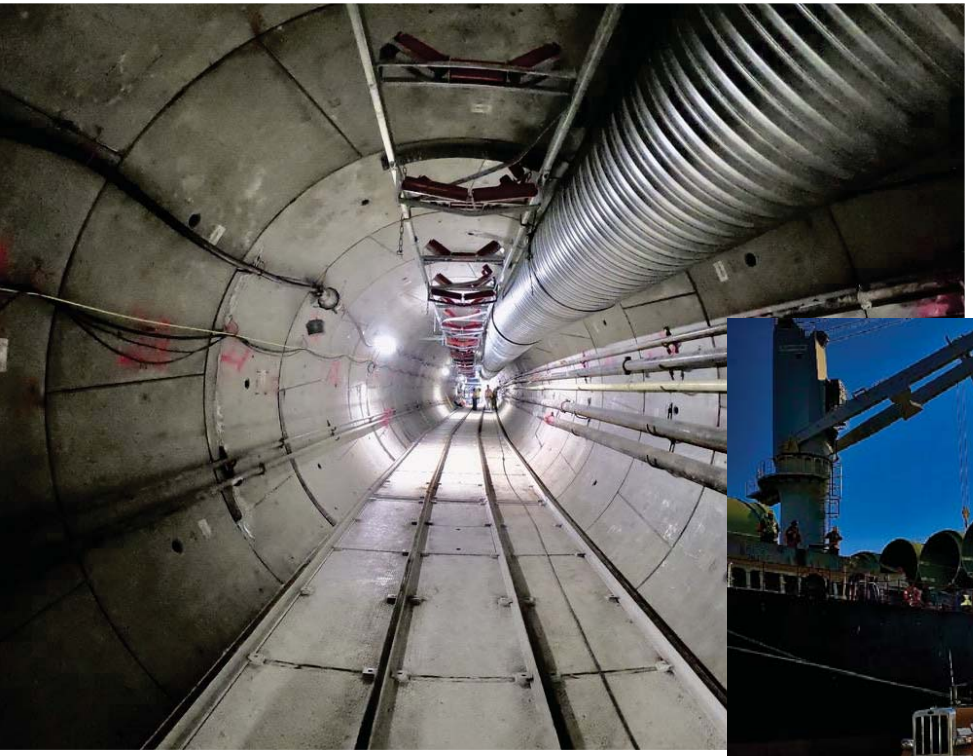


Gravity Pipeline Project Overview

- Replace 50 year old failing force main
- 17,500 LF of tunneling (~3.5 miles
- 16.5 ft diameter TBM
- One launch shaft – two tunneling drives – two receiving shafts

HAVE FUN!

Gravity Pipeline Project Progress



- Raw wastewater conveyance using 10-ft & 11-ft dia FRP
- FRP fabbed in Indonesia, shipped to Port of Stockton, stored in Sunol, CA

HAVE FUN!

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One Drop at a Time

www.svcw.org

https://svcw-rescu.org

https://www.facebook.com/siliconvalleycleanwater/

https://twitter.com/SVCWNews