

DALTON GARDENS IRRIGATION DISTRICT WATER SUPPLY IMPROVEMENT STUDY

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Presented by:
Jon Baune, P.E. and Cody Peters, E.I.



J-U-B ENGINEERS, INC.



**THE
LANGDON
GROUP**



**GATEWAY
MAPPING
INC.**

OTHER J-U-B COMPANIES

Agenda

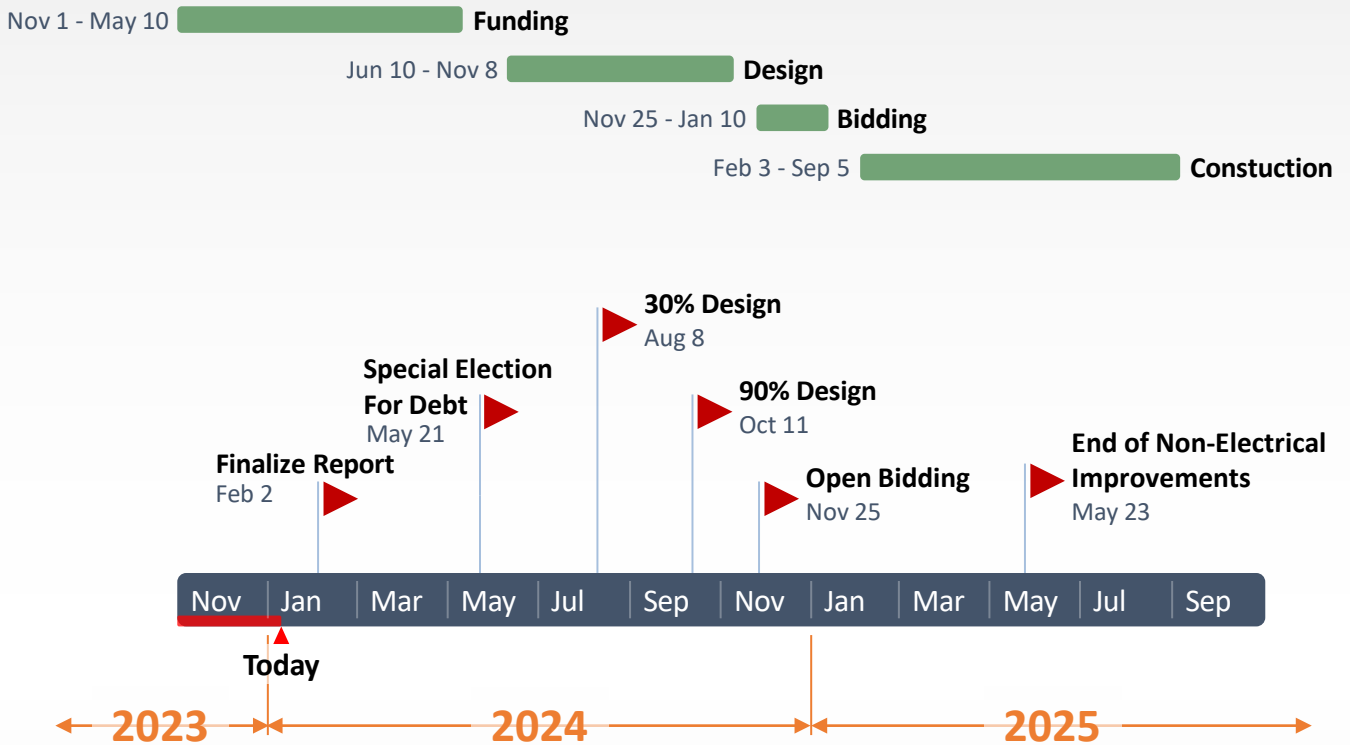
Presentation Purpose:

To review the system study and receive public comment

Presentation Structure:

- Project Schedule
- System Overview
- History
- Deficiencies
- Review of Alternatives
- Phasing
- Cost
- Funding
- Next Steps

Anticipated Schedule



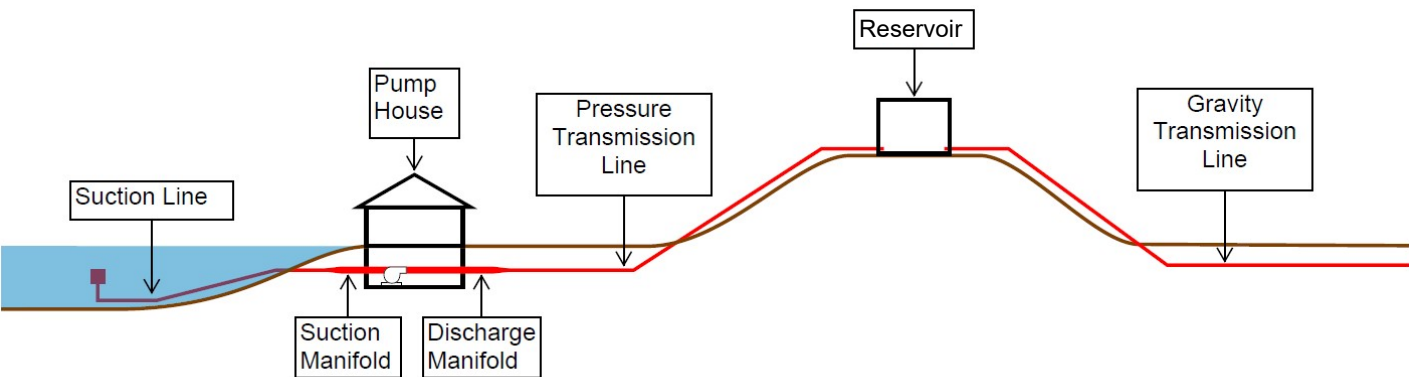
Existing System Overview

Hayden Lake

Boat Launch

Loch Haven Hill

Dalton Gardens



System evaluation of 7 components

- Suction Line
- Suction Manifold
- Pump House and Equipment
- Discharge Manifold
- Pressure Transmission Line
- Reservoir
- Gravity Transmission Line

System History

- Original Construction in 1954 (70-years)
- Cement Lining of transmission main 1962 (62-years)
- Piping under Lower Hayden Lake Road replaced 1994 (30-years)
- CCTV Inspection 1998 (26-years)
- Impressed Current Cathodic Protection 2000 (24-years)



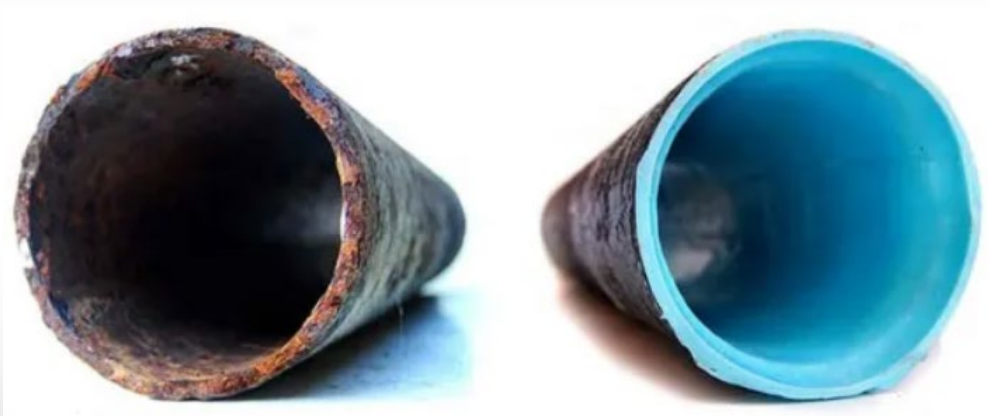
System Deficiencies

- Pipeline - Heavy exterior corrosion and interior spalling
- Pumphouse/Supply - Inefficient Operation due to frequent starting and stopping of pumps
 - Power needed to accelerate over 325 tons of water
 - Increased wear due to inrush currents
- Lack of redundancy
 - All capacity is needed to meet demands especially on Sundays
 - One Supply (lake) and long transmission main



Alternatives

- Suction piping and manifold
 - 24-inch vs. 30-inch
- Increase Supply
 - Additional large pump vs. New well at DGID Parcel
- Transmission line rehabilitation/replacement
 - Like replacement (\$5,855,800)
 - Open trench replacement (\$5,258,200)
 - Rehabilitation – PVC Pipe liner (\$2,873,000)
- Pumphouse improvements
 - Variable Frequency Drive (efficiency improvements)
 - HVAC
 - Updated Power Supply (transformer)
 - Expansion of wellhouse



Selected Alternative

- A combination of System Improvements performed over two phases

- Phase 1 Improvements
 - CIPP lining of pressure and gravity transmission main
 - Replacement of discharge manifold
 - Addition of VFD's and HVAC to pumphouse
 - Relocation of transformer

- Phase 2 Improvements
 - Suction piping and manifold replacement with 24" ductile iron piping.
 - New well

Finances



Dalton Gardens Irrigation District - Water Supply Improvement Study - Cost Summary Table

Group	PROJECT NUMBER:	PROJECT NAME	Total Probable Cost In 2023 Dollars ³	Phase 1 Improvements (24" Suction)	Phase 2 Improvements (24" and Well)
Transmission Line Options	S.1A	Reach 1 Boat Launch Open Trench Replacement	\$880,200		
	S.1B	Reach 1 Boat Launch CIPP Rehabilitation	\$400,200	x	
	S.2A	Reach 2 Richards Field Open Trench Replacement	\$1,631,600		
	S.2B	Reach 2 Richards Field CIPP Rehabilitation	\$914,300	x	
	S.3A	Reach 3 Loch Haven North Open Trench Replacement	\$458,800		
	S.3B	Reach 3 Loch Haven North CIPP Rehabilitation	\$274,200	x	
	S.3C	Reach 3 Loch Haven North Above Ground Replacement	\$749,800		
	S.4A	Reach 4 Loch Haven South Open Trench Replacement	\$1,305,800		
	S.4B	Reach 4 Loch Haven South CIPP Rehabilitation	\$740,200	x	
	S.4C	Reach 4 Loch Haven South Above Ground Replacement	\$1,612,400		
Phase 1 Additional Upgrades	S.5A	Reach 5 Mt. Carrol St. Open Trench Replacement	\$981,800		
	S.5B	Reach 5 Mt. Carrol St. CIPP Rehabilitation	\$544,100	x	
Phase 1 Additional Upgrades	DM.1	24" Discharge Manifold Replacement	\$267,600	x	
	VFD.1	Pump House Improvements	\$964,000	x	
Phase 2 Upgrades	SM.1	24" Suction Manifold Replacement	\$810,200		x
	SM.2	30" Suction Manifold Replacement	\$900,200		
	SP.1	24" Suction Piping Replacement	\$1,570,600		x
	SP.2	30" Suction Piping Replacement	\$1,684,200		
	WH.1	New 3,000 gpm Well on Rude Street	\$2,170,100		x
	PH.1	Pump House Expansion for 3,000 gpm pump addition	\$2,003,500		
Option Cost:				\$ 4,104,600	\$ 4,550,900

1. Planning, Engineering, & Administrative costs include: Geotechnical Evaluations, Design, Survey, Construction Management, O&M Manuals, Record Drawings, and Administration. Estimated at 20% of construction subtotal, including contingency.

2. Costs are in 2023 dollars and should be inflated appropriately to the mid-point of construction for budgeting purposes. Costs are generated during a period of extreme cost volatility, material and wage shortage and therefore may not representative the current market materials cost escalations. No easement acquisition or legal costs are included.

Funding

■ Grants

- **Phase 1 - Seeking a 33%** Cost Reduction with a Idaho Water Resources Board - Aging Infrastructure Grant (\$1.369M)
 - Status → Applied, Submitted, Application is under review
- **Phase 2 - WaterSMART Drought Response Grant**
 - Valid for phase 2 improvements
 - Up to \$500,000
 - Status → Future Application at the time of the project

■ Loans (*Requires a Special Election*)

- Phase 1 Principal: \$2.7M (Assuming Aging Infrastructure Grant)
 - Approximately \$2,731 of principal per acre
- IDWR water project loan rate: 8.5% IDWR typical loan length: 10-15 years

Cost Per Month Per Acre					
Interest Rate	Loan Term Years				
	5	10	15	20	30
6.0%	\$52.80	\$30.32	\$23.05	\$19.57	\$16.37
6.5%	\$53.44	\$31.01	\$23.79	\$20.36	\$17.26
7.0%	\$54.08	\$31.71	\$24.55	\$21.17	\$18.17
7.5%	\$54.72	\$32.42	\$25.32	\$22.00	\$19.10
8.0%	\$55.38	\$33.14	\$26.10	\$22.84	\$20.04
8.5%	\$56.03	\$33.86	\$26.89	\$23.70	\$21.00
9.0%	\$56.69	\$34.60	\$27.70	\$24.57	\$21.97
9.5%	\$57.36	\$35.34	\$28.52	\$25.46	\$22.96

Next Steps

- Step 1 - Finalize the Water Supply Improvement Study
 - Address Public Comments (Due by the end of January)

- Step 2 – Complete the Funding Process
 - Finalize the Grant/Loan Amounts
 - A financial evaluation may be required

- Step 3 - Special Election for Debt

- Step 4 – Proceed with Design and Construction