



National Water and Wastewater
Benchmarking Initiative

How to Use 10 Years of Benchmarking Data to Guide Performance Improvement

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Presentation Outline

- ❑ Metric Benchmarking in Canada for 10 years.
- ❑ Achieved early success, and we clearly addressed a need.
- ❑ Had to learn how to use all of the data that we were collecting, which was difficult.
- ❑ Keys to success were communication and teamwork amongst all of the benchmarking partners.
- ❑ Share and publish everything we learned.
- ❑ Liberal use of “R&D” (Rip-off and Duplicate).
- ❑ We are still learning.



Canada's Water Sector



- ❑ Water services are advanced, and almost all Canadians have access to clean water. (World Water Council ranked Canada 1st out of 147 countries on the Water Poverty Index (2002))
- ❑ Water, wastewater and storm water is a municipal responsibility.
- ❑ Provincial government acts as Regulator. Little direct Federal Government involvement or funding.
- ❑ Water sector professionals are highly trained, well paid and dedicated.
- ❑ Water is still plentiful and inexpensive.



What is Our Definition of Benchmarking?



- How well are we doing?
 - How well do we compare?
 - Are we getting value for money?
- AND**
- How can we improve?

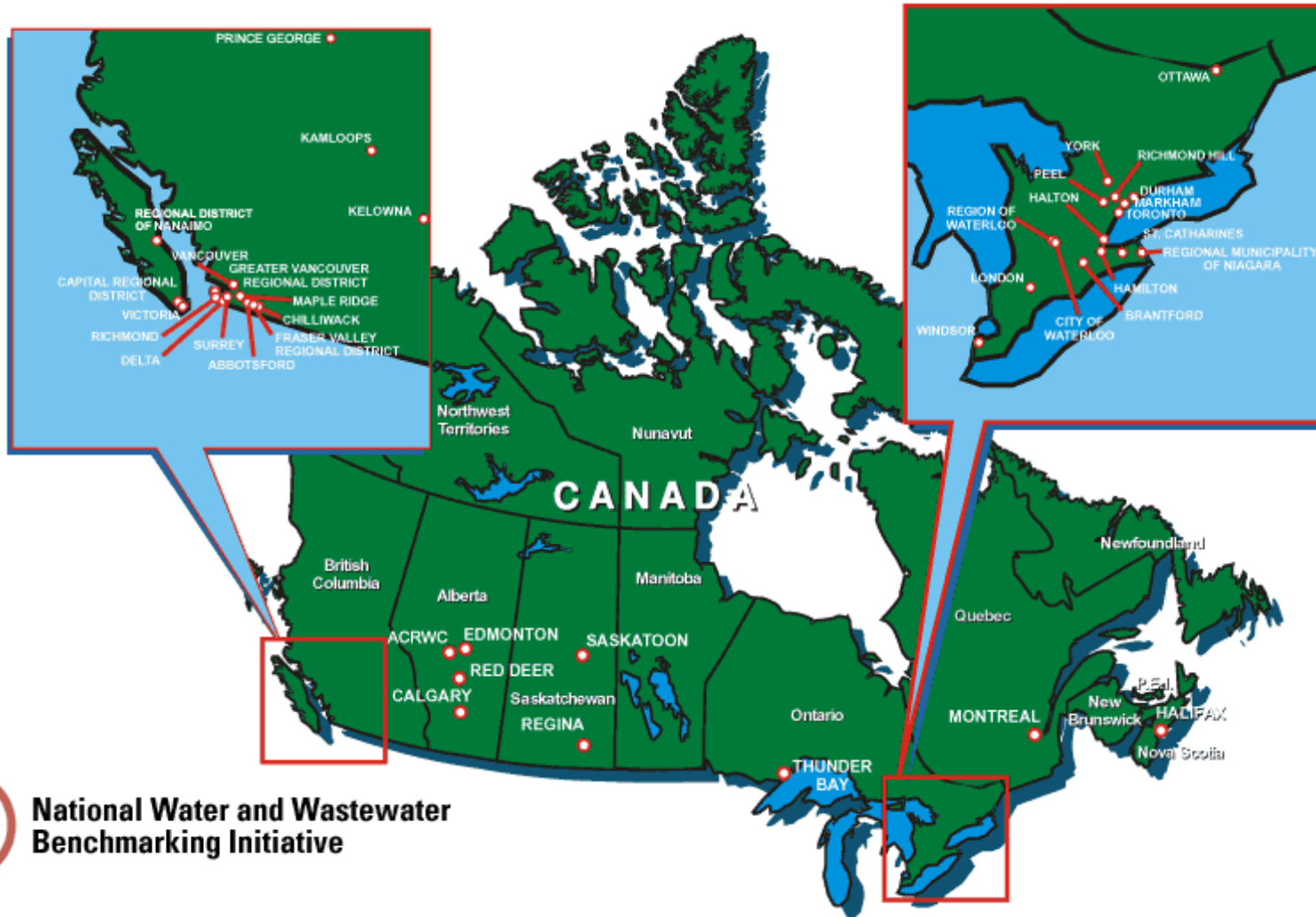


Early Key Success Factors

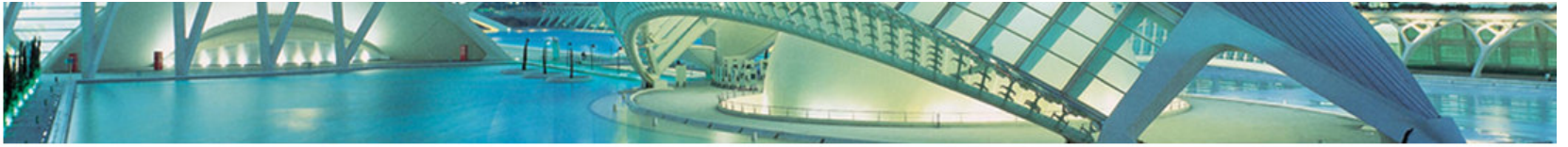
- Very high level of cooperation amongst founding partners;
- Open sharing of information and ideas;
- Willingness to experiment, and pilot new ideas. Change on the fly if necessary;
- Patience: Prepared to make investment of time and energy.



Canadian Benchmarking Initiative: 42 Utilities



National Water and Wastewater Benchmarking Initiative



Our Benchmarking Challenges

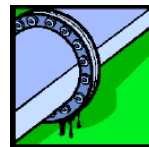
- ❑ “Coast to coast” spans 5 time zones
- ❑ Climate range: Mediterranean to Sub Arctic.
- ❑ Temperate rainforest (1,219 mm annual precipitation) to arid prairie (336 mm).
- ❑ Utility Service populations range from 35,000 to 3 Million people.
- ❑ Mostly urban and suburban regions



Benchmarking Module Structure

WATER

- Water treatment
 - Filtered
 - Unfiltered
- Water distribution
 - Transmission
 - Distribution



WASTEWATER

- Wastewater collection
 - Trunk
 - Collection
- Wastewater treatment
 - Primary
 - Secondary
 - Tertiary



STORMWATER & DRAINAGE

- Stormwater Drainage
- Stormwater Retention & Treatment





Canadian Water/ Wastewater Utility “Goals”

1. Reliable and sustainable infrastructure
2. Provide sufficient capacity
3. Meet service requirements at sustainable cost
4. Protect public health and safety
5. Provide a safe and productive workplace
6. Have satisfied and informed customers
7. Protect the environment and minimize environmental impacts





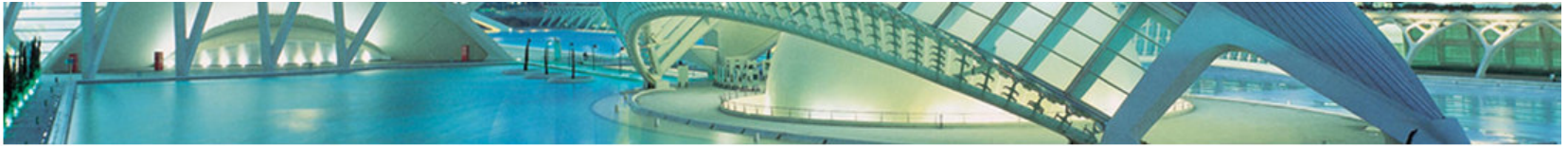
Example PM: Definition Detail

Total Operations & Maintenance Cost / km Length of Distribution system

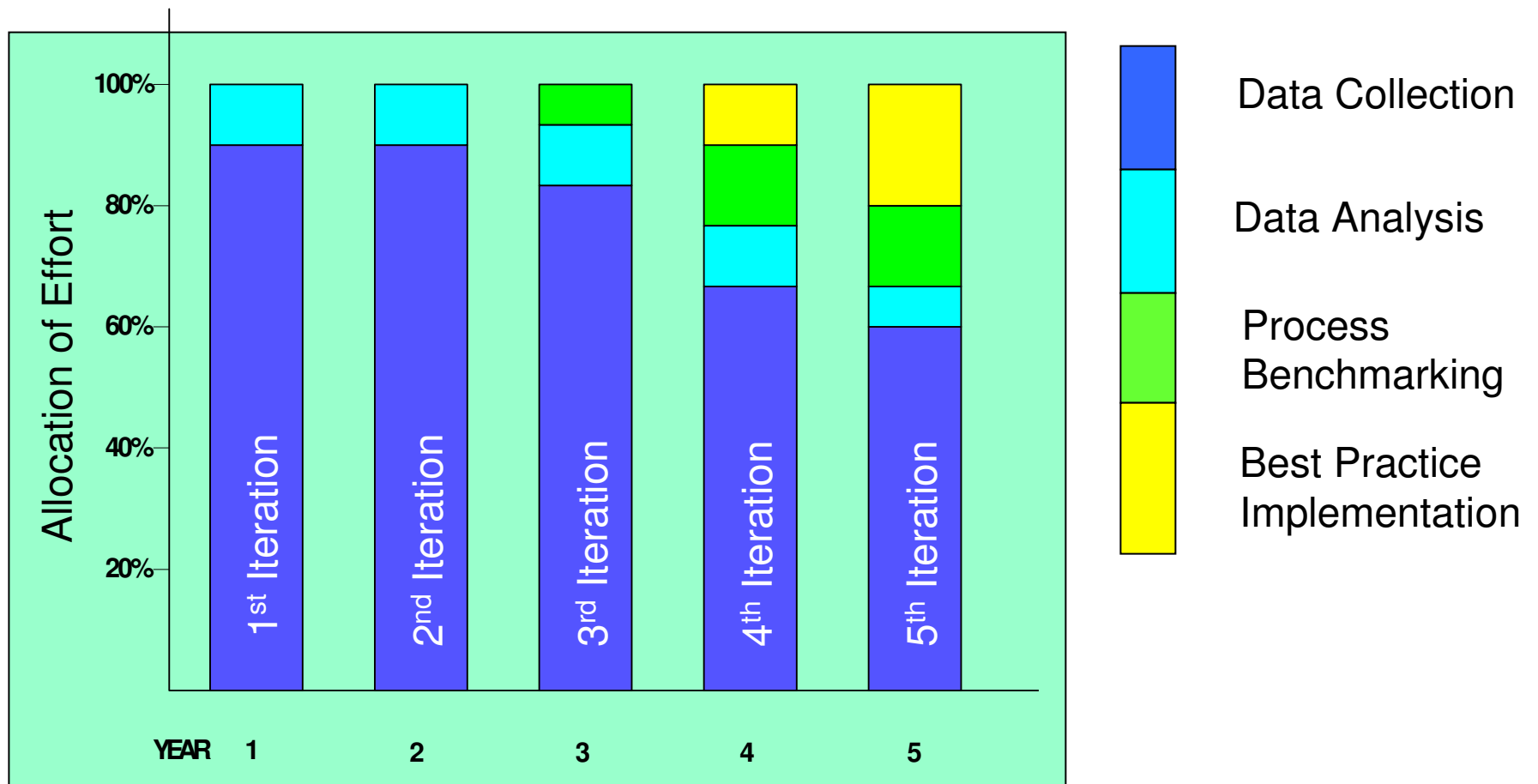
- **Sum of the actual O&M costs** incurred in the operation of the distribution/transmission/ integrated system (excludes capital costs, indirect costs, transfers to reserves and debt/interest charges). Includes O&M costs for both linear (pipes, meters etc) and non-linear (pump stations, reservoirs etc) infrastructure. Revenues are only included where they are recoveries for work done by water distribution staff that is extraneous to the utility (for example, lab tests for other utilities).

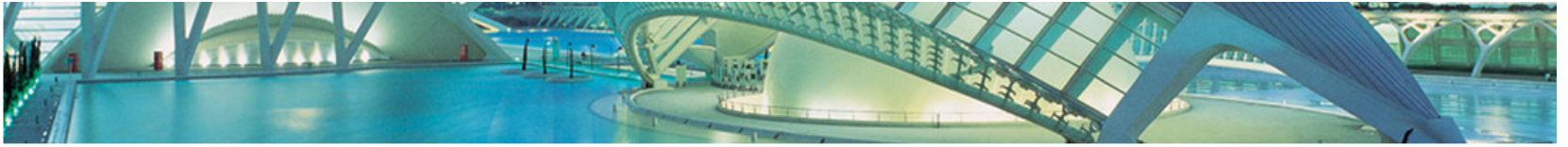
- **Total length of mains** in the distribution system (i.e. excluding length of service connections). For the distribution system length include all connecting pipes between pump stations, rechlorination facilities and storage facilities if these are located within the distribution system. For the transmission system length include all connecting pipes between pump stations, rechlorination facilities and storage facilities when located between the source and the treatment plant or between the treatment plant and the distribution system.

Detailed definitions are vital to ensure valid comparisons



Results and Payback Takes Time





Our Biggest Challenge Came in Year Five!

- ❑ Great success in metric benchmarking.
- ❑ Encountered difficulty in using the data to support performance improvement.
- ❑ Lack of documented saving as a result of benchmarking.
- ❑ At risk of “hitting the wall”.





The Cause of the Problem

- ❑ Lots of data, but it is difficult to process and analysis.
- ❑ Staff turnover and loss of expertise.
- ❑ Various levels of skill within participants to manipulate and report data.
- ❑ Data was accurate, but lacked context in order to be used “every day”.
- ❑ Utility staff are becoming busier and more reactive, in spite of their wish to do the opposite.
 - Canada is in the midst of an unprecedented capital growth program that is responding to:
 - New regulatory standards
 - Urban population growth
 - The need to increase renewal capital spending



Strategy: Leverage Collective Efforts

- Increase the level of cross communication at all project points, especially peer to peer.
- Share implementation experiences gained by all participants.
- Benchmarking Help Desk: Provides a unique service to ensure that the data gets prepared on request very quickly.
- Collaborate on “Process Benchmarking Task Forces”
- Importance of annual workshop to make vital personal connections.



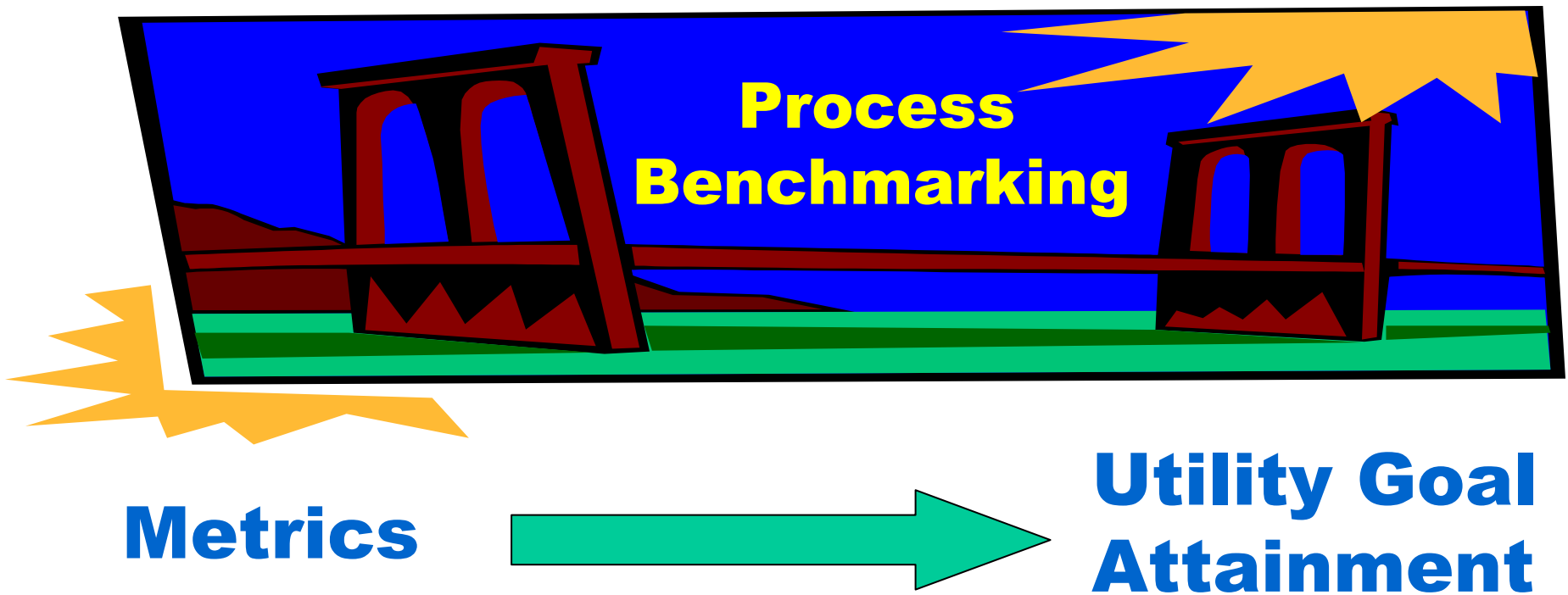


Annual Workshop: Critical Peer to Peer Network





Bridging the Gap





Process Benchmarking Task Forces

1. Identify process related issues that common to many.
2. Refine process specific performance measures.
3. Identify related “Best Practice “ sources (eg: AWWA, IWA, WEF, etc.).
4. Set a specific “Action Plan” according to adopted Best Practice.
5. Network with experts and peers.
6. Pilot the implementation in a few utilities.
7. Refine for the Best Practice for general use.



Current Process Benchmarking Examples

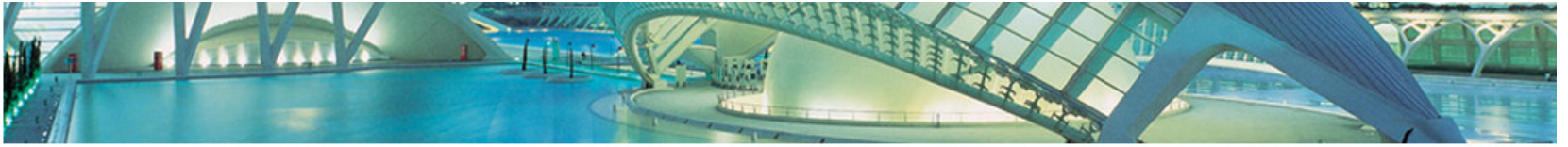
- Water Loss Management;
- Linear Network Maintenance Planning (Collection, Distribution, Drainage);
- Complex Facilities Maintenance Planning
- Asset Management
- Wastewater Treatment Plant Optimization
- Energy Management.
- Inflow and Infiltration
- Succession Planning
- Attendance Management



The Way Forward

- ❑ Benchmarking is becoming a part of standard practices (improved data management processes);
- ❑ Set realistic targets, with specific work plans. We now know that change happens slowly.
- ❑ Need to document tangible savings through improvements (as opposed to hearsay);
- ❑ Communication and networking is more important than ever.
- ❑ Recognition that benchmarking will stop once it becomes stale; the project must always be invigorated with new ideas.





Questions?

This presentation is available for downloading at:

www.nationalbenchmarking.ca

**Public Report, Performance Measures Index, and
detailed glossaries are available at:**

<http://www.nationalbenchmarking.ca/public/about/methodology.htm>