

City of Surrey – “From Pilot Projects to a Watershed Objectives Approach”

When the City of Surrey hosted the second event in the 2006 Showcasing Innovation Series, historical context was provided by Paul Ham, Surrey’s General Manager, Engineering. Paul Ham was also Chair of the Green Infrastructure Partnership from 2005-2008.

“The East Clayton Neighbourhood Concept Plan provided the first large-scale opportunity to ‘test’ a new approach advocated by Patrick Condon and others. This new approach, which is sometimes characterized as ‘the future is the past’, embodied a design with nature way-of-thinking about drainage,” stated Paul Ham.



“Looking back, it is sometimes hard to believe that almost a decade has passed since the City initiated the East Clayton plan. With the passage of time, we tend to take the early innovation for granted. From my perspective, one aspect which really stands out about the East Clayton plan is the integration of sustainability objectives.”

In providing context for City of Surrey actions over time, Ham highlighted three provincial initiatives that had an early influence on City of Surrey thinking. These were the UniverCity Sustainable Community on Burnaby Mountain, the Provincial Guidebook, and the experience of the City of Chilliwack when it developed its *Manual for Surface Water Management* as a feedback loop for Guidebook development.

“The early results from East Clayton combined with the on-the-ground experience of Chilliwack gave Surrey the confidence to implement new green infrastructure objectives in two plans – the Campbell Heights Economic Development Plan (1999-2000), and the Highway 99 Corridor Land Use Plan (2002). In fact, Council made the use of green infrastructure practices a condition of both plans.”

“Investigation of opportunities for the application of green infrastructure objectives is now expected in all the City’s land use plans. Furthermore, ISMPs will provide the basis for implementing green infrastructure objectives to support a design with nature approach on a watershed scale”, concluded Paul Ham.

Shared Responsibility: “Once we know what we want our watersheds and neighbourhoods to look like, the next step is to decide *what the tools are*



that will get us there,” states Vincent Lalonde. In 2008, he succeeded Paul Ham as General Manager. “All of us need to understand and care about the goal if we are to

create the future that we all want. So we designed the *2009 Water Balance Model Forum* to start a dialogue between policy-makers and project implementers about shared responsibility.”

Watershed Objectives: “On the matter of implementing on-site rainfall capture, there is a fundamental difference between Surrey and other Metro Vancouver municipalities,”

continues Remi Dubé, Acting Development Services Manager with the City. “Surrey has moved beyond pilot projects; we are moving to a broader watershed objectives approach to capturing rain where it falls to better protect our streams.”



Water Balance Model Building Blocks: The Stream Health Methodology (*refer to page 44*) now embedded in the WBM evolved through three successive Surrey case studies: East Clayton, South Newton and Fergus Creek.

“East Clayton was an early application of performance targets at a neighbourhood scale. Also, and most importantly the analysis combined



mass balance and flow duration to test the achievability of performance targets,” states Jim Dumont.

“But it was the South Newton case study where the methodology really came together in terms of how to integrate the mass balance and stream erosion analyses. Until then, they were separate analyses.”

“The experience gained in East Clayton and South Newton was then applied in the Fergus Creek ISMP to develop the Stream Health Methodology. This methodology is a function of flow duration, and hence stream erosion.”

Beyond the Guidebook 2010: Implementing a New Culture for Urban Watershed Protection and Restoration In British Columbia

Community Outreach in Surrey: The City has been proactive in going beyond the engineering boundaries to foster a change for the better in the community's 'land and water ethic'. The City's efforts to engage the broader community encompass homeowner outreach initiatives and educational programs in schools.

Online and Interactive Educational Resource: 'Sustainability in My Backyard' is an educational resource developed by the City. "What happens when it rains?" is a simulation of the path that water takes in different situations. Students can explore the impacts to nearby creeks and streams when water hits a built environment (refer to Figure 20 on next page)."

"The simulator offers students, teachers and Surrey residents an interactive way to discover the unique design elements of the East Clayton Sustainable Neighbourhood development," states David Hislop, City of Surrey Project Engineer.

"Also, they can explore the impact of rain and drainage on the nearby North Creek by comparing different rain scenarios and how the sustainable design features work."



"Students compare the impacts based on traditional neighbourhood development techniques, to the impacts when the sustainable design features are employed."



Ongoing Celebration of East Clayton Success: "We are not just 'greening' urban drainage, we are facilitating a stewardship ethic through ongoing celebration of East Clayton innovation", states Carrie Baron, Drainage & Environment Manager.

"To sustain the early momentum, each successive homeowner needs to understand the WHY behind the on-site drainage retention philosophy. Each year, high school students deliver a brochure door-to-door. We also tell our story at Community Day events and at mall displays."



"It is all about continual education. Slowly we are changing the mind-set. It makes a difference that the educational approach is endorsed by Council through Sustainable Surrey,"

Transformation of Robson Park: "We are really excited about the impact that Robson Creek daylighting has had in mobilizing the community in a 70-year old neighbourhood in North Surrey (refer to Figure 20 on next page)."

"Park transformation started with Engineering and Parks collaborating on a joint project. We then involved the neighbourhood, streamkeepers and local school to create a shared vision. The community now has a great new park with educational water features."

"The locals say they have never seen so many people use the revitalized Robson Park. This success story shows that things don't have to stay the same; over time we can bring value back into a neighbourhood."

Connecting with High School Students: "We are working with the Surrey School District to help teachers incorporate local environmental examples into course curricula. Everyone else seems to focus on the grade fives; in contrast, we are targeting high school students. We make the material relevant to their interests."

"This is a long-term commitment. We believe we are successful even if we only reach 2 students out of 30. It will catch on over time," concludes Carrie Baron.