Region of Waterloo

Long Term Water Supply Strategy

Jorge Cavalcante
Manager, Engineering & Planning – Water Services

Water Symposium to Conserve and Protect
June 8, 2013
Presentation Outline

- Background
- 2007 Water Supply Strategy
- 2013 Water Supply Strategy
The Region's Water Supply

- Population
  - 2011: 553,000 people
  - 2031: 729,000 people

- Water System
  - Integrated Urban System
  - 16 Rural Systems
  - 25% Groundwater
  - 75% Surface Water
2007 Water Supply Master Plan

- Confirmed the 2000 Strategy, including:
  - Construct 45 MLD Aquifer Storage and Recovery (ASR) facility in two phases
  - Develop up to 22.5 MLD new groundwater resources by 2018
  - Plan/construct Great Lakes Pipeline by 2035 (Lake Erie)
  - Continue with water efficiency efforts
2007 Long Term Strategy

Recommended strategy with maximum week demand effective water efficiency program & water restrictions

---

[Graph showing water demand projections with and without water efficiency measures.]
The Big Shift

- Declining Water Demands in the Region (and in North America)
- Which components of the 2007 Master Plan are still valid?
- What do we do next?
The Shift in Water Demands
Long Term Trend

Total Tri-City Water Demand - 1994 to 2013
7 Day Moving Average
The Shift in Water Demands
Average Day vs Max Day

Daily Water Demands

Year


Daily Demand (m³/day)

130,000 150,000 170,000 190,000 210,000 230,000 250,000

Maximum Day Demand
Average Day Demand
The Shift in Water Demands
Why The Drop in Demands?

- Water Efficiency Master Plan Implementation
- Outdoor Water Use By-Law (Max Day)
- Large Users – Recycling & Re-Use
- Reduction of Intensive Water Use Industries
- More Efficient Appliances and Fixtures
- More Water-Conscious Public
2007 Long Term Strategy

Recommended strategy with maximum week demand
effective water efficiency program & water restrictions

Water Demand (ML/d)

- 265 ML/d (58 migd)
  - Phase 1 ASR (4 migd)
- 282 ML/d (62 migd)
  - Phase 2 ASR (5 migd)
- 305 ML/d (67 migd)
- 327 ML/d (72 migd)
- 432 ML/d (95 migd)

GL Pipeline

- 2001 2006 2011 2016 2021 2026 2031 2036 2041

Demand With Water Efficiency
Demand Without Water Efficiency
The Shift in Water Demands
2007 WSMP vs 2013 WSMP Estimates
The Shift in Water Demands
2013 WSMP – Future Demand Estimates
2013 Water Supply Master Plan

- Detailed review of all existing water supply sources:
  - Optimize water supply in the local municipalities and pressure zones
  - Tier 3 Water Study – optimize water budget
  - Re-evaluate timing Great Lakes Pipeline
Preliminary Conclusions

• Shift from growing to sustaining
  • Optimize rehabilitation and replacement of Groundwater Sources
  • Continue with water efficiency efforts
• Optimize existing water distribution system
• Close tracking of water demand trends
• Great Lakes Pipeline can be deferred
Water Supply
2013 Long Term Strategy

Expected Completion

• Late 2013, early 2014
  • Depends on completion of the Tier 3 Study
Thank You