

Section 8 - Improvement Program

This Section summarizes the improvements recommended in this Water System Plan (WSP). Section 3 analyzed the water systems ability to meet source of supply, storage, and distribution design criteria. Improvements were also established on projected growth of the City, and advancing the overall efficiency of the system. The best improvement alternatives were selected and are described in Section 3.

The necessary improvements are prioritized as specific projects for the 6-year (2010- 2015) Capital Improvement Program (CIP) as well as more conceptual projects to be completed in the 20-year planning horizon (2029). It will be necessary to annually review the City's growth patterns to make sure that the projects recommended in this plan support the existing and future development. The City should also review the rate of growth to determine if development occurs at the rate estimated in the Comprehensive Plan. The scheduled CIP improvements should keep pace with actual development rates. If growth rates do not match those in this plan, the CIP projects should be delayed or accelerated to keep in stride with the actual development.

8.1 Capital Improvement Schedule

The recommended CIP projects are categorized into source (SR), storage (ST), distribution system (DS), and system management (SM). Tables 8.1 and 8.2 list the improvement schedule. Each improvement has an associated number as well as the anticipated implementation cost and year. Some of the items on the list, however, are dependent on development growth. With this in mind, growth may be faster or slower than what is currently anticipated in this plan. Projects may be constructed before or after the target implementation year established in this plan. Each of the improvement projects is also referenced by its number on Figure 8-1.

The costs shown in Tables 8.1 and 8.2 are not based on detailed engineering evaluations. The construction costs are based on past experience with similar types of projects and do not include variations due to specific site or alignment constraints. Associated project costs should also be included when establishing budget costs for CIP projects. The projects include engineering, easement acquisition, administrative and legal costs that the City will incur when implementing a project. The project costs are estimated at 30 percent for budgetary purposes. Pipeline costs were generally estimated based on the following:

- \$90 per linear foot of 10-inch diameter pipe installed.
- \$100 per linear foot for 8-inch and 10-inch diameter pipe when project involves less than 500 linear feet.
- \$100 per linear foot 12-inch diameter of pipe installed.
- \$125 per linear foot of 16-inch diameter pipe installed

These costs include trenching, backfill, traffic control, valves and fittings, and 30% overhead. The storage costs were estimated based on \$1.00 per gallon of storage capacity for the new Zone 2 reservoir, and \$2.50 per gallon of storage capacity for the elevated Zone 5 reservoir. Land costs were estimated at \$25,000 per acre. The referenced project cost can be quickly

located and adjusted to assist the City in making management decisions or to answer developer inquiries.

The funding source for each project may come from multiple sources. Tables 8.1 and 8.2 list the anticipated primary funding source. The implementation schedule is based on the projected growth rates, anticipated needs of the water system, as well as the funding program outlined in Section 9. A more through discussion of the financial plan for financing the Capital Improvement Plan is provided in Section 9.

Table 8.1 6-Year CIP Schedule (2010-2015)

Number	Description	Total Cost (2009 Dollars)	Financing Source	Implementation Year
Source Improvements				
SR-4.1	2 nd inter-tie booster station with the City of Richland	\$1,000,000	441 Fund	2011
Storage Improvements				
-	None	-	-	-
Distribution System Improvements				
DS-1.3	10-inch Fallon Dr. water main replacement	\$300,000	401 Fund	2013
DS-1.4	12-inch Ruppert Rd. water main and PRV station	\$218,000	441 Fund	2012
System Management Improvements				
SM-1	Regional Water Forecast and Conservation Plan Update	\$35,000	441 Fund	2014
SM-2	Water System Plan Update	\$100,000	441 Fund	2015

Table 8.2 20-Year CIP Schedule (2016-2029)

Number	Description	Total Cost (2009 Dollars)	Financing Source	Implementation Year
Source Improvements				
SR-2.5	Well #1 Chlorination retro-fit, improve capacity	\$650,000	PWTF Loan	2016
SR-2.6	Lewis and Clark Well (1650 gpm)	\$1,500,000	PWTF Loan	2020
SR-4.2	Well #2 chlorination retro-fit	\$343,000	PWTF Loan	2016
SR-4.3	Well #3 chlorination retro-fit	\$384,000	PWTF Loan	2016
SR-4.4	Well #6 chlorination retro-fit	\$246,000	PWTF Loan	2016
Storage Improvements				
ST-2.1	Replace Brotherhood Reservoir with a new Zone 2 Reservoir	\$1,300,000	PWTF Loan	2018
ST-5.1	New Zone 5 Reservoir	\$3,275,000	PWTF Loan	2025
Distribution System Improvements				
DS-1.1	Rebuild Kingview PRV station	\$78,000	PWTF Loan	2018
DS-1.2	12-inch Van Giesen water main replacement	\$450,000	PWTF Loan	2018
DS-1.5	10-inch 39 th Ave between Grant and 40 th	\$250,000	PWTF Loan	2017
DS-2.1	Remove Broadview PRV, combine Zones 1 and 2 into new Zone 2	\$14,000	PWTF Loan	2018
DS-2.2	16-inch water main connecting new Zone 2 Reservoir	\$138,000	PWTF Loan	2018
DS-2.3	8-inch water main on 46 th Ave connecting Zones 1 and 2	\$20,000	PWTF Loan	2018
DS-3.1	Abandon Ironton PRV station, install Maple PRV station	\$78,000	Developer funded	Market dependent
DS-3.2	Water mains in Zone 3 Red Mountain area, two additional PRV stations	\$466,000	Developer funded	Market dependent
DS-4.1	Water main in Zone 4 Red Mountain area	\$938,000	PWTF Loan	2025
DS-4.2	Water main between Collins Rd. and Paradise Way	\$500,000	Developer funded	Market dependent
DS-4.3	12-inch main on Keene Rd. between Highlands Blvd. and Belmont Blvd.	\$250,000	441 Fund	2019
DS-5.1	Water main in Zone 5 Red Mountain area	\$700,000	PWTF Loan	2025
DS-5.2	Red Mountain booster station in Zone 5	\$600,000	PWTF Loan	2025
System Management Improvements				
SM-3	Regional Water Forecast and Conservation Plan Update	\$35,000	441 Fund	2026
SM-4	Water System Plan Update	\$100,000	441 Fund	2027