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
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
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

- Wholesale Water, $1,262,000
- O & M, $3,409,219
- CIP, $1,000,000
- Debt Service, $766,005
- LFP Franchise Fee, $59,473
- Shoreline Franchise Fee, $213,158
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);
    - Environmental preservation
Questions?

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