Reconciling Land Use and Water Demand
(or How Water Law Complicates Growth Management)

Whatcom Water Supply Symposium December 2017

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Issues to Address

• What does GMA require counties to do?
• Plans and procedures in place to address water resource needs from new growth
• How does water law complicate planning under the GMA?
• How do we reconcile competing land use and water needs?
• Challenges going forward
GMA Planning Requirements

• Prepare comprehensive plan and implementing development regulations
• Plan to accommodate 20 years projected growth; update Comp Plan every 8 years
• Designates 3 broad classes of land under GMA:
  1. Urban Growth Areas
  2. Natural Resource Lands of Long-Term Commercial Significance
     • Agricultural Lands
     • Forest Lands
     • Mineral Lands
  3. Rural Lands
GMA Requirements

• Encourage more urban and less rural growth over time
• Protect agricultural lands for their long-term commercial (economic) significance
• Adopt critical area regulations to protect the functions and values of environmentally sensitive areas, including streams and aquifer recharge areas
• Adopt measures to protect rural character (*including traditional rural lifestyles, rural-based economies, and opportunities to both live and work in rural areas*...as well as protecting surface and groundwater resources)
Water for People and Jobs

• More than two-thirds of our existing county population live in cities and urban growth areas
• 20 year growth forecast (2016 Comp. Plan Update)
  • 70,000 new people and 37,000 new jobs
  • 85% of those people and jobs expected to locate in cities and urban growth areas; *about 11,000 new folks expected to live in rural areas that may be dependent on use of permit-exempt wells*
• Procedures for provision of public and private water supplies laid out in the *Coordinated Water System Plan (2016)*
Water for Agriculture

- Two studies* document existing agricultural water use by sub-basin.

- Overall, more land is authorized for irrigation on existing water right certificates, permits and claims than is currently irrigated; however, in some sub-basins, actual water use exceeds that authorized.

- Future agricultural water needs expected to remain relatively stable.

- How do we “protect” agricultural lands of long-term commercial significance without ensuring that those lands have access to an adequate (factual and legal) supply of irrigation water?

*Lower Nooksack Water Budget (2012)
* Quantification of Agricultural Water Use and Water Rights (2016)
Water for Fish

• Instream Flows—minimum flows necessary to protect fish habitat set by the WRIA 1 “Nooksack Rule” WAC 173-501.

• How do we protect instream flows in the future from:
  • Habitat degradation
  • Potential changes in climate
  • projected surface and groundwater withdrawals from population growth and agricultural use
Nooksack at Ferndale

Graph showing the flow of Nooksack at Ferndale over a period from January 2006 to September 2008. The graph compares the flow data for IRPP, WY 2006, and WY 2008.
Plan for Water Needed by Future Growth

- Coordinated Water System Plan (2016)
- Identifies existing use and future demand for domestic potable water countywide
- Identifies residents served by public/private water supplies
- Identifies public water system water right capacities
- Identifies strategies to move water between public water systems, where needed
The City of Lynden and Ecology entered into a Memorandum of Agreement (MOA) due to a disagreement between the parties related to the event of the city's water rights. While the MOA is in place, the parties will work together to secure an adequate water supply for the city to meet current and future growth obligations.
Water Law Implications

• **Postema (2000)**—“...a minimum flow, once established by Ecology, is an existing water right that may not be impaired by subsequent groundwater withdrawals. .......If [a proposed] withdrawal would impair existing rights [by any amount], the statute provides the application must be denied....There is no distinction between a de minimis or significant degree of impairment.

• **Foster (2015)**—Mitigation must be in kind, in time, in place.....

• **Hirst (2016)**—“The GMA places the burden on counties to protect groundwater resources, and requires counties to assure that water is both factually and legally available before issuing permits....Where there is hydraulic continuity and withdrawal of groundwater would impair existing surface water rights, including minimum flow rights, then denial [of a permit] is required “.....
Challenges to Reconciling Land Use and Water Demand?

• Need to collate existing hydraulic continuity, stream flow, water use and supply data and projected climate change impacts into a cogent water supply plan

• Coordinate countywide water resource management efforts among different stakeholders

• Uncertainty on the legal (statutory) framework from which counties have to do water resource management planning
Mitigation Options

• Private individual well mitigation
  • Site-based “net zero” consumptive use strategy

• Public basin-wide mitigation
  • Fee in-lieu well mitigation program to fund:
    • Stream (or groundwater) augmentation
    • Improved storage (winter flow capture)
    • Improve cost-efficient delivery of public water
    • Water bank(s)
    • Deep aquifer exploration
Potential State Legislative Action?

- Create new Ecology managed basin-wide mitigation fee in-lieu program?
- Allocate funds for affected river basin water resource management and mitigation planning?
- Refine GMA to reinforce Ecology’s role in determining legal water availability?
- Recognize the *de minimus* role of permit exempt consumptive water use on instream flows?
- Revise impairment (*Postema*) and mitigation (*Foster*) standards?
- Provide financial assistance for public rural water supplies, mitigation projects and water banks?
Challenges Ahead

• Focus on rural development supplied by domestic permit-exempt wells and agricultural (irrigation) water needs

• How to mitigate the impact from very small to very large water withdrawals on instream flows?

• Need cumulative impact (land use buildout and water demand) analysis to integrate with surface and groundwater models by drainage sub-basin to better understand how hydraulic continuity and water use factors affect instream flows.
### Buildout Potential by Water Service in Whatcom County Rural Areas Affected by Hirst Decision (Outside of UGAs/Point Roberts, Samish, and Lummi Island/Eliza Island Watersheds)

<table>
<thead>
<tr>
<th>Inside Public Water System Service Area</th>
<th>Developed</th>
<th>Potential Additional Lots/DU*</th>
<th># of Tax Parcels w/Dev. Potential**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties within a Group A public water system service area and either connected to a public water system or currently not served (i.e. no existing private permit-exempt well)</td>
<td>15,096</td>
<td>1,333</td>
<td>489</td>
</tr>
<tr>
<td></td>
<td>Undeveloped</td>
<td>0</td>
<td>6,159</td>
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<tr>
<td></td>
<td>subtotal</td>
<td>15,096</td>
<td>7,492</td>
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<tr>
<td>Properties within a Group A public water system service area served by an existing private permit-exempt well (1997-2017)</td>
<td>808</td>
<td>204</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Undeveloped</td>
<td>0</td>
<td>309</td>
</tr>
<tr>
<td></td>
<td>subtotal</td>
<td>808</td>
<td>517</td>
</tr>
<tr>
<td>Properties within and served by a Group B public water system (126 out of 235 Group B Systems mapped - 53%)</td>
<td>367</td>
<td>42</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Undeveloped</td>
<td>0</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>subtotal</td>
<td>367</td>
<td>163</td>
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<tr>
<td>Properties within a Group B public water system service area served by an existing private permit-exempt well (1997-2017) (126 out of 235 Group B Systems mapped - 53%)</td>
<td>32</td>
<td>8</td>
<td>5</td>
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<tr>
<td></td>
<td>Undeveloped</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>subtotal</td>
<td>32</td>
<td>14</td>
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<tr>
<td>Subtotal - Inside Public Water System Service Area</td>
<td>16,303</td>
<td>8,186</td>
<td>5,895</td>
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</table>

<table>
<thead>
<tr>
<th>Outside Public Water System Service Area</th>
<th>Developed</th>
<th>Potential Additional Lots/DU*</th>
<th># of Tax Parcels w/Dev. Potential**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-platted properties outside of Group A or mapped Group B water system service area served by an existing private permit-exempt well (1997-2017)</td>
<td>1,265</td>
<td>256</td>
<td>116</td>
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<tr>
<td></td>
<td>Undeveloped</td>
<td>0</td>
<td>477</td>
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<td></td>
<td>subtotal</td>
<td>1,265</td>
<td>733</td>
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<tr>
<td>Platted Lots in final approved subdivisions outside of Group A or mapped Group B water system service area where the subdivision is served by an existing private permit-exempt well (1997-2017) and beneficial use has been established</td>
<td>1,776</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td>Undeveloped</td>
<td>0</td>
<td>669</td>
</tr>
<tr>
<td></td>
<td>subtotal</td>
<td>1,776</td>
<td>669</td>
</tr>
<tr>
<td>Properties outside of Group A or mapped Group B water system service area where the water source/potential water source is undetermined</td>
<td>3,608</td>
<td>832</td>
<td>313</td>
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<td>Undeveloped</td>
<td>0</td>
<td>3,870</td>
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<td>subtotal</td>
<td>3,608</td>
<td>4,702</td>
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<tr>
<td>Subtotal - Outside Public Water System Service Area</td>
<td>5,649</td>
<td>6,104</td>
<td>4,067</td>
</tr>
</tbody>
</table>

**TOTALS** | 22,922 | 14,290 | 9,902

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*Developed with potential additional lots/du = developed or partially developed parcels that can potentially be further subdivided

**Vacant or subdividerable based upon Whatcom County Buildout Methodology 5/2017

***Assume well in the water source but well log data cannot be mapped to specific parcel and/or well drilled prior to 1997: or water source is other than well

Source/Notes: Group A (system with 15 or more connections) & Group B (less than 15 connections) Water System Service Areas - WC Health 2017 Well - DOE Washington State Well Log Viewer - January 1997-March 2017, wells only recorded if could be matched to a parcel number or address.
Draft Water Service Map

Whatcom County

DRAFT - Water Service*

- Parcel served by P-E Well outside Public Water System Service Area
- Parcel served by P-E Well inside Public Water System Service Area
- Group A or Group B Water System Service Area
- Commercial Forestry Zoneing - no residential development
- Areas not affected by Hirst Decision
- WRIA1 - Watershed Management Areas

Well Log Data


- Approximately 5,137 pre-1997 records including domestic, commercial, ring, decomm, and dewatering wells
- 716 records matched to parcels
- 1,196 records matched to parcels within existing Water System Service Areas
- 350 records in the database were not mapped due to missing/unresolved parcel numbers or addresses
- Database searched by Township/Range/Section for wells drilled from January 1, 1997-present

Water System Service Areas

- One hundred seventy-five (175) Group A system service areas mapped as part of the CWSF 2016 update
- 211 of 238 (89%) Group B systems mapped. Only Deer Creek WMA mains have been mapped. All other systems mapped show only service areas and not existing connections.

*Areas affected by Hirst Decision (outside of USGS P-11 Roberts/Samish and Lummi Is./Eliza Is. watersheds)
Thank You

Questions?
Comments?