

# 2021 Programming Update – Water Stewardship

(10 minutes)

# Natural Infrastructure and Climate Resiliency

## What are the benefits to my organization?

- Resiliency for your business and your community through the utilization of natural infrastructure solutions on private and public lands
- Mitigate risks and potential costs from flooding and extreme weather events including physical damage, supply chain and operational interruptions, and threats to water quality
- Access to a community of experts and vendors to assist with natural infrastructure implementation opportunities
- **Program landing page** - <https://partnersinprojectgreen.com/your-needs/water-stewardship/natural-infrastructure-climate-resiliency/>



# Natural Infrastructure and Climate Resiliency

## Business Case for Natural Infrastructure (2020)

### White Paper and Article publications



- As a liaison between the conservation community and the private sector, Partners in Project Green is uniquely positioned to provide information for businesses on flooding issues in the GTA, on the benefits of natural infrastructure, and on the business case for action
- **White paper** - <https://partnersinprojectgreen.com/natural-infrastructure-white-paper/>
- **ReNew Canada magazine** - <https://partnersinprojectgreen.com/wp-content/uploads/2020/08/Renew-Canada-greeninfrastructure-julyaug-2020.pdf>

# Water Efficiency

## What are the benefits to my organization?

- Consult with a network of experts and technology providers dedicated to helping you solve your organization's process water and wastewater challenges and realize efficiencies.
- Learn from other organizations in our network that have improved their processes by installing industry best practices and innovative water efficient technologies.
- Utilize existing municipal programs, supportive incentives, and potentially reduce process water and wastewater footprints and enhance utility savings.
- Improve Environmental, Social and Governance (ESG), Sustainable Development Goals (SDG), and Corporate Social Responsibility (CSR) performance of businesses.
- **Program landing page - <https://partnersinprojectgreen.com/your-needs/water-stewardship/water-efficiency/>**





# Water Efficiency

## Municipal Eco-Cluster (2019)

### Summary Report and Article publications



- 18-month working group focused on ICI sector water efficiency program alignment between Region of Peel, City of Toronto, York Region, City of Guelph, and Region of Waterloo
- **Summary report -** <https://partnersinprojectgreen.com/resources/municipal-water-efficiency-eco-cluster-summary-report/>
- **Environmental Science & Engineering magazine -** <https://esemag.com/water/craft-brewery-cuts-water-consumption-by-10/>
- **Ontario Pipeline magazine -** [https://www.ontariopipeline-digital.com/owwq/0219\\_summer\\_2019/MobilePagedArticle.action?articleId=1502692#articleId1502692](https://www.ontariopipeline-digital.com/owwq/0219_summer_2019/MobilePagedArticle.action?articleId=1502692#articleId1502692)

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# Collective Implementation Opportunities



## Successful examples of collaborative partnerships

- Nine collaborative implementation projects with industrial and commercial end users that utilized governmental program support and incentivization (references in Appendix section)
- Water offset impact equivalent to 918 Olympic sized swimming pools
- Project awards: Clean 50 (3), Nature Inspiration, North American Pollinator Protection
- Vendor network support (for both green infrastructure and water efficiency services and technologies) to accelerate project implementation
- Case studies and trade publication articles showcasing industry collaboration, stakeholder success, and collective impact





# Water Industry Roundtable – November 2020

## Roundtable Objectives:

1. Identify the common challenges and opportunities available in managing water utility operational footprints and on-site stormwater management
2. Share industry case studies and best practices that Partners in Project Green has led to encourage companies to pursue similar implementation opportunities
3. Inspire industry leadership and collaborative goals




# Water Industry Roundtable Participants





# Water Industry Roundtable Action Items for 2021

PPG Action Item	Brief Description	Estimated Timeline for Completion
Develop concept for Water Leaders Consortium	<ul style="list-style-type: none"> <li>Establish consortium model</li> <li>Invitations to Roundtable attendees</li> </ul>	<ul style="list-style-type: none"> <li>Q1 2021</li> </ul>
Confirm timelines for project completion for each organization	<ul style="list-style-type: none"> <li>Meet with Roundtable attendees</li> <li>Confirm timelines for project implementation</li> </ul>	<ul style="list-style-type: none"> <li>Q1 2021</li> </ul>
Perform resource gap analysis for each organization	<ul style="list-style-type: none"> <li>Identify resource gaps sought by end users</li> <li>Confirm funding capacity from stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Q1/Q2 2021</li> </ul>
Relay reference materials	<ul style="list-style-type: none"> <li>Relay customized list of materials identified</li> <li>Establish repository for materials identified</li> </ul>	<ul style="list-style-type: none"> <li>Q1 2021</li> </ul>
Develop inventory of technical support	<ul style="list-style-type: none"> <li>Establish industry vendor network(s)</li> <li>Establish supportive stakeholder network(s)</li> </ul>	<ul style="list-style-type: none"> <li>Q1/Q2 2021</li> </ul>
Pursue supportive governmental alignment	<ul style="list-style-type: none"> <li>Meet with OWWA Water Efficiency committee</li> <li>Meet with Peel, York, Toronto programs (efficiency)</li> <li>Meet with Mississauga, Brampton, Toronto (stormwater)</li> </ul>	<ul style="list-style-type: none"> <li>Q1/Q2 2021</li> </ul>
Develop case study repository	<ul style="list-style-type: none"> <li>Establish inventory of case study references</li> <li>Develop new case studies with Roundtable participants</li> </ul>	<ul style="list-style-type: none"> <li>Q2/Q3 2021</li> </ul>
Confirm supportive categorization from PPG	<ul style="list-style-type: none"> <li>Water management / Sustainability plan development</li> <li>Sewer surcharge / wastewater discharge reduction</li> <li>On-site stormwater management / resiliency</li> <li>Water efficiency capital retrofit capacity</li> <li>Pilot program development and participation</li> <li>Funding source capacity for implementation support</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing</li> </ul>



# Appendix I

(Brainstorming Questions)

# Brainstorming Questions



## Uncovering Water Stewardship Opportunities

- What are some of the common challenges that your organization faces managing operational water footprint or on-site stormwater management?
- What are your current priorities when it comes to water stewardship over the next 1-3 years?
- What are your primary motivators for making some of these changes?



# Appendix II

(Case study references)



# Natural Infrastructure and Climate Resiliency

## Green Infrastructure Implementation (2015)

### Calstone's "Ponds"



- 44,000 ft<sup>2</sup> of drainage area supported (rooftop, infiltration ponds)
- Infiltrates ~1.8 M litres of on-site stormwater runoff capacity per year
- Industry recognition: (4) trade publication articles, (2) case studies, multiple stakeholder awards (e.g. Clean50, Green Business Leader)
- **PPG Partners:** Calstone, XCG, Grounds Covered, Ministry of Environment
- **Case study** - <https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/evaluation-retrofitted-stormwater-source-control-practices-calstone-inc-toronto/>

# Natural Infrastructure and Climate Resiliency

## Corporate Social Responsibility Implementation (2018)



### Raingarden / Pollinator Habitat / Engagement Pilot

- Neighbourhood Improvement Area
- 800 m<sup>2</sup> of on-site infiltration
- ~700k litres of on-site stormwater runoff capacity each year
- 2,000+ native plant species
- **PPG Partners:** Toronto District School Board (Tom Longboat Junior Public School), Calstone
- **Award recipient video -**  
<https://www.youtube.com/watch?v=UsCdsB7oI34>

# Natural Infrastructure and Climate Resiliency

## Tower Program Demonstration (2019-2021)

### Burnhamthorpe SNAP Collaboration



- Help older multi-unit residential buildings make improvements to their building and gain from savings
- Providing co-benefits to the community and help to improve aging affordable housing
- **PPG Partners:** TRCA SNAP, Starlight Investments, City of Mississauga, Eco-Source, Federation of Canadian Municipalities
- **Pilot program landing page -**  
<https://trca.ca/conservation/sustainable-neighbourhoods/snap-neighbourhood-projects/burnhamthorpe-snap/projects-tower-program/>



# Natural Infrastructure and Climate Resiliency

Green Infrastructure Leadership Lab (2021-2023)

## Greening Corporate Grounds Collaboration

- Minimize potential stormwater risks to property and the environment
- Increase uptake of the stormwater credit program by building leadership within the business community
- Improving the profile and awareness of green infrastructure and innovative stormwater management practices
- **PPG Partners:** Credit Valley Conservation, City of Mississauga, Mississauga Board of Trade





# Water Efficiency

## Water Conservation and Reuse (2016)



## Dextran Products Water reuse retrofit

- Reduction of rising operational costs: gas, chemical treatment, surcharge fees
- Reduction in process water and wastewater footprint
- 8-step retrofit capital project: \$60k investment to redeem \$110k savings

- **Case study -**

<https://partnersinprojectgreen.com/case-study/dextran-products-water-stewardship/>

💧 ~45.4 million litres of process water offset from operations

# Water Efficiency

## Water Conservation (2016)



### Campbell's Reverse Osmosis retrofit

- Reverse osmosis retrofit installation
- Reduction in CO2 loading
- Reduction in chemical usage
- Boost boiler efficiency
- \$397,000 capital project, \$80,000 grant

💧 ~18.3 million litres of process water offset from operations

# Water Efficiency

## Water Conservation (2017)



### **Molson-Coors Pre-buffer cooling process retrofit**

- Bottle and can line retrofit installation
- Electrical equipment enhancements
- Pasteurization equipment enhancements
- \$225,000 capital project, \$78,000 grant

💧 ~34.6 million litres of process water offset from operations

# Water Efficiency

## Water Conservation (2017)



### Supreme Egg 10-step water conservation retrofit

- Enhanced clean in place practices
  - Sanitation and pasteurization adjustments
  - \$136,722 in overall operational savings
  - 30% municipal block rate incentive
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- ~7.7 million litres of process water offset from operations per year
  - ~28.3 tonnes of greenhouse gas emission reduction (municipal electricity pumping, natural gas, steam heat recovery)
  - **Case study** - <https://partnersinprojectgreen.com/case-study/municipal-water-efficiency-eco-cluster-supreme-egg/>



# Water Efficiency

## Water Conservation (2017)



### Credit Valley Hospital Sterilizer and heat exchanger retrofit

- Sterilizer equipped with vacuum pumps
  - Heat exchanger for preheating efficiency
  - \$43,573 in overall operational savings
  - \$12,750 municipal program incentive
- ~18.6 million litres of process water offset from operations per year
  - ~28.2 tonnes of greenhouse gas emission reduction (municipal electricity pumping, natural gas, steam heat recovery)
  - **Case study** - <https://partnersinprojectgreen.com/case-study/municipal-water-efficiency-eco-cluster-credit-valley-hospital/>

# Water Efficiency

## Water Conservation (2018)



## Arla Foods Process water reuse & efficiency retrofit

- Spray nozzle and process water reuse
  - Natural gas, cleaning chemical reduction
  - \$285,000 in overall operational savings
  - \$30,513 municipal program incentive
- ~122.4 million litres of process water offset from operations per year
  - ~212.0 tonnes of greenhouse gas emission reduction (municipal electricity pumping, natural gas, steam heat recovery)
  - **Case study** - <https://partnersinprojectgreen.com/case-study/municipal-water-efficiency-eco-cluster-arla-foods/>