

## **Critical Areas Ordinance Revision and Best Available Science Review**

Meeting date: December 3, 2003

Location: Silverdale Community Center, Silverdale WA

Attendance:

Technical Review Committee (TRC) Members:

Art Castle, Home Builders Association of Kitsap County,

John Nantz, West Sound Conservation Council

Michael Gustavson, Kitsap County Planning Commission

Jeff Davis, Washington State Department of Fish and Wildlife

Tom Ostrom, Suquamish Tribe

Kitsap County Department of Community Development Staff: Jim Bolger, Natural Resources, David Greetham, Environmental Review, Rick Kimball, Environmental

Review Deanna Jacobsen, Natural Resources Keith Folkerts, Natural Resources

Other: Art Schick, Suquamish Tribe Dave Fuller, Port Gamble S'Klallam Tribe Don

Flora, Kitsap Alliance of Property Owners Martin Sebren, Kitsap Public Utility District

Samantha Torpey, Home Builders Association of Kitsap County Mary Ellen Madison,

League of Women Voters Mary Bertrand, Chums of Barker Creek

TRC members received a handout listing four possible changes to the Geologically Hazardous Areas chapter. Dave updated information. Rick discussed issues from the previous meeting.

The meeting convened at 2:15 with introductions by attendees.

Keith Folkerts introduced Marty Sebren, Dave Fuller, and Art Schick as guests. Keith began his presentation: Critical Aquifer Recharge Areas (CARAs) - BAS Review, by pointing out that only one document was listed by the State Department of Community, Trade and Economic Development (CTED) as BAS for CARAs (i.e., Guidance Document for the Establishment of CARA Ordinances, State Department of Ecology, prepared by Kirk V. Cook, RPG Hydrogeologist, water quality program). Besides this other local sources of BAS include several USGS studies completed in the past decade concerning Bangor Sub Base as well as four assessments completed as part of the Kitsap Peninsula (WRIA 15) Watershed Planning process.

Someone asked: How is aquifer production measured and how is it determined which aquifers are most critical?

Another question came up about valuing different areas, based on the ability of that area to recharge (because of less rainfall, etc., e.g. Hansville Aquifer). Dave Fuller stated that the existing CAO looks at permeability of the soil, not at the amount of rainfall. He suggested that moderately permeable soils in areas with less rainfall are important to maintain to allow an adequate quantity of water to infiltrate.

Jeff asked what distinguishes class A from B well connections; Marty replied that generally A has >15, B has <15. Keith discussed "Well Head Protection Areas" (WHPAs)—areas delineated around public wells that show how long it would take a contaminant to reach the well (e.g. 6 month, 1/5/10 year time of travel). He cited caveats: Maps are major simplifications, shallow areas...may not be contaminated if they are in high discharge areas, most threatening areas are regulated by State and Federal

governments... Dave Fuller said that the “time of travel” is measured horizontally and the recharge (depth) is a vertical measurement...

At one point Keith emphasized page 61 of the CAO (in the notebooks) which lists “Operations with Potential Threat to Groundwater”.

Detailed studies at Bangor, Kitsap County delineate the three principle aquifers in the area (“perched” “sea-level” and “deep”). This is a Superfund site and one of the best studied areas in the County (and State) as a result. We have a more detailed understanding of this area than the rest of the County. Other information is gathered from purveyor and well head protection reports.

Someone asked how water “age” is determined. Bangor studies referred to a final numeric groundwater flow model - a few studies done using this - which resulted in an experimental age date of water. The main purpose of this study was to find groundwater flow paths. A range of water age was found in this study, some water was hundreds of years old.

Someone suggested that the EPA list should be included in our CAO.

The issue of not addressing the quantity water as much as the quality of water was discussed at length. Rick said that other counties are having similar concerns. Water quantity concerns are especially import to consider when extending the Urban Growth Areas.

Discussion: someone asked if anyone had studied where growth would be suited to, i.e. land areas having characteristics that would be more suited to development.

Mary Ellen suggested that a representative from the Health District be invited to these TRC meetings.

Rick commented that the CAO has no overseeing jurisdiction over “exempt” well use. Keith explained that studies conducted for the Watershed Planning Process show that about two-thirds of water use is provided by purveyors and one-third by exempt wells. The conventional wisdom is that that most folks with an exempt well have a septic so not much water is lost in the cycle.

Points brought up: shallow aquifer systems contribute to our streams, we need better mapping of impervious surfaces and shallow aquifers, unconfined and shallow aquifers are critical, and we need to limit impervious surfaces to maintain recharge.

Dave Fuller pointed out that many studies are in small purveyor reports and other individual studies. Suggestion: to get those into the GIS system somehow. John Nance had a question about tests for soils (relating to detention ponds). Mike said that not many contaminants have been found in groundwater from these.

Someone mentioned that the availability of sewer/septic is a bigger driver for growth than water service.

Keith mentioned saltwater seeps, pointing out that less recharge means less water to push saltwater out. He pointed out County map of elevated chloride areas. Keith mentioned that saltwater intrusion is a concern for coastal areas. According to the WRIA 15 Water Quality Assessment wells with ½ mile—and especially wells within ¼ mile—of the coastline are susceptible to saltwater intrusion. Chlorides were found in primarily in wells that draw from the sea level aquifer, with several instances in the deep aquifers as well.

A “vulnerability” study done by the USGS pointed out areas that are more likely to have elevated levels of nitrate. This study was remarkably consistent with the WRIA 15 Water Quality Assessment’s map of elevated nitrates hits. The WRIA 15 WQ Assessment

assumed that most nitrates are the result of septic systems (failing and non failing) and secondarily from agricultural practices.

Question/Discussion period:

Will the County map the gravely and sand soil recharge areas?

Dave mentioned that one could look at the USDA soil maps and look for sandy gravely soils, at least 5 ft deep. Caveats to this is that mapping is mostly done with air photos and there is a 1 in 5 chance that the soil was mismapped.

Other suggestions: get a list from State Ecology, they have well maps, but not that accurate. Also mentioned was the Soil Conservation Service. Kitsap County maps soil samples in CAO by numbers designated by USDA. Get well head protection reports. Get GPS tagged location of wells matched with the well logs. Need coordination of efforts to get water quantity and quality data together.

It was said that the CAO mainly addresses water quality and the Kitsap County Stormwater manual does not address fish, also that this manual does not use CARAs. The BAS review of CARAs will be continued at next meeting, some possible topics/updates: Have a Health District Rep present. What is happening with the 2514 process. What will it take to upgrade maps. John Nantz suggested a change in (permit?) processing, to identify information and tie it in with the tax parcel number. How do we build other layers of information into our existing maps (GIS) and improve accuracy with combining information (e.g. WHPAs etc.) Someone asked what is the BAS, and do we have enough of it to make decisions.

The meeting adjourned close to 4:00pm.