

## **From Limbo to Leading Edge: Benton County, Oregon- Groundwater Policy and Planning**

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**Summary:** This paper focuses on the role of Oregon counties, in evaluating, setting policy, and planning for rural-residential groundwater supply and quality. The Benton County, Oregon groundwater policy and planning template overview is provided.

### **Introduction:**

In Benton County, Oregon, approximately 7,117 households are located outside of the service areas of municipal water systems. 2% of total estimated groundwater demands supply rural private wells ('exempt use') or community wells to meet their household and irrigation requirements ranging from 2.0 to 3.8. million gallons per day depending on the season. Irrigation groundwater rights total 92% of appropriated groundwater rights in the County, with current demand unknown. As rural residential growth continues, competing demands for available groundwater increases. These critical water and land use issues resulted in drafting and adoption of County groundwater supply requirements and completion of a comprehensive countywide water assessment and outreach effort.

### **Background:**

Benton County assessed complex groundwater, surface water, and land use interconnections by completing a **Phase 1** Benton County Water Analysis and Demand Forecast (<http://www.co.benton.or.us/boc/water>). This comprehensive assessment of groundwater included an innovative groundwater use estimate for private "exempt" wells, based on County operated/metered wells, and has provided planners and policy makers with information to make better informed planning and development decisions in rural Benton County. This 'Benton County Water Project' was highly collaborative, gaining a wide range of support from the State Water Resources Department--Oregon Water Supply and Conservation Initiative community grant program, GSI Water Solutions Inc. (local consulting firm), local academics, elected officials and diverse outreach and technical volunteers from non-profit organizations within the county. Six countywide meetings gathered residents' concerns and values to plan for water quality and supply

### **The Groundwater Planning and Policy Role for Oregon Counties:**

County Planners in Oregon are increasingly challenged to require empirical evidence as part of quasi-judicial land use proceedings, to demonstrate that a proposed development has an adequate supply of water and that the development does not exceed the carrying capacity (Mabbott, 2007). In fact, the Oregon Water Resources Department (OWRD) will not authorize a water use that violates a local [County] plan, unless there is an extraordinary, overriding public interest in doing so (Bastasch, 2006). This has placed the burden of ensuring groundwater availability for expected development on the shoulders of county planning departments. However, information on water quality and quantity within county boundaries is incomplete and difficult for counties to utilize in planning, policy, and management decision making (Snell, 2007).

Although rural developments use a small portion of the groundwater that is extracted annually, the concentration of wells in a rural residential area increases the potential for a new well to impact neighboring wells. When ballot measure 37 was passed in 2004, thousands of exemptions to Statewide Planning Goals were submitted to local and state agencies for review. Approximately 90% of these claims were in unincorporated areas and under the jurisdiction of counties (PSU, 2005). The claims, if approved and built as outlined in the application, would result in low-density, large lot houses relying on individual wells rather than community water systems found within urban growth boundaries, pitting neighbor against neighbor and encouraging ‘dueling expert’ groundwater consultants (Jarvis, draft 2007). The potential for rural groundwater conflicts to greatly increase, led Benton County to proactively work with academics, local hydrogeologists, the local well-drilling community, and State to development a Benton County Groundwater Ordinance.

**Benton County Template for Groundwater Policy and Planning:**

In 2007, Benton County adopted a local ordinance, requiring would-be rural land developments, subdivisions and partitions to complete “Groundwater Supply Requirements” (Ordinance No. 2001-0224; BCC 99.805-99.840). These groundwater ‘prove it’ rules, require a range of hydrologic data for county review, prior to building or land division approval by county staff/Planning Commission (Table 1 overview; full groundwater supply requirements can be reviewed at: <http://www.co.benton.or.us/cd/naturalfeatures>).

**Table 1.** Benton County groundwater supply requirements excerpt from ordinance

	Aquifer Characteristics**					
	Bedrock			Alluvium		
	Minor Pump Test	Major Pump Test	Hydro-geologic Study	Minor Pump Test	Major Pump Test	Hydro-geologic Study
	99.845(3)	99.845(5)	99.850	99.845(3)	99.845(5)	99.850
<b>Partition</b> with an average parcel size:						
less than 5 acres		X			X	
5 acres to less than 10 acres		X			X	
10 acres or larger	X			X		
<b>Subdivision or Series Partition*</b> with an average parcel size:						
less than 5 acres			X			X
5 acres to less than 10 acres			X		X	
10 acres to less than 20 acres		X		X		
20 acres or larger	X			X		

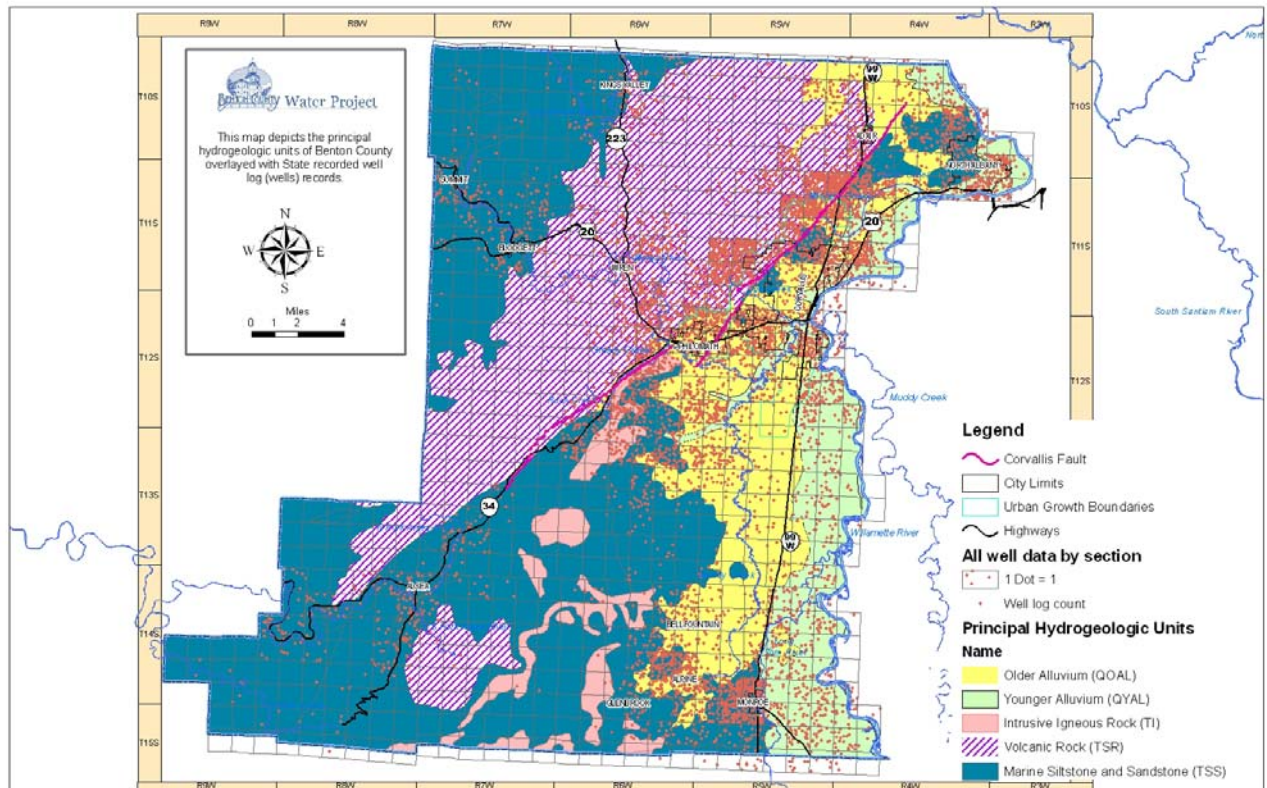
\* 99.XXX(X) = County Code

Benton County water supply requirements are producing up-to-date hydrogeologic, groundwater supply and quality related planning information that informs land use decisions. Currently, Benton County planning staff is using **Phase 1** Benton County groundwater information with groundwater supply requirement consultant reports to better evaluate water and land use. For example, well deepenings, hydrogeologic units and domestic well density data compiled during the **Phase 1** project are over-laid with proposed development locations (see Figures 1, 2). Upon development review, staff and Planning Commission members can now utilize a suite of groundwater and related land use information to determine the full range of groundwater supply and quality issues associated with the new development. Completing the circle of groundwater planning, hydrogeologic data from site-specific evaluations submitted for purposes of obtaining building permit or subdivision approval feed additional information back into the County's base of groundwater information.

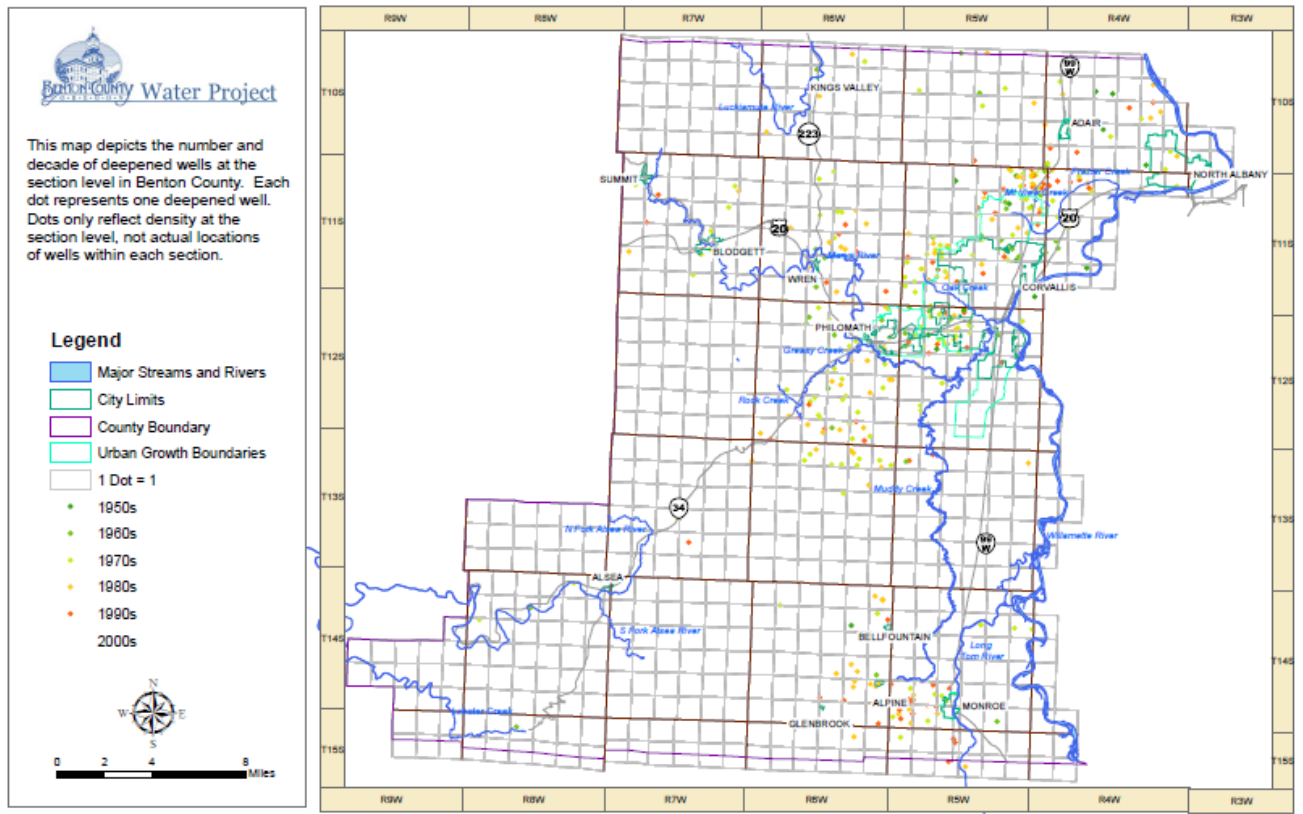
### County Groundwater Role Going Forward:

Oregon counties have shown interest to better understand, adapt, and/or utilize the water-land use approach developed by Benton County. Support from the County Board of Commissioners is critical to tackling the complex sociopolitical and technical planning issues of land use and water. The current Benton County leadership supports continued efforts to refine water planning and policy, especially as supply and quality data and outreach efforts are produced by state, local and private entities.

**Figure 1** Map depicting principal hydrogeologic units and well log density per section



**Figure 2** Map depicting the number of deepened wells by decade per section



**References:**

Mabbott, T. 2007. *Bridging the Governance in Oregon: Water and Land Use Planning*. Prepared for Conference, Water in the Pacific Northwest: Moving Science into Policy and Action, November 9, 2007.

Bastach, R. 2006. *The Oregon Water Handbook A Guide to Water and Water Management*. Oregon State University Press, Corvallis.

Snell, A.M. 2007. *Water Supply Planning Perspectives from Oregon Counties: An Overview of the Water Resources Department's County Outreach Project*.

Institute for Metropolitan Studies, Portland State University (PSU), Measure 37 database: <http://www.pdx.edu/ims/>

Jarvis, W.T. 2007. *Dueling Experts and the Hydrohydra*. Used with permission from Author, cited draft under peer review (third round) by National Groundwater Association.