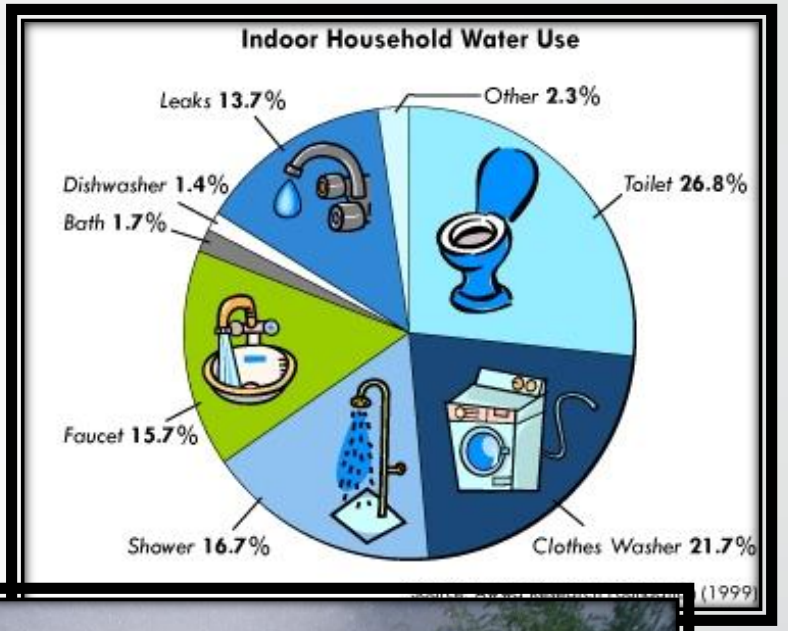
Newberg Water Master Plan

Citizen Advisory Committee

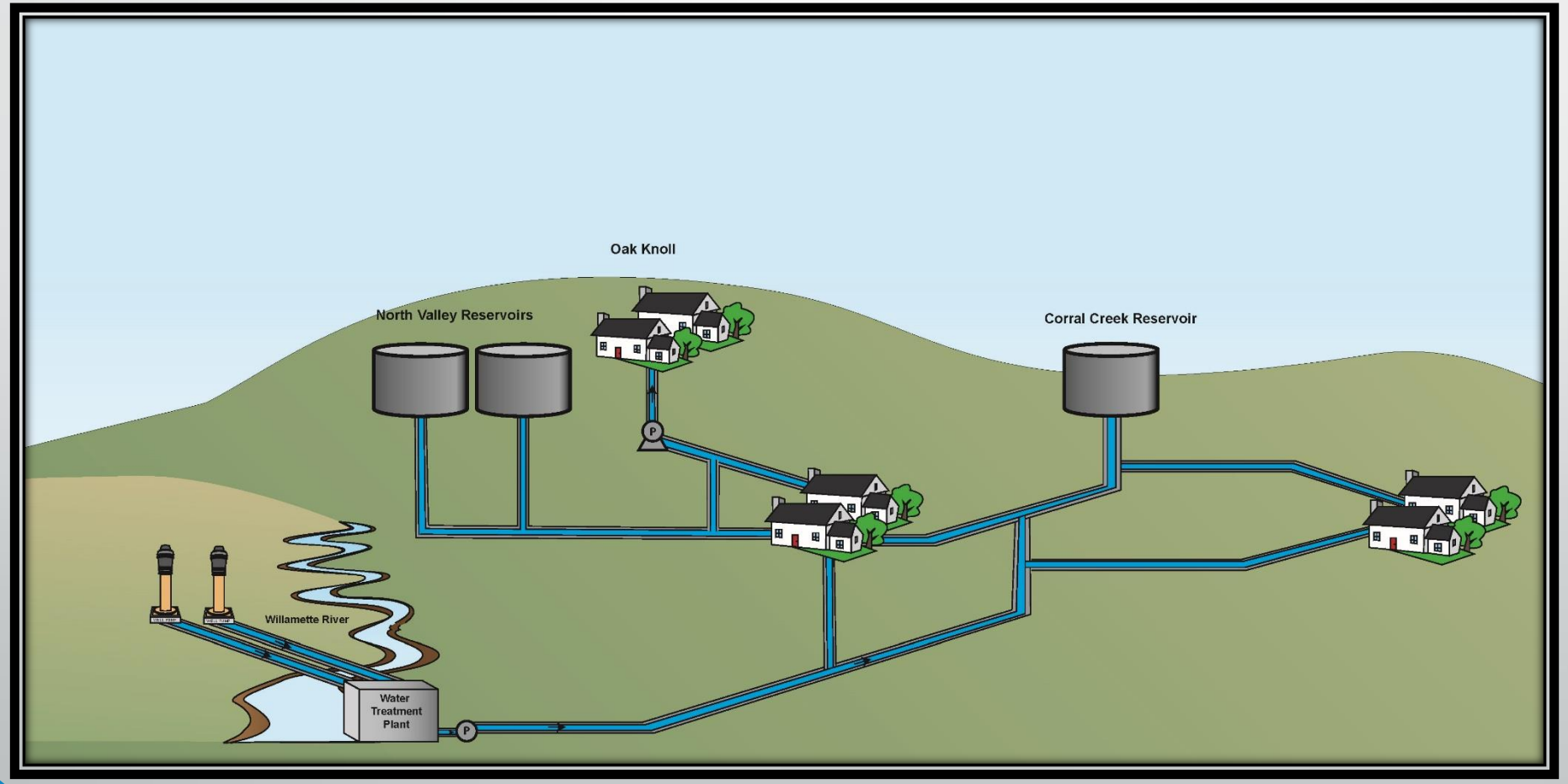
April 27, 2016

Introduction

- Why are municipal drinking water systems important?
- Water systems serve broader functions
  - Drinking water
  - Fire suppression
  - Industry & commerce
  - Domestic uses



Water System Overview



Water Source

- 5 wells located in Marion County on the south side of the Willamette River
- 12-inch to 18-inch diameter holes, drilled ~100 feet deep
- Groundwater is pumped from underground up to the surface by pumps installed in the wells
- Currently drilling another well to provide additional redundancy
- Non-potable water sources include the reuse system and Otis Springs

Water Supply - Transmission

- 2 water mains transmit water across the Willamette River from the wellfield
  - 24-inch diameter main suspended above the river on the old Hwy 219 bridge
  - 30-inch diameter main installed beneath the river

Water Supply - Treatment

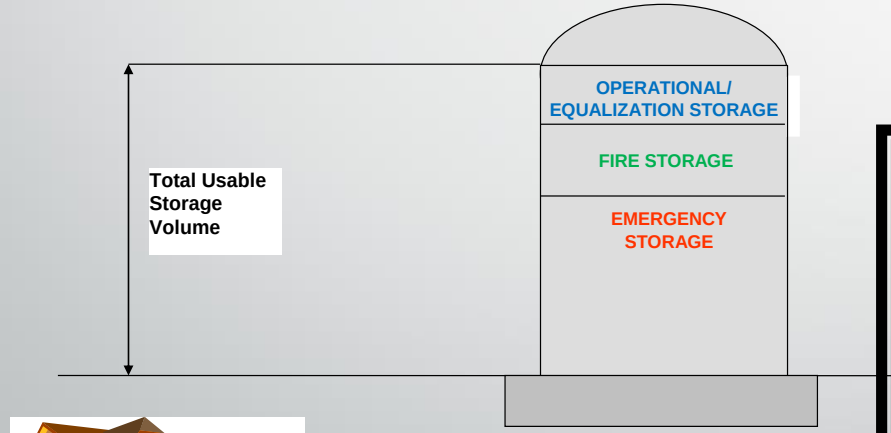
- Water Treatment Plant located within the WestRock mill site
- Removal of Iron in the groundwater
- Addition of chlorine for disinfection
- Booster pump station pumps water from WTP to the distribution system

Water Quality

- EPA sets legal limits on over 90 contaminants in drinking water. The legal limit for a contaminant reflects the level that protects human health and that water systems can achieve using the best available technology. EPA rules also set water-testing schedules and methods that water systems must follow.
- The Safe Drinking Water Act (SDWA) gives individual states the opportunity to set and enforce their own drinking water standards if the standards are at a minimum as stringent as EPA's national standards.

Water Distribution - Storage

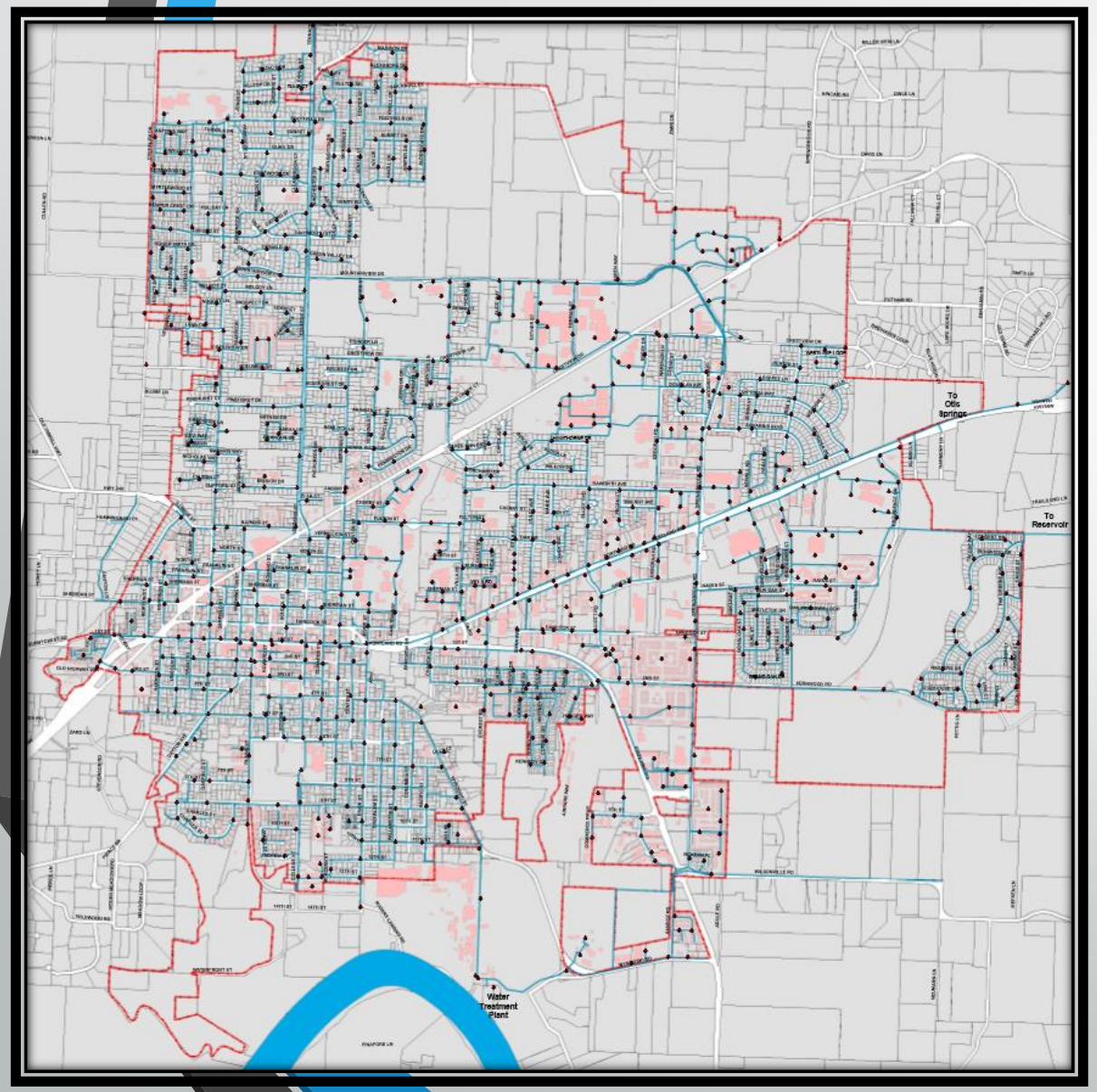
- 3 Reservoirs with a combined volume of 12 million gallons
- Water level in the reservoir provide service pressure
- Purposes: Equalization, Fire Suppression volume and Emergency



40-80 PSI
Static Pressure

20 PSI System
Pressure under fire
flow Conditions

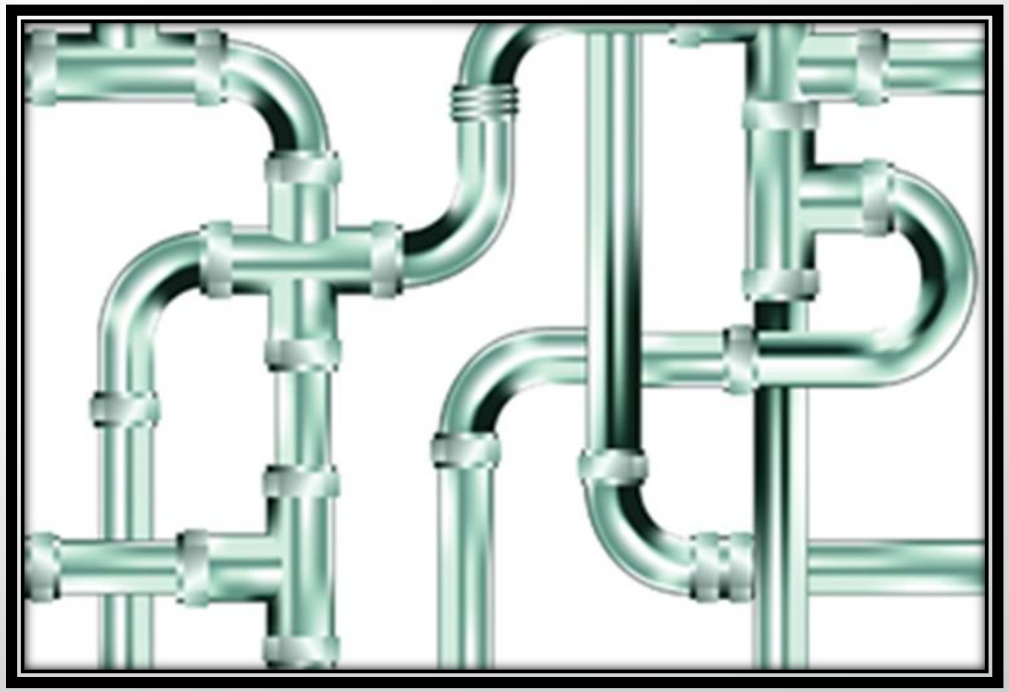
Water Distribution - Piping



- ~103 miles of piping ranging from 2-inch to 24-inch diameter
- Distributes water from storage to:
  - Individual metered service connections
  - Public fire hydrants
  - Private commercial and industrial fire suppression systems
  - Parks and golf course for irrigation purposes

Why Master Plan?

- Required by the State of Oregon – reviewed by Oregon Health Authority, Drinking Water Services
- Identify short- and long-term needs
  - Capital improvements
  - Staffing levels
  - Policy updates
  - Financial strategy
- Improve level of service to customers
  - Economic development support
  - Redundancy
  - Developer standards identification
- Develop short- and long-term roadmap for system improvements



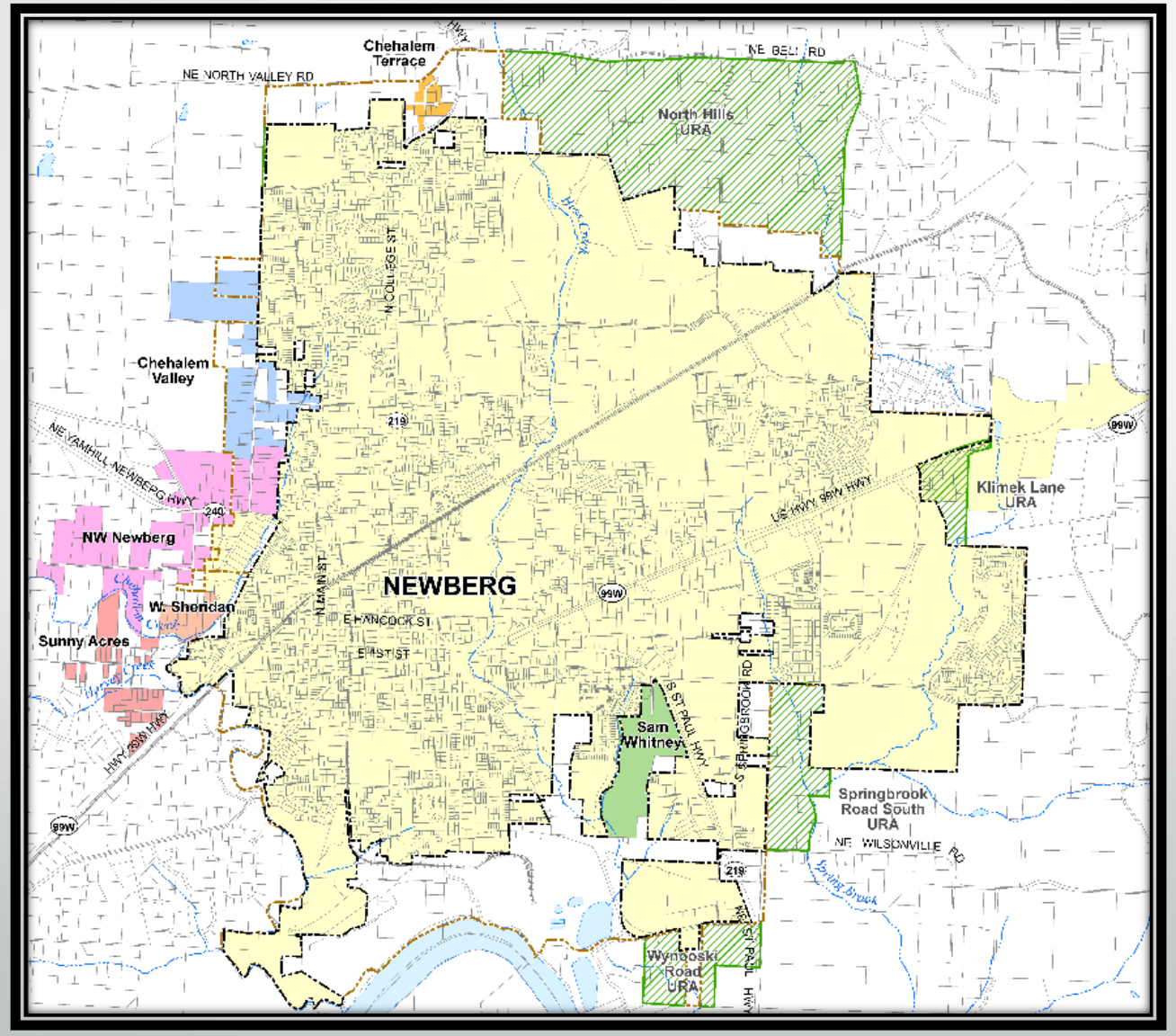
This Committee's Role

- Review elements of the Water Master Plan
- Provide citizen/customer feedback

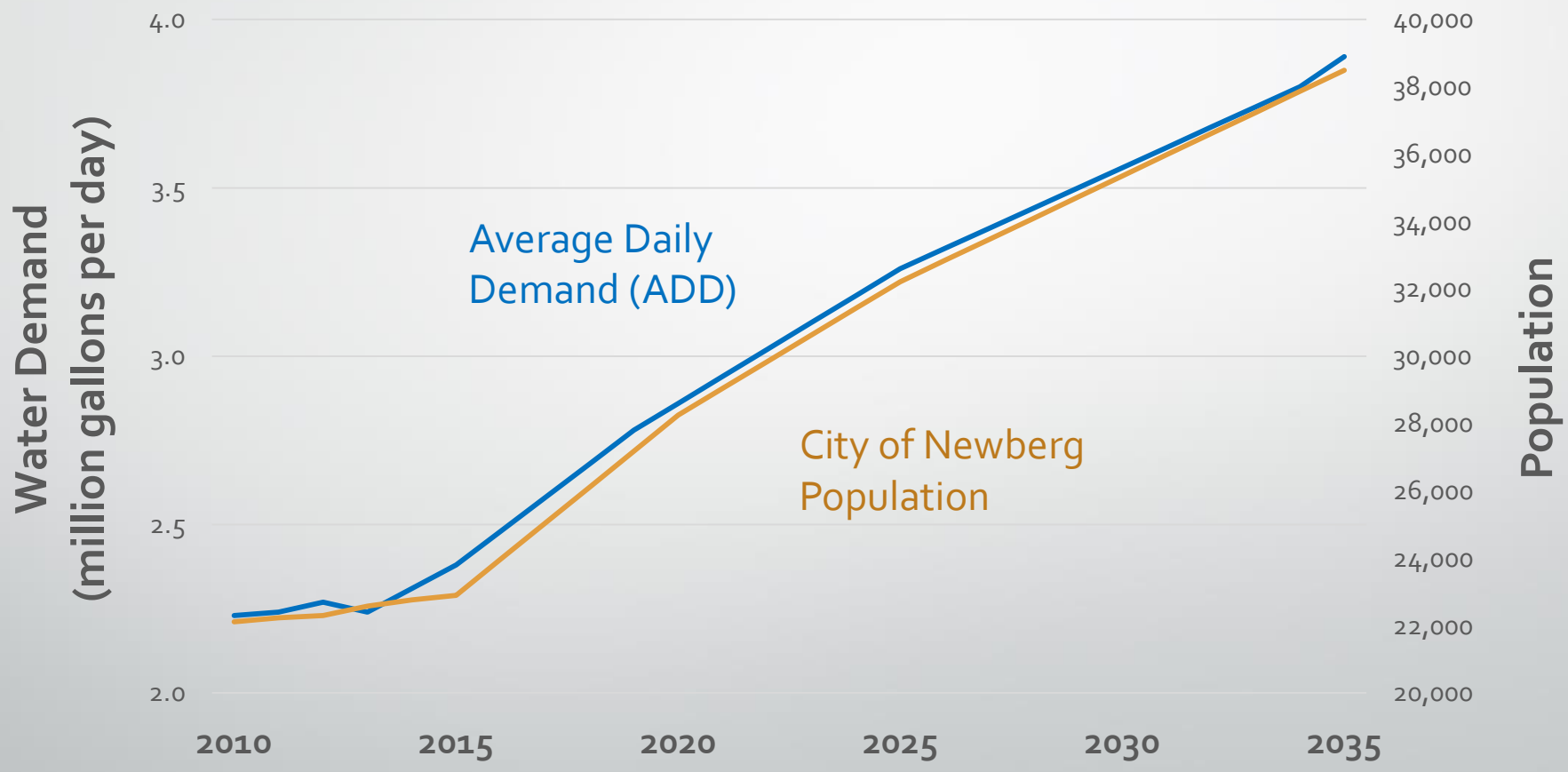
Water System Master Planning Elements

- Existing system description and facility evaluations
- Projected population forecasts and water demand estimates over planning horizon
- Water quality and service goals
- Identified present and future water system deficiencies
- Develop solutions to correct water system deficiencies and achieve system expansion to meet anticipated growth
- Describe financing options
- Recommended alternatives for achieving goals, correcting deficiencies and a financing program for constructing improvements

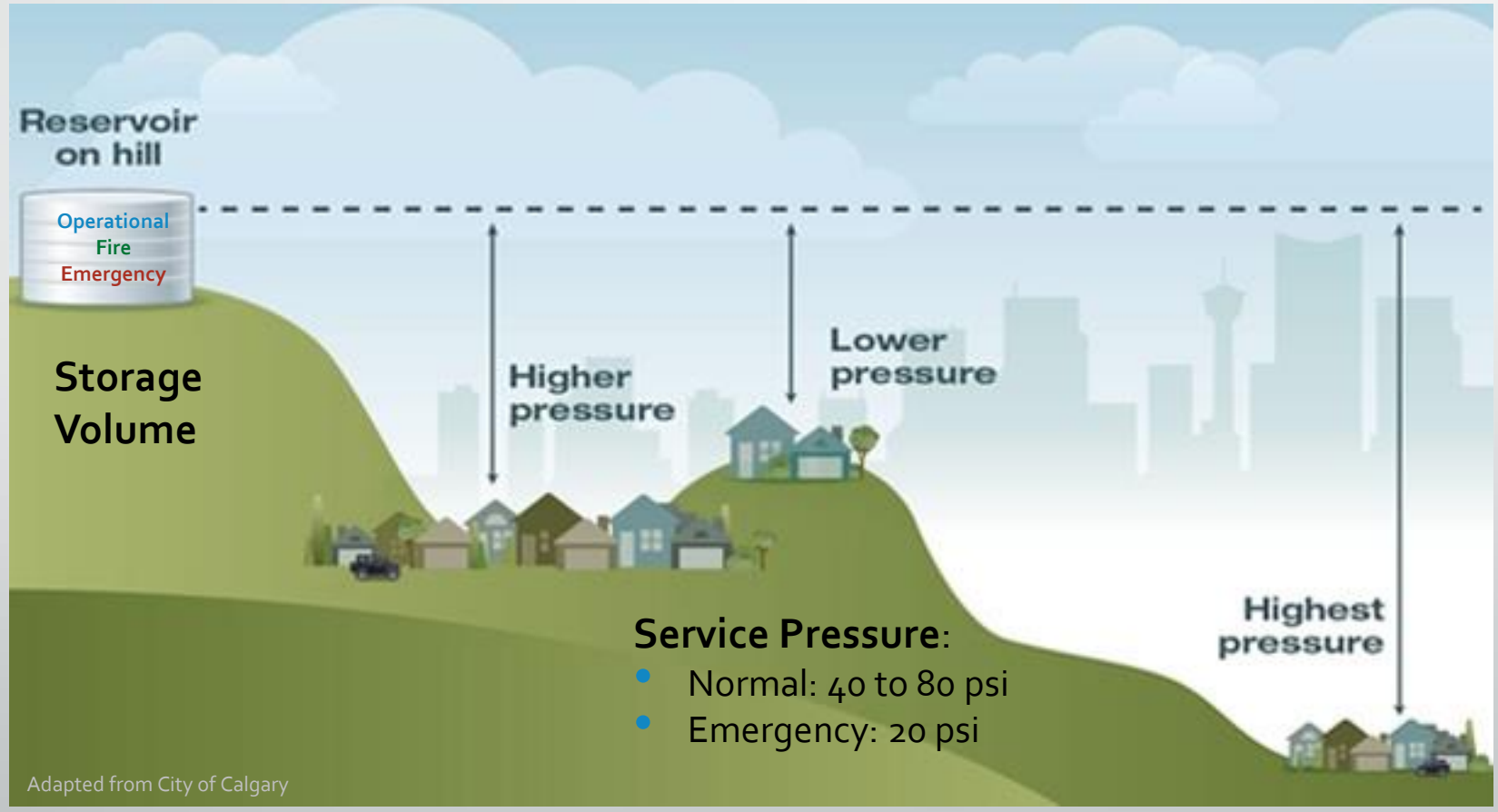
Water Service Area



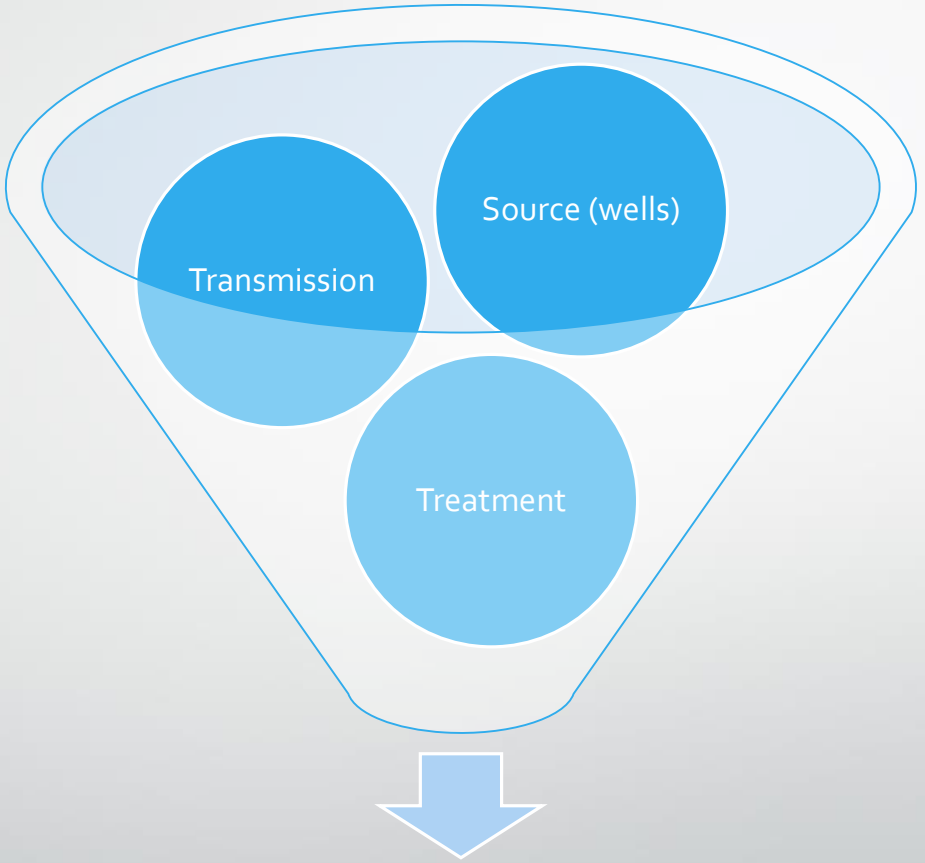
Water Demand



Distribution Analysis



Water Supply Analysis



Water Supply System

Water Supply Analysis

Evaluate Capacity
- Firm Wellfield Capacity
- Transmission Mains
- Treatment Plant

Assess Condition and Vulnerabilities
- Identify Risks
- Likelihood of Failure

Identify Improvements to Provide Desired Level of Service
- Expansion of Capacity
- Mitigation of Risks
- New Redundant Facilities

Goal: *Adequate and reliable water supply capacity to meet customer needs.*

Questions?