

General Outline

I Introduction

A. Scope of report

i. Definition of infrastructure – **Pete Mulvaney**

a. Treatment & Source Infrastructure

1. Man-made impoundments (i.e. dams¹, or other ground level reservoir)
2. Intake (or well)
3. Treatment Facility

b. Supply: Transmission & Distribution

1. Pipes (series of pipes from larger to smaller)
2. Storage (ground level tanks and elevated tanks)
3. Pumping systems
4. Meter (this represents the end of the line for a public utility)

c. Return & Reclamation

1. Sewer pipe (series of smaller to larger)
2. Pump stations
3. Reclamation plants
 - i) Outfall or Septic tank (end of the infrastructure line)

ii. Definition of sustainability (i.e., what are the industry standards for sustainability) – **Ed Gladfelter**

B. Vision of sustainable water infrastructure

i. Measure of sustainability (quality of life, water quality, property values, etc.) - ?

ii. Benefits and impacts of water infrastructure related to land use – **Lynita Docken, Jon Allen, Becky Lameka** (will talk to Victoria Pebbles, co-chair of the land use workgroup)

- a. POWTS (onsite systems) advanced systems and their impact
- b. Reuse systems impact
- c. Waukesha example of infrastructure limitations by agreements

II. Current status of water infrastructure

i. Supply (how much, how old, technology, etc.) – **Ed Gladfelter**

- a. Milwaukee crypto outbreak and infrastructure weaknesses (Lynita)

ii. Storage – **Pete Mulvaney**

- a. Reinvestment needs are great
- b. current capacity is limited, not all areas are equally provided
- c. inequalities between large municipalities vs. smaller rural
- d. Safety – natural and human threats

iii. Discharge – **Lynita Docken** and **Jon Allen** (Walkerton example)

iv. Self- supply (well systems, septic tanks, etc.) - ?

- a. How does infrastructure apply to onsite, cluster or decentralized systems? (Lynita)

v. conservation practices – **Becky Lameka**

- a. Reuse (Lynita)
- b. Based on 136 responses* (representing 7.5% in the Great Lakes region) to the GLC survey, the following the frequency of water conservation activities (Lameka 2004).

¹ I was able to confirm that Michigan has river impoundments specifically for potable water. I am waiting a call back with a complete list from the Michigan DEQ.

- Meter Calibration and Replacement – 63.2%
- Leak Detection – 60.2%
- Consumer Education – 48.1%
- Water Restrictions – 44.4%
- Water Audits – 21.8%
- Increase Percent of Metered Connections – 20.3%
- Industrial/Commercial/Institutional Advice – 9.0%
- Install/Subsidize POU Low-Flow Fixtures – 7.5%
- Inverted Pricing Blocks – 3.0%

*Responses came from of a randomly selected pool of 525 facilities. This selected pool came from a population of 1828 available facilities provided by state/provincial water use data collection programs. Wisconsin and Indiana did not participate in the survey.

III. Trends and sustainable development

i. Supply (how much, how old, technology, etc.) – **Ed Gladfelter**

ii. Storage – **Pete Mulvaney**

- a. utilization of artificial recharge
- b. separation of potable water storage from other water uses
- c. decreased use of river impoundment

iii. Discharge – **Lynita Docken**

- a. Multi-purpose piping systems
- b. Reuse/stormwater use

iv. Self- supply (well systems, ceptic tanks, etc.) - ?

v. conservation practices – **Becky Lameka**

- a. Change in perception of adequate or abundant water supplies from all sources of water.
- b. Conducting forecasts of future water demand
- c. Coupling education with other incentives to the end user
The true value of water (internalizing all costs)
- d. Water system audits and leak detection and repair programs

IV. Recommends – to be developed

Ideas may be noted by any workgroup member including Pete Mulvaney.

References

Lameka, R.A. 2004. Briefing Paper: Summary of Current Water Conservation Practices in the Public Water Supply Sector of the Great Lakes-St. Lawrence Region. Great Lakes Commission.
<http://www.glc.org/wateruse/conservation/pdf/FinalDraftConBrief.pdf>