Surrey Stormwater Management: A historical perspective

Surrey Water Balance Forum
March 12, 2009
Where did we come from
Where are we going

- Historical perspective
- A few typical projects (pilot projects, neighbourhoods, watersheds)
- Bumps along the road
- Successes
- Moving forward (guidelines, policies)
- Broader regional context
- Closing Comments
Historical Perspective

- Water courses as a resource
- First nations/colonization/logging/agriculture
- Urbanization
- Drainage servicing
- Surrey (1967) Waterways protection by-law/Natural Drainage Policy (natural water courses are integral to our system)
- Applied the science as it evolved: Pipes, Ponds, Integration
- Increased Stewardship, new guidelines/pilot projects, New By-law
Drainage Servicing
Drainage Servicing
Response to land use

- Protect life and property
- Avoid nuisance flooding
- Design criteria
- Design storms
  (2y, 5y, 100y, 15 min, 1h, 2h, 24h)
- Statistically based level of service
- Peak flow conditions
- Pipes, ditches, ponds
- Historical storms for testing operational issues
Drainage Servicing Framework

- City wide design criteria
- Master Drainage Plans
- Functional Plans
- Integrated into Neighbourhood Concept Plans

- We developed good long range servicing plans in the context of our natural drainage policy
Stewardship
Stewardship

• Protect our watercourses and their natural environment.
• Social benefits interweaved with environmental values.
• Could be conflicting with drainage servicing philosophy but consistent with natural drainage policy.
• Must understand natural processes.
Sustainability Smart Development

- Mid 1990’s
- Multi-leveled sustainability objectives

- Natural drainage
- With respect to drainage hoped one size could fit all (capture 25 mm)

- Given Surrey’s varied geology and streams a different approach was necessary
Watershed Based Performance Targets (ISMPs under LWMP)
Watershed Based Approach

• Need to understand the watershed
  - streams
  - opportunities/constraints
  - vision

• Need to go beyond peak flow conveyance and address full hydrologic regime.

• Need to communicate vision (objectives/targets).

• Must have a process to implement plan
Some projects that helped us get here

- Our Master Drainage Plans
- Our Lowland Flood Control Strategy
- East Clayton
- Highway 99 corridor plan
- Campbell Heights Industrial Land Use Plan
- South Newton NCP
- … and many more stream specific projects

- Shift from arbitrary performance targets to watershed based performance targets (Fergus Creek and other ISMPs)
The Surrey Sustainability Charter
The broader context

- Endorsed by Council September 2008
- Winner of the Fraser Basin Council Overall Sustainability Award (February 19, 2009)
Council has defined Sustainability as:

“Meeting the needs of the present generation in terms of socio-cultural systems, the economy and the environment while promoting a high quality of life but without compromising the ability of future generations to meet their own needs.”