

**CITY OF BOARDMAN, OREGON  
WATER SYSTEM MASTER PLAN  
DESIGN CRITERIA**

	Year 2025	Year 2046
Design Population <sup>1,2</sup>	5,820	9,287
<b>Supply</b>		
Average City Daily Demand (gpcd)	315	315
Average City Daily Flow (gpd)	1,833,000	2,925,000
Average City Daily Flow (gpm)	1,300	2,000
Average Port of Morrow Flow <sup>3</sup> (gpd)	2,906,000	2,906,000
Average Port of Morrow Flow (gpm)	2,000	2,000
Average Industrial Flow <sup>4</sup> (gpd)	82,000	246,000
Average Industrial Flow (gpm)	60	180
Total Average Daily Flow (gpd)	4,821,000	6,077,000
Total Average Daily Flow (gpm)	3,400	4,200
Peak City Demand <sup>5</sup> (gpcd)	1,100	1,100
Peak City Flow (gpd)	6,402,000	10,216,000
Peak City Flow (gpm)	4,400	7,100
Peak Port of Morrow Flow (gpd)	6,029,000	6,029,000
Peak Port of Morrow Flow (gpm)	4,200	4,200
Peak Industrial Flow (gpd)	1,008,000	3,024,000
Peak Industrial Flow <sup>6</sup> (gpm)	1,400	4,200
Total Peak Daily Flow (gpd)	13,439,000	19,269,000
Total Peak Daily Flow (gpm)	10,000	15,500
Peak Hourly Flow <sup>7</sup> (gpm)	17,000	26,400
Supply Flow Available (gpm)	16,100	16,770
Fire Demand		
Residential (gpm)	1,500	1,500
Commercial/Public (gpm)	3,500	3,500
Duration (hour)	2	2
Minimum Residual Line Pressure Under Peak Demands Plus Fire Flow (psi)	20	20
<b>Storage</b>		
Operating Storage <sup>8</sup> (gal)	82,600	146,900
Equalization Storage <sup>9</sup> (gal)	0	1,444,500
Fire Reserve <sup>10</sup> (gal)	420,000	420,000
Emergency Reserve <sup>11</sup> (gal)	4,821,000	6,077,000
<b>Total Potential Storage Need (gal)</b>	5,324,000	8,088,000
<b>Total Existing Storage (gal)</b>	1,300,000	2,300,000
<b>Potential Storage Deficit (gal)</b>	4,024,000	5,788,000
<b>Potential Storage Needed if Emergency Reserve is Provided by Water Supply Sources<sup>12</sup> (gal)</b>	0	0



**CITY OF  
BOARDMAN, OREGON  
WATER SYSTEM MASTER PLAN  
  
DESIGN CRITERIA**

**FIGURE  
2-2**

<sup>1</sup> Current population based on Portland State University's Population Research Center certified population estimates.

<sup>2</sup> Population projection for 2046 based on 2.25 percent annual growth rate.

<sup>3</sup> Port of Morrow usage of City's water not expected to increase beyond the current level.

<sup>4</sup> Industrial water usage expected to triple over the next 20 years.

<sup>5</sup> Peak City flow data based on September 2022 recorded production rate.

<sup>6</sup> Industrial usage anticipated to reach a maximum of 4,200 gpm.

<sup>7</sup> 1.7 times peak daily flow.

<sup>8</sup> Reservoirs currently have an operating level of 2 feet as of 2025; 2046 is assumed to be similar.

<sup>9</sup> Difference between peak hourly flow and available supply for a 2.5-hour period.

<sup>10</sup> 3,500 gpm flow for a two-hour duration.

<sup>11</sup> One-day supply at average daily flow demand.

<sup>12</sup> The City has multiple backup power sources, making emergency reserve supplies redundant.

gal = gallons

gpcd = gallons per capita per day

gpd = gallons per day

gpm = gallons per minute

psi = pounds per square inch