

1. Executive Summary

With continued growth projected for the City of Lonsdale, the City's water distribution system was studied to determine if the existing infrastructure is adequate to meet long-term growth. The water distribution system's computer model was updated, calibrated, and used to study how recommended infrastructure upgrades could impact the operation of the system. This report summarizes the water system capital improvements that were identified as part of this analysis for the City of Lonsdale.

The system's existing facilities include:

- Three water supply wells (Wells 3, 4, and 5);
- One water treatment facility that removes iron, manganese, and radium from the well water;
- One elevated water storage tank (water tower); and
- A distribution network to provide potable water and fire protection to the existing water service area. The existing water distribution network is divided in two (2) pressure zones. Water is supplied to the high pressure zone via a booster station.

Water demands were projected through the year 2040 utilizing population projections depicted in the City's 2040 Comprehensive Plan adopted in 2016. The short and long-term growth projected for the City will create a need for improvements to the water system to meet increasing demands. The future water system improvements were projected by evaluating the existing supply, treatment, storage, and distribution capacity against the future water demands. A detailed analysis of the infrastructure needs can be found in **Sections 5 and 6** of this report. The following system improvements are recommended over the next 20 years given the water demand projections and the status of the existing infrastructure:

- Rehabilitation of the existing booster station;
- Water tower siting study;
- Utility rate study;
- Construction of a new water tower;
- Drilling a new well (timeline will be affected by the status of Well 3); and
- Expanding the system's treatment capacity.

The recommended project timeline and opinion of probable cost for each improvement is summarized in the table below. The recommended projects would require a significant amount of funding. Therefore, a preliminary analysis of the available funding options is summarized in **Section 8.2** of the report. Future project costs were calculated at a 3-percent inflation rate.

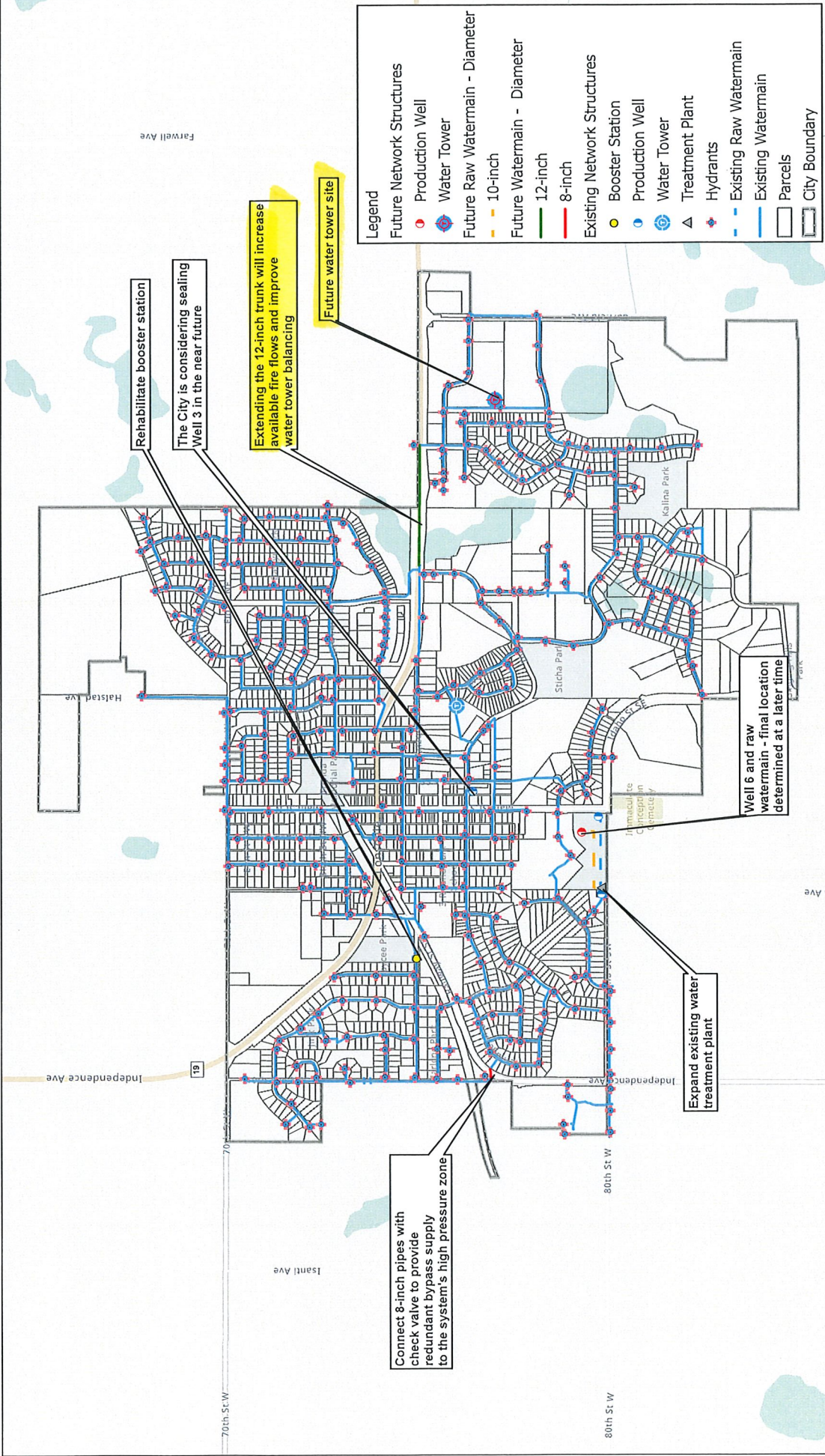
Table 1.1 – Recommended Capital Improvement Timeline

Timeframe	Category	Improvement	Year	Probable Cost	Probable Cost per Timeframe
0 – 5 years	Distribution Storage General	Booster Station Rehab	2024	\$420,000	\$520,000
		Water Tower Siting Study	2024	\$25,000	
		Utility Rate Study	2024	\$15,000	
5 – 10 years	Storage	Water Tower 2 Construction ⁽¹⁾	2028	\$4,850,000	\$4,850,000
10 – 15 years	Storage Treatment Supply	Water Tower 1 Rehabilitation	2034	\$640,000	\$7,140,000
		Treatment Capacity Expansion	2035 ⁽²⁾⁽³⁾	\$4,280,000	
		Drill Well 6 and Watermain	2035 ⁽²⁾	\$2,220,000	
15 – 20 years	N/A	N/A	N/A	N/A	N/A

(1) Includes the altitude valve and installation of the 12-inch trunk along Lonsdale Boulevard as shown in Figure A9 in Appendix A.

(2) The need to modify the timeline to drill a new well and/or expand treatment should be assessed in a water tower siting study.

(3) Possible softening treatment upgrade may also be required. The cost of the softening upgrade is not included in this estimate.



WSB

N

0 1,250 Feet
1 inch = 1,250 feet

Figure A9 - 2040 Water Distribution System
 Comprehensive Water System Plan
 City of Lonsdale

