Utilities at a Glance

Water Providers

Boise has both groundwater and surface water resources. Surface water comes from the Boise River. Aquifers are the source of the majority of drinking water in Boise. Two private water providers serve Boise residents United Water Idaho (85 percent of residents) and Capital Water Corporation of Boise (ten percent of residents). Personal wells serve the remaining five percent of Boise households. Both water providers rely almost entirely on groundwater from aquifers.

UNITED WATER IDAHO

WATER SOURCES

- Approximately 80% of the water supplied by United Water Idaho (UWI) comes from 90 wells located throughout the Boise area.
- The remaining 20% comes from the Boise River and is treated at two surface water treatment plants; Marden Water Treatment Plant and Columbia Water Treatment Plant.

CAPACITY & DISTRIBUTION

- Maximum source delivery capacity of the UWI system is 98 million gallons per day (mgd).
- About one-quarter of the capacity is from surface water; the two plants can deliver 24.3 mgd.
- Wells deliver the rest; on average, well volume is 560 gallons per minute.
- The system includes 33 reservoirs with a combined capacity of 33 million gallons.
- The UWI system serves 160 square miles and includes 10 pressure zones.

WATER USAGE (2004)

- Average annual usage of a UWI residential customer is about 136,136 gallons.
- Total water usage for all UWI customers is in the range of 15.5 billion gallons.
- The average daily usage is about 43 mgd.
- Peak usage is 93 mgd, while the low usage is about 20 mgd.

NEEDS

Currently, the UWI planning document is unavailable. However, a recent Five-Year expenditure plan provided by the company indicates probable expenditures over the next five years of about $45 million. Improvements and replacements are planned in the areas of source and supply, water

TRENDS AND KEY ISSUES:

Increasing Demand

- Future water and wastewater supply issues facing the city include:
  - ✓ Potential annexations outside the city's current ACI.
  - ✓ Aging infrastructure in core areas of the city.
  - ✓ Sanitary sewer extensions to existing areas with major septic system problems.

Regional Considerations

- The city is actively working with Ada County to update the ACI boundary and establish requirements for city-led subarea planning.
- The city has also kicked off efforts to develop an Adequate Public Facilities Ordinance and a Wastewater Master Plan to help inform and address these issues.

Sources

City of Boise Department of Public Works

Idaho Department of Water Resources. " Water Budget for the Treasure Valley Aquifer System for the Years 1996 and 2000", 2004.

http://www.puc.state.id.us/internet/press/121106_CapWatrfinal.htm

Idaho Department of Water Resources. "Order designating the Southeast Boise GWMA". October 1994.

United Water Idaho website http://www.unitedwater.com/uwid/

treatment, pumping, transmission, distribution, customer service lines, meters, and information technology.

- As indicated above, peak daily usage is not far below maximum daily capacity.
- Although UWI has several conservation programs in place, it appears that continued growth will increase demand beyond current capacity.
- Some of the UWI water delivery system has been in place for a very long time. In 2007, values on the water main downtown broke and required emergency repairs, shutting down water to customers during a Sunday in June. Replacements and upgrades may be needed for some older water mains.

TWENTY MILE SOUTH FARM

Treated Biosolids

- Treated biosolids are transported to a 4000-acre farm on South Cloverdale Road (Twenty Mile South Farm) to recycle nitrogen, phosphorus and potassium as fertilizer to grow crops.
- Biosolids are trucked to the farm four times a day in trailers holding approximately 25 tons per load.
- The crops are primarily alfalfa, corn, and small grains are sold to the farmers for use as livestock feed.
- The farm is managed to comply with state and federal regulations governing the reuse of biosolids.

CAPITOL WATER CORPORATION OF BOISE

Capitol Water Corp. of Boise serves about 2,875 households in the west bench area of Boise. The water source is groundwater from aquifers. This is an unmetered system and provides water at a flat annual rate to its customers. Capitol Water's service area is surrounded by UWI and it is expected that source upgrades and pipeline replacements in the distribution system may be needed in the future.

Wastewater System

COLLECTION AND TRANSPORT

Sewer service in Boise is provided by four agencies: Boise City Sewer, Bench Sewer District, Northwest Boise Sewer District and West Boise Sewer District.

The Boise sewer system is comprised of more than 650 miles of pipes and includes over twenty-five lift stations (pump stations) positioned throughout the service area.

TREATMENT AND DISPOSAL

Boise's Public Works Department operates and maintains two wastewater treatment plants to treat wastewater received from the four agencies serving the Boise Area of Impact and from the cities of Garden City and Eagle.

- **West Boise Wastewater Treatment Plant:** has a design capacity of 24 mgd and currently operates at about 15 mgd.
- **Lander Street Wastewater Treatment Plant:** has a design capacity of 15 mgd and currently operates at about 14 mgd.

Three primary products result from the treatment process of these plants: cleaned and disinfected water, biosolids, and methane gas.

- **Clean effluent water:** Nearly all of the plants effluents are discharged to the Boise River, while a minor amount is used for irrigation within the plants boundaries.
- **Methane:** Methane generated by the treatment process is used to heat water in boilers for process and space heating and to fuel engines that operate wastewater pumps, thereby offsetting electricity for motor-driven pumps.
- **Biosolids:** Solids removed during the treatment process are stabilized in anaerobic digesters, hauled to the City owned Twenty Mile South Biosolids Application Site and recycled by growing crops.

INDUSTRIAL PRETREATMENT PROGRAM

Since 1985, Boise City has regulated industrial and commercial wastewater discharges into the public sewer system through its EPA-approved Industrial Pretreatment Program.

NEEDS

- There are currently about 23 subdivision areas within the City limits that do not have sewer available. To serve these areas, it is estimated that approximately ten miles of **new sewer** will be needed.
- **Sanitary sewer extensions** are constructed in three ways: 1) By developers to serve new development; 2) By the City in conjunction with Ada County Highway District (ACHD) projects; and 3) by the City into existing neighborhoods at the request of property owners. City approval for a neighborhood extension is based on the number of residents signing a petition agreeing to pay fees and connect, and the cost and length of the sewer extension. All City projects are subject to funds being available.
- **Wastewater Treatment Plant Upgrades** are needed to provide increased removal of pollutants such as phosphorus.
- **Aging Collection and Treatment facilities** need to be renovated or replaced.

BENCH SEWER DISTRICT

The Bench Sewer District is a special service district that collects and discharges wastewater into Boise's collection system for transport and wastewater treatment. The Bench collection system is approximately 112 miles in length. This system will be consolidated with the City's in 2014 or sooner.

NORTHWEST AND WEST BENCH SEWER DISTRICTS

The Northwest and West Bench Sewer Districts are special service districts that collect and discharge waste water into the Boise collection system for transport and wastewater treatment. The Northwest Sewer District's collection system is approximately 59 miles in length and the West Bench system is approximately 66 miles in length. The treatment agreement for the Northwest Sewer District will be expiring in a few years. Boise City and the district have been evaluating options for both entities.

Pressure Irrigation

- In the Treasure Valley, "pressure irrigation" means taking ditch water and distributing it through pressure pipes. Pressure irrigation water is completely separate from the drinking water system.
- In Boise, irrigation water is diverted from the Boise River and distributed by large irrigation canals and smaller irrigation laterals to local neighborhoods throughout the city. Currently, the city of Boise operates and issues utility bills for pressure irrigation systems in five subdivisions: Linshire-Whidbey; Darien; Steamboat; Bradford-Graystone, and Ashbrook. Other systems are operated by local irrigation and canal districts.
- Subdivisions built in the last 10 years are eligible to hook up to the pressure irrigation system. The Boise Public Works Department has

BOISE'S GEOTHERMAL SYSTEM

Currently, four independent heating districts operate geothermal systems within Boise:

- The **Boise Public Works Department** operates and collects fees for the system that serves the downtown core area.
- The **State of Idaho** operates the system that heats the Idaho State Capitol and several other buildings with in the Capitol Mall area.
- The **Veterans Administration (VA)** provides service to the VA campus, and
- The **Boise Warm Springs Water** District provides service to the residential properties in the vicinity of Warm Springs Avenue.

design standards for constructing pressure irrigation systems in new subdivisions.

Flood Response and Drainage Control

Flood Response

- Flooding in the City of Boise typically comes from one of: flash flooding, snowmelt from the foothills or flooding of the Boise River.
- To protect against flash flooding, the City operates and maintains several flood control structures on each of the four main foothills gulches (Stuart Gulch, Crane Gulch, Hulls Gulch and Cottonwood Creek). Most of these structures were either installed or upgraded following a major wildfire in the fall of 1996.
- To mitigate Boise River flooding, the City of Boise works with the Bureau of Reclamation and the U.S. Corps of Engineers to keep appraised of water flows from three dams upstream of the Boise River drainage. The dams provide for both irrigation water storage and flood control and flows are managed to balance these needs.

Drainage Control

- The City of Boise Public Works operates and maintains the conveyance systems for stream flows from the four main gulches in the Boise Foothills: Cottonwood Creek, Hulls Gulch, Crane Creek, and Sand Creek.
- The City also handles commercial development drainage plan review to ensure that storm water runoff from business sites is disposed of in an environmentally sound manner.
- Street drainage and street drains are the responsibility of the Ada County Highway District (ACHD).
- Several irrigation or drainage district associations have responsibility for drainage where flood irrigation is used within the city limits.