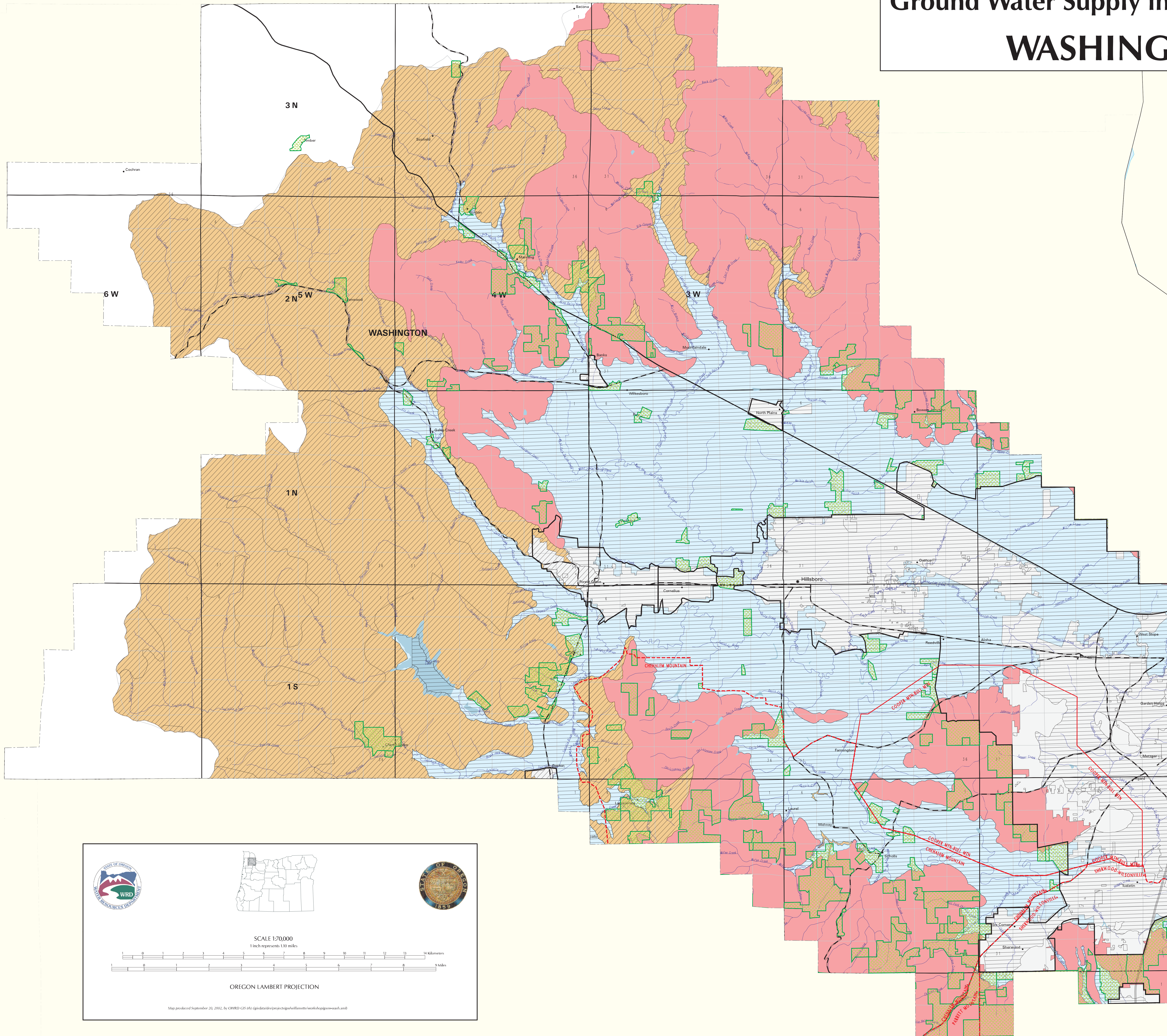


# Hydrogeologic Factors That Limit Ground Water Supply in the Willamette Basin, Oregon WASHINGTON COUNTY



**Zoning (1)**

- City limits
- Urban Growth Boundary (UGB)
- Rural Residential (RR) zone

**OWRD Ground Water Restricted Areas**

- Critical Ground Water Management Area
- Other regulated ground water area

**Generalized Hydrogeologic Units (2)**

- Basin-Fill Sediment Unit
- Sands and gravels thin or absent
- Columbia River Basalt Unit
- [All] High risk of overdraft
- Low-Yield Bedrock Unit
- High risk of salty water
- High risk of elevated arsenic

**Sources**

(1) City limits from a theme compiled by ODOT in 1999. Available from Oregon Geospatial Data Clearinghouse (OGDC). UGB and RR zoning units from generalized zoning theme (1996) downloaded from the OGDC (<http://www.ogd.state.or.us>).

(2) Hydrogeologic data based on the following publications and unpublished data at the Oregon Water Resources Department (OWRD):

Hinkle, S.R., and Pickett, D.J., 1999. Arsenic in ground water of the Willamette Basin, Oregon. U.S. Geological Survey Water-Resources Investigations Report 98-4205, 26p.

Gannett, M.V., and Caldwell, R.R., 1998. Geologic framework of the Willamette lowland aquifer system, Oregon and Washington. U.S. Geological Survey Professional Paper 1424-A, 32p.

McFarland, W.D., 1983. Description of aquifer units in western Oregon. U.S. Geological Survey Open-File Report 82-65, 35 p.

O'Connor, J.E., Sarna-Wojcicki, A., Mozniak, K.C., Pickett, D.J., and Flick, R.L., 2001. Origin, extent and thickness of Quaternary geologic units in the Willamette Valley, Oregon. U.S. Geological Survey Professional Paper 5609, 52p.

Ornd, L.L., Mozniak, K.C., Melones, T.R., and Lee, D.B., 2000. Groundwater and water-chemistry data for the Willamette basin, Oregon. U.S. Geological Survey Water-Resources Investigations Report 99-4036, 141p.

Woodward, D.G., Gannett, M.V., and Vaccaro, J.J., 1996. Hydrogeologic framework of the Willamette Lowland Aquifer system, Oregon and Washington. U.S. Geological Survey Professional Paper 1424-B, 82p.

**DRAFT**

SCALE 1:70,000  
1 inch represents 1.50 miles

OREGON LAMBERT PROJECTION

Map produced September 20, 2002, by CWMD GIS staff using data from projects in the Willamette basin by the Oregon Water Resources Department.

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