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A DIFFERENT WAY TO LOOK AT RURAL BUILDING PERMITS/WATER AVAILABILITY IN THE POST-HIRST-DECISION WORLD

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The common initial response to the majority opinion in the Supreme Court Case known simply as the *Hirst Case* was to decry it as ending rural development by eliminating the use of the exempt well as a source of water for the issuance of a County building permit. Indeed, when combined with the current paradigm for water wells and regulated streams, and then applied to County permitting, that is the easiest conclusion to reach.

However, by moving the assessment of the potential for impact to streams into the County land-use permitting authority as an independent protection of local water resources, the court has opened the assessment of impact to streams to a less myopic process. Prior to the Court ruling all Counties believed themselves constrained by Ecology's assessment of stream flow impacts and Ecology dealt only with the water allocation component of the issue. In the context of a land-use change, which is the County's responsibility, the assessment rightfully involves all of the hydrologic elements that change as a result of the permit issuance.

In that context, the new hydrologic model for each site includes changes in the amount of rain that reaches the ground of the property and how much of that additional water is infiltrated to become groundwater recharge and ultimately base flow to streams. ***When all hydrologic changes inherent to the building of a house on a rural property are considered, the net effect is generally an enhancement of recharge and therefore of baseflow to the streams.***

Without an impairment of the streams, there is no obligation for the County to deny building permits on the basis of non-availability of water. ***The Hirst Court has separated the water availability assessment of the County from the restrictive and myopic assessments of Ecology.***

In that light, the Court has done a great service to the rural property owners of the State and to the health of the streams. Those building permits issued under the finding of water availability will enhance recharge and thereby enhance the flow of groundwater to streams as baseflow.

HYDROLOGIC CHANGES ASSOCIATED WITH BUILDING OF A RURAL HOME

A typical rural home withdraws an estimated 150 gallons per day (gpd) per some Ecology rules (somewhat more in others). Ninety percent of that water is returned to the groundwater system through the drainfield of the septic wastewater treatment system. That means the consumptive use on the property is about 15 gpd. We could quibble about this value and it will be somewhat different for each property but it is almost certainly less than 40 gpd.

The 150 gpd pumped from the well is almost always taken from an aquifer deeper than the water table groundwater system and is always recharged to the water table system. This fact means 90% of the pumped water goes to the stream higher in the basin than the point where it would have discharged to the stream as normal groundwater discharge. This in itself is a benefit to the stream.

There are other water resource related components inherent to a home-building project that are seldom talked about but are equally (perhaps even more) real and definable. Tree removal, reduction of “Crown Capture”, and storm water infiltration are a few examples.

Trees removed in the building footprint are no longer consuming groundwater. During the growing season, the average mature Douglas fir is estimated to take 250 gpd. With a 4-month growing season this is 30,000 gallons per season per tree. If the equivalent of four mature trees is removed, that is a saving of more than 320 gpd as an annual average for the property.

There is a forest hydrology phenomenon known as “crown capture” in which trees capture a portion of the water from a precipitation event and hold it until it evaporates. Typical estimates of this phenomenon are that 15% to 30% of an event is captured. In an area with 40 inches of precipitation annually this is at least 6 inches of water per square foot each year (for a moderate 2500 square-foot area this is 18,700 gallons per year – 50 gpd). When a tree is removed, this water falls to the ground where it can infiltrate.

The clearing of a building site to create the footprint of a house and a driveway inherently changes the hydrology of the site. Building codes require that storm water management on a modern building site must manage the water to achieve as much infiltration as is practical before allowing water to leave the property. This is typically accomplished by capturing roof & driveway water and infiltrating it directly to the water table.

When these factors are totaled, there is a net increase of 330 gpd of groundwater leaving the property and benefiting stream flows that did not leave the property in the pre-building scenario. This is far different from the assertion of a 15 gpd decrease in stream flow as a result of the issuance of a building permit.

IMPLICATIONS OF THIS REALITY TO COUNTY ISSUANCE OF RURAL BUILDING PERMITS

Since the Hirst Court has made it clear that it is the responsibility of the County to independently assess the water resource implications of its land-use permitting decisions, all of these factors should be considered in determining if there is to be an adverse impact on water resources as a result of the issuance of a building permit. The current dogma doesn't match the reality revealed by fully considering all factors - **virtually every rural site developed has the potential to enhance the base flows of the streams in the area.** The denial of a building permit based on the myopic approach currently employed at Ecology, that considers only the withdrawal from the well, results in a lower contribution to the base flow than would be the case were the permit to be issued.

It may well be that the best way for a County to demonstrate responsibility to the protection of stream flow is to encourage rural building. There is certainly no basis for an assumption that the issuance of rural building permits is detrimental to streams or to assert that water is not available for the typical rural building site.