

Drinking Water Systems

Association of Kootenay Boundary Local Governments
J. Ivor Norlin, Manager, Drinking Water Systems Program
Fernie, BC, April 17th, 2018



Interior Health
Every person matters

Environmental Public Health

Over 750,000 residents

120 staff

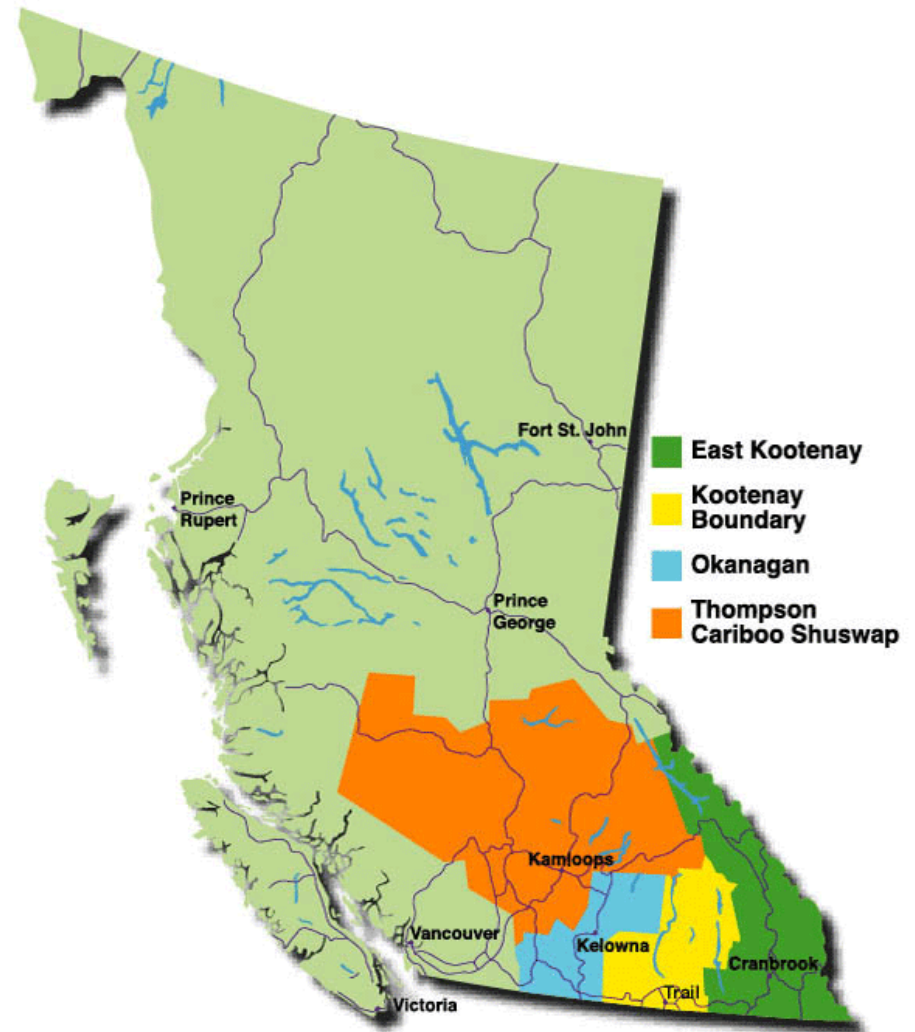
Health hazard response & investigation

1,191 rec water facilities

973 community care facilities

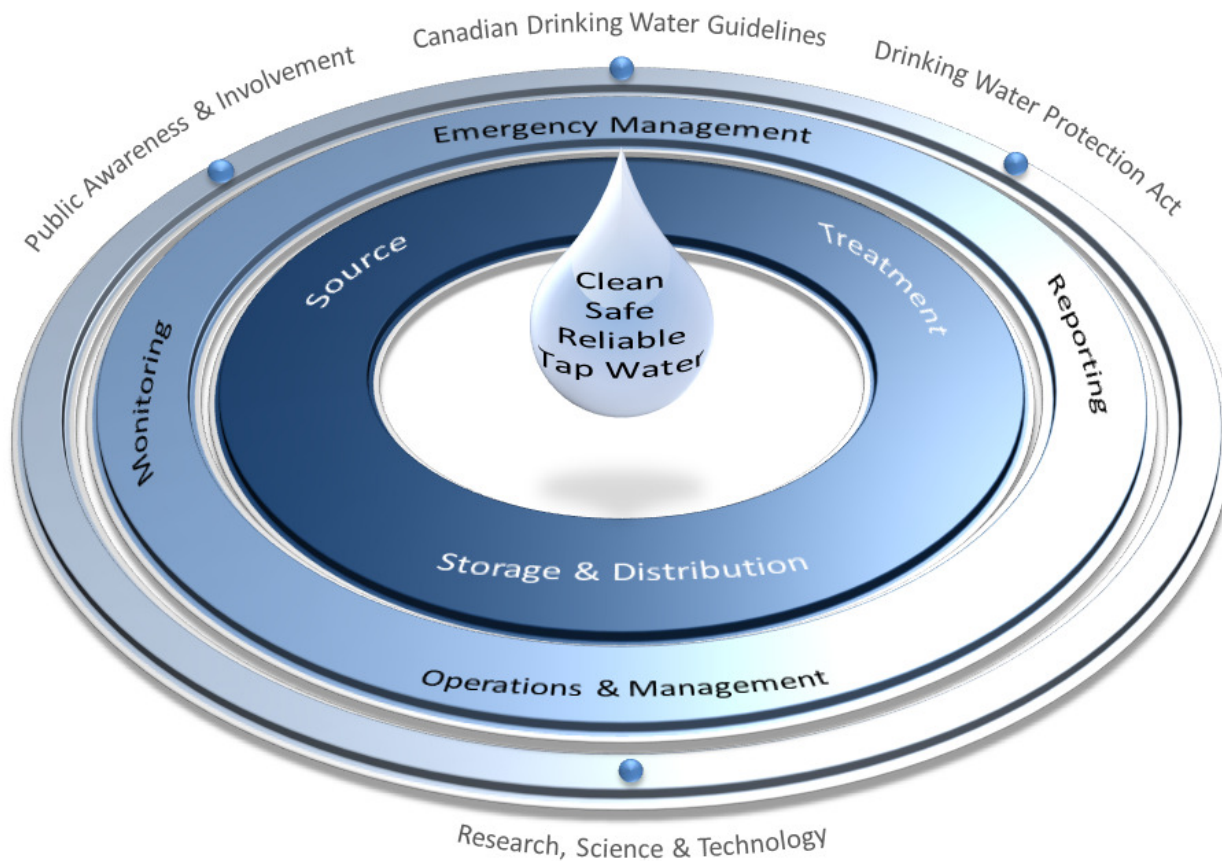
6,536 food facilities

1,944 water supply systems



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Drinking Water Systems Program



Compliance through:

- 1) Collaboration
 - technical support
 - education, partnerships
 - committees
- 2) Permits & inspection
- 3) Incident response & investigations



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Every person matters

Drinking Water in Interior Health

An Assessment of Drinking Water Systems, Risks to Public Health, and Recommendations for Improvement



Office of the Medical Health Officer
January, 2017

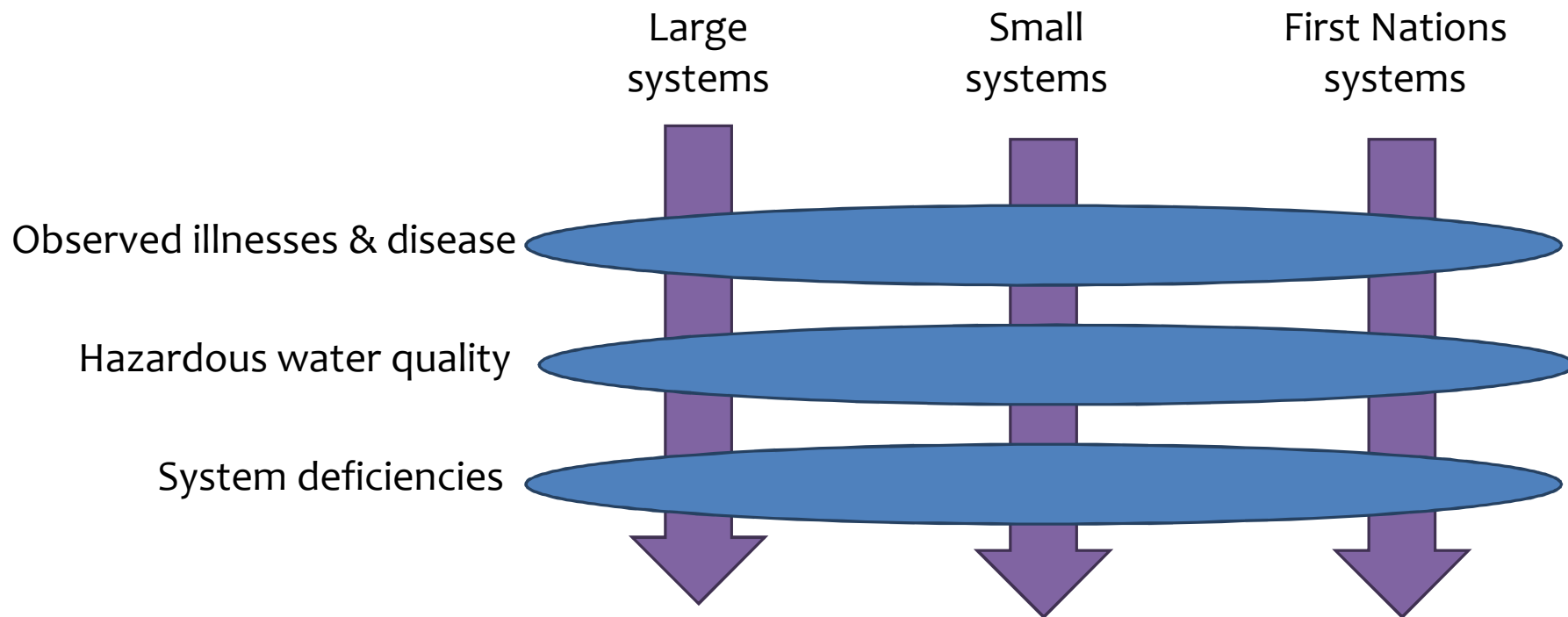
MHO Report under BC Public Health Act

Evidence of:

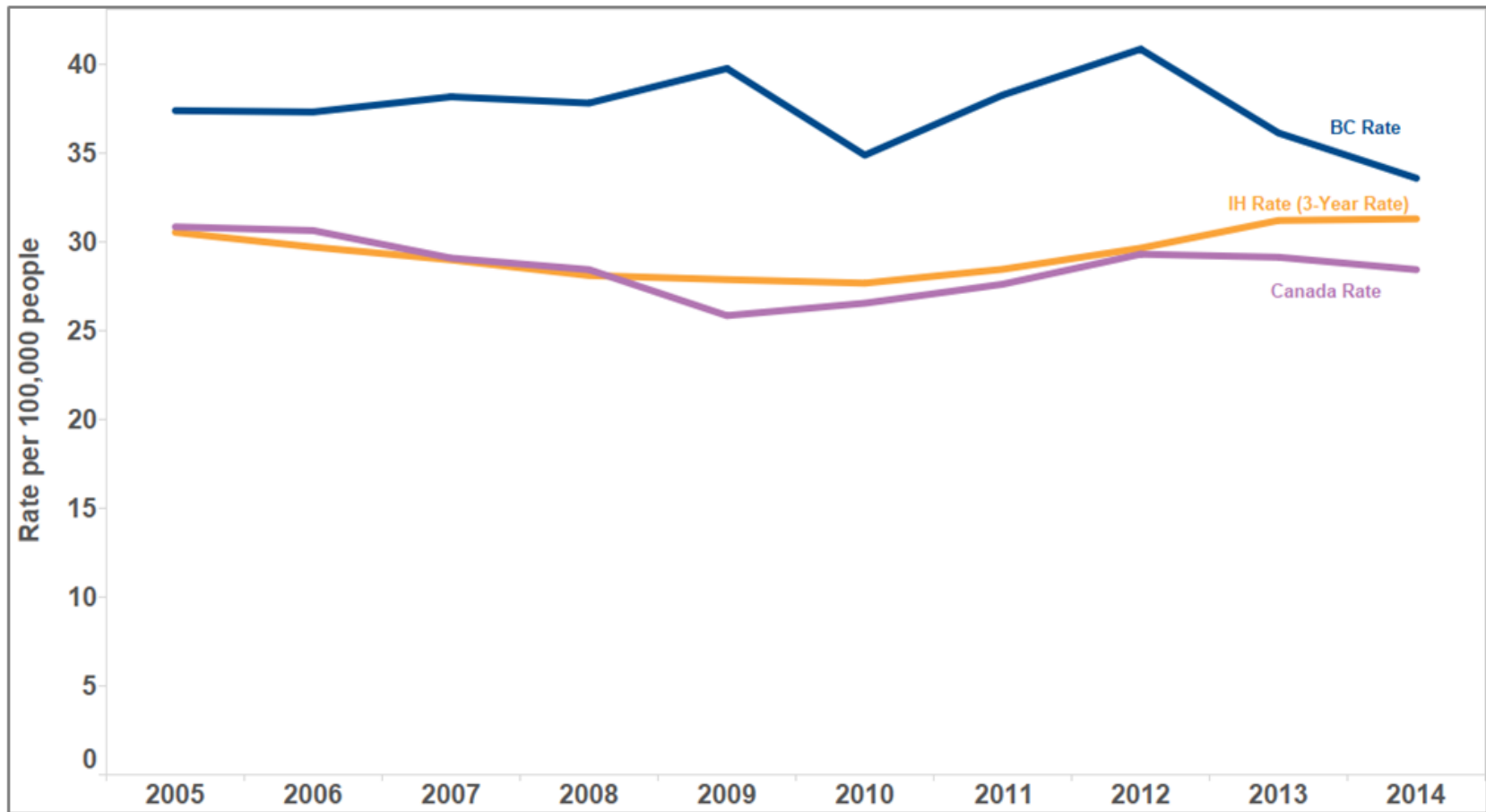
- Harm?
- exposure (i.e. potential harm)?
- protection (i.e. from harm)?

5/15/2018

Report development



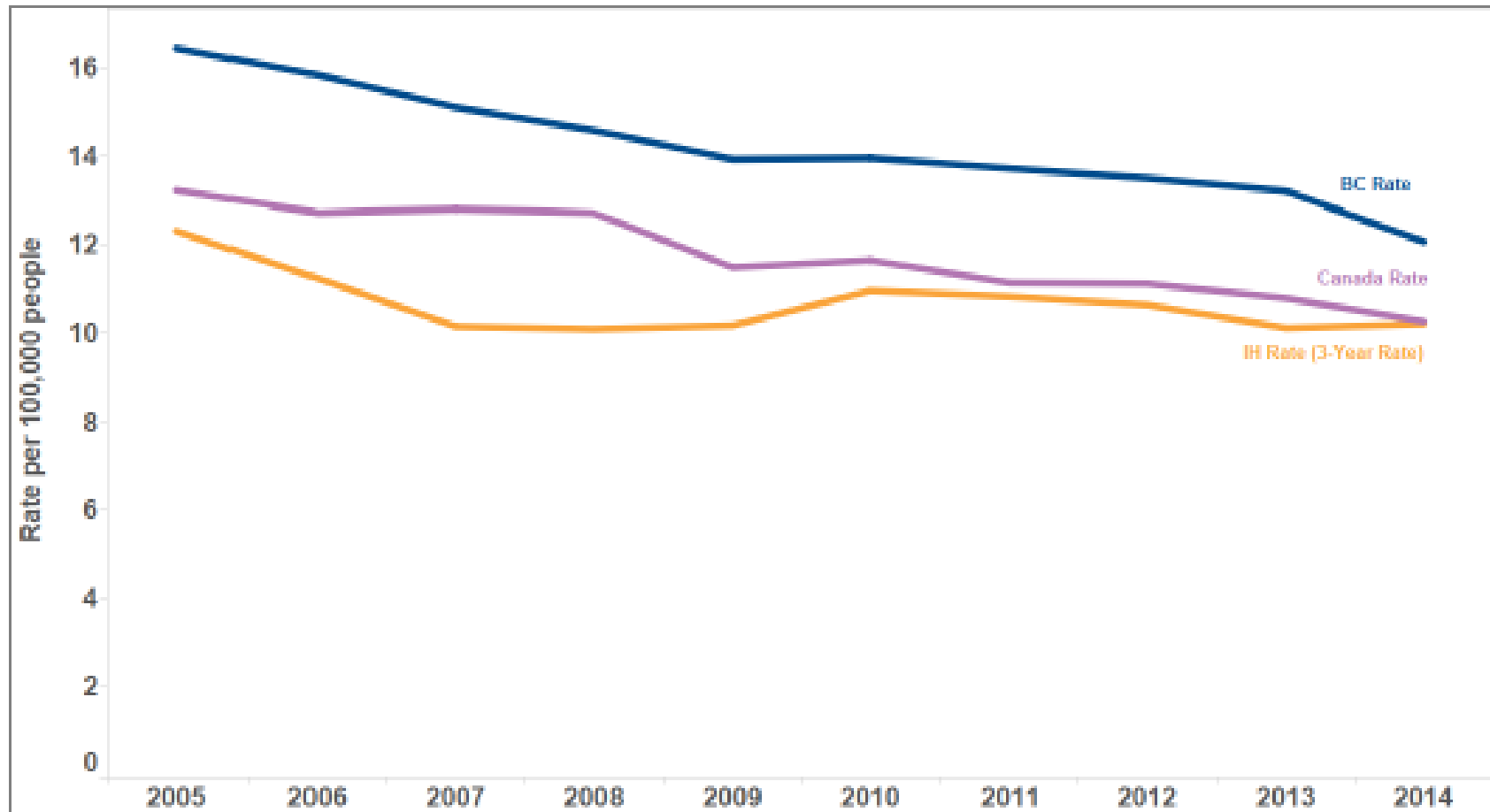
Evidence of: harm



Sources: Panorama (IH Rate); BCCDC/Panorama (BC Rate); Canada Notifiable Disease Charts (Canada Rate)

Figure 4: 3-Year Incidence Rate per 100,000 Population of Lab-Confirmed Campylobacteriosis Infection, Interior Health 2005 - 2015

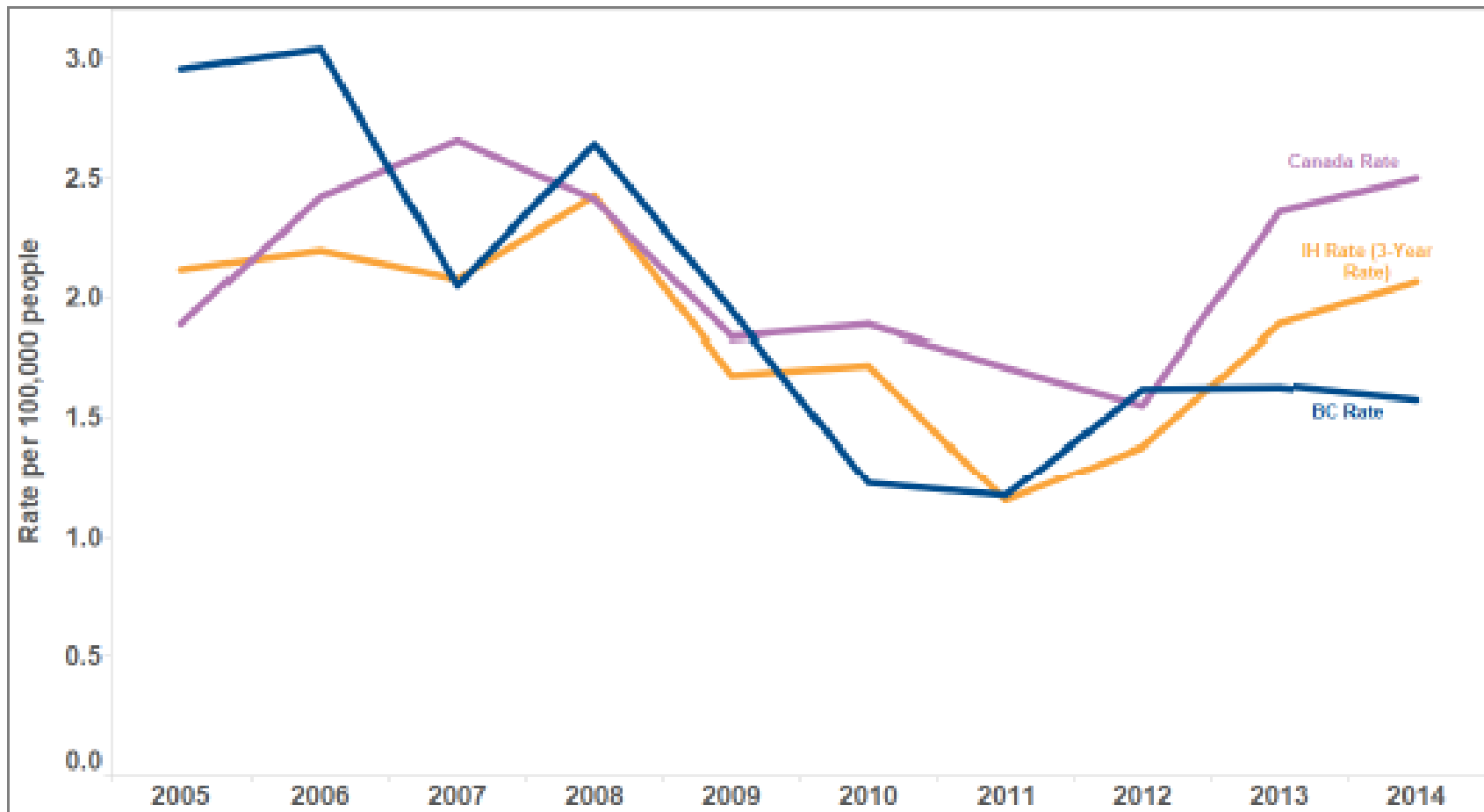
Evidence of: harm



Sources: Panorama (IH Rate); BCCDC/Panorama (BC Rate); Canada Notifiable Disease Charts (Canada Rate)

Figure 3: 3-Year Incidence Rate per 100,000 Population of Lab-Confirmed Giardiasis Infection, 2005 - 2015

Evidence of: harm



Sources: Panorama (IH Rate); BCCDC/Panorama (BC Rate); Canada Notifiable Disease Charts (Canada Rate)

Figure 2: 3-Year Incidence Rate per 100,000 Population of Lab-Confirmed Cryptosporidiosis Infection, Interior Health 2005 – 2015

Evidence of: harm

Conclusions:

1. Not epidemic ... outbreaks of drinking water related diseases are gone
2. We can't detect/differentiate endemic drinking water diseases
3. Absence of detectable disease does not mean “safe”

Evidence of: exposure

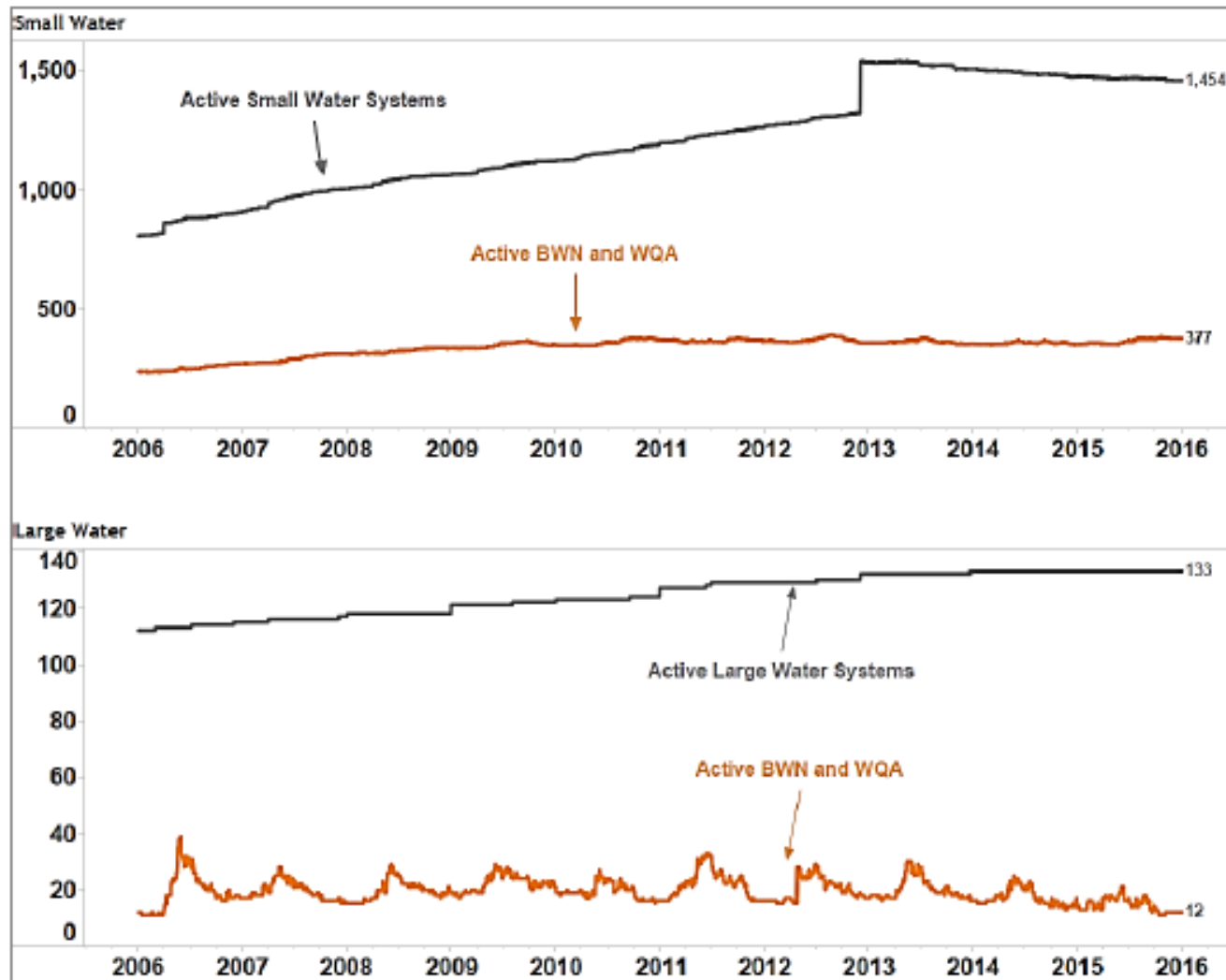


Figure 7: Number of Active Water Systems¹ and Advisories over Time, Interior Health, 2006 - 2015

Evidence of: exposure

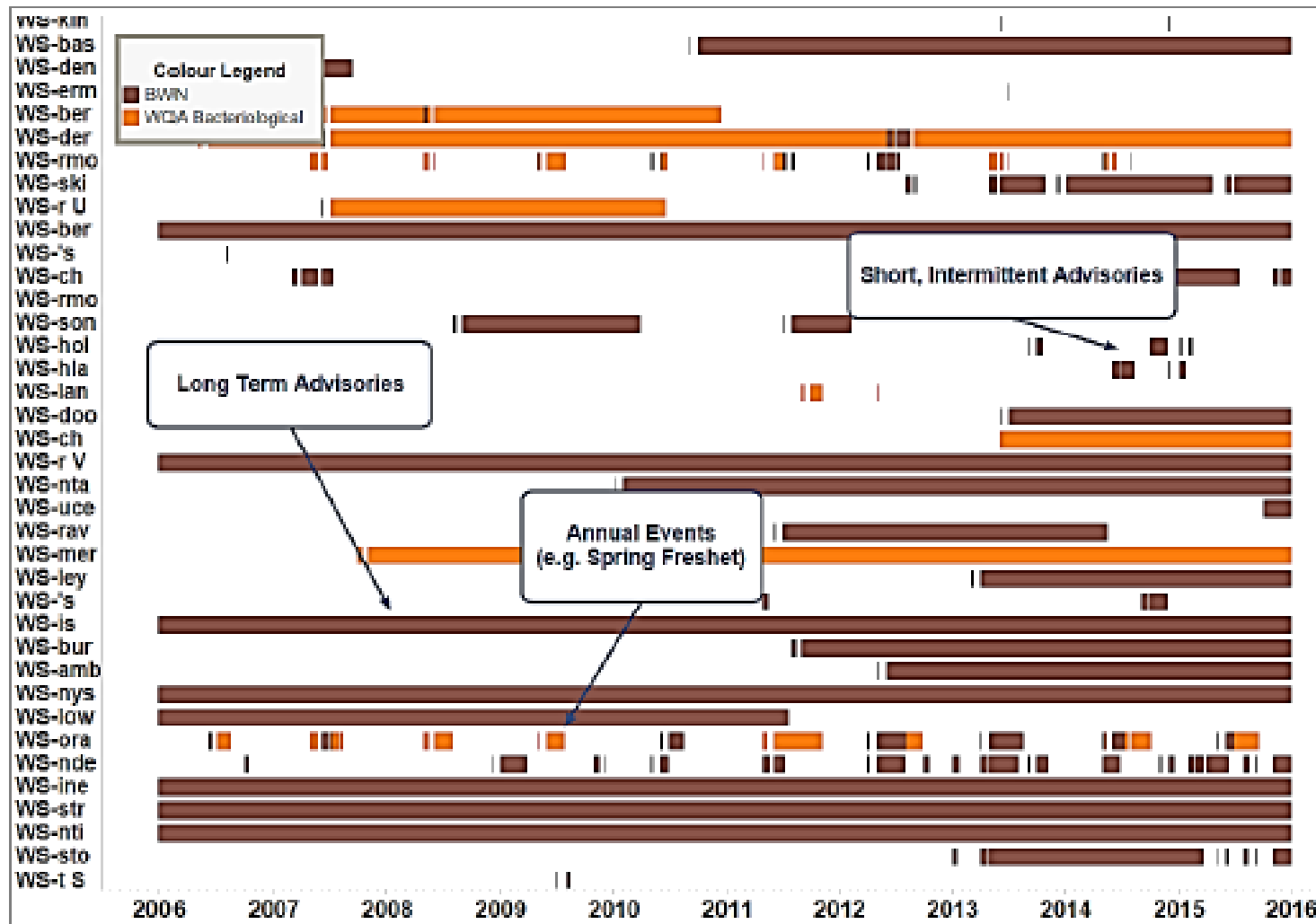


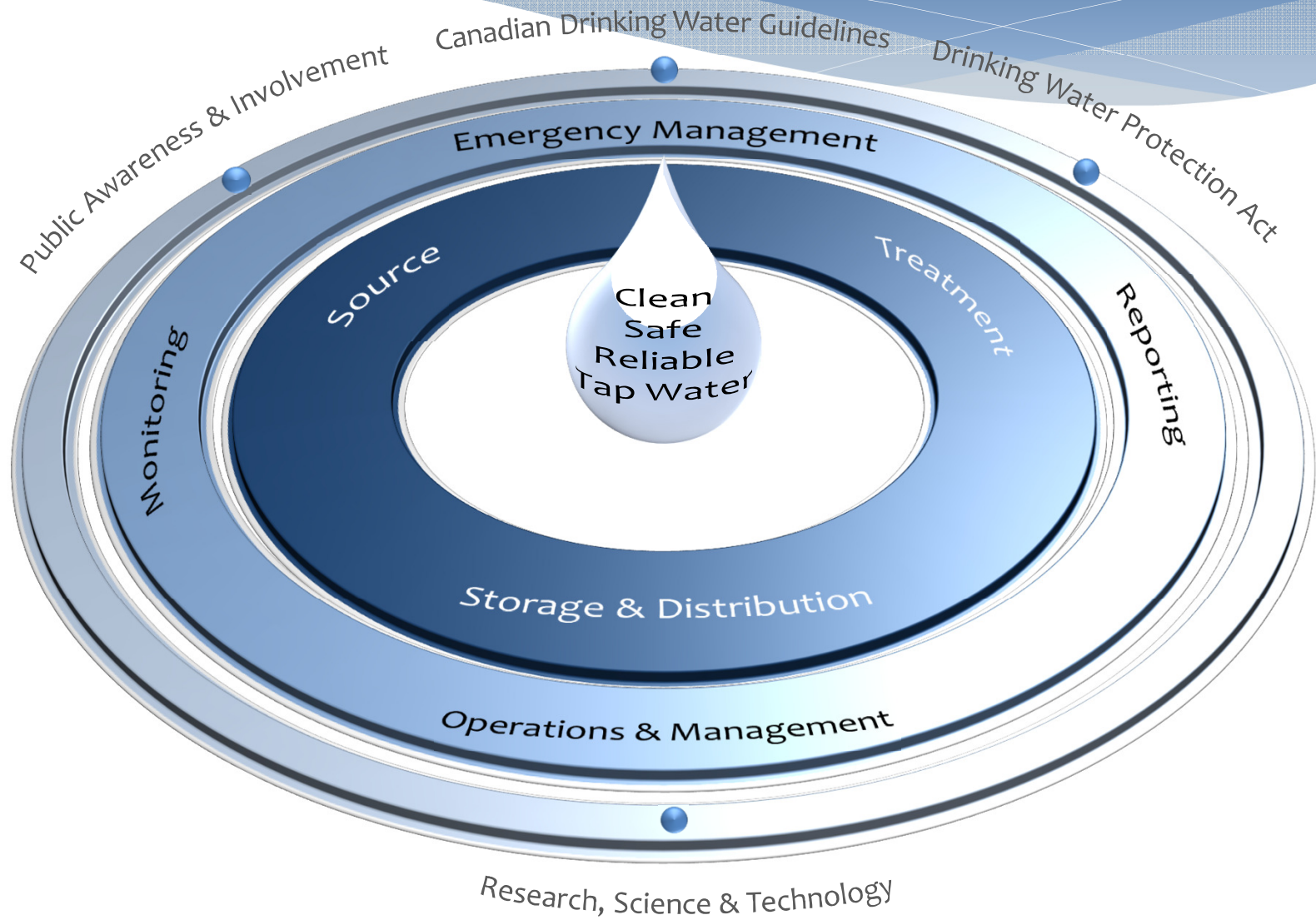
Figure 8: Duration of Boil Water Notices and Water Quality Advisories Related to the Risk of Pathogenic Microorganisms

Evidence of: exposure

Conclusions:

- 1) The factors and risks are complicated
- 2) The number of people on advisory is too high

Evidence of: protection



Recommendations

Based on the findings of this report, the following six recommendations are noted:

1. IH Medical Health Officers (MHOs), delegated Drinking Water Officers (DWOs) and Communications Officers should develop and implement a community engagement strategy with water suppliers, municipalities and regional districts that encourages in-depth local dialogue over the next 12-18 months.
 - a) The strategy should follow a logical order that includes all water systems prioritized by risk and population size.
 - b) IH program staff should collaborate with the Ministry of Health in developing and implementing this strategy based on community readiness for change.
2. Delegated DWOs should work with all large water systems using a surface source to achieve provincial treatment objectives by 2025. This may serve as a goal upon which water suppliers, local governments, MHOs and delegated DWOs develop local improvement plans that take into consideration community needs, value engineering, construction, provincial and federal grant opportunities, and cost.
3. Delegated DWOs should report annually to the Chief MHO on water systems at highest risk and which are unable to implement the multiple barrier approach to safe drinking water. Reporting may include barriers that are preventing water suppliers from meaningful progress, and the consideration and use of progressive compliance measures available under the *Drinking Water Protection Act*.
4. IH program staff should enhance information management to support reporting on multiple barriers for drinking water safety that aligns with provincial reporting.
5. IH program staff should collaborate with and empower First Nations communities and the First Nations Health Authority to achieve safe drinking water for First Nations people. Opportunities may include aligned reporting of waterborne disease rates, public advisories and use of the multiple barrier approach to ensure clean, safe and reliable drinking water.
6. IH program staff should work with the Ministry of Health and local and provincial partners to explore an area-based management approach to drinking water systems, similar to that used for liquid-waste management. This approach would need to include methods to engage communities in planning for sustainable small water systems and to identify funding mechanisms to support.

1. Engage and discuss

2. Treatment objectives

3. Reporting

4. Better data

5. Empower First Nations

6. Area-based management

I. Engage and discuss

1. IH Medical Health Officers (MHOs), delegated Drinking Water Officers (DWOs) and Communications Officers should develop and implement a community engagement strategy with water suppliers, municipalities, and regional districts that **encourage in-depth local dialogue** over the next 12-18 months.
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I. Engage and discuss

water.



DISCOVERY REPORT
PREPARED FOR
INTERIOR HEALTH BY

BE THE CHANGE
GROUP INC.



- Group of 10 - summer/fall 2016
- All 68 local governments - winter 2017
- Full release - June, 2017

I. Engage and discuss

Interior Health
Every person matters

water.

CLEAN, SAFE, RELIABLE
DRINKING WATER *for* EVERYONE
IS A GOAL SHARED
BY EVERYONE

•

BUT ASK YOURSELF:

- How much do you really know about where your tap water comes from?
- Who treats it, delivers it to your home, and ensures that it is safe?
- How valuable is clean water to you and your family?

water.

“

Public health
is not about rules, it's
not about regulation,
it's not about the law,
it's about people.”

drinkingwaterforeveryone.ca

2. Treatment objectives

2. Delegated DWOs should work with **all large water systems using a surface source to achieve provincial treatment objectives by 2025.**

This may **serve as a goal** upon which water suppliers, local governments, MHOs and delegated DWOs develop local improvement plans that take into consideration community needs, value engineering, construction, provincial and federal grant opportunities, and cost.

- 2014/15 \approx 1 in 4 met objective
- 2015/16 \approx 1 in 3 met objective
- 2017/18 \approx 1 in 2 met objective
- 2018/19 \rightarrow planning for remaining 30 systems

3. Reporting

3. Delegated DWOs should **report annually to the Chief MHO** on water system at highest risk and which are unable to implement the multiple barrier approach to safe drinking water. Reporting may **include barriers** that are preventing water suppliers from meaningful progress, and the consideration **and use of progressive compliance** measures available under the *Drinking Water Protection Act*.

- Disease & advisories rates
- Inspection findings
- Enforcement actions

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Thank you

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drinkingwaterforeveryone.ca

Secure | https://drinkingwaterforeveryone.ca/advisorymap/

Search Results: holid

water. SEARCH

Interior Health

Who is my water supplier?

Current drinking water statistics

Where does the data come from?

ALL WATER SUPPLY SYSTEMS

WATER QUALITY ADVISORY

BOIL WATER NOTICE

DO NOT CONSUME

DO NOT USE

ADVANCED FILTERS 0 active filters

Your Location - Kelowna, BC

NORTH KELOWNA

KELOWNA

DILWORTH MOUNTAIN

TSINISTIKEPTUM INDIAN RESERVE NO. 10

MAP LIST

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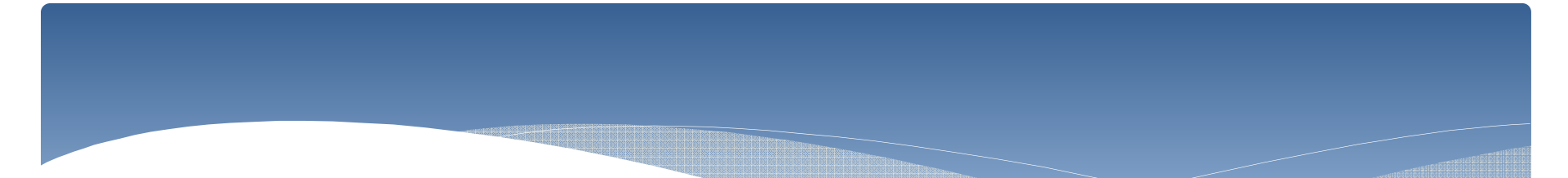
DO NOT CONSUME

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MAP LIST

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 **BOIL WATER NOTICE**

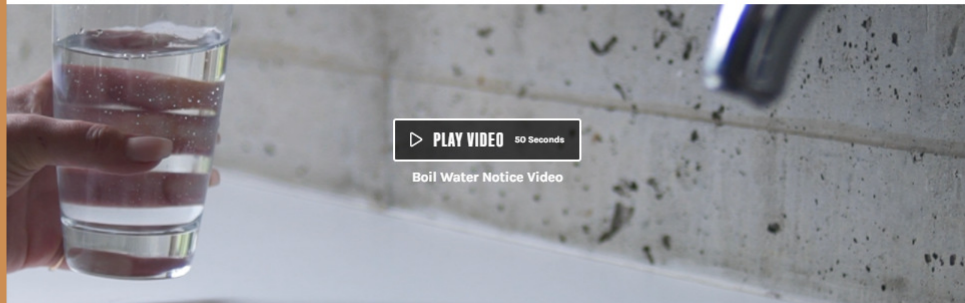
Norbury Lake Campground Water System [Print this notice](#)

ADVISORY START DATE 📅 17 September 2015	DATA UPDATED 🕒 20 March 2018 9:10pm
REASON(S) FOR ADVISORY • Untreated drinking water at risk of containing pathogens	SUPPLIER CONTACT INFORMATION 📞 (250) 489-8540
WEBSITE N/A	
POPULATION SERVED N/A	

[REPORT A PROBLEM OR MISTAKE WITH THIS PAGE](#)

[Back to Map](#) [See All Recent Water Sample Reports](#)

[Back to Map](#) ✕



WHAT DOES THIS NOTICE MEAN?

BOIL WATER NOTICE

A boil water notice tells you that there are organisms in the water that can make you sick. To safely consume (swallow) the water, you must bring it to a rolling boil on a stovetop for at least 60 seconds to kill these harmful organisms. [Click here](#) to learn more about all types of water advisories.








UNTREATED DRINKING WATER AT RISK OF CONTAINING PATHOGENS

Drinking water has not been treated to prevent the risks posed by disease-producing organisms such as viruses and bacteria.

[Click here](#) to learn more about the reasons for water advisories.

Not sure who your water supplier is or if this affects your house? [CLICK HERE](#) to learn how you can find out who your water supplier is.

REASONS *for* WATER ADVISORIES

REASON	EXPLANATION
 <p>Chemical and physical water quality parameters in excess of acceptable concentrations</p>	<p>There are minerals, chemicals, or metals, at levels higher than recommended guidelines for healthy drinking water, or a dangerous substance has entered the water.</p>
 <p>Distribution system integrity failure</p>	<p>Storage tanks, pipes, and other plumbing in physical distribution and delivery systems have been compromised. There is potential for contamination or loss of water service. Contaminants can get into the drinking water because the water system has been damaged or loses pressure, backflow has occurred, or parts of the system are old and worn out.</p>
 <p>Excessive turbidity compromising treatment and water quality</p>	<p>Cloudy water (turbidity) has a higher amount of organic and inorganic matter that provides food and shelter to disease-producing organisms such as viruses and bacteria. The turbidity can make disinfection less effective.</p>
 <p>Flushing/fire flow testing</p>	<p>Flushing/fire flow testing improves water quality by eliminating matter that would otherwise contribute to turbidity. During flushing the water may contain higher levels of contaminants as they are flushed from the system.</p>
 <p>Inadequate construction or protection of distribution, storage, and other waterworks</p>	<p>Water storage and distribution systems are not built correctly and/or protected against threats to water safety.</p>
 <p>Inadequate operations and maintenance</p>	<p>Water treatment, storage, distribution, and delivery systems are not operated correctly or kept in good repair.</p>
 <p>Insufficient treatment or disinfection residual</p>	<p>Disease-producing organisms, such as viruses and bacteria, are not adequately treated due to insufficient amounts of disinfectant or other problems in water treatment.</p>

