By Jonathan Yoder

Abstract
Washington State has been in fiscal gridlock because a recent court case – the Hirst Decision (Hirst)--- would require counties to show legal availability of groundwater to issue permits for new rural residential wells that would be in connectivity with surface water. Many argued that this requirement would halt rural residential development in the state. This article examines the context and potential consequences of Hirst through an economic lens. For context, the characteristics of exempt wells and recent legal precursors are discussed. A qualitative assessment of the likely impacts of Hirst and the conditions that might alleviate its effects is provided, followed by potential institutional innovations that may emerge because of or in response to Hirst. These developments in Washington State illustrate some of the complexities of exempt wells common to many of the Western United States.

Prologue: When this article was written, the State had been operating with no capital budget since June 2017 because of legislative negotiations over a consequential Washington State Supreme Court decision that could limit rural residential development due to concerns over groundwater impacts. A bill was passed in January 2018 as a legislative response to the court decision, which then allowed the state capital budget to be passed. The text of the article has not been changed in response to the recent passage of the new bill, but an epilogue provides a brief description of the bill and its potential implications.

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Introduction
Washington State and the Pacific Northwest are facing many changes in water systems. Climate change will likely lead to smaller snowpacks in the Cascade Mountains, leading in turn to lower summer streamflow and irrigation availability. Despite growing population especially in the west side, municipal water demand is holding steady or declining in many places, but storm water runoff is impacting terrestrial water quality and Puget Sound. The Columbia River Treaty is up for renewal, potentially changing the dynamics of energy production, flood control, and fisheries management in the Columbia River Basin. Groundwater is declining in some aquifers, increasing in others, and groundwater nitrate levels in the central part of the state have led to recent court cases and regulatory response.

The most politically pressing water-related problem in Washington State right now is the effect of permit-exempt groundwater wells on surface water flows. In fact, the state of Washington has had no capital budget since June of 2017 because of political gridlock due to a potent 2016 State Supreme Court decision over permit-exempt wells. Permit-exempt wells are small-volume groundwater wells for which a full water right is not required, and are often issued as part of a building permit for rural residential property where no municipal system is available. Legal exception to appropriative rights for small-volume wells is common across the Western United States, but there has been longstanding and, in some places, mounting legal pressure to bring them more fully into prior appropriations systems.

Exempt wells can have consequential aggregate impacts on groundwater stocks. Where there is surface-groundwater continuity, exempt wells in sufficient numbers (like groundwater pumping generally) can lead to reduced surface water stream flows, affecting water availability for ecosystem services and surface water rights. Potential solutions to conflicts over exempt well use and its impacts are varied and often vexing (Bracken 2010, 2012); the foundations for what Vinett and Jarvis call a “Spaghetti-western water war” (Vinett and Jarvis 2012). This paper describes recent legal developments around exempt wells and conjunctive use in Washington State, examines the economic underpinnings and consequences of these developments, and discusses some related institutional innovations occurring in Washington State. The issue of exempt well effects on surface water spans multiple dimensions of water management. These dimensions include friction over qualitatively different forms of water rights, variability and uncertainty about surface-groundwater continuity, uncertainty and conflict over instream flow values, ecosystem services, the salmon and steelhead populations that they support, and the Native American treaty right that are tied to them. All these factors affect the law and economics of water. They play a role in where Washington State finds itself now as well as how water law and economics will evolve in the future. The Journal of Contemporary Water Research & Education Volume 148, Issue 1 (JCWRE 2012) is dedicated to exempt wells. These articles illustrate the scope and importance of exempt wells and their associated water management issues across the West. While this present article focuses on Washington State, its content echoes and illustrates the legal, regulatory, and economic content of the articles in that issue and its predecessors.

Washington State’s Spaghetti Western
The State Supreme Court Hirst Decision (Hirst 2016) is used as a bargaining chip for the State Capital Budget. For the first time, it requires counties to show physically and legally available water in order to issue an exempt well for residential development. The legal availability aspect of the decision is the new monkey wrench, especially for county administrators who have never had to be concerned with water rights. As a result, these administrators find themselves required to assess local surface-groundwater continuity, and the likelihood that a small-volume well will impinge on existing surface water rights. Also, if no water is legally available, no development will be allowed. This is the potential consequence of Hirst that has led to legislative gridlock (Brunell 2017).

The Hirst Decision was preceded by a string of consequential State Supreme Court cases and regulatory changes in the last 20 years which illustrate some of the complexities. In 2009, the Washington State Department of Ecology imposed a moratorium on new exempt well development in upper Kittitas County on the eastern slope of the Cascade Mountains. The moratorium was in response to a petition on behalf of senior surface water rights holders and environmental groups concerned over instream flows (Cronin and Fowler 2012). Another court case brought and won by the Swinomish Tribe (Swinomish 2013) in the Skagit Basin in Western Washington contended that groundwater use, specifically from exempt well development, was affecting their treaty rights
to sustained salmon habitat. The case resulted in a moratorium on exempt wells in the Skagit Basin.

An earlier State Supreme Court Decision, (Postema 2000), found that individually de minimus (trivial, effectively unmeasurable) impacts on existing water rights could preclude new water rights issuance. Finally, the Foster Case (Foster 2015, Ecology 2018a) places tight restrictions on the allowable forms of mitigation that can be used against the effects of groundwater pumping. Basically, the potential impact of groundwater pumping on mandated minimum instream flows must be mitigated at the time, in the place, and in the form of the surface water flow impact. In other words, there can be no “out-of-kind” mitigation. These rulings together are quite restrictive for mitigation options against exempt well use impacts.

Within this legal context, the Kittitas and Swinomish moratoria have led to very different outcomes and illustrate the range of possible Hirst consequences. In Kittitas, water banks developed quite quickly, allowing developers to purchase mitigation rights for rural property development requiring exempt wells. In contrast, no water banking has developed in Skagit after the Swinomish Decision, essentially halting well development. Looking forward, some claim that Hirst will halt rural residential development across the state (FixHirst 2017). Although there is reason to believe (the Kittitas water banks are a hint) that the consequences of Hirst will be more limited both at the intensive and extensive margin across the state.

Mitigation Markets. or Not.

The Kittitas moratorium caused consternation, transition costs, and ongoing transaction costs. As a result, a robust mitigation market has developed for much of the affected area, with myriad private and public water banks with a variety of prices (Ecology 2018c, Ziemer et al. 2012). Relatively low prices are charged for a mitigation right by the public (state and county-run banks) and relatively high prices are charged by private for-profit banks (Hall et al. 2016). Indeed, for most of the affected area, these water banks provide over-the-counter (easy to acquire) mitigation water allowing existing water rights to be transferred from relatively low-valued uses to highly-valued residential use. Therefore, water is available to support high-value development, but now developers (and subsequent homeowners) are paying existing water rights owners to move water use to new exempt wells.

No water market has developed in Skagit, ostensibly because senior water rights are not available to purchase for mitigation purposes. One might ask how there can be no senior rights to purchase if the moratorium is designed to protect more-senior water rights? First, there are senior agricultural irrigation and municipal water rights low in the coastal plain where agriculture and the major municipal areas exist. These water rights are not currently suitable for upstream mitigation due to the potential diminution of streamflow between the potential sale and upstream purchase points. Second, tribal water rights to which the Swinomish Decision applies are not likely transferable (Nyberg 2014, Palma 1980). Based on a complex body of legislative and legal rulings, treaty-based water rights to instream flows for the support of fisheries are either not transferable or transferability is questionable. Although, there is active leasing of tribal water with explicit and specific congressional authorization (Getches Wilkinson Center 2017, Anderson 2015, Nyberg 2014, Colby, Thorson, and Britton 2005, Storey 1988). Leased water is likely ineligible for exempt well mitigation, or at least much less practical than outright purchase as mitigation for permanent exempt wells. In a nutshell, the transferability of tribal water rights reserved for instream flows to support fisheries is questionable even if tribes were interested in such a transfer. In any case, this option does not appear to have substantively entered the discussion around the Swinomish Case in the Skagit.

How does this range of outcomes — from very active mitigation markets in Kittitas to no markets at all in Skagit — bode for the future of mitigation markets in the wake of Hirst? Statewide, senior surface water rights appear to be the most viable source for exempt well mitigation. As in many western states, these water rights are held and used in greatest volume for agricultural irrigation, largely due to historical water appropriation history during western development. Given that the value of water for agricultural use tends to be low relative to municipal and domestic use (Brewer et al. 2007, Brown 2006), it might suggest that existing senior irrigation rights might play a key role as a source for mitigation water.

However, irrigation rights tend to be seasonal, allowing water withdrawal and use only during the irrigation season. For a summary of these cases and additional information about instream flow management (Ecology 2018b).
season, roughly from April through October. The Foster Decision discussed above requires that mitigation be a
time and place-specific wet water “replacement” of groundwater pumping impacts. This means that the Foster
Decision throws some cold water on the prospects for using senior irrigation rights as exempt well mitigation. In
fact, the Washington State Department of Ecology, which is the regulatory authority for issuing water rights in
the state, says that it cannot issue change of use that alters the season of use because of the Foster Decision. Fur-
ther, the Department explicitly states that because of it, “There are few areas in the state where in-kind, in-time,
and in-place mitigation water will be available.” (Ecology 2018a). Given the relative scarcity of senior water rights
other than those designed for agriculture, the Foster Decision may be quite constraining.

Consequences of Hirst
Hirst and its predecessors can be interpreted as an attempt to internalize or at least address an externality: one
imposed by rural residential exempt well users on more senior water surface rights owners. The cases mean that
the burden on senior water rights owners of showing harm has been shifted to a burden on prospective exempt
well owners to show no harm to surface water rights owners. One version of a Coase theorem suggests that
initial rights do not matter for efficient resource allocation if conditions are conducive to trade (Randall 1983).
Water markets rarely, if ever, come anywhere near satisfying the necessary conditions for any version of a Coase
theorem to hold. Therefore, one might expect initial rights to matter. Looking at Skagit, a failure of mitigation
market development has already been demonstrated. Rajnus (2014) argues that the series of court cases leading
up to Hirst impedes water markets and the state’s and stakeholders’ capacity to allocate water efficiently. It would
require potential transactors to prove a negative --- that a transaction will not have even de minimus impacts on
third parties. In doing so, he argues, these cases entrench the status quo against water reallocation across com-
peting uses as demands change.

What is the net economic impact of the Hirst property rights switch when markets are ineffective at facilitat-
ing trade? This is difficult to answer quantitatively. For the sake of conjecture, suppose there are two sets of ben-
eficiaries of the Hirst Decision who might have otherwise been harmed by exempt well development. The first
set is composed of agricultural surface water diversion rights holders (who do hold most surface water rights by
volume). The second set are beneficiaries from maintaining instream flows, such as Native American tribes who
value fisheries and who collectively hold treaty rights for instream flows as fish habitat, and environmental stake-
holders who receive ecosystem services or other benefits from instream flows. In principle, these benefits come at
the expense of forgone residential development where legally available water cannot be shown and mitigation is
not available.

Based on water bank prices in Kittitas and elsewhere in Washington State, water prices paid for rural resi-
dential development in private water banks ranged from about $30,000 per acre/foot consumptive use to over
$130,000 per acre/foot consumptive use. The low end of this range is substantially higher than that for essentially
all agricultural water uses (Hall et al. 2016, Part 2, p. 261, Yoo et al. 2013). This means that the Hirst Decision
is a switch of rights away from a de facto right for a higher-valued use (residential use) to a lower-valued use
(agriculture) when weak or no opportunity for a subsequent transaction exists. In other words, where markets
do not develop for whatever reason, the Hirst Decision may trade one external cost imposed on irrigators for a
larger cost imposed on rural property owners. As a result, potential exacerbation of inefficient water allocation
might occur from a water value perspective. The benefits from instream flow maintenance are substantially more
difficult to assess. They are an important basis for the satisfaction of treaty rights for tribes with economic and
cultural fishing interests and rights. Also, they are an important dimension of other ecosystem functions and
services whose valuation is difficult, but of which water markets are increasingly inclusive (Griffin and Hsu 1993,

Institutional Innovations in Washington State
Hirst became a bargaining chip ostensibly because it is taken to be a substantial threat to rural development.
Rajnus (2014) argues that the judicial predecessors of Hirst hinder efficient allocation of water across competing
uses in part due to high information costs over the burden of proof. Another hindrance is a failure of admin-
istrative capacity to adjudicate review requests. Further, Rajnus argues that even in the aggregate, exempt wells
amount to a minuscule proportion of consumptive water use in most settings. The strict impairment standard arising from these cases amounts to a costly “symbolic action.” Nonetheless, the Kittitas water banks (and others in the state) arose precisely because of exempt well moratoria. While information and associated transaction costs can be high, apparently, they can be overcome in some circumstances.

One thing seems clear: these judicial innovations in Washington State are and will continue to drive legislative, administrative, and private institutional innovation. The active Kittitas water banks are an example of innovative market development in direct response to legal change around exempt wells. Others include some flexible local water management arrangements such as under the Walla Walla Watershed Partnership, and legislative code in the form of RCW 90.90 (the Columbia River Water Management Program, 2006) intended to help “streamline review of water rights for mitigation and consultation purposes.” In Skagit, while water banks have yet to develop in response to the Swinomish Decision, numerous mitigation strategy proposals have been examined. One proposal consisted of pumping water sourced from inchoate municipal rights low in the Skagit Basin via small diameter pipes for direct stream augmentation during low flow periods to satisfy minimum instream flow requirements (Brady et al. 2016). Yakima County is implementing what is being called a Groundwater Utility, in which the County is purchasing senior water rights satisfactory for exempt well mitigation. Conceptually, this practice is somewhat similar to a standard public water utility, charging a fee for connections and required metering, in addition to marginal consumption fees for the installation and use of individual exempt wells (Ferolito 2017a, Ferolito 2017b). Other counties are taking various different routes, including a “wait-and-see” approach.

The wait-and-see approach might be warranted. As of mid-January 2018, the state of Washington still does not have a capital budget because it is being used as a bargaining chip to find ways to “fix” Hirst. To date, it remains unclear how the budget impasse will be resolved, and how the solution will affect how exempt wells in water-constrained basins will be dealt with in the future. The legal developments leading up to and including the Hirst Decision will certainly change the institutional landscape within which the last holdout from the prior appropriations system — exempt wells — will be managed. In turn, rural residential development in Washington State will also be affected.

Epilogue: The Legislative “Fix” for Hirst

“An act relating to ensuring that water is available to support development” (Engrossed Substitute Senate Bill [ESSB] 6091) was signed into law on January 19, 2018. The act passed more than half a year after the capital budget failed to pass because of the impasse over the Hirst Decision.

The Hirst Decision would require counties to assure that legally-available groundwater was available to issue building permits reliant on an exempt well. However, the absence of a basin closure by Washington State’s regulatory authority (the Department of Ecology) was found to be insufficient basis for allowing a new well. Thus, Hirst placed the burden of proof on counties to show water availability. Demonstrating burden of proof is a tall order, especially for groundwater.

The new bill removed this general burden of proof for allowing new wells, and in its place provides for and in some places requires the implementation of Watershed Preservation and Enhancement Committees (WPEs). These committees are charged with measuring and mitigating the effects of groundwater withdrawals on in-stream flows specific to individual watersheds.¹ The state will charge a fee of $500 per exempt well (current wells are grandfathered) and set aside $300 million over 15 years to support WPE streamflow enhancement planning and implementation. The bill also reduced allowable water use of domestic exempt well owners in some basins. In summary, the bill seems to reduce the potential restrictions on the development of Hirst, while providing a mechanism and funding basis for mitigating against the effects of continued exempt well development.

¹ The author of this article is not a lawyer, ESSB 6091 is a complex bill. This summary is a relatively loose interpretation of the bill intended to provide a broad sense of primary implications for exempt well use. It is a far-from-complete description of the provisions of this bill. For additional analysis see Senate Committee on Agriculture, Water, Natural Resources, and Parks (2018), Washington State Department of Ecology (2018d)
As the concluding sentence of the main body of this article suggests, Hirst and its legislative response will indeed change the institutional landscape around water in Washington. The development of these WPEs, for example, may be a foundation for more robust local watershed-level management than currently exists in Washington State.

References


