



2011 Water System Plan Update

February 16, 2012

Mission Statement

To provide high quality drinking water to our community in a manner that promotes conservation, maintains customers' trust and protects their financial investment in the District.

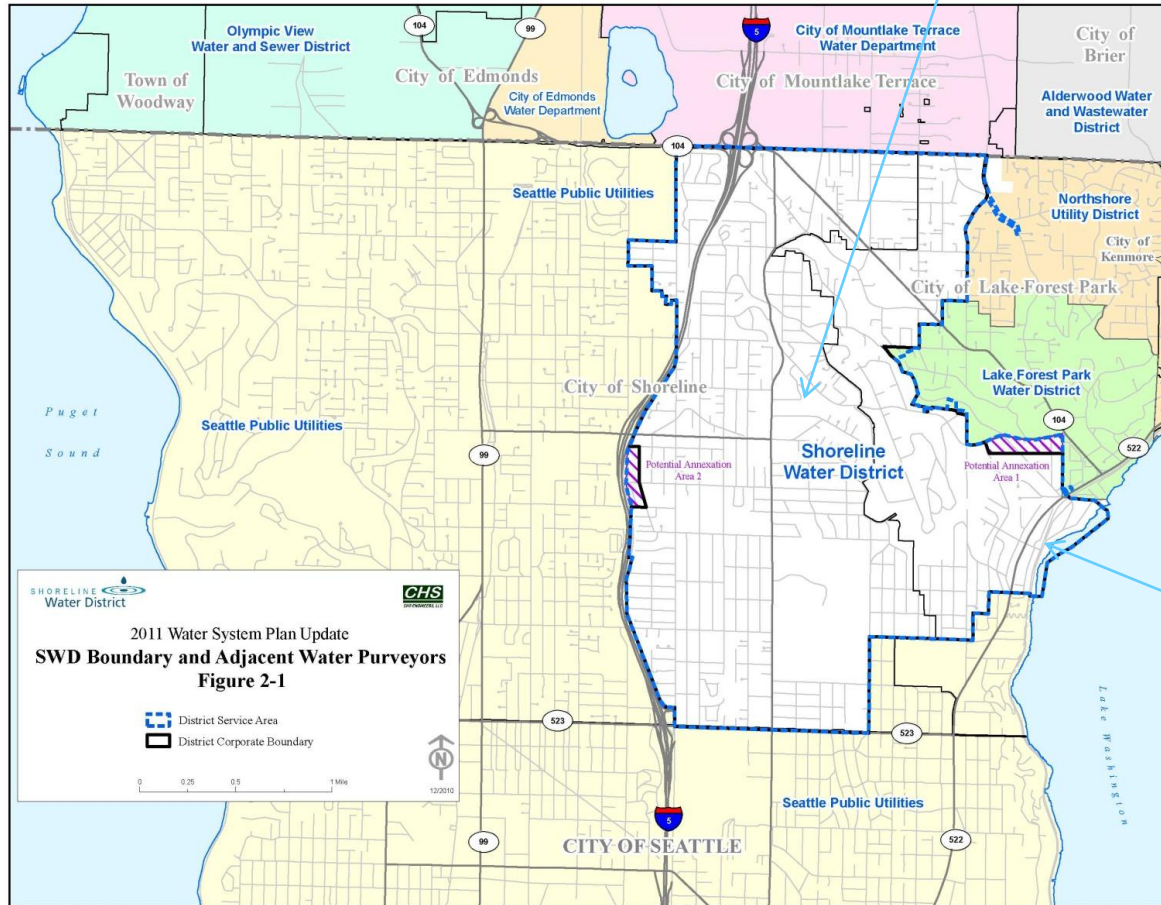


History

- ▶ Shoreline Water District was formed in 1931
- ▶ We signed a 60 year agreement with SPU for water supply in 2001
- ▶ We are governed by a 3 member Board of Commissioners elected to staggered 6 year terms
- ▶ We are responsible for water service in portions of Lake Forest Park and Shoreline Water District

Corporate Boundary

High point in the District
near our office on NE
177th St. Elev. = 490 ft



Shoreline
of Lake
Washington
Elev. = 20 ft

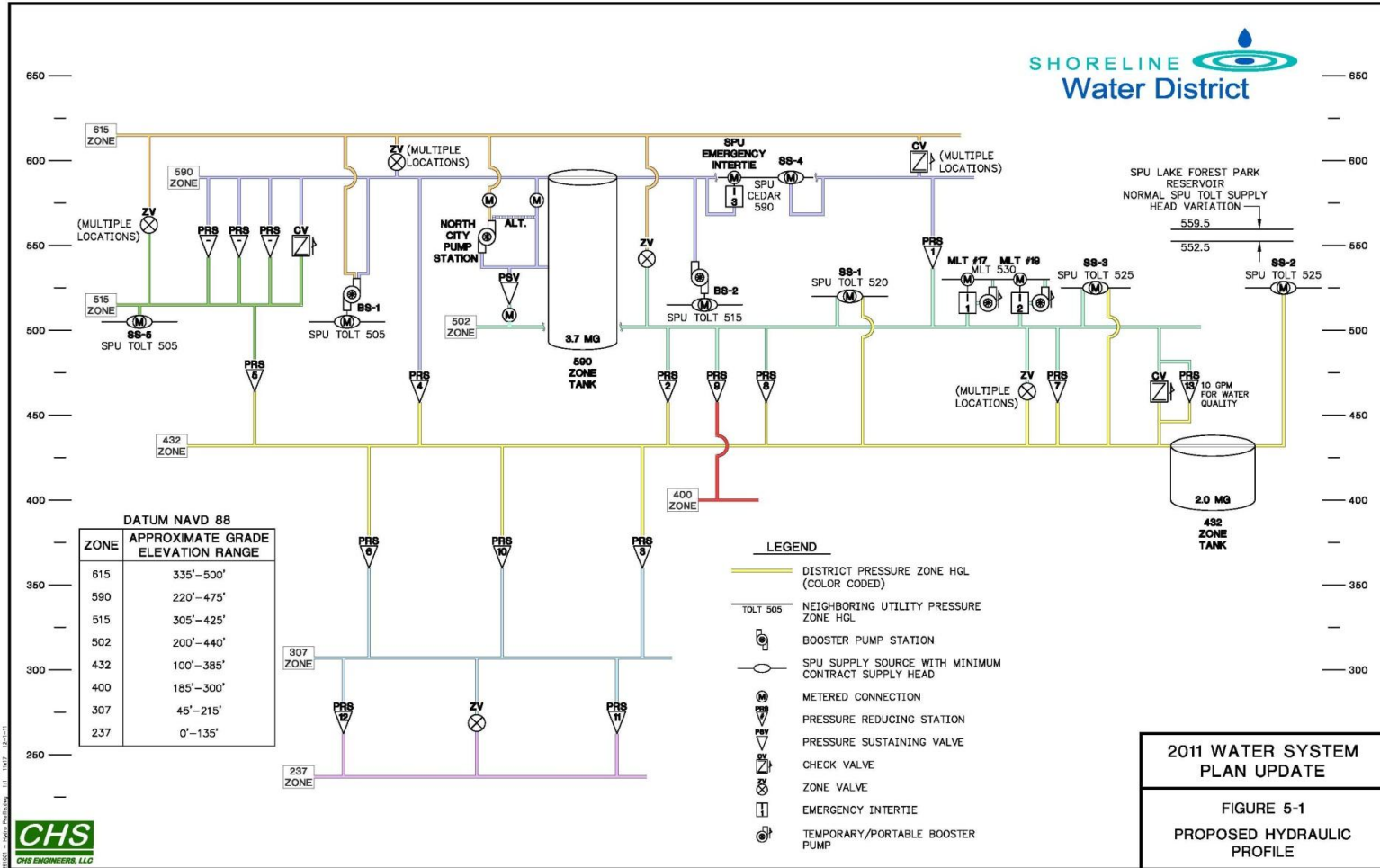
Population and Employment Data

- ▶ 3 population studies were reviewed including the 2007 Buildable Land Study which had input from both Lake Forest Park and Shoreline
- ▶ Site specific information from Master Plans in Shoreline
- ▶ 2010 District data
 - ▶ Population 22,361 Employment 4,660
- ▶ 2030 expected District data
 - ▶ Population 23,314 Employment 5,549
- ▶ Water system changing as the service area changes from a bedroom community to an urban setting

Some Water System Design Standards

- ▶ Washington Administrative Code and Revised Code of Washington – set by legislature
- ▶ International Fire Code – set by Fire Officials
- ▶ Provide peak hour demand flow at 30 psi to all connections except under fire flow
- ▶ Provide maximum day demand flow with fire flows at 20 psi
- ▶ Pipeline velocities – 8 feet/sec for new design
- ▶ Mains to be ductile iron, class 52
- ▶ Fire hydrants to be every 500 ft

Hydraulic Profile



Source Analysis

- ▶ District added a second source in 2011 for backup
 - ▶ Water comes from both the Tolt River and Cedar River
 - ▶ Three emergency interties
 - ▶ Two additional interties are proposed
- Updating our contract with SPU to include the new source and projected water demand.**



Cedar River



Tolt River

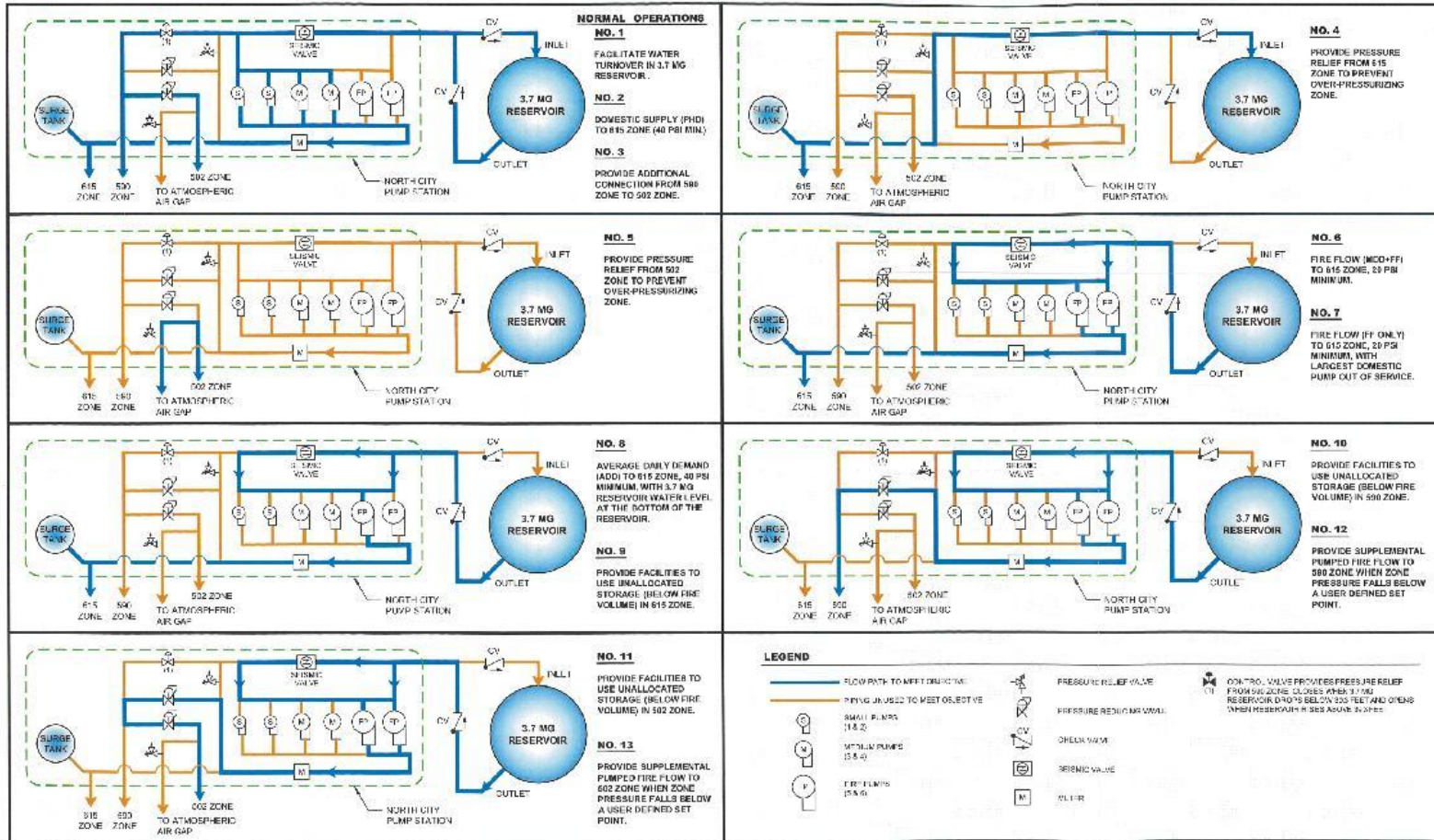
Storage Analysis

- ▶ District has two reservoirs – 2.0 MG & 3.7 MG
- ▶ Analyzed individually and collectively as required by DOH
 - ▶ Dead (Inactive) Storage
 - ▶ Standby Storage
 - ▶ Fire Suppression Storage
 - ▶ Equalizing Storage
 - ▶ Operational Storage

Excess Storage through 2030



Pumping Analysis – to maximize efficiency



PREPARED BY: BHC CONSULTANTS, LLC
 DATE: 11/15/2011
 PROJECT: NORTH CITY PUMP STATION
 SHEET: 11-1

BHC CONSULTANTS
 BHC Consultants, LLC
 1611 1st Avenue, Suite 500
 Seattle, WA 98101
 206.425.5430
 206.425.5436 (fax)
 www.bhcconsultants.com

SHORELINE Water District
 Functional Objectives
 North City Pump Station
 November 2011

Distribution System Analysis

- ▶ Updated hydraulic model
- ▶ 92 miles of water main (Shoreline to Bellingham +)
- ▶ Checked under a variety of scenarios for current and anticipated growth population and employment projections as identified by the City of Shoreline and Lake Forest Park



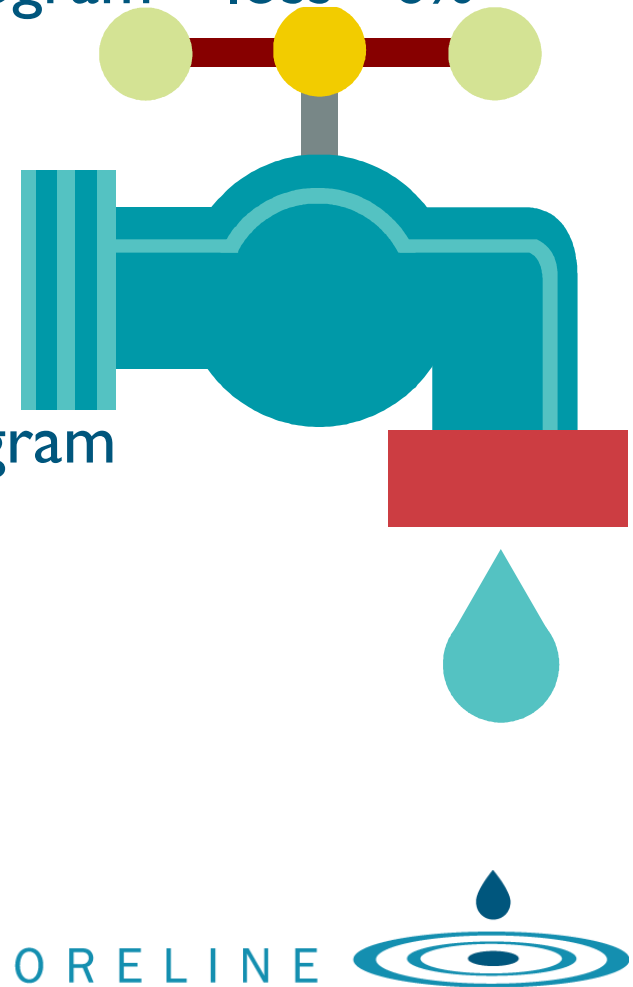
Operations

- ▶ 3 staff trained to WDM-4 level, WDM-3 req'd, all operations staff are certified and encouraged to advance
- ▶ District owns equipment to handle daily operations such as our Vactor Truck (\$400,000+) to our chlorine analyzers (\$2500 each)
 - ▶ Continuity of service
 - ▶ Routine Water Quality Sampling
 - ▶ Cross Connection Control Program etc.
- ▶ Maintain Mapping and As-Built drawing records
- ▶ Established/Practiced Safety procedures



Operations – cont.

- ▶ Active Preventative Maintenance Program – loss <6%
 - ▶ Flush dead end mains twice annually
 - ▶ Check all hydrants bi-annually
 - ▶ Check all valves bi-annually, etc.
- ▶ Cross Connection Control Program
- ▶ Bacteria (Coliform) Monitoring Program
- ▶ Conservation Program
- ▶ Hazard Mitigation Planning
- ▶ Emergency Response Planning
- ▶ Vulnerability Analysis



SHORELINE

Water District

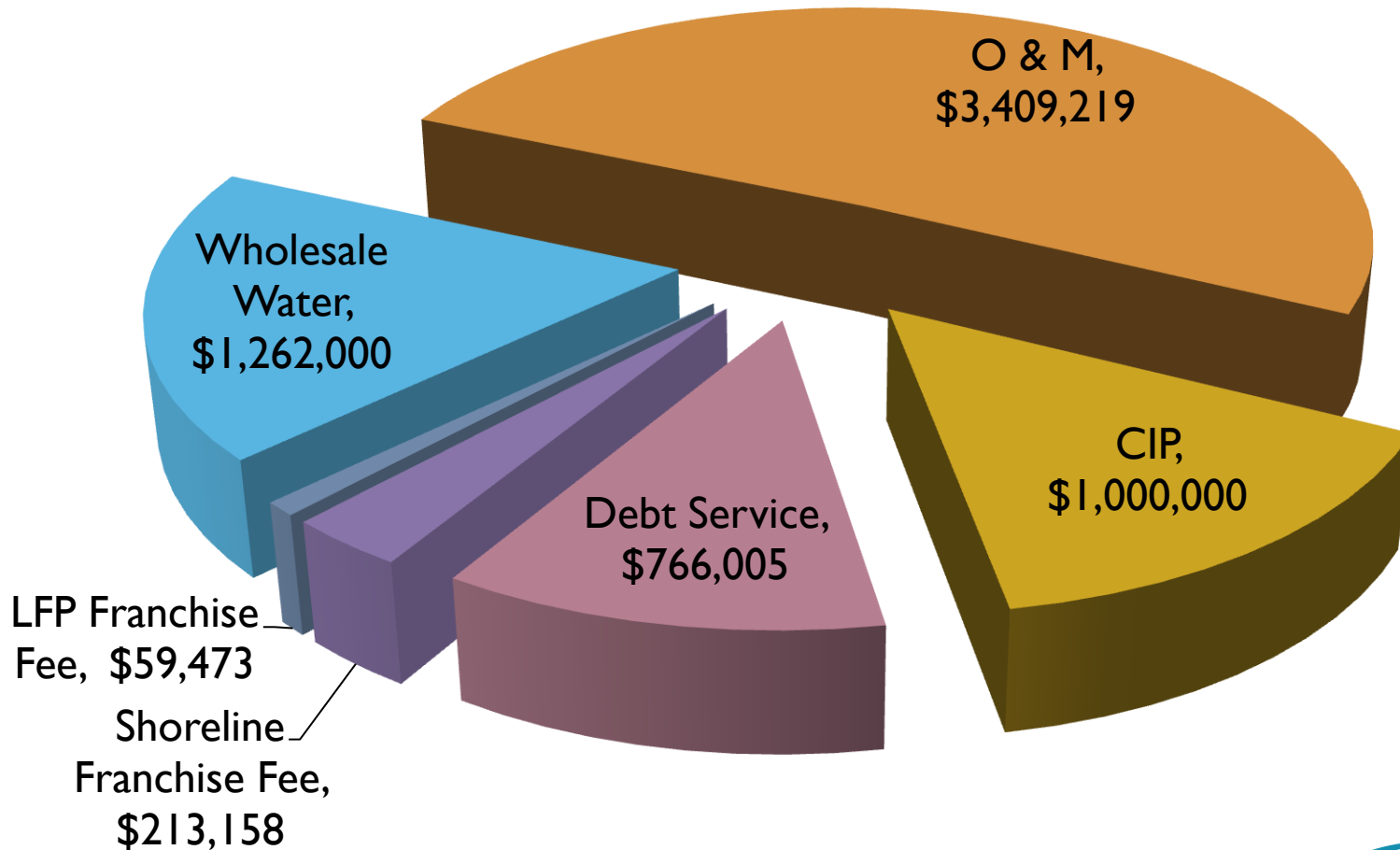


Capital Improvement Program

- ▶ Goals for our entire system improvements:
 - ▶ Improve fire flow
 - ▶ Optimize water quality
 - ▶ Optimize transmission of water throughout system

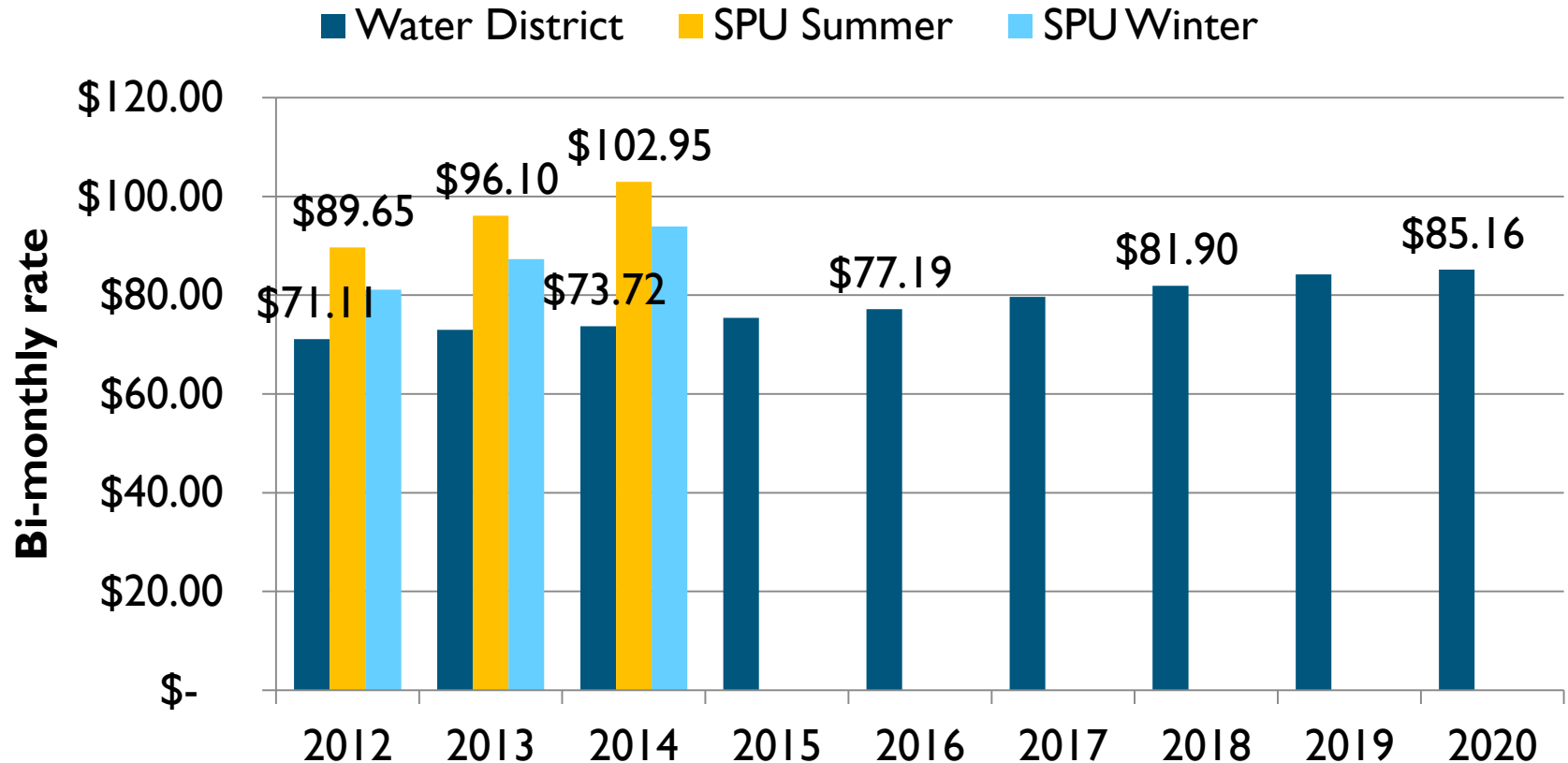
- ▶ 2012-2021 CIP - \$16,644,000
- ▶ 2021-2031 CIP - \$ 8,423,000

2012 Budgeted Expenses



Projected Single Family Rates

Assuming 10 ccf (74.8 gallons per day)



*Water District rates: assumes wholesale water costs go up 5% every year

*Water District rates: assumes O&M costs increase by 3% each year

*SPU rate information from Seattle Ordinance 123742

Summary

- ▶ Operating a water system is expensive and complex
- ▶ Trained and experienced staff are key in keeping system running efficiently
- ▶ Determining appropriate rates to cover:
 - ▶ operating costs and
 - ▶ CIP for short and long term. These fall into one or more of these categories
 - ▶ System renewal and replacement (to maintain system integrity);
 - ▶ Service expansion (for growth and redevelopment);
 - ▶ Mandates (legal obligations or to meet regulatory requirements); and/or
 - ▶ Environmental preservation

Questions?

Diane Pottinger, PE

Shoreline Water District

www.shorelinewater.org

(206) 362-8100

