



City of Whitefish
Department of Public Works
1005 W. 10TH Street, PO Box 158
Whitefish, MT 59937
(406) 863-2460 Fax (406) 863-2419

May 13, 2025

Mayor Muhlfeld and City Councilors
City of Whitefish
Whitefish, Montana

Mayor Muhlfeld and Councilors

**Approval of Preliminary Engineering Report for the
South Whitefish Water Tank**

Introduction/History

The City's potable water system requires additional storage to function properly along HWY 93 South and beyond. In addition, the remaining 6" cast iron main on the south end of town is undersized, deteriorating, contains lead components, and is well beyond its lifespan and should be replaced.

The City has been working with AE2S on this project and the next milestone requires that a Preliminary Engineering Report (PER) be approved by Council and submitted to DEQ.

Current Report

A PER is a critical document for State Revolving Fund (SRF) applications, particularly for drinking water and wastewater projects. It serves as a planning document, identifying the best project to address public health, safety, or environmental concerns. A PER must include a summary of existing conditions, identify needs, evaluate alternatives, provide cost estimates, facilitate funding, and ultimately provide a recommended solution.

The following is a brief summary of the three alternatives that were analyzed in the report:

Alternative 1: Do nothing

While it may seem contradictory to analyze a status quo alternative, it is a basic requirement of and PER to review the consequences of doing nothing. While this alternative will not incur any



costs, it does not address lack of storage, emergency flow issues in the south end of the City or remove cast iron main from the distribution system.

Alternative 2: 1.5 MG ground storage at the water treatment plant site

This alternative consists of the construction of a new 1.5MG ground storage tank located on City owned property adjacent to the existing 1.0MG ground storage tank near the water treatment plant. This alternative would address the increase in demand for water storage for the facilities. However, this alternative does not address emergency flow deficiencies to several locations in the south end of the City and does not remove cast iron pipe.

Alternative 3: 1.0 MG elevated storage at the city shop site

This alternative includes a new booster station to isolate the southern main zone from the northern main zone, the construction of a new 1.0 MG elevated storage tank located at the City owned Shop Site in the southern main zone of the City, as well as the construction of an upgraded 16-inch transmission main that would fill the new storage tank into the existing distribution system. This alternative addresses the water storage deficiency, emergency flow deficiencies, and removes cast iron main.

Alternative 4: 1.0 MG elevated storage tank one half mile south of the city

This alternative consists of the construction of a new 1.0 MG elevated storage tank located just south of Highway 40 W on private land. This alternative includes a 16-inch transmission main that would tie the new storage tank as well as a new 18-inch transmission main that would tie in a new booster station. This alternative addresses the water storage deficiency, emergency flow deficiencies in the southern main zone and transmission capacity issues with the construction of additional storage in the south City area and removes cast iron main. However, this alternative suffers from excessive water aging issues exceeding 50 days.

Alternative 5: 1.5 MG ground storage one mile south of the City

This alternative provides a new 1.5MG ground storage tank located in the Southern Main Zone of Chickadee Way on private land. This storage tank would tie into the existing system with a 16-inch water main. Additionally, a new booster station would be constructed and tied into the existing distribution system with an 18-inch water main. This alternative addresses the water storage deficiency, emergency flow deficiencies, and removes cast iron main. However, this alternative suffers from excessive water aging issues exceeding 50 days.

Alternative 6: Upsized water main along Spokane Avenue and Depot Street

This alternative replaces the existing 12-inch water main along Spokane Avenue and Depot Street between the railyard and E 2nd Street with a new 18-inch water main. This alternative does not provide much increase in flow to the southern end of the City or remove any cast iron watermain, but would be a “building block” in creating a larger main to the southern end of the City. This alternative does provide some increase in transmission/distribution system capacity, but it does not provide enough benefit as a stand-alone project to justify selection currently.



Alternative 7: New 24-in transmission pipeline around eastern flank of City

This alternative consists of a new 24-inch transmission pipeline that runs from the southern end of Texas Avenue around the eastern flank of the City, to the intersection of JP Road and Highway 93 S. Some easement acquisition will be required. This alternative would address emergency flow deficiencies in the southern end of the City, but it will not address storage deficiencies or remove cast iron pipe.

Financial Requirement

The following table provides a comparison of the estimated construction costs for the seven alternatives considered in the PER:

<u>Alternative</u>	<u>Construction Cost</u>
Alt 1	\$0
Alt 2	\$3,400,000
Alt 3	\$16,600,000
Alt 4	\$16,600,000
Alt 5	\$12,400,000
Alt 6	\$1,700,000
Alt 7	\$26,100,000

A project budget strategy has been prepared which anticipates the use of City Funds along with an SRF loan (with anticipated forgiven principal).

Recommendation

A copy of the Executive summary of the PER is included with this report and the entire PER is available for review or download at the Public Works Department.

Alternative 3 is the recommended project. This alternative addresses the water storage and emergency flow deficiencies in the southern main zone, transmission capacity issues with the construction of additional storage in the south City area, and removes cast iron pipe.

It is the opinion of the Public Works Department that this PER provides a comprehensive review of the alternatives to address the deficiencies in the water distribution system. Based on these factors, it is the recommendation of the Public Works Department that Council hold a public hearing to consider approval of the PER and authorize its submittal to DEQ.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Workman".

Craig Workman, P.E.
Director of Public Works

Please publish the following legal notice in the *Daily Interlake* on May 11, 2025 and the *Whitefish Pilot* on May 14, 2025

Please publish below this line

**CITY OF WHITEFISH
NOTICE OF PUBLIC HEARING**

NOTICE IS HEREBY GIVEN that at its regular meeting on Monday May 19, 2025 at 7:10 PM, at the Whitefish City Hall, 418 E. Second Street, the Whitefish City Council will conduct a public hearing and take public comment regarding the adoption of Preliminary Engineering Report for the construction of the South Whitefish Water Tower. A copy of the proposed report may be obtained on 5/14/2025 at www.cityofwhitfish.gov.



DRAFT

Problem definition:

The existing potable water system is storage deficient. The existing transmission/distribution system is inadequate to fill additional storage except when new storage is located near or at the Water Treatment Plant (WTP), this location is unable to provide fire flow to several locations in the south end of the City. The last remaining 6" cast iron main on the south end of town is undersized, deteriorating, contains lead components, and is well beyond its lifespan and should be replaced.

Alternatives:

Alternative 1: Do nothing

Does nothing.

This alternative will not incur any costs.

This alternative does not address lack of storage, fire flow issues in the south end of the City or remove cast iron main from the distribution system.

No further consideration.

Alternative 2: 1.5 MG ground storage at the water treatment plant site

Alternative 2 consists of the construction of a new 1.5MG ground storage tank located on City owned property adjacent to the existing 1.0MG ground storage tank near the water treatment plant. This alternative would address the increase in demand for water storage for the facilities.

This alternative does not address fire flow deficiencies to several locations in the south end of the City and does not remove cast iron pipe. As shown in Table 1 below, this alternative is more cost friendly.

May not require further consideration.

Alternative 3: 1.0 MG elevated storage at the city shop site, and a new booster station to isolate the southern main zone from the northern main zone

Alternative 3 consists of the construction of a new 1.0 MG elevated storage tank located at the City owned Shop Site in the southern main zone of the City. This alternative also includes the construction of an upgraded 16-inch transmission main that would tie the new storage



tank into the existing distribution system. Additionally, this alternative includes the construction of a new booster station located at the corner of Highway 93 S and Greenwood Drive, that would also tie into the existing distribution system with an 18-inch water main.

This alternative addresses the water storage deficiency, fire flow deficiencies in the southern main zone, transmission capacity issues with the construction of additional storage in the south City area and removes cast iron pipe. Table 1 below shows the preliminary costs for this alternative.

Initially, this is the preferred Alternative.

[Alternative 4: 1.0 MG elevated storage tank one half mile south of the city, and a new booster station to isolate the southern main zone from the northern main zone](#)

Alternative 4 consists of the construction of a new 1.0 MG elevated storage tank located in the southern main zone just south of Highway 40 W and East of Highway 93 S on private land. This alternative includes a 16-inch transmission main that would tie the new storage tank into the existing distribution system as well as a new 18-inch transmission main that would tie in a new booster station, located at the corner of Highway 93 S and Greenwood Drive.

This alternative addresses the water storage deficiency, fire flow deficiencies in the southern main zone and transmission capacity issues with the construction of additional storage in the south City area and removes cast iron main.

This Alternative suffers from excessive water aging issues. Previous studies indicated a wintertime water age exceeding 50 days.

This alternative may require additional review.

[Alternative 5: 1.5 MG ground storage one mile south of the City, and a new booster station to isolate the southern main zone from the northern main zone](#)

Alternative 5 provides a new 1.5MG ground storage tank located in the Southern Main Zone off of Chickadee Way on private land. This storage tank would tie into the existing system with a 16-inch water main. Additionally, a new booster station would be constructed and tied into the existing distribution system with an 18-inch water main. This booster station would also be located at the corner of Highway 93 S and Greenwood Drive.



This alternative addresses the water storage deficiency, fire flow deficiencies in the southern main zone and transmission capacity issues with the construction of additional storage in the south City area and removes cast iron main.

This alternative suffers from excessive water aging issues. Previous studies indicated a wintertime water age exceeding 50 days.

This alternative may require additional review.

[Alternative 6: Upsized water main along Spokane Avenue and Depot Street between the railyard and E 2nd Street](#)

Alternative 6 replaces the existing 12-inch water main along Spokane Avenue and Depot Street between the railyard and E 2nd Street with a new 18-inch water main. This alternative does not provide much increase in flow to the southern end of the City but would be a “building block” in creating a larger main to the southern end of the City. Alternative does not remove cast iron pipe.

This alternative does provide some increase in transmission/distribution system capacity, but it does not provide enough benefit as a stand-alone project to justify selection currently.

Does not address storage or cast iron main removal.

This alternative may not be considered as a stand-alone project, but may be considered in conjunction with alternatives 3, 4 & 5.

[Alternative 7: New 24-in transmission pipeline around eastern flank of City](#)

Alternative 7 consists of a new 24-inch transmission pipeline that runs from the southern end of Texas Avenue around the eastern flank of the City, to the intersection of JP Road and Highway 93 S. Some easement acquisition will be required. This alternative would address fire flow deficiencies in the southern end of the City.

This alternative will not address storage deficiencies, does not remove cast iron pipe, and is significantly more expensive than other alternatives.

May not require further consideration.



Table 1. Alternatives preliminary estimated costs.

Alternatives Preliminary Estimated Costs - 2025			
Alternatives	Construction Costs	Non-Construction Costs	Total Cost
Alt 1	\$0	\$0	\$0
Alt 2	\$3,400,000	\$1,100,000	\$4,500,000
Alt 3	\$16,600,000	\$5,600,000	\$22,200,000
Alt 4	\$16,600,000	\$5,600,000	\$22,200,000
Alt 5	\$12,400,000	\$4,400,000	\$16,800,000
Alt 6	\$1,700,000	\$600,000	\$2,300,000
Alt 7	\$26,100,000	\$9,200,000	\$35,300,000



PROJECT NAME: Whitefish South
COMPLETION DATE:

PROJECT LOCATION: Whitefish, MT
FABRICATOR:

COLORS SELECTED:



Tank White | 15BL

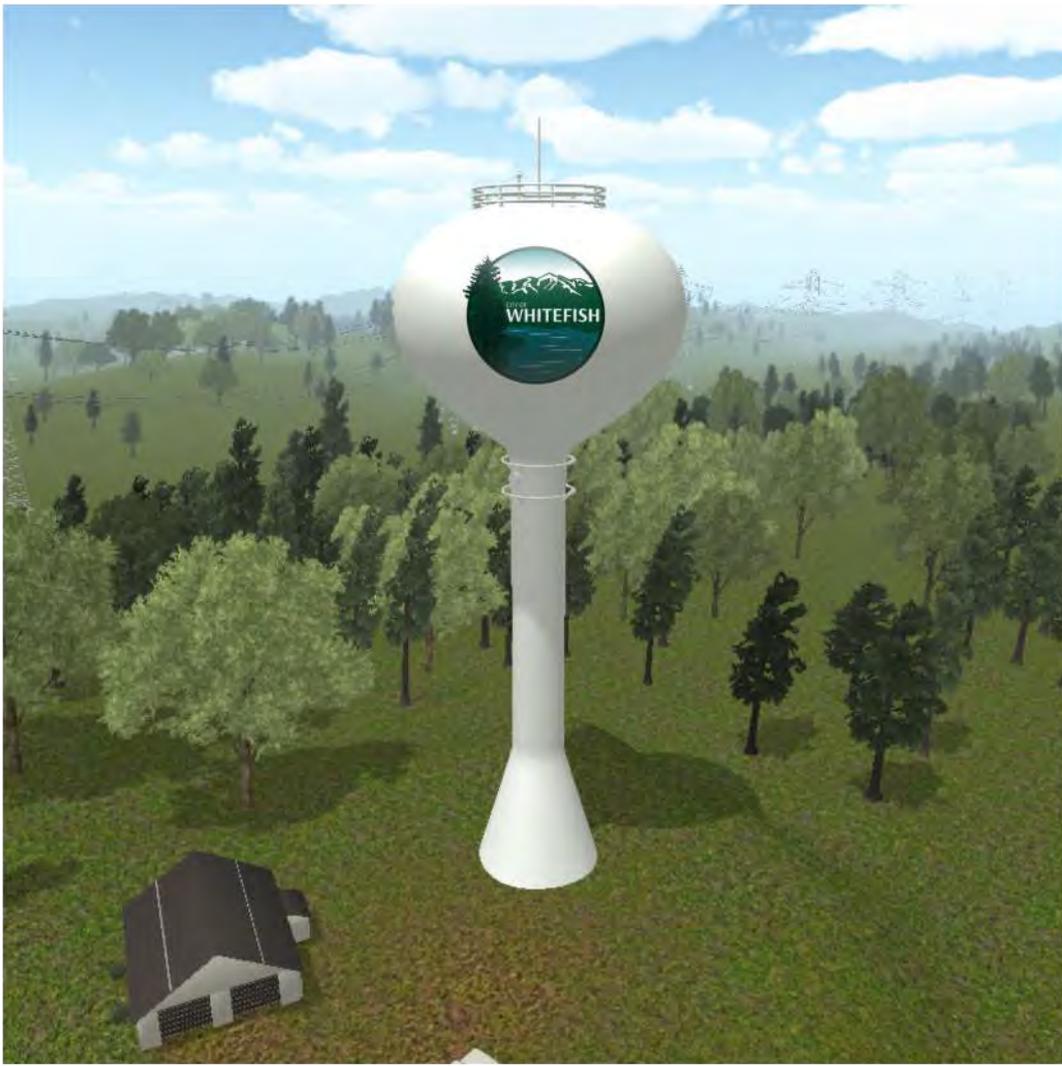
ADDITIONAL INFORMATION:

Tank3D is provided as a general, visual representation for water tank color schemes and is not intended to provide an exact, properly scaled design. Logo, lettering, and physical attributes of the water tank within the Tank3D program will vary from real-world water towers.

Tnemec Company Tank Colorization

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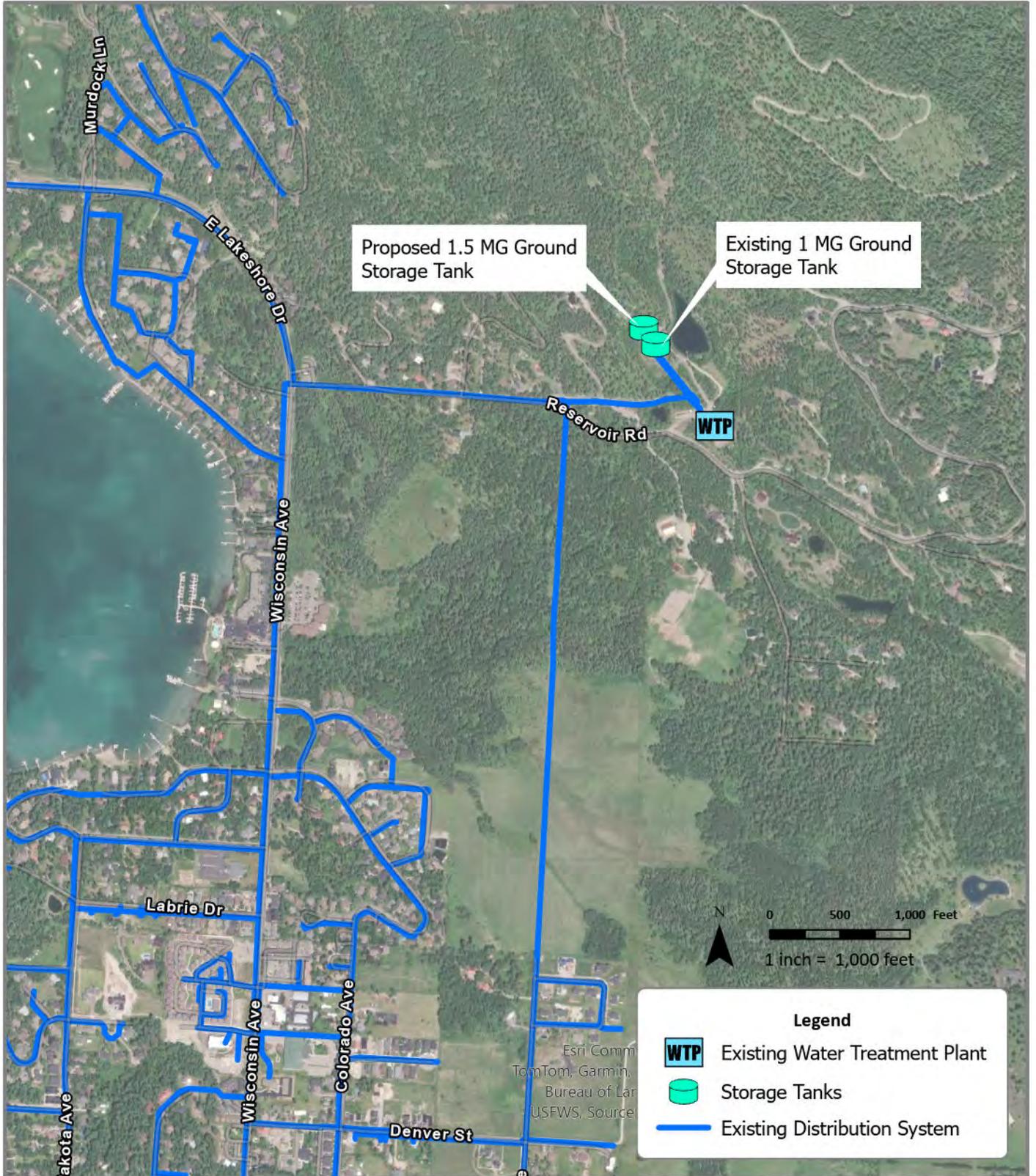
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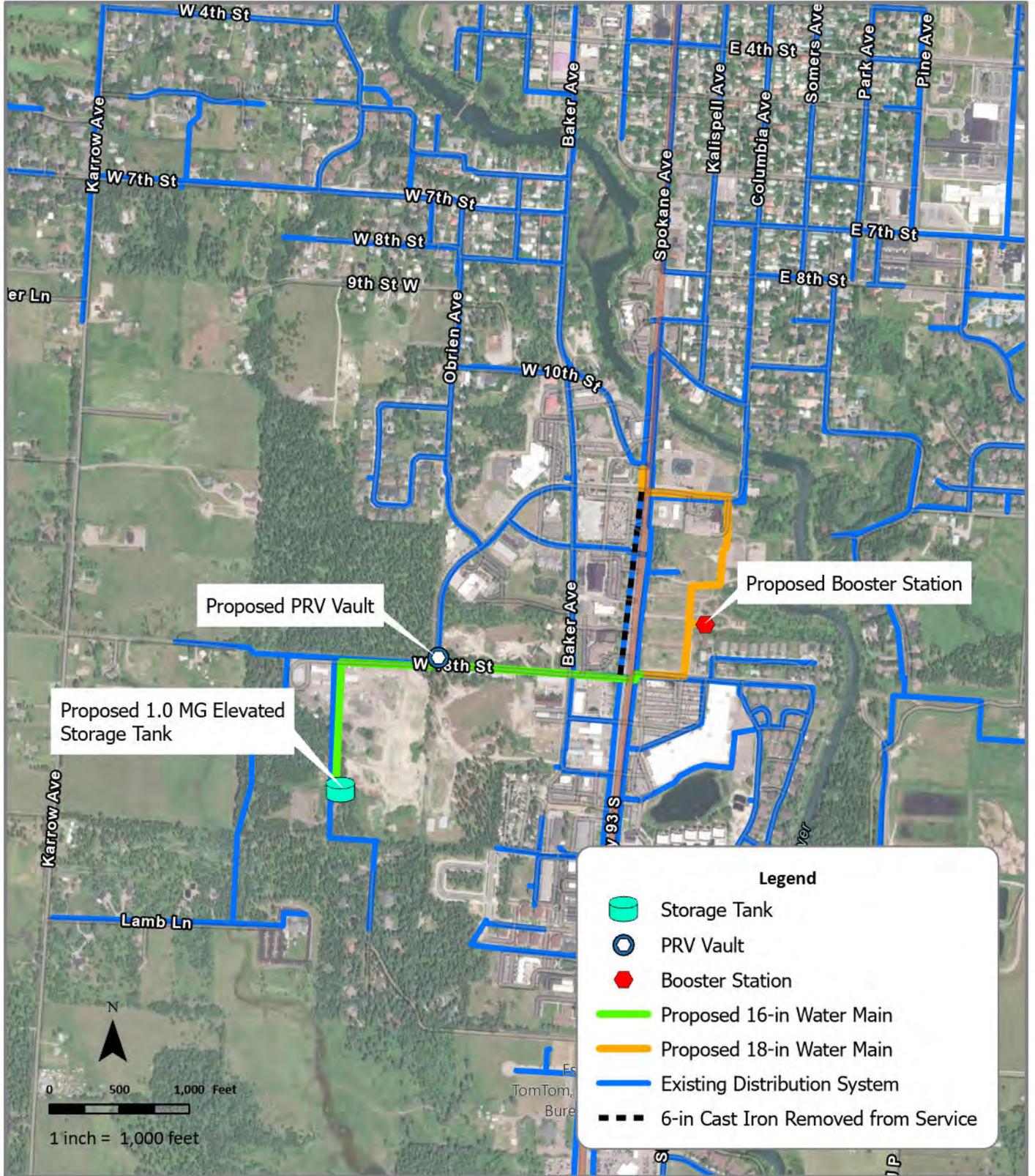
Locator Map Not to Scale

Figure X ALTERNATIVE 2

WHITEFISH SOUTH WATER TANK
City of Whitefish | Flathead County, MT



Date: 4/28/2025



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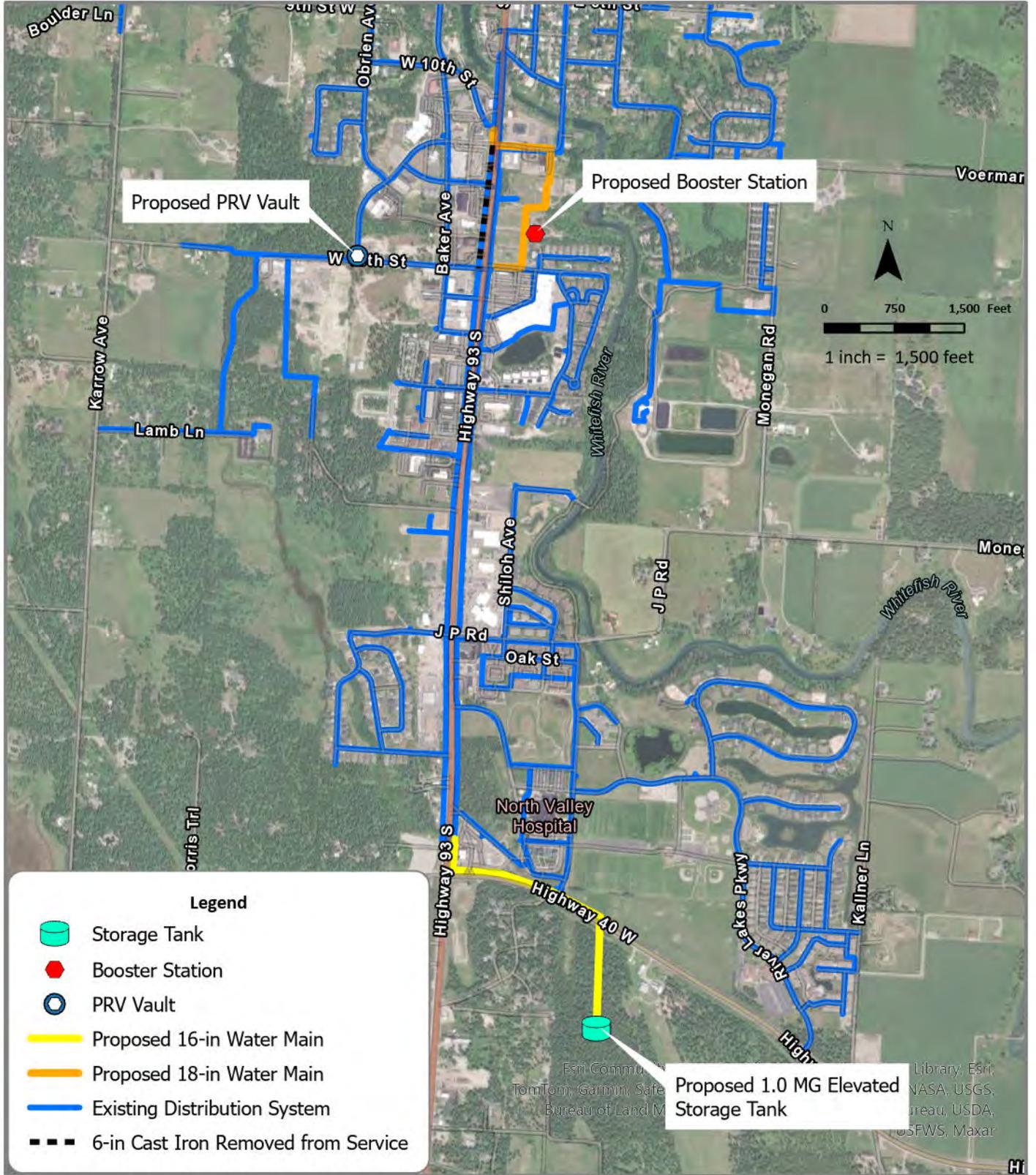
Locator Map Not to Scale

Figure X
ALTERNATIVE 3

WHITEFISH SOUTH WATER TANK
City of Whitefish | Flathead County, MT



Date: 5/6/2025



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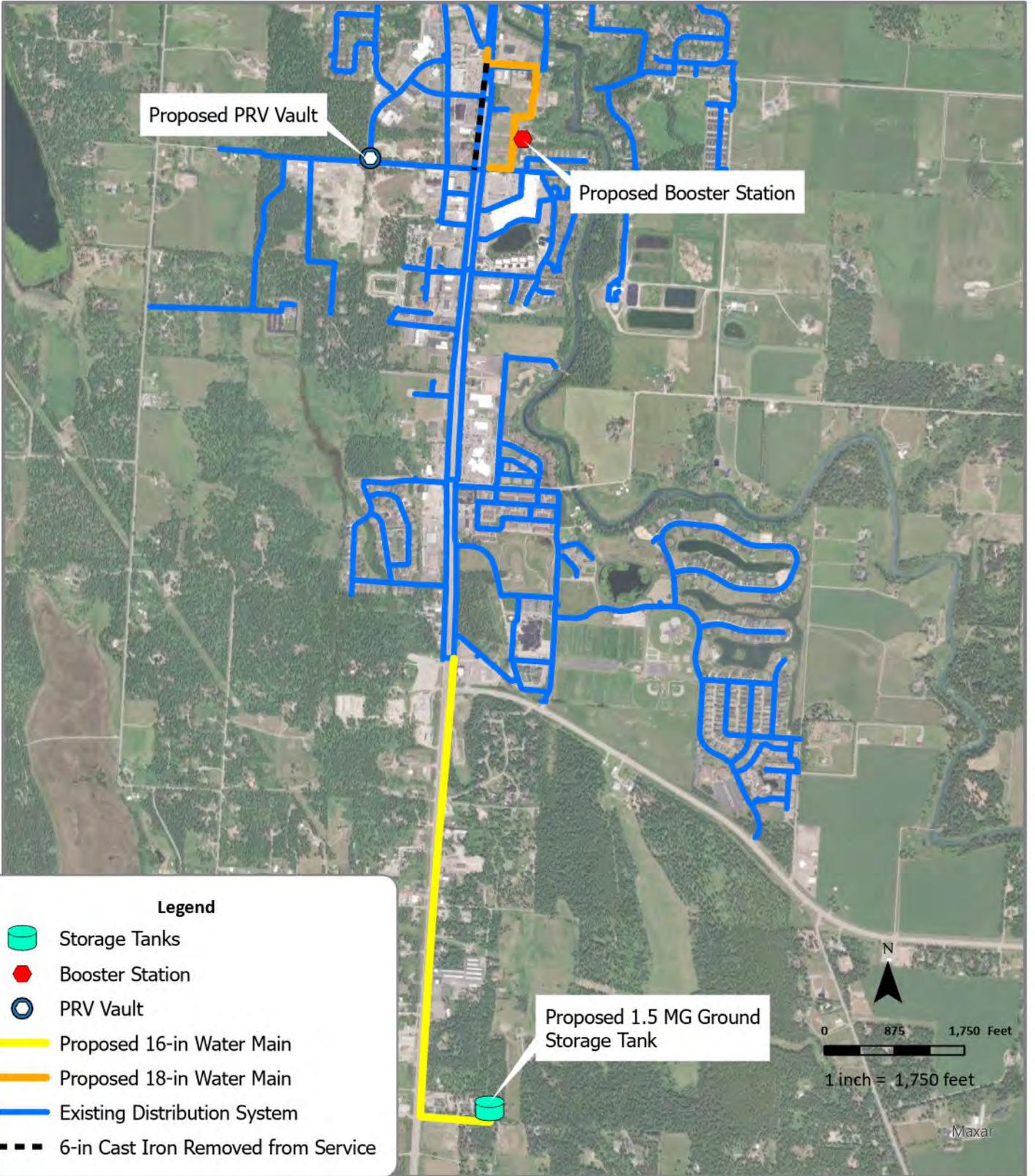
Locator Map Not to Scale

Figure X
ALTERNATIVE 4

WHITEFISH SOUTH WATER TANK
City of Whitefish | Flathead County, MT



Date: 5/6/2025



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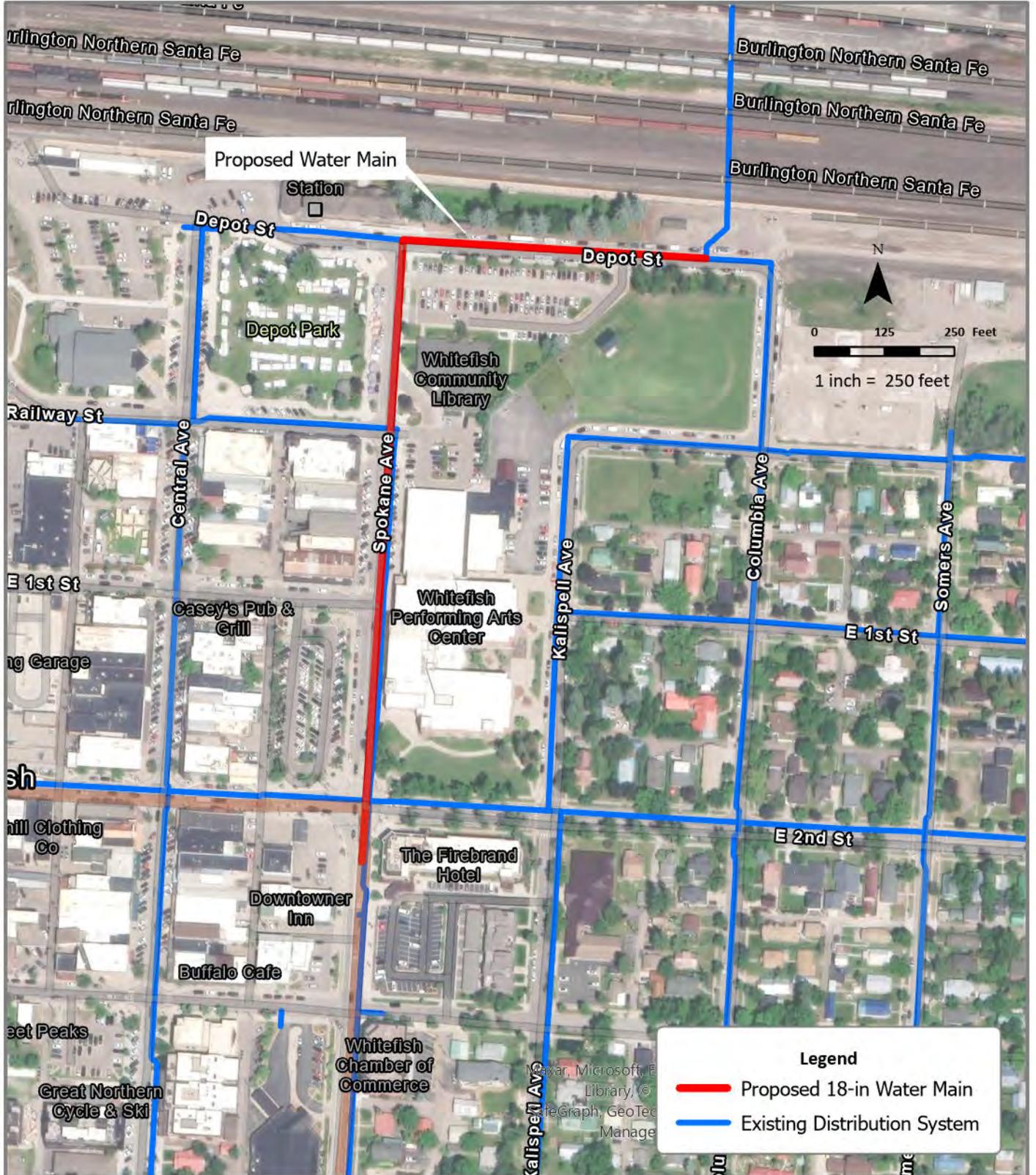
Locator Map Not to Scale

Figure X ALTERNATIVE 5

WHITEFISH SOUTH WATER TANK
City of Whitefish | Flathead County, MT



Date: 5/6/2025



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 Coordinate System: NAD 1983 2011 StatePlane Montana FIPS 2500 Ft Intl | Edited by: CMartins | C:\Local Project Data\Whitefish South Tank\GIS\Whitefish South Tank - Mapping and Analysis.aprx | Alternative 6



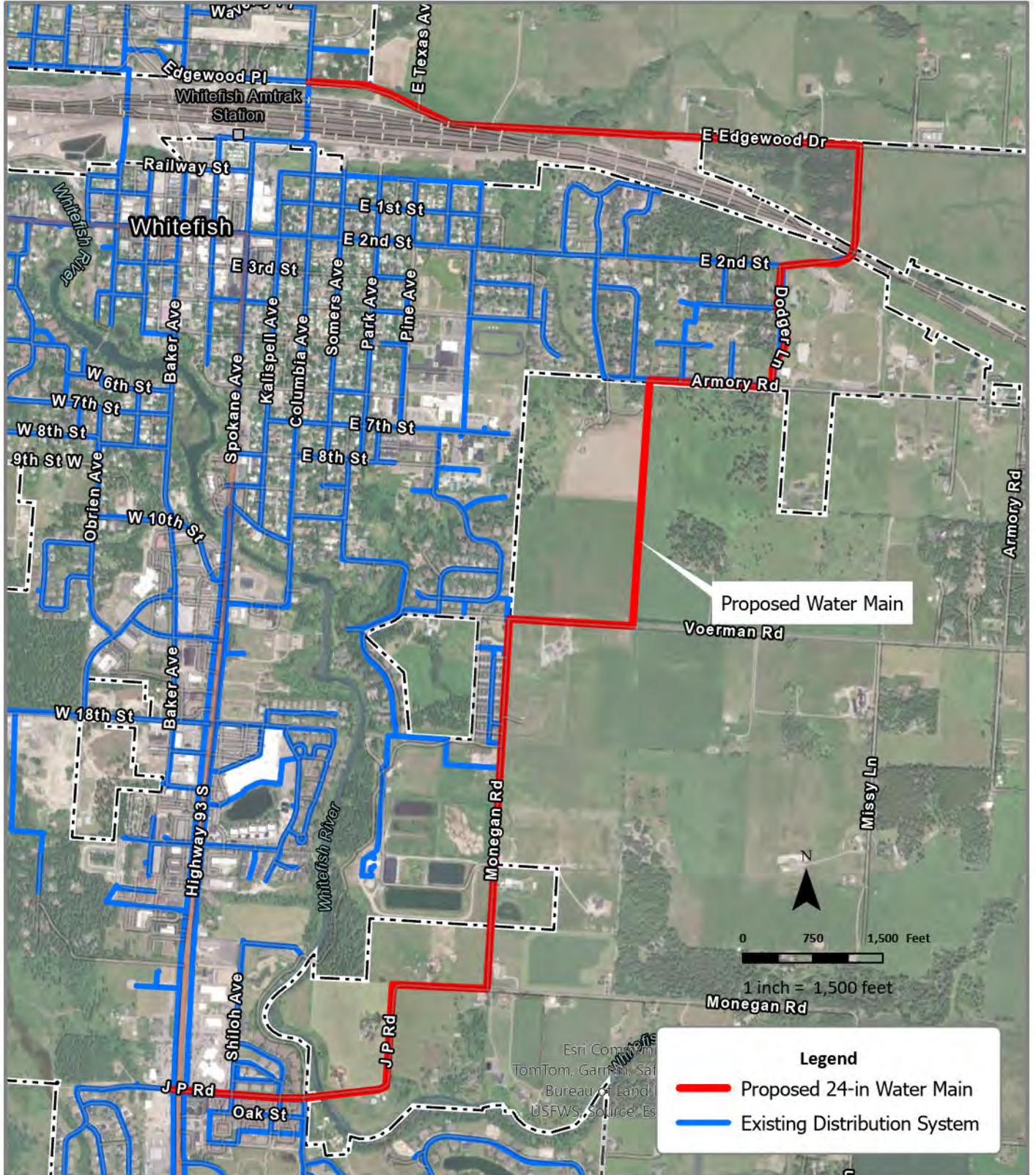
Locator Map Not to Scale

Figure X
ALTERNATIVE 6

WHITEFISH SOUTH WATER TANK
 City of Whitefish | Flathead County, MT



Date: 4/28/2025



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Locator Map Not to Scale

Figure X ALTERNATIVE 7

WHITEFISH SOUTH WATER TANK
City of Whitefish | Flathead County, MT



Date: 4/28/2025