Regional District of Nanaimo & Applications of the Groundwater Vulnerability Maps
RDN Applications of the Groundwater Vulnerability Maps

Area A Official Community Plan (OCP) Outreach Programs
Water Quality Monitoring
OCP Application of the Groundwater Vulnerability Maps

• Area A OCP update began ~2008
• ‘New work being done by VIU’
• Strong community interest in groundwater protection
• Groundwater primary domestic & agricultural water source
• Set budget to consider groundwater study as input to OCP
  • ‘Groundwater Assessment and Vulnerability Study’
OCP Application of the Groundwater Vulnerability Maps

Limitations of Data:
• Not easily used at a site level
• Difficult to figure out how to apply (#’s)
• Accuracy at site scale
Solutions:
- Classified data (low-medium-high)
OCP Application of the Groundwater Vulnerability Maps

Solutions:
• ‘Smoothed’ lines
OCP Application of the Groundwater Vulnerability Maps

Solutions:
- Did not use on a site level - Used with an existing DPA (Form and Character)
South Wellington Industrial-Commercial DPA

Groundwater Protection

1. Use and disposal of substances or contaminants
2. Assessment of aquifer impacts (supply)
3. Require implementation of report’s recommendations
4. RWMP to protect groundwater quality
5. Drainage directed to oil, water and grease separator with maintenance agreement
6. Proposed developments that may reasonably pose a detrimental impact on either the quality or quantity of groundwater shall not be supported.
7. Waste Management
Cedar Main St and Cassidy DPA

**Groundwater Protection**

Others plus:

1. Encourage permeable paving
2. Maintain natural hydrologic regime (i.e., retain vegetation)
Policies and Objectives

4.4 Drinking Water Protection and Groundwater Resources

Policies:
1. Support the installation of monitoring wells
2. Further study including aquifer characterization and water budget
3. In unserviced areas, zoning amendments proposing increased density above ‘moderate’ or ‘high’ vulnerability require assessment
4. Land uses which could negatively impact quality, or quantity of ground or surface water shall not be supported.
5. Groundwater protection BMPs
6. Minimize impervious surfaces while protecting groundwater quality
7. Subdivision Servicing Bylaw

Advocacy Policies
1. Encourage the MOE to license groundwater and require reporting of extraction for all license holders
2. Support the creation and implementation of an aquifer/groundwater monitoring program
3. Encourage the subdivision approving officer, to require an aquifer impact assessment to ensure no quality or quantity impacts.
# OCP Application of the Groundwater Vulnerability Maps

## Best Management Practices

<table>
<thead>
<tr>
<th>Sources of Contamination</th>
<th>Aquifer Vulnerability</th>
<th>Responsible Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Moderate</td>
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<tr>
<td><strong>Liquid wastes</strong></td>
<td>Confined industrial wastewater disposal allowed (use of impermeable liners)</td>
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</tr>
<tr>
<td></td>
<td>Tanks and pipelines are allowed, with groundwater monitoring</td>
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</tr>
<tr>
<td><strong>Tank and pipeline leakage</strong></td>
<td>Mining activities are allowed with water management plans</td>
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<td></td>
<td>Detailed list of hazardous products handled, stored and used.</td>
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<td>Use of highest industry standards for handling and storage (double/triple lining of containers, safe storage program, emergency plans)</td>
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<td>Design and implementation of staff education and training programs on toxicity and risks to the environment.</td>
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Other Groundwater Protection Policies

Yellow Point Aquifer Protection DPA
- To promote water conservation
Application of the Groundwater Vulnerability Maps: Outreach Programs

- **Rural Water Quality program**
  - Pilot planned for Cassidy
  - Outreach to prevent NPS and promote BMPs including proper household hazardous waste disposal, septic system maintenance, proper fueling
  - Potential industry partnerships

- **Team WaterSmart outreach**

- **WellSmart**

- **Sustainable Development Checklist**
Application of the Groundwater Vulnerability Maps: Water Quality Monitoring

- Cassidy-South Wellington Water Quality Survey
- Monitoring parameters in production wells in vulnerable areas
Questions?