

MAKING PROGRESS - A MUNICIPAL PERSPECTIVE



Rachel Prudhomme, M.Sc., P.Eng.

Director, Engineering Services, Town of Newmarket

Stormwater & LID Workshop, Midland - Wednesday, May 29, 2019

Dude, where's my car?





1. THE RISK / THE URGENCY

- **FLOODING** = Newmarket's & others' HIGHEST climate change risk
- Risk: Phosphorus and pollutants
- Risk: Damage to persons and property / Health & wellbeing
- **RISK: Municipal Liability – Class Action Lawsuits!**
 - We KNOW that there are more extreme precipitation events
 - If we do NOT make best efforts to address, we are exposed
 - EXAMPLES:
 - District of Muskoka / MNR (2016, sued for \$900M)
 - City of Thunder Bay (2012, sued for \$300M)
 - City of Stratford (2010, settled for \$7.7M but spent \$70M to upgrade SWM facilities, some to 250 year storm)
 - Others throughout Canada (Manitoba, BC, Quebec)



2. WHAT CAN WE DO?

- Change a culture internally (paradigm shift); **KEY IS REPETITION!!!**
- **ALWAYS** Low Impact Development (LID) before traditional SWM
- Seek partners (LSRCA, MECP, FCM, YR, NRCan, ECan...)
- Capitalize on **ALL** opportunities:
 - Development (eliminate ponds; pond clean-outs; policies & bylaws)
 - Capital (road reconstruction; retrofits at municipal buildings)
 - Can even do with Transportation! (traffic calming with LID)
 - Residential / ICI Retrofits (education; grants or relief from charges)
 - Municipal Lands (lead by example)

(What can we do? ...continued...)



- Create a dedicated full-time position – “Sr. Climate Change Specialist”
- Implement Municipal Stormwater Charge; KEY IS KEEP IT SIMPLE and start with **ZERO-NET INCREASE** - 48-page Stormwater charge manual “PDF” available on request, 7-page executive summary: <https://www.newmarket.ca/LivingHere/PublishingImages/Pages/Stormwater%20Charge/Stormwater-Charge-and-Credit-Research-Project1106-811/Executive%20Summary.pdf>
- Be open to a macro-economic watershed approach across borders
- Council Workshop on LID: Newmarket, Jan. 14, 2019, streamed video starts at the 12 minute 37 second mark at this link: https://pub-newmarket.escribemeetings.com/Players/ISISStandAlonePlayer.aspx?ClientId=newmarket&FileName=New%20Encoder_CW_2019-01-14-08-53.mp4

3. CAPITAL LID INSTALLATIONS



Pre-2015:

- Rodeo Homes / Quaker Trail LEED Platinum (2007): U/G Cisterns
- Vales of Glenway / Mosaik Subdivision (2012): Fully LID & u/g tank

2015:

- Woodland Court: Bioswale
- Tom Taylor Trail in Fairy Lake Park: Bioswale & permeable concrete

2016:

- Arnold Crescent: 4 Bioswales
- Tom Taylor Trail Davis Drive Underpass: Grassed infiltration trench
- Forest Glen Road Demonstration Project: NO STORM SEWERS!

2016:

FOREST GLEN DEMO PROJECT

<https://www.youtube.com/watch?v=iYZy5ytxao0>



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(Capital LID Installations ...continued...)

2017:

- Ray Twinney Rec. Complex: Bioretention & permeable pavers
- Fairy Lake East parking lot: Rain garden
- Lundy's Lane: Bioswale
- Queen Street Traffic Calming Pinch Point: Bioswale

2018:

- Magna Centre: 5 enhanced swales before existing pond (LSRCA)
- Lions Park: Naturalized wetland & stream restoration / usable park

2019 & beyond:

- All designs looking to LID solutions before traditional storm sewers

Ray Twinney Rec. Complex: Bioretention and permeable pavers



Queen Street Traffic Calming Pinch Point: Bioswale





4. DEVELOPMENT LID

2015:

- Infiltration gallery for rooftop – 205 Pony Drive
- Bioswale with infiltration gallery (design as per CVC) – 145 HWP N

2016:

- Huge infiltration bed & permeable pavers (no stm outlet) – 24 Eagle St
- Infiltr'n trench, open bottom u/g chamber, bioswale – 18110 Yonge St
- Infiltr'n trench, perforated pipe network – medical bldg. 536 Mulock
- Bioswales, permeable pvm't, rainwater harvesting – Y.R. Annex Bldg

2017:

- Infiltr'n trench, perforated pipe network – 73 townhouses 955 Mulock
- Bioswales, permeable pavers – 85 Eagle St

2018:

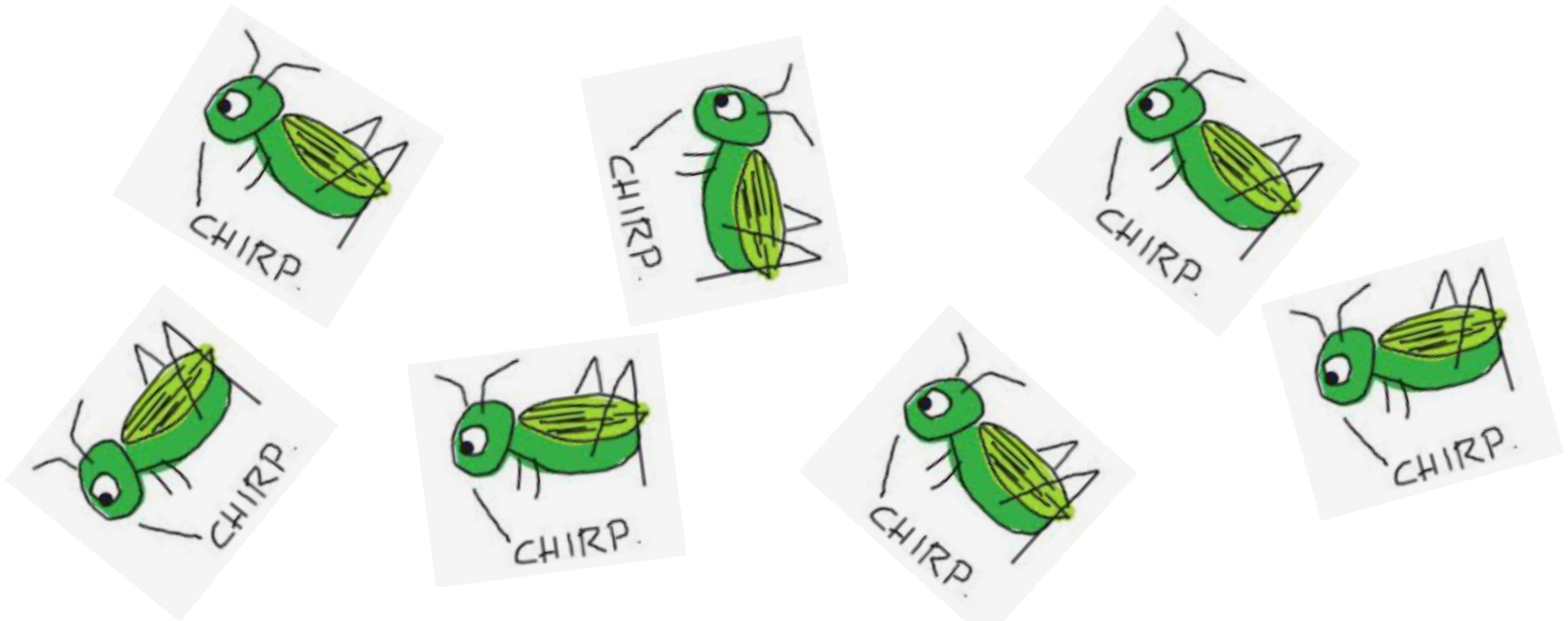
- Raingardens, permeable pavers (entire private road) – 400 Park Ave.
- Permeable pavers for all townhouse driveways – 260 Eagle
- Infiltration galleries for roof areas – 17844 Leslie St.

5. RESULTS

- Every little bit helps!!!

EXAMPLE: FLOODING ALONG WESTERN CREEK

- Pre-LID: Dozens of phone calls every single year for over 10 years
- Several meetings with Mayor, Deputy Mayor, ward councillor & staff
- Addressed by installing LID upstream and getting UCM to clear ponds
- Post-LID: 2 years with about 3 x 100-yr storms, no more flooding!



6. CHALLENGES & SOLUTIONS



- **FUNDING** (new provincial policies / upcoming federal election)
Sol'n: SWM Charge to sustain LID; LSRCA offsets & technical help
- **UNKNOWN**s of province's regional gov't & Simcoe County review
Sol'n: Continue business as usual – nothing we can do now
- **TECHNOLOGY** is still relatively new to municipalities
Sol'n: Training (through LSRCA and others); Conferences (TRIECA)
- **NOT ALL CONSULTANTS** familiar with LID designs
Sol'n: LSRCA pre-qualification lists & direct awards; Training
- **DEVELOPERS** don't know benefits / Small cottages → huge homes
Sol'n: Education; Compel when dev't applications; Policies & bylaws
- **OPERATIONS** crews are not accustomed to maintaining LID
Sol'n: Hands-on training; salt vs sand; agreements with residents

7. WHERE DO WE GO FROM HERE?



- Continue efforts and not lose momentum
- Look at a macro-economic approach across municipal borders for a more concerted approach to SWM within the watershed
- Encourage Councils to consider LID when choosing priorities
- Engage private sector (Residential, ICI) through education, the creation of incentives and the enforcement of by-laws and policies
- Get away from SWM ponds; NEED BY-LAWS & POLICIES!!
- Monitor pilot projects for continuous improvement
- Ask for training, technical advice & support from peers and partners
- ***WE NEED TO DO THIS.*** *There is no choice.*



THANK YOU !