



# CITY OF SALMON

## Water Facilities Planning Study Open House

August 25, 2020

GROWING POSSIBILITIES ►

# Water Facilities Planning Study

## EVALUATED

- ▶ Sources
- ▶ Water Treatment Plant
- ▶ Storage Tank
- ▶ Distribution System

## OBJECTIVE

Make recommendations to keep system in compliance with DEQ regulations for drinking water systems

## RESULT

Develop a capital improvement plan to address issues

## PROJECT DESIGN PERIOD (USEFUL LIFE)

- ▶ 20 years for water treatment facilities
- ▶ 40 years for distribution systems

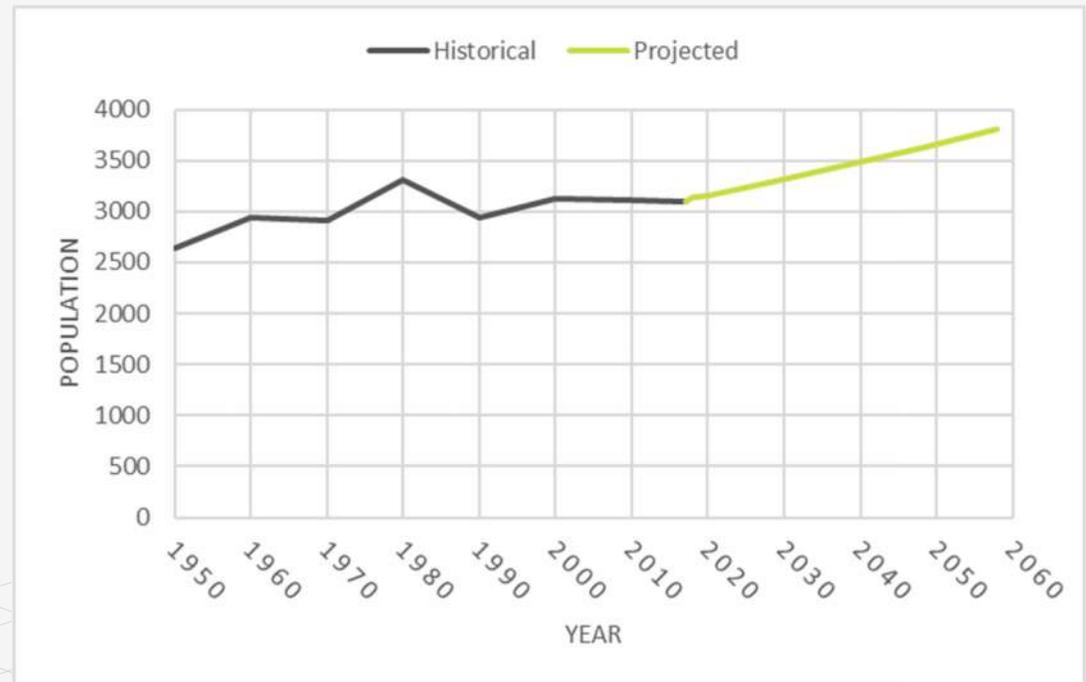
# Study Criteria

## Population Projection

- ▶ Current - 3,141
- ▶ 20-year - 3,447
- ▶ 40-year - 3,809

## Emergency Standby Water Storage

- ▶ Based on Average Day Demand for 8 hours with a fire scenario
- ▶ Available Storage - 1.5 Million Gallons
- ▶ Current - shortage of 260,000 gallons
- ▶ 20 year - shortage of 400,000 gallons



# Study Criteria

## Average Usage

- ▶ Winter – 413 gallons per capita per day (gpcd) (about 4 times typical)
- ▶ Average Day Demand – 514 gpcd (about 2.5 times Idaho avg)

| Demand Criteria    | 2017 Demand                       | 2039 Demand (Projected) | 2059 Demand (Projected) |
|--------------------|-----------------------------------|-------------------------|-------------------------|
| Average Day Demand | 1.6 Million Gallons per Day (MGD) | 1.8 MGD                 | 2.0 MGD                 |
| Max Day Demand     | 2.8 MGD                           | 3.1 MGD                 | 3.4 MGD                 |
| Peak Hour Demand   | 3.9 MGD                           | 4.3 MGD                 | 4.8 MGD                 |
| Annual Production  | 583 Million Gallons (MG)          | 648 MG                  | 716 MG                  |

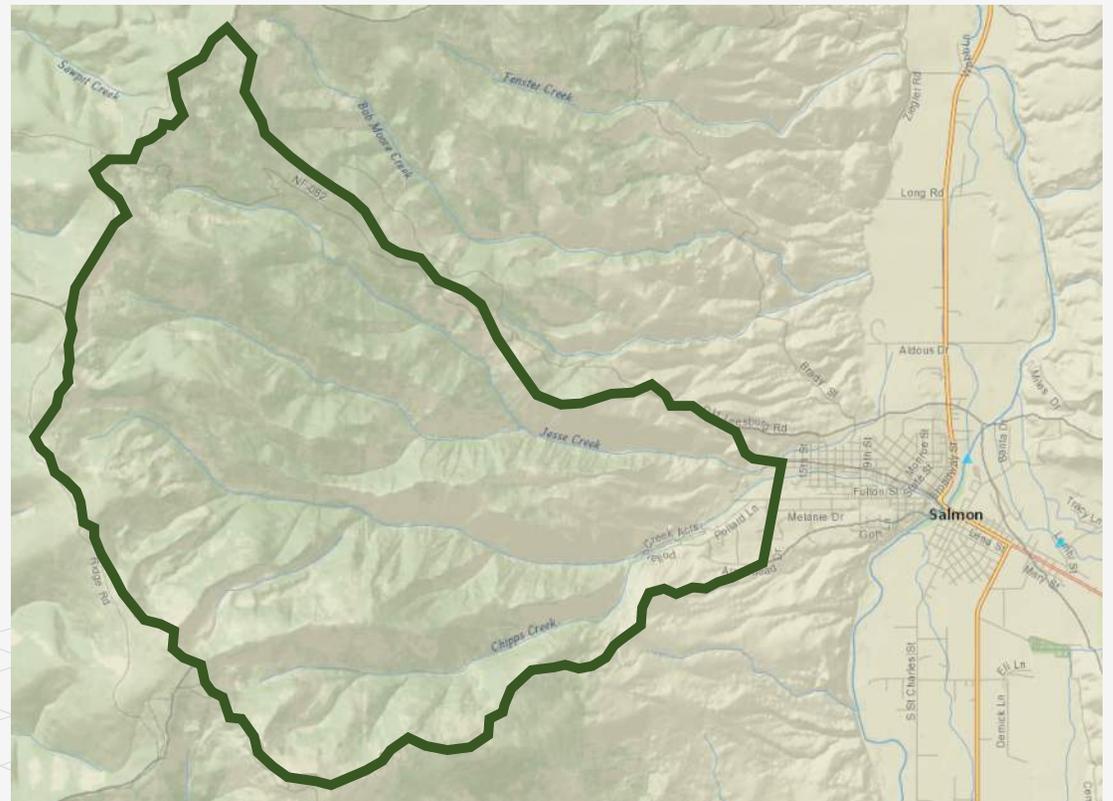
# Drinking Water Sources

## Surface Water

- ▶ Jesse Creek
- ▶ Pollard Creek
- ▶ Chipps Creek
- ▶ Salmon River (supplemental)



View of water treatment plant settling ponds looking west with the municipal watershed in the background.



Watershed providing surface water to Salmon's water treatment plant including Jesse Cr, Pollard Cr, and Chipps Cr.

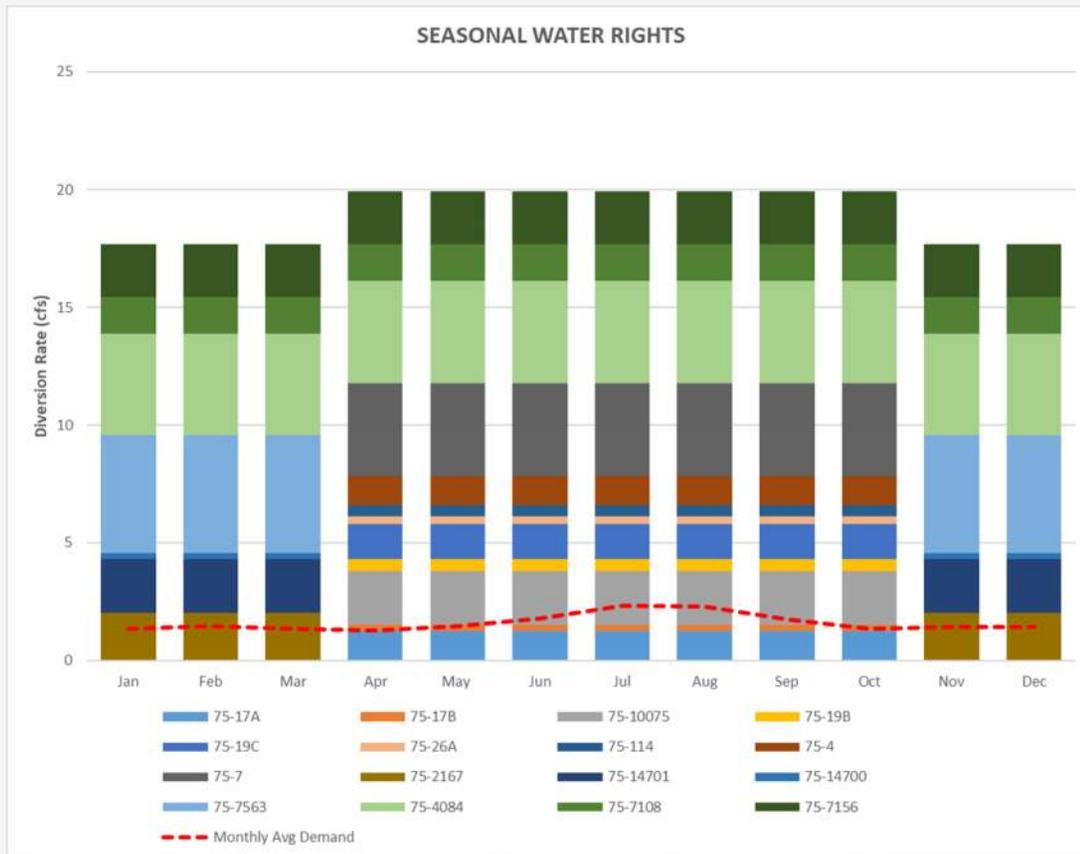
# Water Rights



## CITY OF SALMON WATER RIGHTS

| Water Right     | Type    | Priority  | Location                     | Availability | Rate (CFS) | Rate (gpm) |
|-----------------|---------|-----------|------------------------------|--------------|------------|------------|
| <b>75-2167</b>  | Decreed | 4/21/1905 | CHIPPS, JESSE, POLLARD CREEK | 1/1 - 12/31  | 2          | 898        |
| <b>75-4084</b>  | Decreed | 7/1/1938  | SALMON RIVER                 | 1/1 - 12/31  | 4.35       | 1,952      |
| <b>75-7156</b>  | Decreed | 10/5/1979 | SALMON RIVER                 | 1/1 - 12/31  | 2.25       | 1,010      |
| <b>75-7108</b>  | Decreed | 5/1/1978  | SALMON RIVER                 | 1/1 - 12/31  | 1.55       | 696        |
| <b>75-14700</b> | Decreed | 8/18/1961 | CHIPPS, JESSE, POLLARD CREEK | 11/1 - 3/31  | 0.24       | 108        |
| <b>75-14701</b> | Decreed | 4/12/1940 | CHIPPS, JESSE, POLLARD CREEK | 11/1 - 3/31  | 2.3        | 1,032      |
| <b>75-7563</b>  | License | 12/3/1990 | JESSE CREEK                  | 11/1 - 3/31  | 5          | 2,244      |
| <b>75-4</b>     | Decreed | 4/1/1894  | CHIPPS, JESSE, POLLARD CREEK | 4/1 - 10/31  | 1.2        | 539        |
| <b>75-17B</b>   | Decreed | 6/1/1867  | CHIPPS, JESSE, POLLARD CREEK | 4/1 - 10/31  | 0.24       | 108        |
| <b>75-19C</b>   | Decreed | 6/1/1868  | CHIPPS, JESSE, POLLARD CREEK | 4/1 - 10/31  | 1.5        | 673        |
| <b>75-26A</b>   | Decreed | 5/1/1884  | CHIPPS, JESSE, POLLARD CREEK | 4/1 - 10/31  | 0.3        | 224        |
| <b>75-7</b>     | Decreed | 4/1/1894  | JESSE CREEK                  | 4/1 - 10/31  | 1.26       | 565        |
| <b>75-17A</b>   | Decreed | 6/1/1867  | JESSE CREEK                  | 4/1 - 10/31  | 0.493      | 221        |
| <b>75-19B</b>   | Decreed | 6/1/1868  | JESSE CREEK                  | 4/1 - 10/31  | 0.493      | 221        |
| <b>75-114</b>   | Decreed | 4/1/1894  | JESSE CREEK                  | 4/1 - 10/31  | 4          | 1,795      |
| <b>75-7563</b>  | License | 12/3/1990 | JESSE CREEK                  | 4/1 - 10/31  | 1.01       | 453        |
| <b>75-10075</b> | Decreed | 6/1/1867  | CHIPPS, JESSE, POLLARD CREEK | 4/1 - 12/31  | 2.3        | 1,032      |

# Water Rights



Existing water rights of 19.9 cfs were found to be sufficient for the future projected water demand of 5.3 cfs (3.4 MGD)

# Water Treatment Plant (WTP)

- ▶ WTP was found to be in good condition
- ▶ Minor equipment maintenance recommended
- ▶ No backup generator which can create operational challenges and potential lack of water during power outages.
- ▶ Plant capacity (4.0 MGD) was found to be adequate for the future projected water demand (3.4 MGD)



**Top left:** View of settling ponds, treatment facility and storage reservoir. **Top right:** Pumps from clearwell pumping to filters. **Bottom:** Clearwell pumps, screens, and filters in treatment plant.

# Water Storage Tank



*Partially buried concrete storage tank.*

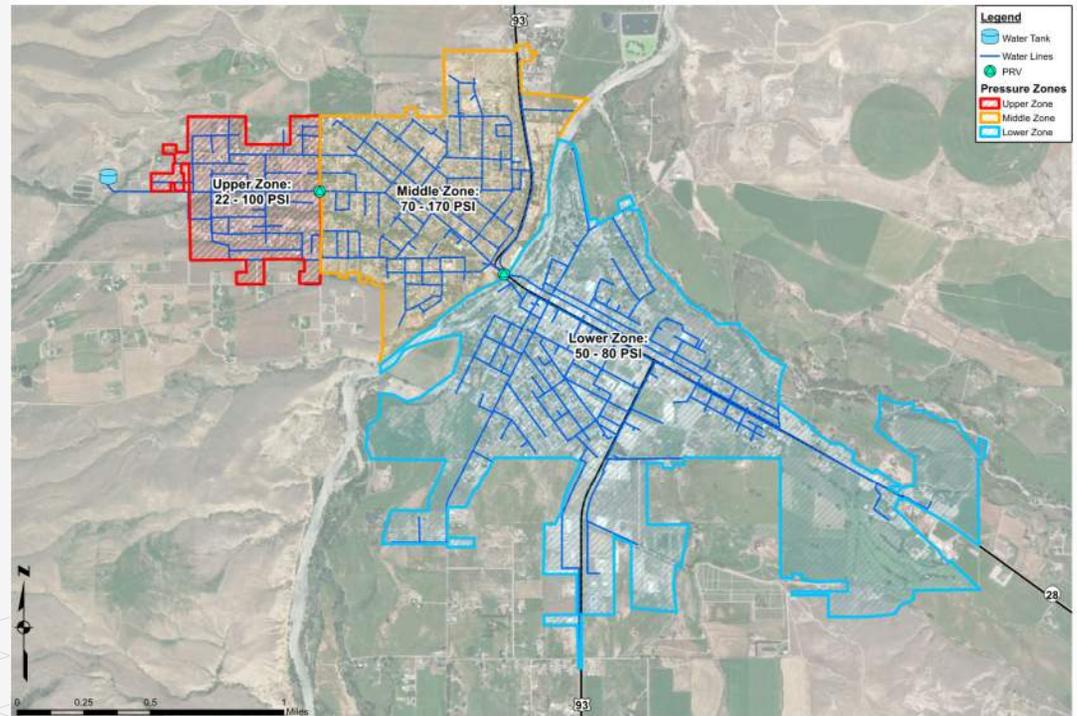


*Aerial view of the partially buried concrete storage tank next to the water treatment plant.*

- ▶ The partially buried concrete storage tank was built around 1978
- ▶ The tank appears to be in good condition
- ▶ Storage volume is sufficient as long as the WTP is running
- ▶ Under DEQ's emergency standby scenario, the City's total storage is deficient by 260,000 gallons currently, and will be short 400,000 gallons in 20 years
- ▶ An emergency generator at the water treatment plant could offset the need for additional storage

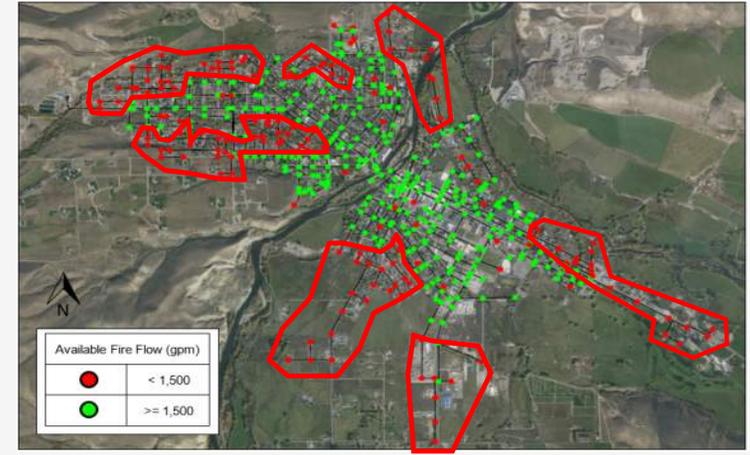
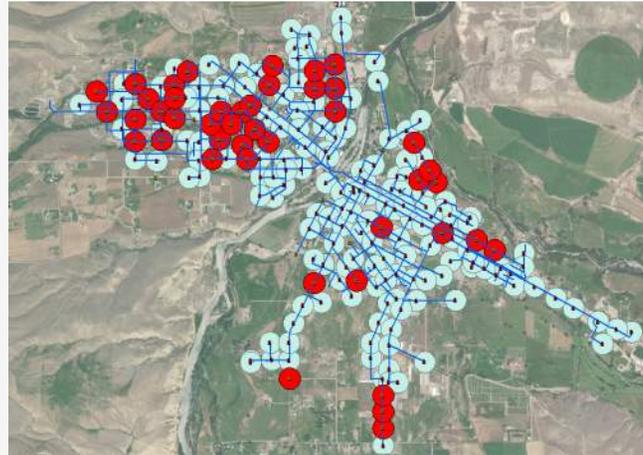
# Distribution System

- ▶ Over 195,000 ft of pipelines (37 miles) from 2 to 20-inch diameter in the City's system
- ▶ Much of the piping is aging and beyond its design life and ready to be replaced
- ▶ Two pressure reducing valve (PRV) stations create three pressure zones
- ▶ DEQ typically requires pressures to be between 40 - 100 psi
- ▶ The middle pressure zone ranges from 70 - 170 psi which is too high for safe operation



Existing pressure zones boundaries and pressure ranges.

# Distribution System (cont'd)

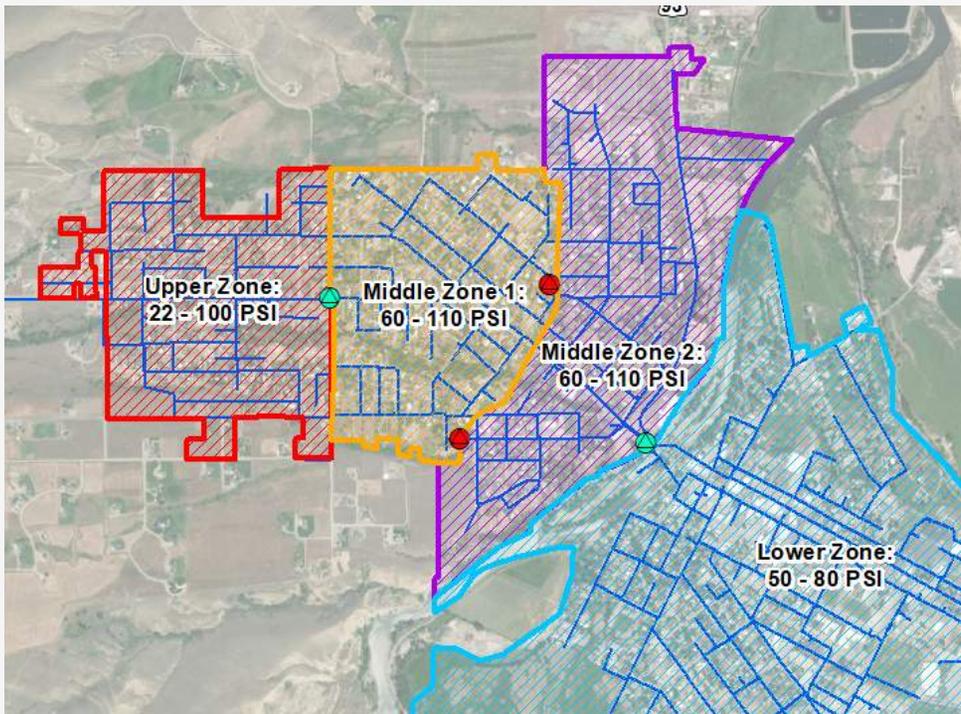


Hydrant flowing at Fulton St and W 4<sup>th</sup> Ave. Areas needing additional fire hydrant coverage

Computerized hydraulic model results showing fire flow failures as red dots

- ▶ Fire hydrant coverage was evaluated and deficient areas identified
- ▶ Fire flow deficiencies identified
- ▶ Water meters are approaching 30 yrs old and need to be replaced as they lose accuracy with age

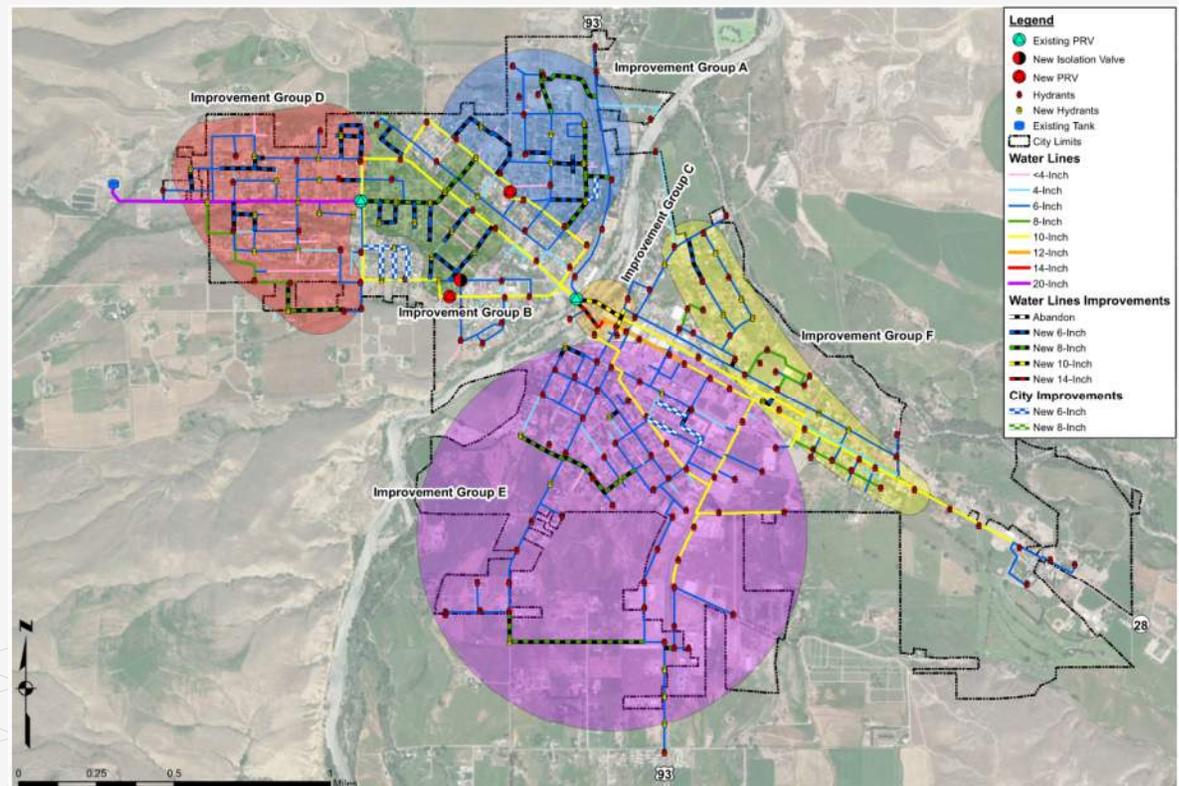
# Address High Pressures



- ▶ Split middle zone creating a fourth pressure zone
- ▶ Add two PRV stations

# Piping Improvements

- ▶ Address fire flow and looping issues
- ▶ Oldest and problem sections identified
- ▶ Identified piping was split up into groups by area and prioritized (labeled A-F)



# Environmental Considerations



## Environmental Screening Matrix

| Description                       | No Action Alternative                               | Replacement of Aging Infrastructure        |
|-----------------------------------|---|--|
| <b>Physical Aspects</b>           | No Adverse Impact                                   | No Adverse Impact                          |
| <b>Land Use</b>                   | No Adverse Impact                                   | No Adverse Impact                          |
| <b>Wetlands and Water Quality</b> | Potential for Pipeline Rupture                      | Temporary Impacts During Construction      |
| <b>Flora and Fauna</b>            | No Adverse Impact                                   | Temporary Impacts During Construction      |
| <b>Cultural Resources</b>         | No Adverse Impact                                   | No Adverse Impact                          |
| <b>Air Quality</b>                | No Adverse Impact                                   | Temporary Impacts During Construction      |
| <b>Energy</b>                     | Additional Water Treated for Losses                 | Reduce Energy Usage from Preventing Losses |
| <b>Public Health</b>              | Drinking Water Quality and Fire Protection Concerns | Improved Water Quality and Fire Protection |

# Cost Estimates



| Improvement                               | Linear Feet of Pipe | Total Cost              |
|---|---------------------|-------------------------|
| City Improvements (Piping & Water Meters) | 4,600               | \$ 1,288,000.00         |
| Generator                                 | N/A                 | \$ 410,000.00           |
| 2 New PRVs                                | N/A                 | \$ 176,000.00           |
| Improvement Group A                       | 8,100               | \$ 2,133,000.00         |
| Improvement Group B                       | 6,900               | \$ 2,064,000.00         |
| Improvement Group C                       | 1,600               | \$ 930,000.00           |
| Improvement Group D                       | 6,600               | \$ 1,890,000.00         |
| Improvement Group E                       | 6,500               | \$ 1,755,000.00         |
| Improvement Group F                       | 1,300               | \$ 433,000.00           |
| <b>Subtotal</b>                           | <b>35,600</b>       | <b>\$ 11,079,000.00</b> |
| Cost for all Remaining Diameter 4" & Less | 26,100              | \$ 8,293,000.00         |
| <b>Total</b>                              | <b>61,700</b>       | <b>\$ 19,372,000.00</b> |

*\*Cost estimates are preliminary and are based on the current understanding of the project. Cost estimates will continue to be refined during the project planning and design process. Actual costs will be determined at time of bidding. The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.*

# Funding Opportunities

Project funding typically consists of a combination of grants and low-interest loans

## Funding agencies consider demographics and user rates

- To be eligible for some grants, annual average user rate must be above \$48/month
- Current Salmon Water Rates - \$38.85/month + \$0.78/1000 gal
- Average user rate is \$48/month
- According to American Waterworks Association, utilities exceed “affordability” after they crest 2.5% of the median household income (MHI).

## Potential funding sources include:

- **Idaho DEQ (IDEQ)** - Loan and Principal Forgiveness ('grant') - 20 to 30 Year Loan @ 1.5 to 3%/year
- **United States Department of Agriculture - Rural Development (USDA-RD)** - Grants and Loans - Up to a 40 Year Loan @ 1.75 to 3%/year
- **Community Development Block Grant (CDBG)** up to \$500,000
- **US Army Corps of Engineers Grants and Loans (ACOE)**
- **Special Appropriation Grants (SAPP)**



The City plans to work with ECIPDA to obtain the best funding package possible



# Phased Construction

## Phase 1 (Construction 2021)

- New PRVs / pressure zones
- Generator
- Piping replacement

## Phase 1 Funding Scenario

\$400,000 City cash  
\$500,000 CDBG grant  
**\$900,000 total project funding**

## Phase 2 (Construction 2023-2024)

- Replace aging water meters
- Piping replacement

## Possible Phase 2 Funding Scenario

\$ 500,000 CDBG grant  
\$3,500,000 USDA-RD Loan  
\$4,000,000 USDA-RD Grant\*  
**\$8,000,000 total project funding**

*\*Assuming Salmon would be eligible for a 50% USDA-RD grant. Rates would need to be \$48-\$50/month for USDA-RD grant consideration.*

# User Rate Adjustments

## ANTICIPATED FUTURE USER RATES WITH PROJECTS

| Year | Base Rate | Average User Rate (Base + Usage) |
|------|-----------|----------------------------------|
| 2020 | \$37.00   | \$46.00                          |
| 2021 | \$38.85   | \$47.85                          |
| 2022 | \$40.79   | \$49.79                          |
| 2023 | \$40.79   | \$49.79                          |
| 2024 | \$40.79   | \$49.79                          |
| 2025 | \$42.04   | \$51.04                          |

- ▶ Average annual usage for the City is approximately to be \$9/month/user (\$0.78/1000 gal)
- ▶ Current water bond will be paid off in 2021 (\$3.50/month)
- ▶ City proposed a 5% increase (\$1.85/month) in 2020
- ▶ Considering a 5% increase (\$1.94/month) in 2021
- ▶ Final rate adjustment of slightly less than 5% for 2025 based on final project funding

*\*User rates are approximate and dependent on final interest rates and funding package.*

# Timeline

## Phase 1 (Construction 2021)

|                 |   |
|-----------------|---|
| <b>Aug 2020</b> | Online public meeting for study                             |
| <b>Sep 2020</b> | Finalize study with public meeting comments                 |
| <b>Sep 2020</b> | Grant Admin procurement / CDBG application started          |
| <b>Oct 2020</b> | Surveying and environmental report                          |
| <b>Nov 2020</b> | Public hearing for CDBG application                         |
| <b>Nov 2020</b> | Submit CDBG application                                     |
| <b>May 2021</b> | Engineering design complete and CDBG environmental complete |
| <b>Jun 2021</b> | Bid Opening   |
| <b>Nov 2021</b> | Construction 80% Complete                                   |

# Timeline

## Phase 2 (Construction 2023-2024)

|                            |  |
|----------------------------|--|
| <b>Feb 2021</b>            | Identify scope of Phase 2                                  |
| <b>Apr 2021</b>            | USDA-RD application started                                |
| <b>May, Jul, Sep 2021</b>  | Community education/bond meetings or Judicial Confirmation |
| <b>Aug 2021</b>            | Start CDBG application                                     |
| <b>Nov 2021</b>            | Bond Election or Judicial Confirmation                     |
| <b>Jan 2022</b>            | Begin engineering design                                   |
| <b>Apr 2022</b>            | CDBG award   |
| <b>Dec 2022</b>            | Engineering design complete                                |
| <b>Jan 2023</b>            | Bid Opening  |
| <b>Apr 2023 - Oct 2024</b> | Construction   |
| <b>Oct 2025</b>            | First bond payment due                                     |

# QUESTIONS?

**Amy Fealko - City of Salmon**

[afealko@centurytel.net](mailto:afealko@centurytel.net) | (208) 756-3214

**Rick Miller - The Development Company**

[rick.miller@ecipda.net](mailto:rick.miller@ecipda.net) | (208) 356-4524

**Matthew Hill, PE**

[mhill@kellerassociates.com](mailto:mhill@kellerassociates.com)

**Jim Mullen, PE**

[jmullen@kellerassociates.com](mailto:jmullen@kellerassociates.com)

**kellerassociates.com | (208) 238-2146 | Pocatello, ID**