Sustainable Neighbourhood Action Program

ACTION PLAN SUMMARY

Toronto and Region Conservation Authority

Bayview Glen Sustainable Neighbourhood Retrofit Action Plan (SNAP)

Becoming a National Leader in Sustainability and Technology

In collaboration with:

MARKHAM   York Region

BAYVIEW GLEN SNAP - Becoming a National Leader in Sustainability and Technology

The Sustainable Neighbourhood Retrofit Action Plan (SNAP) is a collaborative, neighbourhood-based solution for advancing urban renewal and climate action in older urban areas. SNAP helps municipalities improve efficiencies, draw strong local community support and build innovative partnerships for implementation of a broad range of initiatives in the public and private realms.

The Bayview Glen SNAP was initiated as one of five pilot projects in the Greater Toronto Area (GTA) to guide the sustainable transformation of a mature, suburban neighbourhood and provide input for future decision-making by the City of Markham. It is led by Toronto and Region Conservation Authority (TRCA) in collaboration with the City of Markham (following direction from Markham City Council) with support partners like York Region and other stakeholders (see Table 1).

Bayview Glen is located in the community of Thornhill in the City of Markham, which is situated within the Don River Watershed *(Figure 1)*. This residential neighbourhood is primarily made up of single detached homes built on large lots with manicured lawns, wide driveways and mature trees. The neighbourhood's built form and character has been changing through infill of new, larger homes. A relatively stable population of approximately 2,137 (715 households) exist in the neighbourhood utilizing the parks and parkettes, an elementary school, places of worship and nearby commercial and retail services *(Table 2)*.

Prior to the development of this neighbourhood in the 1960s and 1970s, a tributary of the East Don River traversed the site in a shallow valley feature. The valley was infilled and henceforth the water table remains near the surface. This in combination with low permeable soils has contributed to imperfect drainage conditions throughout parts of the neighbourhood leading to flooding challenges and increased pollution and erosion of the East Don River. As such, stormwater infrastructure improvements were scheduled for this area. This along with the fact that the neighbourhood has one of the highest water and energy uses per capita in the province, provided a timely opportunity for the Bayview Glen community to be selected for the SNAP project which would take an integrated approach and include water, energy and ecosystem retrofits.

SNAPs identify priority actions to accelerate local sustainability that address the objectives of multiple partners. In Bayview Glen, the priority actions will improve local quality of life and help achieve the goals outlined in the City of Markham's Community Sustainability Plan, The Greenprint, the West Thornhill Stormwater Remediation Class Environmental Assessment (EA) Study, TRCA's Don River Watershed Plan, York Region's Inflow & Infiltration Reduction and Long Term Water Conservation Strategies and Enbridge and Powerstream conservation objectives. Additionally, residents and stakeholders were consulted and contributed to the plan which revealed important community characteristics not apparent in the neighbourhood's built form that contribute to local culture and values and helped inform the recommended priority actions and implementation strategies *(Table 3)*.

Table 1

Who's Involved?

LEAD PARTNERS

Toronto and Region Conservation Authority (TRCA)

City of Markham

York Region

COMMUNITY PARTNERS

Bayview Glen Residents Association

Bayview Glen Public School (& parent council)

Homeowners

Businesses

UTILITY COMPANIES

Powerstream

Enbridge Gas

Bayview Glen residents value the neighbourhood's location, amenities and defining physical qualities, particularly its natural setting near the Don River, mature tree canopy and greenspaces. They also take pride in their homes and properties, maintaining their condition and curb appeal, many by landscape maintenance contractors. While residents value the neighbourhood parks and public spaces and use them for informal uses (e.g., walking and cycling), they primarily tend to socialize and recreate in their backyards. Data analysis performed by Environics indicates that residents in the neighbourhood can be identified in two lifestyle clusters – "urbane villagers (wealthy, middle-aged urban sophisticates)" and "cosmopolitan elite (very wealthy middle-aged and older families and couples). The Environics research findings were used to inform the residential retrofit and new home construction programs.

The resulting Bayview Glen SNAP action plan encompasses not only public realm improvements to update local infrastructure, but also includes a Residential Retrofit Program to help homeowners make their homes and properties more sustainable. Community cohesion and resilience programs are also part of the plan's objectives.

Figure 1

Table 2

Neighbourhood Profile

STUDY AREA SIZE

432 ha

LAND USE

Single Family Residential (SFR) – 62%

Multi-unit residential (MUR) – 1%

Industrial, Commercial, Institutional (ICI) – 7%

Parks and Open Space – 7%

Roads – 20%

Rail line/way – 3%

Natural cover: 15 ha – 10%

Urban Forest: 46 ha – 31%

DEMOGRAPHICS
(based on 2011 Census)

Population: 2,137

Immigrants: 50% *(more than 75% arrived pre-1991)*
Visible minorities *(primarily Chinese)*: 30%

Median age: 49.2 years

Building Age:
Built between 1960 - 1970

Median Household Income *(2006 Census)*:
$148,119

Most common languages spoken at home:
English and Chinese

Private Dwellings *(2006 Census)*: 715
Single Detached Homes – 615
Apartment *(> 5 stories)* – 70
Row house – 10
Apartment *(Duplex)* – 20

Table 3

How we're listening

RESEARCH TOOLS

Homeowners surveys
Key Informant Interviews

EVENTS & DEMONSTRATIONS

West Thornhill Stormwater Remediation Phase I
and II Implementation – Community meeting

Bayview Glen Public School Open House

Bayview Glen Public School Fun Fair

FEEDBACK SESSIONS

Municipal and Agency Staff Meetings

Resident focus group

Community Gathering

A Closer Look at Bayview Glen SNAP

The Bayview Glen SNAP is an integrated action plan to foster local sustainability and wellbeing. Technical analysis characterized baseline conditions, developed neighbourhood objectives, generated retrofit options, indicators and targets and identified six core areas to improve sustainability and quality of life in the neighbourhood, which reflected residents values and priorities: water efficiency; ecosystem integrity; energy and climate; access and mobility; and identity and culture. These objectives support the City of Markham's Sustainability Plan and are linked to those in The Greenprint. To achieve these outcomes, strategic actions for the Bayview Glen SNAP were developed and are illustrated in Figure 2. Priority actions, which address each core area, have been identified both in the public realm and on private residential lots.

Initiatives proposed in the public realm include the following:
- Retrofitting Bayview Glen Park, Glencrest Park and Stone Farm Parkette to achieve a range of SNAP objectives;
- Implementing stormwater management initiatives within several cul-de-sacs in the neighbourhood in synergy with the West Thornhill Flood Remediation project;
- Retrofitting some streets that have a 'rural' cross-section to improve stormwater management, reduce inflow and infiltration, enhance aesthetics and create a more durable pavement structure;
- Installing sidewalks and bicycle routes to improve walkability and provide active transportation options;
- Implementing a separate sub-surface drainage system in the road right-of-ways, consisting of perforated pipes within granular trenches to manage stormwater, reduce inflow and infiltration and reduce flooding.

Initiatives proposed to enhance the sustainability of residential dwellings through retrofits or new home construction includes the following:
- Promoting and increasing energy and water efficiency;
- Managing stormwater on the surrounding property and through evapotranspiration as well as reducing infiltration and inflow to the surrounding sanitary system;
- Encouraging behavior change for more sustainable choices;
- Succession planting for aging trees and dying ash trees.

Figure 2

BAYVIEW GLEN
Integrated Plan

Glencrest Park

• Improve stormwater management;
• Complement the proposed flood control plan;
• Enhance urban tree canopy cover;
• Enhance habitat and ecological functions
• Provide opportunities for recreation and socialization;
• Improve walkability; and
• Reinforce community identity.

Residential Houses

• Reduce electricity, gas, and potable water consumption;
• Increase use of alternative water sources (e.g. grey water);
• Adopt renewable energy sources;
• Reduce GHG emissions;
• Reduce stormwater runoff from private property through evapotranspiration and/or infiltration;
• Contribute to ecological integrity objectives by promoting native species, naturalization and tree planting on private properties;
• Reduce inflow and infiltration to sanitary system through sump pump discharge management;
• Promote healthy living through the inclusion of backyard gardening and local food; and
• Contribute to a strong and sustainable neighbourhood identity with a sense of belonging and civic pride amongst the residents.
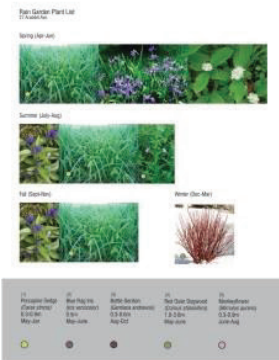
Bayview Glen Park

• Improve stormwater management in terms of quality enhancement and erosion quantity control;
• Naturalized plantings - rain gardens, bioretention cells and detention swales;
• Expand urban tree canopy cover;
• Improve walkability;
• Promote energy conservation;
• Provide opportunities for recreation and socialization;
• Enhance public safety;
• Reinforce community identity;
• Mitigate flooding; and
• Enhance urban forest/ succession planting for aging trees and dying ash trees.

Streets

• Add street trees;
• Promote traffic calming;
• Add infiltration/filtration trenches;
• Reduce impermeable surfaces;
• Reduce inflow and infiltration;
• Add sidewalks; and
• Add bicycle route.

Stone Farm Park

• Improve stormwater management;
• Complement the proposed flood control plan;
• Provide opportunities for recreational and socialization;
• Reinforce community identity.

BAYVIEW AVE.

STEELES AVE.

0 25 50   100 Metres
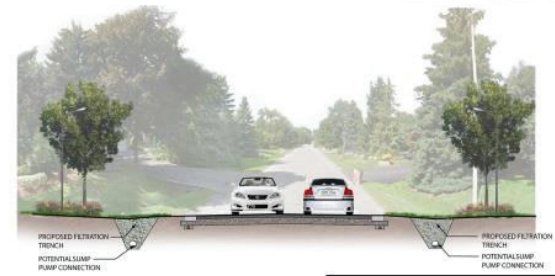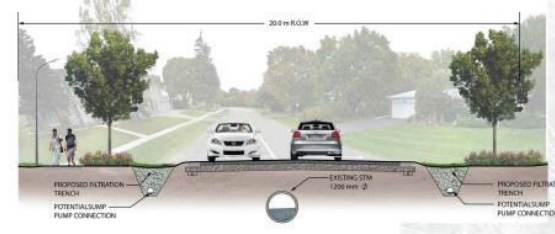
PUBLIC REALM

Parks and Parkette

The public open space within the Bayview Glen neighbourhood consists of two parks (Bayview Glen and Glencrest Parks) and one parkette (Stone Farm Parkette). The park concept plans address the core objectives of SNAP and features improvements on multiple levels. Proposed implementations will renew aging recreational amenities and add beauty while achieving a range of sustainability objectives.

Bayview Glen Park Revitalization

This park is centrally located and forms a contiguous open space with the Bayview Glen Public School grounds. Recreational amenities in the park are in need of upgrades or repairs. Topographical and landscape improvements are needed to address wet, muddy areas caused by poor drainage and a reduced tree canopy. Also identified was the need to enhance safe pedestrian connections to the park from the surrounding area.

The proposed concept will result in this park being the recreational and social centerpiece of the community *(Figure 3)*. Recreational amenities will be enhanced to improve user experience. The playground will be replaced by a state of the art structure that includes a unique architectural design shade feature that incorporates photovoltaic panels which will provide a source of power to illuminate the adjacent path. A system of pathways and new sidewalk are proposed that will link the park's amenities and enhance connections to the residential streets.

The topographical and landscape improvements will include redirecting the flow of stormwater from small storm events into two new wetland areas to collect and store runoff, improve water quality, reduce erosion and promote evapotranspiration. A sub-surface storage system could also be created under current sports fields for added flood control measure.
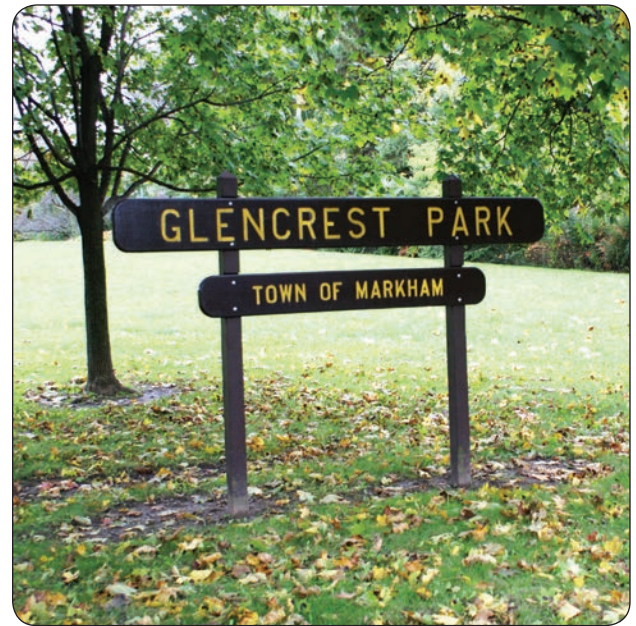
Concept includes:

- ✓ New playground and safety surface in a new location
- ✓ Naturalized plantings – rain gardens, bioretention cells and detention swales
- ✓ Shade structure/solar array
- ✓ Solar lighting for proposed trails
- ✓ Stone entry sign wall
- ✓ Paved pedestrian walkways and entry courts
- ✓ Permeable unit paving layby and entry court
- ✓ Enhancements to existing softball field
- ✓ Bike racks and benches

Figure 3

BAYVIEW GLEN
Retrofit Design

FLUSH CURB
EX. ROAD TO BE NARROWED AND CONVERTED TO PEDESTRIAN WALKWAY
ENTRY COURT-PERMEABLE PAVEMENT
EX. DRIVEWAY TO REMAIN
DETENTION SWALE
INTERPRETIVE SIGNAGE
PROPOSED FOOT BRIDGE
CULVERT

EX. SOFTBALL DIAMOND TO REMAIN

PROPOSED SOLAR POWERED LIGHTS
PROPOSED TRAIL
CULVERT
PROPOSED RAIN GARDEN
PROPOSED SWALE
CULVERT

PROPOSED PLAYGROUND

PROPOSED PLAYGROUND WITH HIGH QUALITY SAND SURFACE
PROPOSED SHADE STRUCTURE WITH SOLAR PANELS
PROPOSED CULVERT
PARK SIGN
PROPOSED SIDE WALK
BIO RETENTION GARDEN
PROPOSED TRAIL
PROPOSED PERMEABLE PAVEMENT PARKING LAY-BY
MOUNTABLE CURB
EX. INLET GRATE TO REMAIN
Swale

EX. TENNIS COURTS TO REMAIN

BAYVIEW GLEN SCHOOL

LIMCOMBE DRIVE

Scale: 1:400   0 5 10   20 m

N

Glencrest Park Revitalization

Located in the north end of the neighbourhood, Glencrest Park includes limited recreational facilities. The park's topography includes a valley-like landform created by a small watercourse that once traversed the site; a dilapidated corrugated steel culvert has replaced the watercourse. The Emerald Ash Borer destroyed much of the tree cover within the park and many trees were removed in spring 2014. The remainder of the park landscape comprises maintained turf.

Recommended topographical and landscape improvements (i.e. re-creating the valley feature, tree planting, pollinator gardens) will help manage stormwater naturally through evapotranspiration, reducing volume and improving the quality of water flowing into the sewer while enhancing user experience of the park. This will also increase the diversity of habitats and provide shade to park users. Landscape modifications and proposed recreational amenities increase opportunities for year round passive and active recreation *(Figure 4)*.

Concept includes:

✓ Meditation garden

✓ Pollinators garden

✓ Lanyrinth

✓ Open play space

✓ Stormwater attenuation/ naturalized area

✓ New playground on safety surface

✓ Shade structure

✓ Picnic area

✓ Stone entry sign wall

✓ Reforestation area

✓ Pedestrian walkway/trail system

Stone Farm Parkette Concept Plan

This small parkette is situated in the southeast corner of the neighbourhood and used to be the site of the Stone family farmhouse. It is now comprised of a small playground and open lawn. While the parkette provides a strategic catchment area to manage stormwater runoff from nearby streets, it is also located in an area where the water table is high.

Features like a new playground structure and shade structure will add architectural interest. The small multi-use field and trail proposed will increase amenity space and connections to the neighbourhood. Improvements to stormwater management would be met by the installation of two rain gardens, retrofitting a nearby cul-de-sac to reduce runoff and creating a sub-surface storage system below the multi-use field *(Figure 5)*.

Concept includes:

✓ New playground and safety surface in new location

✓ Open play space

✓ Naturalized areas

✓ Shade structure

✓ Rain gardens

✓ Stone entry sign wall and interpretive signage

✓ Paved pedestrian walkways and entry courts

Figure 4

GLENCREST PARK
Retrofit Design

LADYSLIPPER CT

PROPOSED PARK SIGNAGE

PROPOSED ENTRY COURT

PROPOSED PLAYGROUND WITH HIGH QUALITY SAND SURFACE

PROPOSED SHADE STRUCTURE

PROPOSED LABYRINTH

PROPOSED SIGNAGE

PROPOSED REFORESTATION AREA

MULTIFLORA PL

PROPOSED PERMEABLE PAVEMENT TRAIL WITHIN EASEMENT

SUPPLEMENTARY BUFFER PLANTING

EX. WATER SUPPLY

SUMMER-OPEN PLAY SPACE WINTER-VOLUNTEER ICE RINK

RAILWAY CORRIDOR

PROPOSED PICNIC AREA

PROPOSED REFORESTATION AREA

PROPOSED RAIN GARDEN

TOBOGGAN HILL

PROPOSED SIGNAGE

PROPOSED POLLINATORS GARDEN

PROPOSED MEDITATION GARDEN

PROPOSED SIGNAGE

PROPOSED INFORMAL TRAIL

PROPOSED RAIN GARDEN

PROPOSED INLET TO STORM SEWER

WILDROSE CRESCENT

Scale: 1:400

Figure 5

STONE FARM PARK
Retrofit Design

PROPOSED MEDIAN

PROPOSED CURB
EXISTING CURB

PROPOSED CURB

EXISTING ROAD EDGE/CURB

STONEYBROOK CT

APRICOT STREET

PROPOSED PERMEABLE PAVEMENT
OVER ATTENUATION GALLEY

PROPOSED FLUSH CURB/
EDGE RESTRAINT

PROPOSED SUBDRAIN CONNECTION
TO EXISTING CB

EXISTING DCB

STONEYBROOK
COURT

CANADIANA DRIVE

EXISTING OVERLAND
FLOW ROUTE

EXISTING REMNANT
HEDGEROW

PROPOSED OPEN PLAY AREA
SUBSURFACE STORAGE SYSTEM

EXISTING PLAY GROUND TO BE
REMOVED/RELOCATED/ UPGRADED

PROPOSED RAIN GARDEN

PROPOSED CURB INLET

PROPOSED SWALE

PROPOSED PLAYGROUND
WITH HIGH QUALITY SAND SURFACE

PROPOSED CONTROLLED OUTLET

PROPOSED SHADE STRUCTURE

PARK SIGNAGE

ENTRY COURT

PROPOSED
RAIN GARDEN

PROPOSED CURB INLET

PROPOSED CONTROLLED OUTLET

APRICOT STREET

Scale: 1:400   0   5   10   20 m

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Streetscape and Circulation

The neighbourhood's built form, high water table and outdated infrastructure have presented challenges to local mobility as well as watershed and stormwater management efforts. This is most apparent in the local street fabric, which comprises two types of streets:
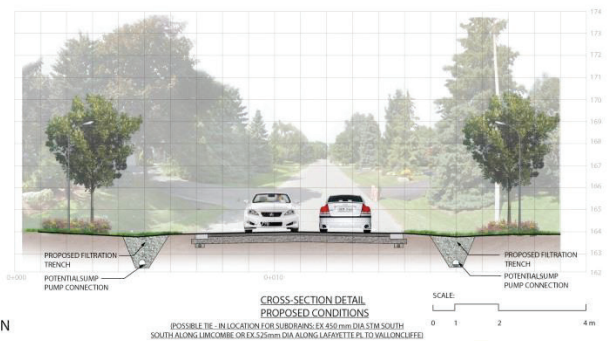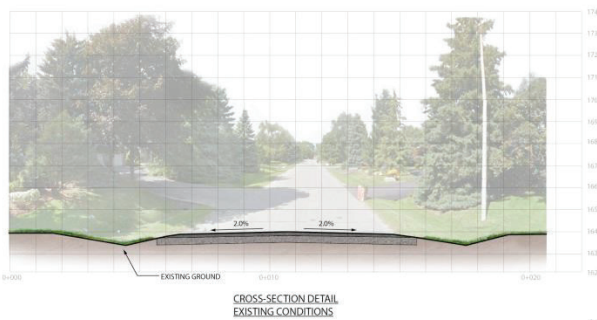
- Streets with an urban cross-section (i.e., with curbs, fitted with catchbasin and storm sewers); and
- Streets with a "rural" cross-section (i.e., no curbs, with ditches running parallel to streets).

Figure 6

RURAL AND URBAN
Cross-section Designs
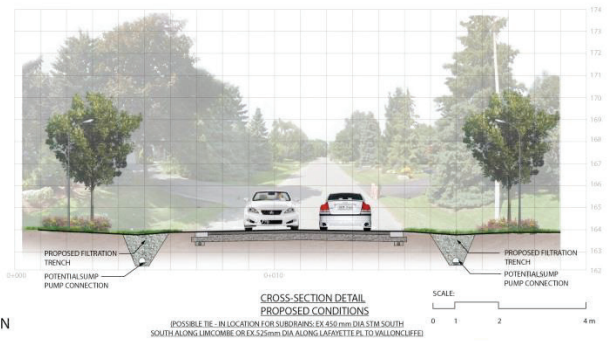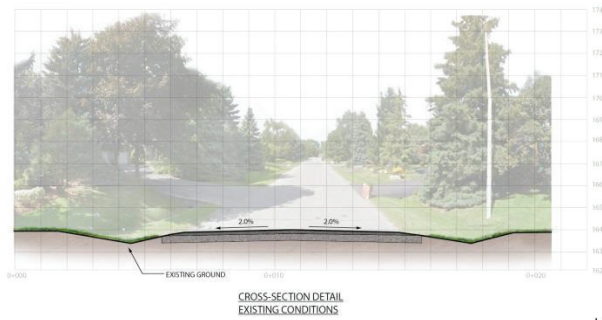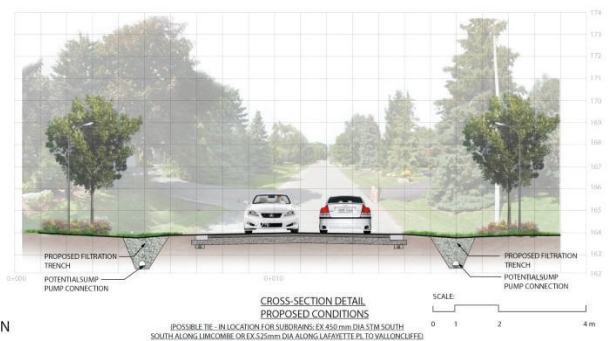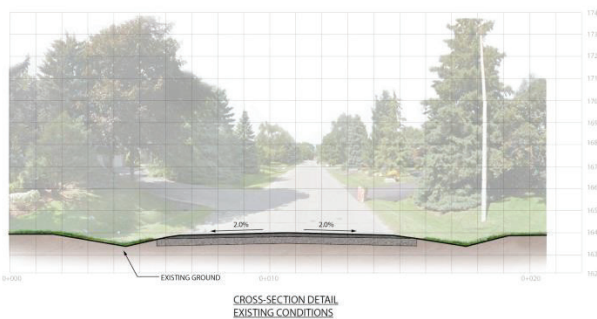
Within these two street typologies are two subsets, streets with sidewalks and streets without sidewalks. Throughout the community engagement process some residents expressed concern over a lack of sidewalks, trails and bike paths. An assessment of the community revealed that there is a lack of connectivity in the system of sidewalks throughout the neighbourhood, limiting walkability and discouraging active transportation. At the present time, there are no designated bicycle routes within the neighbourhood.

The Bayview Glen SNAP proposes retrofitting road right-of-ways (ROW) throughout the neighbourhood to enhance stormwater management efforts as well as local connectivity. Recommended public realm improvements in the SNAP include retrofitting the rural streets in the southern portion of the study area by reducing the pavement width, adding flush curbs and infiltration/filtration trenches, to reduce runoff volumes and treat the stormwater that is collected. Retrofitting the urban streets in the study area is more challenging. Sufficient room within the right-of-ways does not exist to replace the storm sewers with the system of trenches and sub-drains proposed for the existing rural areas.

Within the urban areas, there are a number of smaller storm sewer systems that connect to a larger trunk storm sewers on Laureleaf Road and Canadiana Drive. It is proposed to replace the upstream-most section of storm sewer in these systems with an infiltration trench located under the curb. The upstream-most catchbasins would be replaced or retrofitted with small oil-grit separators, with connections to the main trench, to provide pre-treatment of road runoff. The proposed trenches could improve water quality and reduce erosion in the East Don River by infiltrating runoff from most storm events. In combination with the road ROW retrofits, the installation of sidewalks is proposed on several streets to enhance walkability within the neighbourhood. These sidewalks would connect to the trail systems proposed within Bayview Glen Park and Glencrest Park to create a linked system of pedestrian routes that will connect key destinations within the neighbourhood. The implementation of a designated bicycle route along Laureleaf Road is also recommended

since this road is a major through street that connects to public transit. Traffic-calming measures such as speed bumps or strategically placed trees were also suggested by residents during engagement activities.

By implementing a separate sub-surface drainage system in the road right-of-ways, consisting of perforated pipes within granular trenches to manage stormwater, this would reduce inflow and infiltration and thus reduce flooding. Retrofitting the rural streets would include reducing pavement width, adding flush curbs and infiltration/filtration trenches to reduce runoff volumes and treat the stormwater. The urban streets pose greater challenges due to insufficient room within the right-of-ways. Here, more locational solutions comprising stormwater infrastructure retrofits have been proposed. The combination of road ROW retrofits, the installation of sidewalks and designed bicycle routes and traffic calming features in the proposed spots throughout the neighbourhood would enhance active transportation that the community desires *(Figure 7)*.

Figure 7

Proposed sidewalks, trails and bike routes map

Glencrest Park

Bayview Glen Park

Stonefarm Park

LADYSLIPPER COURT

BAYVIEW AVENUE

OLD ENGLISH LANE

BALCOMBIE DRIVE

APRICOT STREET

STEELS AVENUE EAST

STEELS AVENUE EAST

STEELS AVENUE EAST

LEGEND

- ⬛⬛⬛ PROPOSED SIDEWALK (approx. 2881m)
- ⬛⬛⬛ PROPOSED TRAIL (approx. 1454m)
- ⬛⬛⬛ PROPOSED BICYCLE ROUTE (approx. 4372m)
- ━━━ EXISTING SIDEWALK
- ━━━ EXISTING TRAIL

0 25 50 100 Metres

PRIVATE REALM

Residential Houses

Bayview Glen is an established residential neighbourhood comprised of 615 single detached dwellings. These homes, built on relatively large lots with grass-covered lawns and wide driveways, account for approximately 85% of the housing stock. The majority of the housing stock (53%) was built between 1960 and 1980 with notable infill development where original homes are being replaced with larger homes. Home ownership is nearly 96%, much higher than the city average.

Residential Retrofit Program

Developing a program to encourage residents to retrofit their homes and properties provides significant opportunity to contribute to many core area objectives. There is a concentration of high water users in Bayview Glen compared to other neighbourhoods in York Region; nearly 30% of the homes have pools. As well, there are high levels of electricity and gas consumption. Previously offered conservation program uptake (energy and water) was low in this area and these trends were echoed through community engagement where residents indicated they did not know about the programs, or found the incentive programs too cumbersome. The Residential Retrofit Program is designed to provide a one-stop shop approach to upgrading their homes and properties which would provide a significant opportunity to contribute to many core area objectives *(Table 4)*. Discovered through community engagement, residents believe their homes to be outstanding and in no need of improvement: however, the energy and water consumption data indicate differently. As such, the program would center on a detailed home audit to help homeowners understand their true level of consumption and how to become more efficient. Strategies to increase uptake and engagement are detailed in the action plan. This pilot program will both generate momentum and serve as an opportunity to pilot these sorts of efforts for wider scale applicability which will help the City of Markham reach its ambitious target of net zero by 2050.

Table 4

Recommended Measures for the Residential Retrofit Program

ENERGY EFFICIENCY

Air Sealing windows & other junctions

High quality, thermally broken triple-pane windows

Insulation

Low energy appliances

High efficiency heating, ventilating and air conditioning and domestic hot water

HVAC maintenance and controls upgrades

Drain water heat recovery devices

Solar pool pump, heater and blanket

Stepwise retrofit plan/complementary measures

WATER EFFICIENCY

Water efficient landscaping

Irrigation system automation / optimization (timers, sensors) + dripping hoses

Rain barrel

Low flow faucets and showerheads

Fix leaky taps and toilets

Low flow toilets

SUSTAINABLE MANAGEMENT OF STORMWATER & URBAN FOREST

Disconnect downspout from sewer system

Rain gardens to encourage evapotranspiration

Planting of key species (i.e. willows) in areas of high water table (including native species that enhance evapotranspiration or heavy water drinkers where the water table is high)

Treat or replace ash trees

INFLOW AND INFILTRATION

Disconnect sump pumps and downspouts from the sanitary system

Connect sump pump to "third pipe" / subdrain system to stormwater system

New Home Construction program

Bayview Glen is slowly being transformed with infill development. To complement the Residential Retrofit Program, it is recommended that a New Home Construction Program be included on a home by home basis. This would provide an ideal opportunity to adopt substantial energy and water efficiency measures on properties.

In order to reach new build homeowners it is suggested that the City's Building Department be enlisted to help promote these programs. It is also recommended that the City of Markham seek out homeowners willing to achieve Passive House, Net Zero, LEED Platinum, or Living Building Challenge requirements as a showcase for the community. The coordination of Open Houses for neighbours could be arranged with the participating homeowners as it has been proven in similar projects here and abroad that this increases interest and uptake in these sorts of developments and technologies. This would also provide opportunity to partner with private sector partners which can prove valuable for future Bayview Glen SNAP initiatives.

Table 5

Key outcomes over the long term – Core area objectives

WATER	• Reduce residential water use to 150L per capita per day • Reduce peak and average water day demand by at least 10% • Reduce peak sanitary sewer system flow by 50-70% in the MA08 flow monitor area • Eliminate all downspout and sump pump connections to the sanitary sewer system • Reduce homes with downspout connections to the storm sewer to 25% • Reduce the number and frequency of basement flooding calls • Increase lot level SWM and basement flooding prevention measures
GHG REDUCTION	• 6% GHG reduction in 10 years • Net Zero energy, water, waste and emissions by 2050 • Increase active transportation and reduce number of trips by car
URBAN FOREST	• Maintain urban matrix forest cover of 41% (2009) by replacing all dying ash trees and increasing the number of street trees along Bayview Avenue

SHORT TERM IMPLEMENTATION

Continuing with the momentum set by this integrative plan, project partners will now focus on the development of implementation programs and monitoring. Two major projects that showcase innovative approaches and that are highly strategic have been prioritized for short term implementation:

Glencrest Park Renewal

Part of the West Thornhill Flood Remediation Strategy involves storm sewer replacements in Bayview Glen. This offered the ideal opportunity to re-imagine the outdated 1970s Glencrest park into one that would serve the residents better while at the same time achieving significant environmental and stormwater management objectives. This executive summary was supposed to be developed before the park was implemented. A design will be developed in consultation with residents involving public meetings, surveys and engagement at community events. In collaboration with municipal departments, a modern multifunctional park design will be created. Construction will start in the fall of 2016 and will be completed in the spring of 2017. The updated design will include a modern playground, open play space, a meditation garden, and the valley feature was re-created with the installation of a system of rain gardens. The landscape of Glencrest Park will undergo a transformation from maintained turf to a rich mosaic of ecotones, creating a naturalized landscape with hundreds of native trees, shrubs and flowers and supporting attenuation of stormwater runoff. A looped trail system will connect key features within the park as well as provide an off-street pedestrian linkage. In the fall of 2016 a community tree planting took place whereby community members contributed to the parks future by planting a portion of the extensive tree plantings that will occur throughout the park; this will expand the tree canopy and promote evapotranspiration. Public events at the park, were also used to develop community cohesion and discuss with residents sustainability actions that they can implement at their home (see below). Glencrest Park revitalization will be used as a demonstration project to showcase innovative approaches for integrative infrastructure renewal and neighbourhood engagement.

Residential Retrofit Program:

Based on in-depth local market research, a preliminary strategy was developed for a residential retrofit program to achieve strategic neighbourhood objectives on greenhouse gas reduction, water conservation, basement flooding prevention, stormwater management, reduction in inflow and infiltration to the sanitary system and urban forest succession. The program will tap into residents' interests for the latest in technology and their neighbourhood pride. Through a one window, face to face approach, the program will help homeowners to make decisions and implement key retrofits at home. It will also help them access government and utility incentives. The TRCA, the Region of York and the City of Markham are working on partnerships with businesses and utilities for program delivery. The program will launch with a pilot in 2016.

Preliminary marketing research and strategies will be reviewed in relation to the development and implementation of the Residential Retrofit Program.

ACHIEVEMENTS

In March of 2016, the Bayview Glen Sustainable Neighbourhood Retrofit Action Plan was a recipient of a National Award of Excellence from the Canadian Society of Landscape Architects (CSLA) in the category of New Directions. This was a recognition for SNAP's proposed innovative solutions to manage runoff, mitigate flooding, improve energy efficiency and enhance a natural heritage through community-based retrofit initiatives.

Acknowledgment

The partners wish to acknowledge LURA Consulting, Schollen & Company Inc., The Municipal Infrastructure Group Ltd., and BECC for their contribution to the development of the Bayview Glen SNAP Action Plan (Phases 2 and 3).

www.trca.ca/SNAP