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# TRANQUILLO PINES MDWCA WATER SYSTEM IMPROVEMENTS PROJECT

February 19, 2026



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## INTRODUCTIONS

- Tranquillo Pines Board
- Honored Guests
- Horrocks & SWEFC



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## Project Need

- Administrative Order for Fluoride
- Frequent Line Breaks
- Hauling Water Daily from Entranosa for Two Years
- Inoperable Valves
- Low Flow Wells (6-10 gpm)



## Why is Fluoride Dangerous?

- Maximum Contaminant Level of 4.0 mg/L
- May cause skeletal fluorosis (4.0 mg/L)
- May cause dental fluorosis (2.0 mg/L)
- Naturally occurring in groundwater – depends on geology



## Self-Help Projects

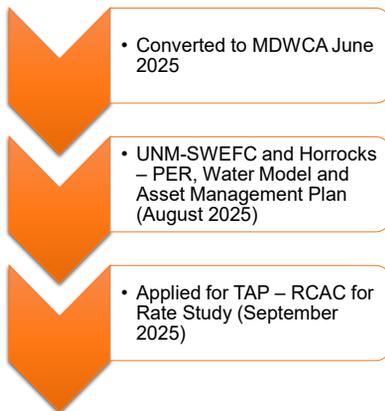


- Asset Inventory Complete
- Leak Detection
- Line Repair
- Extensive Data Collection
- Water Hauling
- Funding Applications



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## Project Readiness



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## Funding Requests

- Water Trust Board Application and Hearing
- Legislative Requests
  - Senator Thornton
  - Representative Lord
  - Governor Michelle Lujan Grisham's Office
- Funding Conferences (IFC and WFX)
- Future Funding



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## Preliminary Engineering Report

- Funded by UNM-SWEFC
- Evaluates Alternatives for Addressing Project Needs
- Provides Cost Estimates
- Includes Water Model for Future Planning



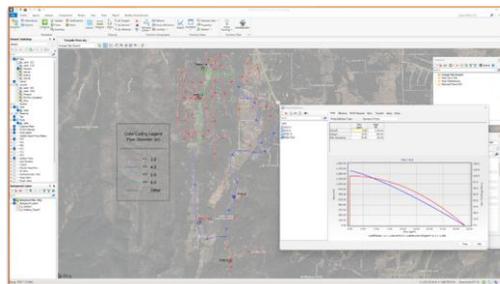
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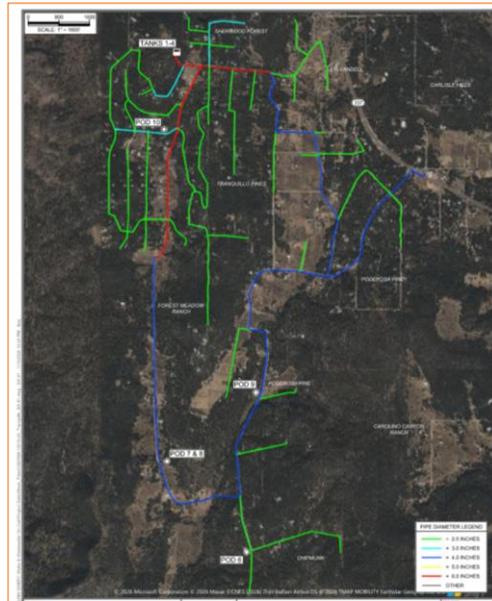
## Asset Management Plan

- What is an Asset Management Plan?
- Asset Inventory
- Project Phasing and Cost
- Basis for Budget and Capital Program

## Water Model

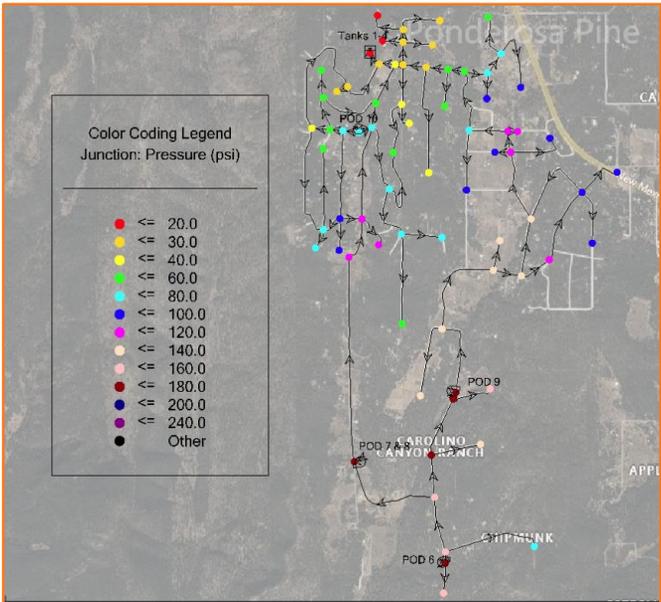
- Why do you need a water model?
- What information does it capture?
- What does your water model tell us about your system?





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## Alternatives

- Alternative 1 – No Action
- Alternative 2 – Fluoride Removal – Blending
- Alternative 3 – Fluoride Removal – Treatment
- Alternative 4 – Water Loss Mitigation/System Upgrades
- Alternative 5 – Combined Fluoride Removal and System Upgrades

## Alternative 1 – No Action

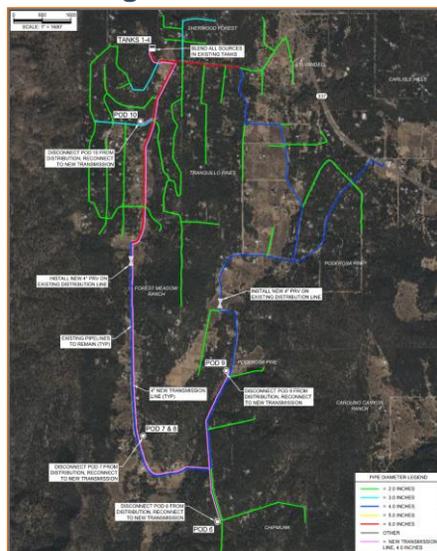
- Continued leaks
- Fluoride Untreated (AO = \$1,000/month fine)
- Non-Compliance
- Not an option



## Alternative 2 – Fluoride Removal - Blending

- Combines high and low fluoride wells
- Would require dedicated pipelines and a common storage point before the water goes to houses
- Two wells have fluoride levels that exceed recommended standards
- Three wells have fluoride levels that may cause dental fluorosis
- Dependent on output from POD10

## Alternative 2- Blending



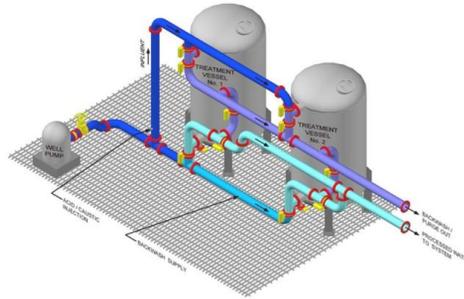
# Alternative 3 – Fluoride Removal - Treatment

• Types of fluoride removal:

- Reverse osmosis
- Ion Exchange
- Activated Alumina

• Activated alumina:

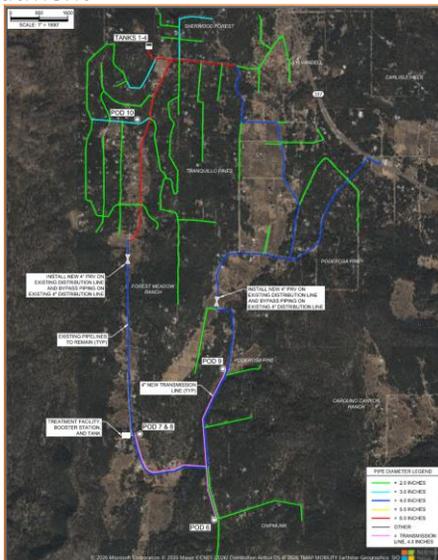
- pH – acid wash
- Level 4 operator
- Media change and
- Minimum flows



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# Alternative 3- Treatment



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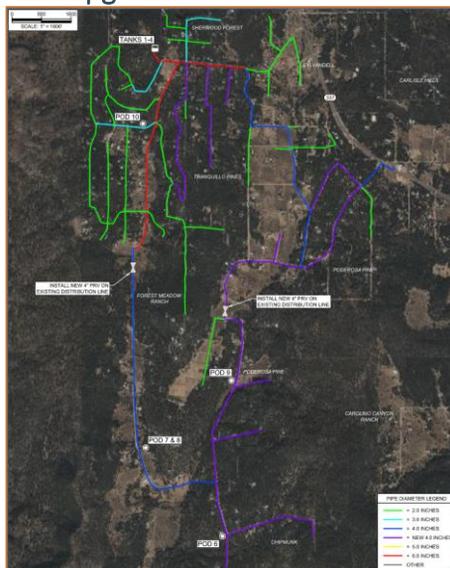
## Alternative 4 - Water Loss Mitigation/ System Upgrades

- No point in treating water and immediately losing it
- Hauling water is bankrupting the system
- Pipes were not installed correctly and/or are thin-walled
- Isolation valves need replacement
- Well production is limited
- PRV's



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## Alternative 4- System Upgrades



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## Life-Cycle Cost for Each Alternative

- Alternative 2- Blending
  - Capital Cost - \$3.6 million
  - O&M - \$128,000
  - 20 Year Life Cycle- \$6.1 million
- Alternative 3-Fluoride Treatment
  - Capital Cost - \$3.1 million
  - O&M - \$138,000
  - 20 Year Life Cycle-\$5.7 Million
- Alternative 4- System Mitigation
  - Capital Cost - \$6.2 million
  - O&M - \$128,000
  - 20 Year Life Cycle- \$8.6 million
- Alternative 5- System Mitigation and Fluoride
  - Capital Cost - \$8.8 million
  - O&M - \$138,000
  - 20 Year Life Cycle-\$11.4 million

## Recommended Alternative 5

- Addresses fluoride removal issue
- Addresses water loss mitigation
- Project can be scaled/phased depending on funding
- Minimum cost is \$3.0 million for fluoride removal
- Includes replacement of lower elevation pipes and valves

# Asset Management Plan Progress

- System history
- System characteristics
- Current operational challenges
- Mission Statement
- Inventory components
  - Basic data (asset ID, type, material etc.)
  - Condition assessment
  - Probability of Failure
  - Consequence of Failure





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# Asset Inventory

Pipes			Pumps			Valves			Meters		
Size (Diameter)	Length, mi	%	Type	#	%	Type	#	%	Type	#	%
Unknown		0.0%	High Service	1	100.0%	Gate	79	89.8%	Residential	262	98.1%
2"	11.0	58.5%	Booster	0	0.0%	Backflow Prev.		0.0%	Commercial		0.0%
3"	1.1	6.1%				Blow off	3	3.3%	Industrial		0.0%
4"	5.1	26.9%	<b>Size (power)</b>	<b>#</b>	<b>%</b>	Corp Stop	3	3.3%	System/Master	5	1.8%
6"	1.0	8.5%	<5 hp	0	0.0%						
8"		0.0%	5-10 hp	5	100.0%	<b>Size (Diameter)</b>	<b>#</b>	<b>%</b>	<b>Size (Diameter)</b>	<b>#</b>	<b>%</b>
10"		0.0%	10-15 hp		0.0%	1 in	3	3.9%	24 in	262	98.1%
12"		0.0%	15-20 hp		0.0%	2 in	44	57.9%	34 in		0.0%
			>20 hp		0.0%	3 in	6	7.9%	1 in	1	0.4%
						4 in	15	19.7%	1.5 in		0.0%
<b>Age (Install Date)</b>	<b>Length, mi</b>	<b>%</b>	<b>Age (Install Date)</b>	<b>#</b>	<b>%</b>	6 in	8	10.5%	2 in	4	1.5%
<10 yrs		0.0%	<3 yrs	3	60.0%	8 in		0.0%	Unknown		0.0%
10-20 yrs		0.0%	3-9 yrs		0.0%	12 in		0.0%			
20-30 yrs		0.0%	10-15 yrs	1	20.0%	> 12 in		0.0%	<b>Age (Install Date)</b>	<b>#</b>	<b>%</b>
30-40 yrs		0.0%	15-20 yrs		0.0%				<3 yrs	8	3.0%
40-50 yrs	18.3	97.9%	Unknown	1	20.0%				3-9 yrs		0.0%
Unknown	0.5	2.7%							10-15 yrs		0.0%
<b>Material</b>	<b>Length, mi</b>	<b>%</b>				<b>Age (Install Date)</b>	<b>#</b>	<b>%</b>	15-20 yrs		0.0%
PVC	18.8	100.0%				<10 yrs	5	8.3%	Unknown	259	97.0%
Steel		0.0%				10-20 yrs		0.0%	<b>Mechanism</b>	<b>#</b>	<b>%</b>
Cast iron		0.0%				20-30 yrs		0.0%	Positive Displacement Meter	1	100.0%
Ductile iron		0.0%				30-40 yrs		0.0%	Ultrasonic Flow Meter		0.0%
HDPE		0.0%				40-50 yrs	60	75.9%	Magnetic Flow Meter		0.0%
						Unknown	14	17.7%	Velocity Meter		0.0%
									Turbine Meter		0.0%





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# Asset Priorities

Asset ID	Segment No.	Type	Length (m)	Outside Thick PU		Material	Manufacturer	Other markings	Condition Assessment	Probability of Failure		Consequence of Failure
				Diament	ress					(Condition)	(Critical or Not)	
P1	1	417	4	Mixed - some sections replaced w/COO	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(4) High (\$10-\$20M)	System Regi	Very high pressure area at 180-200PSI		
P2	2	1700	4	Mixed - some sections replaced w/COO	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(4) High (\$10-\$20M)	System Regi	of service disrupted		
P3	3	875	4	Mixed - some sections replaced w/COO	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(4) High (\$10-\$20M)	System Regi	of service disrupted		
P4	4	50R-26	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it		
P5	5	50R-26	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it		
P6	6	50R-26	1.145	200 PVC 1130	Robotech	Robotech 20(3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it		
P7	7	50R-26	1.588	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P8	8	50R-26	1.459	4	200 PVC 1130	Robotech	Robotech 20(3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P9	9	50R-26	1.555	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P10	10	50R-26	1.913	4	200 PVC 1130	Robotech	Robotech 20(3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P11	11	50R-26	2.114	4	200 PVC 1130	Robotech	Robotech 20(3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(4) High (\$10-\$20M)	System Regi	Asset has shown a pattern of failures. Though the it
P12	12	1075	2	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it			
P13	13	50R-26	1.327	4	200 PVC 1130	Robotech	Robotech 20(3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(4) High (\$10-\$20M)	System Regi	Asset has shown a pattern of failures. Though the it
P14	14	31.6	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted		
P15	15	794	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted		
P16	16	2975	4	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Very Likely to Fail	(4) High (\$10-\$20M)	System Regi	Asset has shown a pattern of failures. Though the it		
P17	17	50R-26	1.16	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted	
P18	18	50R-26	1.020	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted	
P19	19	50R-26	1.829	4.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Somewhat Likely to Fail	(4) High (\$10-\$20M)	System Regi	of service disrupted
P20	20	50R-26	791	4.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted	
P21	21	50R-26	1.829	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P22	22	1337	4	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(4) High (\$10-\$20M)	System Regi	of service disrupted		
P23	23	50R-26	1.509	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted	
P24	24	188	4	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted			
P25	25	1391	2	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted			
P26	26	1931	4	PVC	(3) Fair	Known source of other water loss	(3) Somewhat Likely to Fail	(4) High (\$10-\$20M)	System Regi	of service disrupted		
P27	27	50R-26	2.291	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P28	28	50R-26	752	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P29	29	50R-26	1812	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P30	30	1340	201	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(4) High (\$10-\$20M)	System Regi	Low Pressure Area		
P31	31	820	6	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(4) High (\$10-\$20M)	System Regi	of service disrupted		
P32	32	50R-26	1.113	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P33	33	50R-26	1874	2.09	180 PVC 1130	Certain-Teel	Plastics ASTM-D-224 (3) End of Life	Known source of significant water loss	(3) Very Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it	
P34	34	1010	6	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(3) Very High (\$10M+ or more)	System Regi	of Service Disrupted		
P35	35	1790	3	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(3) Moderate (\$10-\$20M)	HighAsset has shown a pattern of failures. Though the it			
P36	36	105	2	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted			
P37	37	444	2	PVC	(3) Fair	Based on age >50 yrs known (inheri) water loss	(3) Somewhat Likely to Fail	(3) Low (\$1-\$5M)	A few Services Disrupted			

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# Next Steps

- Create internal and external goals
  - Suggest goals pertain to completing the AMP and setting up standard operating procedures (SOPs) to ensure missing data is collected and components of the AMP are updated regularly
- Risk analysis
- Standard operations & maintenance activities
  - SOPs
- Capital Improvement Plan
- Financial Planning

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## Q & A

