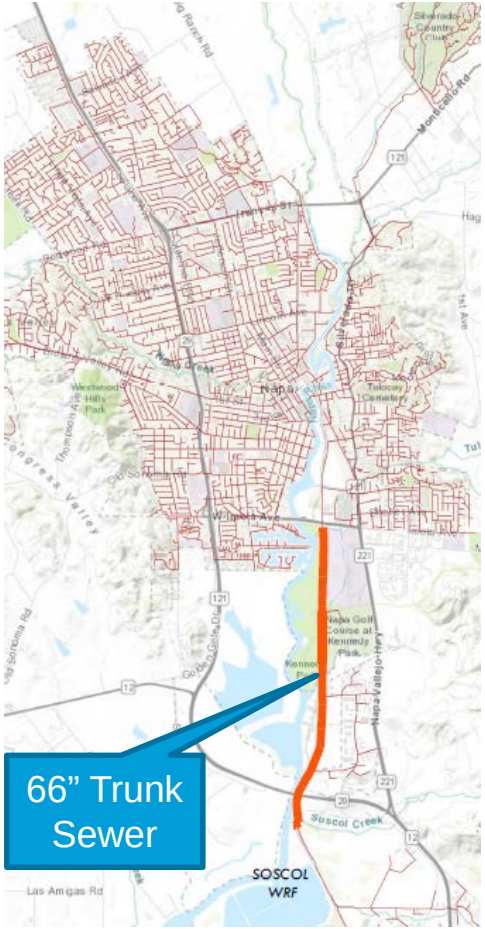
Award Task Order for 66-inch Trunk Sewer Condition Assessment (CIP 19701)

Napa Sanitation District

Board of Directors Meeting

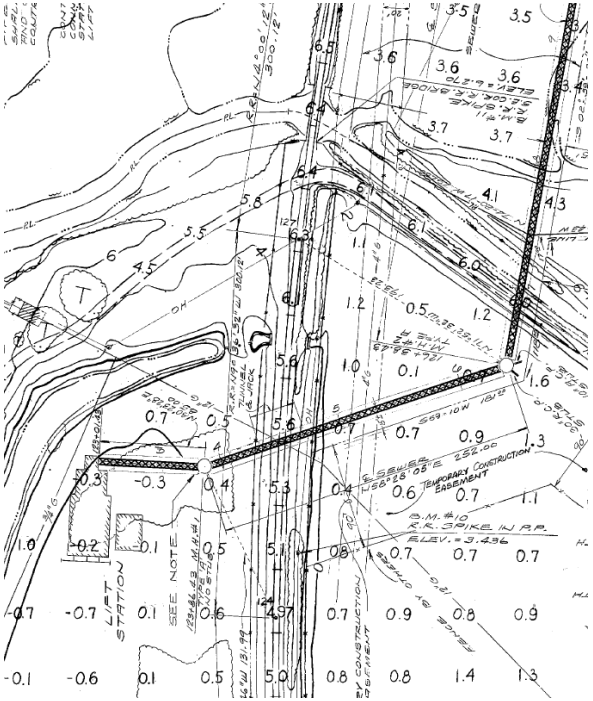
June 6, 2018



Background

- 15,400 LF (~3mi length)
- 66” RCP - unlined
- Criticality
  - Conveys over 90% of flow to treatment plant
  - Extends along east bank of Napa River
  - No redundancy

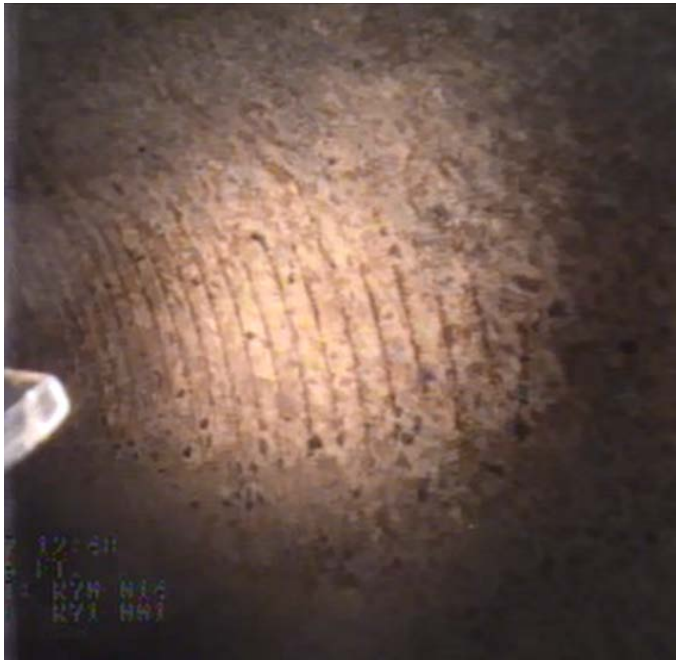
Background



- Constructed in 1967
  - Outfall line from Imola plant to oxidation ponds
- Began conveying untreated sewage in 1998
- Inspection history:

  2001, 2012, 2017 (partial)

2017 Video Inspection



Manhole Entries

Internal Condition Assessment

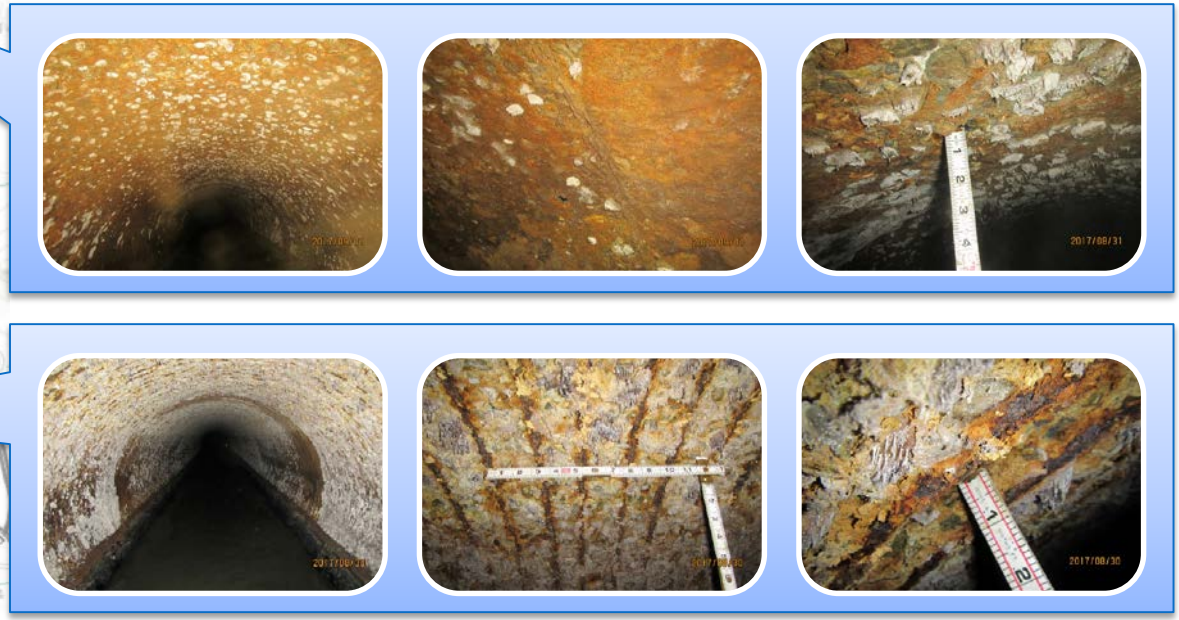
- Characterize CCTV observations
  - Surface pH
  - Penetration testing
  - Sounding
  - Surface penetrating radar

Internal Condition

- Corrosion observed at all entries
- Structural deterioration along lower third
- Loss of concrete hardness and wall thickness

Internal Condition

Varies along alignment



Test Pit Excavations

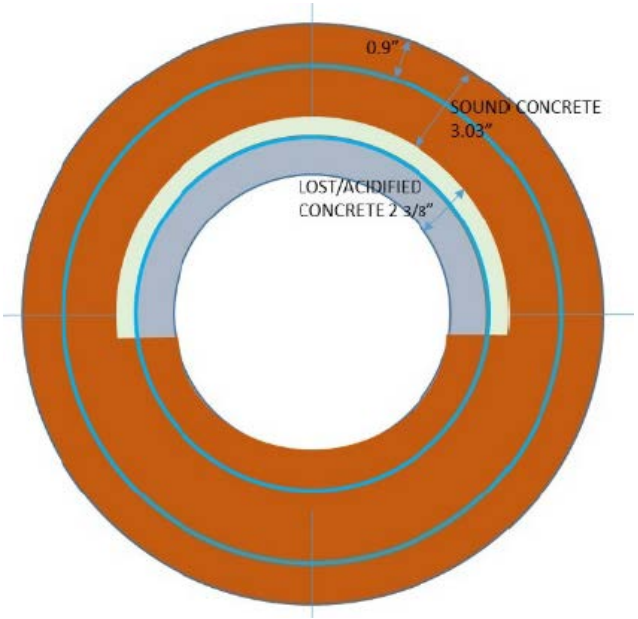
External Condition Assessment

- Soil Corrosivity
- Core sampling

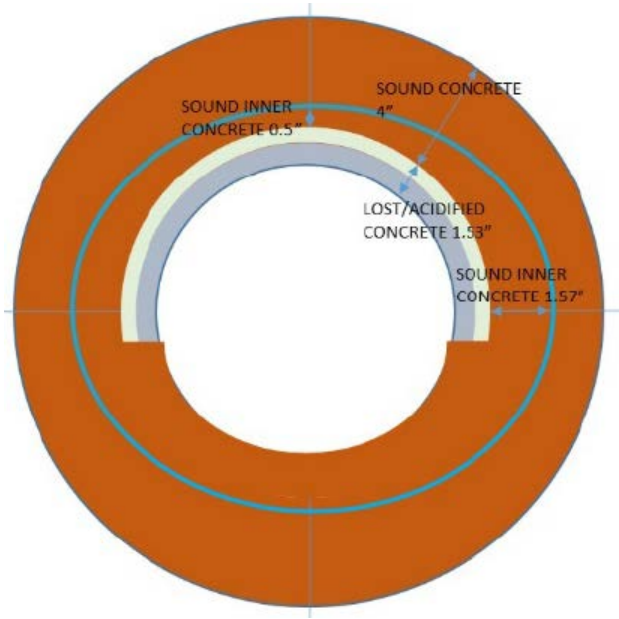
External Condition

- Surface in good condition
- Remaining wall thickness of 4.6 to 4.8 inches
- Reinforcement type varies along length

Summary of Conditions



Double cage
(south test pit)



Elliptical
(north test pit)

Hydraulics

- 2007 CSMP identified that trunk requires capacity upgrade to convey peak flow
- Surcharging observed during storm events
- Peak flows are directly attributable to I/I
- Eight major I/I reduction projects have been completed; planned to continue at 2% of system annually

Alternatives

Corrosion Protection	Structural Rehabilitation	Replacement
• Chemical injection • Crown spraying	• Sliplining • Cured-in-place pipe (CIPP) • Spiral wound lining • Mechanical point repairs	• Open-cut • Microtunneling

Increasing capital cost, schedule, environmental considerations

Advantages/Disadvantages

Corrosion Protection	Structural Rehabilitation	Replacement
• Lowest capital cost • CEQA Categorical Exemption • High O&M cost • Non-structural	• Most cost effective long-term • Ability to phase construction • Requires flow bypassing • CEQA IS/MND • Reduces capacity	• Longest service life • Ability to increase capacity • Limited ability to phase construction • Extensive design / permitting process • Capital cost

Alternative Selection Factors

- Condition
  - Limits of structural deterioration
  - Continuity of wall loss
  - Sediment depths
- Hydraulics
  - Impact of sediment and wall loss
  - Long-term flow projections
  - Defining acceptable level of service

Condition Assessment TO

Master Plan – Phase I

Condition Assessment Task Order

- Conduct CCTV inspection and analysis along entire alignment of 66-inch trunk sewer
- Determine limits of structural deterioration and prioritize rehabilitation by segment
- Review CCTV footage of North Napa trunk sewer (11,700 LF unlined RCP) and prioritize rehabilitation
- Subsequent task orders include alternative selection, CEQA, permitting, and final design

Anticipated Schedule

Milestone	Date
Conduct CCTV Inspection	June 2018
Condition and Prioritization Reports	August 2018
Preliminary Design Report*	September 2018
Permitting and CEQA*	January 2019
Final Plans*	January 2019
Bidding	February 2019
Construction	Summer 2019

* To be completed under subsequent task orders; assumes CIPP

Recommendation

Authorize the General Manager to execute Task Order 1 with Woodard & Curran to provide engineering services to conduct a condition assessment and prioritization study for the 66-inch Trunk Sewer Rehabilitation Project (CIP 19701) in the amount of $210,859.