Steering Committee Meeting #5

Morrow and Umatilla County Drinking Water Investigation

February 13, 2025

GSI Water Solutions, Inc.

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Meeting Objectives

- Update the PWS/cities about the project
- Solicit perspectives from PWS/cities on extending water service to domestic well users
  - "Fatal flaws" and key concerns
  - Opportunities
- Schedule 1:1 follow-up meetings with each city

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Meeting Topics

1. Project update (for city representatives)
2. Update on PWS connection concept issues
3. Cities' perspectives on system extension
4. Open discussion

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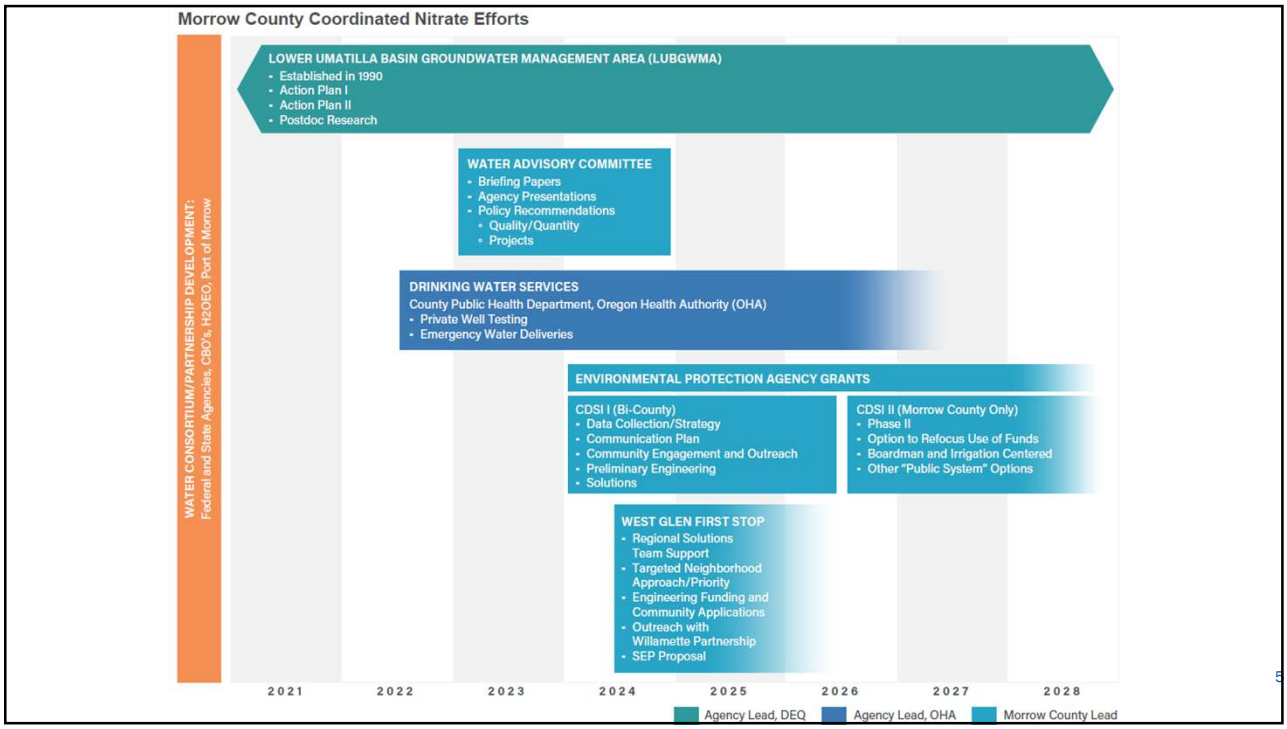
Morrow County Coordinated Nitrate Efforts
WATER CONSORTIUM/PARTNERSHIP DEVELOPMENT: Federal and State Agencies, CBO's, H2OEO, Port of Morrow
LOWER UMATILLA BASIN GROUNDWATER MANAGEMENT AREA (LUBGWMA)
- Established in 1990
- Action Plan I
- Action Plan II
- Postdoc Research
WATER ADVISORY COMMITTEE
- Briefing Papers
- Agency Presentations
- Policy Recommendations
  - Quality/Quantity
  - Projects
DRINKING WATER SERVICES
County Public Health Department, Oregon Health Authority (OHA)
- Private Well Testing
- Emergency Water Deliveries
ENVIRONMENTAL PROTECTION AGENCY GRANTS
CDSI I (Bi-County)
- Data Collection/Strategy
- Communication Plan
- Community Engagement and Outreach
- Preliminary Engineering
- Solutions
CDSI II (Morrow County Only)
- Phase II
- Option to Refocus Use of Funds
- Boardman and Irrigation Centered
- Other "Public System" Options
WEST GLEN FIRST STOP
- Regional Solutions Team Support
- Targeted Neighborhood Approach/Priority
- Engineering Funding and Community Applications
- Outreach with Willamette Partnership
- SEP Proposal
2021
2022
2023
2024
2025
2026
2027
2028
Agency Lead, DEQ
Agency Lead, OHA
Morrow County Lead

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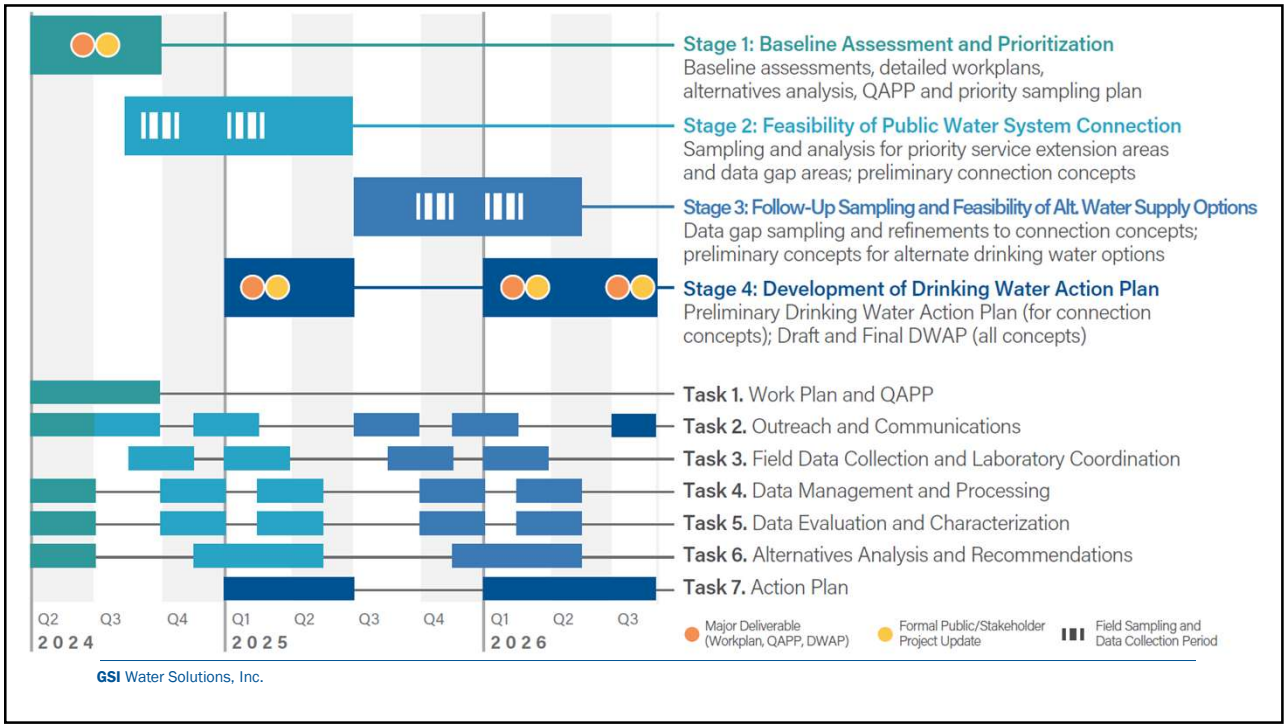
Stage 1: Baseline Assessment and Prioritization
Baseline assessments, detailed workplans, alternatives analysis, QAPP and priority sampling plan
Stage 2: Feasibility of Public Water System Connection
Sampling and analysis for priority service extension areas and data gap areas; preliminary connection concepts
Stage 3: Follow-Up Sampling and Feasibility of Alt. Water Supply Options
Data gap sampling and refinements to connection concepts; preliminary concepts for alternate drinking water options
Stage 4: Development of Drinking Water Action Plan
Preliminary Drinking Water Action Plan (for connection concepts); Draft and Final DWAP (all concepts)
Task 1. Work Plan and QAPP
Task 2. Outreach and Communications
Task 3. Field Data Collection and Laboratory Coordination
Task 4. Data Management and Processing
Task 5. Data Evaluation and Characterization
Task 6. Alternatives Analysis and Recommendations
Task 7. Action Plan
Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3
2024
2025
2026
Major Deliverable (Workplan, QAPP, DWAP)
Formal Public/Stakeholder Project Update
Field Sampling and Data Collection Period
GSI Water Solutions, Inc.

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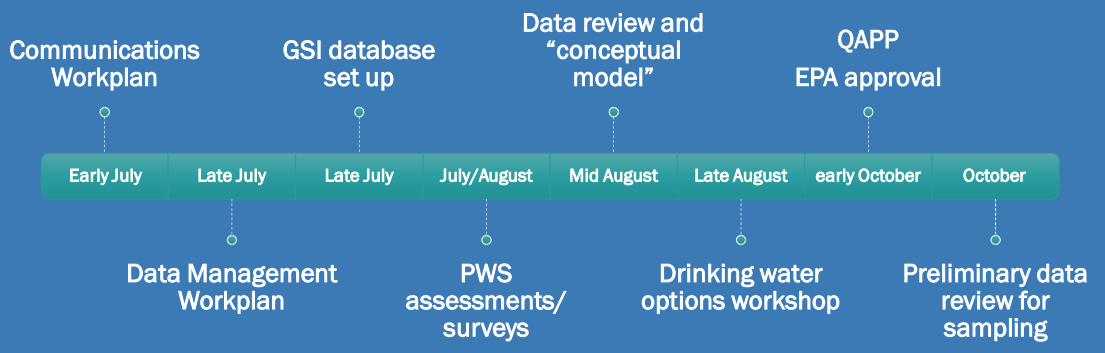
Stage 1 Status (2024)



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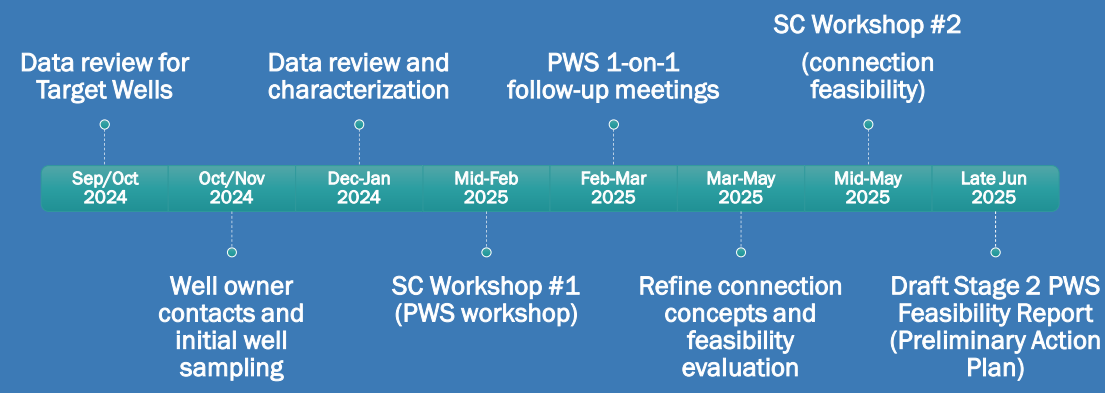
Stage 2 Schedule (2025)



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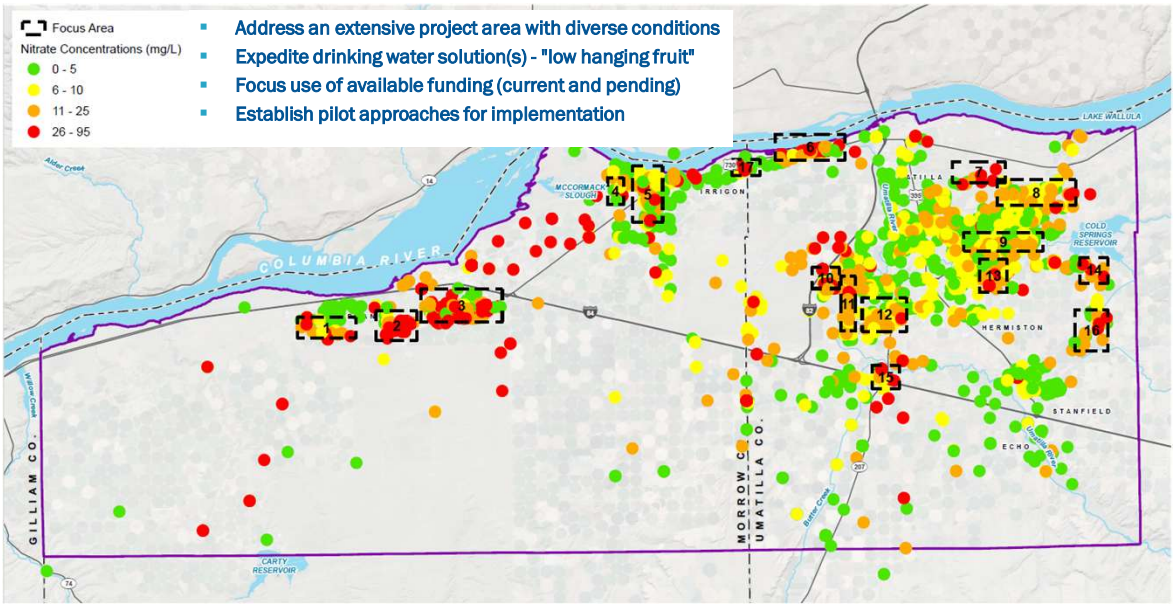
Potential Focus Areas



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Summary of Drinking Water Options

1a. Connection to existing PWS

1b. Connection to existing PWS + treatment

2. Connection to Regional Water System

3. Existing well with improvements/treatment*

4a. New well (deeper/not impacted)*

4b. New well with treatment*

5. Point-of-use treatment

6. Aquifer storage and recovery/Aquifer recharge

**Sub-options for #2, 3, 4: with or without extensive distribution system requiring local improvement or special district.*

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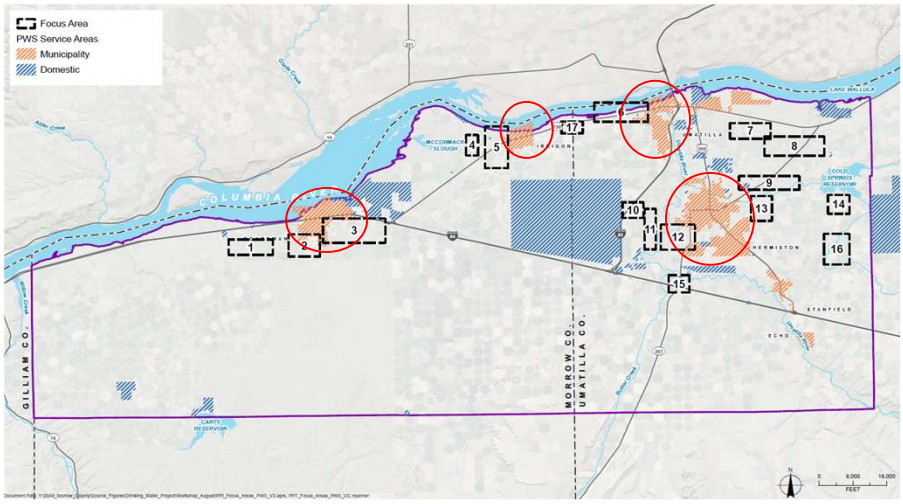
Focus Areas near Municipal Water Systems

Focus Areas with municipal system opportunities



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Next Sampling Round (Spring 2025)

- Tasks:
  - Refine sampling approach/expectations
  - Identify target wells for other Focus Area groups
  - Collaborate with DEQ & OWRD for geophysical surveys and synoptic event
  - Repeat outreach/communications/coordination
  - Re-mobilize and sample
  - Update data interpretation & analysis

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Public Outreach and Agency Coordination

- Morrow County Website
  - https://www.co.morrow.or.us/planning/page/morrow-and-umatilla-county-drinking-water-roadmap
- Coordination with agencies and counties for sampling and communications
- Collaboration and clarification of roles/programs among the agencies
- Outreach to well owners:
  - Purpose/process for well sampling for this project
  - Share options and survey interests/concerns – pending in Stage 2

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PWS Connection Concepts and Considerations

- Information provided and collected
- Criteria and considerations
- Concepts by focus area

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Information Gathering for PWS

- Approach
  - OHA Summary
  - Online Research for Published Documents
  - Survey and Interview
  - Masterplan and Document Review
  - Team Collaboration and Nitrate Mapping

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Municipal Systems Survey

City	Population	Water Source(s)	# Wells	Willing to Expand (Y/N)	Able to Expand (Y/N)[1]
Hermiston	19,354	Groundwater, Surface Water	4	Y	Y
Umatilla	7,363	Groundwater	4	Y	Y
Boardman	3,828	Groundwater	3	Y	Y
Stanfield	2,144	Groundwater	3	Y	Y
Irrigon	2,011	Groundwater	---	---	---
Echo	632	Groundwater	4	Y	Y

1 Based on opinion of expansion and does not consider any potential political and/or legal hurdles.

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PWS Data

PWS**	Year of Data	Total Groundwater Rights (GPM)	Total Surface Water Rights (GPM)	Current Capacity (GPM)	Current Ave Day Demand (GPM)	Current Peak Day Demand (GPM)
Hermiston	2019	9,785	6,500	8,780	3,108	7,222
Umatilla	2022	10,551	10,322	4,638	986	1,590
Boardman	2015	16,773	0	12,000	2,000	4,384
Stanfield	2018	-	-	-	406	980
Irrigon	-	-	-	-	-	-
Echo	2022	3,980	0	965	91	274
RWS	2019	0	27,000	12,935	-	-

** Data is unconfirmed and only for reference. Each data point represents many complexities that cannot be illustrated in this table.

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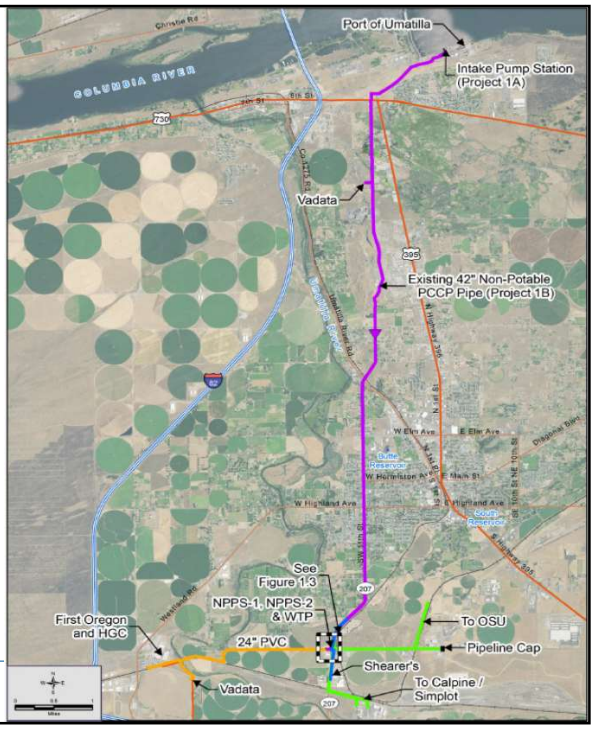
Existing Regional Water System (RWS)

- Largely Industrial Purpose
- Serves Portion of Drinking Water for Hermiston
- Source of Raw Water and Drinking Water
- Provides Another Option for PWS Expansion



Infrastructure Criteria

- Water Master planning – updates likely needed
- Water Supply Capacity
  - Meet max day demand (MDD) and fire flows
  - Peak hourly demands (PHD) typically absorbed by water storage
- Water Treatment and Aging
  - Determine minimum chlorine residuals based on water chemistry
  - Determine level-of-service (LOS) for water aesthetics (taste and odor) and target maximum system turnover time

Infrastructure Criteria

- Water System Hydraulics
  - Determine adjustments to existing and potentially new pressure zones
  - Determine LOS for system pressures (typically 40-80 psi) and verify fire flows at min pressures
- Water System Storage
  - Determine LOS for water storage such as having 48 hours at average-day-demand (ADD) for emergency storage
  - Consider water system resilience factors

Domestic Well Demand Estimates

- Per household residential water usage data from water provider master plans

Municipality	Low Range Household Demand (gpd) [1]	High Range Household Demand (gpd) [1]	Source
City of Boardman (MOR)	**505**	**843**	Boardman WSMP (2015)
City of Hermiston (UM)	**467**	**672**	Hermiston WSMP (2019)
City of Echo (UM)	**552**	**--**	Echo WMP (2022)
City of Umatilla (UM)	**436**	**474**	Umatilla WMP (2021)

County	Low Range Household Demand (gpd)	High Range Household Demand (gpd)
Morrow	**505**	**843**
Umatilla	**436**	**672**
Both	**436**	**843**

[1] A range of estimates for each municipality is given based on multiple methods used to calculate demand.

Domestic Well Demand Estimates

- Potential additional irrigation demand
  - Exempt well users allowed to irrigate up to 0.5 acres per day
  - Average U.S. per-capita in-house water use figure for low range of domestic well demand estimates
  - Average irrigation rate per well for high range of domestic well demand estimates
- OWRD domestic well demand estimates:
  - ~ 3,909 exempt domestic wells in the Umatilla County portion of the Umatilla Basin. Demand per well ~ **210 to 1,326 gallons per well per day** (Wozniak, 2007) (1 well serves 1 household)

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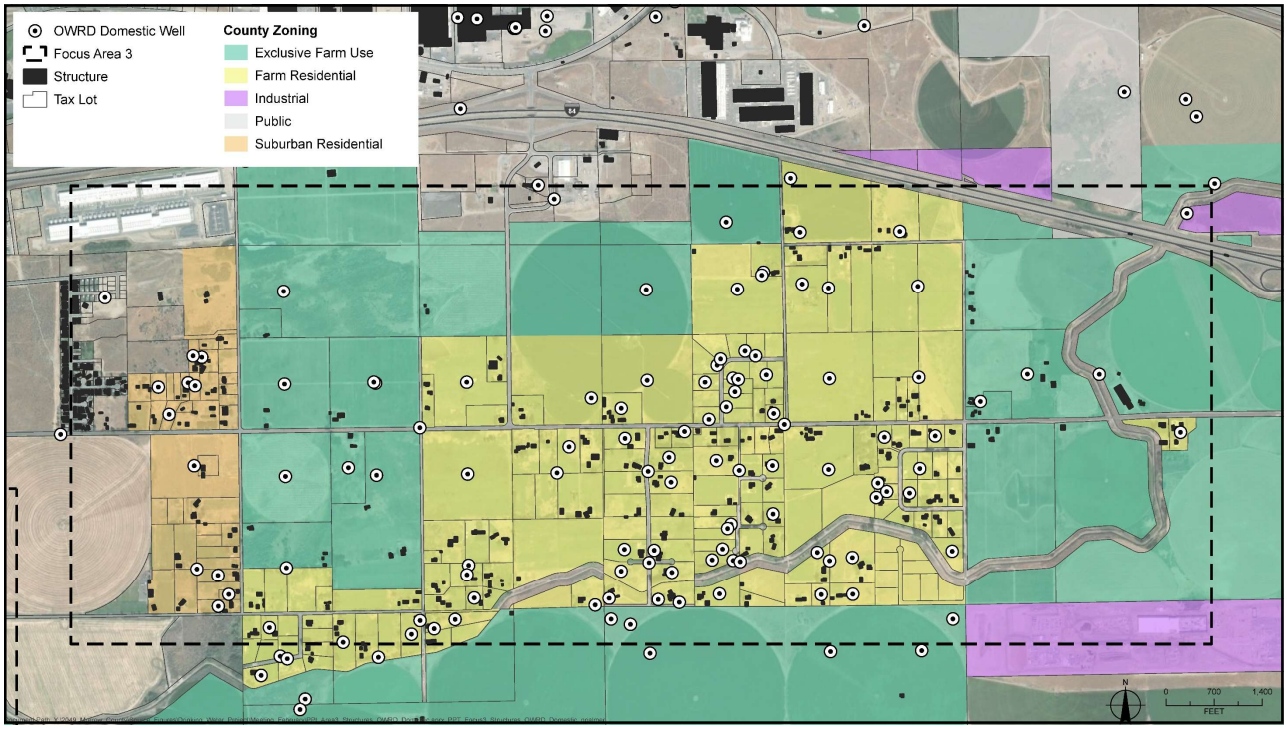

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Non-Infrastructure Criteria

- Willingness/Incentives
  - Local support, infrastructure upgrades
- Policy
  - UGB, Annexation, Land-use, Other
- Financials
  - Cost, Funding sources (grant/loan), Districts, Rates/SDCs, Financial Sustainability
- Regulatory and Permitting
  - Local, County, State, Federal

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Regulatory and Permitting

- **Federal:** NEPA (if Federally funded), Section 7 Endangered Species (USFWS), Wetlands and Waters (USFWS), Section 106 Historic and Cultural Resources (SHPO)
- **State:** OHA Design Approval, OHA Well Drilling Plan, OHA Disinfection Profile, Lead and Copper Rule, NPDES/WPCF WTP Discharge, NPDES 1200C Stormwater, Hazardous Materials (DEQ)
- **County:** Conditional Use Permit, Rights-of-way, Water District Formation, Annexation, Zoning
- **Local:** UGB and Annexation, Policy Modification, Rights-of-way, Water Rates and SDC Modification, Public Funding, Building Permit

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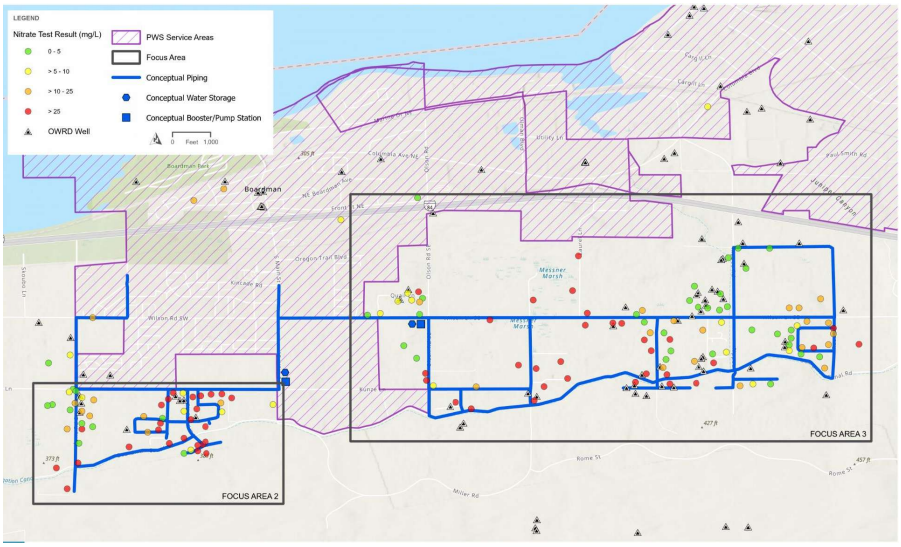
Connection Concepts - Boardman



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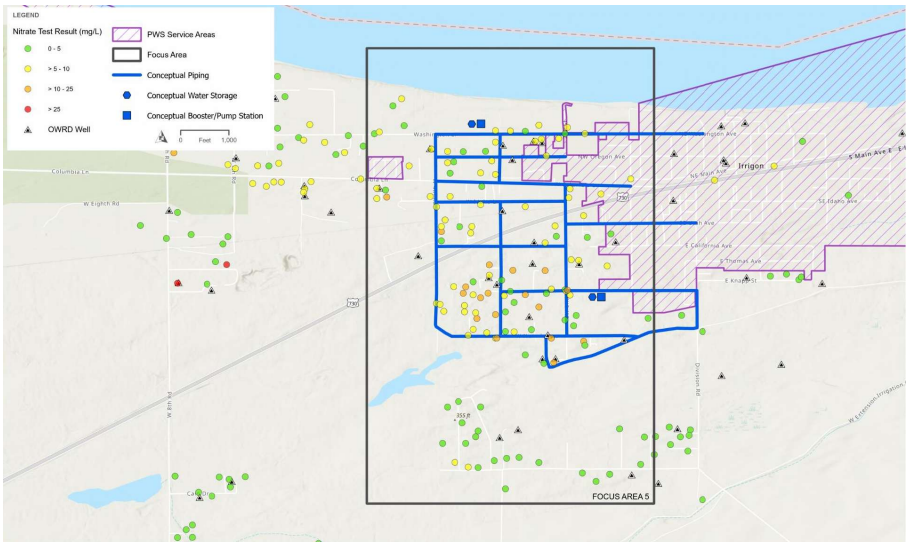
Connection Concepts - Irrigon



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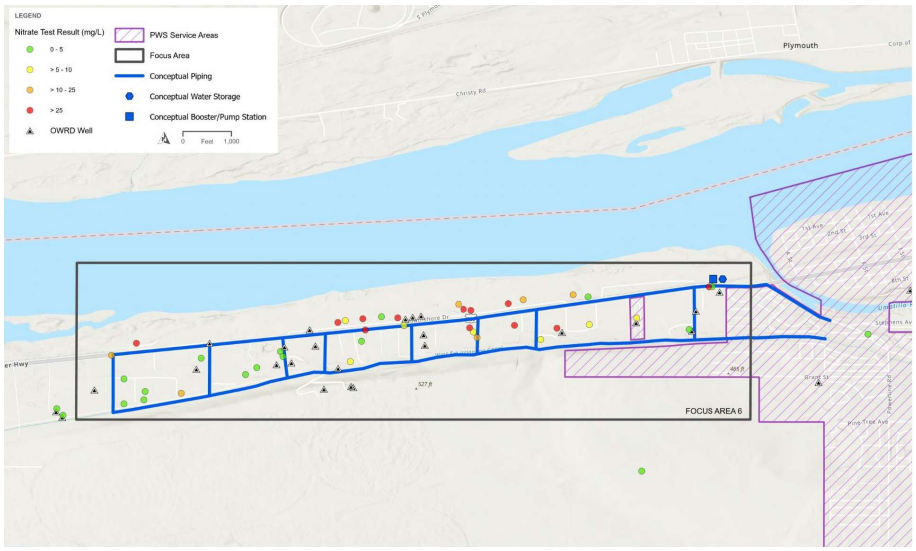
Connection Concepts - Umatilla



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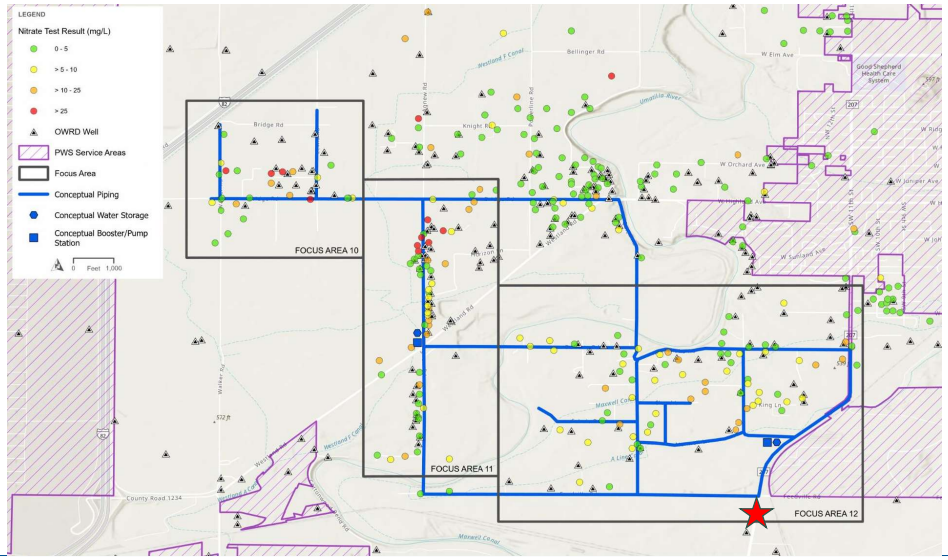
Connection Concepts – Hermiston



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Cost Considerations

- City of Boardman Example – *Rough Order of Magnitude*
  - 75,000 LF Water Main - ~$23M
  - 2 Water Storage Tanks - ~$6M
  - 2 Booster Pump Stations - ~$3M
- Other Cost Considerations
  - Potential City Infrastructure Investment: Water Supply, Water Treatment, Pump Stations, Water Storage, Water Mains

Financial Considerations

- Debt Service Coverage Ratio – For any borrowing, the rate study needs to demonstrate that the construction/O&M/replacement costs are covered
- Lending agency likely wants to know if people will be required to connect
- Grants are typically necessary to make rates feasible, especially for low density areas
- Can run scenarios to illustrate rate impacts based on grant or loan ratios
- People may not want to pay an SDC when they have “good wells”

PWS Connection Concepts and Considerations

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Water District Formation

- Special Service District vs. County Service District
- Filing a Petition (electors or landowners)
- Economic Feasibility Statement
- County Service District Requires Referendum
- Finances Managed by SD or by County

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PWS Coordination and Data Needs

- Water System Impacts and Needs (supply, hydraulics, treatment, condition)
- Non-infrastructure Information (feasibility, water rights, boundaries, financials)
- GIS Mapping or Data
- Updated Masterplanning or Sub-area planning
- Demand Data or Hydraulic Data

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City Perspectives

- Boardman, Irrigon, Umatilla, Hermiston, Stanfield, Echo (~10 minutes each)
- Refinements, corrections to information you heard
- Water system needs

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Connection Constraints and Opportunities

- Concerns
  - Low-density service area – not enough revenue to cover O&M
  - Eliminates incentive for City annexation
  - Locks in land near cities to “low value” development, which can constrain long-term economic and tax base growth
  - Other….
- Opportunities
  - Incentives to extend (leverage funding for infrastructure needs)
  - Other…

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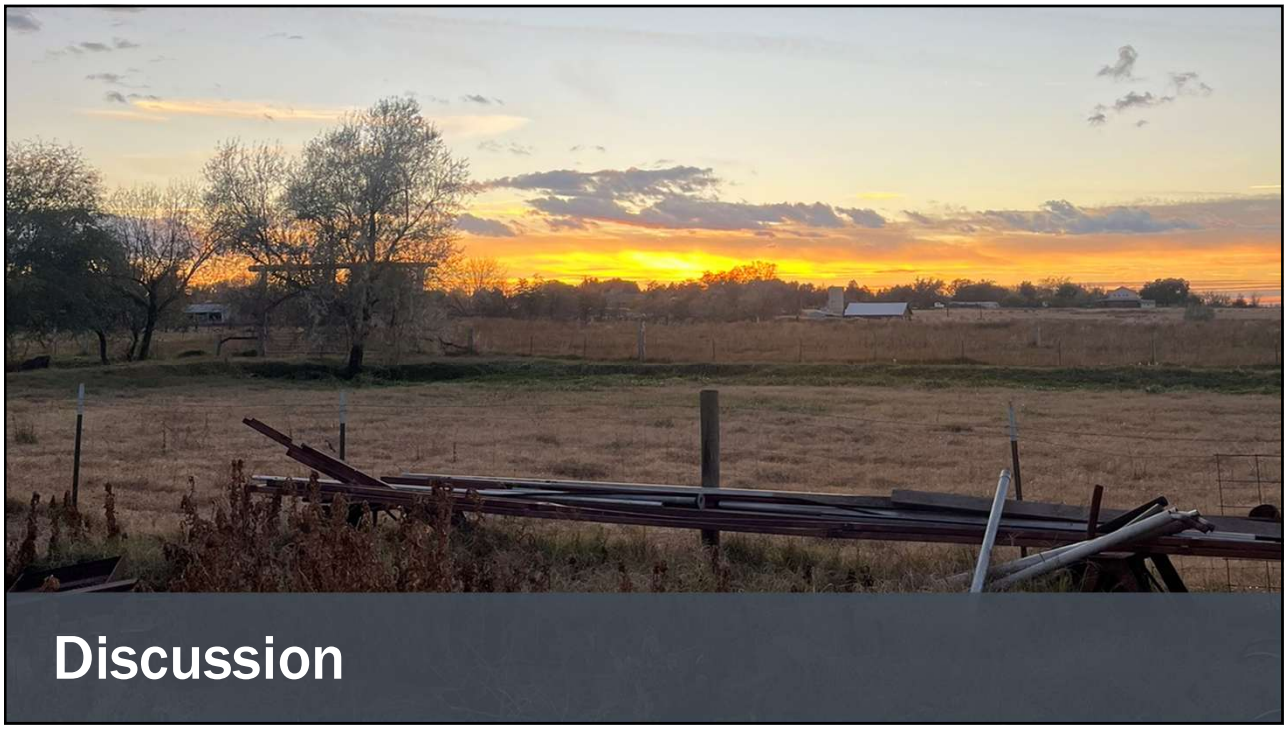

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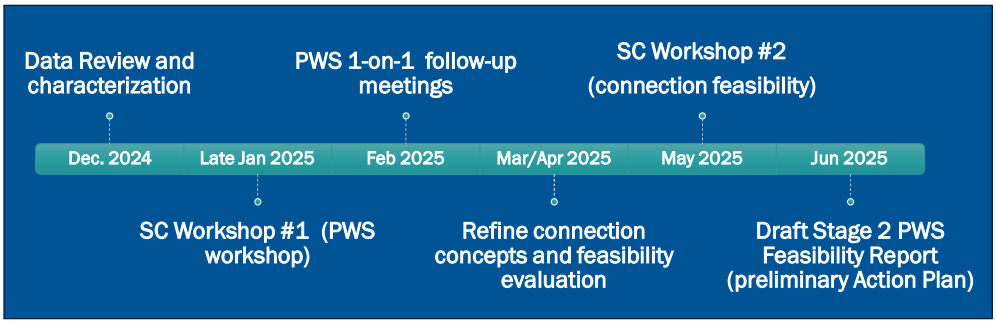
(Near-term) Next Steps

- Follow up meetings with individual cities (into early March)
- Continue Stage 2 follow-up sampling coordination and outreach/survey (into early April)
- Continue development and evaluation of connection concepts (through mid-May)



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Ronan Igloria, PE
Principal Water Resources Consultant
Email: rigloria@gsiws.com
direct: 971.200.8510
650 NE Holladay Street, Suite 900, Portland, OR 97232
GSI Water Solutions, Inc. | www.gsiws.com

Thank you!

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