Richmond Hill's Perspective: Climate Change & Planning

Bringing Climate Change into Official Plans Workshop

Clean Air Council/Partnership

September 21, 2018

AGENDA

A. Background Context
B. Climate Change Perspective
C. Planning Perspective
D. Main Take-Aways

Climate Change – Richmond Hill context

- Richmond Hill's community values achieving an environmentally sustainable community while maintaining their quality of life and services.

- Local impacts from climate change **threaten the Town's ability to maintain future service levels** and the health of our community and environment.
  - Severe weather events (e.g. ice storms, heat waves, sporadic winter freeze-thaw cycles, heavy rainfalls, and wind storms)
  - Damage to infrastructure and facilities, power outages, vector-borne diseases, heat stroke, flooding and extra strain on staff and resources

- From a municipal perspective, climate change conditions increase our:
  - **Risks** to health and safety of life and property
  - Need to respond to **emergencies** and **service disruptions**
  - Need for more frequent capital repair and maintenance **costs**
  - Municipal **liabilities** related to all of the above

Corporate Climate Change Risk Scan

What is it?

- A high-level scan that assessed the risks to our municipal corporation from future climate scenarios and identified potential adaptation opportunities (Fall/Winter 2017/2018)
- A series of inter-departmental workshops led by the Ontario Climate Consortium

What did we learn?

- **Top climate change risks:**
  - more intense rainfalls
  - heat waves
  - ice storms/freeze-thaw cycles
- **Top climate change impacts:**
  - flooding and stormwater management
  - heat stress
  - infrastructure damage
- **Major consequences:**
  - increased financial costs
  - business continuity
- **Recommendations included:**
  - develop a **coordinated CC Action Framework** to align corporate initiatives for adaptation
  - focus on adaptation actions that can address the highest priority risks

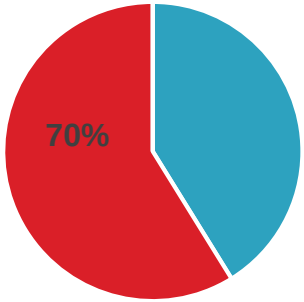



Corporate Climate Change Risk Scan

What did we learn?

- **Adaptation categories with potential to address most high priority risks:**
  - Updating Engineering Standards and/or Maintenance of Infrastructure
    - e.g. shade structures, IDF modelling, building/facility design for heavier snow/ice loading, LID & green infrastructure
  - Planning and Policy (internal and external)
    - e.g. Corporate Asset Management and long-term budget forecasting, worker schedules and H&S protocols, Sustainability Metrics, urban forest canopy targets
  - Emergency and Business Continuity Planning
    - e.g. clarify emergency procedures, staff roles & responsibilities during extreme weather events, cooling and warming centres, back-up means of communication & technology

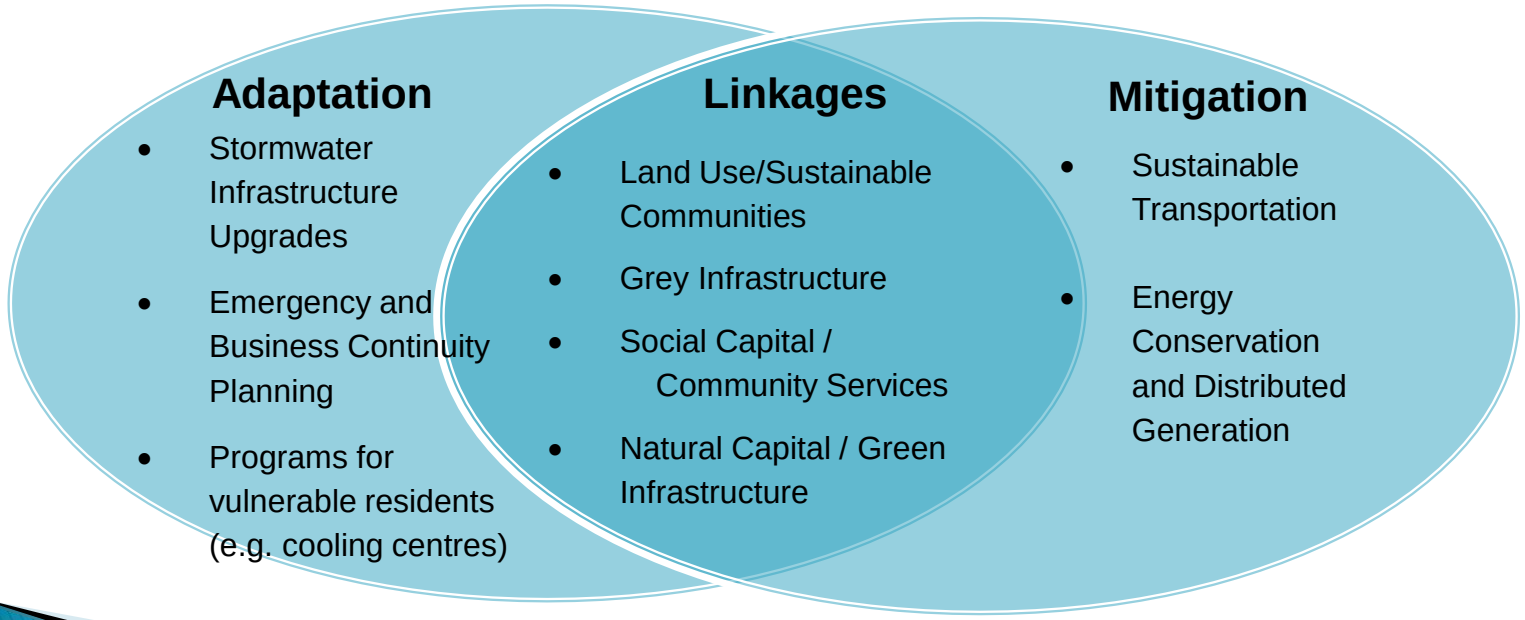
Focusing on these adaptation categories would help address 70% of Richmond Hill's high priority risks



CC Framework Scoping Workshop

What is it and what did we learn?

- A focused inter-departmental workshop led by OCC (spring 2018) to help identify:
  - Main functional areas ("buckets") for climate change action to be considered in the framework
  - Related corporate plans and strategies with potential to apply a climate change lens
  - Stakeholders and engagement opportunities relevant to the functional areas
- Information from the scoping workshop will inform workplan development
- DRAFT major functional areas for consideration:



Corporate Climate Change Perspective

Implications for climate change policies in OP:

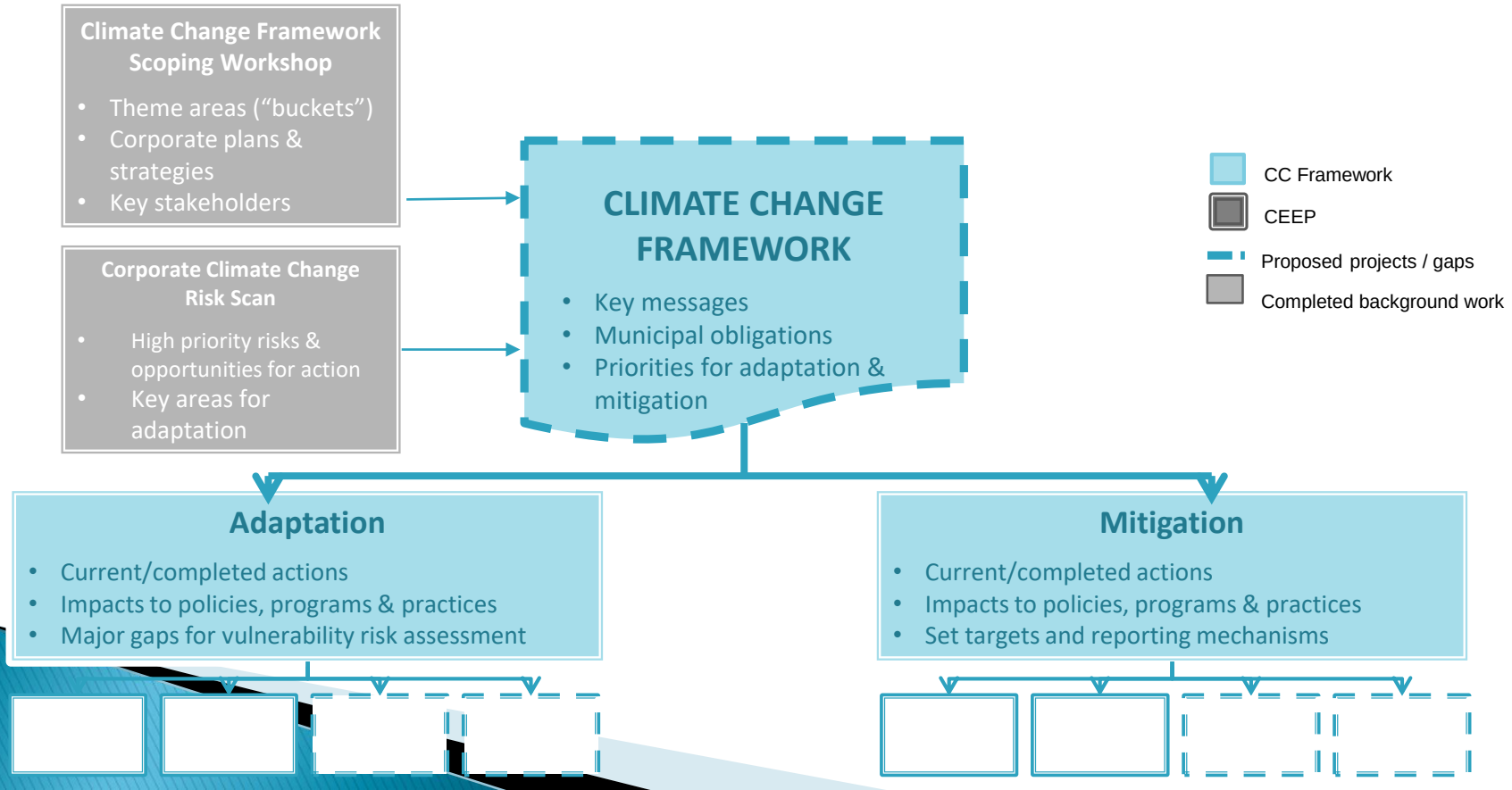
- Several opportunities to relate adaptation to land use planning through location, design and construction of buildings and green infrastructure
- However, only a fraction of the adaptation opportunities identified could be addressed through land use policies in the Official Plan
- Many divisions in the corporation are not primarily governed by the OP
  - e.g. divisions responsible for financial planning, business continuity and emergency services, procedures for community programming and facility operations, health & safety, municipal risk and liability, etc.
- Need to recognize regulatory and policy requirements that govern other corporate business functions
  - e.g. capital asset management planning, ISO 14001 EMS, employment standards, EV strategy, stormwater facility monitoring programs, etc.

Richmond Hill approach:

- Develop a Climate Change Framework to identify corporate obligations and align priorities
- Develop a Community Energy & Emissions Plan to inform OP policies with respect to mitigation

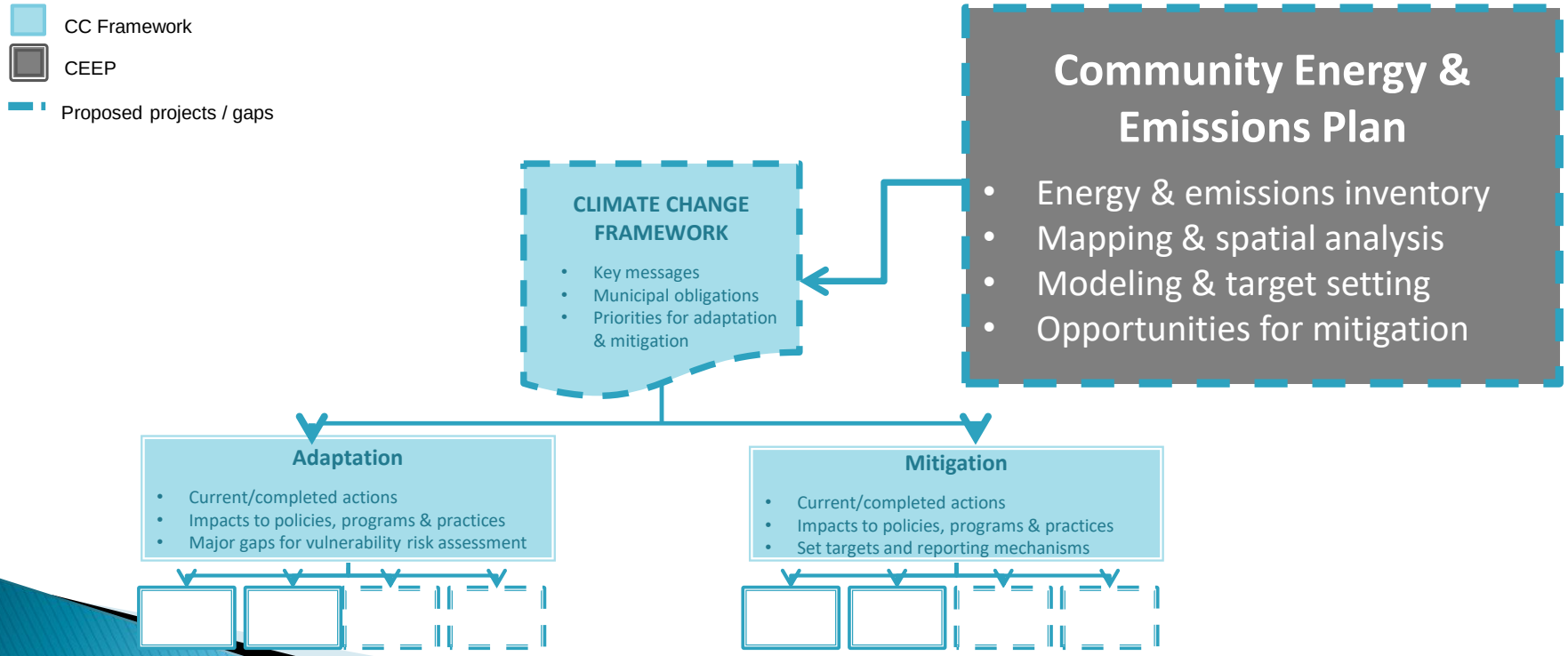
Climate Change Framework

- An **umbrella document** that will outline Richmond Hill's climate change mandate (key messages, municipal obligations, priorities for adaptation and mitigation)
- A central, **coordinated approach** (Council-supported, align other corporate initiatives, foundation to pursue grant funding)
- Apply a **CC lens to identify gaps** for existing/new initiatives
  - e.g. Sustainability Metrics update, Comprehensive ZBL, Transportation Management Plan update, Urban Forest Management Plan, Environment Strategy update, SWM Vulnerability Risk Assessment, Business Continuity, etc.



Community Energy & Emissions Plan

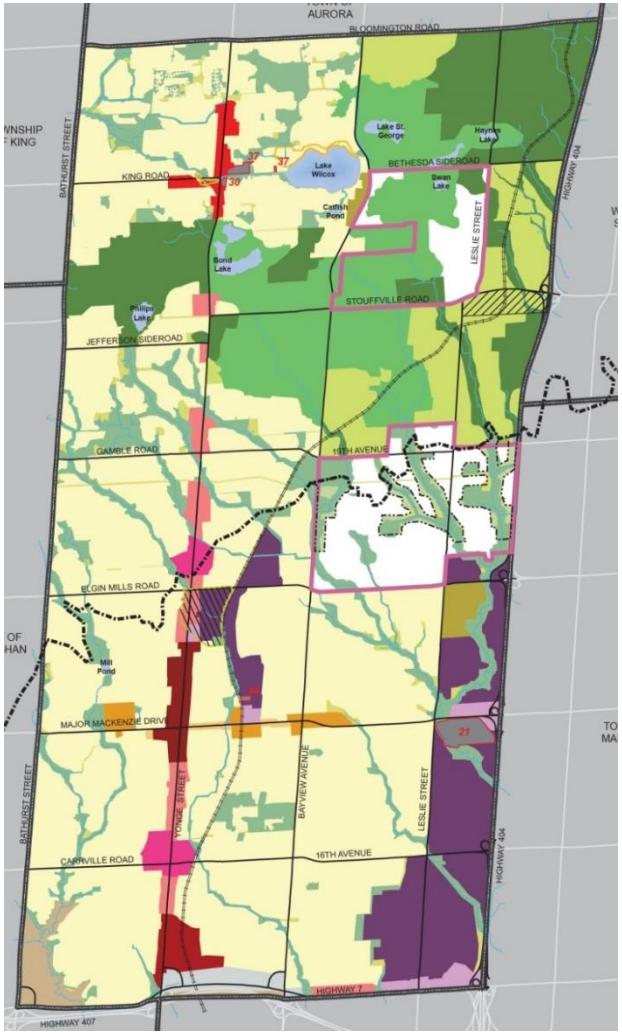
- A comprehensive **municipal study & action plan** to reduce GGH emissions
- Required to meet conformity, update/inform other corporate initiatives, become eligible for grant funding
- Likely to focus on GHG reduction through buildings, transportation, and natural capital/green infrastructure



Climate Change mandate in an OP

- OP is only 1 tool that can be used to address climate change

Richmond Hill OP (2010) provides the broad strokes to move towards a more compact, walkable built form with a connected Greenway System, including an expanded parks and urban open space system (key directions suggested in Province's CEEP Guidebook)



So where does a place like Richmond Hill go from here?

- Could an OP incorporate a focus on creating a more resilient built form, natural environment, and parks and urban open space system?

Built form

- How do we create a more resilient built form?
- Note: RHOP already directs for updates to the Town's Sustainability Metrics

Tool 1:Green development standards

Tool 2: Green Roof Bylaw

Ex: Toronto Green Roof By-law

Ex: Hamburg, Germany
Green Roof Strategy

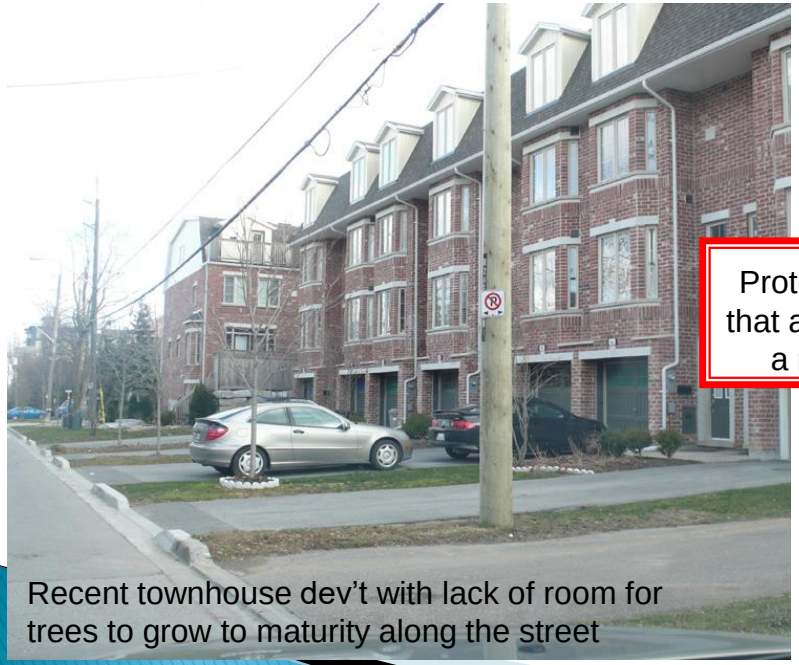
- Goal is to plant 100 hectares of green roof surface with plants and flowers in the metro area by 2020
- New residential constructions alone provides a 44 ha. green roof potential over 5 years

Natural Environment

- How do we enhance the urban tree canopy?
- Note: RHOP requires 25% tree canopy, currently at ~29%, majority of existing tree canopy on ORM (north RH), but growth is primarily in the south

Tool 3: Refine OP Policy

Tool 4: Comprehensive Zoning By-law



Recent townhouse dev't with lack of room for trees to grow to maturity along the street

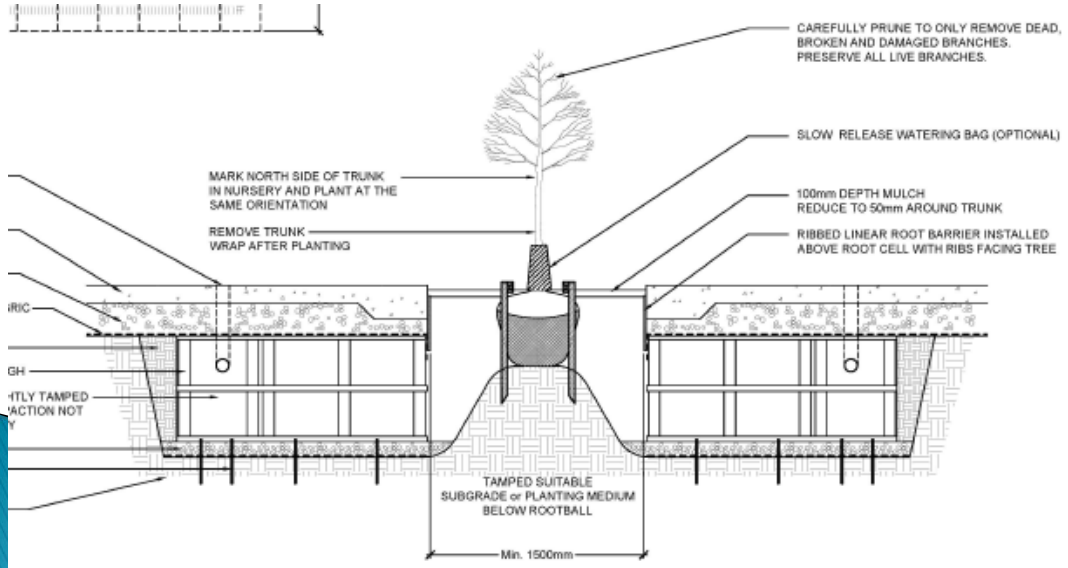
Protecting a width that accommodates a mature tree

Natural Environment

- How do we ensure trees can withstand heavy winds & hotter summers/ drought?
- Note: RHOP requires adequate growing space within street ROWs

Tool 5: Urban Forest Planting Guidelines

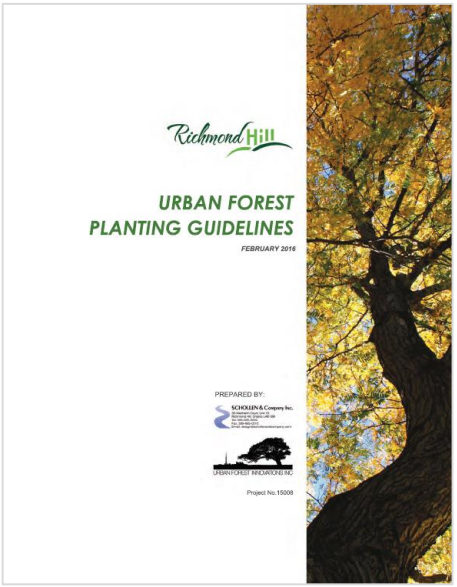
Tool 6: Soil Volume Standards




TORONTO STAR

News - #StarWeather

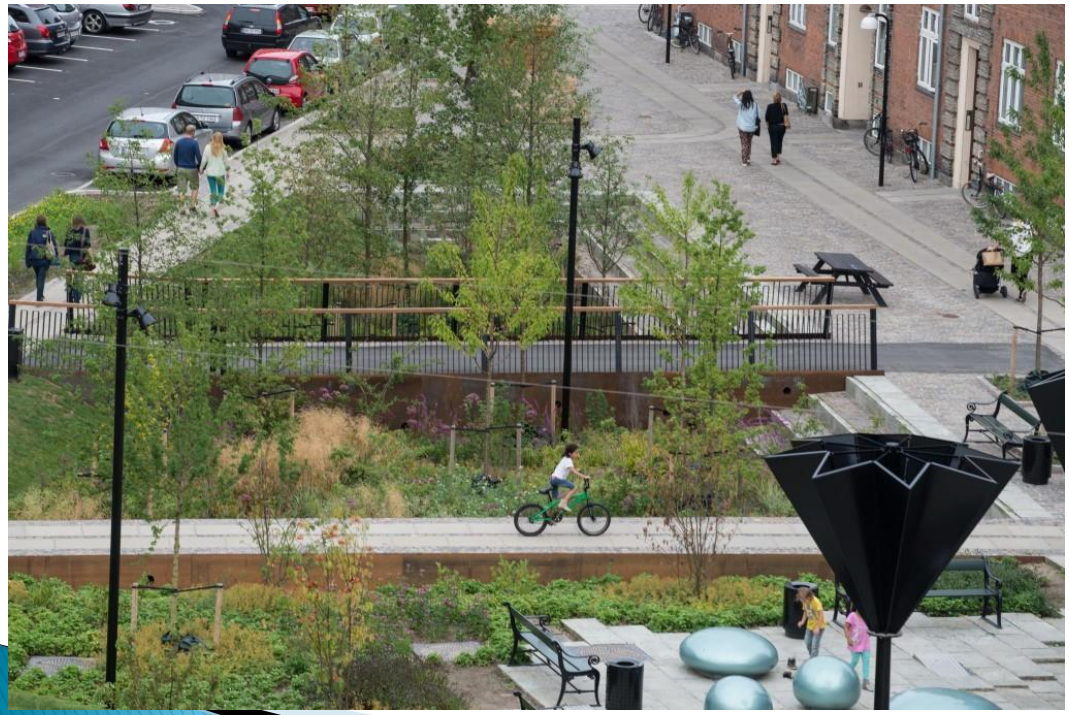
'Suddenly, the whole lawn came up': Severe thunderstorm in Toronto leaves trees uprooted, thousands without power



Parks & Urban Open Space System

- Can we actively/intentionally design our parks system as climate resilient infrastructure?

Tool 7: Green Infrastructure **Tool 8: Parks Design**



Ex: Tåsinge Plads, Copenhagen

- City's first climate-adapted urban square
- SWM infrastructure dressed as a park
- 1000 m2 "wild" urban nature designed to delay and percolate rainwater from surrounding area (~4300m2), freeing up room in the storm sewer
- includes "water parasols" as structural elements that collect water, filter it, and create small channels for children to use for play

Main Take-Aways

- **Every municipality is different**
  - RH's approach evolved out of a need to balance regulatory requirements and corporate priorities against resource constraints

- **Know your municipality when designing your approach**
  - What is essential to gain buy-in?
  - How do things "actually" get done in your municipality?
  - What/where are the best opportunities to make a difference in your local context?
  - Consider all the tools available in your municipality – the OP is one of them

- **Official Plans provide a good opportunity to recognize and/or incorporate tools to address climate change**

  For example:
  - Green development standards
  - Green roof by-law
  - OP policies
  - Comprehensive zoning by-law
  - Urban forest planting guidelines
  - Soil volume standards
  - Green infrastructure
  - Parks design