## City of Forest Grove Water System Plan Update

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# Purpose of Water System Plan



Planning Resource for City Staff and Council



**Document System History and Components** 



Outline plan for system improvements



Show financial impact of Capital Improvement Program



Meet Regulatory Requirements







**Executive Summary** 

- Introduction and Existing Water System
- Water Requirements
- Planning and Analysis Criteria
- Water Supply Analysis
- **Distribution System Analysis**
- Seismic Resiliency Plan Summary
- Capital Improvement Program

# Syste of Water escription









ADD= Average Day Demand

## **Historical Demands (2018-2020)**



ADD= Average Day Demand MDD = Max Day Demand

#### MDD

## **Planning Data and Projections**



**Population Projections** 

#### **Non-Residential Projections**

## Water Conservation



#### Figure 2-6 | Historical Residential Demand per Capita

Progressive tiered billing

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#### JWC Water Management and Conservation Plan

- Distributes indoor and outdoor
- conservation items (low flow
- showerheads, hose nozzles, faucet aerators)
- City's WaterSense<sup>®</sup> Toilet Rebate Program
- Customer billing with water
- conservation messages

# Middle Housing (HB2001) and **Demand Uncertainty**



**Demand Uncertainty:** +/-5% for 5 year projections +/- 10% for 10 year projections +/- 15% for 20 year projections +/- 20% for 50 year projections

#### Impact of HB2001:

- Assumes 3% increase in density (increase in population) Only affects residential demands

## **Demand Projections**



ADD= Average Day Demand MDD = Max Day Demand

# System Analysis

- Supply
  - City
    - Water Rights
    - Raw Water
      Transmission
    - WTP Capacity
  - JWC
    - Water Rights
    - WTP Capacity
    - Finished Water Transmission
- Distribution
  - 3 Main Pressure Zones
  - 2 Storage Reservoirs
  - 2 Pump Stations





## Water System Components Analyzed

#### **Supply Components - Water** Rights, Treatment Capacity, and **Finished Water Transmission**





## Water Supply Analysis – Max Demand



- City WTP Water Right Supply (0.52 mgd)
- Ownership of JWC 24" TL Capacity (6.1 mgd)
- Ownership of JWC WTP Treatment (~3.7 mgd additional)
- Ownership of JWC Stored Water Rights (3.5 mgd additional)
- Maximum Day Demand (mgd)



## Water System Components Analyzed

Supply Components - Water Rights, Treatment Capacity, and Finished Water Transmission





New 0.5 MG 710 Reservoir as development requires

New 710 Tank (0.5 MG) David Hill (1 MG) New 368 Tanks (10 MG total) **5** MG WTP Tank (5 MG) JWC Storage (3.2 MG) -System Wide Required Storage

### **System Transmission**





### Seismic Analysis



Liquefaction Susceptibility for M9 CSZ Earthquake Water Transmission and Distribution System

CITY OF FOREST GROVE WATER SYSTEM SEISMIC RESILIENCY PLAN Plate 9

### Seismic Analysis



#### Proposed Seismic Improvements

Proposed Upsized Transmission (may also be concurrent with proposed seismic improvements)

## **Capital Improvement Program Goals**





Provide for Development



Seismic Preparation



### **Capital Improvement Program Areas of Focus**

Project Type	0-5 Years	6-10 Years	<b>11-20 Years</b>	20-Year Total
Supply	\$2,595,000	\$-	\$7,640,000	\$10,235,000
Storage Reservoirs	\$11,300,000	\$11,300,000	\$1,000,000	\$23,600,000
Pump Stations	\$2,100,000	\$-	\$850,000	\$2,950,000
Piping Improvements	\$7,840,000	\$5,040,000	\$8,210,000	\$21,090,000
Seismic Improvements	\$22,047,500	\$50,000	\$4,100,000	\$26,197,500
Planning	\$50,000	\$300,000	\$300,000	\$650,000
TOTAL	\$45,932,500	\$16,690,000	\$22,100,000	\$84,722,500



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#### Replace 5 MG Reservoir

Replace aging infrastructure, increase storage capacity, improve seismic resiliency

#### Increase Transmission of Finished Water from JWC

Increase capacity, improve seismic resiliency

# Key CIP Projects



#### Improve System Transmission

Increase capacity and system resiliency, improve fire flow deficiencies, improve seismic resiliency

#### Summary



System currently adequately provides for existing residential, commercial, and industrial customers.

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Additional investment is important to plan for seismic and emergency conditions Investment is required to provide for future growth.

The proposed CIP will help the City build a more resilient system.

#### **NEXT STEPS**

- Legislative process:
  - Submit Draft for State Approval
  - First/Second Reading at City Council
  - Approve Water Master Plan and Include in City Comprehensive Plan
- Begin Water Rate/SDC Update



# Questions?