Environment
& Sustainability
Committee

City of Idaho Falls
Environment & Sustainability
CUSP Committee Meeting
Chair: Kris Millgate
Vice-Chair: Stephanie Austad

February 12, 2020
10:30 a.m.
Activity Center
1575 N. Skyline Dr.
Idaho Falls, ID 83402

MINUTES

Roll Call:

Adams C.		Evaly, J.	X	Millgate K.	X	Silverman H.	X
Austad S.		Haney, C.	X	Morales K.		Vazhnik V.	
Cherry B.	X	Lepler K.	X	Sehlke G.	X		

Call to Order:

The meeting was called to order at 10:35 am by committee chair Kris Millgate.

Approval of Minutes:

Bob Cherry motioned to approve the 01/29/20 minutes.
Gerry Sehlke seconded the motion.
All in Favor.

Speaker: David Richards, City of Idaho Falls Water Superintendent
See attached Water presentation.

History of water in Idaho Falls aka Eagle Rock
1888 city water works had 2 35,000-gallon reservoirs.
Started drilling wells and found aquifer

(River) Surface water – accessible since 1800s but high cost of treatment and supply and freezes plus inconsistent flow.

(Aquifer) Ground water - low treatment cost and doesn't freeze, consistent
Idaho Falls sits on one of largest groundwater sources in the nation.
Goes 1 mile deep.

Eastern Snake River Plain Aquifer is – 10,8000 square miles
170 miles long (Ashton to King Hill)
60 miles wide
200-300 million acre feet on top

Lake Erie – 10,800 square miles
240 miles long
57 miles wide
3.4 million acre feet

Most city wells go 400 ft deep. Two of the oldest wells in town are more than 2k feet deep (half mile). Aquifer is source of city water, but it is depleting

New in 2019
Sand Creek Recharge Site – by Sandy Downs
First private managed aquifer recharge site in state is in IF
Storage water for IF in Pali is diverted to pit and sinks into the ground
Water is tested for contamination.
Idaho Irrigation District put in also
2k acre feet of recharge in 2019
Idaho Falls is supposed to recharge 3k acre feet annually
City wants to add 1-2 more recharge sites

Gerry Sehlke suggested fencing and security around recharge.
City is working on that.

Dawn of the replacement era
Red and white tower - Built in 1937 – $2-$3 million to fix so looking at replace
21 wells plus 325 miles of underground pipe
$1 million a mile to replace pipe
City public works doesn't use tax money to replace pipes. Need to replace 3 miles of pipe a year, but been doing 2 miles a year. The bulk of money goes to wells. Once wells are fixed, more money will go to pipes.

Heather Silverman suggested public education component. ie: If city is replacing pipe by your house, you probably need to replace pipes to your house. Save money ahead for that.

Gallons per person per day comparison of Pocatello (metered) Rexburg (metered) Idaho Falls (not metered)

Gallons per person per day
653 Idaho Falls
358 Pocatello
376 Rexburg
Peak season (July)

Gerry Sehlke suggested committee review Las Vegas water plan

Prior to 2006 city developments don't have meter pit area. Have to dig down 5-6 feet to install a pit then put the meter in. $200-$300 meter only but $2500-$3000 for meter and pit.

Drinking water goes on residential lawns now. Using gray water instead would require new piping. No shortage of water, but all water is attached to a piece of paper which is a water right. More growth but not more water. Use surface for parks and recharge to buy us time.

City uses 2 wells in winter and 19 wells in summer (watering lawns)

Metering citywide water would cost $87.03 million
$21 a month would go to $52.26 to pay for metering.

Since 2015
Retrofitting non residential with metering and being metered. All new non residential are metered. All new residential has meter pit for future meter. Replacement parts have meter pit added for future meter. Added 3,000-4,000 meter pits since 2015

Gerry Sehlke suggested city review of INL climate change report
Katrin Keplar suggested committee members look at other climate action plans already shared as committee resources.

Q&A session with speaker ran long.
Rest of agenda bumped to next committee meeting.

1. Finalize Targets
2. Assign Target Mini Committees
3. Discuss Vision Statement

Call for Agenda/Action Items

Continue water theme with water quality speakers at next meeting.

Announce Next Meeting Date/Time:

February 26, 2020; 10:30 am

Adjourn:

Adjourned: 12:00pm

END NOTES

Recorded by:
Kris Millgate
Committee chair

CITY OF IDAHO FALLS

WATER SYSTEM SUSTAINABILITY

CUSP PRESENTATION – FEBRUARY 2020

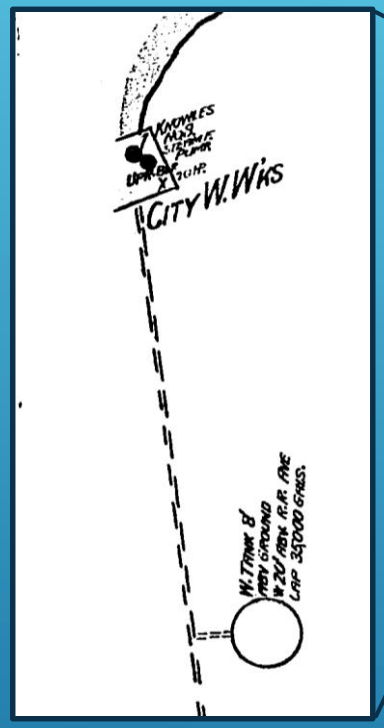
By: David Richards, PE

Water Superintendent

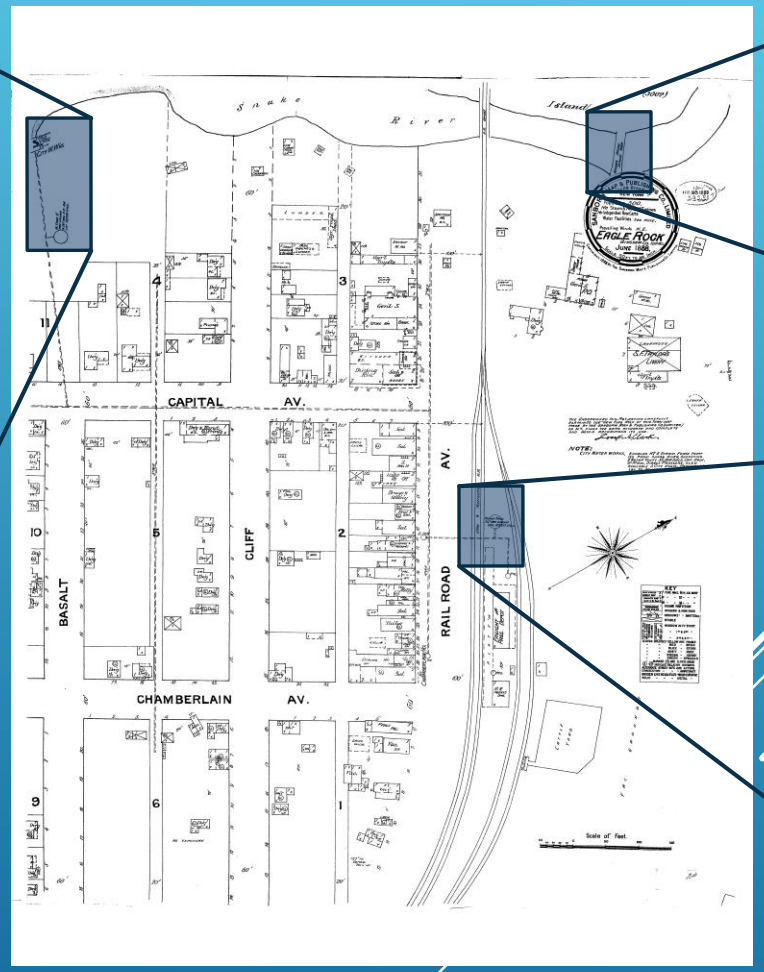
IDAHO FALLS PUBLIC WORKS

CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

The Beginnings of a City in Eastern Idaho

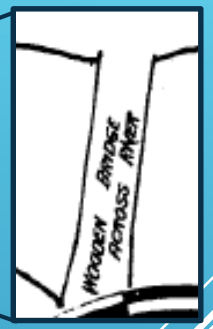


City of Eagle Rock pumped surface water from Snake River to two 35,000 gallon water tanks

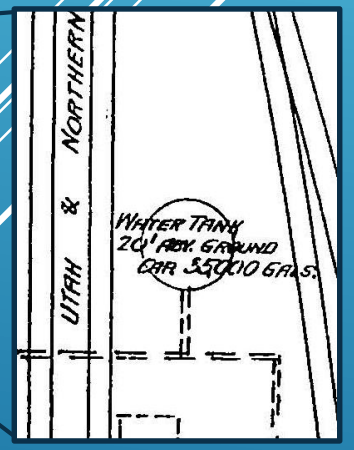


City of Eagle Rock – June1888

(Sanborn Map & Publishing Co. Ltd.)



1865 – Taylor's Bridge built

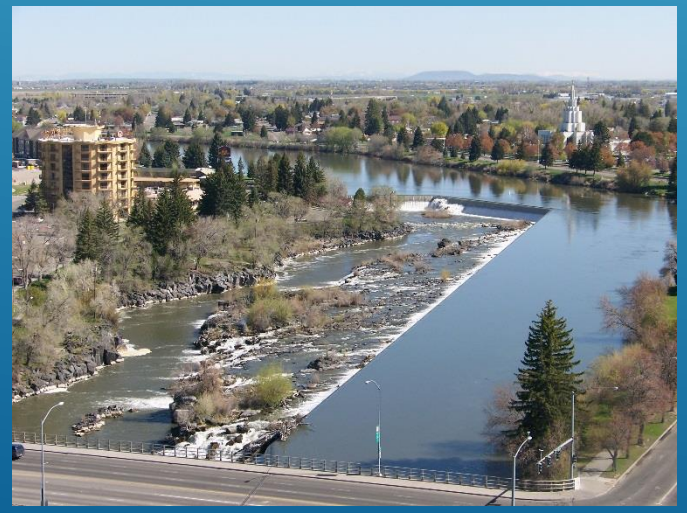


1878 – Railroad reached Eagle Rock

CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

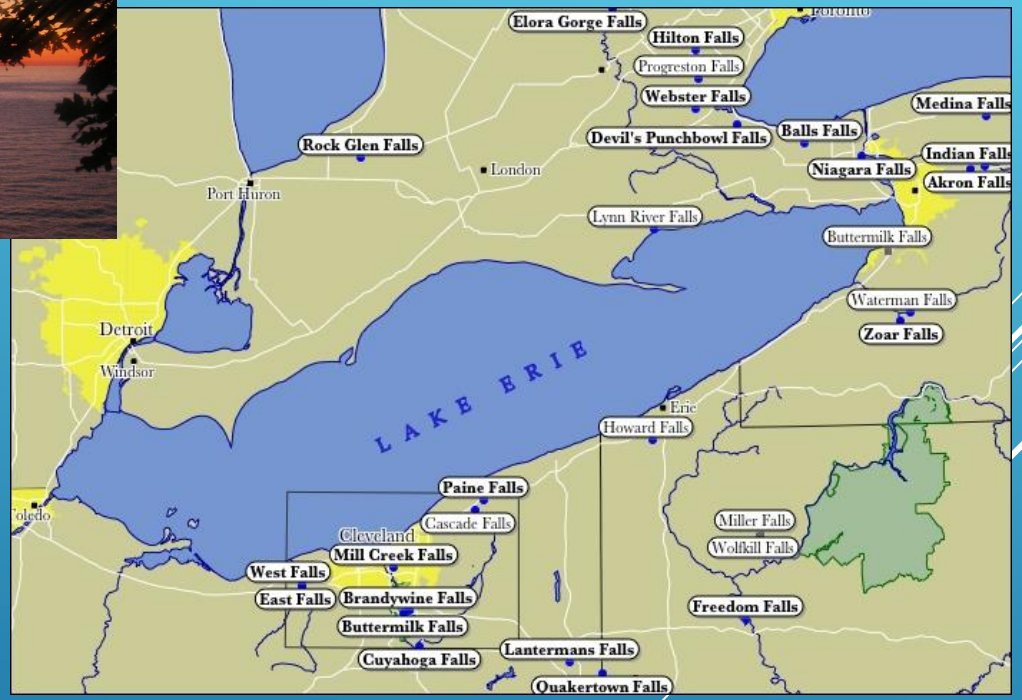
Municipal Water Supply – Groundwater vs. Surface Water

SURFACE WATER	Vs.	GROUNDWATER
Accessible Since Settlement		More Accessible Since 1950's
High Cost of Treatment		Low Cost of Treatment
Less Consistent Supply		More Consistent Supply
More Susceptible to Freezing		Less Susceptible to Freezing



CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

The Eastern Snake Plain Aquifer (ESPA)

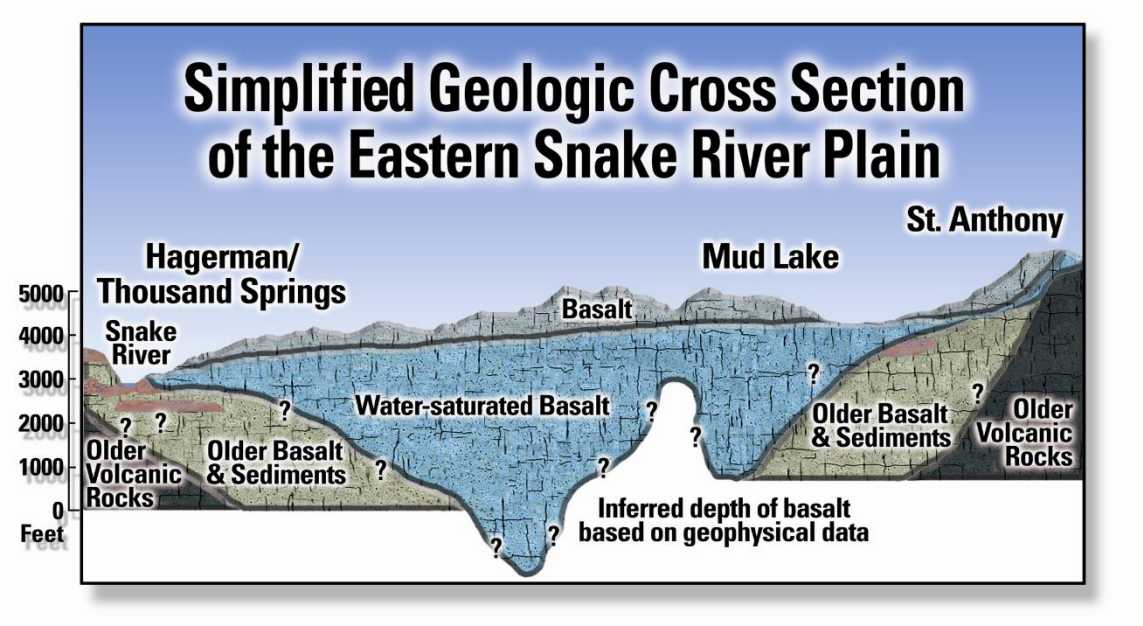


Surface Area: 10,800 square miles
Length: 170 miles (Ashton to King Hill)
Width: 60 miles (at widest spot)
Volume: 200-300 million acre-ft (top 500 ft)

Surface Area: 10,800 square miles
Length: 241 miles
Width: 57 miles
Volume: 3.4 million acre-ft

CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

ESPA Statistics

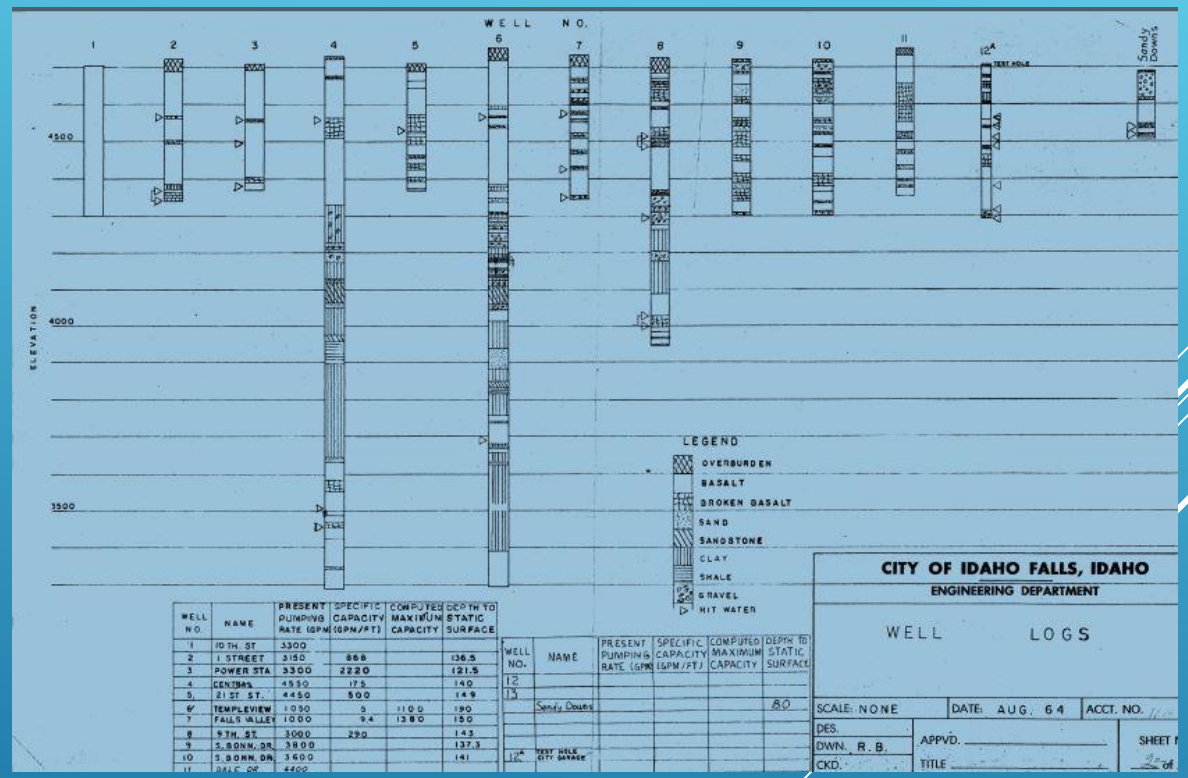


Maximum Thickness of Aquifer: 5,000 ft

Estimated Total Volume: 1 billion acre-ft

Majority of Water is in Top 300-500 ft

Aquifer Depths Vary Along Cross Section



Idaho Falls' Wells Average Depth: Approximately 400 ft

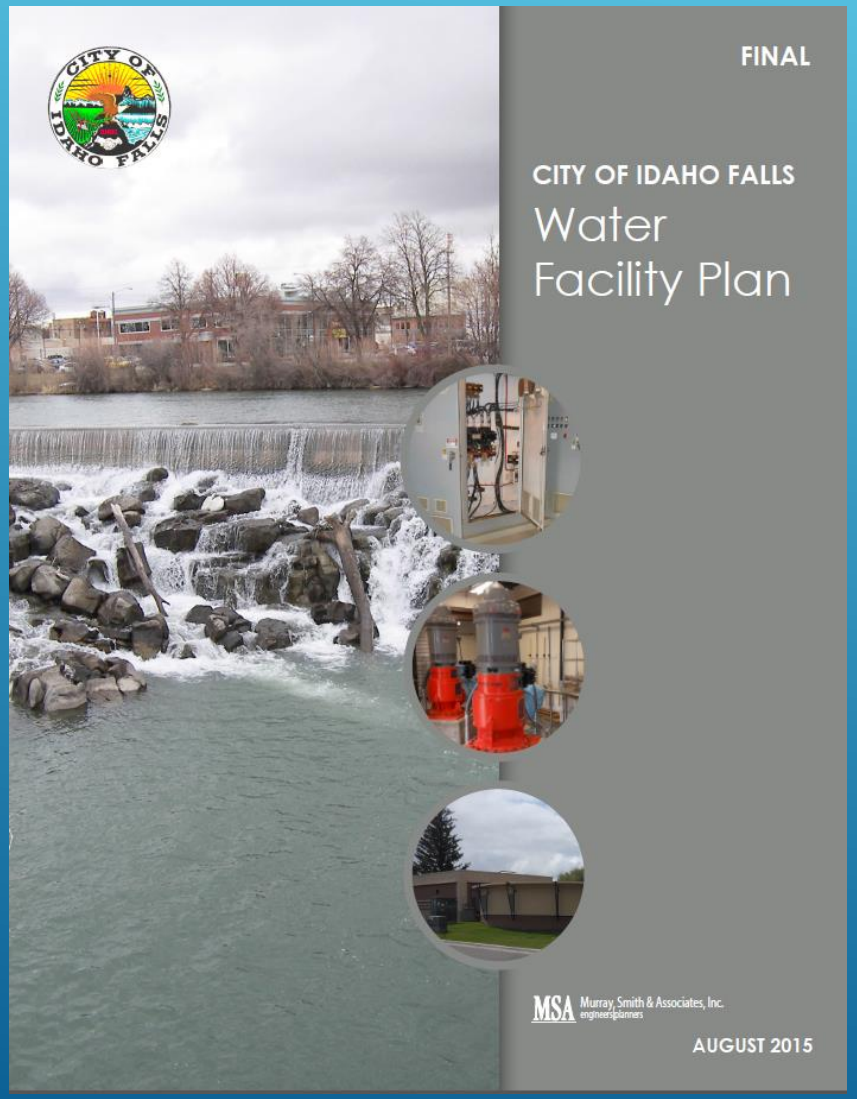
Maximum Well Depth: Approximately 2,000 ft

CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

Source Water Sustainability – Managed Aquifer Recharge

CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

Water Facility Plan – August 2015



Major Sections

- Executive Summary
- Existing System Description
- Population and Demand Projections
- Distribution and Supply Analysis
- Operations and Maintenance
- System Condition and Code Evaluation
- Capital Improvement Program
- Financial Plan
- Financial Impacts of City-wide Meter Implementation
- Alternative Rates

Appendices

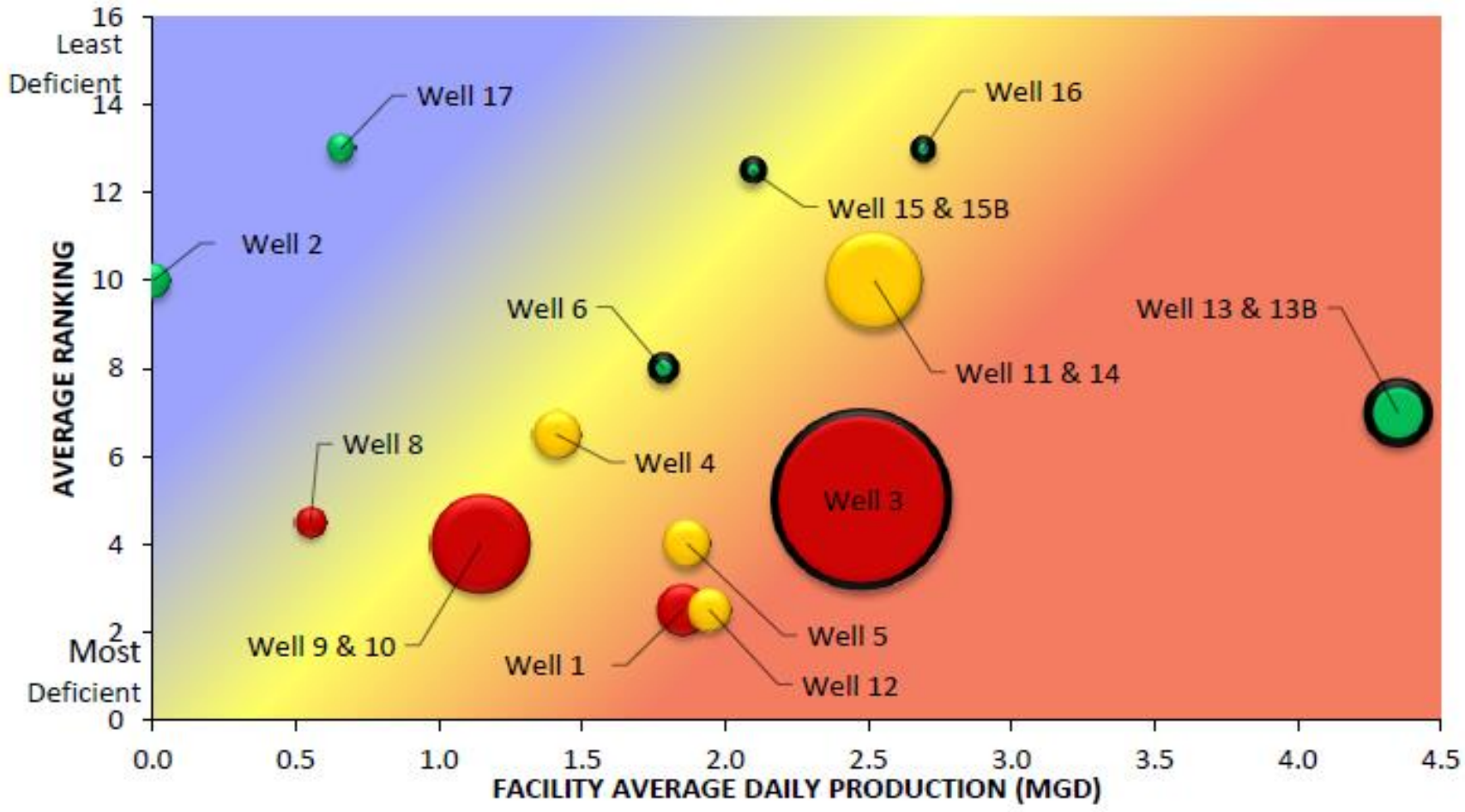
- Water Conservation Plan
- Water Rights Plan
- CIP Pipeline Summary
- CIP Detailed Cost Sheets

IDAHO FALLS PUBLIC WORKS

CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

Water Facility Plan – Well Site Sustainability

Figure 6-1
Well Ranking vs Average Daily Production



KEY

- Size of circle indicates relative cost of improvements
- Black outer bands indicate wells used year-round
- Color of circle indicates well facility risk of failure

Table 6-5
Well Facility Improvement Ranking

Order of Improvements	Facility
1	Wells 9 & 10
2	Well 3
3	Well 1
4	Well 4
5	Well 8
6	Well 5
7	Well 12
8	Wells 11 & 14
9	Wells 13 & 13B
10	Well 6
11	Well 16
12	Well 17
13	Well 2
14	Wells 15 & 15B

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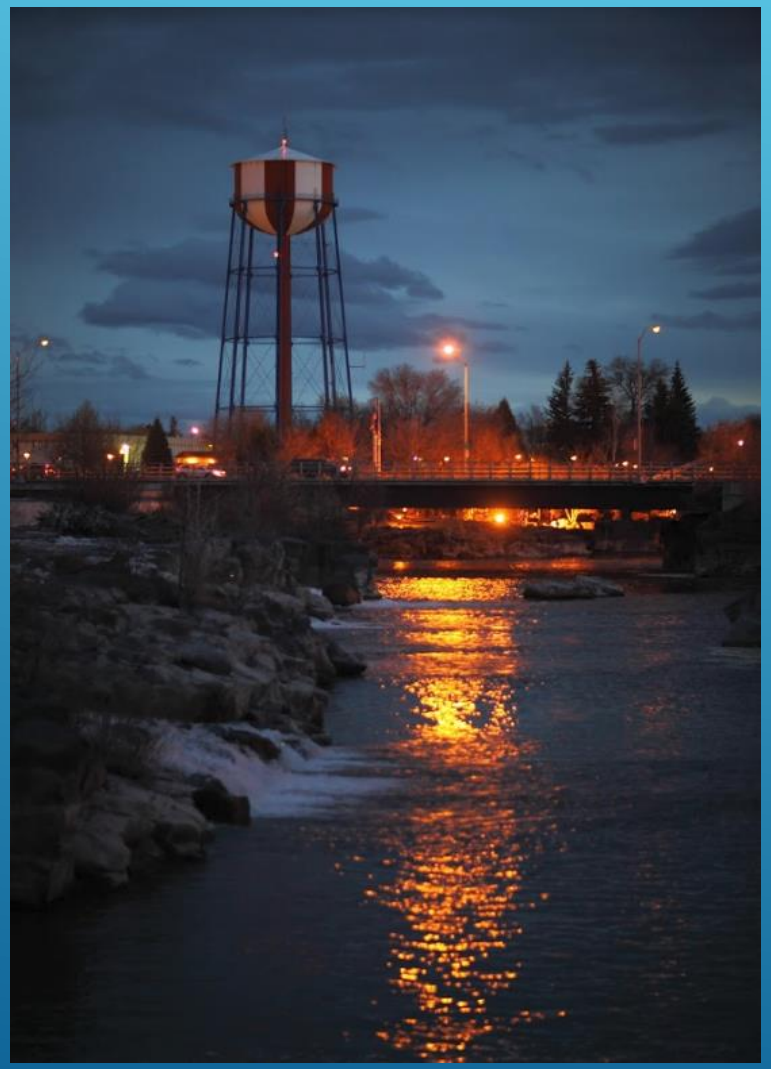
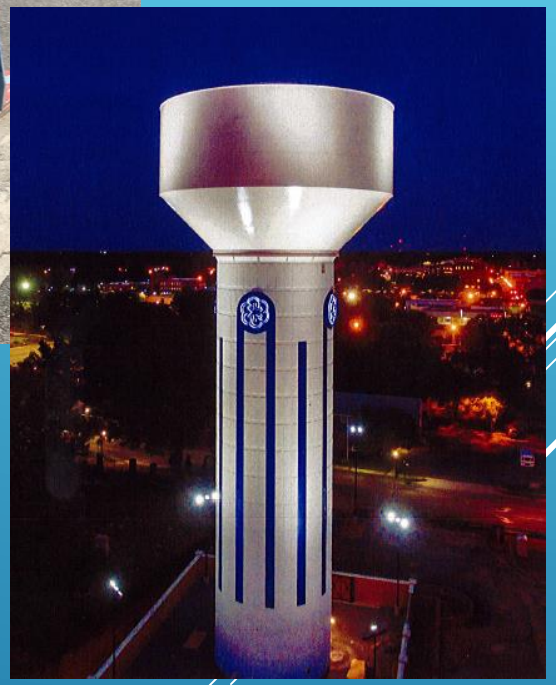
CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

Water Facility Plan – Well Site Sustainability



Elevated Tower – Constructed in 1937



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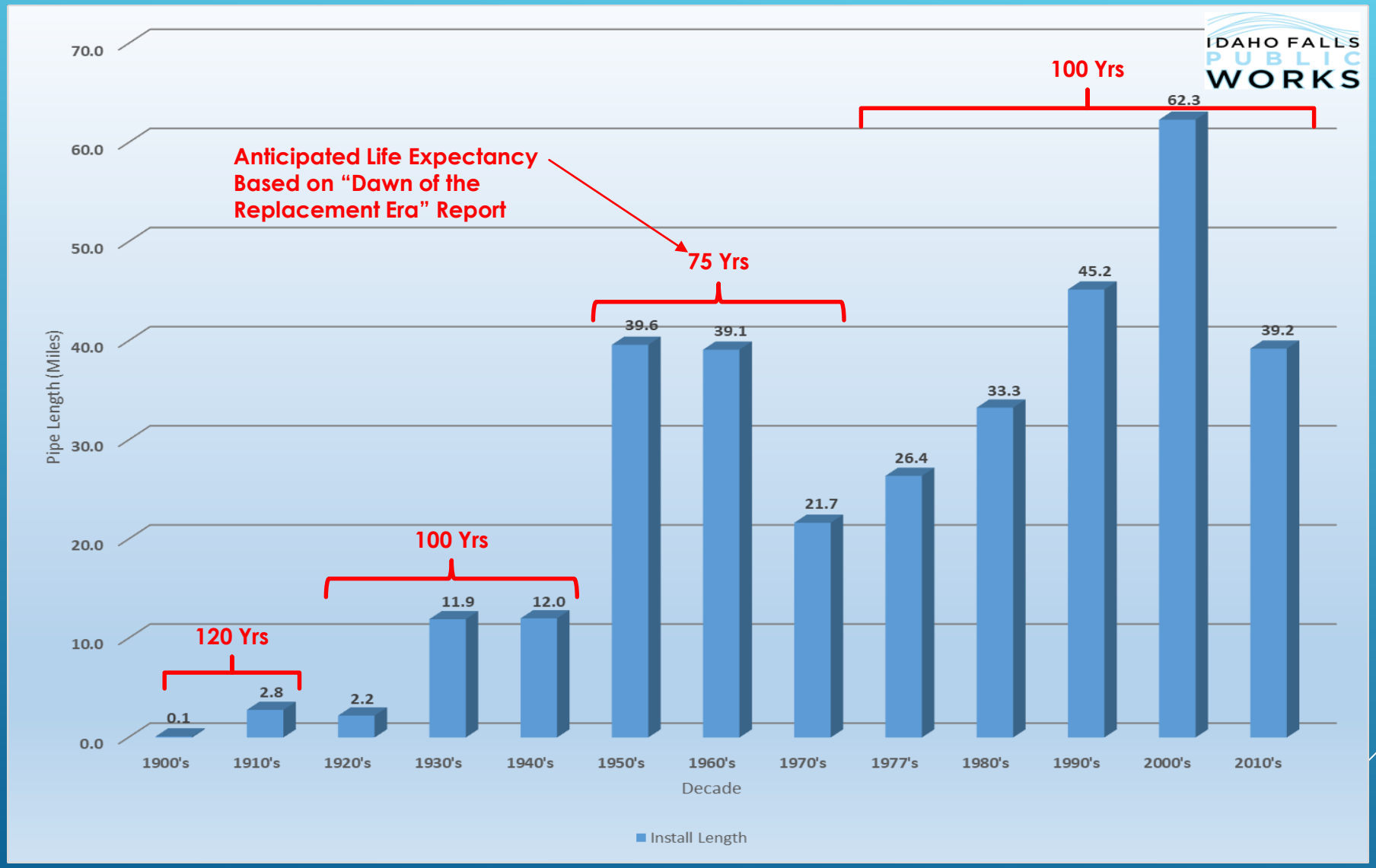
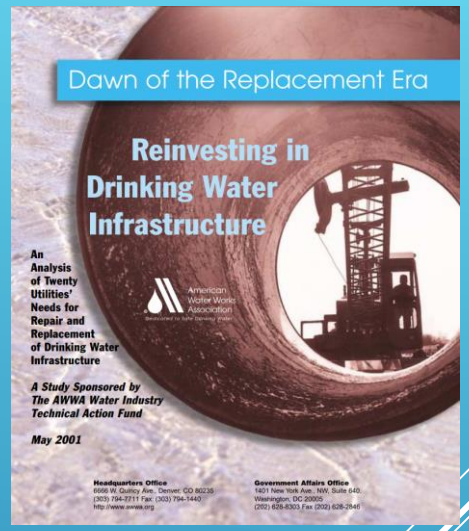
CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

Distribution Main Lines "Wave"





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CITY OF IDAHO FALLS – WATER SYSTEM SUSTAINABILITY

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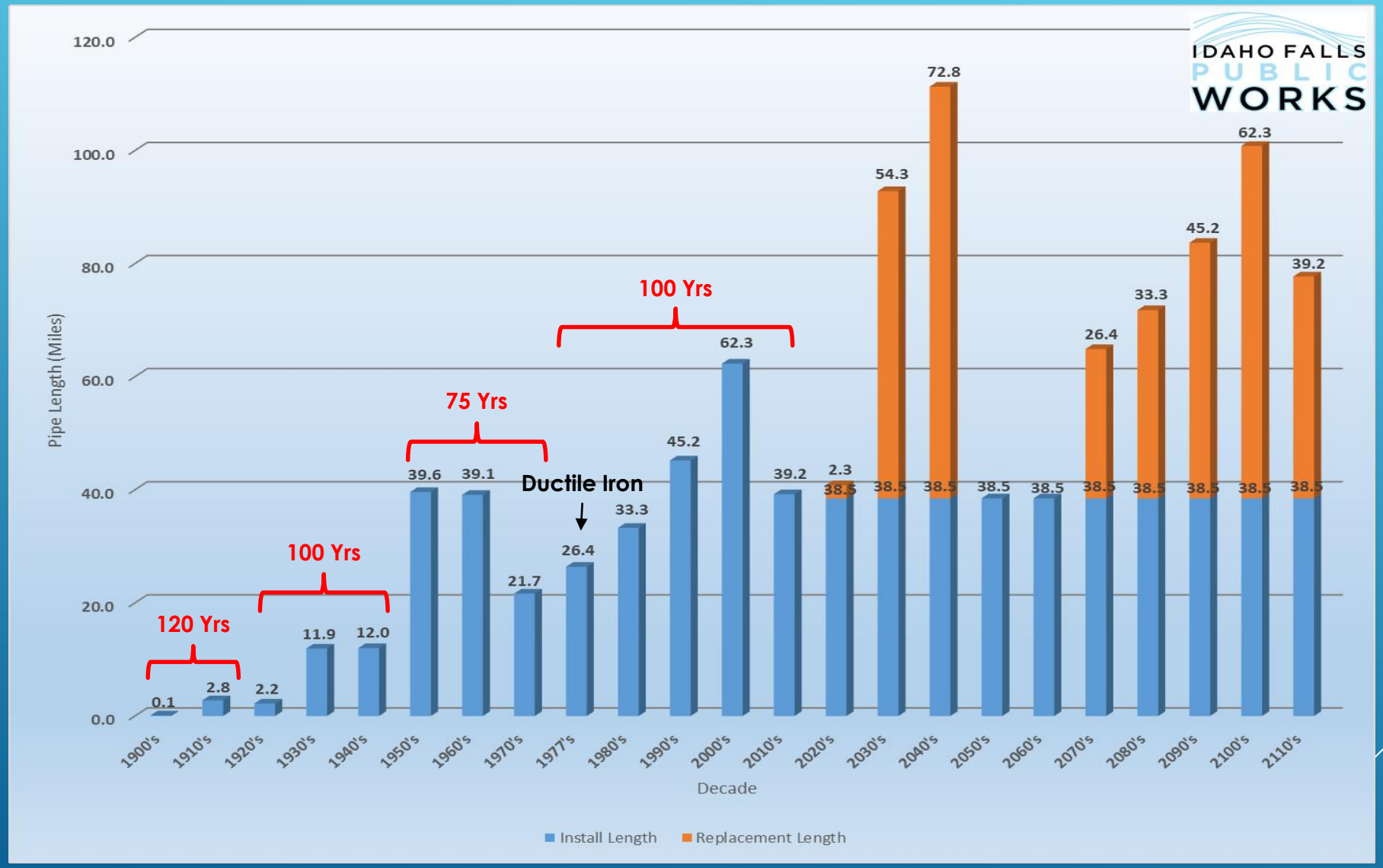


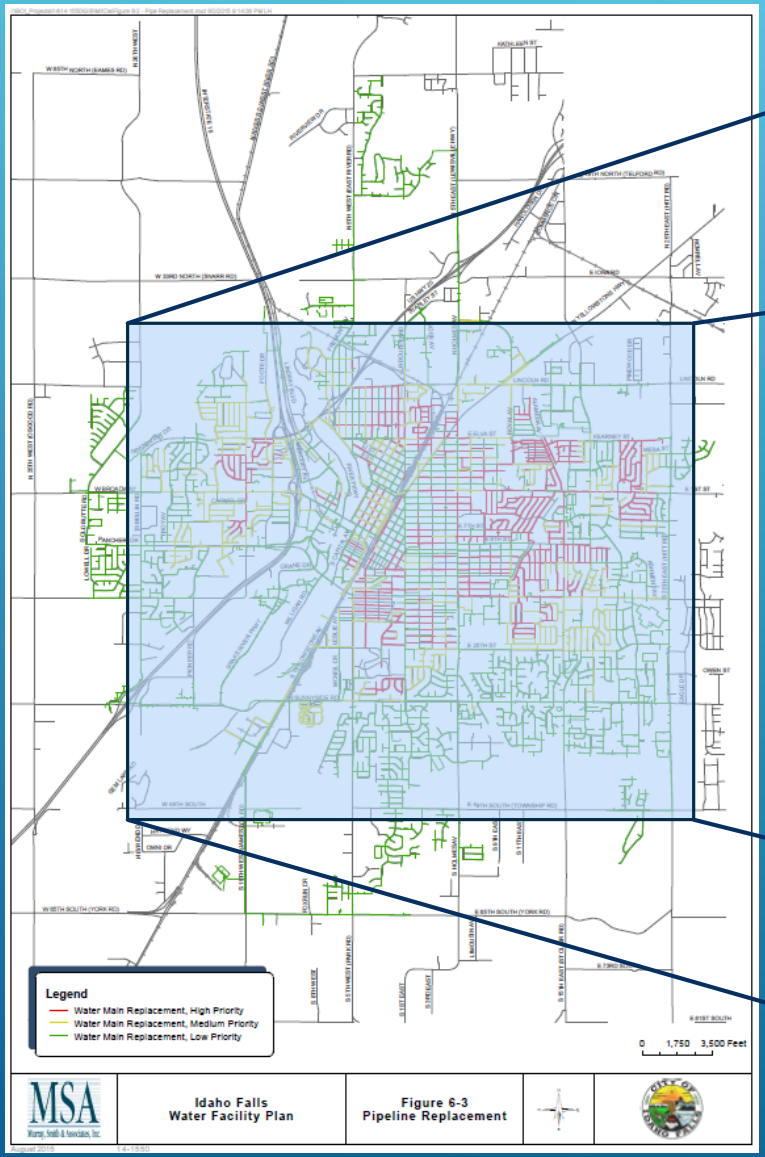
Current average cost of water distribution main line replacement:
Over $1 Million/Mile

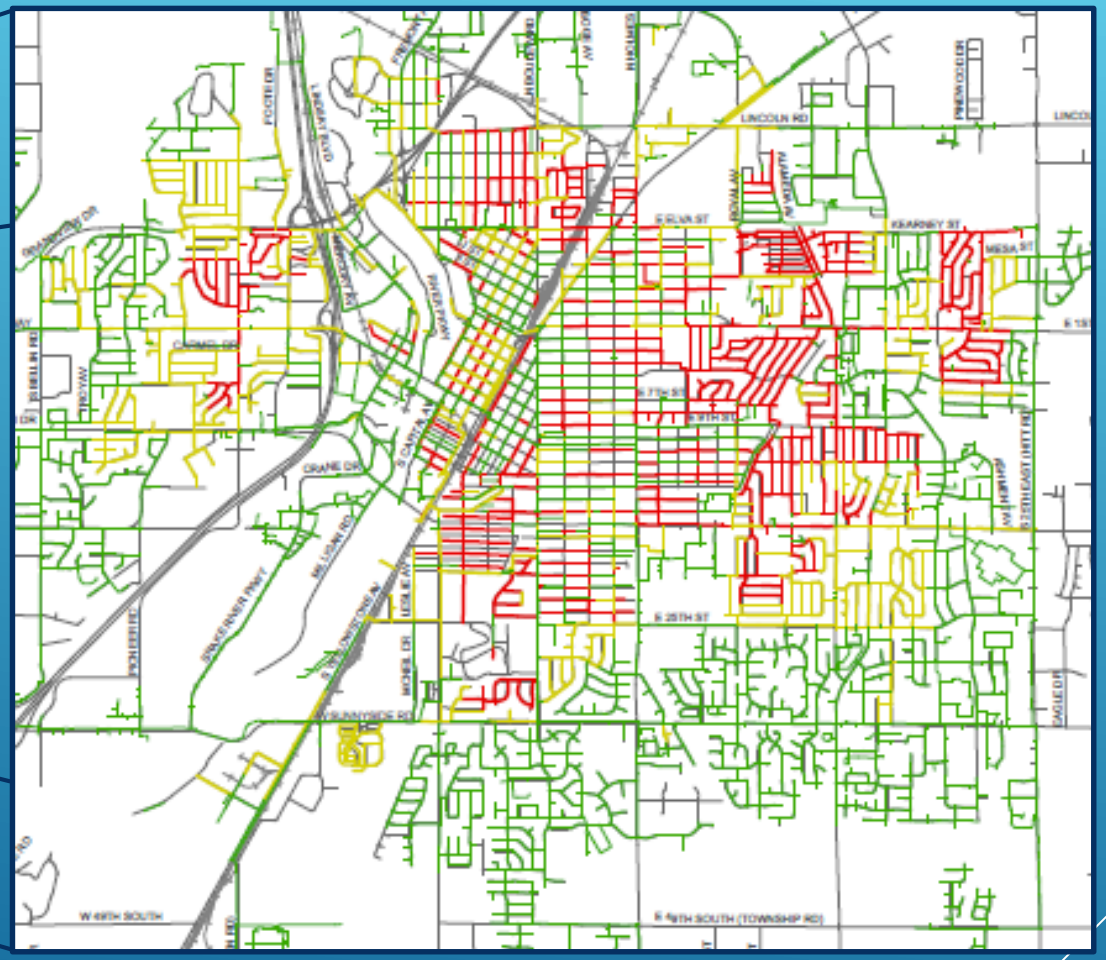
Require over $3.25 Million/year for 1% water distribution main line replacement (currently)

IDAHO FALLS PUBLIC WORKS

CITY OF IDAHO FALLS - WATER SYSTEM SUSTAINABILITY

Water Distribution Main Replacement Priorities





Evaluation Results

- High Priority
  - 19.58 Miles
- Medium Priority
  - 20.48 Miles

Does not consider factors such as:

- Pipe Diameter
- Joint Type
- Installation
- Break History
- Valves
- Fittings

KEY

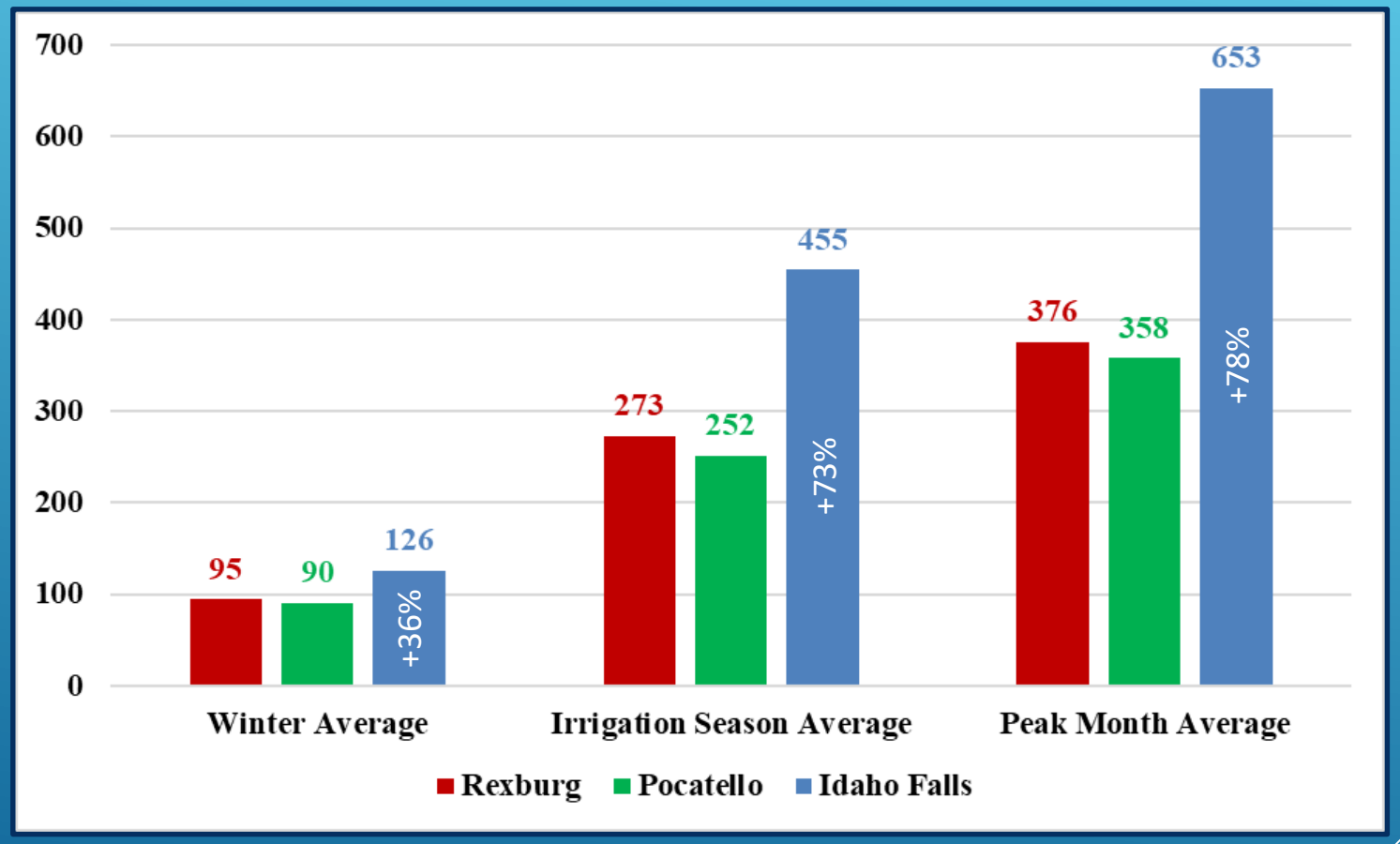
- Red – High Priority; Yellow – Medium Priority; Green – Low Priority

IDAHO FALLS PUBLIC WORKS

CITY OF IDAHO FALLS - WATER SYSTEM SUSTAINABILITY

Water Consumption Statistics – A Comparison of Cities

2014 City Comparison of Per Capita Water Use (gallons per person per day)



Note: Both Rexburg and Pocatello Meter Water Use

IDAHO FALLS PUBLIC WORKS

CITY OF IDAHO FALLS - WATER SYSTEM SUSTAINABILITY

Water Conservation – To Meter Or Not To Meter?

City-wide Meter Implementation

- Estimated, conceptual cost of **$87.03 million** to install water meters city-wide over 20-year forecast period
  - Implementation would require debt financing and rate increases
  - 2015 residential rate of $21/month would increase to $52.26 by 2020
  - Residential rate increase of 148.9% over 5 years.
- Consumption reduction due to metering
  - Reduced capital expenditures of **$27.76 million** over 20 years
  - Reduced water use means lowered capital project needs
- Net cost of metering program: **$59.27 million** over 20 years

Changes Since 2015

- In 2015, City Council authorized Water Division to convert existing, non-residential customers to water meters, beginning with the largest users first
- All new non-residential customers are required to install water meters
- All new residential customers are required (by State regulation) to install water meter pits
- All water service replacements by the Water Division are retrofitted with water meter pits

IDAHO FALLS PUBLIC WORKS

CITY OF IDAHO FALLS - WATER SYSTEM SUSTAINABILITY

Groundwater Use Statistics in Idaho (USGS Circular 1405, 2010)

2010 Statistic	Amount	%-age
Total Daily Groundwater Use	4,250 MG/Day	
Total Annual Groundwater Use	1,551,250 MG	
Municipal Annual Groundwater Use	77,380 MG	5.0%
Idaho Falls Annual Groundwater Use	8,380 MG	0.5%
Annual Savings from Metering (40%)	3,352 MG	0.2%

Agricultural uses account for nearly 90 % of Idaho's groundwater use

Full meter implementation for Idaho Falls

- Results in a maximum reduction of about 0.2% of Idaho's groundwater use
- Would cost City approximately $87 Million

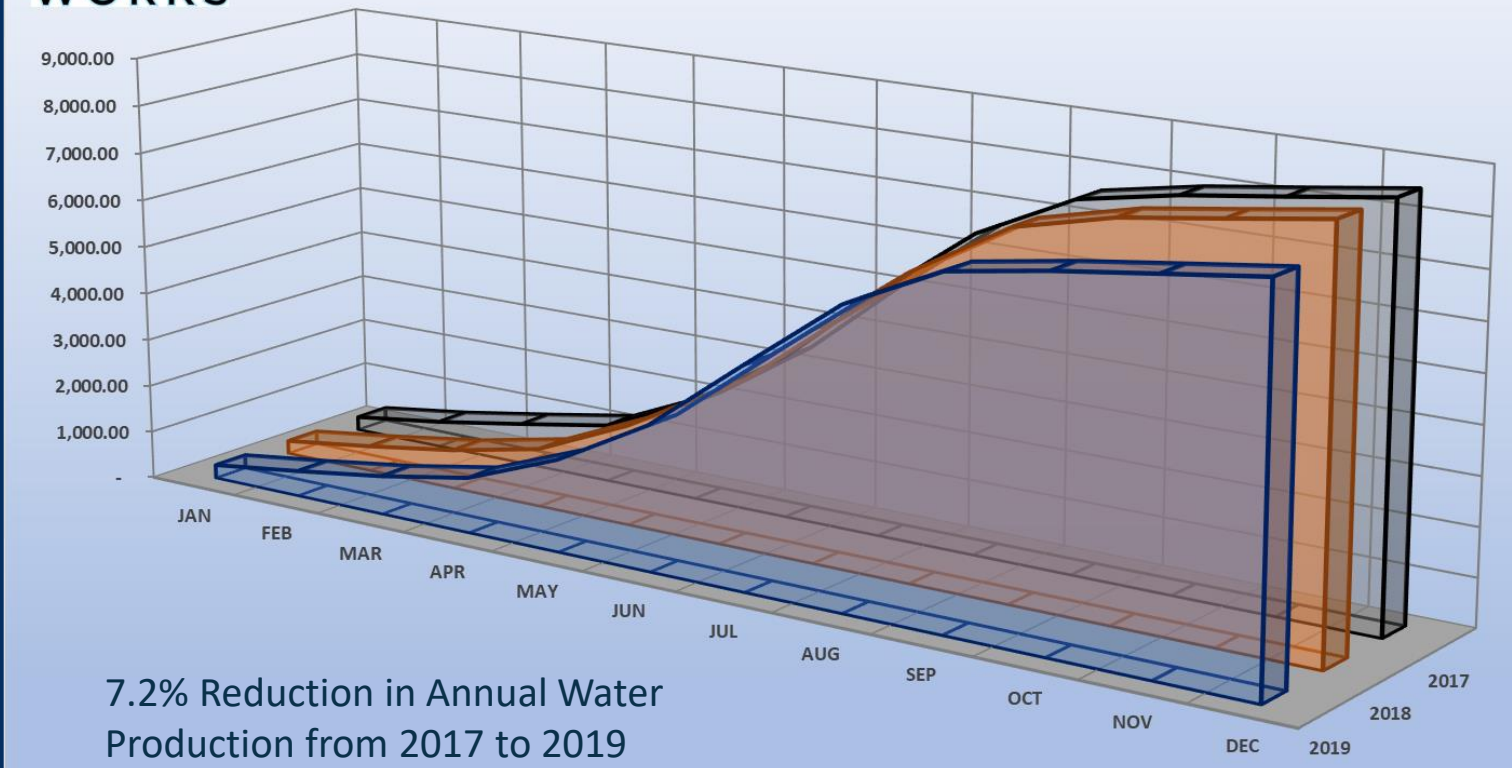
Idaho Falls is a part of the problem, albeit a small part

Idaho Falls is willing to be a part of a municipal solution

- In addition to meter installations, City is pursuing alternatives for groundwater recharge as well as investigating options for surface water irrigation of parks and reuse of treated effluent

CITY OF IDAHO FALLS - WATER SYSTEM SUSTAINABILITY

Water Consumption Statistics – A Comparison of Cities



7.2% Reduction in Annual Water Production from 2017 to 2019

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	297.20	558.00	878.20	1,215.90	2,092.00	3,398.68	5,077.92	6,597.89	7,582.66	7,962.01	8,231.78	8,513.18
2018	288.87	546.24	836.04	1,238.87	2,104.32	3,224.51	4,800.41	6,284.82	7,473.58	7,963.13	8,247.99	8,544.68
2019	295.53	547.20	822.13	1,171.75	1,930.76	3,020.09	4,583.72	6,111.06	7,075.85	7,406.04	7,674.68	7,940.53

CITY OF IDAHO FALLS
WATER SYSTEM SUSTAINABILITY
CUSP PRESENTATION – FEBRUARY 2020

ANY QUESTIONS???

IDAHO FALLS PUBLIC WORKS