

Meeting of the Minds

Infrastructures Matter

Prepared by Rick Lloyd, P.Eng.
RCL Consulting Ltd

Water and Wastewater Sustainability



Where does water come from?

- Lakes ?
- Rivers ?
- Wells ?
- Rainfall ?

Municipal Supply

- Reservoirs – lakes
- Reservoirs – tanks
- Pumps
- Cisterns / Desalination

How Do We Get Water It To Us?

- Piped to users
- Trucked to site storage
- On- site collection and storage

So What ?

- These systems are VITAL to sustaining our standard of living
- Water supply is THE most important utility provided by a community
- Without water, every community fails!

So What is Sustainable Water?

- Source security
- Infrastructure management
- Use demand management

Water Source Security



Source Preservation

- Need to prevent loss through
 - Contamination
 - Development
 - Invasion by nasty chemicals
 - Over use
 - Poor maintenance

Contamination

- One of the most dangerous possibilities
- Comes from almost anywhere
- Often outlasts the water system or is expensive to treat

Manage the Supply

- Protect the source through knowledge and education
- Own the entire water shed – above or below ground (not usually practical)
- Govern land use

But most of all

MANAGE THE RAINWATER

(You knew I'd get here)

Water Supply Management



So What is REALLY Important

- Preserve the water supply
- Keep the collection/distribution system in good condition
- Institute demand management
- EDUCATION

So How Does This Work?

- System planning
- Adequate funding
- Systematic maintenance
- Educated Management

What about Wastewater?

- We create it
- We collect it
- We treat it
- Then we dispose of it

So Where is the Sustainability?

- Wastewater just never stops
- All we can do is reduce the amount of wastewater
- And employ innovative technologies for treatment / disposal

But, you already have a system

- Sadly, I don't think our current systems are sustainable.
- Pipes are installed then forgotten until there is a problem.
- The pipes may be cleaned but other than that, what can you do?

Look at the BIG picture

- We need to reduce the overall generation of wastewater
- That can be accomplished by changing our water demand and improving our technologies
- Then there is reuse

Can We Really Reuse ?

- Right now, the governance is difficult
- We do not have enough confidence in the health issues related to reuse.
- BUT, yes we can design for reuse

We need an holistic approach

- We must maintain our current infrastructure
- We need to look at the future land use and
- We need to plan for newer methodologies

Know the infrastructure



Prepare Mapping

- With GIS mapping, Managers can keep track of the systems
- As-built drawings are essential