



Regional Water Supply Planning

Water Provider & Stakeholder Work Session

Monday, December 6, 2021 · 1-3 pm

Purpose & Agenda

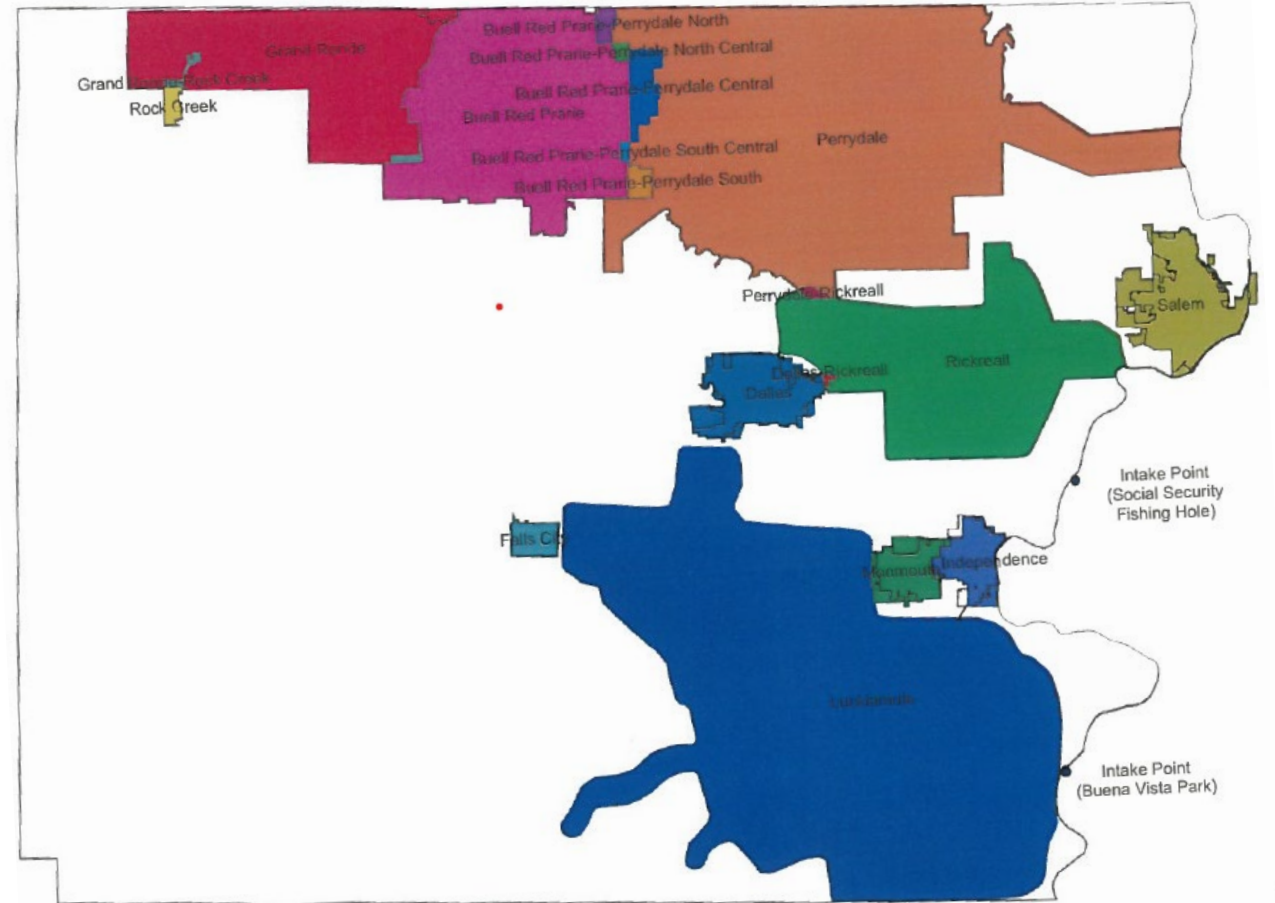
Purpose: Introduce regional water supply plan goals, build shared understanding of regional state of water needs, and assess interest in a regional water supply solution.

1-1:15 pm	Welcome & Introduction
1:15-1:25	Project Overview
1:25-2:25	State of Water Needs
2:25-2:55	Questions & Feedback
2:55-3	Next Steps & Adjourn



Welcome

- City of Dallas
- City of Falls City
- City of Independence
- City of Monmouth
- City of Willamina
- Buell-Red Prairie Water District
- Grand Ronde Community Water Association
- Luckiamute Domestic Water Cooperative
- Perrydale Domestic Water Association
- Rickreall Community Water Association
- Rock Creek Water District





Who's in the room?

Project Goal

- To equitably improve water supply resilience and reliability throughout Polk County.
- Task objective:
 - Understand the long-term supply needs of Polk County water providers to determine interest and opportunities to benefit from a regional supply.

Background

- Completed Polk County Regional Water Supply Strategy in 2005
- Secured a Willamette River water right permit
- Subsequent water planning
 - Valsetz Water Storage Study (2013); Polk Co. WMCP (2015); individual master plans
- Investing federal funding received in 2021 to update and re-assess a Willamette River regional water supply opportunity



Upcoming Milestones

- Develop regional water supply concepts (2nd Qtr. 2022)
- Prepare a capital improvements plan (3rd Qtr. 2022)
- Identify business needs to operate and finance a regional system (4th Qtr. 2022)
- Prepare an implementation roadmap (1st Qtr. 2023)
- Develop a preliminary Intergovernmental Agreement framework (1st Qtr. 2023)



Initial Questions?

5 mins · Raise Hand · Type in Chat

Polk County Water Right

- Polk County Permit (S-54681)
 - Year-round maximum rate of 25.0 cfs (16.2 mgd) from Willamette River (priority date of Apr. 5, 2007)
 - Place of use lists the eleven (11) water providers in Polk County
 - Development date by Oct. 29, 2030
- Conditions
 - Diversion allowed only when flows are above minimum flows at Salem, OR
- Relation to Adair Village permit (S-35819)
 - Polk Co. Water Providers (*PCWP*) allowed use of up to 16 cfs (10.3 mgd)
 - Development date by Oct. 1, 2050
 - Combined total of 25.0 cfs (16.2 mgd)

Current Water Supplies and Demands*

*2020 estimated MDD shown

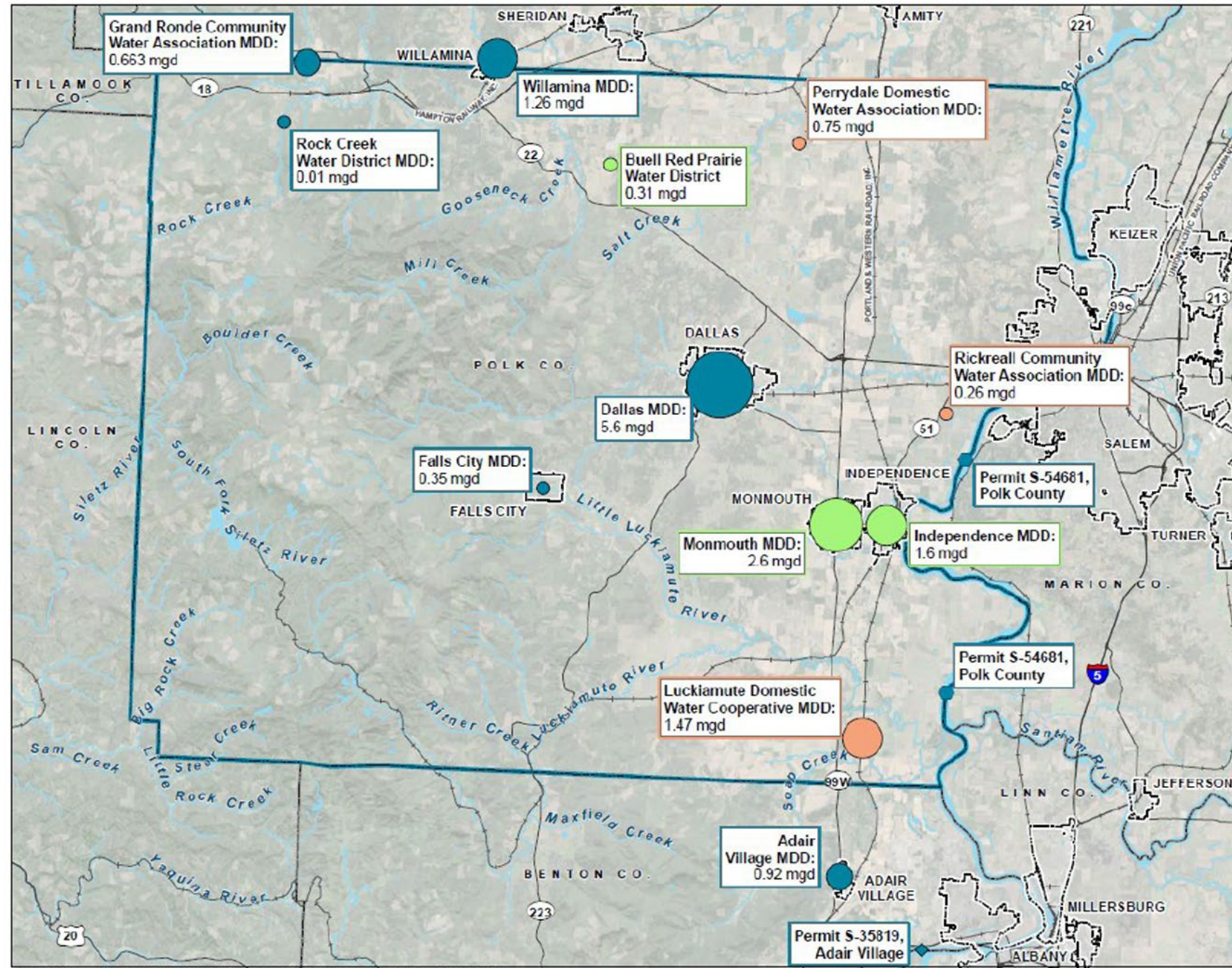
LEGEND

Point of Diversion (POD)

- ◆ Adair Village
- Polk County

Water Supply Source

- Groundwater
- Surface Water
- Surface Water and Groundwater



Current Water Supplies

Water Provider	Authorized Rate (cfs) ¹	Authorized Rate (mgd) ¹	Estimated Current Supply Capacity (mgd)	Notes on the Limiting Factor(s) for Supply Capacity
City of Dallas	25.33	9.91	5.60	Based on recorded delivery of 5.60 mgd in 2015–2017. Total authorized rate includes authorized diversion rate from Mercer Reservoir. The storage rights have volume limits and the maximum flow rate cannot be diverted year-round.
City of Falls City	6.06	3.92	0.56	Limited by WTP max operating capacity of 390 gpm (0.562 mgd)
City of Independence	12.30	7.95	3.38	Well capacity 2,350 gpm in summer/fall (3.38 mgd) and 2,825 gpm in winter/spring; Willamette River permit not developed yet (accounts for 2.88 mgd of max authorized diversion rate); and a water rights transfer pending for 2 cfs.
City of Monmouth	20.95	13.54	2.92	Current design capacity at full production from three wells 2,030 gpm; Willamette River permit (2.88 mgd) not developed yet.
City of Willamina	3.80	2.46	1.01	WTP maximum is 700 gpm (1.01 mgd); usable water rights total 0.87 mgd, which does not meet peak demands without using stored water
Buell-Red Prairie Water District	0.68	0.44	0.44	Two wells limited to combined 100–200 gpm due to seasonal variability and interference from nearby wells, plus 125 gpm for surface water filtration; capacity assumed limited by water right limit (~300 gpm)
Grand Ronde Community Water Association	1.47	0.95	0.52	360 gpm (0.52 mgd) flow from springs, need to reduce water loss and/or increase storage to meet max demands
Luckiamute Domestic Water Cooperative	6.05	3.91	2.39	1,663 gpm (2.39 mgd) operating capacity total for all four wells
Perrydale Domestic Water Association	9.58	6.19	1.00	Total capacity uncertain but able to meet current demand
Rickreall Community Water Association	3.51	2.27	0.93	645 gpm (0.93 mgd) total operating capacity of wells
Rock Creek Water District	0.20	0.13	0.14	100 gpm WTP capacity (but only operates at about 25 gpm); storage limited to 17.64 AFY but does not appear to be a constraint

Notes

¹ These values are based on the sum of the authorized instantaneous rate listed on all the water provider's water rights, assuming no development limitations on water rights.
AFY = acre-feet per year

Current Water Demands

Water Provider	ADD (mgd)	MDD (mgd)	Average per Capita Daily Use (gpcd)	Applicable Year
City of Dallas ¹	2.6	5.6	160	2017
City of Falls City ²	0.16	0.31	168	2015
City of Independence ³	0.97	1.98	110	2015
City of Monmouth ⁴	1.12	2.89	83	2020
City of Willamina ⁵	0.32	0.61	159	2021
Buell-Red Prairie Water District ⁶	0.24	—	128	2021
Grand Ronde Community Water Association ⁷	0.23	0.51	90	2020
Luckiamute Domestic Water Cooperative ⁸	0.49	0.71	174	2017
Perrydale Domestic Water Association ⁹	0.18	0.40	112	2015
Rickreall Community Water Association ¹⁰	0.26	0.46	159	2016
Rock Creek Water District ¹¹	0.04	0.09	182	2021

Notes

¹ 2015–2017 average (Jacobs, 2018)

² 2010–2015 average (HBH Consulting Engineers, 2017)

³ 2015 (4B Engineering and Consulting, 2015); the Water System Master Plan is currently being updated.

⁴ 2020 (4B Engineering and Consulting, 2020); per capita water use does not include university irrigation (4B Engineering and Consulting, 2020)

⁵ 2021 (Keller Associates, 2021)

⁶ 2021, communication with Buell-Red Prairie Water District; per capita water use is from HDR-EES, 2005

⁷ 2020 (Grand Ronde Community Water Association, 2021)

⁸ 2017 (Luckiamute Domestic Water Cooperative, 2018)

⁹ 2015 (Perrydale Domestic Water Association, 2018); per capita water use from HDR-EES, 2005

¹⁰ 2012–2016 average (Oregon Association of Water Utilities, 2018)

¹¹ 2021, communication with Rock Creek Water District

— = not applicable

ADD = average day demand

gpcd = gallons per capita per day

MDD = maximum day demand

mgd = million gallons per day

Water Demand Projections - Methodology

- Extrapolate per capita water use and population data when available from each provider's latest water plan(s)
- Growth rates generally assumed constant
- Interviewed water provider staff if available
- Limitations:
 - Constraints on growth
 - Per capita use assumed constant

Water Demand Projections - Results

Projected Maximum Day Demands (million gallons per day)

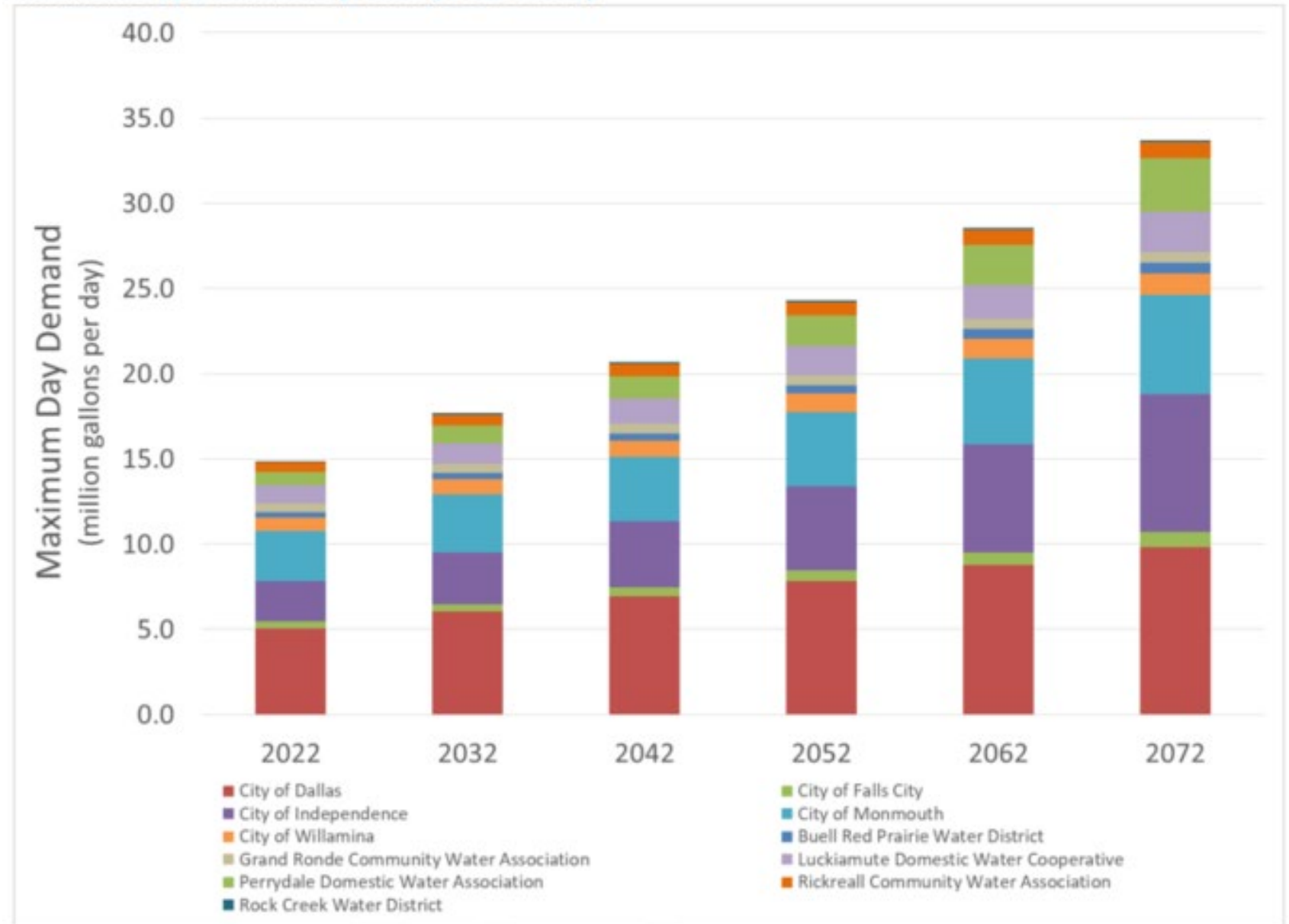
Water Provider	2022	2032	2042	2052	2062	2072
City of Dallas	5.07	6.04	6.95	7.84	8.79	9.84
City of Falls City	0.40	0.47	0.56	0.63	0.71	0.80
City of Independence	2.36	3.02	3.87	4.95	6.33	8.11
City of Monmouth	2.97	3.43	3.78	4.35	5.01	5.77
City of <u>Willamina</u>	0.78	0.86	0.97	1.08	1.19	1.31
Buell-Red Prairie Water District	0.31	0.36	0.41	0.47	0.54	0.63
Grand Ronde Community Water Association	0.52	0.54	0.56	0.58	0.60	0.63
<u>Luckiamute</u> Domestic Water Cooperative	1.06	1.24	1.45	1.70	2.00	2.35
<u>Perrydale</u> Domestic Water Association	0.75	0.95	1.25	1.66	2.20	2.91
<u>Rickreall</u> Community Water Association	0.56	0.64	0.72	0.80	0.87	0.95
Rock Creek Water District	0.09	0.09	0.09	0.09	0.09	0.09
Total	14.86	17.63	20.61	24.16	28.34	33.38

Water Demand Projections - *Modifications*

[Task 1 - State of Water\Info Modifications in ppt.xlsx](#)

Water Demand Projections - Results

Maximum Day Demand Projection (2022-2072)



Supply Deficiencies - Results

Projected MDD Supply Deficiencies and Timing by Polk County Water Provider

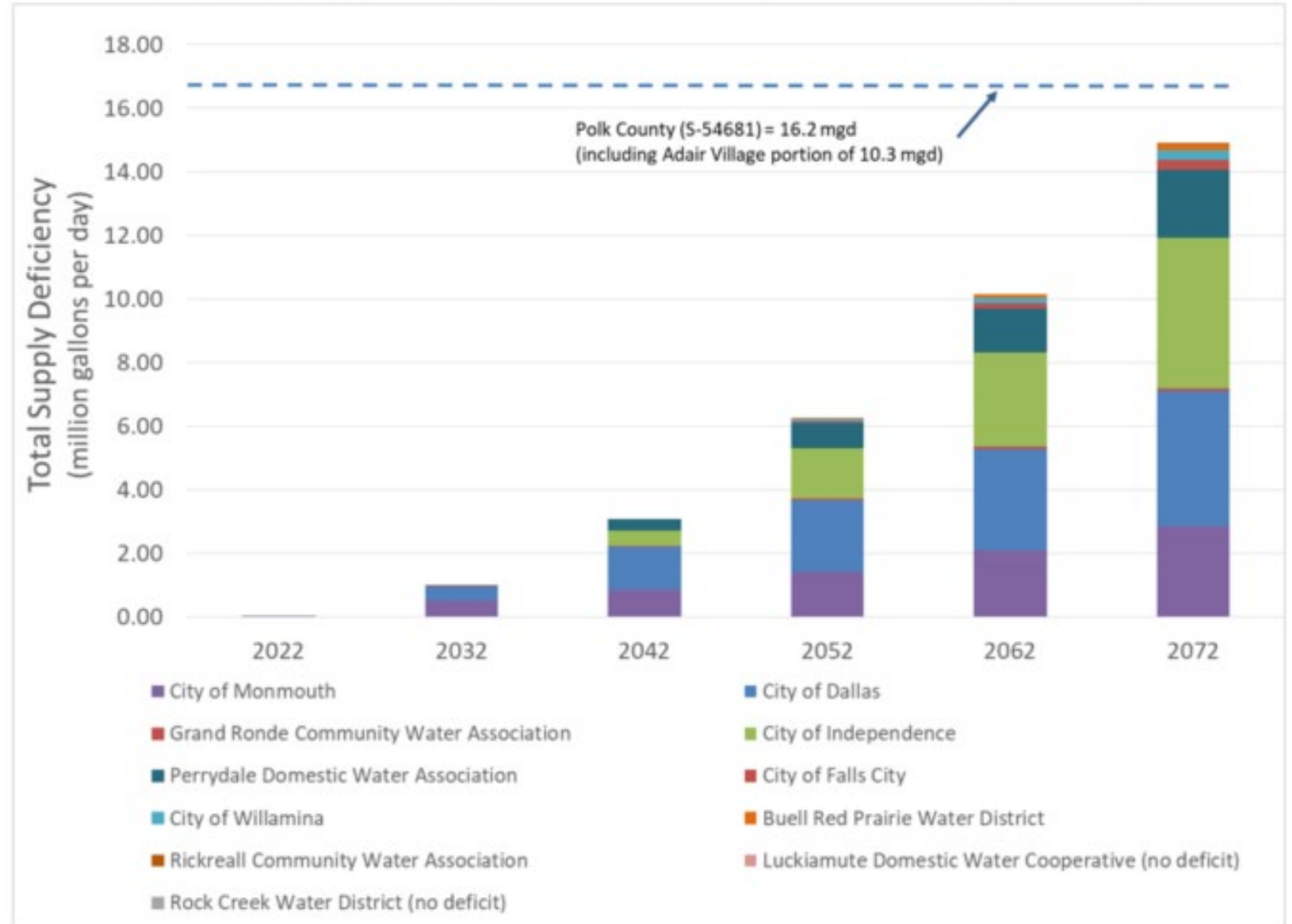
Water Provider	Current Supply Capacity (mgd)	Supply Deficiency (mgd)					
		2022	2032	2042	2052	2062	2072
City of Dallas	5.60	–	0.44	1.35	2.24	3.19	4.24
City of Falls City	0.56	–	–	–	0.06	0.18	0.31
City of Independence	3.38	–	–	0.48	1.56	2.95	4.72
City of Monmouth	2.92	0.05	0.51	0.86	1.43	2.09	2.85
City of Willamina	1.01	–	–	–	0.07	0.18	0.30
Buell-Red Prairie Water District¹	0.44	–	–	–	0.03	0.10	0.19
Grand Ronde Community Water Association	0.52	–	0.02	0.04	0.06	0.08	0.11
Luckiamute Domestic Water Cooperative	2.39	–	–	–	–	–	–
Perrydale Domestic Water Association	1.00	–	0.02	0.36	0.79	1.37	2.14
Rickreall Community Water Association	0.93	–	–	–	–	–	0.02
Rock Creek Water District	0.14	–	–	–	–	–	–
Total Deficit for All Providers	–	0.05	0.99	3.08	6.26	10.14	14.89

Supply Deficiencies - *Modifications*

[Task 1 - State of Water\Info Modifications in ppt.xlsx](#)

Supply Deficiencies - Results

Estimated Total Water Supply Deficit by Water Providers Compared to Polk County Water Right



Findings

- Largest supply deficiencies: Dallas, Independence, Monmouth
- In 50 years **(2070) total supply deficiency of 14.9 mgd** is:
 - Less than the 16.2 mgd Polk County permit authorized rate
 - Greater than the 10.3 mgd Adair Village permit authorized rate (for PCWP)
- Polk Co. permit development date **2030: ~1 mgd in total deficiency**
- Adair Village permit development date **2050: ~6 mgd total deficiency**

Considerations for Regional Concept

- Larger water providers are looking at other options:
 - Monmouth and Independence have their own Willamette permits
 - Dallas developing storage for supply needs
- Smaller water providers are distant (~8 to 30 miles from Independence)
- Timing to perfect portion of Polk County permit (2030)
- Polk County permit can be back-up supply
 - Total supply deficiencies are lower than Polk County permit rate
 - Polk County permit can be completely regulated off when minimum flows are not met (i.e. no diversion allowed) -> Adair Village permit

Benefits of Regional Concept

- Cost sharing
- Reliability of Willamette River supply
- Back-up supply for resiliency and redundancy
- Potential permitting advantages relative to storage

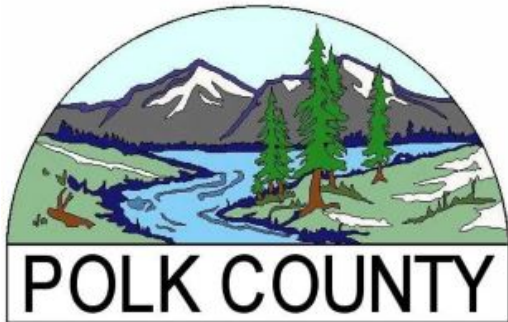


Questions & Feedback?

25 mins · Raise Hand · Type in Chat

Next Steps

- **Collect review input** on State of Water Needs memo in January 2022
- **Develop concepts** for regional water supply in February 2022
- **Host work session** in late March 2022



Thank you!

Learn more: co.polk.or.us/rwsp



Polk County Regional Water Supply Planning

[Frequently Asked Questions](#)

Contact Information

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Polk County Regional Water Supply Planning

OVERVIEW

For many years, Polk County and our communities have been seeking a long-term water supply to meet our growing water needs. We are excited to share that we are investing funding we recently secured from the American Rescue Plan Act in a Regional Water Supply Planning project. Our goal is to equitably improve water supply resilience and reliability throughout the County.

Through a facilitated, collaborative process, this planning work will evaluate feasibility of regional supply solutions to serve Polk County communities, including how a regional Willamette River water source can leverage ongoing water supply efforts.

UPCOMING MILESTONES

Beginning September 2021 and continuing through the end of 2022, the County will be engaging with water providers to explore opportunities, benefits, and feasibility of a basic framework for a regional water supply.

Future phases include:

- Develop regional water supply concepts
- Prepare a capital improvements plan
- Identify business needs to operate and finance a regional system
- Prepare an implementation roadmap
- Develop a preliminary Intergovernmental Agreement framework