

# Backgrounder

## 2010 FCM AWARDS OF EXCELLENCE

**Saturday, May 29, 2010**

This year, the FCM Awards of Excellence recognize individuals and initiatives in four areas: the FCM Sustainable Community Awards, the FCM Individual and Municipal Awards for Sustainability; the FCM International Awards; and the Watershed Awards.

### ***FCM Sustainable Community Awards***

Since 2000, best practices in sustainable community development have been celebrated each year with the FCM Sustainable Community Awards.

The Awards are open to all municipal governments and their private-sector partners. To be eligible for an award in one of eight categories, projects must have been completed within two years of the date of application, or be in the final stages of implementation, and must have achieved measurable results. Submissions are judged by an expert panel of judges selected by FCM.

The eight categories are: Brownfields, Buildings, Energy, Planning, Residential Development, Transportation, Waste, Water.

FCM's Green Municipal Fund is the primary sponsor of the Sustainable Community Awards. The Government of Canada endowed the Federation of Canadian Municipalities (FCM) with \$550 million to establish the Green Municipal Fund™ (GMF). The Fund is a long-term, sustainable source of grants and below-market loans for municipal governments and their partners. The Fund provides below-market loans and grants, as well as education and training services to support municipal initiatives that improve air, water and soil quality, and protect the climate.

CH2M HILL Canada is also a key sponsor. The Affordability and Choice Today (ACT) program sponsors the residential development category.

### **The categories**

#### ***Brownfields***

Projects or programs that focus on the remediation and redevelopment of brownfield sites.\* Eligible initiatives include municipal-led programs that have succeeded in creating incentives for the remediation and redevelopment of brownfield sites, and brownfield projects that demonstrate leadership in soil remediation (e.g. presenting viable alternatives to “dig and dump”) and redevelopment based on sustainability practices (e.g. LEED® or equivalent, heritage preservation, community economic development, mixed land-use/zoning, etc.).

*\*A brownfield site is an abandoned, vacant, derelict or underutilized commercial, industrial or institutional property where past actions have resulted in actual or perceived contamination or threat to public health and safety and where there is an active potential for redevelopment.*

## **City of Toronto, Ontario**

### **Adaptive Reuse of the Industrial Heritage Wychwood Car Barns**

An excellent example of early 20<sup>th</sup> century industrial architecture, the Wychwood Car Barns site in midtown Toronto was used for many years by the Toronto Transit Commission (TTC) to repair and maintain its streetcar fleet. The TTC vacated the premises in the 1980s and the property (five attached brick buildings built between 1913 and 1921 on a four-acre site) was left derelict for many years. Little progress was made in revitalizing the contaminated site until environmental and cultural objectives were established through an extensive community consultation process and a feasibility study. Rather than selling the property to a private developer, the city envisioned a balance of cultural, environmental and educational uses for the Barns. With support from FCM's Green Municipal Fund™, the resulting project made it the first designated heritage site in Canada to seek LEED® Gold certification for redevelopment, and transformed it into a multifaceted community centre and public park where arts and culture, environmental leadership, heritage preservation, urban agriculture and affordable housing come together to foster a strong sense of community. By respecting and preserving the historic buildings and adapting them for new uses, the project also brought city staff together in a collaborative effort that inspired creativity and commitment to work cooperatively across many departments and to partner with the community in new ways.

#### *Key results:*

- 7,400 m<sup>3</sup> of contaminated soil removed during site remediation
- 71% of construction waste diverted from landfill
- First designated heritage site in Canada with LEED® Gold certification for redevelopment

### **Buildings (two winners)**

Projects or programs that focus on improving the environmental performance of new or existing buildings. These integrated initiatives address sustainable building practices in two or more areas (energy, water, waste, transportation) in relatively equal proportions. Eligible initiatives include LEED buildings or equivalents.

## **City of Campbell River, British Columbia**

### **Green Roof Retrofit for City Hall**

In May 2009, the City of Campbell River became the first municipality in B.C. to install a green roof on an existing civic building. The roof is designed to be self-sustaining, requires little maintenance, and is expected to double the lifespan of the roof by protecting it from UV radiation, temperature variations and physical damage. The rooftop vegetation consists of native, drought tolerant species that require minimal watering and maintenance, and that were chosen for their proven ability to reduce energy costs and GHG emissions. As part of its Green City Strategy and Climate Action Charter commitments to become carbon neutral by 2012, the City of Campbell River is pursuing energy-efficient building retrofits, conservation initiatives and Green City policies. The green roof has enhanced the work environment for city staff by providing a communal, environmentally friendly amenity in the workplace that encourages outdoor gathering. The city's sustainability department and facilities and supply management team are using the project as a catalyst for additional building retrofits. The green roof retrofit has provided Campbell River with an opportunity to demonstrate leadership in environmental initiatives, and has generated community interest in green building principles and the Green City Strategy.

#### *Key results:*

- Vegetation filters 500 kg of fine airborne particulate matter annually
- Minimal operating costs of \$500 per year
- Total life-cycle cost savings are estimated at \$196,000

## **Town of Newmarket, Ontario**

### **Newmarket Eco-Homes: Canada's First Occupied Neighbourhood of LEED® Platinum Homes**

Beyond LEED® Certified and far beyond R2000 and Energy Star, there is LEED Platinum — the highest rating for environmentally sound housing in the world. This is the rating the Town of Newmarket achieved in the 34-home subdivision it built with Rodeo Fine Homes on a former rural property in the town's south end. Even before they moved in, the new homeowners were going green, reducing construction waste onsite by 65 per cent. The homes were built to use at least 25 per cent less water, send 60 per cent less discharge into storm and sanitary sewers, produce 60 per cent less greenhouse gas, and use 60 per cent less energy compared to conventional homes. In undertaking the LEED Platinum project, the town built on previous green initiatives such as the Smart Commute Program, anti-idling and pesticide bylaws, and a green bin program.

#### *Key results:*

- 34 LEED® Platinum homes surpass provincial standards for energy efficiency
- 65% of construction waste diverted from landfill
- Project led to development of new municipal building inspection manual

### **Energy (two winners)**

Projects or programs that focus on producing, conserving or distributing energy. Eligible initiatives include the production of energy from renewable sources (e.g. solar, wind, geothermal, small-scale hydro), energy-efficiency retrofits, energy conservation programs, and district energy systems.

## **City of Toronto, Ontario**

### **Regent Park Revitalization (Phase 1)**

With a population of 7,500 and an average household income of \$15,500, Regent Park is Canada's oldest public housing community. With support from FCM's Green Municipal Fund™, Toronto Community Housing is redeveloping the community to create a mixed-income, mixed-tenure, mixed-use neighbourhood of about 12,500 residents that meets LEED Gold® certification requirements. Revitalization will occur in six phases over 15 years. In addition to demolishing and replacing existing social housing and introducing market condominiums, the redevelopment will include new community facilities and retail uses, apply sustainable design practices and build to high standards of energy efficiency. In phase 1, over 900 residential units and over 30,000 square feet of new retail space have been constructed. Occupancy began in May 2009 and all buildings are on target to achieve LEED® Gold certification with building designs 40 per cent more efficient than the Model National Energy Code for Buildings. The project has attracted investment from two private-sector partners for the market condominium and commercial development, and a third partnership with a utility company for the production and delivery of district energy. The development optimizes the density potential of a 69-acre parcel of downtown land, providing affordable housing near large employment centres and transit routes with access to new community facilities, including a municipally licensed daycare, an indoor pool and a park.

#### *Key results:*

- Canada's oldest public housing community redeveloped to LEED® Gold certification
- Building designs 40% more efficient than MNECB
- Community energy system reduces GHG emissions by 30% (13,000 tonnes) annually

## **Town of Cobourg, Ontario**

### **Streetlight Renewal**

The Town of Cobourg's Streetlight Renewal project began in 2008 with a review of new street lighting technologies. Induction lighting technology was identified as the best technology and aligned with the town's objectives to help the Ontario Power Authority with an electricity supply gap (24,000 megawatts by 2025), reduce GHG emissions related to electricity generation, update aging lighting infrastructure, reduce annual streetlight operating costs, provide better lighting within the community, and reduce light pollution with dark sky compliant lighting. Cobourg Networks Inc. (CNI) validated the lighting technology through a pilot program that measured actual light levels and power consumption. Lakefront testing found that induction lights use half the energy of high-pressure sodium (HPS) streetlights for an equivalent amount of light. Based on this finding, specific goals were set to reduce streetlight electrical consumption by 50 per cent and to reduce GHG emissions by 500 tonnes per year. A manufacturer of energy-efficient lighting was engaged to convert the town's entire street lighting system. The conversion included the design of a new fixture to support Cobourg's long-standing commitment to the heritage lighting that enhances the traditional character of the downtown core. With its streetlight renewal initiative, Cobourg became the first community in North America to implement induction technology in its lighting system.

#### *Key results:*

- 2,300 older lighting fixtures replaced with induction technology
- 50% savings on installation costs through mass installation
- \$1.3 million in savings over 20 years (approx.)

### **Planning**

Plans that focus on advancing the sustainable community development objectives of a municipality, community or neighbourhood. Eligible initiatives include sustainable community plans\* and neighbourhood and site-level plans.\*\*

*\*Sustainable community plans establish a vision for sustainability, integrate sustainability issues across municipal departments and service areas, and set environmental targets for the municipal government and the community.*

*\*\*Neighbourhood and site-level plans use integrated design and a systems approach along with a comprehensive stakeholder engagement process in the development of a neighbourhood site design and development.*

## **City of Williams Lake, British Columbia**

### **Integrated Community Sustainability Planning Framework**

Imagine Our Future is a joint initiative between the City of Williams Lake, its community partners, the Williams Lake Indian Band and Soda Creek Indian Band, and the community at large to envision a successful and sustainable Williams Lake in 2030 and create transition strategies to get there. With the support of the Whistler Centre for Sustainability and The Natural Step Canada, the city is using community input to develop an integrated community sustainability planning (ICSP) framework. The ICSP will integrate social, cultural, environmental, economic, and land use planning pillars to shape the community's future. The project features events designed to harvest the community's ideas and aspirations, such as community partner cafés, an innovators' summit, a youth digital story-telling jam, children's events, kitchen table meetings, partner interviews, an online survey and standing committee meetings. A booth was developed to raise the project's profile at local festivals and events, National Aboriginal Day, and at a regional sustainability conference. Draft planning documents, based on strategic development activities to date in Williams Lake and research into best practices from other communities across Canada and internationally, were prepared for community review and feedback. The ICSP will be used as a lens to review the current Official Community Plan and restructure it within the principles of integrated community sustainability planning, and will guide the city's development for the next 25 years.

*Key results:*

- The planning process solicited public input on 10 priority areas
- The ICSP will guide the city's development for the next 25 years
- Strategies foster a resilient local economy and reduce exposure to climate change risks

**Residential Development**

Projects or programs that focus on making changes to the municipal regulatory environment to improve housing affordability and housing options. Eligible initiatives include the development of or changes to municipal bylaws, building codes, development standards, renovation guidelines and approval procedures that help reduce the cost of housing or increase housing options.

*Category sponsored by Affordability and Choice Today.*

**City of Kelowna, British Columbia**

**Zoning for Housing**

Influencing supply to meet the range of housing needs is a huge challenge to every municipality. To close this gap, the City of Kelowna has systematically examined and changed its zoning in recent years to allow as many housing forms and related support services as possible in all neighbourhoods. Related regulations, such as parking requirements, have similarly been reviewed and amended to reflect actual needs for certain housing types — such as boarding homes, congregate housing, group living homes and supportive housing. Many of these changes were inspired by a 1998 review of the city's zoning bylaw, but others have since been added. For example, the city has successfully partnered with BC Housing to bring supportive housing to the community, allowing Kelowna to stay current and be consistent with housing needs, as well as with provincial priorities. All BC Housing-funded projects (four buildings since 2004) have achieved LEED® Gold certification, are centrally located and accessible to transit. Zoning strategies and regulations are transferable and can be adapted for any municipality once a workable model is achieved. While zoning projects often focus on only one aspect of housing such as secondary suites, Kelowna has developed a comprehensive approach that is working well and can be shared with other communities.

*Key results:*

- Land partnerships have secured over \$35 million in senior government capital funding
- All four BC Housing-funded projects are LEED® Gold standard
- Zoning strategies are transferable and adaptable for any community

**Transportation (two winners)**

Projects or programs that focus on reducing dependence on single-occupant vehicles by encouraging modal integration and accessibility within the transportation network. Eligible initiatives include those that address road design (e.g. traffic calming measures, complete streets); walking and cycling (active transportation) programs and facilities; transportation demand management (e.g. car sharing, changes to parking pricing and supply, telework, transit pass programs etc.); conversion of vehicles to more efficient or innovative technologies; intelligent transportation systems (to improve service); transit service development; system-wide projects to optimize routes and enhance service delivery.

**County of Haliburton, Ontario**

**Building Capacity for Active Transportation in Haliburton County**

Working together and with other community groups, the County of Haliburton and the district health unit ventured into new territory in the summer of 2009 by spearheading a project that applied transportation demand management (TDM) principles in a rural setting. The goal was to improve conditions for commuter cycling in this rural central-eastern Ontario region, and to help more people recognize and choose cycling as a valid way to move from place to place. The project's summer-long "Share the Road" public awareness campaign included newspaper articles, radio interviews, brochures and bumper stickers, and featured a commuter cycling challenge that built on an earlier pilot project. Weekly radio ads, featuring the voice of a

community police officer, and newspaper ads ran from July to September. With the support of the local municipalities, the county erected almost 100 roadside signs and organized bike safety courses with local elementary school students. The roadside signs will be taken down and stored each winter, and will reappear on county roads each spring.

*Key results:*

- 100 "Share the Road" signs will be reused every year
- 1,100 kg reduction in CO<sub>2</sub> emissions during Commuter Challenge
- "Ripple effect" injected \$18,000 into the local economy

**Société de transport de l'Outaouais and Société de transport de Montréal  
STO/STM Green Line and Urban Transportation Showcase Program**

This joint project undertaken by the *Société de transport de l'Outaouais* (STO) and the *Société de transport de Montréal* (STM) measured the effectiveness of green propulsion technology in reducing GHG emissions, and implemented a series of measures to enhance the speed, accessibility and comfort of public transit. In Gatineau, STO's "Green Line" used a study lane to operate two electric-diesel hybrid buses and seven standard diesel buses for comparison purposes. STM used eight hybrid buses and six standard buses to carry out the comparison. Additional measures included developing reserved lanes and incentive parking, modernizing bus shelters and bus stop signage, installing a digital board with schedules at traffic lights, and implementing automatic passenger counting. Both municipalities used the 12-month study period to measure the energy efficiency and fuel consumption of hybrid propulsion compared to standard diesel propulsion, and used a versatile and proactive network to share information on winning strategies in GHG reduction and sustainable urban transport. The project aligns with both organizations' strategic plans, and both are in favour of purchasing more hybrid buses.

*Key results:*

- 7.5% increase in ridership on the STO "Green Line"
- Over 90% of users in both municipalities favoured hybrid technology
- Recognized by Transport Canada's Urban Transportation Showcase Program

**Waste**

Projects or programs that focus on reducing, diverting and managing waste. Eligible initiatives include recycling programs, composting programs, landfill gas management initiatives (e.g. capture, containment, flaring, etc.), energy production from landfill gas, and waste-to-energy projects.

**Regional Municipality of York, Ontario  
McCleary Court Community Environmental Centre**

With only one full-service waste management depot located in the north end of the Regional Municipality of York, many residents in the south had to drive long distances to dispose of their waste. Community environmental centres (CECs) are designed to provide the public with reliable and convenient access to solid waste management services. The McCleary Court CEC, located in the city of Vaughan, is the first in a planned regional network of CECs and was officially opened in July 2009. Vaughan residents attended a public consultation meeting early in the project process, allowing them to learn about the facility and ask questions prior to construction. Follow-up meetings were held to resolve the community's concerns, and a number of design and operational measures were adopted. As part of the project plan, working relationships were established with two charity reuse partners, Goodwill and Habitat for Humanity. Another integral component in the project was the inclusion of a community education space that informs residents on conservation programs, environmental sustainability and regional waste management programs. Targeting LEED® Silver certification was also an important aspect of the project, as it aligns with the environmental mission of the facility. The region expects that thousands of tonnes of waste will be diverted annually from landfill disposal.

*Key results:*

- 3,000 tonnes of waste diverted from landfill annually
- LEED® Silver certification supports facility's environmental mission
- Community relationships create a win-win scenario

## **Water**

Projects or programs that focus on the consumption, quality, treatment and distribution of water. Eligible initiatives include those that address water management (including watershed protection), drinking water, water conservation, wastewater treatment, leachate treatment and stormwater run-off.

### **City of Edmonton, Alberta**

#### **Kennedale End-of-Pipe Constructed Wetland**

End-of-pipe treatment wetlands are a relatively new, innovative and cost-effective way to treat stormwater runoff from older, built-out communities that would otherwise discharge street runoff directly to rivers. Edmonton's watershed monitoring program demonstrated that over 80 per cent of the suspended solids discharged to the North Saskatchewan River are from the city's storm sewer system. As a result, a Stormwater Quality Strategy (SWQS) and Action Plan were developed to improve local watershed health. The SWQS examined potential stormwater quality improvement projects and identified potential sites for improving stormwater quality and reducing pollutants discharged to the river. The Kennedale end-of-pipe constructed wetland realized multiple cost-effective benefits for pollutant load reduction, watershed protection, and improved site aesthetics. The project was cost-effective because land (a former gravel pit in Hermitage Park) was readily available, and it provided added value by improving the park for users and creating more natural habitat. While Edmonton has a number of other stormwater management facilities — some of which also provide partial treatment — they have been built primarily for flood prevention. The Kennedale facility is the city's first constructed wetland built exclusively for stormwater treatment and river protection. It is expected to operate indefinitely and will allow the city to continue to develop and grow as an urban centre without impairing local watershed health.

*Key results:*

- 70% of annual stormwater volume through the city's largest sewer trunk will be treated
- 1,100 kg (44%) of suspended solids are removed each day
- Wetland provides additional bird, amphibian and aquatic habitat

## **Watershed Awards**

Canada's aging infrastructure systems are not able to handle the increased precipitation that is now a reality. The insurance industry is committed to helping communities adapt to climate change by advocating for better municipal infrastructure and by creating innovative programs and partnerships that advocate for the creation of more sustainable communities.

The Watershed Awards is a new annual awards program presented by the Insurance Bureau of Canada (IBC) and FCM to Canadian municipalities that have demonstrated leadership in their efforts to adapt to climate change by reducing their vulnerability to flooding and water damage. The Watershed Awards recognizes infrastructure investments and urban development policies and practices that demonstrate leadership by forward-thinking communities. It will shine a spotlight on communities that have taken the initiative to adapt to the effects of climate change to protect its citizens and, in the process, inspire other communities to follow their lead.

One national winner was selected as well as one from each of five regions: British Columbia, the Prairies and the North, Ontario, Québec and Atlantic Canada. The newly launched Watershed

Awards will be part of FCM's annual Awards of Excellence, which, for the past decade, have recognized the best in municipal sustainability.

## **2010 Watershed Award Winners**

### **National Winner – City of Edmonton, Alta**

#### ***Lendrum Stormwater Management Dual-use Dry Pond***

On July 11, 2004 an extreme rainfall event flooded over 4,000 basements throughout the city of Edmonton. According to the IBC, there were 12,000 claims totalling \$180 million dollars. In response to the flooding, the city completed flood investigation studies and conceptual designs for 43 of the neighbourhoods most heavily affected by the flooding. These engineering studies identified a number of projects to reduce the risk of future flooding in these neighbourhoods. In 2006, City Council approved a plan to fund a \$146 million flood prevention program over the next 10 years.

The neighbourhood of Lendrum Place had about 98 basements flooded during the July 2004 event. Investigations determined that the neighbourhood's sewer systems were overloaded and that the excess water ponded on the surface, causing flood damage. The ground surface in most of Lendrum Place slopes down towards the neighbourhood school's fields which were constructed on fill material and elevated 1.5 to 2.0 metres above the surrounding neighbourhood.

In addition to sanitary sewer relief projects, Edmonton redeveloped the Lendrum Place school field at an elevation below the adjacent roadways, so that the field will receive and contain flood waters during infrequent, large rainfall events. The Lendrum Dual-Use Stormwater Management Facility project allows the school field to fulfill its current function as a playing field, and also to provide stormwater management and flood control.

### **B.C. – District of Central Saanich**

#### ***Integrated Stormwater Management Plan***

The District of Central Saanich is the first municipality on Vancouver Island to create an Integrated Stormwater Management Plan (ISMP) following the guidelines and recommendations of the BC Stormwater Planning Guidebook. The district has used innovative design approaches and best management practices in the ISMP to restore the dispersal of rainwater flows to near predevelopment levels. The resulting stormwater reduction will substantially reduce the extent of damage caused by erosion, extreme variability of flows, degradation of water quality, and required conveyance works.

The project began in the summer of 2007 with a data collection program. A stakeholders' advisory committee, led by the district's Engineering and Public Works Committee, was formed. Members of government agencies, area farmers, local interest groups, and district staff worked together to develop proactive solutions to the changes that urbanization has brought to Central Saanich's stormwater system and natural habitat. An important measure of success was to ensure that each stakeholder group supported the ISMP. The stakeholders involved in the project identified different issues, values and requests; however, they worked together to develop a comprehensive plan that addresses ecological, social, cultural, agricultural and engineering issues in an inclusive manner.

Open houses were held to obtain feedback from the public and to provide information on the importance of storm water management; and a final project report and implementation plan were presented to Council in the fall of 2009. The district has already started implementing many of the report's short-term recommendations, while medium and long-term goals have been identified and assigned to various departments and industry experts for execution. Council has approved the recommended ISMP projects as part of its 2011–2014 Financial Plan. Long-term success will be measured by monitoring the progress of the implementation plan over the next five to 20 years.

**Prairies and North  
City of Saskatoon**

***Wastewater Detention Superpipes***

The City of Saskatoon maintains two separate sewer systems: a sanitary sewer system that conveys domestic sewage to the wastewater treatment plant; and a storm sewer system that conveys rainwater from streets and other surfaces directly to the South Saskatchewan River. Unlike many large cities, such as Edmonton or Winnipeg, Saskatoon has never had a combined sewer system that conveys both wastewater and stormwater.

Saskatoon experienced three severe rainfall events in June 2005, June 2007 and August 2007; each of which resulted in significant basement flooding from sanitary sewer overflows. It was determined that the primary source of stormwater entering the sanitary sewer system and causing the flooding was household weeping tile (foundation drainage) systems that drain directly into basement floor drains. Although weeping tile systems are no longer permitted to connect into floor drains in Saskatoon, it is estimated that 50 per cent of households connect weeping tile systems to floor drains. Disconnecting these systems to remove the source water was considered cost-prohibitive.

The proposed solution was to provide storage tanks (known as superpipes) constructed from large-diameter (1800mm–3000mm) locally manufactured polyethylene pipes, and connected directly to the sanitary sewer system at elevations lower than the most vulnerable basements. When a large rainfall event occurs — or more often, a moderate event combined with significant antecedent moisture — the extra flow generated by the weeping tile systems overflows directly into the superpipes and decreases the risk of basement flooding. Two superpipes were constructed on the west side of Saskatoon in 2008, followed by two on the east side in 2009. The 2010 program will see as many as three superpipes installed, with four more planned between 2010 and 2014.

**Ontario – two winners**

**City of Toronto**

***Basement Flooding Protection Program***

Extreme storm events can result in wide-spread surface and basement flooding when the design capacity of the existing storm drainage system is exceeded. On August 19, 2005, a storm exceeding a one in 100-year return frequency hit an area of the city where storm drainage was provided only by separated storm sewers. IBC estimates the damages to public and private property at \$400-500 million, making it the largest natural disaster in southern Ontario.

Traditionally, sewer system improvement works have focused on the sanitary sewer system by eliminating bottlenecks with oversized pipes, and constructing in-system storage facilities. However, these improvements have been insufficient to guard against more intense rainfall events. A comprehensive engineering review has shown that in areas without a major storm drainage system, roadways do not typically provide a continuous flow route, are very flat or have low-lying areas with no stormwater outlet. In these areas, stormwater enters the sanitary sewer system from a number of sources, leading to system surcharging and basement flooding.

To help guard against future flooding, the city developed the Basement Flooding Protection Program by initiating a comprehensive engineering review in 32 priority areas. The program's adaptive management strategy applies an integrated systems approach using lot level controls; storm sewer improvements; sanitary sewer system improvements; and overland flow control.

A key feature of the program is an enhanced level of protection against basement flooding from sanitary sewer backup for a storm event equivalent to a one in 25-year to a one in 50-year storm, and against surface flooding for one in 100-year storm event, where feasible, in areas where a proper major (overland flow) stormwater drainage system does not exist.

## **Town of Richmond Hill**

### ***Pioneer Park Stormwater Management Rehabilitation Project***

The Town of Richmond Hill's Pioneer Park Stormwater Management project involved the rehabilitation of an existing flood control facility to provide protection to vulnerable areas, protect existing infrastructure, enhance erosion control, treat water quality, and stabilize and rehabilitate the associated watercourse. Built in 1985, the facility no longer met the standards to which it was designed and fell short of modern stormwater standards. As a result, key infrastructure was at risk including Major Mackenzie Drive, an important dispatch route for a large area hospital, and other emergency services including fire and police. Residential properties upstream and downstream of the facility were also at risk of sewer surcharge and flooding.

The Pioneer Park initiative is the first project in Richmond Hill resulting from the Stormwater Ten-Year Capital Plan — a study that looked at the municipality's stormwater infrastructure, its condition and vulnerability to changing weather conditions, and considered how to adapt the infrastructure to make it more effective and sustainable. The town used watershed planning principles and public consultation to develop a facility design that incorporated both climate adaptation and mitigation components and addressed environmental, social and economic opportunities. The town also partnered with regulatory agencies to obtain permits and approvals, and completed a value engineering exercise prior to commencing construction.

Funding for the project involved all three orders of government — Federal Gas Tax funds, Ontario Provincial Infrastructure funds, and a special stormwater reserve fund set aside by Richmond Hill Council. Through this \$6.3 million, multi-disciplinary project, Richmond Hill has taken measures to reduce its vulnerability to storm damage and provides an example for other local governments to adapt their aging infrastructure to deal with severe weather events.

## **Quebec – City of Saint-Jérôme**

### ***Schulz Park Detention Pond***

For the last several years, with regard to its wide-scope residential projects, in order to protect the environment and reduce development costs, the City of Saint-Jérôme has focused on storm water runoff detention rather than immediate transfer to storm sewers.

The city decided to develop a long-term vision based on watershed conservation, rather than managing development on a case-by-case basis, by residential project or by artificial property limits. This watershed development approach is far more respectful of the landscape. The development of the Schulz Park Detention Pond, in the north-eastern area of Saint-Jérôme, perfectly illustrates this approach. By going beyond the purely practical considerations of the project and incorporating other uses, the Schulz Park Detention Pond became a neighbourhood landscape project.

The detention pond is more than just infrastructure; it stands out from other similar initiatives because it is multifunctional — it is practical, green and recreational. Project planning began in July 2006 with site characterization and preparation of engineering plans. Work began in November 2006 and was completed in September 2009.

## **Atlantic Canada – Towns of Appleton and Glenwood, N.L.**

### ***Engineered Wetland Sewage Treatment System***

The Towns of Appleton and Glenwood implemented an innovative treatment system for their combined sewage and stormwater treatment — an engineered wetland system. Both towns had older sewage treatment plants that had become costly to maintain and operate. With outfalls into the Gander River, both systems were overloaded and could not meet provincial or federal environmental discharge requirements.

Along with the mayors of both towns, the Gander River Management Association had lobbied for years to have the sewage problems corrected on the Gander River. This project is the first operating full-scale municipal application of the Kickuth engineered wetland technology in

Canada. Kickuth is a German technology that has been transferred and adapted to Canadian conditions by Abydoz Environmental Inc. of Newfoundland. Unlike other wetland treatment facilities in Canada, this technology provides full secondary treatment of wastewater, where other constructed wetlands generally provide support to treatment by other technologies or use larger natural wetlands.

An engineering study was initiated to review sewage treatment alternatives and determine the way forward. The towns, along with the province and other partners reviewed the options and chose the engineered wetlands technology. From then on, engineering and construction teams provided the overall project management. The system also incorporated a sludge treatment process whereby solids removed from the waste stream by settling tanks are mineralized into a compost material which can be recycled and diverted from landfill.

FCM's Green Municipal Fund™ supported the project by funding measures designed to further reduce stormwater flow into the system