City of East Helena

Water System Master Plan

Overview and Discussion on Preliminary Findings

Public Meeting – April 5, 2018

Robert Peccia and Associates

In General the Master Plan includes:

- **Review the existing water system and its operating parameters.**
- **Identify areas where system improvements should be made. Develop alternatives to provide the community with reliable water service and improve operations through the planning period.**
- **Complete a list of recommended improvements for the water system and a funding strategy for implementation.**

East Helena Water System Components

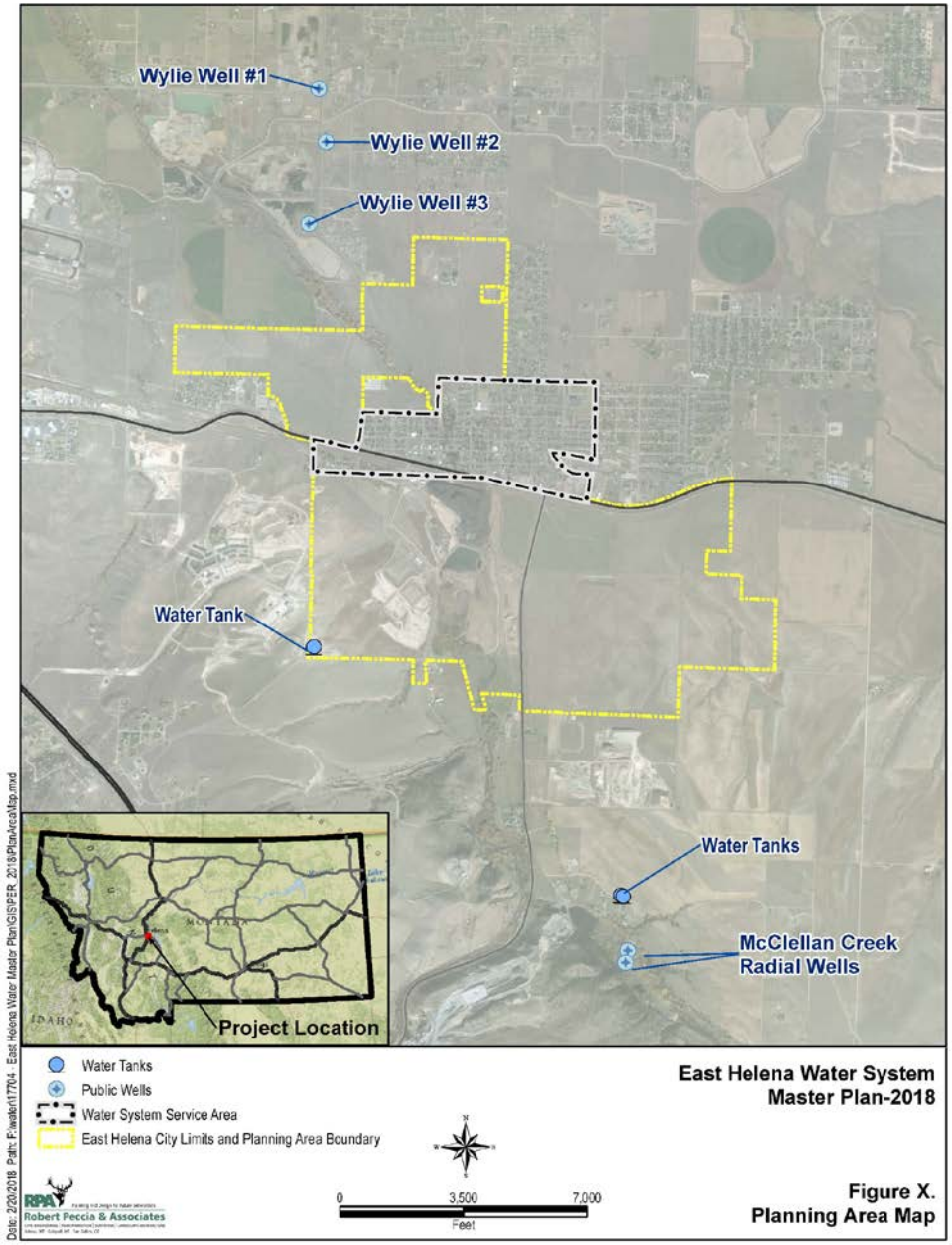
- **Wylie Drive Wells and Transmission Main**
  - Wylie Well #1, 600 gpm (1965)
  - Wylie Well #2, 600 gpm (1965)
  - Wylie Well #3, 450 gpm (1987) – Chlorination Point for Wylie Wells

- **McClellan Radial Wells**
  - Radial Well #1, 500 gpm (1987)
  - Radial Well #2, 500 gpm (1987)

East Helena Water System Components (Cont'd)

- **McClellan Tanks**
  - Reservoir #1, 250,000 Gallons (1928)
  - Reservoir #2, 300,000 Gallons (1948)
- **Highway 282, 1-Million-Gallon Reservoir**
- **Distribution System**
- **Wylie and McClellan Transmission Main**
- **Telemetry & Control System**

East Helena Planning Area



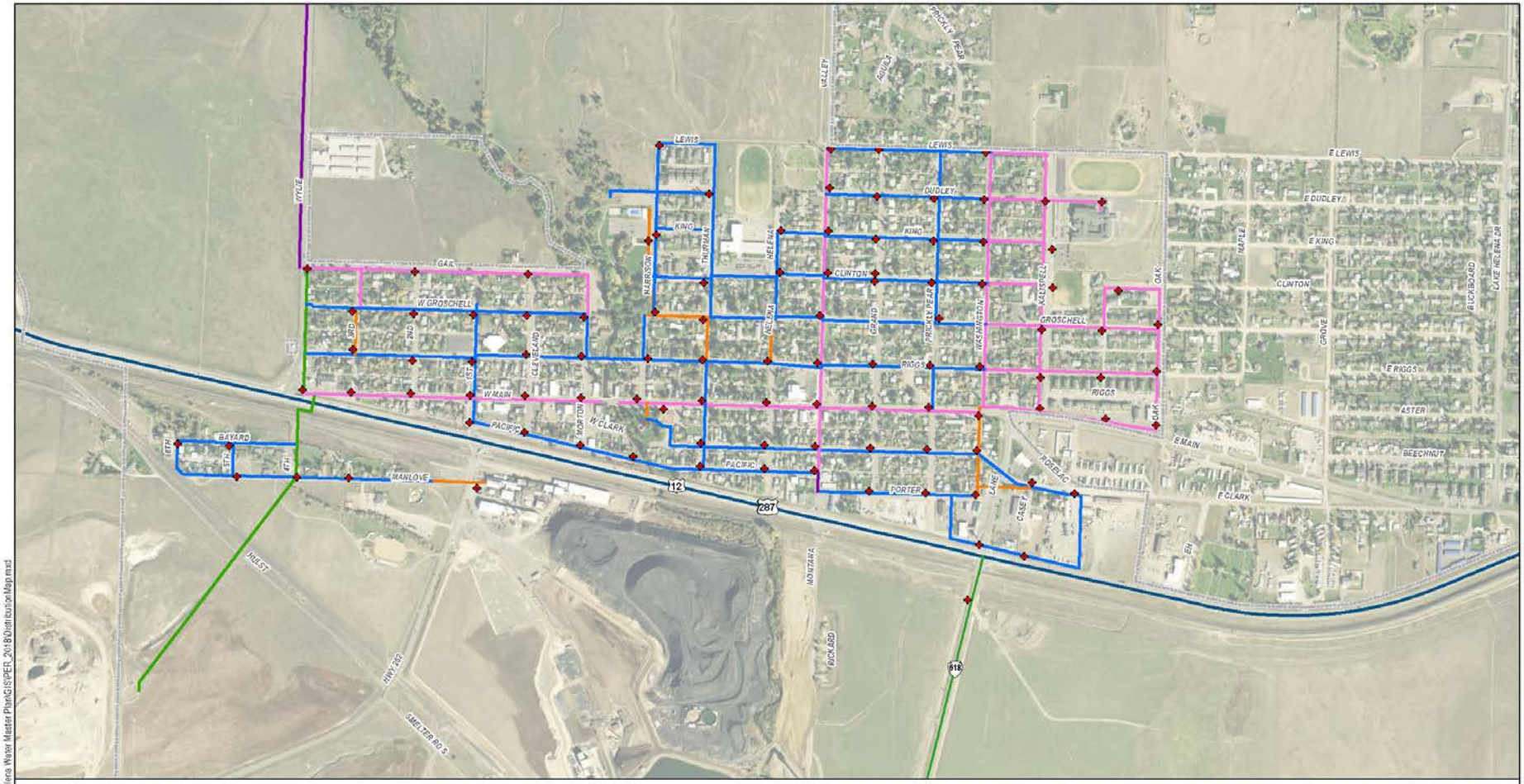


Figure 2.C.4.
City of East Helena's Existing Distribution

Current and Future Operating Criteria

CRITERIA	VALUE
Existing Population (2017)	2,194
Annual Growth Rate	1.45%
Planning Population (2037)	2,926
Current Average Day Demand	423,835 gpd (294 gpm)
Average Day Demand per Capita	193 gal
Current Max Day Demand	1,059,588 (736 gpm)
2037 Average Day Demand	564,718 gpd
2037 Max Day Flow	1,411,795 gpd (980 gpm)

Concerns – East Helena Water System

- **Potential Contamination of Wylie Well #3.**
- **Aging McClellan Creek Tanks.**
- **Water Main That Crosses PPC Lost in 2012. Important Crossing.**
  - **Only other Stream Crossings at Pacific and Riggs.**
- **Dead-End Main, Could Cause Stagnation (1st Street & W. Groschell).**
- **One area of Low Fire Flows (End of Manlove).**
- **Accessibility to Radial Wells.**
- **Aging Telemetry Controls.**

Need for New Water Source

- **Selenium Plume Approximately 1,250’ from Well.**
- **Helena Sand and Gravel Pit Could Influence Groundwater Adjacent to Well.**
- **Water Rights Reserved for East Helena in Closed Basin.**
- **McClellan Radial Well #2 Had Low Water Levels in 2017. (Uncertainty)**

Water Supply Alternatives :

- **Alternative 1**
  - No Action
- **Alternative 2**
  - New Production Well at Northeast Corner of City Owned Property
- **Alternative 3**
  - New Production Well at Northwest Corner of City Owned Property

Preferred Water Supply Alternative

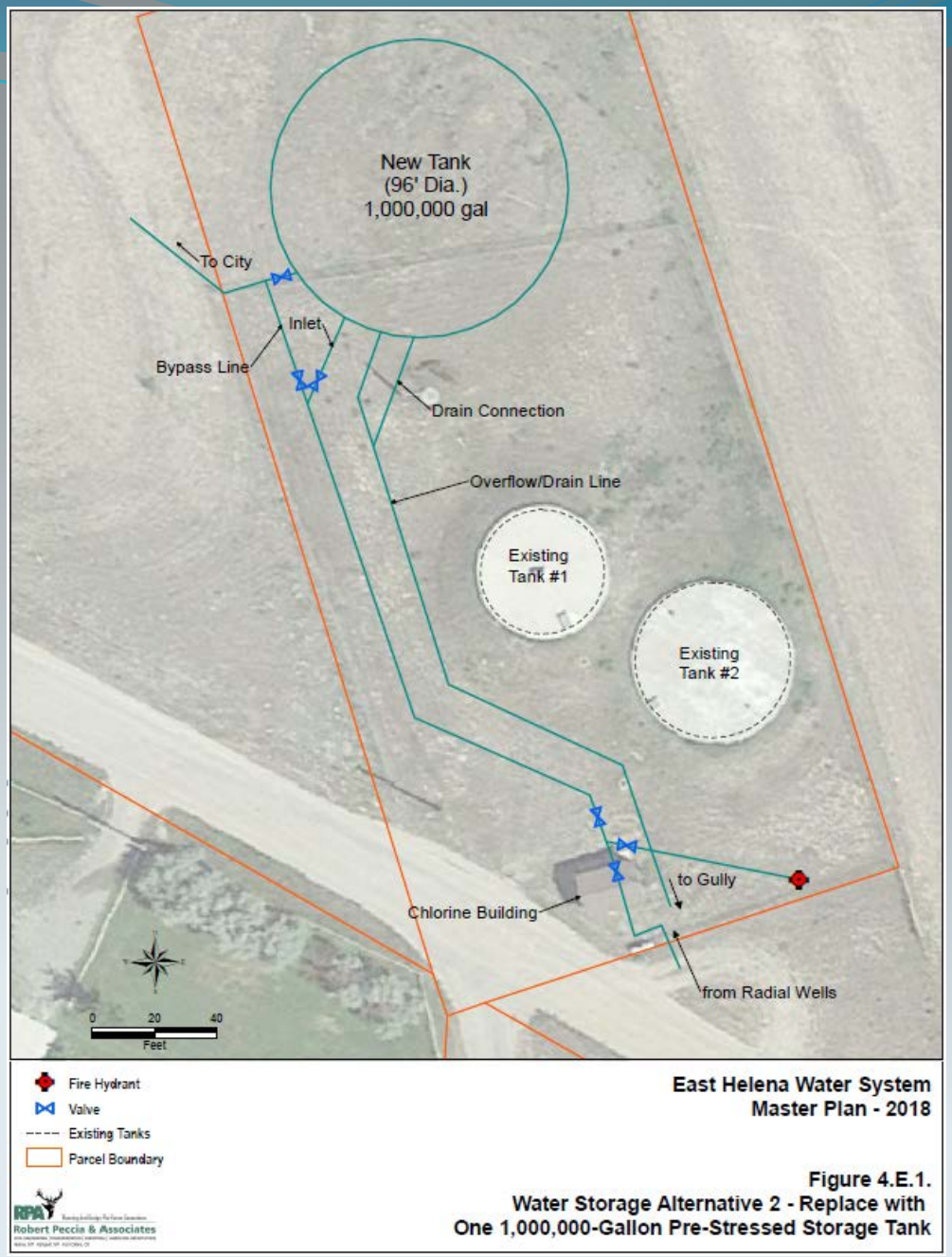
Need for New Water Storage

- **Water Loss.**
  - Leaking Approximately 44,000 Gallons per Day (16 MG per Year).
  - Current System Water Loss 19%.
  - Estimated Water Loss Without McClellan Tanks is 9%.
- **Deteriorating Concrete at Joints Could Become Health Issue.**
- **Un-Operable Isolation Valves.**
- **Deteriorating Connecting Piping.**

Water Storage Alternatives :

- **Alternative 1**
  - No Action
- **Alternative 2**
  - Replace McClellan Storage Tanks With a 1-Million-Gallon Pre-Stressed Concrete Storage Tank
- **Alternative 3**
  - Replace McClellan Storage Tanks With a 1-Million-Gallon Glass-Fused-To-Steel Bolted Tank

Preferred Water Storage Alternative



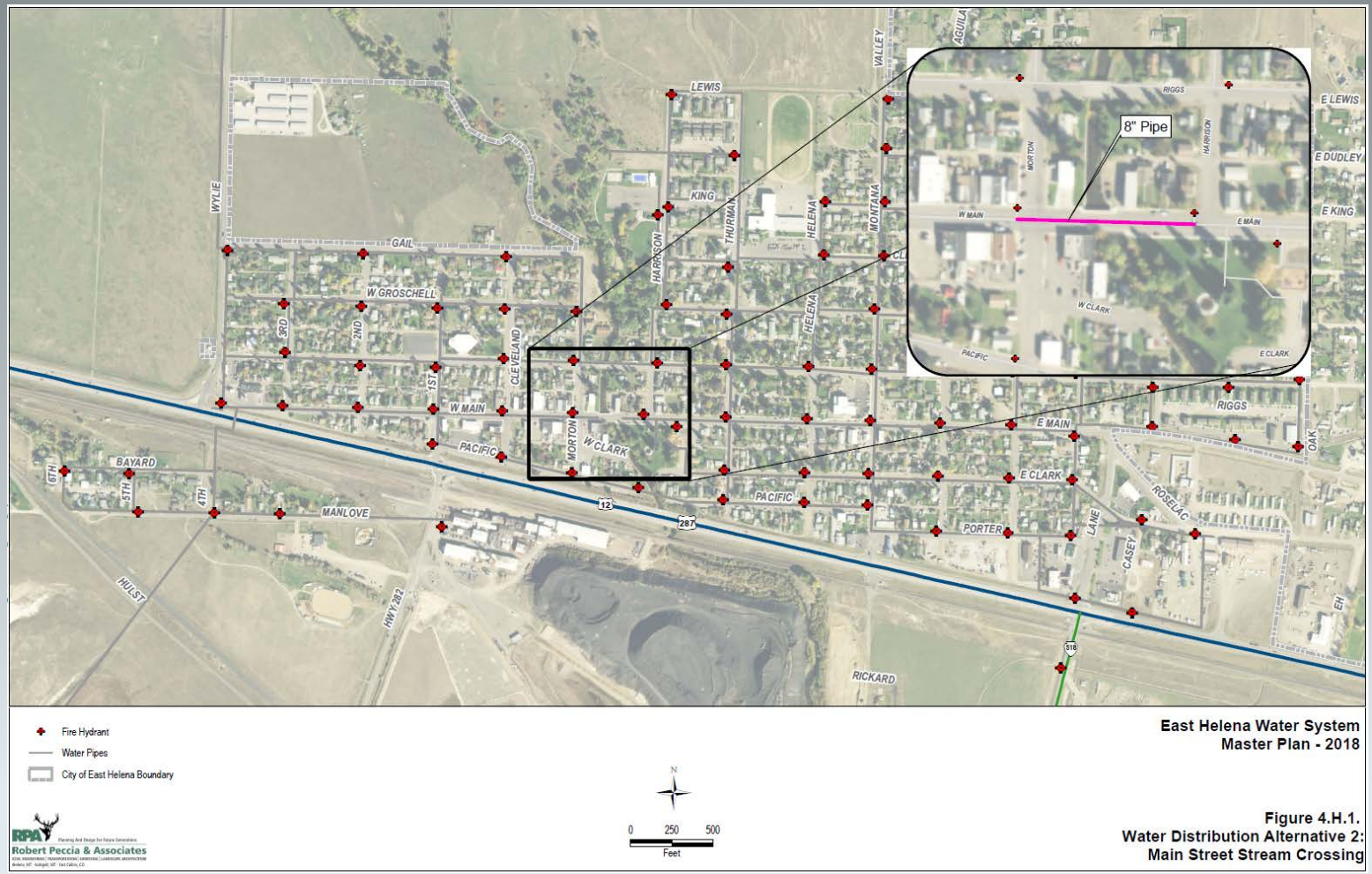
Need For Water Distribution System Improvements

- **Main Street Creek Crossing**
  - Allows Water To Flow From Wylie Source to East Side of PPC (and vice-versa).
  - Dead-End Main.
- **Manlove Water Main**
  - Dead-End Main.
  - Providing Lower Fire Flows.
- **West Groschell and 1st Street Main**
  - Decreased Available Fire Flow.
  - Dead-End Main.

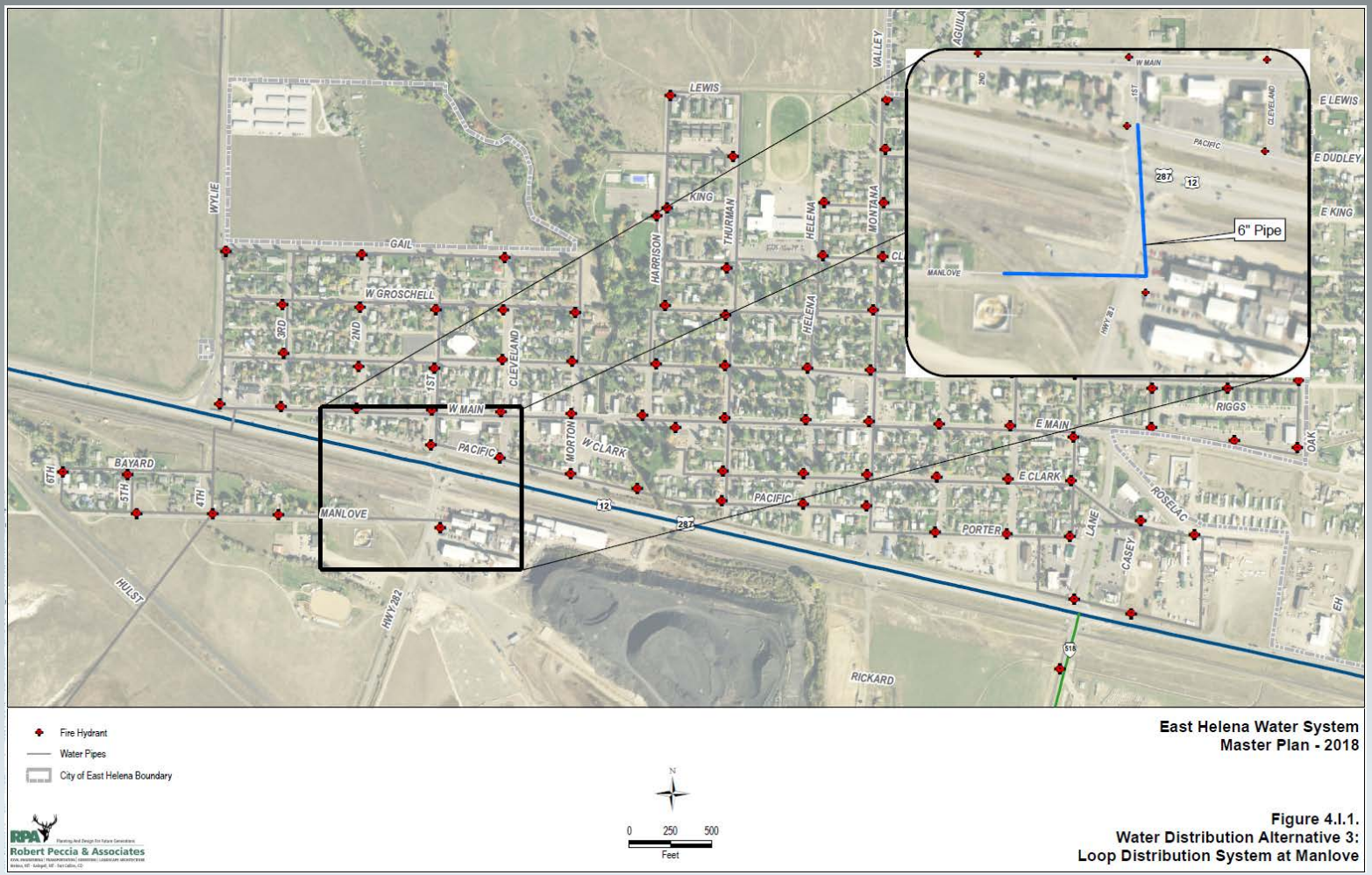
Distribution System Alternatives :

- **Alternative 1**
  - No Action
- **Alternative 2**
  - Main Street Stream Crossing
- **Alternative 3**
  - Loop Distribution System at Manlove
- **Alternative 4**
  - Eliminate Dead-End at 1st Street and West Groschell Street

Preferred Water Distribution System Alternative 2



Preferred Water Distribution System Alternative 3



Preferred Water Distribution System Alternative 4

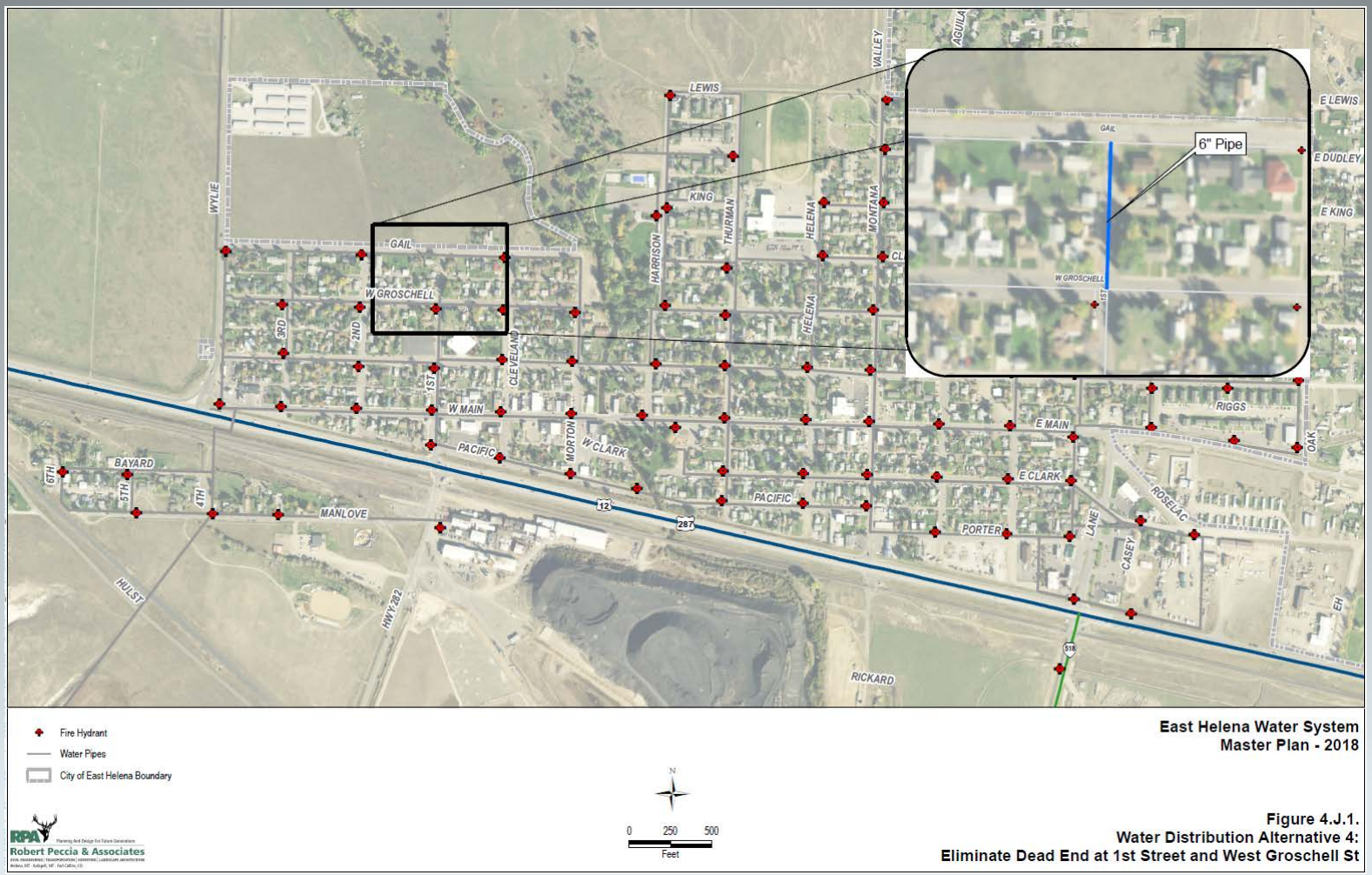


Figure 4.J.1.
Water Distribution Alternative 4:
Eliminate Dead End at 1st Street and West Groschell St

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Need For Other Water System Improvements

- **Radial Well Access**
  - No Creek Crossing.
  - Existing 2-Track Becomes Impassible in Spring and Winter.
  - Wells Not Inspected on Regular Basis.
  - Could be Inaccessible in Emergency Event.
- **Telemetry System**
  - Scada System Not Communicating Properly with Radial Wells.
  - Aging Equipment.
  - Potential For Operators Not to be Notified of Alarm Conditions.

Other Water System Alternatives :

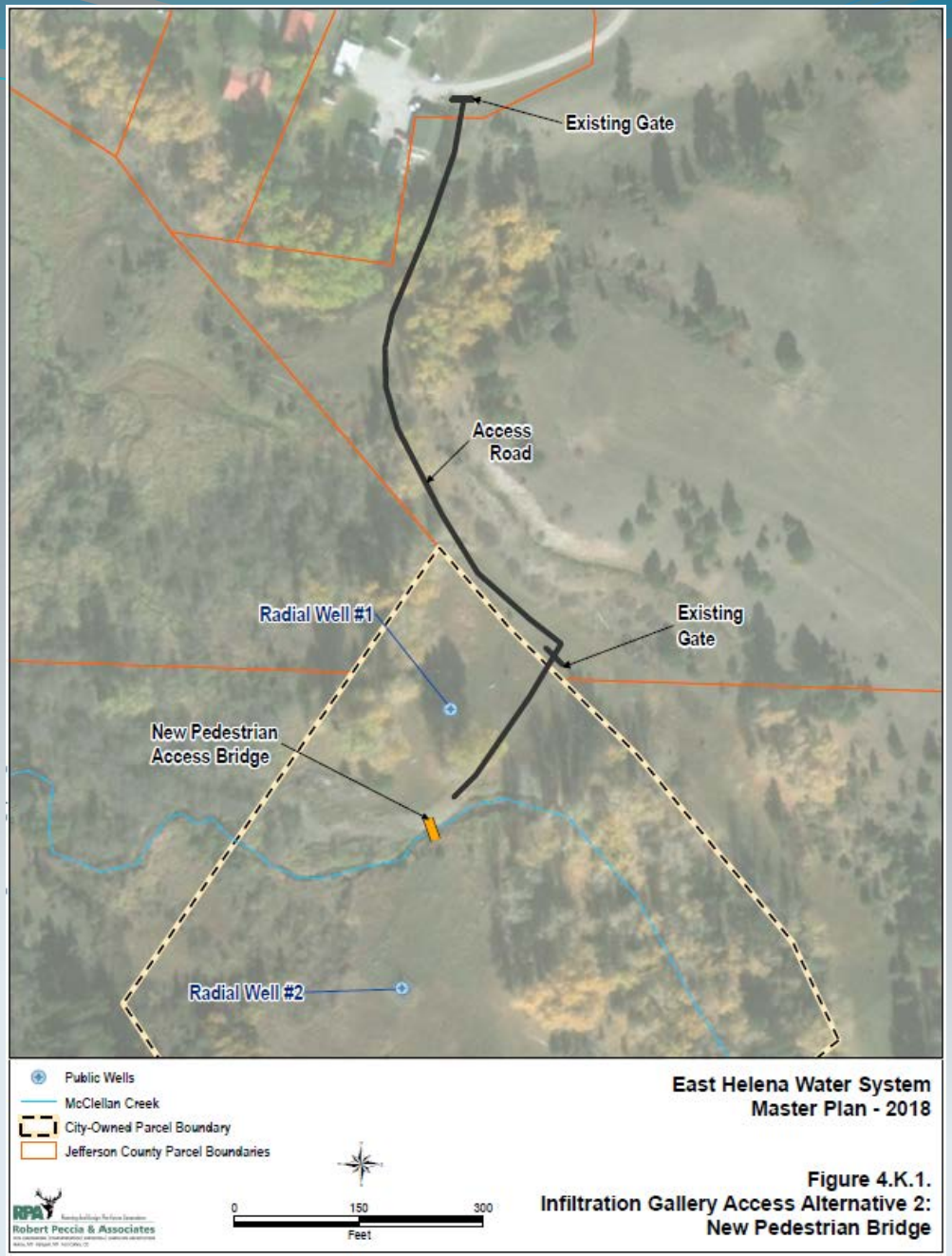
McClellan Water Source Access

- **Alternative 1**
  - No Action
- **Alternative 2**
  - New Pedestrian Bridge

Telemetry System

- **Alternative 1**
  - No Action
- **Alternative 2**
  - Upgrade SCADA System

Preferred McClellan Water Source Access Alternative



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Summary of All Recommended Improvements

- **Replace Wylie Well #3 on City Property and Install New Chlorination System.**
- **Construct New McClellan Tank and Piping.**
- **Re-establish Water Main Crossing at Main Street.**
- **City to Work on Access Agreement and Add Walking Bridge at Radial Wells.**
- **Water Main Loop and Replacement from 1st Street below Highway 12 to Manlove.**
- **Water Main Loop on 1st Street from West Groschell to Gail to alleviate dead-end.**
- **Replace Telemetry.**

TOTAL PROJECT COST – ALL RECOMMENDED ALTERNATIVES

Alternative	Total Project Cost
One New Well on East Side of City Property	$1,345,627
1,000,000-Gallon Pre-Stressed Concrete Storage Tank	$3,383,010
Main Street Stream Crossing	$214,830
Loop Main At Manlove	$589,380
1st Street Loop	$144,890
McClellan Source Access	$107,610
Telemetry System	$474,090
Total Project Cost or All Recommend Alternatives	**$6,259,437**

Grant and Loan Funding Opportunities

- TSEP Grants of $500,000 to $750,000 (biannual) – 7 Criteria
  - **Must Exceed TSEP "Target Rate" (2.3% of MHI = $88.60 /mo for Water+Sewer).**

    Current Residential Avg. Rate = $100.25 (113% of Target Rate)
  - **Maximum of $500,000 (unless ≥ 125% of Target Rate).**
  - **"Dollar-for-Dollar" Match required – can include other grants.**

- RRGL Grants to $125,000 (biannual) – "conservation of water resources"
  - **Maximum of $125,000.**
  - **No Match required.**

- DOJ, Natural Resource Damages Program (Potential Portion of Settlement)
  - **Groundwater Damages is One Criteria.**

Grant and Loan Funding Opportunities

- USDA Rural Development Grant/Loan Packages
  - **Grant Share is Variable.**

- MDEQ State Revolving Fund (SRF) Loans
  - **(2) SRF Programs – Water Pollution Control and Drinking Water.**
  - **2.50% Interest, 20 or 30 year Loans.**

- Most Grants Require “Financial Need”.... also Health/Safety Issues
- Grant Applications are Ranked COMPETITIVELY, and Not All Funded

Grant and Loan Funding Strategy – *BE OPPORTUNISTIC*

- Apply for TSEP - Grants of $500,000
  - **May be a tough year given the project scope and political circumstances.**

- Apply for DNRC - RRGL Grant to $125,000
  - **The project that meets this program's criteria best is the replacement of the McClellan Tanks (Reduce Leakage).**

- DOJ, Natural Resource Damage (NRD) Program – City Amount Unknown – Total Settlement $6M
  - **Groundwater Damages fit criteria for East Helena Water System.**
  - **Continue to provide NRD with information.**

Next Steps and Project Schedule

- City to Adopt Water Master Plan.
- City to Adopt and Approve Grant Applications (DRNC and TSEP). These to be submitted in May and June.
- Natural Resource Damage (NRD) Program will hold a Public Meeting most likely in June. A Restoration Plan which includes how the settlement will be allocated to follow.
- Project Web Site (Current) – Link From City's Web Page.