

## CHAPTER 4

### CAPITAL IMPROVEMENT PROGRAM

Various improvement projects were identified in Chapter 3. A brief description of each project selected for the 6-year and 20-year planning horizons is presented in the following sections. A map showing the location of each project is presented on Figure 4-1. Detailed cost estimates are provided in Appendix K. A schedule for implementing these improvements is provided in Table 4-1 at the end of this chapter. Financing for improvements planned for the next six years is discussed in Chapter 5.

#### SOURCE IMPROVEMENTS

No source improvements are required for the 6-year planning period. The City has identified the following source improvements for its 20-year improvement schedule:

- **Raw Water Intake Improvements.** This improvement consists of the addition of a fourth 2,800 gpm submersible turbine pump at the City's raw water intake to meet 2027 MDD requirements. To take full advantage of this expansion, the City must increase its instantaneous water rights from 4,488 gpm to 6,944 gpm.
- **Water Rights.** Additional instantaneous and annual water rights will be obtained through pending change applications and annexations or transfers.

#### TREATMENT

No treatment improvements are required for the 6-year planning period. The City has identified the following treatment improvements for its 20-year improvement schedule:

- **Water Treatment Plant Expansion.** This improvement consists of expanding the City's Water Treatment Plant (WTP) from 6.7 mgd to 10 mgd in order to meet 2027 MDD.
- **Backwash Basin No. 2 Roof.** This improvement consists of construction of a roof for Backwash Basin No. 2 to protect backwash water from potential contaminants and eliminate a potential safety hazard.

#### STORAGE

The City has identified the following improvements to resolve storage-related deficiencies for its 6- and 20-year improvement schedule:

- **Boyd Road Pressure Zone Fire Pumps.** This improvement consists of the installation of new fire pumps to serve the Boyd Road pressure zone to resolve the Pinnacle reservoir's fire suppression storage deficit.

- **Wilmorth Reservoir No. 2.** This improvement consists of the construction of a new storage reservoir to serve the Washington Street pressure zone to meet MDD and fire flow requirements within this zone.

## TELEMETRY

- **Telemetry Upgrade.** This improvement consists of replacing the City's old remote telemetry units (RTU) with new ones.

## WATER METERS

- **Automatic Meter Reading Equipment.** This improvement consists of upgrading the City's water meters with automatic meter reading technology.

## BOOSTER PUMPING STATIONS

The City has identified the following booster station improvements for its 6- and 20-year improvement schedule.

- **Darnell's BPS.** This improvement consists of the installation of a permanent auxiliary power generator at Darnell's BPS. This station provides potable water to the entire north shore service area of the City and an auxiliary power source will provide a reliable system should there be a power failure to the BPS.
- **Highland BPS.** This improvement consists of the installation of an additional fire pump in the Highland BPS to meet the fire flow requirement of 1,500 gpm for the Hospital pressure zone.
- **Washington Street BPS.** This improvement is identified in the Chelan River and Isenhart Irrigation Districts' 2007 Comprehensive Water System Plan and consists of increasing the capacity of the Washington Street BPS to meet future demands. The improvements identified in this plan indicate that replacing the existing 200 gpm pumps with 500 gpm pumps will be necessary by 2011 to meet water demands through 2017, at which time improvements to provide larger pumps, mechanical and electrical equipment, and possibly a new BPS building, will be required to meet 20-year demands.

## DISTRIBUTION

The City has identified the following distribution system improvements for its 6- and 20-year improvement schedule.

- **Woodin Avenue 16-Inch Pipeline.** This improvement consists of the construction of a 16" water transmission/distribution line on Woodin Avenue

from Columbia Street to the Lakeside booster station in order to meet future MDD and fire flow demands and improve supply system pressures to the Lakeside booster station.

- **Mountain View 8-Inch Loop.** This improvement consists of the replacement of an existing 6" water line with a new 8" water line in order to meet MDD and fire flow requirements.
- **Prospect Street Alley Area 8-Inch Pipelines.** This improvement consists of the replacement of existing 4" and smaller water lines with a new 8" water line in order to meet MDD and fire flow requirements.
- **Wapato Avenue Alley Area 8-Inch Pipelines.** This improvement consists of the replacement of existing 6" water lines with new 8" water lines in order to meet MDD and fire flow requirements.
- **Hospital Area 8-Inch Pipelines.** This improvement consists of the replacement of existing 4" and smaller water lines with new 8" water lines in order to meet PHD, MDD and fire flow requirements and maintain minimum required supply and high zone system pressures.
- **Stehekin Way 8-Inch Pipeline.** This improvement consists of the replacement of an existing 6" water line with a new 8" water line in order to meet MDD and fire flow requirements.
- **Junior Point 8-Inch Pipelines.** This improvement consists of the replacement of existing 4" water lines with new 8" water lines in order to meet MDD and fire flow requirements.
- **Eldorado Way 8-Inch Loop.** This improvement consists of the replacement of existing 4" water lines with new 8" water lines in order to meet MDD and fire flow requirements and provide improved looping on the north shore of Lake Chelan.
- **Whisper View 8-Inch Loop.** This improvement is identified in the Chelan River and Isenhart Irrigation Districts' 2007 Comprehensive Water System Plan and consists of the installation of an 8" water line to provide improved water system capacity and pressures to the Hospital area.
- **Washington Street 12-Inch Pipeline.** This improvement is identified in the Chelan River and Isenhart Irrigation Districts' 2007 Comprehensive Water System Plan and consists of the replacement of the existing 8" water line from the Washington Street BPS to the intersection of SR 150 and US 97A to meet future water system demands.

- **Wilmorth Drive 12-Inch Pipeline.** This improvement is identified in the Chelan River and Isenhart Irrigation Districts' 2007 Comprehensive Water System Plan and consists of the replacement of 7,200 feet of existing 8" water main with 12" water main. This improvement is due to anticipated development growth and it is anticipated that the new water main costs will be borne by new development.

## **SCHEDULE**

A schedule for the City's planned capital improvements is provided in Table 4-1.

**TABLE 4-1  
CAPITAL IMPROVEMENT PLAN**

| Project         |   | August<br>2009<br>Cost | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | >2013 |
|-----------------|---|------------------------|------|------|------|------|------|------|-------|
| SOURCE          |   |                        |      |      |      |      |      |      |       |
| 1.              | Raw Water Intake Improvements                     | \$390,000              |      |      |      |      |      |      | X     |
| TREATMENT       |   |                        |      |      |      |      |      |      |       |
| 2.              | WTP Expansion                                     | \$7,960,000            |      |      |      |      |      |      | X     |
| 3.              | Backwash Basin No. 2 Roof                         | \$110,000              |      |      |      |      |      |      | X     |
| STORAGE         |   |                        |      |      |      |      |      |      |       |
| 4.              | Boyd Road Pressure Zone Fire Pumps                | \$560,000              |      |      |      |      |      | X    |       |
| 5.              | Wilmorth Reservoir No. 2                          | \$930,000              |      |      |      |      |      |      | X     |
| TELEMETRY       |   |                        |      |      |      |      |      |      |       |
| 6.              | Telemetry Upgrade                                 | \$500,000              |      |      | X    |      |      |      |       |
| WATER METERS    |   |                        |      |      |      |      |      |      |       |
| 7.              | Automatic Meter Reading Equipment                 | \$100,000/yr.          |      |      | X    | X    | X    | X    | X     |
| BOOSTER STATION |   |                        |      |      |      |      |      |      |       |
| 8.              | Darnell's BPS Generator                           | \$200,000              |      |      |      |      |      |      | X     |
| 9.              | Highland BPS Fire Pump                            | \$180,000              |      |      |      |      |      | X    |       |
| 10.             | Washington Street BPS – Ph. 1 <sup>(1)</sup>      | \$110,000              |      |      | X    |      |      |      |       |
| 11.             | Washington Street BPS – Ph. 2 <sup>(1)</sup>      | \$830,000              |      |      |      |      |      |      | X     |
| DISTRIBUTION    |   |                        |      |      |      |      |      |      |       |
| 12.             | Woodin Avenue 16-Inch Pipeline <sup>(2)</sup>     | \$2,214,000            |      |      | X    |      |      |      |       |
| 13.             | Mountain View 8-Inch Loop                         | \$389,000              |      |      |      | X    |      |      |       |
| 14.             | Prospect Street Alley Area 8-Inch Pipelines       | \$340,000              |      |      |      | X    |      |      |       |
| 15.             | Wapato Avenue Alley Area 8-Inch Pipelines         | \$244,000              |      |      |      | X    |      |      |       |
| 16.             | Hospital Area 8-Inch Pipelines                    | \$557,000              |      |      |      | X    |      |      |       |
| 17.             | Stehekin Way 8-Inch Pipeline                      | \$407,000              |      |      |      |      | X    |      |       |
| 18.             | Junior Point 8-Inch Pipelines                     | \$191,000              |      |      |      |      | X    |      |       |
| 19.             | Eldorado Way 8-Inch Pipeline                      | \$662,000              |      |      |      |      | X    |      |       |
| 20.             | Whisper View 8-Inch Loop <sup>(1)</sup>           | \$457,000              |      |      |      |      |      | X    |       |
| 21.             | Washington Street 12-Inch Pipeline <sup>(1)</sup> | \$534,000              |      |      |      |      |      |      | X     |
| 22.             | Wilmorth Drive 12-Inch Pipeline <sup>(1)(2)</sup> | \$1,609,000            |      |      |      |      |      |      | X     |

(1) Improvements identified in the Chelan River and Isenhart Irrigation Districts' 2007 Comprehensive Water System Plan.

(2) Development driven improvements.