Pump Station Improvements Outreach Meeting

June 27, 2018
Agenda

• Introduction (Kim)
• Pump Station Improvement Project – Overview (Charlie)
• Procurement Process and Stages (Bob)
• Key Parts of the RFQ (Bob)
• Estimates, Budgets and Pricing (Bob)
• Available Information (Bob)
• Questions (Please ask along the way)
SVCW PSI Project Team

- SVCW Owner’s Representative – Teresa Herrera
- Project Manager – Bob Donaldson – Collaborative Strategies Consulting, Inc.
- Owner’s Advisor – Charlie Joyce – Brown and Caldwell
- Connecting Project – Gravity Pipeline
  SVCW Project Manager – Bruce Burnworth
  Owner Advisor – Mark Minkowski – Kennedy/Jenks
PSI Project – Overview

• Background
• Flows
• Project Elements – by location
  – Existing
  – Project Concept
• Status of EIR, Permits and Easements
• Availability of SVCW Funding
Background
Problem we need to Solve

- 4 pump stations with a Booster Pump Station and Influent Lift Pumps
- Joints every 12 ft in RCP Force Main thru YBM
  - Design useful life = 25 to 50 years (ASCE; EPA)
  - Pipe is 45 years old
  - Currently operating at 2.5 times design pressure
  - 64 leaks so far; rate of failure is increasing
  - Leaks are time-consuming, disruptive and expensive to repair . . . potentially catastrophic.
Pipe cracked
(not a joint separation)

Raw sewage flowing from separated and offset joint
Pump stations are getting old and worn...
Numerous Alternatives Considered

**2012/2014**
- Pump Station Upgrades +
- Open Cut in Street
- Open Cut in Levee
- Lay in Slough
- Lay in Lagoon
- Microtunnel (shallow)

**2014/2015/2016**
- Microtunnel (deep)
- Tunnel Boring Machine (deep)
  - From SVCW Plant
  - From near Airport
- Sliplining (w/ bypass)
- Parallel Smaller Pipes
- Pipe Bursting (w/ bypass)
- Replace in place (w/bypass)
- Rehab/Replace 3 Pump Stations
- New RLS - HW
PSI Conceptual Flow Conditions

<table>
<thead>
<tr>
<th>Flow Condition</th>
<th>MPPS (mgd)</th>
<th>RCPS (mgd)</th>
<th>BPS (mgd)</th>
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<tbody>
<tr>
<td></td>
<td>Exist</td>
<td>Future</td>
<td>Exist</td>
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<tr>
<td>Average DWF</td>
<td>3.7</td>
<td>4.6</td>
<td>4.5</td>
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<tr>
<td>Peak DWF – hourly</td>
<td>10.2</td>
<td>10.0</td>
<td>11.1</td>
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<tr>
<td>Min DWF – hourly</td>
<td>0.2</td>
<td>0.9</td>
<td>0.3</td>
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<tr>
<td>PWWF – hourly</td>
<td>22</td>
<td>38</td>
<td>60</td>
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</table>

• Existing – October 2015
• Future – 2040
  – RCPS PWWF includes MPPS flows
PSI Conceptual Hydraulic Gradeline

BELMONT CONVEYANCE

To Front of Plant

MPPS and RCPS

FORCEMAIN

GRAVITY PIPELINE

80 MGD PWWF
60 MGD Peak Process Flow
23 MGD 72-inch ICP Used
22.5 MGD 48-inch ICP Used
12.5 MGD Equalized ADWF

Sewer Conveyance Upgrade
Menlo Park Pump Station - MPPS

- Project Planning Report – see SVCW.org
MPPS Data – Lidar of Pump, Motor, Electrical Rooms

MPPS Motor Room
MPPS Improvement Concept

- Modify inlet channels / wet wells
- Install removable trashracks
- Add odor control
- *Replace 5 - 85 HP pumps with chopper dry pit pumps
- Replace piping in pump station
- Remove dual manifolds
- New flow meter
- New sampling ports and sampler
- New seismic upgrades to building
- Civil site improvements / flood protection
- New electrical, including standby generator
- New I&C
- New CARVs located along Force Main
MPPS Sketchup Model

- Replace 1 Manifold
- Remove old Manifolds
- New Generator
- New Dry-Pit Submersible Pumps (Chopper)
- New Trashracks
- Wet Well
- Hydraulic Updates
Redwood City Pump Station

- PPR–SVCW.org
RCPS - Site
RCPS Data – Lidar of Pump, Motor, Electrical Rooms
RCPS Improvement Concept

- Connect to 60-inch Sewer
- *New Screens
- New Odor Control
- *4 - 50 HP Dry and 4 - 400 HP Wet Weather pumps - Double pump MPPS wet weather flow
- *Dual trench style wetwell with dry pit submersibles
- New flow meter
- New sampling ports and sampler
- New seismic upgrades to building
- Civil site improvements / flood protection
- New electrical, including standby generator, relocate transformer
- New I&C
- New Surge Control

**Diagram:**
- New 60” Sewer
- Screens 42’ x 35’
- Truck Access
- New Pump Station
- Chemical Storage
- Generator Location
- Diesel Fuel Storage
- Relocated Transformer
- Surge Tanks

*Note: Diagram shows new facilities including chemical storage, generator location, and diesel fuel storage.*

**Legend:**
- New Sewer
- Water
- Flow Direction/ Existing
- New Facilities

**Sources:**
- SVCW
- RESCU – Regional Environmental Sewer Conveyance Upgrade
RCPS – Local Project(s) Coordination

San Mateo Correctional Facility and Homeless Shelter

March 2018.
Belmont Pump Station - Site

- PPR – SVCW.org
BPS – Improvement Concept

- 3 new dry pit submersibles -75 HP
- New grinder
- New odor control
- Relocate flow meter and sampler to San Carlos PS site-Part of GP Project
- New generator
BPS Sketchup Model

- New Generator
- Exhaust Ducts to be Rerouted to Odor Control System
- New Grinder Location (Grinder Not Shown)
- Influent Sluice Gate
- New Suction Piping
- Supply Air Ducts
- Existing Motor Room
- Discharge Piping
- To SCS
- New Dry Pit Submersible Pumps
- Influent Channel Opening into Wet Well

S.W. Elevation

Sewer Conveyance Upgrade
Belmont Force Main

- 1,150 ft of 24-inch FM – CIPP Rehabilitation
- 3,550 ft of 54-inch FM – HDPE Slipline Rehabilitation
- Belmont PPR-SVCW.org
CIPP Access at BPS
Belmont Tee Connection
Holly and US-101 Access Pit
## PSI Facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>Pumps / Hydraulics</th>
<th>Odor Control</th>
<th>Electrical</th>
<th>Instrumentation</th>
<th>Seismic</th>
<th>Site Civil</th>
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<tr>
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<td>Belmont Pump Station (BPS)</td>
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<td>Belmont Force Main (BFM)</td>
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- Menlo Park Pump Station (MPPS)
  - Dry Pit - Chopper pumps
- Redwood City Pump Station (RCPS)
  - Screens
  - Wet well/dry pit submersible
- Belmont Pump Station (BPS)
  - Dry pit submersible
- Belmont Force Main (BFM)
Current Project Concept

• SVCW will share the studies and alternatives developed to-date including summary planning reports and current project concepts

• We expect to work collaboratively with the PDB during Stage 1 to refine these concepts to best meet SVCW objectives and D-B to budget
**EIR Status**

- Draft EIR November 2016
- Adopted April 2017
- Available on SVCW.org website
Environmental Permits

• Environmental Permit Applications submitted December 2016
  – BCDC for PSI still needed to be acquired by SVCW
  – California F&WS

• Acquired October 2017

• SVCW anticipates obtaining its own Air Permit to construct
Funding

• SVCW has bonding capacity to obtain bonds for entire program
• SVCW is pursuing less expensive funding
  – SRF
  – WIFIA
Procurement Process and Stages of Design-Build

• Why Progressive Design Build
• RFQ/RFP
• Stage 1/Stage 2 with Phases
• Schedule
Why Progressive Design Build

- Coordinate and accelerate completion of overall Project relative to DBB delivery
- Promote a cooperative and collaborative relationship between SVCW and the PDB team
- Incorporate ongoing cost modeling and take a “design-to-budget” approach
- Flexibility for phased design and construction
- Early and ongoing staff involvement and training
RFQ/RFP Process

• Step 1:
  – RFQ issuance,
  – Pre-submittal meeting
  – Reference checking
  – Interviews with selected Respondents,
  – Shortlisting of up to three Respondents.

• Step 2:
  – RFP issuance to short-listed Respondents,
  – Confidential Meetings with each short-listed Respondent
  – Reference checking
  – Interviews
  – Selection of winning Respondent
  – Negotiation of Progressive Design Build Contract
    (Stage 2 pricing via amendment)
Stage 1/Stage 2 with Phases

• Stage 1
  – Collaboratively bring the design from a 5% to 10% level to a 60% to 70% level
  – Negotiate Stage 2 Contract Pricing and Schedule
• Stage 2
  – Final design (100%)
  – Construction
  – Testing and Start-up including 3-6 month cooperation of facilities.
• Construction Phases
  – As needed to move project forward
Design Progression during Preconstruction

• Selected PDB Entity is encouraged to propose alternative designs within defined direction

• Selected PDB Entity is encouraged to propose cost savings and optimization improvements

• Selected PDB Entity must develop collaborative relations with SVCW Operations and Maintenance
## Current PSI Delivery Schedule

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<thead>
<tr>
<th>Stage 1 - Design/GMP Negotiation</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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Anticipated Procurement Schedule

• Issue RFQ                      Shortly after July 12
• Pre SOQ Presentation           Week of July 30
  Site Visit
• SOQ Submission                 August 24
• SOQ Interview and Shortlist    Week of September 24
• RFP Issued                     Week of October 1
• Proposals Due                  December 10
• PDB Interviews                 Early January 2019
• PDB Team Selected              Early January 2019
• Stage 1 NTP                    Late February 2019
• Stage 2 Approval               January 2020

Construction: ~Three years
Key Parts of the RFQ

- **Project or RESCU Success Factors**
  - A successful project is a balance of these

- **Pump Station Improvement Project Objectives**
  - Collaboration and Operations and Maintenance involvement are key

- **Availability and use of background information**
  - SVCW Website Based
  - Planning reports and the EIR
  - Proposers should not be limited by the concepts shown, unless directed approach identified

- **Required elements of SOQ**
**RESCU Success Factors**

“Success” - **collaboratively** implementing an **appropriate balance** of the following:

- **Cost:** Provide a complete functional conveyance system that meets the goals of the Program at the **lowest practical capital and lifecycle cost.**
- **Operations:** Produce projects that are **easy, efficient, and effective to operate.**
- **Maintenance:** Produce projects that **minimize required maintenance.**
- **Safety:** Implement projects that are **safe** to construct, operate, and maintain.
- **Schedule:** Place new wastewater conveyance system projects into operation with **best practical safe speed,** while maintaining the present level of service with existing facilities.
- **Stakeholder Impacts:** Solicit, evaluate, and respond to stakeholder’s concerns, and implement a Program that **best meets the combined needs of stakeholders while reaching the Program’s goals.**
Pump Station Improvement Project Objectives

• **Quality**: The PSI Project to reliably receive, pump, and convey wastewater over a 50-year service life, and that fully complies with environmental requirements.
• **Cost**: Design to Budget.
• **Schedule**: Bring new facilities online in coordination with the GP Project so existing failing pipeline and pump stations can be taken out of operation as early as reasonably possible.
• **Risk**: Assign to the party best able to manage the risk.
• **Safety**: Implement an effective safety program incorporating best practice industry practices.
• **Accountability**: Design-Builder to provide for a single point of accountability for performance of all services under Stage 1 and Stage 2. SVCW to provide a single point of accountability for all direction to the Design-Builder.
• **Collaboration**: Implement an integrated design process that collaboratively includes SVCW management, engineering, operations and maintenance as well as the Design-Build contractor and engineer to develop a design that optimally achieves SVCW success factors and PSI requirements.
• **Innovation**: design innovation and construction / sequencing options to be considered that may lead to capital or life cycle cost savings, and/or to improved functionality.

**SVCW**

**Regional Environmental Sewer Conveyance Upgrade**
Required Elements in RFQ

• Team structure
  – (responsible designers and construction principals for the PSI)
• Key personnel and resumes for above
• Experience collaborating with owners
• Experience collaborating with interdependent projects
• Experience collaborating with Operations and Maintenance
• Demonstrated methods of delivered project safety

Pass - fail items, financial, insurance, bonding, etc.
Questions on RFQ Stage?
Estimates, Budgets and Pricing-RFP

• Budget vs Current Cost Estimate
  – Design to budget
• Firm Lump Sum for Stage 1-Preconstruction
• Markups for Stage 2
• Indicative Pricing for Stage 2-Construction
  – Based on project as currently defined in EIR
  – Indicative pricing to be used in scoring
Focus Areas during early PDB Preconstruction Services (Stage 1)

• Equipment configuration and sizing
• Controls and SCADA approach
• Hydraulic conditions
• Final Diameter of Belmont FM Rehabilitation
• Construction sequencing
• Bypass system(s)
• Seismic upgrades to building
• Site civil improvements – flood protection
• Project cost and schedule
Project Cost and Schedule

• Reduce PSI cost
• Accelerate PSI schedule
  – Connect MPPS and RCPS when GP takes flow
  – Connect BPS and BFM within a year after existing FM available for rehabilitation
• Achieve 50 year service life
• Achieve diurnal and wet weather flows
  – Existing
  – 2040
Available at SVCW.ORG

• Now
  – Final Adopted EIR
  – Today’s Presentation – Sign-in list
  – Notice to Prospective Designers and Contractors
  – List of Ineligible Firms and Required Firm – July 3, 2018
  – Project Planning Reports
    • Geotechnical Data
    • Includes detailed cost estimates; capital and life cycle
    • Details outstanding issues at time of PPR

• During SOQ preparation
  – Current concept updates to PPRs – late July
  – Pre SOQ presentation and site visits
More questions?
Pumpstations@svcw.org

*Thank you for your interest!*