An Environmental Health Perspective: Land Use Planning, Drinking Water and Onsite Sewage

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Small Water System Team, Infrastructure Programs,
Health Protection  Less Risk - Better Health  Mar. 9, 2015
Overview

- To give a brief introduction to the current teams and services provided by the Infrastructure Programs within IHA’s Health Protection Department:
  - Healthy Built Environment Team
  - Large Water System Team
  - Small Water System Team
  - Public Health Engineering Team

- To describe the overall objectives of the teams contained within the Infrastructure Programs as they relate to sound land use planning and a healthy built environment

- To provide general information on our involvement in drinking water and onsite sewage
The Basic Services Provided by Infrastructure Programs

1. The **Healthy Built Environment Team** provides input on watershed protection, advocating for community sewer and water supply systems. In conjunction with other Interior Health programs it provides input from the broader “Healthy Built Environment” perspective.

2. The **Large Water System Team** focuses on water supply systems that serve over 500 persons during any 24 hour period and monitors/enforces compliance with the Drinking Water Protection Act (DWPA), regulations and policies.

3. The **Small Water System Team** focuses on water systems that serve up to 500 persons during any 24 hr period and monitors/enforces compliance with the Drinking Water Protection Act (DWPA), regulations and policies.

4. The **Public Health Engineering Team** provides technical support to the Large Water System Team and the Small Water System Team (they also review plans for the construction or alteration of water supply systems and pools).
In recent years, our role has changed as we’ve moved upstream with respect to subdivision review, drinking water and onsite sewage:

• we don’t inspect onsite sewerage systems unless there is a health hazard; we receive a complaint or; for taking enforcement action under the Sewerage System Regulation (Public Health Act)

• we are focusing less on actual water system inspections and more on strategies that will reduce the number of these systems on a Boil Water Notice and that will move water systems towards accountability and providing “Clean, Safe, Reliable Tap Water” for all

• we are more involved with land use planning and the promotion of a sustainable healthy built environment
Infrastructure Programs’ Overall Objectives: Land Use Planning

- Engage with Local Government and all levels of government to help promote healthy communities
- Collaborate with Local Government who we recognize as the lead when it comes to Planning for the community
- Advocate for the creation of a sustainable healthy built environment in all communities
- Support Local Government as it develops Regional Growth Strategies, Liquid Waste Management Plans, OCPs, Zoning Bylaws and Development Permit Areas (for sensitive areas)
Infrastructure Programs’ Overall Objectives: Regional Growth Strategies

• Discourage development where water quality/quantity is insufficient and support the adoption of water conservation bylaws

• Advocate for the mapping and management of watersheds and aquifers and promote rainwater infiltration practices

• Support groundwater & surface water monitoring (Quality/Quantity)

• Support Liquid Waste Management Plans that consider the cumulative impact of rural and urban development

• Support strategies for future development that occurs within compact, pre-identified urban and rural containment boundaries
We Advocate:

• Assessing long term groundwater availability as a condition of subdivision or DP process (new developments)
• Establishing Aquifer Protection Development Permit Areas with buffer zones (always consider the vulnerability of the aquifer)
• Developing an integrated water management planning approach for community water supplies (groundwater & surface water)
• Creating cluster development near community services
• Evaluating environmental factors & cumulative impact of rural dev’t
• Creating parcels that are a minimum one hectare (2.5 ac) where community sewers and community water systems are unavailable
• Connecting Commercial and Industrial developments to community water and sewer systems whenever possible
IHA strives to support the creation of built environments that can support physical, mental, and social health and well-being.

What does this “Healthy Built Environment” mean? HBE refers to:

• human-made or modified physical surroundings in which people live, work, learn and play.

• places/spaces that include our homes, communities, schools, workplaces, parks/recreational areas, business areas, and transportation systems, and vary in size from large-scale urban areas to smaller rural developments.

How communities are planned and built, and the services and resources provided within them, directly impacts people's physical, mental, and social health. (above is from Provincial Health Services Authority web page)
Infrastructure Programs’ Overall Objectives: Is this sustainable development?
Infrastructure Programs
Onsite Sewage

- EHOs enforce the Sewerage System Regulation (BC Reg. 326/2004) to ensure that a sewerage system isn’t installed without a Record of Sewerage System, a Letter of Certification and a Maintenance Plan.

- IHA is a depository for all “filings” & letters of certification in IHA

- Only an “authorized person” can install a sewerage system

- An authorized person needs to refer to the Sewerage System Standard Practice Manual for technical guidance re setbacks, etc.

- EHOs respond to complaints regarding illegal installations and malfunctioning sewage systems (which may cause a health hazard)
Firstly, a “water supply system” is defined under the Drinking Water Protection Act (DWPA):
- any domestic water system other than one for a single family residence

Except for rental houses or threats to drinking water, single family residences are on their own (we don’t regulate their water systems)

“Water supply systems” must monitor the drinking water source, water in the system and the water it provides for the parameters and at frequencies specified by regulation and the operating permit (Section 11 of the Drinking Water Protection Act).

Water monitoring analysis – Section 8 of the DWP Regulation requires a water supplier to:

Monitor for Total Coliform bacteria and Escherichia coli at the frequencies in Schedule B, or as established by the DW Officer
Infrastructure Programs
Drinking Water – Water Quality Standards
Bacteria

Water Quality Standards for Potable Water – DWPR Schedule A

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standard</th>
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</thead>
<tbody>
<tr>
<td><em>Escherichia coli</em></td>
<td>No detectable <em>Escherichia coli</em> per 100 ml</td>
</tr>
<tr>
<td><em>Total coliform bacteria</em></td>
<td></td>
</tr>
<tr>
<td>a) 1 sample in a 30 day period</td>
<td>No detectable total coliform bacteria per 100 ml</td>
</tr>
<tr>
<td>b) More than 1 sample in a 30 day period</td>
<td>At least 90% of samples have no detectable total coliform bacteria per 100 ml and no sample has more than 10 bacteria per 100 ml</td>
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</tbody>
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IHA uses the Guidelines for Canadian Drinking Water Quality for chemical parameters.

IHA also considers EPA and WHO guidelines.
Reporting Procedure: If the water quality standards in Schedule A (bacteria) are not met, the accredited laboratory must immediately report this to the Drinking Water Officer (Section 9 of DWP Reg).

Operator of a water supply system must immediately report threats to the drinking water to the Drinking Water Officer (DWO).

Operator must provide an Annual Report by June 30th (S. 11 DWPR).

Operator must provide an Emergency Response Plan (S. 10 DWPA).

Public Notification Requirements:

Under Section 13 of the DWP Act, the operator must give public notice to all users when requested or ordered by a DWO (e.g. Boil Water Notice, Water Quality Advisory and Do Not Use Notice).
Many parameters are naturally occurring in water, resulting from water contact with soils and rock formations during well recharge or overland flow to surface bodies.

- Arsenic, uranium, nitrate, boron, fluoride, ammonia, iron, manganese are common in many areas.

- Surface waters can be contaminated with bacteria, viruses and parasites (protozoa).
Infrastructure Programs - Who to Call
Clare Audet of HBE Team/Water Focused EHO
Questions??

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