

GROUNDWATER QUALITY AND QUANTITY

Outcome: Protect Water Quality and Quantity

Countywide Planning Policy Rationale

“All jurisdictions shall adopt policies to protect the quality and quantity of groundwater where appropriate...” (CA-5) “Land use actions should take into account the potential impacts on aquifers determined to serve as water supplies. The depletion and degradation of aquifers needed for potable water supplies should be avoided or mitigated; otherwise a proven, feasible replacement source of water supply should be planned and developed to compensate for potential lost supplies.” (CA-6)

From 2001 through 2004, the King County Department of Natural Resources and Parks (DNRP) conducted ambient groundwater monitoring, testing 68 wells for the presence of multiple contaminants including arsenic, nitrate, lead, and fecal coliform. Figure 15.1 shows the results of that testing. Arsenic was detected in wells throughout the county, though this was not unexpected as arsenic is a naturally occurring component of certain types of soil and rock found in the Pacific Northwest. In fact, the high levels of arsenic present in over one half of the tested wells in East King County were attributed to the natural geology of the region, rather than contamination from human activity, such as industrial manufacturing. Only two of the wells in East King County were found to have excessive quantities of nitrate and fecal coliform, leading to good to excellent overall water quality ratings for the monitored wells.

Additional nitrate testing has continued on Vashon-Maury Island. In both 2005 and 2006, all monitored wells on Vashon-Maury Island met the drinking water standard, all with less than 5 mg per liter of nitrate present.

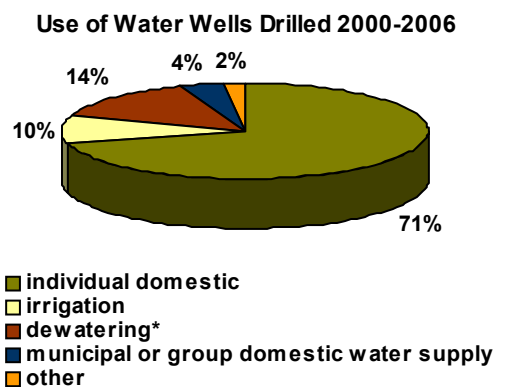
Figure 15.1

Ambient Groundwater Quality: 2001-2004 Monitoring Results						
Ground Water Management Area (GWMA)	total wells sampled	Wells Not Meeting Drinking Water Standards*				Overall Water Quality
		Arsenic	Nitrate	Lead	Fecal Coliform	
East King County	15	8	1	0	1	Good
Issaquah Creek Valley	15	0	0	0	0	Very Good- Excellent
Redmond- Bear Creek Valley	16	1	0	0	0	Very Good
Vashon-Maury Island	22	2	0	0	0	Good
total	68	11	1	0	1	

* Drinking water standards: arsenic (0.01 mg/L), nitrate (10 mg/L), lead (0.015 mg/L), fecal coliform (any detection of fecal coliform constituted an exceedence of the drinking water standard).

In 2006, King County DNRP partnered with Seattle-King County Public Health to determine the effect of new and existing Group B systems (serving 2 to 14 connections) and other exempt water wells on Group A (15 or more connections) public water utilities. The study identified around 11,500 water wells logged by the Washington State Department of Ecology in King County. As shown in figure 15.2, over 1,500 new water wells have been drilled since 2000, most for individual domestic use. The majority of these domestic water wells (94% of those drilled over the seven-year period) have been drilled in rural King County. However, a large proportion of the domestic and irrigation wells were drilled within existing water utility service areas. Almost 40% of the domestic and irrigation wells drilled in King County were drilled within the water supply areas of Covington Water District, Cedar River Water and Sewer District, King County Water District 119, Sammamish Plateau Water and Sewer District and Fall City Water District #127.

Figure 15.2



* A dewatering well is intended to withdraw or divert groundwater for the purpose of facilitating construction, stabilizing a landslide or protecting an aquifer.