

## Local Government's Role in Ensuring Clean Drinking Water

BCWWA Conference  
Penticton B.C.

# PRESENTATION OUTLINE



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

- The AGLG and Performance Audit
- Our Audits
- Local Government's Role in Ensuring Clean Drinking Water
  - Our approach, good practices and recommendations
- Perspective Series – Emergency Management and Drinking Water
- Looking Forward
- Questions

# AGLG ACT ENABLES THE OFFICE



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## Mandate

- Conduct performance audits of local government operations

## Potential Auditees

- 161 municipalities, 27 regional districts, and 2 greater boards
- Improvement and irrigation districts currently not in AGLG mandate

## Purpose

- Provide local governments with objective information and relevant advice that will assist them in their accountability to their communities for the stewardship of public assets and the achievement of value for money in their operations

## Practices

- Conduct audits according to CPA Canada assurance standards

# VISION AND OUR COMMITMENT



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## OUR VISION

**TO BE A VALUABLE  
RESOURCE FOR LOCAL  
GOVERNMENTS AND  
OTHER STAKEHOLDERS**

## OUR COMMITMENT

**TO WORK  
COLLABORATIVELY  
WITH LOCAL  
GOVERNMENTS**

# PERFORMANCE AUDITS



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## WHAT IS A PERFORMANCE AUDIT?

- ▶ Performance audits, sometimes called “value-for-money” audits evaluate the operations of local governments in areas such as:
  - Operational and capital procurement
  - Human resources
  - Emergency management
  - Drinking water
- ▶ Focused on Effectiveness, Efficiency and Economy
- ▶ Not to be confused with other types of water audits such as a leak detection survey or water balance exercise.



# CAPE TOWN WATER CRISIS



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT



 [www.westerncape.gov.za](http://www.westerncape.gov.za)

## Level 6B Water restrictions

Level 6B water restrictions are applicable to **residents and businesses** in the City of Cape Town as of **1 February 2018**. Water use should be **limited to human consumption**.

 = **50 litres of water**  
per person, per day

**1**

**Water consumption limited to 50 litres or less per person, per day at home, work or school etc.**

# AGLG DRINKING WATER AUDITS IN THE MEDIA



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

Kelowna posted April 13, 2018 by Josh Duncan

## Audit of Kelowna's Water Utility includes 15 recommendations

## Auditor General recommends improvements in water management at RDOS

MAY 30, 2017, 9:21 AM

FEATURED

## Auditor gives RDOS water systems passing grades, but finds lots of room for improvement

JOE FRIES Jun 4, 2017 0

## Public not properly consulted on city water plan: auditor

The Daily Courier 16 Apr 2018 By RON SEYMOUR

## Recommendations in Regional District drinking water audit could prove expensive

By *Steve Arstad*

# AGLG NOW AUDITING TWO TOPICS



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## ➤ **Drinking Water:** Local Government's Role in Ensuring Clean Drinking

### Water

- Regional District of Okanagan Similkameen - *completed*
- City of Kelowna – *completed*
- Township of Langley - *underway*
- Drinking Water Perspective Series booklet – *underway*

## ➤ **Emergency Preparedness & Business Continuity:** Emergency

### Management in Local Governments

- Town of Sidney - *completed*
- Capital Regional District - *underway*
- District of Mission & Fraser Valley Regional District - *planned*
- Emergency Management Perspective Series booklet – *completed*

# REPORTING



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## OUR REPORTS

### Achieving Value for Money in Operational Procurement

City of Revelstoke  
Regional District of Fraser-Fort George  
District of West Vancouver  
Comox Valley Regional District  
City of Vernon  
Corporation of Delta

### Emergency Management in Local Governments

Town of Sidney

### Learnings from Local Government Capital Procurement Projects and Asset Management Programs

City of Cranbrook  
City of Campbell River  
District of North Vancouver  
City of Dawson Creek  
District of Sechelt  
City of Rossland (Part 1 of 2)  
City of Rossland (Part 2 of 2)

### Local Government Performance in Managing Policing Agreements and Police Budget Oversight

City of Williams Lake  
City of New Westminster  
City of Port Alberni  
City of Merritt  
City of Surrey

### Local Government's Role in Ensuring Clean Drinking Water

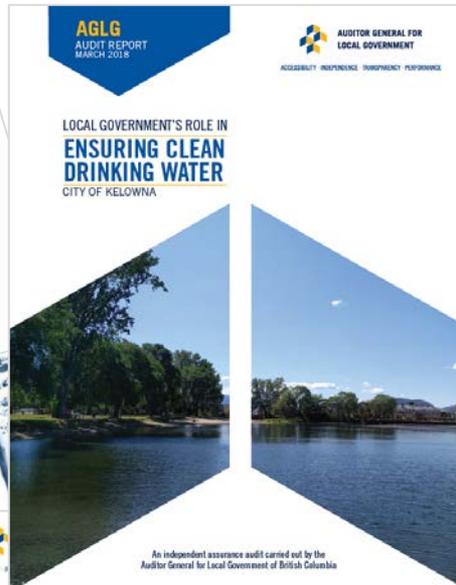
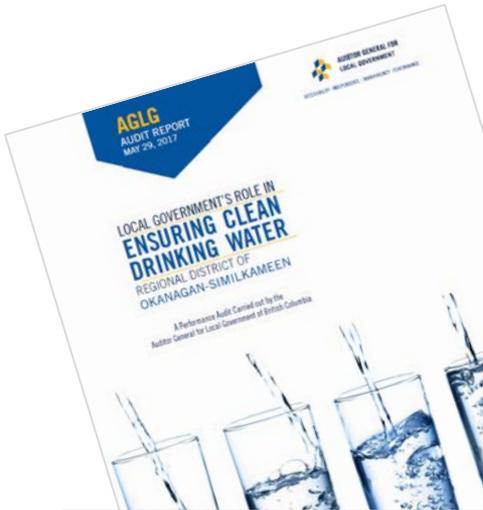
City of Kelowna  
Regional District of Okanagan-Similkameen

### Managing the Inherent Risks of Limited Human Resources within Small Local Governments

District of Tofino  
District of Port Edward  
City of Fernie  
City of Nelson

### Perspective Series Booklets

Improving Local Government Emergency Management  
Improving Local Government Procurement Processes  
Policing Services Performance Assessment  
Asset Management for Local Governments  
Oversight of Capital Project Planning & Procurement



## IN PROGRESS

- Drinking Water Perspective Series Booklet
- Performance Audit Township of Langley

# LOCAL GOVERNMENT'S ROLE IN ENSURING CLEAN DRINKING WATER



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## ► Why this topic?

- The well-being of every British Columbian— and every B.C. community—depends on access to clean drinking water
- For many of us our local government provides our drinking water
- 2016 Engagement/Audit Planning process also identified this as an area of risk and an audit topic of value

WATER CONSUMERS TYPICALLY EXPECT THAT  
DRINKING WATER:



IS AVAILABLE 24 HOURS PER DAY



IS FREE OF PATHOGENS  
AND TOXIC CHEMICALS



IS FREE OF OBJECTIONABLE  
TASTES AND ODOURS



IS DELIVERED WITH  
ADEQUATE PRESSURE  
AT ALL TIMES

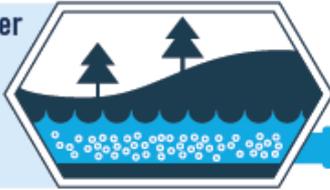


IS AVAILABLE IN SUFFICIENT  
VOLUME TO MEET  
DEMAND AT ALL TIMES

# WHY CLEAN DRINKING WATER IS IMPORTANT

## surface water

Drinking water can come from reservoirs, lakes, rivers & streams

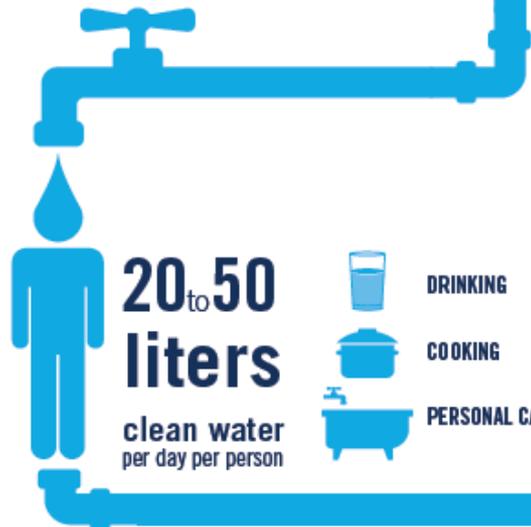


## ground water

Drinking water can also come from aquifers



AUDITOR GENERAL FOR LOCAL GOVERNMENT



**20 to 50**  
**liters**

clean water  
per day per person



DRINKING



COOKING



PERSONAL CARE

Local services, agriculture and other businesses and industry that employ British Columbians also need a dependable supply of clean water to operate.



AGRICULTURE



BUSINESS/INDUSTRY



LOCAL SERVICES



Estimated **900** million people globally face serious health consequences due to polluted drinking water



**599** notices were in effect across the province as of March 31, 2012

Access to clean drinking water depends on water providers acting appropriately at each stage of the process.



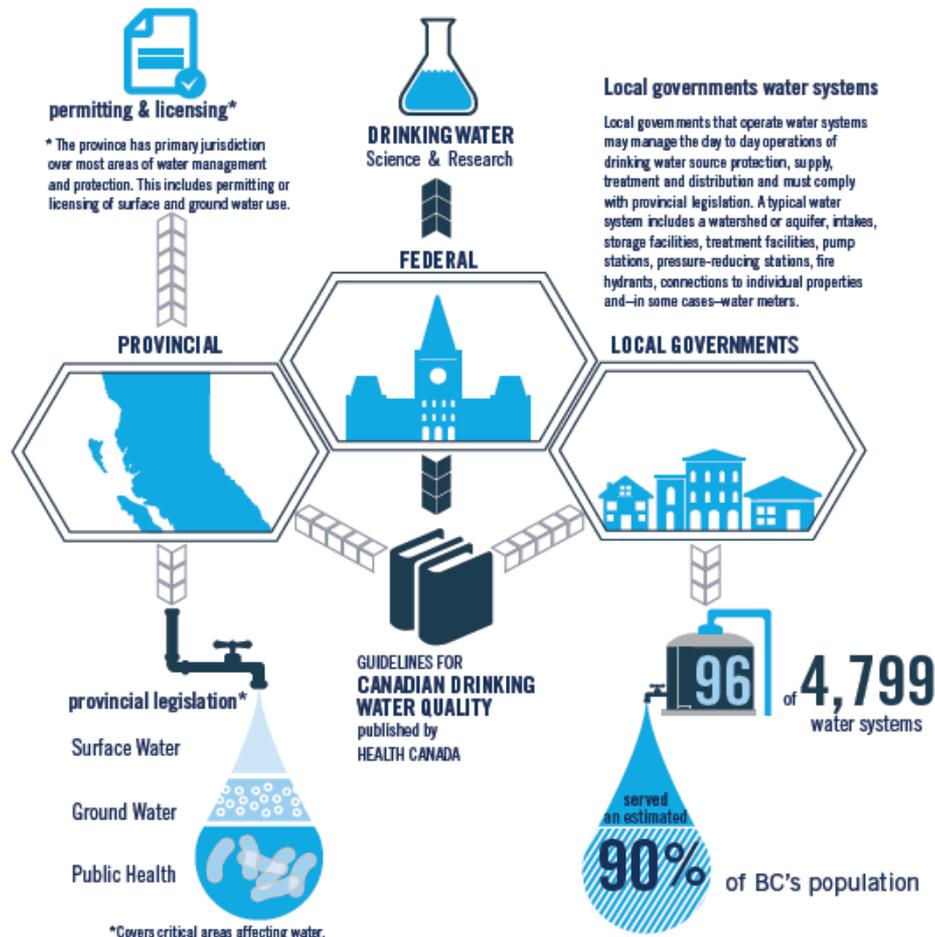
source water protection



drinking water systems



drinking water quality management



In addition to the BC regional districts and municipalities that are responsible for water systems to provide water for domestic, commercial, agricultural and industrial use, water services are also provided by:

IRRIGATION AND IMPROVEMENT DISTRICTS	WATER USERS' COMMUNITIES
PRIVATE UTILITIES	GOOD NEIGHBOUR SYSTEMS
FIRST NATIONS	

In 2015, the Provincial Health Officer highlighted particular challenges faced by suppliers of drinking water to small or remote communities in BC. These included inadequate treatment, difficulty attracting and retaining qualified operators, difficulty getting access to lab services in a timely way and inadequate financial resources to upgrade their systems.

# LOCAL GOVERNMENT'S ROLE IN ENSURING CLEAN DRINKING WATER



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## AUDIT OBJECTIVES FOR CITY OF KELOWNA AND REGIONAL DISTRICT OF OKANAGAN SIMILKAMEEN

### Objective 1

- The local government's governance structure and activities supported the provision of clean and safe drinking water where and when needed.

### Objective 2

- The local government managed its drinking water supplies to meet current and expected future demand.

### Objective 3

- The local government ensured the safety and reliability of drinking water provided through its treatment and distribution systems.

# ABOUT OUR DRINKING WATER AUDITS



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## SOME ATTRIBUTES OF OUR AUDITEES

- Municipal and regional district governance
- Both ground water and surface water sources
- Well infrastructure and associated regulations and planning
- Lake intakes and shared multi-use watershed
- 100% metered service vs. partially metered
- Drought prone areas
- Multiple levels of governments and stakeholders



# WHAT WE LOOK AT



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## AUDIT CRITERIA BASED ON

- Government regulations
- Good practices
- Subject matter experts input
- Academic research
- International standards

## EXAMPLES OF GOOD PRACTICES

- Full cost accounting
- Asset management planning
- Source water protection planning
- Conservation oriented pricing
- Multi-barrier approach
- Continual improvement
- Business continuity planning
- Coordinated emergency planning



# GOOD PRACTICES AT RDOS



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## REGIONAL DISTRICT OF OKANAGAN SIMILKAMEEN

- ▶ Worked with stakeholders and commissioned Similkameen Watershed Plan
- ▶ Fenced and secured wells in Faulder and Olalla
- ▶ Led regional district wide public outreach initiatives focused on water conservation
- ▶ Promoted innovative water conservation methods such as xeriscaping and rainwater harvesting
- ▶ Supported staff EOCP training and certification

# GOOD PRACTICES AT THE CITY OF KELOWNA



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## THE CITY OF KELOWNA

- Robust process for setting water rates
- Participated in Canadian National Water and Wastewater Benchmarking Initiative.
- 100% metered service and volumetric pricing
- Required a landscape conservation report for new landscaping irrigation systems
- Strongly supported EOCP training and certification
- Good internal management structure that supported the provision of clean and safe drinking water
- Good asset management practice - considered current and future water demand

# OUR FINDINGS AND RECOMMENDATIONS



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## FINDINGS

Source water protection planning approach is incomplete

Stakeholder engagement activities could be improved

Emergency response plans not tested

•Lack of business continuity planning

## RECOMMENDATIONS

The local government should improve its approach to source water protection planning

The local government should improve its processes for engaging and communicating with stakeholders.

The local government should enhance its emergency planning by ensuring that its water utility emergency response plan is regularly updated, tested and made accessible.

The local government should complete business continuity planning for its critical services including drinking water

# SOURCE WATER PROTECTION PLANNING



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## RECOMMENDATION

The local government should improve its approach to source water protection planning.

- In both cases the local government could further develop source water protection planning by developing relevant plans
- Coordinate source water protection initiatives with stakeholders
- Improve drinking water supply planning
- Build community support for source water protection



# STAKEHOLDER ENGAGEMENT



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## RECOMMENDATION

The local government should improve processes for engaging and communicating with other levels of government and stakeholders.

- Consult with all key stakeholder groups and levels of government during drinking water planning
- Develop a policy and process for engaging with other local governments
- Better understand regional water risks by communicating with stakeholders



# CONSERVATION AND DEMAND MANAGEMENT



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## RECOMMENDATION

The local government should improve its conservation and demand-management efforts.

- Update conservation strategy to improve compliance with bylaws
- Develop a comprehensive long-term drought plan to inform conservation efforts
- Consider using variable water rates, pricing and public awareness of the full cost of water services as tools for achieving conservation and demand management goals



# GOVERNANCE TRANSFER POLICY



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## RECOMMENDATION

The local government should improve its policies related to taking on water systems.

- Both local governments needed to further develop their governance transfer policies and processes to:
  - Document actions and timelines for processes that take place during and following an acquisition
  - Identify the process and scope of a governance transfer
  - Identify conditions and assessment criteria for the water system
  - Consider legal, financial and engineering aspects of a governance transfer



# FULL COST ACCOUNTING AND ASSET MANAGEMENT



## FULL COST ACCOUNTING, PRICING AND ASSET MANAGEMENT

- Both local governments had different approaches to billing for water.
- One local government had good asset management practices in place.



### What is full cost accounting?

		Activity
Full Cost Accounting	Full Accrual Accounting	Operating Expenses
		Operations and Maintenance
		Regional Water Purchases
		Customer Care (billing etc.)
		Indirect (admin, overhead)
		Source Protection and Pollution prevention
	Interest Expenses	
	Amortization of Tangible Capital Assets	
	Debt Principal Repayment	
	System Growth / Expansion	
	Service Enhancements	
	Inflation in Asset Costs	
	Historic Under-Investment	
Environmental and Resource Costs		
Future risks		

### Asset Management

- Tracks and inventories assets
- Develop a robust understanding of the price and life cycle of assets
- Identifies risks and risk management options
- Guides efficient maintenance scheduling
- Determines full lifecycle costs
- Informs accurate water pricing

# EMERGENCY AND BUSINESS CONTINUITY PLANNING

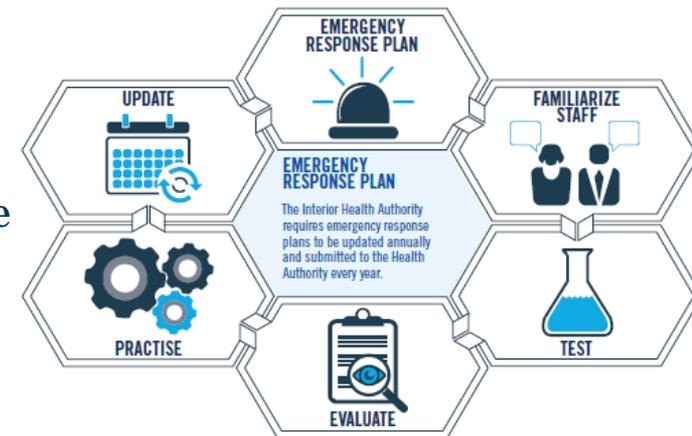


AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## EMERGENCY RESPONSE PLANNING AND BUSINESS CONTINUITY

The local government should enhance its emergency and business continuity planning for its critical services.

- Regularly test and update emergency response plans
- Make water operators aware of the emergency response plan
- Make back-up power available for all water systems
- Complete business continuity planning for all critical services including drinking water



EMERGENCY  
RESPONSE

# LOCAL GOVERNMENTS ROLE IN ENSURING CLEAN DRINKING WATER



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## SUMMARY OF RECOMMENDATIONS

- Develop an asset management system to enable decisions based on asset conditions, full lifecycle costing and risk analysis
- Consider a full cost recovery approach for water services
- Introduce a performance management system
- Complete business continuity planning for critical services
- Ensure emergency response plans are updated regularly and tested
- Develop a water conservation policy/demand management strategy and ensure alignment with bylaws and compliance process
- Implement a formal routine maintenance and inspection program
- Improve on source water protection planning and mitigation



## ► **Why a Perspective Series booklet on Drinking Water?**

- Important for elected officials and others to understand their local government's role in the provision of drinking water, including aspects of governance, planning, sustainable financing, integrated water management and developing relationships
- A way to further assist local governments by sharing some key learnings from our drinking water audits in a different format

# EMERGENCY MANAGEMENT PERSPECTIVE BOOKLET – HIGHLIGHTS



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

**AGLG**

PERSPECTIVE SERIES  
APRIL 2018



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

ACCESSIBILITY · INDEPENDENCE · TRANSPARENCY · PERFORMANCE

IMPROVING LOCAL GOVERNMENT

## EMERGENCY MANAGEMENT

Considerations for Local Government  
Council and Board Members



RELATING TO AGLG AUDIT TOPICS:

Local Government's Role in Ensuring Clean Drinking Water  
Emergency Management in Local Government

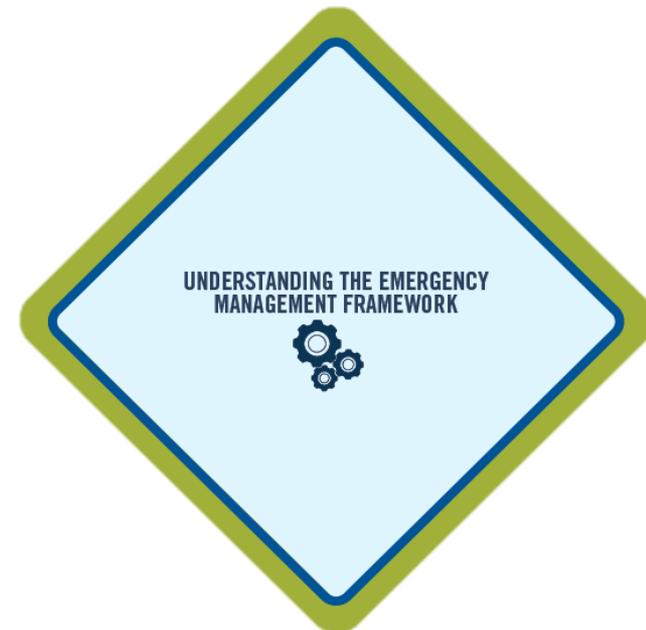
# EMERGENCY MANAGEMENT PERSPECTIVE BOOKLET



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## ► Why a Perspective Series booklet on Emergency Management?

- Important to understand the importance of emergency management and being prepared
- Emergency management affects critical services (e.g. drinking water) and community resilience
- Necessity for an integrated and embedded approach to emergency management



# EMERGENCY MANAGEMENT PERSPECTIVE BOOKLET



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## ► **During our audit work, we learned that local governments face some of these challenges:**

- Lack a strategic approach to emergency management and organization-wide business continuity planning
- Did not regularly update, test or make their water system emergency response plans available to staff
- Did not have business continuity planning completed for critical services including drinking water
- Focus on some aspects of emergency management, but with little emphasis on recovery and resilience
- Lack knowledge of procedures or roles and responsibilities of various parties involved
- Do not recognize the impact of emergencies and recovery on other vital systems (e.g. IT) and impact on critical services like drinking water



# IMPORTANCE OF COLLABORATION



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## WHY IS IT IMPORTANT TO INVOLVE EMERGENCY MANAGEMENT AND DRINKING WATER DEPARTMENTS IN THE DEVELOPMENT OF EMERGENCY PLANS?

The provincial Emergency Program Act requires an emergency management plan and the Drinking Water Protection Act requires all water suppliers to have a written emergency response and contingency plan.

- Often departments develop plans separately
- Drinking water is a critical service so linkage is important
- Integrated approach is best practice

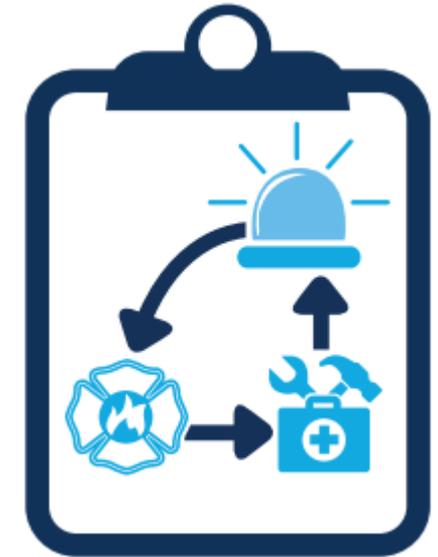


# BUSINESS CONTINUITY PLANNING



## DOES YOUR LOCAL GOVERNMENT HAVE A BUSINESS CONTINUITY PLAN?

- ▶ Business continuity plans are strategic plans concerned with returning a local government's critical services to full operation as soon as possible
- ▶ Emergency operations can be delayed or hampered if local government operations are impacted by an emergency
- ▶ Local governments should prepare business continuity plans to ensure that emergency operations and critical services continue during an emergency



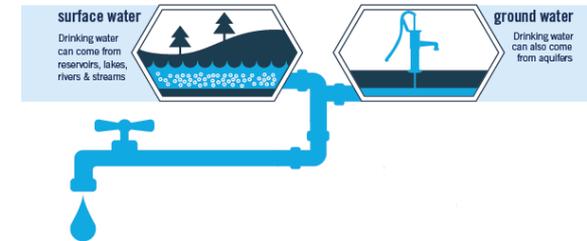
# WATER SUPPLY CONTINGENCY PLANNING



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## DOES YOUR LOCAL GOVERNMENT HAVE AN ALTERNATIVE DRINKING WATER SUPPLY IN CASE OF AN EMERGENCY?

- Drinking water is a critical service, so contingency planning is essential
- For water and other critical services, the local government needs to determine what the acceptable level of service should be following an event
- A local government responsible for drinking water needs to determine what the alternative supply of water will be in case the primary source is contaminated or there is a failure in the distribution system
- Local governments without a viable alternative water source could address this issue by building redundancy into their systems



# AUDIT TOPICS 2018 FORWARD



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## ➤ **Local Government's Role in Ensuring Clean Drinking Water**

*2 audits completed, 1 audit and Perspective Booklet underway*

## ➤ **Emergency Preparedness, Business Continuity, Disaster Recovery**

*1 audit and Perspective Booklet completed, 3 audits underway*

### **Potential Future Topics:**

- **Asset Management and Project Management**
- **Fire Protection Service**
- **Liquid Waste and Sewage Treatment**
- **Housing Development, Affordable Housing and Homelessness**
- **Public Consultation and Engagement**
- **Procurement, Contract Management and Shared Services**

# QUESTIONS?



AUDITOR GENERAL FOR  
LOCAL GOVERNMENT

## CONNECT WITH US



The AGLG welcomes your feedback and comments.

WEB: [www.aglg.ca](http://www.aglg.ca)

EMAIL: [info@aglg.ca](mailto:info@aglg.ca)

PHONE: 604-930-7100

FAX: 604-930-7128

MAIL: 201-10470 152<sup>nd</sup> Street Surrey BC V3R 0Y3



Follow us on Twitter: @BC\_AGLG

