



CANADIAN WATER NETWORK  
RÉSEAU CANADIEN DE L'EAU



*bringing water research to life*

# International Water Crisis

- **3.4 MILLION PEOPLE DIE ANNUALLY FROM WATER-RELATED DISEASES**
- Water use is increasing twice as fast as the human population
- Half of the people in hospital beds around the world are sick due to waterborne illnesses
- Billions lack access to safe to drinking water and sanitation
- Climate change is affecting world-wide supply of water



# Canada is not immune

- **HEALTH PROBLEMS RELATED TO WATER POLLUTION COST CANADIANS \$300 MILLION PER YEAR**
- 75 boil water advisories in First Nation Reserves in three weeks
- Canadians flush 40,000 Olympic sized swimming pools of raw sewage into waterways every year
- Urban runoff discharges millions of tons of suspended solids, chlorine, oil, grease and trace metals into our waterways
- Massive water infrastructure deficit
- Canadians use twice as much water as Europeans
- 25% of municipalities faced water shortages



# Who we are

- **NETWORKS OF CENTRES OF EXCELLENCE** – created in 2001
- **RESEARCHERS, STUDENTS, UNIVERSITIES ACROSS CANADA**
- **PARTNERS** – government, industry, academic, non-government organizations and international
- **26 CURRENT RESEARCH PROJECTS** – 60 to date



# What we do

- **CREDIBLE & TRUSTED** – Sources of expert knowledge
- Build **MULTIDISCIPLINARY** and **MULTI-SECTORAL** national network of researchers, partners and students
- Match decision-makers needs to research capacity
- Provide **CREDIBLE AND TRUSTED SOURCES OF EXPERT KNOWLEDGE**
- **FILL THE GAP BETWEEN SCIENCE AND POLICY** – translating scientific knowledge into useable information for policy makers, regulators and industry



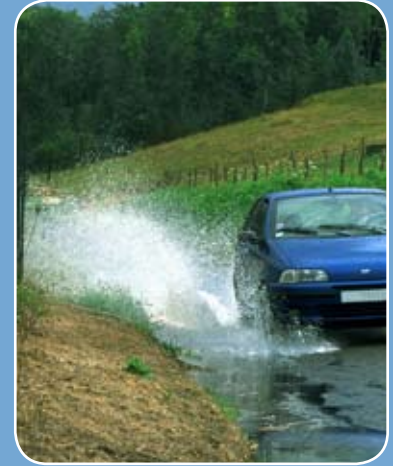
“THE CWN IS CREATING

**innovative solutions  
to critical water problems**

IN CANADA.”

# Infrastructure Challenges

- Optimizing water investment and operations
- Water infrastructure deficit of \$88.4 billion
- Estimated 700 water main breaks each day in North America costing over \$1 billion a year
- 40% of Atlantic communities do not provide sewage treatment
- Climate change increasing duration and frequency of droughts and floods



# What CWN is doing...

- Developing technology to evaluate the condition of infrastructure and prioritize system repairs
  - Municipalities save millions
- Developing small-scale, rural wastewater technology
  - Commercialization of technology
- Developing climate change scenarios
  - Strategic planning templates for utilities, government and private corporations



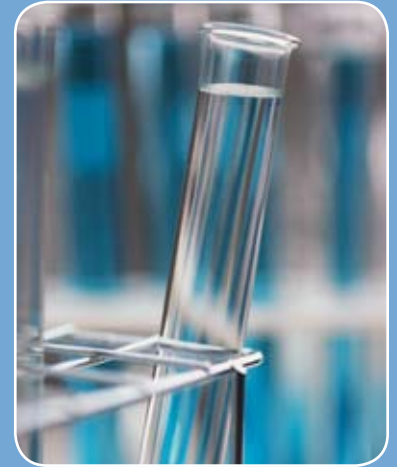
# Public Health Challenges

- Enabling source water protection
- 35% of diarrheal illnesses traced to drinking water that met all safety requirements
- Untreated/insufficiently treated wastewater containing viral and parasitic contaminants contaminating drinking water sources
- Arsenic (carcinogen) found in drinking water



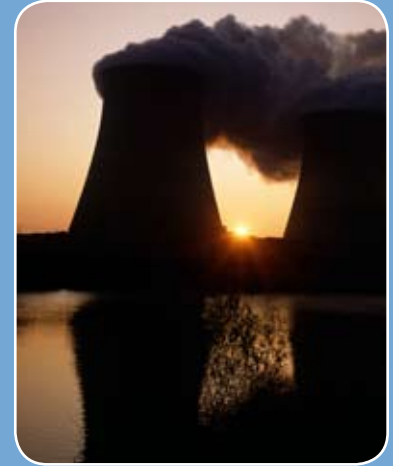
# What CWN is doing...

- Ensuring that government approved drinking water is virus-free
  - Defining new discharge guidelines for wastewater treatment plants
- Determining health effects of low level exposure to arsenic
  - Health Canada changed guidelines
- Determining toxicity of disinfection by-products
  - Developing novel technology to evaluate disinfection by-products
- Helping industry and municipalities optimize water and wastewater treatment (UV and membrane technology)



# Watershed Challenges

- Sustainable water allocation and use
- Competing demands from stakeholders about how water should be used/treated
- Oil sands industry creating environmental concerns
- Agrichemicals – including pesticides and fertilizers - seep into the environment
- Trace amount of pharmaceuticals have been found in Canada's drinking water



# What CWN is doing...

- Balancing both human and ecosystem demands for water
  - Providing decision-makers with information to ensure effective policy development
- Determining toxicity implications of discharge of oil sands water
  - Developing long-term, environmental practices while ensuring economic sustainability of companies
- Evaluation of farming Best Management Practices
  - Prioritizing most significant threats
- Collaborative EU project on risk assessment of pharmaceuticals in the environment, reducing risks to environment and humans



# Why you want to be involved

- Ability to answer pressing water questions
- Access to multi-disciplinary teams of researchers
- Increase efficiency, productivity and the bottom line
- Unrivalled research expertise
- Scientific data to validate decisions and regulations
- Leverage resources of the Canadian Water Network and its partners



research for your needs



**CANADIAN WATER NETWORK**  
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