West Glen Water System Expansion
City Council Presentation

Mike Lees, P.E.

May 13, 2026

Meier Feasibility Study Review

Feasibility Study Report to Provide Potable Water to the Community of West Glen, OR

Prepared for:
Morrow County, Oregon

Prepared by:

Meier
ARCHITECTURE • ENGINEERING
Celebrating 40 Years of Service

Paul M. Giever, P.E., S.E.

Meier Water Distribution System Expansion

Meier Project Cost Opinion

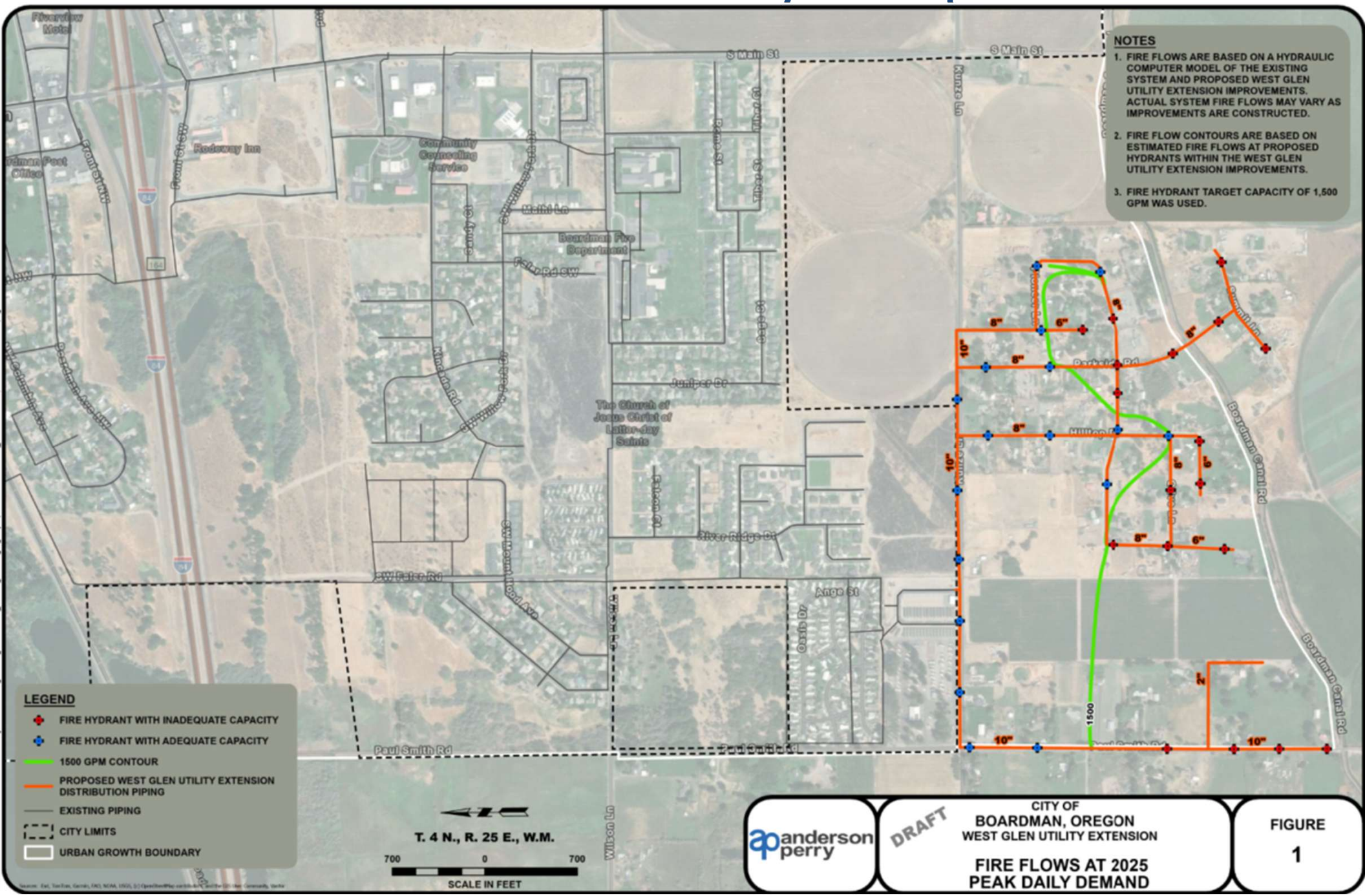
COST OPINION SUMMARY

Water Distribution System Construction - West Glen & Summit Lane		$ 1,718,387
Engineering	15%	$ 257,758
Performance Bond (RS Means 0131 1390 0xxx)	1.5%	$ 25,776
Builder's Risk Insurance (RS Means 0131 1330 0xxx)	0.6%	$ 10,310
Contingencies at Conceptual Stage	20%	$ 343,677
COST OPINION TOTAL		$ 2,355,909
Consider 7% inflation for 2 Years = 14.49% increase		$ 341,371
COST OPINION TOTAL With 2 Years' Inflation		**$ 2,697,280**

This is a Rough-Order-of-Magnitude (ROM) opinion of probable construction cost.

Notes:
1. No hydraulic modeling has been done for this estimate, so pipe sizes are estimated based on similar systems.
2. The utility may want to upsize the main line to add capacity for future water extensions beyond West Glen.
3. Excavation thru rock is more expensive and has not been included.
4. Likewise, dewatering of excavations was not anticipated or included.
5. Estimate includes one meter and service line to one house/building per lot.
6. No meters or service lines were estimated to empty lots.
7. Utility may want additional looping
8. Estimate is based on the prime Construction Contractor performing all the work.
9. Contingency of 20% is consistent with RS Means for a Conceptual Design (ref RS Means 0121 1600 0020).

Meier Water Distribution System Expansion



Meier Water Distribution System Expansion – Water Model Results

City of Boardman, Oregon
West Glen Utility Extension
Fire Flows at 2025 Peak Daily Demand

Hydrant Model ID	Capacity Assessment	Hydrant Design Flow (gpm)
J174	PASS	1,628.59
J176	PASS	1,548.28
J178	FAIL	1,421.95
J182	FAIL	1,368.69
J184	FAIL	1,304.73
J186	FAIL	1,336.28
J188	FAIL	1,088.96
J190	FAIL	1,446.65
J192	FAIL	1,472.04
J194	FAIL	1,026.24
J196	FAIL	1,239.49
J198	PASS	1,511.84
J200	FAIL	1,486.14
J202	PASS	1,511.84
J204	PASS	1,508.22
J206	FAIL	1,486.38
J208	FAIL	1,469.05
J210	FAIL	1,300.52
J212	FAIL	1,183.58
J214	FAIL	1,075.30
J216	FAIL	1,148.47
J218	FAIL	1,489.90
J220	PASS	1,505.84
J222	PASS	1,525.84
J224	PASS	1,541.98
J226	FAIL	1,227.21
J228	PASS	1,510.59
J230	PASS	1,547.84
J232	PASS	1,593.21
J234	PASS	1,550.38
J236	PASS	1,712.53
J238	PASS	1,814.67
J240	PASS	1,814.67
J242	PASS	1,738.49
J244	PASS	1,585.65

gpm = gallons per minute

Notes:
1. Fire hydrant design flow demand is 1,500 gpm. A hydrant design flow greater than 1,500 gpm results in a passing capacity assessment.
2. The hydrant design flow rate shown for each hydrant is the maximum flow rate capable while maintaining an entire water system residual pressure above 20 pounds per square inch, as required per Oregon Health Authority - Drinking Water Services regulations and the Oregon Fire Code.
3. Individual fire hydrants typically provide flows in the range of 800 to 1,200 gpm from a small port, and approximately 2,000 gpm from a larger "pumper" port. Hydrant design flow rates exceeding 2,000 gpm are generally accomplished by utilizing multiple nearby fire hydrants to meet the increased fire demand. The hydrant design flows shown exceeding 2,000 gpm are more representative of the available flows in the distribution system main lines at that specific fire hydrant location, rather than the flow rate the fire hydrant is actually capable of.

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CITY OF
BOARDMAN, OREGON
WEST GLEN UTILITY EXTENSION
FIRE FLOWS AT 2025 PEAK DAILY DEMAND

FIGURE
1

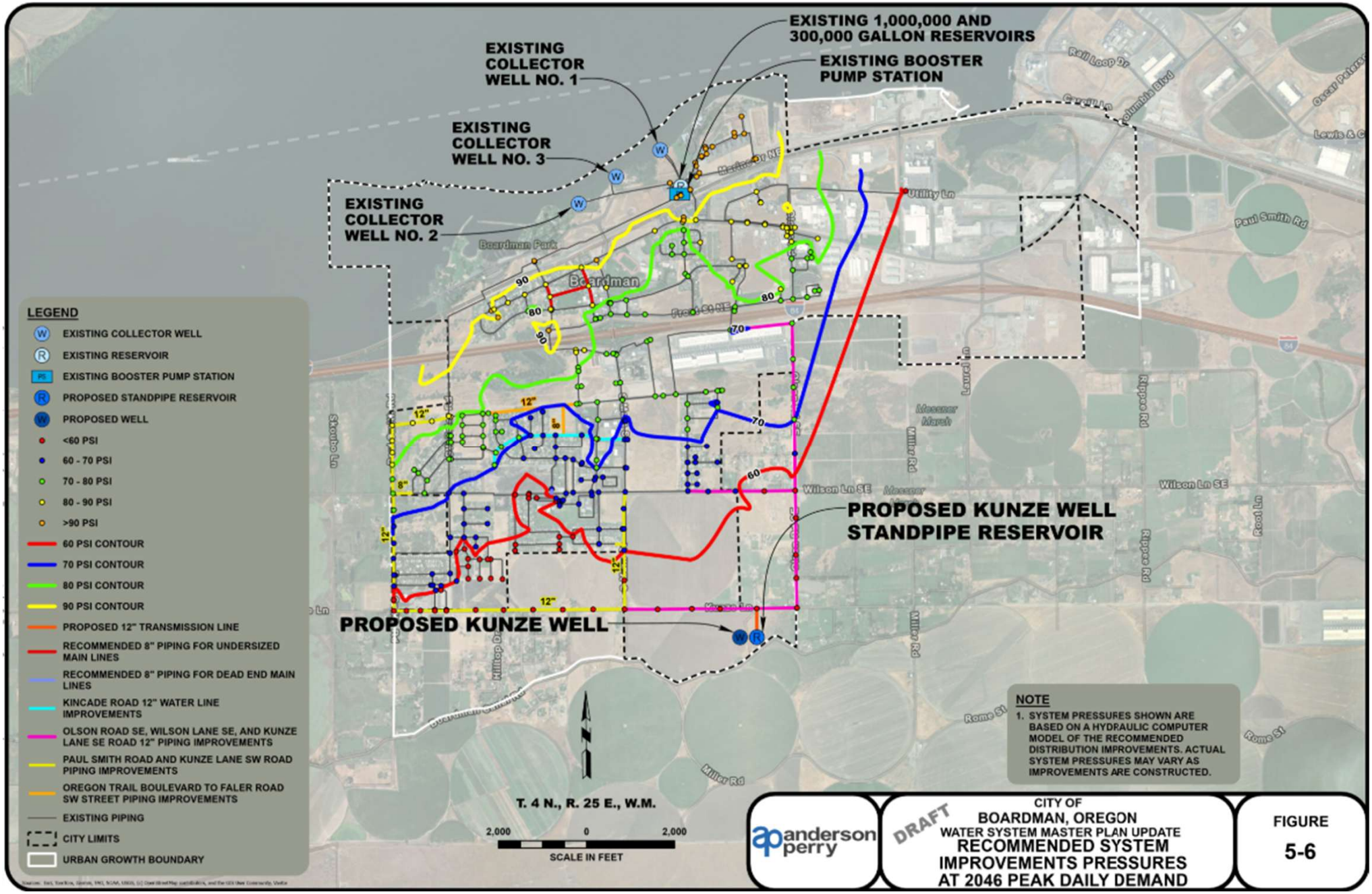
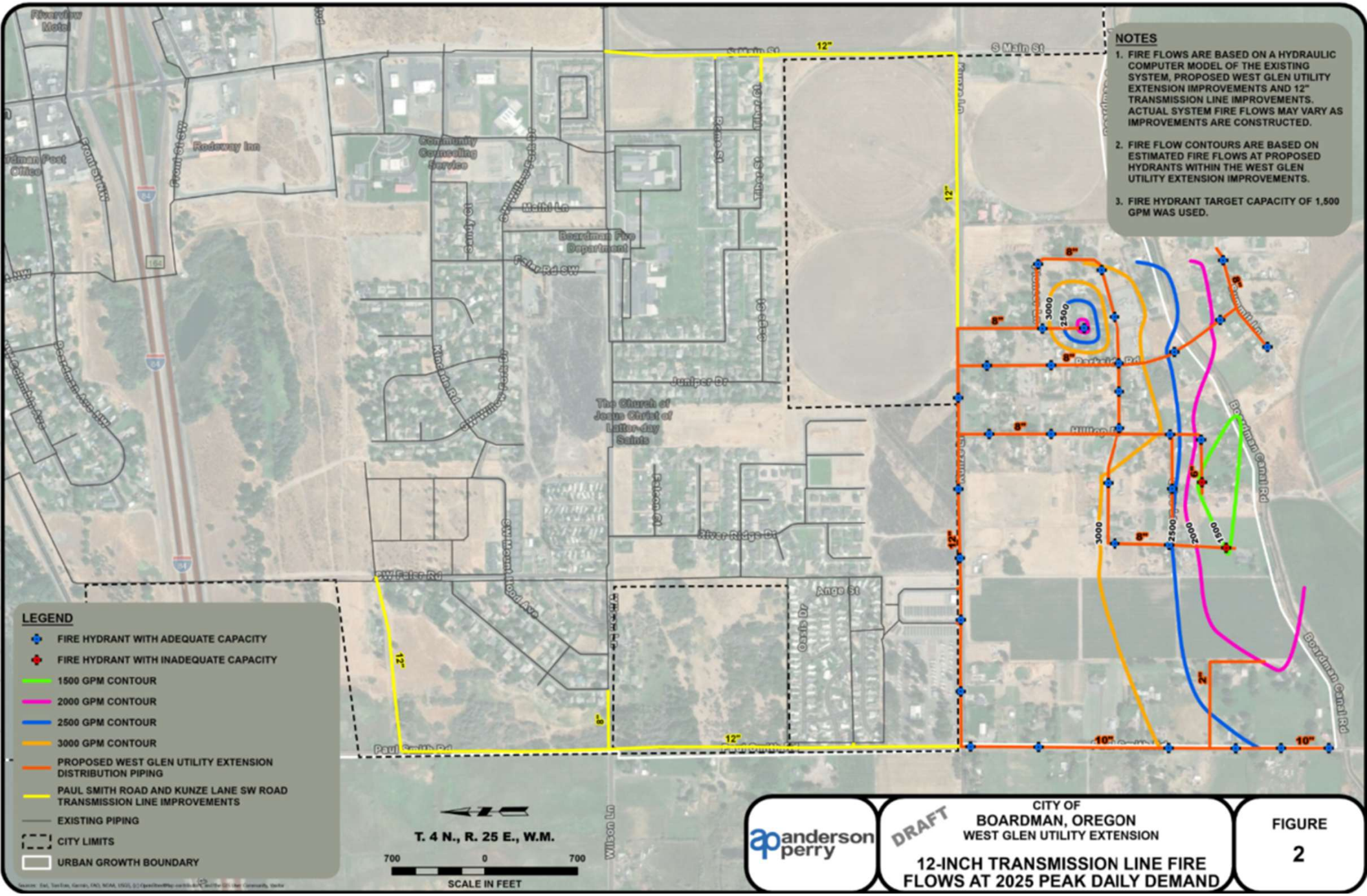


Figure 5-6 Recommended System Improvements Pressures at 2046 PDD



Water Model Results with 12-inch Transmission Main

Meier Water Distribution System Expansion – Water Model Results with 12-inch connecting on Faler Road and looping around to S. Main Street

City of Boardman, Oregon
West Glen Utility Extension
12-inch Transmission Line Fire Flows at 2025 Peak Daily Demand

Hydrant Model ID	Capacity Assessment	Hydrant Design Flow (gpm)
J174	PASS	5,663.27
J176	PASS	4,061.54
J178	PASS	2,892.98
J182	PASS	2,580.39
J184	PASS	2,275.78
J186	PASS	2,417.91
J188	FAIL	1,474.17
J190	PASS	2,559.31
J192	PASS	2,637.85
J194	FAIL	1,340.20
J196	PASS	1,809.33
J198	PASS	2,883.62
J200	PASS	2,674.25
J202	PASS	2,893.31
J204	PASS	3,468.16
J206	PASS	3,611.13
J208	PASS	3,452.57
J210	PASS	2,352.06
J212	PASS	1,901.43
J214	PASS	1,584.79
J216	PASS	1,698.22
J218	PASS	3,474.47
J220	PASS	3,323.75
J222	PASS	3,432.78
J224	PASS	3,164.87
J226	PASS	1,771.88
J228	PASS	3,734.39
J230	PASS	4,618.56
J232	PASS	4,597.60
J234	PASS	3,630.88
J236	PASS	6,330.61
J238	PASS	6,324.50
J240	PASS	5,960.24
J242	PASS	5,561.72
J244	PASS	5,235.95

gpm = gallons per minute

Notes:
1. Fire hydrant design flow demand is 1,500 gpm. A hydrant design flow greater than 1,500 gpm results in a passing capacity assessment.
2. The hydrant design flow rate shown for each hydrant is the maximum flow rate capable while maintaining an entire water system residual pressure above 20 pounds per square inch, as required per Oregon Health Authority - Drinking Water Services regulations and the Oregon Fire Code.
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CITY OF
BOARDMAN, OREGON
WEST GLEN UTILITY EXTENSION
12-INCH TRANSMISSION LINE FIRE FLOWS AT 2025 PEAK DAILY DEMAND

FIGURE
2

CITY OF BOARDMAN, OREGON
SW BOARDMAN UTILITY IMPROVEMENTS
WATER DISTRIBUTION PRELIMINARY COST ESTIMATE
(YEAR 2026 COSTS)
5/13/2026

NO.	DESCRIPTION	UNIT	UNIT PRICE	ESTIMATED QUANTITY	TOTAL PRICE
1	Mobilization/Demobilization	LS	$ 122,100	All Req'd	$ 122,100
2	Temporary Protection and Direction of Traffic/Project Safety	LS	85,000	All Req'd	85,000
3	12-inch Water Line	LF	80	13,600	1,088,000
4	8-inch Water Line	LF	60	600	36,000
5	12-inch Butterfly Valve	EA	3,500	15	52,500
6	8-inch Gate Valve	EA	2,800	8	22,400
7	Air-release Valve and Vault	EA	15,000	7	105,000
8	Connection to Existing Water Line	EA	6,500	6	39,000
9	Fire Hydrant and Auxiliary Valve	EA	10,000	27	270,000
10	Surface Restoration	LS	80,000	All Req'd	80,000
11	ACP Restoration	SY	150	4,600	690,000
				Total Estimated Construction Cost	**$ 2,590,000**
				Construction Contingencies (20%)	518,000
				Design and Construction Engineering (20%)	518,000
				Permitting (2%)	52,000
				TOTAL ESTIMATED PROJECT COST (2026)	**$ 3,678,000**
				5% Inflation to the Time of Construction (Assumed Construction 2027)	184,000
				TOTAL ESTIMATED PROJECT COST (2027)	**$ 3,862,000**

Comments and/or Questions

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