



Operations Committee Meeting
Tuesday, August 3, 2021 at 1:00 PM
Valley Sanitary District Board Room
45-500 Van Buren Street, Indio, CA 92201

Page

1. CALL TO ORDER

- 1.1. Roll Call
- 1.2. Pledge of Allegiance

2. PUBLIC COMMENT

This is the time set aside for public comment on any item not appearing on the agenda. Please notify the Secretary in advance of the meeting if you wish to speak on a non-hearing item.

3. DISCUSSION / ACTION ITEMS

Consent calendar items are expected to be routine and noncontroversial, to be acted upon by the Board of Directors at one time, without discussion. If any Board member requests that an item be removed from the consent calendar, it will be removed so that it may be acted upon separately.

- 3.1. Project Update: Collection System Rehabilitation & Replacement Project

3 - 21


[3.1 Collection System Rehabilitation & Replacement Project.pdf](#) 

[3.1 Attachment A - Board Presentation v3 07282021.pdf](#) 

3.2. Project Update: Reclaimed Water Project - Phase 1

22 - 48

[3.2 Reclaimed Water Project - Phase I.pdf](#) 

[3.2 Attachment A - Board Presentation Project Status.pdf](#) 

4. FUTURE MEETING ITEMS

5. ADJOURNMENT

Pursuant to the Brown Act, items may not be added to this agenda unless the Secretary to the Board has at least 72 hours advance notice prior to the time and date posted on this notice.



**Valley Sanitary District
Operations Committee
August 3, 2021**

TO: Operations Committee
FROM: Ron Buchwald, Engineering Services Manager
SUBJECT: Project Update: Collection System Rehabilitation & Replacement Project

<input type="checkbox"/> Board Action	<input type="checkbox"/> New Budget Approval	<input type="checkbox"/> Contract Award
<input checked="" type="checkbox"/> Board Information	<input type="checkbox"/> Existing FY Approved Budget	<input type="checkbox"/> Closed Session

Executive Summary

The purpose of this report is to provide a project update and information regarding VSD’s Collection System Rehabilitation and Replacement Project. A PowerPoint presentation will be provided.

Strategic Plan Compliance

This item complies with VSD Strategic Plan Objective 3: Excellent Facilities.

Fiscal Impact

The current fiscal year impact of this project is \$2,900,000 million for both design and construction as shown in the CIP budget. The total estimated construction cost of this project is \$58,958,000 to be spent over the next ten (10) years. In total, this is a substantial and significant project and one of VSD’s largest to date.

Background

This project began in early 2018 and at that time was intended to be a 10-year project. This project has started slower than anticipated for several reasons. We have built a strong foundational program that we can build on over the next 10 years (12 years total). We have also built a good team with the consultant.

To date, VSD has completed one cured in place pipeline (CIPP) project with good success. VSD also recently completed the CCTV inspection of large diameters and/or high flow mains along with other difficult to televise mains. The major findings from the CCTV inspections are that VSD’s mains are in mostly good shape. Staff wants to include the addition of VSD’s four lift stations to the rehabilitation program since they are an integral part of the collection system.

Currently, staff and Harris are working on the downtown City of Indio improvement plans. Staff should have 90% completion plans in the next couple of weeks. Staff will

be meeting with the City of Indio Public Works staff to discuss the project, permit and traffic control requirements by mid to late August.

Recommendation

No recommendation. Information only.

Attachments

Attachment A: PowerPoint presentation

Attachment B: National Plant Services CCTV video to be shown during the meeting



VALLEY SANITARY DISTRICT COLLECTION SYSTEM INFRASTRUCTURE PROJECT

Board Operation Committee
August 3, 2021

AGENDA

- Program Updates
- Major Components of the Program Recap
- Lift Stations
- Capital Improvement Project Updates
- FY 21-22 Project Planning
- Tracking Program Success



TOTAL PROGRAM COSTS

PLANNING OPINION OF PROBABLE CONSTRUCTION COSTS

July 27, 2021

VALLEY SANITARY DISTRICT SEWER IMPROVEMENT SUMMARY OF COSTS

LOCATED IN CITY OF INDIO, CALIFORNIA

12 YEAR PROGRAM COST

Item	Item Description	LF / EA	Item Total
1	Rehabilitation of Sewer Mains and Manholes (CIPP)	68,480	\$10,497,666
2	Point Repair	2,130	\$1,566,840
3	Realignment	18,389	\$13,728,559
4	Replacement In Place Sewer Mains and Manholes	12,128	\$5,233,244
5	Budgeted Not Yet Inspected / Assumed Repairs For Sewer Mains Not Inspected	17,281	\$7,040,846
6	Replace In Place Sewer Manholes Outside of Improvement of Mains	25	\$393,000
7	Inspections By Outside Forces	37,306	\$197,548
8	Lift Station	4	TBD
Sub-Total Construction Costs			\$38,657,703
Soft Costs:			
	Project Management (6%)		\$ 2,319,462
	Design / Survey / Geotech / Misc. (10%)		\$ 3,865,770
	CM / Inspection / Material Testing (10%)		\$ 3,865,770
Sub-Total Soft Costs			\$ 10,051,003
Total			\$ 48,708,705.94
Escalation (3.36% - 12 Year Distribution) Total			\$58,957,941



Harris & Associates



EXPENDITURES BY YEAR*



VSD 12 Year Program - Forcasted Expenses By Year

Year	Prog 1 2019/20	Const 1 Prog 2 2020/21	Const 2 Prog 3 2021/22	Const 3 Prog 4 2022/23	Const 4 Prog 5 2023/24	Const 5 Prog 6 2024/25	Const 6 Prog 7 2025/26	Const 7 Prog 8 2026/27	Const 8 Prog 9 2027/28	Const 9 Prog 10 2028/29	Const 10 Prog 12 2029/30	Const 11 Prog 12 2030/31	Total
Construction													
	0.00%	1.07%	5.69%	10.4%	12.9%	15.5%	15.5%	12.9%	10.4%	7.8%	5.3%	2.7%	
Program Delivery Cost													
	2.50%	3.44%	6.94%	12.66%	15.10%	15.10%	12.66%	10.22%	7.78%	5.34%	5.34%	2.91%	
Budgeted Annual Construction Cost	\$529,510	\$1,809,854	\$2,200,000	\$4,005,080	\$4,989,490	\$5,973,890	\$5,973,890	\$4,989,490	\$4,005,080	\$3,020,670	\$2,036,260	\$1,051,850	\$38,973,082
Annual Escalation Construction Cost				\$417,429	\$705,148	\$1,073,361	\$1,310,148	\$1,298,671	\$1,212,044	\$1,046,345	\$797,468	\$461,123	\$8,321,739
Opinion of Probable Construction Cost	\$0	\$727,382	\$2,200,000										
Actual Construction Cost	\$0	\$412,002											
Budgeted Annual Program Soft Cost	\$451,900	\$834,074	\$700,000	\$1,272,570	\$1,517,720	\$1,517,720	\$1,272,570	\$1,027,430	\$782,280	\$537,130	\$537,130	\$291,990	\$10,051,001
Annual Escalation Program Soft Cost	\$0			\$132,633	\$214,494	\$272,697	\$279,090	\$267,421	\$236,739	\$186,059	\$210,358	\$128,006	\$1,927,499
Actual Program Soft Cost	\$251,002	\$293,627											
Projected Program Soft Cost	\$0	\$52,432	\$697,400										
Total Annual Budgeted Cost	\$981,410	\$2,643,928	\$2,900,000	\$5,827,712	\$7,426,853	\$8,837,668	\$8,835,699	\$7,583,012	\$6,236,143	\$4,790,204	\$3,581,217	\$1,932,970	\$58,957,941
Total Program Cost (Actual + Projected)	\$251,002	\$758,061	\$2,897,400										
Balance Forward		\$1,885,867											

* LIFT STATION WORK WILL BE ADDED TO THE PROJECT AT A LATER DATE

MAJOR COMPONENTS OF THE PROGRAM

- INSPECTION
- ASSESSMENT
- PRIORITIZATION
- DESIGN
- CONSTRUCTION



MAJOR COMPONENTS OF THE PROGRAM (CONT'D)

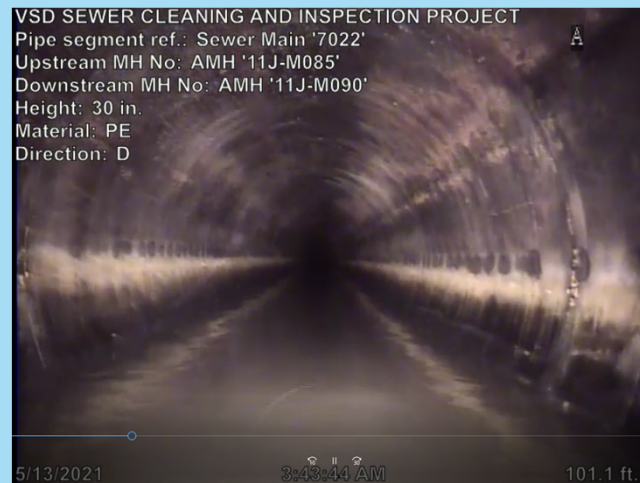
INSPECTION (10-year cycle)

- CCTV'd Sewer Pipeline – 1,109,209 linear feet (83.2%) (2008-2021)
- Sewer Pipeline Pending CCTV – 191,678 linear feet (14.4%)
- Inspect approximately 120,000 lineal feet per year
- Inspection by Outside Forces – 31,600 linear feet (2.4%)

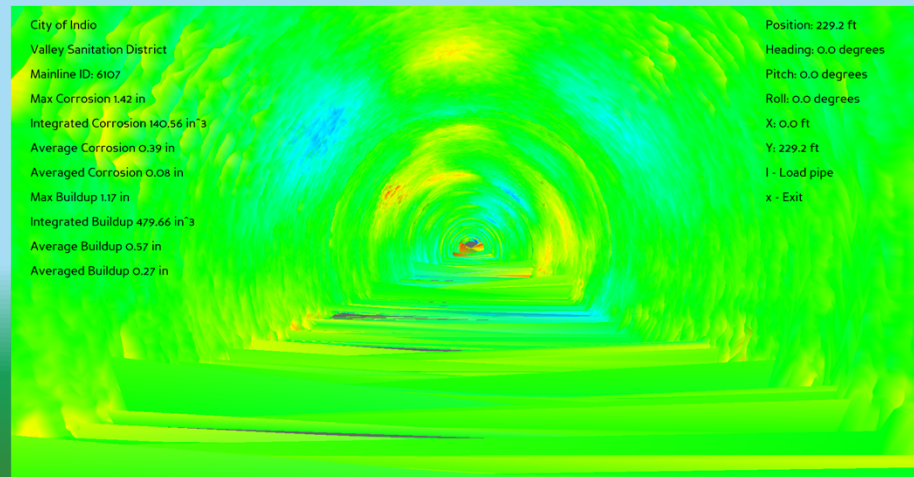
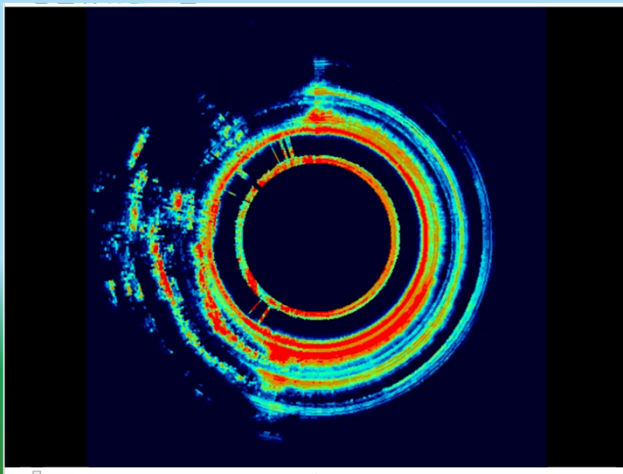




MINI CAMERA



CLOSED CIRCUIT TELEVISION
CAMERA (CCTV)



SONAR AND LASERS WHERE FLOWS EXCEED 50% OF PIPE CAPACITY

MAJOR COMPONENTS OF THE PROGRAM UPDATES (CONT'D)

INSPECTION

SEWER PIPELINE CONDITION



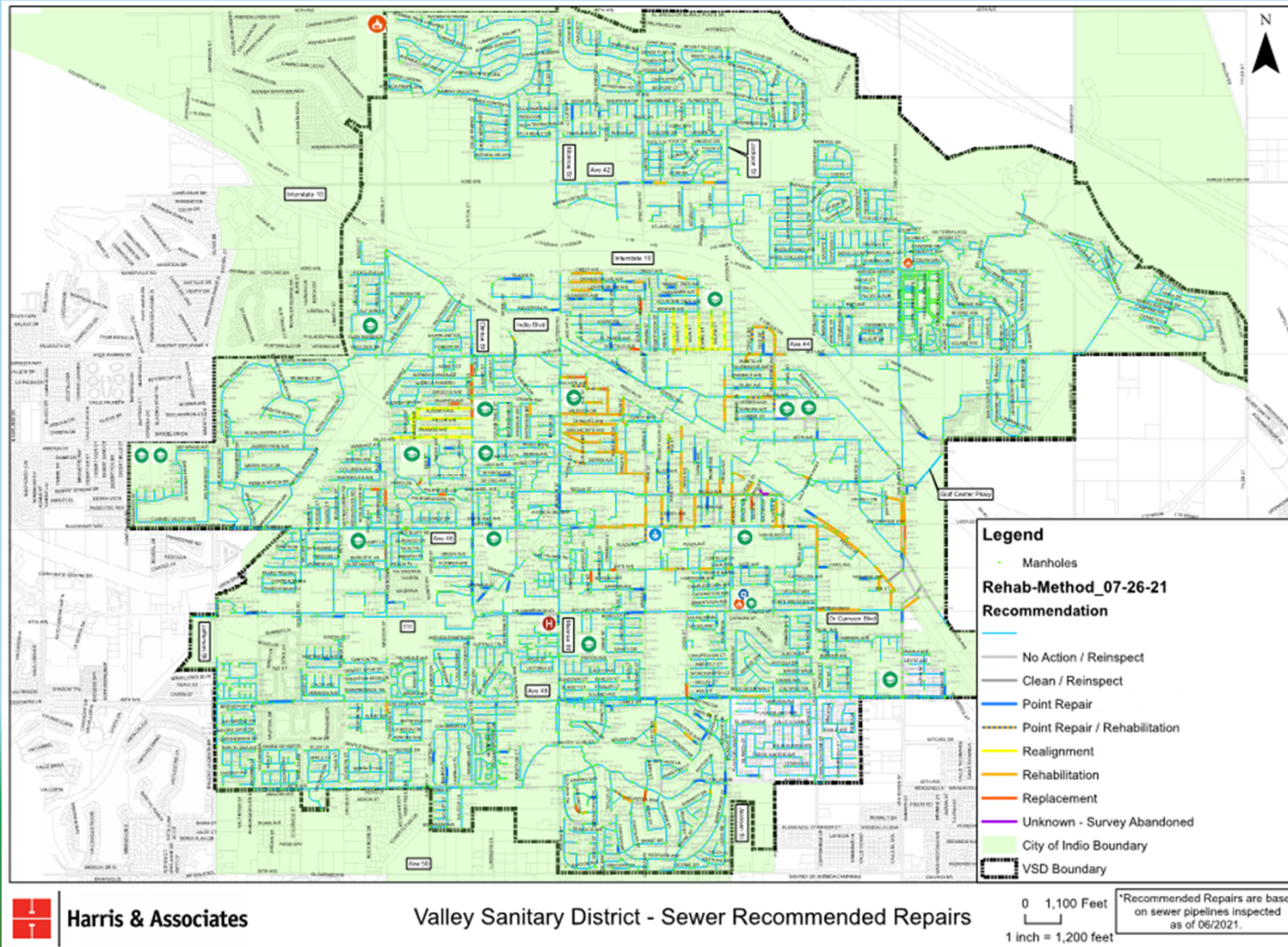
Sewer Pipeline (QRS) Grading CCTV Table*

Quick Rating Structural (QRS) Grading	Linear Foot of VSD Inspected Sewer Pipeline (LF)*	Percentage of VSD Sewer Pipeline Inspected FEB 2021	Percentage of VSD Sewer Pipeline Inspected AUG 2021
5	19,895	1.4%	1.5%
4	85,344	5.3%	6.4%
3	69,807	4.6%	5.2%
1/2	220,041	16.5%	16.5%
No Defect found	745,722	54.4%	56.0%
Pending Values	191,678	17.8%	14.4%
Total=	1,332,487	100.0%	100.0%

QRS Rating

- 5 – Most significant defect grade
- 4 – Significant defect grade
- 3 – Moderate defect grade
- 2 – Minor to moderate defect grade
- 1 - Minor defect grade

ASSESSMENT



LIFT STATION PROGRAM INCORPORATION

FOUR LIFT STATIONS

- CARVER (1967)
- BARRYMORE (1979)
- CALHOUN (2005)
- VANDENBERG (2007)

FOLLOW MAJOR COMPONENTS OF PROGRAM

- INSPECTION
- ASSESSMENT
- PRIORITIZATION
- DESIGN
- CONSTRUCTION



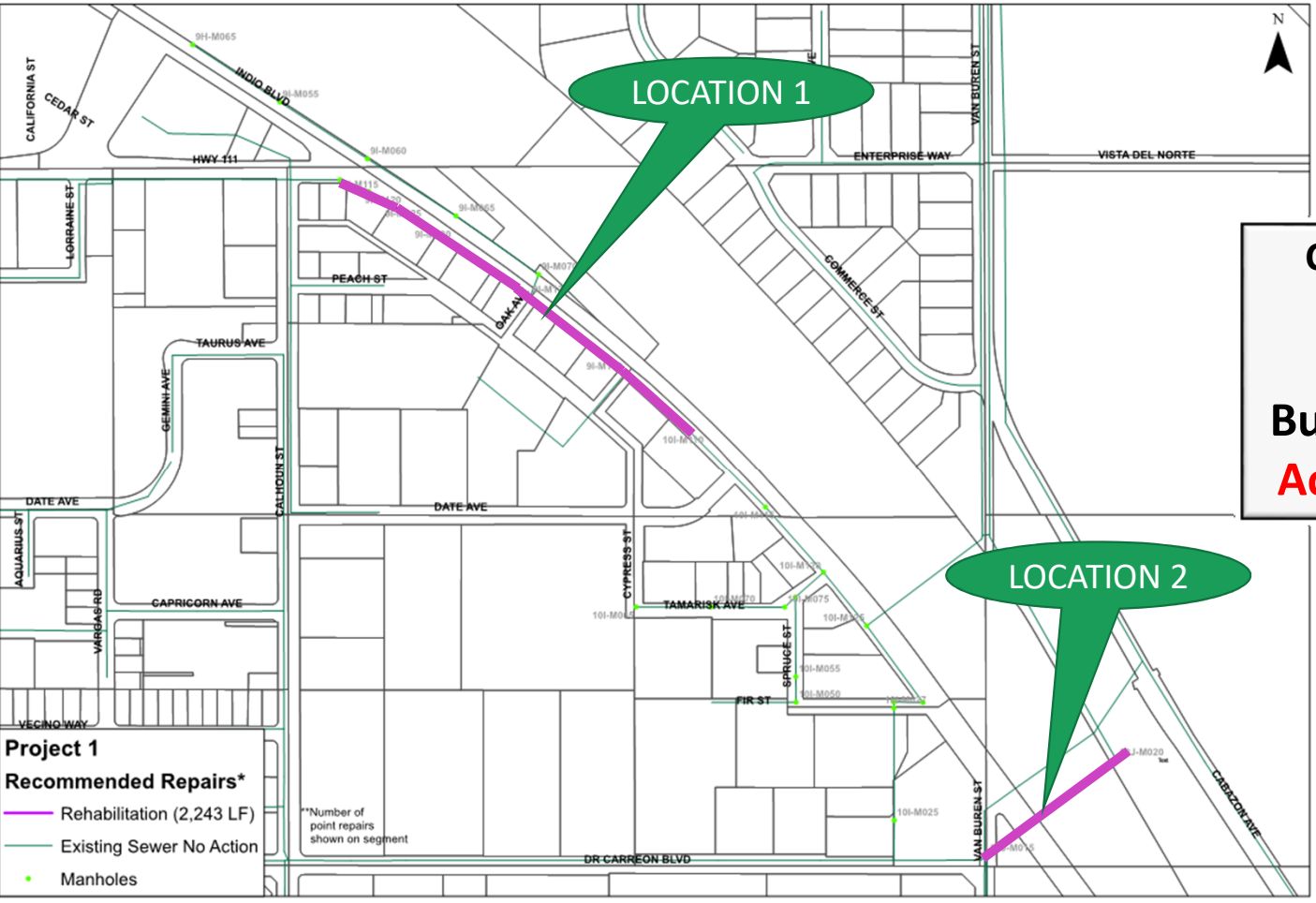


CAPITAL IMPROVEMENT PROJECTS UPDATES

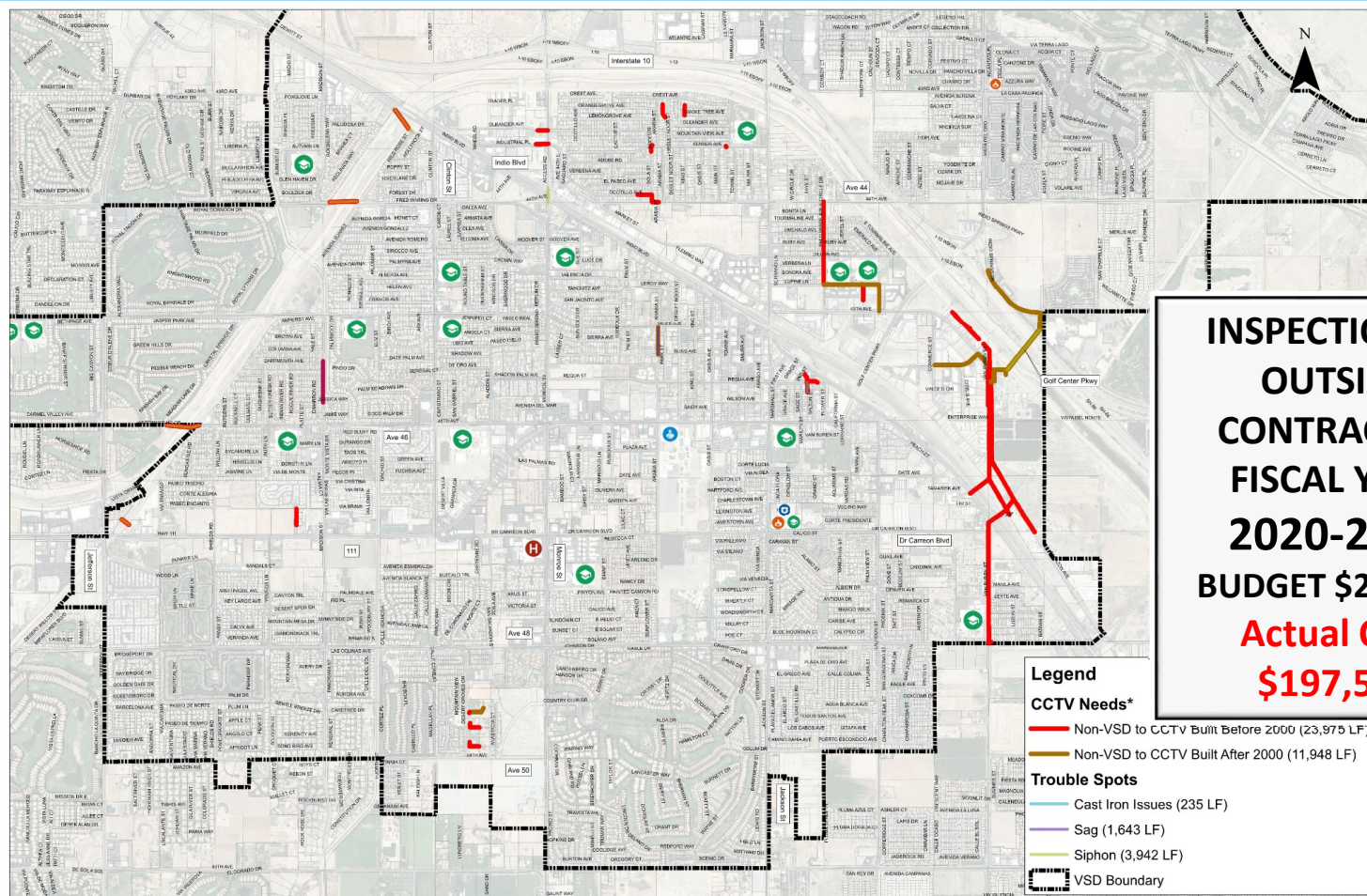
CAPITAL IMPROVEMENT PROJECTS



**CONSTRUCTION
FISCAL YEAR
2020-2021
Budget \$529,510
Actual \$214,454**



CAPITAL IMPROVEMENT PROJECTS (CONT'D)



**INSPECTION BY
OUTSIDE
CONTRACTOR
FISCAL YEAR
2020-2021
BUDGET \$219,468
Actual Cost
\$197,548**

Legend

CCTV Needs*

- Non-VSD to CCTV Built Before 2000 (23,975 LF)
- Non-VSD to CCTV Built After 2000 (11,948 LF)

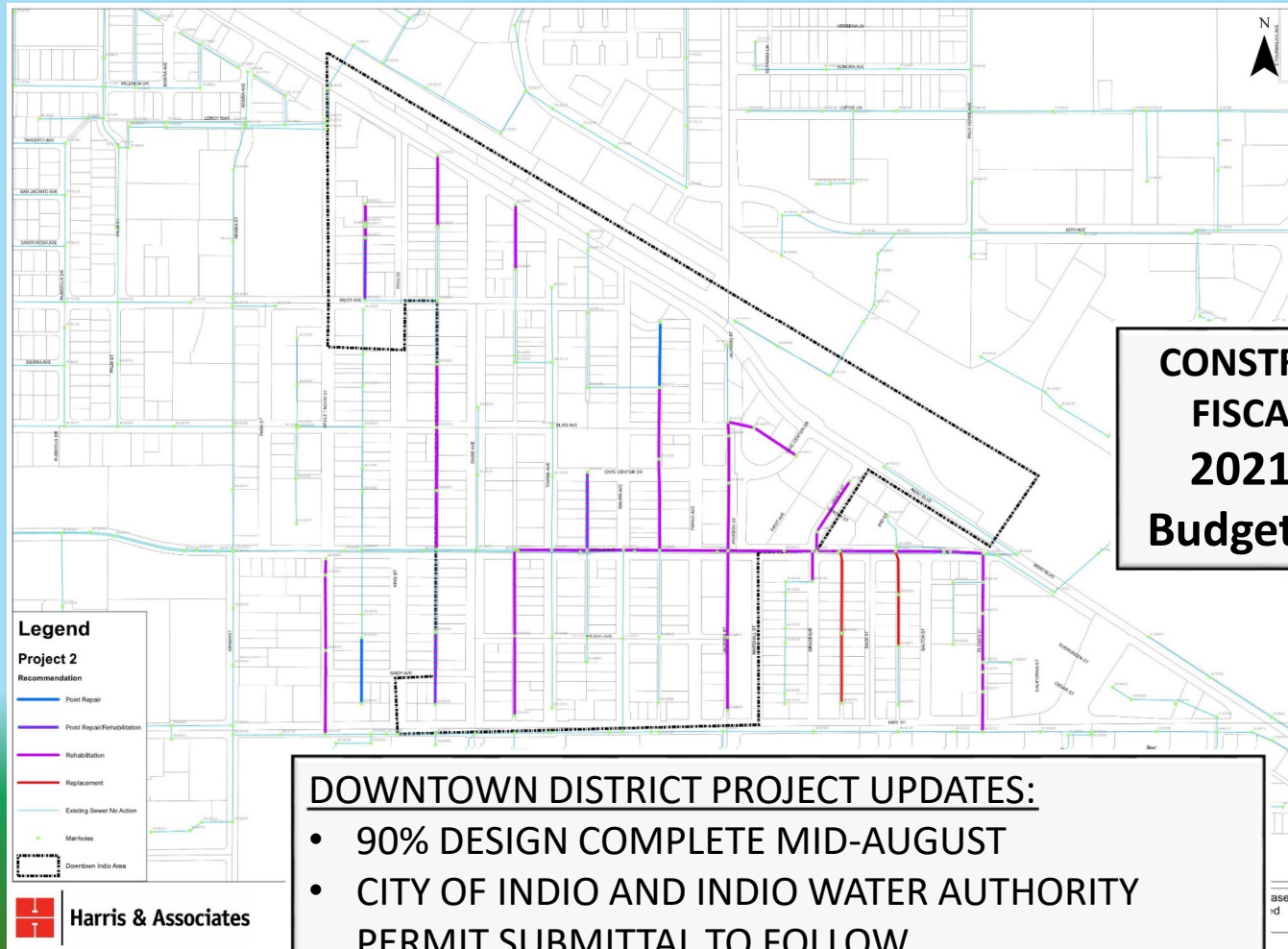
Trouble Spots

- Cast Iron Issues (235 LF)
- Sag (1,643 LF)
- Siphon (3,942 LF)
- VSD Boundary

0 1,000 Feet
1 inch = 1,000 feet
06/18/2018

*CCTV Needs is based on no historical CCTV data provided by VSD on 06/05/2018.

CAPITAL IMPROVEMENT PROJECTS (CONT'D)

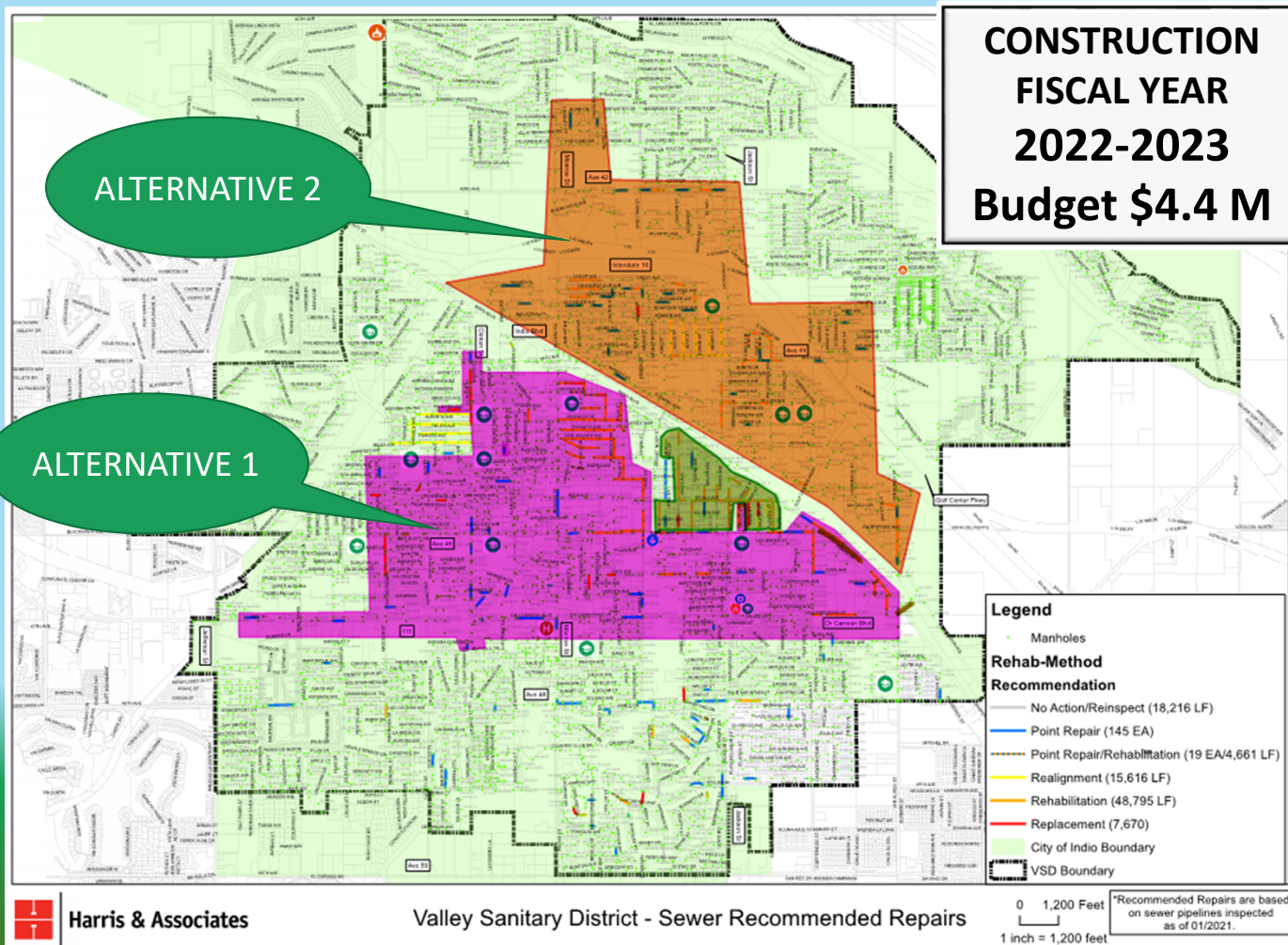


**CONSTRUCTION
FISCAL YEAR
2021-2022
Budget \$2.2 M**

DOWNTOWN DISTRICT PROJECT UPDATES:

- 90% DESIGN COMPLETE MID-AUGUST
- CITY OF INDIO AND INDIO WATER AUTHORITY PERMIT SUBMITTAL TO FOLLOW

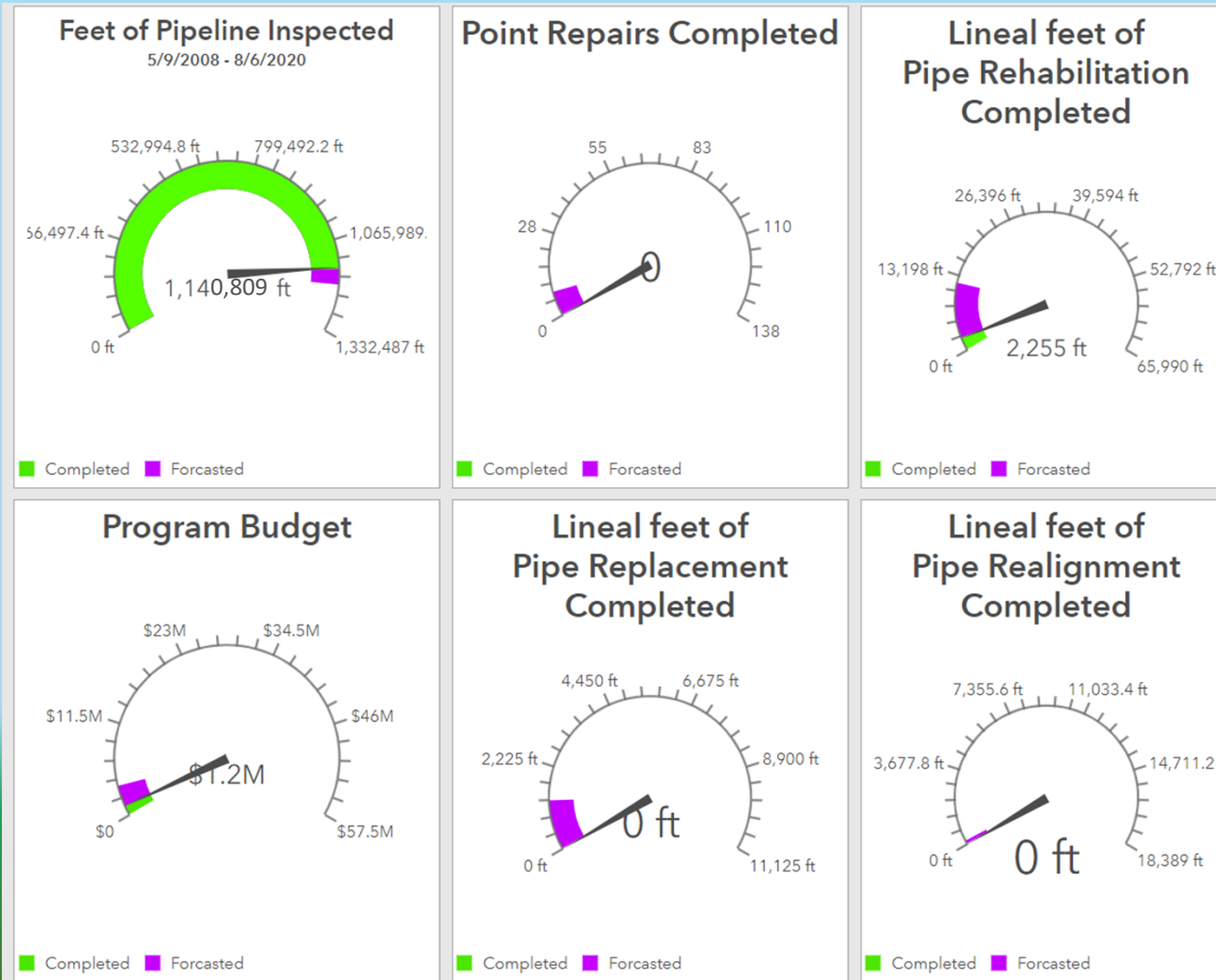
CAPITAL IMPROVEMENT PLANNING

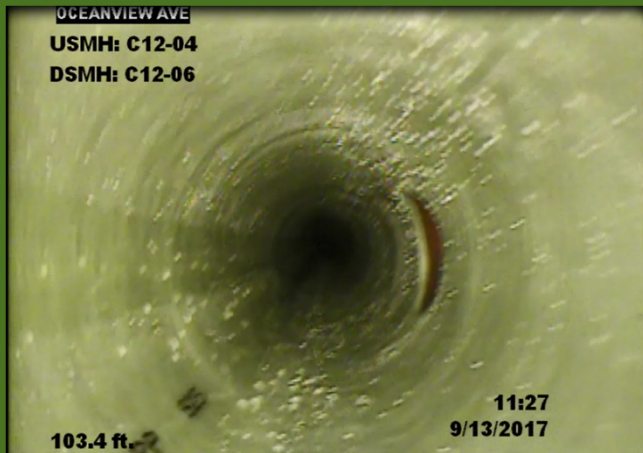
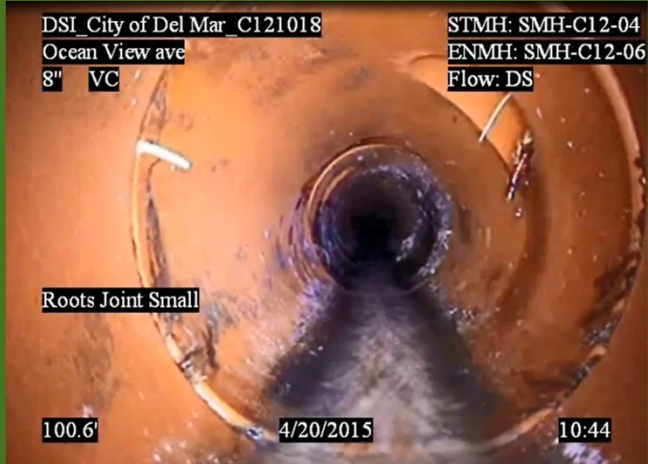


Harris & Associates

Valley Sanitary District - Sewer Recommended Repairs

TRACKING PROGRAM SUCCESS





THANK YOU

Valley Sanitary District



**Valley Sanitary District
Operations Committee
August 3, 2021**

TO: Operations Committee

FROM: Ron Buchwald, Engineering Services Manager

SUBJECT: Project Update: Reclaimed Water Project – Phase I

<input type="checkbox"/> Board Action	<input type="checkbox"/> New Budget Approval	<input type="checkbox"/> Contract Award
<input checked="" type="checkbox"/> Board Information	<input type="checkbox"/> Existing FY Approved Budget	<input type="checkbox"/> Closed Session

Executive Summary

The purpose of this report is to provide a project update and information regarding VSD’s Reclaimed Water Project Phase I. A PowerPoint presentation will be provided.

Strategic Plan Compliance

This item complies with VSD Strategic Plan Objective 3: Excellent Facilities.

Fiscal Impact

The current fiscal impact of this project is \$2.2 million which will produce 60% design plans. In fiscal year 2021/22, Staff will request from the Board the authorization to award the completion of design and construction of the project estimated to be about \$61 million.

Background

The Reclaimed Water Project Phase I is the initial project of three phases that will allow VSD to be able to produce reclaimed water. This project will replace and improve some treatment structures and provide redundancy for other treatment structures so that we can eventually decommission the ponds (Phase II) which will provide the needed area to construct additional treatment systems to be able to produce reclaimed water (Phase III). Phase I is expected to be completed by early 2025.

Recommendation

No recommendation. Information only.

Attachments

Attachment A: PowerPoint presentation



Operations Committee Update

Design/Build for Energy Services Treatment Plant Project

August 3, 2021

Presented by Schneider Electric

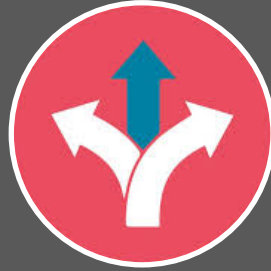
Agenda

- 1 **Recap since Phase 1**
- 2 **Phase 2: Scope of Work (30% design)**
- 3 **Projected Savings**
- 4 **Preliminary Construction Plan**
- 5 **Financial Considerations**
- 6 **Timeline and what's next in Phase 3?**

Quick Recap: Why this project and delivery method?



Collaboration
with VSD
Staff



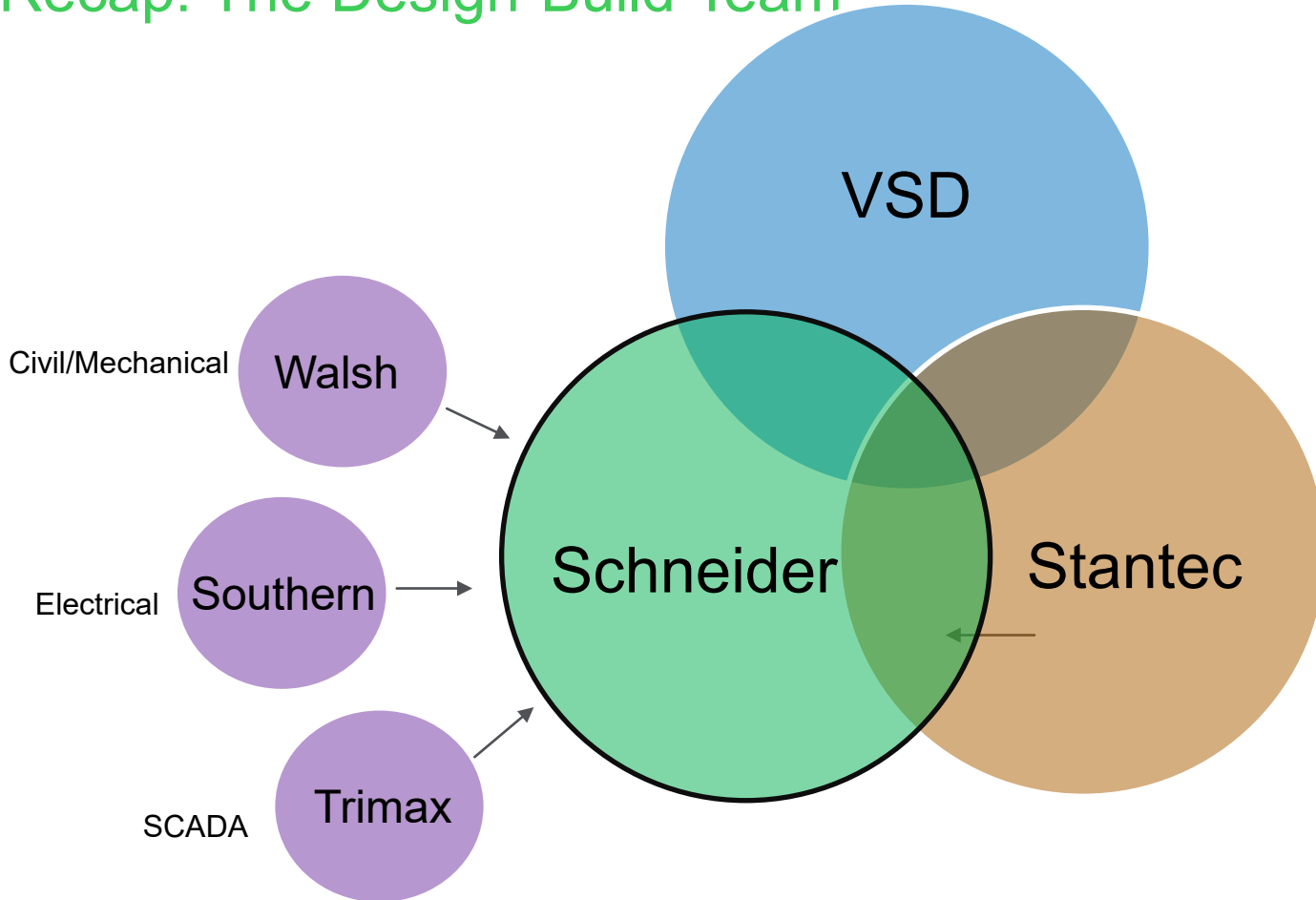
Flexibility



Funding
Options



Quick Recap: The Design-Build Team



Quick Recap: what we have accomplished thus far



VSD Board approved D-B contract in June 2020



Phase 1

- **Conceptual Scoping Phase**
- July to September 2020



Phase 2

- **Mid-term: BODR, 30% design and budgetary pricing**
- September 2020 through June 2021

Phase 3

- **Final: Scope, savings, financing and GMP pricing (60% design)**
- July 2021- January 2022

Phase 4

- **Construction contract and funding~ Q1 2022;**
- Followed by 100% design, equipment procurement
- 2022-2025

Scope of Work

Scope of Work developed in Phase 2

- **ECM 1** – Mechanical Bar Screen
- **ECM 2** – Grit Chamber
- **ECM 3** – Waste Activated Sludge (WAS) Thickening – DAFT and pumps/equipment
- **ECM 4** – 2nd Digester and related systems, including pumps including secondary flare
- **ECM 5** – SWBD MS Replacement
- **ECM 6** -- DAFT Subnatant and Filtrate Return

* Doesn't include temporary power for shutdown for ECM 5 – SWBD-MS

ECM 1: Bar Screen

Proposed Scope of Work at VSD:

- Add one bar screen to replace existing manual rack in the third screen channel.
- The bar screen added will be a multi-rake bar screen with $\frac{1}{4}$ " opening as opposed to the existing $\frac{1}{2}$ " opening climber screens.
- The existing washer and compactor are considered adequate to handle the increased screenings and will remain unchanged.



ECM 2: Grit Chamber

Proposed Scope of Work at VSD:

- Replace aerated grit with Vortex type grit chamber
- Sized for 22.5 mgd peak flow capacity
- One unit is required with two new grit pumps, a grit collector, and two grit classifiers
- Space and stubout for a future grit chamber will be provided
- Includes the ability to bypass



Existing Aerated Grit System –
to be decommissioned

ECM 3: DAFT System

Proposed Scope of Work at VSD:

- One (1) DAFT (dissolved air flotation thickener) unit will be constructed with a new Electrical Building D to house new MCC-M and necessary HVAC equipment.
- New WAS feed pumps 1 and 2 will be located at the RAS pump station.
- Includes polymer feed system
- Space will be provided for a second DAFT unit to be installed in the future.

Redundant servicing equipment includes:

- Subnatant recycle pumps
- Air compressors
- Thickened WAS (TWAS) feed pumps



ECM 4: Digester No.1, secondary flare and related systems

Proposed Scope of Work at VSD:

- New digester will be the same size as existing Digester No. 2 (85-ft diameter).
- Includes pumped mixing system, digester gas handling, temperature control, and digested sludge withdrawal.
- A shade structure will be built to provide some protection of the equipment that serves the new digester, including sludge recirculation pumps, the sludge heat exchanger, and the digested sludge transfer pump.
- Current flare is too large for the digester gas at the plant, so this project will include a 2nd flare of smaller capacity.



Existing Digester No.2

ECM 5: SWBD-MS Replacement

Proposed Scope of Work at VSD:

- Replace SWBD-MS (in place since 1972) per 2019 Arc Flash study (Carollo)
- MCC-H is no longer in service and will be fully demolished.
- The replacement SWBD-MS will continue to be located in the blower building and shall serve the following loads:
 - MCC-A
 - MCC-F
 - MCC-IM ATS
 - Air Blower B401
 - Air Blower B402
 - Main Office
 - MCC-D
 - Building B
 - MCC-HA



ECM 6: DAFT Subnatant and Dewatering Filtrate Return

Proposed Scope of Work at VSD:

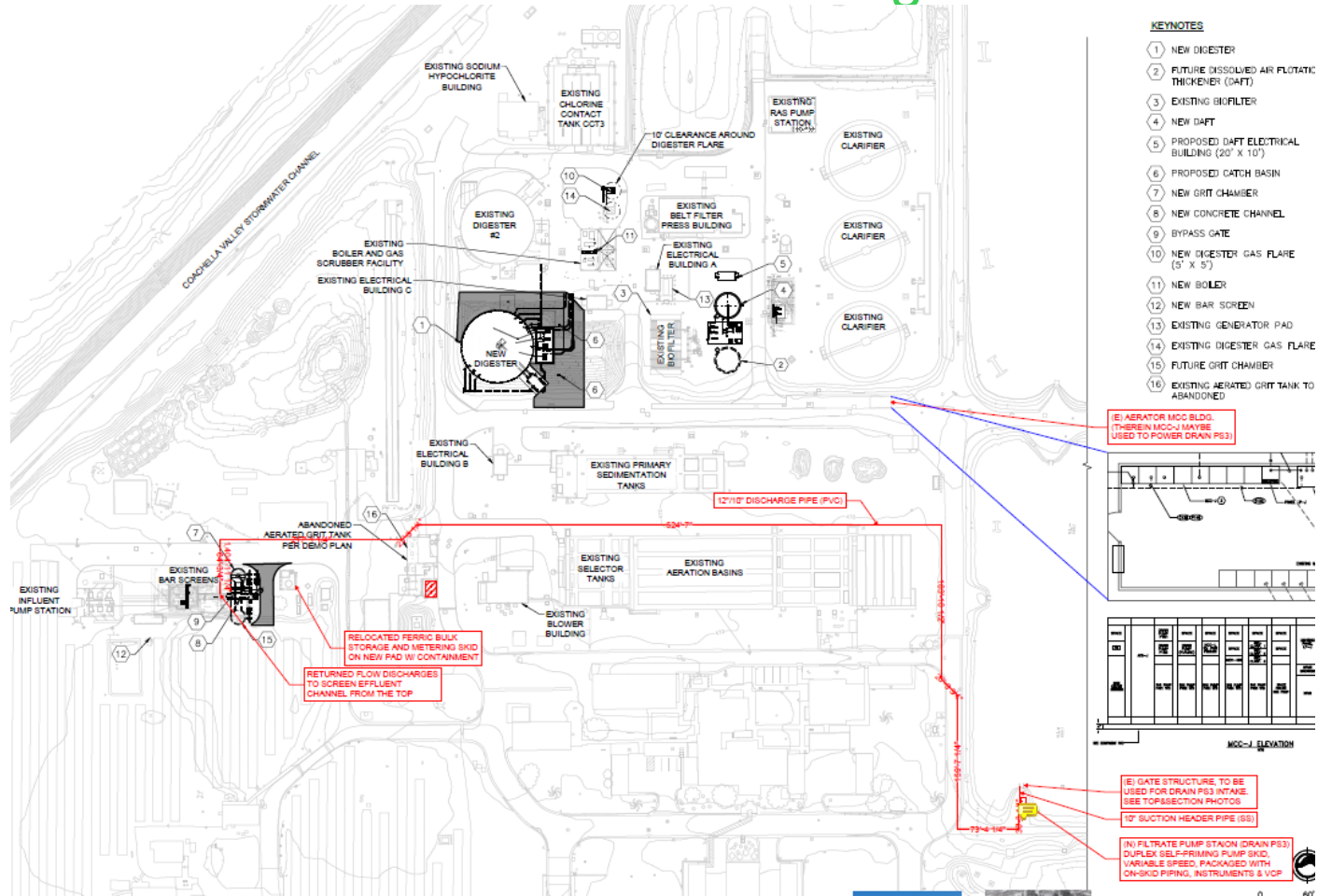
DAFT subnatant return:

- Construct 8-inch gravity pipe to convey DAFT subnatant flow to the primary effluent channel.

Dewatering filtrate return:

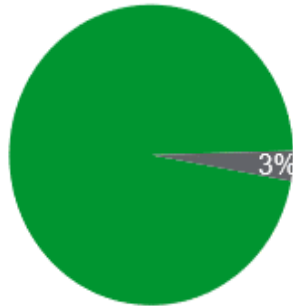
- Construct new Drain Pump Station 3 adjacent to the North Cell with an enclosure or a canopy.
- The pump station primarily consists of duplex self-priming pumps, a local control panel, and a flow meter.
- Construct a 12-inch discharge pipe to convey flows from the North Cell to the proposed grit removal facility.
- Provide power supply for the Drain Pump Station 3 from Electrical Building J.

ECM 6: DAFT Subnatant and Dewatering Filtrate Return



Projected Savings

Projected Energy and Operational Savings



Energy Cost Savings

Energy Indices		
	Energy	Cost
	<i>kWh/MGD</i>	<i>\$/MG</i>
Baseline	2,623	\$266.93
Post Project	2,551	\$258.33
% Savings	2.7%	3.2%

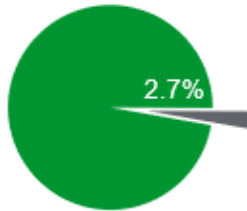
Project Summary				
Project	Electricity		Fossil Fuels	Energy
	Energy Use	Actual Demand	Energy Use	Total Cost
	<i>kWh</i>	<i>kW</i>	<i>MMBtu</i>	<i>\$</i>
Baseline	5,374,409	8,467	427	\$546,874
Post Project	5,226,902	8,165	427	\$529,257
Projected Savings, Units	147,506	303	0	\$17,616
Projected Savings, %	2.7%	3.6%	0.0%	3.2%

Projected Annual Energy and Operational Savings

Scope of Work	Calculated Energy Savings	O&M Savings	Total
ECM 1 – Mechanical Bar Screen	\$88	\$0	\$88
ECM 2 – Grit Chamber	\$9,888	\$0	\$9,888
ECM 3 –Waste Activated Sludge (WAS) Thickening – DAFT	\$7,147	\$14,976	\$22,123
ECM 4 – 2 nd Digester and related systems, including secondary flare	\$13,020	\$20,000	\$33,020
ECM 5– Switchboard-MS Replacement	\$0	\$0	\$0
ECM 6 - Returning Sludge Dewatering Filtrate	-\$12,526	\$0	-\$12,526
Total	\$17,616	\$34,976	\$52,592

Projected Environmental Impact

Environmental Benefits		
	Natural Gas	Electric
Total Energy (MMBtu)	427	18,343
Total Emission (Tons CO ₂ e)	25	1,457
Total Savings (Tons CO ₂ e)	0	40



Savings



40

eTons GHG



9

Cars Removed



5

Equivalent Houses

* Emissions factors are derived from EPA eGrids database and represent the State of CA

Preliminary Construction Plan

Preliminary Construction Plan

Board Action - Contract Amendment

- 2/28/22

Post Contract Design: 120 days

- 3/14/22 to 8/26/22

Equipment Lead Time 280 days

- 3/14/22 to 4/7/23

Construction Duration 545 days

- 8/27/22 to 9/27/24

Startup and Commissioning 20 days

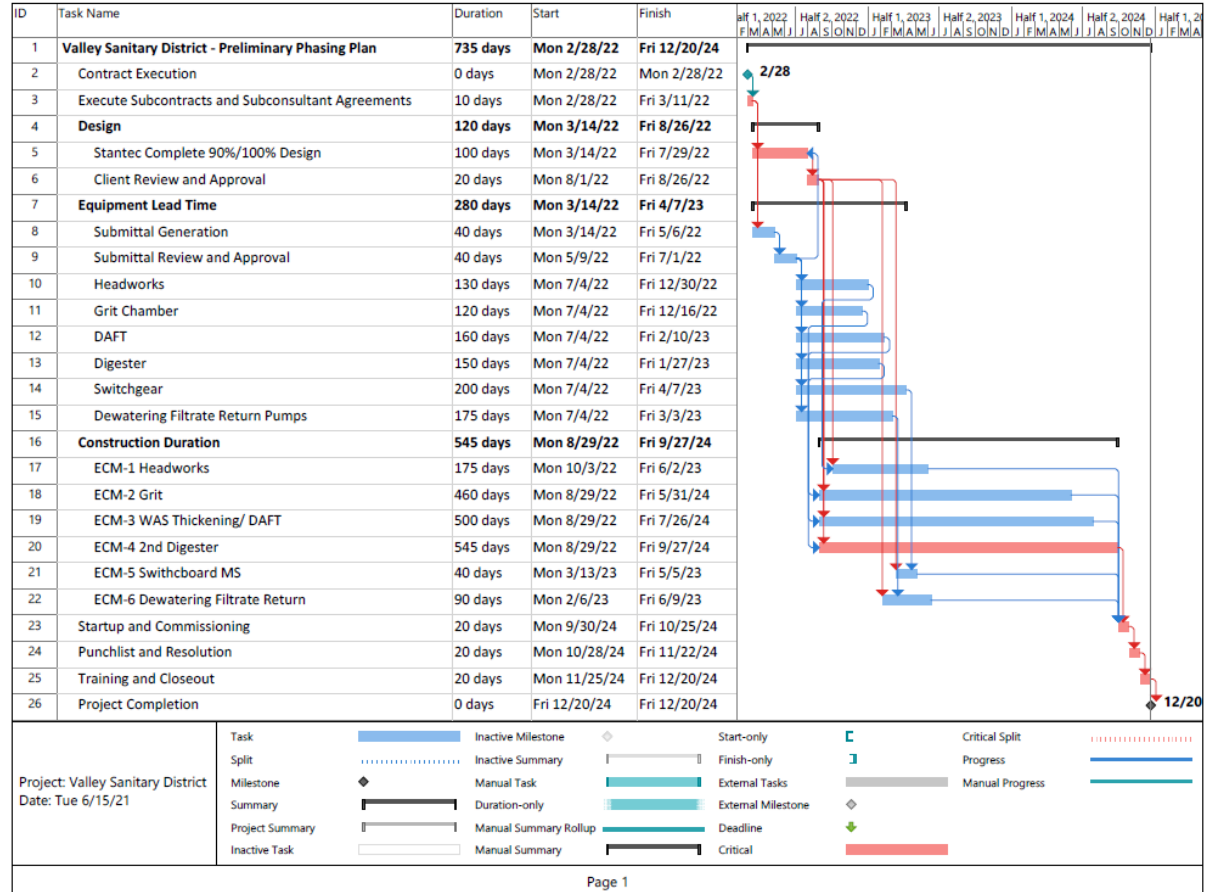
- 9/30/24 to 10/25/24

Punchlist and Resolution 20 days

- 10/28/24 to 11/22/24

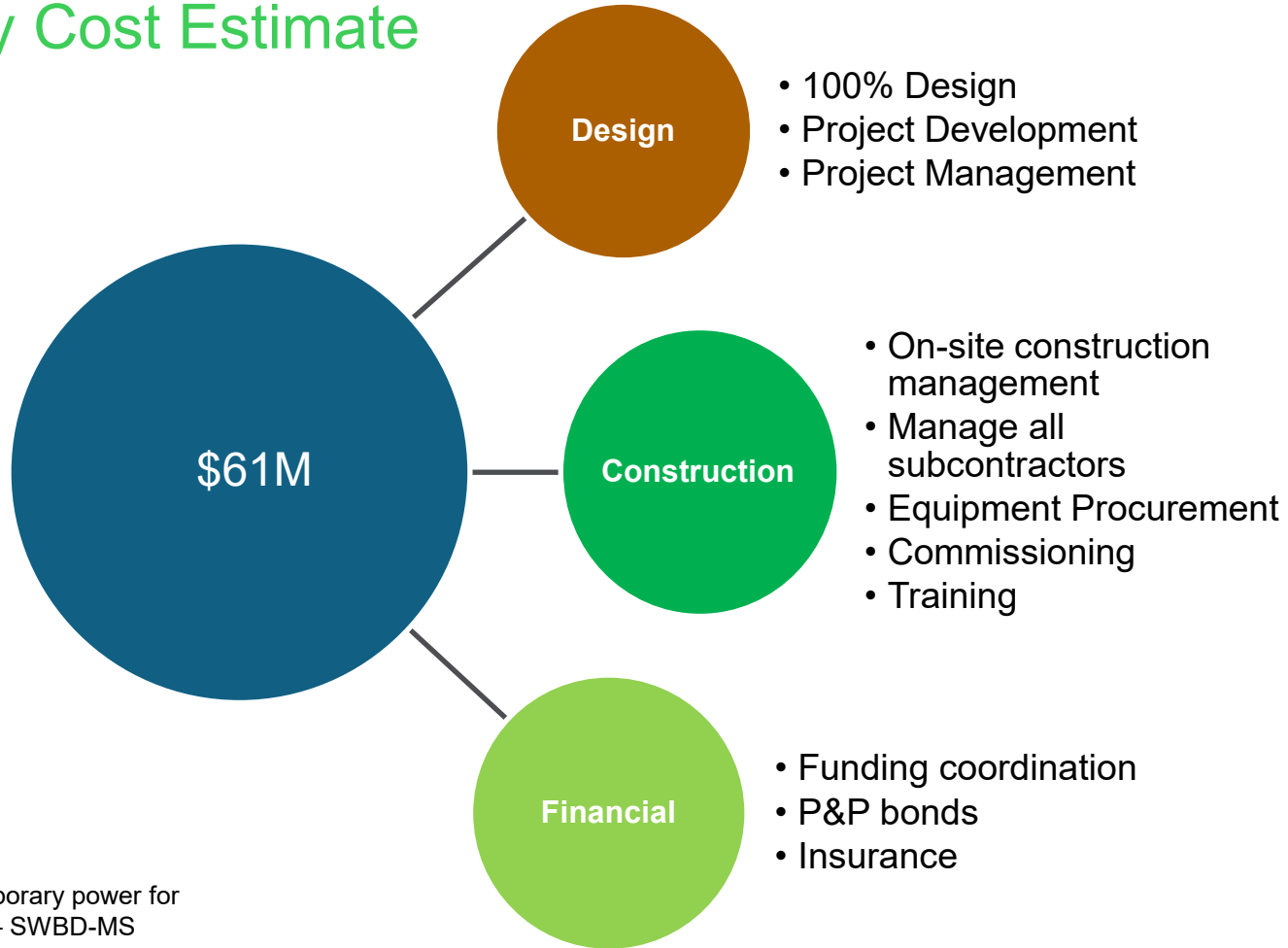
Training and Closeout 20 days

- 11/24/24 to 12/20/24



Financial Considerations

Budgetary Cost Estimate



Potential Funding Sources

- Installment Sale Agreement
(3rd party financing)
- Grants (as available)
- VSD capital – optional down payment

\$50MM Borrowing					
Term (Years)	Aggressive		Conservative		Annual Debt
	Interest Rate	Service Payment	Interest Rate	Service Payment	
15	2.23%	\$ 3,958,546.60	2.75%	\$ 4,109,959.08	
20	2.45%	\$ 3,192,227.42	2.99%	\$ 3,357,678.93	

\$55MM Borrowing					
Term (Years)	Aggressive		Conservative		Annual Debt
	Interest Rate	Service Payment	Interest Rate	Service Payment	
15	2.23%	\$ 4,354,401.26	2.75%	\$ 4,520,954.99	
20	2.45%	\$ 3,511,450.16	2.99%	\$ 3,693,446.83	

\$60MM Borrowing					
Term (Years)	Aggressive		Conservative		Annual Debt
	Interest Rate	Service Payment	Interest Rate	Service Payment	
15	2.23%	\$ 4,750,255.92	2.75%	\$ 4,931,950.90	
20	2.45%	\$ 3,830,672.90	2.99%	\$ 4,029,214.72	

Timeline and What's Next

What's next?

Phase 3

- **Final: Scope, savings, financing and GMP pricing (60% design)**
- July 2021- January 2022

Scope

- 60% Design Package
- P&IDs
- Key operating strategies
- Draft construction schedule

Financial

- Final GMP costs based on subcontractor input and equipment pricing
- Final energy & operational savings
- Financing options vetted

Communication/Vision

- Marketing Vision Plan
- Outreach/communication ideas in support of VSD Strategic Plan

Thank you!