2013 Water Stewardship
District of North Vancouver
Council Workshop

Lorn Carter, P.Eng.
Manager – Utilities
January 14, 2013

District of North Vancouver
2013 Water Stewardship

1. What is Water Stewardship
2. 2008 Municipal Water Use
3. Water Use VS Growth
4. Water Stewardship Initiatives
5. Lower Mainland Municipal UWM Status
6. DNV Water Metering Infrastructure
7. Cost Split for DNV Water/Sewage Services (2012)
8. Potential Savings due to UWM
9. UMW Current/Future Financials
10. Pros and Cons with UWM
11. Water Saving Program Comparators
12. Summary
13. Planned approach

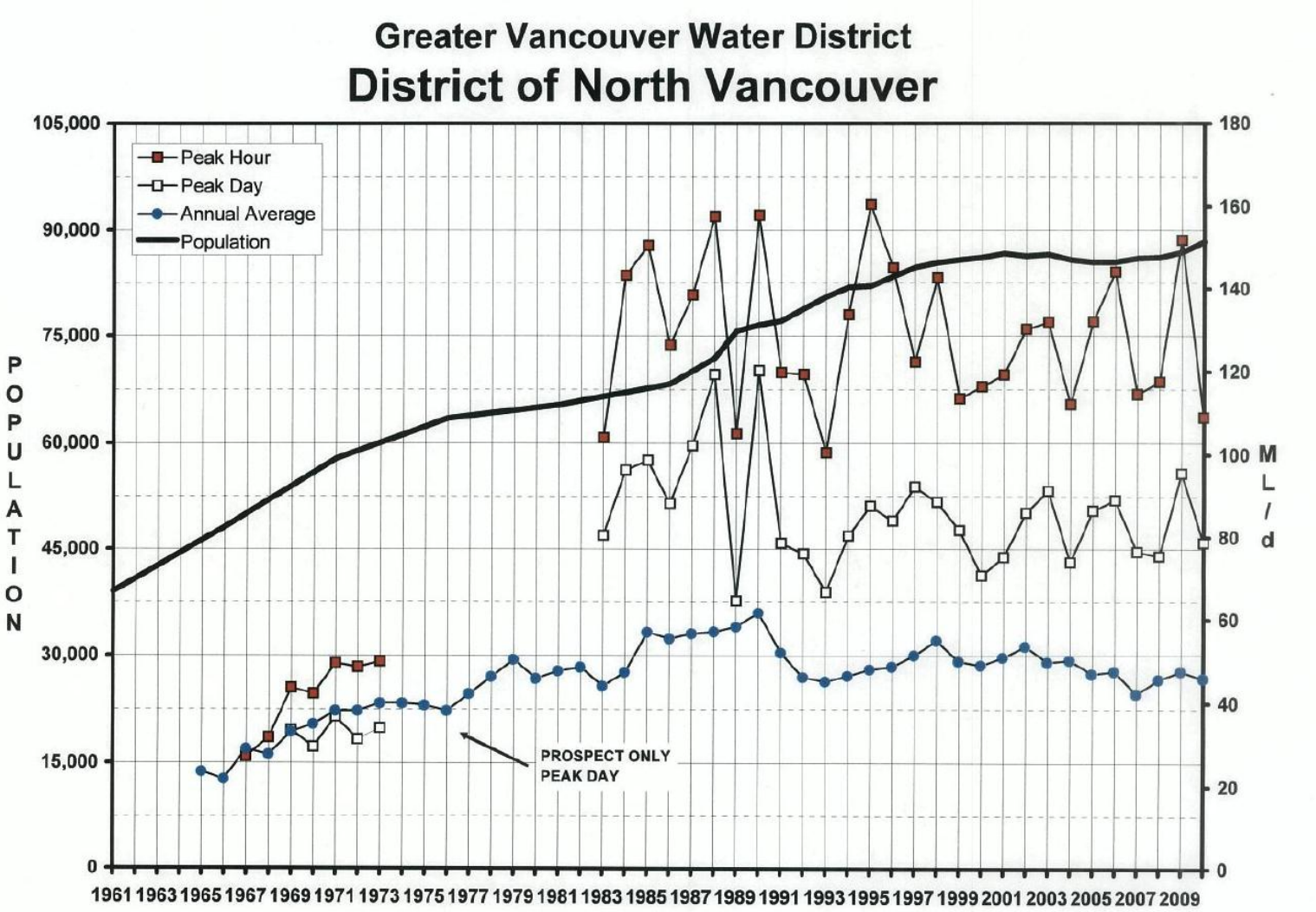
1. What is Water Stewardship?

- Water Stewardship is a strategy for the DNV to be responsible for drinking water management.
- Quality - Metro and DNV have responsibilities.
- Supply capacity.
  - Source waters
  - Conveyance
- Equity.

2. 2008 Municipal Water Use

Municipality	Total (LPCD)	Estimated Residential (LPCD)
City of North Vancouver	425	185
Coquiltam	402	218
New Westminster	338	226
City of Langley	429	262
Township of Langley	451	276
City of Pitt Meadows	538	285
Richmond	536	288
Port Coquitlam	459	290
District of North Vancouver	531	292
Burnaby	499	301
Vancouver	518	308
Surrey	435	313
District of Maple Ridge	474	341
University Endowment Lands	1086	352
Corporation of Delta	733	372
District of West Vancouver	584	440
Port Moody	456	NA

3. Water Use VS Growth



4. Water Stewardship Initiatives

Current

- Toilet Rebate (2004)*
- Noise loggers (2012) *
- Water audits and leak detection* (1998)
- Golf course water use plans (2004)
- Parks automated/monitored sprinkling systems (2006)
- Indoor/Outdoor water saver kits* (2008)
- Automatic sprinkler system evaluations* (2011)
- Educational programs
  - Lawn Sprinkling Regulations (1993)
  - School Play (“The A to Z of H2O”) and colouring book (2000)
  - Water Conservation Officer (education/enforcement) (2006)
- ICI/MF Water meters

* Have potential to save water at lower cost than metering.

4. Cont'd. Water Stewardship Initiatives

Planned Future

- Subzone metering - 2013
- Pressure zone control – 2013
- Select SF residential metering – 2013
- Ultimate per capita consumption roadmap - 2013

Potential

- Purple pipes/water reuse
- Staged Metering – Better equity likely at lower costs
  - Meter all ICI, All Multi Family
  - Meter pools, automatic sprinkling systems, s. suites
  - Universal metering (last stage)

5. Lower Mainland Municipal UWM Status

- 24 municipal bodies in GVWD area.
- 3 UWM Municipalities - WV,UEL, C. of Langley.
- 3 volunteer UWM - Surrey, Richmond, Delta
- 2 new construction – City N. Vancouver, Vancouver
- In past 12 years Metro completed 3 business cases – all returned negative cost benefit.

6. DNV Water Metering Infrastructure

- Industrial/Institutional/most Commercial metered.
- Most multi-family residential metered.
- 98 Monthly meters (large demand).
- 510 Quarterly meters (lower demand).
- 75 Annual (monitored only).
- 60 days of Water meter reading crew.
- Approx. 36% of annual (2011) flow metered.
- Metro monitors DNV usage with 21 meters.

7. Cost Split for DNV Water/Sewage Services (2012)

Total Utilities Water Budget	**$ 20.7M**
• Purchasing water from Metro	$ 10.7M
• Total Homeowner Water Cost	$ 550
• Homeowner Water purchase cost*	$ 181
Total Utilities Sewerage Budget	**$ 16.6M**
• Metro's Sewage handling cost	$ 8.7M
• Total Homeowner Sewage cost	$ 461
• Homeowner Sewage handling cost*	$ 142

* Potentially impacted through metering

8. Potential Savings due to UWM

Water

• 2011 purchased water m3	17.2 M
• Residential (non meter) m3	11.0 M
• Value of saved water* (10% reduction)	$915,000

Sewer

• Chargeable DNV sewage volume m3	15 M
• Value of saved sewage* (5% reduction)	$320,000

Total expected maximum savings	**$1,235,000**

* $0.5980/m3 (2012 water rate) & $0.58/m3 (2012 sewer rate)

9. UWM Current/Future Financials

Cost to deliver savings

2012 Financial- $95/y/SFR x 20,000 connections=$1.9M

Savings

2012 Potential 2012 savings up to $1.235M

2016 Potential 2016 savings up to $1.70M

Net difference

2012 : $665,000 loss - best case

2016 : $200,000 loss - best case

10. Pros and Cons with UWM

Cons

- Average resident will pay more than now.
- Requires change of habit for residents for success.
- Currently a cost/benefit loser.
- Permanent expensive infrastructure and system.
- Causes CO2 footprint to implement.

Pros

- Primary tool to address equity.
- Addresses private side leakage.
- Excellent system information.

11. Water Saving Program Comparators

Noise Loggers

- Save 50% system leakage or $0.5M (’12)– $0.7M (’16)
- Other benefits (Unauthorized, sprinkler, main breaks)

Toilets

- 50,000 high volume (15 avg lpf) toilets remain
- $1.3M/y (2012) savings rising to $1.8M/y (2016)
- Assume toilet replacement cost $250
- Other benefits (guaranteed, permanent)
- Proposed mass replacement pilot for 2014

12. Summary

- UWM provides equity for billing and excellent water use data.
- UWM can save resident-side water leakage.
- UWM is expensive and a cost benefit loser (average resident will pay more than now.)
- There are environmental impacts to implement.
- Existing water conservation programs cost effectively reduce water demand.
- Each Toilet replacement can permanently reduce consumption 22 m3 (60 lpcpd), without habit change.
- Noise loggers are cost beneficial.

13. Planned Approach

Key Steps

- Noise Logger pilot program in 2013.
- SFR meter pilot to gain key information in 2013.
- Expand toilet replacement program in 2014.
- Return to review decision on UWM in 2015.

THANK YOU!