Attachment 1

Corporate Environmental Action Plan 2021 Progress Report

Water Conservation

Objective W1: Reduce Town-owned facility water consumption.

Objective W2: Reduce the uncontrolled and inadequately controlled storm water areas with respect to both quality and quantity by following recommendations of the Town's Comprehensive Storm water Management Master Plan.

- Town Operations installed an in-ground holding tank at library square to harvest and repurpose greywater, generated from splashpad usage, as a resource for irrigation for landscape and vegetation (W1);
- Town Operations changed 315 water meters in 2021 as part of its water loss reduction strategy (W1);
- Applied low impact development techniques during construction of the 2021 road reconstruction projects (bio-swales and enhanced oil/grit separator) (S1 and W2);
- Replaced sanitary laterals as part of its water loss reduction strategy (W1).

Sustainable Urban Development

Objective S1: Foster a sustainable green development and alternate methods of transportation to improve the quality of life of Aurora's residents and Town staff.

- To promote sustainable transportation for Town staff, the Town participated in the Annual Smart Commute Designation Award, maintaining Gold Standard status since 2012 (S1);
- Implementation of LEED Gold certified design features on Town-owned facilities during construction of the 2021 construction projects (water conservation low-flow hands-free plumbing fixtures; daylighting; high efficiency water fixtures and HVAC units; thermal comfort and control systems; LIDs; drought resistant plantings; and rainwater harvest designs) (W1, S1, and C3).

Waste Reduction and Diversion

Objective D1: Implement sustainable construction practices to reduce waste, incorporate sustainable design and reclaim or recycle materials.

Objective D2: Reduce waste going to landfill disposal.

- Included recycled concrete material as a provisional item as part of 2021 road reconstruction project procurement to encourage sustainable construction and building practices for Town infrastructure (D1);
- Integrated energy and waste reducing methodological practices as part of 2021 infrastructure maintenance and monitoring projects (integration of on-site helical piles, repurposing of topsoil stockpiles, and integration of web-based infrastructure maintenance and monitoring applications) (D1, D2, and C3);
- Integrated CB shields as part of 2021 storm pond reconstruction project (W2 and D1);
- As part of the Town's Waste Reduction Strategies, the Town has set 2018 as a base year for tracking Community-level waste diversion rates (D2):
 - o **2018: 65%**
 - o **2019: 65%**
 - o **2020: 64%**
 - o **2021**: 66%;
- Council approved the Bag Tag Program, which aims to educate residents on proper waste disposal practices and increase Town-wide waste diversion rates (D2);
- Increased the number of multi-residential buildings within the Town's recycling program (D2).

Biodiversity and Natural Heritage

Objective B1: Enrich Aurora's ecology by protecting and preserving biodiversity.

- Planted 1,900 trees and shrubs on Aurora lands (B1);
- As part of Aurora's ecological enrichment strategy, a thirteenth partnership was established in 2021 with the Adopt a Park Program and Partnership development (Herb McKenzie Park) (B1);
- Maintained the partnership with York Region for invasive species control where Phragmites, Garlic Mustard, Giant Hog Weed, and European Buckthorn were targeted on regional frontage adjacent to Aurora parkland. Arboretum continued work on Phragmites control (B1).

Climate Change and Energy

Objective C1: Prepare a Climate Change Adaptation Plan.

Objective C2: Implement the Provincial Climate Change Plan Actions.

Objective C3: Reduce the Town's greenhouse gas emissions by Town staff and at Town facilities. * Actions pulled from the Provincial Climate Change Plan.

- As part of Aurora's climate change adaptation initiatives, the Town had the kickoff to their Climate Change Adaptation Plan and Green Development Standard in 2021 (C1);
- Integrated Aurora's "Every Second Counts" public education campaign in 2021, as part of the Council-approved Anti-Idling Policy, which aims to limit idling from residents, businesses, and Town staff (C3);
- Council approved the Town's first Green Fleet Action Plan and Electric Vehicle Charging Station Policy, which aims to electrify the Town's corporate fleet to produce zero emissions by 2051 (C3);
- As part of Aurora's commitment to the Provincial Climate Action Plan, the Town had partnered with IVY Charge and installed eight (8) dual head level 2 chargers at Town-owned facilities; with proposed actions on installing two (2) additional dual head chargers as part of the Library Square Project (C3);
- Continued energy use tracking at Town Facilities (C3):
 - o 2018: 23,180,806 equivalent kilowatt-hours (Benchmark)
 - o 2019: 24,641,678 equivalent kilowatt-hours (~0.1% more than benchmark)
 - o 2020: 19,860,541 equivalent kilowatt-hours (~14.3% less than benchmark)
 - o 2021: 19,828,350 equivalent kilowatt-hours (~14.5% less than benchmark);
- Council approved \$50,000 for the implementation of energy efficient measures within Town-owned facilities, as part of effort to reduce corporate emissions (C3);
- Acquisition and implementation of energy efficient infrastructure within Townowned facilities (energy management software, LEDs, light control and occupancy systems, building automation system) (C3);
- Generated 613,727 kilowatt-hours of electricity from Town solar rooftop systems (C3);

- Continue monthly Building Performance meetings with Facility staff and Energy and Climate Change Analyst, to discuss ongoing energy projects, operational changes, energy consumption, trends, best practices for energy conservation, new technologies, utility incentives etc. (C3);
- Continued investigation of new technology to improve energy efficiency at SARC using the Building Automation System innovation (C3);
- Performed a natural gas use audit under Enbridge's "Run it Right" program, which served to implement low-cost energy conservation measures and operational changes, resulting to annual GHG emission reductions of 5% and annual operational costs of \$3,700 at Town-owned facilities (C3);
- Integration of operational changes at Town-owned facilities, in effort to reduce energy consumption during COVID 19 shutdown, resulted to an estimated energy cost avoidance of \$488,000 (~23% energy avoidance) in 2021.

Environmental Awareness

Objective A1: Encourage the stewardship of Aurora's natural resources and advance green initiatives by promoting community involvement.

- Continued efforts on updating the Town of Aurora website, providing the community up-to-date information on the Town's climate change initiatives and plans (A1);
- Integration of Every Second Counts Town Anti-Idling education campaign, which served as an education tool regarding the impacts of vehicle idling whilst promoting anti-idling methodologies (A1);
- Integration of two (2) Community Environmental awareness GO Green Challenges, which served to promote and encourage environmental awareness initiatives at home (A1);
- Developed an enhanced Lymantria Dispar Dispar (LDD) strategy that includes monitoring, robust communication plan, burlap kits, and watering and injection treatments of select prominent trees (A1 and B1).

ANNEX 1

2021 Building Energy Performance at Town Facilities







🚹 Aurora Family Leisure Complex (AFLC) 👖 Aurora Public Library 📲 Victoria Hall 📲 Aurora Cultural Centre - 22 Church Street 📲 Joint Operations Centre (JOC) 🎆 Reference year | 2018 🛛 Actual: 2021

Electricity Use Intensity - 2021 Electricity Use Comparison (2018 and 2021) Fuel consumption 1 - Aurora Public Library Actual | 2021 Difference Difference Reference | 2 - Aurora Family Leisure Complex (AFLC) 2018 3 - Stronach Aurora Recreation Complex (SARC) kWh kWh kWh % 4 - Aurora Town Hall 498,013 15.1% Stronach Aurora Recreation Complex (SARC) 3,292,409 2,794,396 5 - Joint Operations Centre (JOC) Aurora Family Leisure Complex (AFLC) 2,100,942 1,743,762 357,180 17% 6 - Aurora Sports Dome Aurora Public Library 1,416,072 -706,888 709,184 -99.7% 7 - Aurora Seniors Centre Aurora Community Centre (ACC) 1,465,961 1,174,228 291,733 19.9% 8 - Aurora Community Centre (ACC) Joint Operations Centre (JOC) 1,123,639 1,045,926 77,713 6.9% 9 - Aurora Cultural Centre - 22 Church Street **Aurora Town Hall** 978,611 893,431 47.7% 1,872,042 10 - 15171 Yonge Aurora Cultural Centre - 22 Church Street -38,681 208,338 247,019 -18.6% 11 - Victoria Hall **Aurora Seniors Centre** 264,918 204,138 60,781 22.9% 12 - 15165 A Yonge **Aurora Sports Dome** -88,208 88,208 13 - McMahon Club House 15171 Yonge 68,677 -68,677 14 - The Armoury 15165 A Yonge 24,440 -24,440 10 15 5 20 38 Victoria Hall 7,210 3,488 3,722 51.6% McMahon Club House 2,476 -2,476 **Energy use intensity Electricity** (kWh/ft²) 13,719 95.6% The Armoury 14,350 630 Total 11,058,994 9,792,072 1,266,922 11.5% Legend Highest 3 Middle Lowest 4 **RETScreen Expert** Subscriber: Town of Aurora - Professional



Natural Gas Use C	ompariso	on (2018 ai	Natural Gas Use Intensity - 2021		
	Fuel consumption				1 - Victoria Hall
	Reference 2018	Actual 2021	Difference	Difference	2 - Aurora Sports Dome
	kWh	kWh	kWh	%	3 - Stronach Aurora Recreation Complex (SARC) —
ronach Aurora Recreation Complex (SARC)	5,159,204	4,292,750	866,454	16.8%	4 - The Armoury
urora Community Centre (ACC)	2,753,596	1,610,660	1,142,936	41.5%	5 – Joint Operations Centre (JOC)
oint Operations Centre (JOC)	1,506,699	1,356,879	149,820	9.9%	6 - Aurora Family Leisure Complex (AFLC) —
Aurora Family Leisure Complex (AFLC)	2,176,837	1,274,816	902,022	41.4%	7 – Aurora Community Centre (ACC) —
urora Town Hall	561,685	440,854	120,831	21.5%	8 - Aurora Seniors Centre
urora Sports Dome		367,224	-367,224		9 - 15165 A Yonge -
he Armoury	95,403	195,783	-100,381	-105%	10 - Aurora Town Hall
urora Public Library	732,276	184,835	547,442	74.8%	11 - Aurora Public Library
urora Seniors Centre	160,793	183,665	-22,873	-14.2%	
5165 A Yonge		67,055	-67,055		0 10 20 30 40
/ictoria Hall	56,015	61,757	-5,743	-10.3%	Energy use intensity Natural gas (kWh/ft²)
Aurora Cultural Centre - 22 Church Street	205,682		205,682	100%	(KWN/TC-)
ota	13,408,188	10,036,278	3,371,910	25.1%	Legend
					Highest 3 Middle Lowest 4
TScreen Expert					Subscriber: Town of Aurora - Profes



(tCO₂/ft²)

Subscriber: Town of Aurora - Professiona

12

23.4%

Legend

Highest 3 Middle Lowest 4

-0.08

806

0.08

2,632

3,439

McMahon Club House

Tota

RETScreen Expert



Energy Cost Avoided due to ECMs/ closures

	Fuel cost							
	Predicted	Actual	Savings (Normalized)	Savings (Normalized)				
	\$	\$	\$	%				
2020	2,389,087	1,885,918	503,169	21.1%				
2021	2,133,195	1,644,516	488,679	22.9%				

List of ECMs Completed since 2019

- Council approved \$50,000 for the implementation of energy efficiency measures at Town facilities (2020).
 - Town acquired an energy management software to track energy use, analyze trends, estimate energy savings from energy projects, and track GHG emissions (2019).
 - Unitative programmers and track GHG emissions (2019).

- Historic energy consumption from Town Facilities were acquired from utility companies for software input (2019-2020).

Monthly Building Performance meeting with Facility staff and Energy and Climate Change Analyst, to discuss
ongoing energy projects, operational changes, energy consumption, trends, best practices for energy
conservation, new technologies, utility incentives etc. (ongoing since 2020)

- Integrated energy efficiency and waste disposal wording/ requirements in Facilities' procurement documents (2020).

- Investigated a new technology for improving energy efficiency at SARC using the Building Automation System (2020-2021).

- Completed LED lighting retrofits at Senior Centre, SARC and Town Hall (2021).

 Completed Light controls instillation (motion sensors, occupancy sensors) at Town Hall (1st and 2nd floor), planning 3rd floor (2021).

 Performed an energy audit under Enbridge's Run it Right program at Town Hall and JOC, received \$9,000 from Enbridge to implement low cost energy conservation measures, reducing GHG emissions by 5% per year and around \$3,700 per year in operational costs (2021).

- 9 dual head electric vehicle charging stations installed at Town Hall, SARC, JOC, ACC, Armoury, AFLC, under the Ontario-wide Ivy Network, with funding from NRCAN (2021).

- Due to COVID 19, facilities made operational changes to reduce energy consumption during shutdowns, avoiding an estimate of \$488,000 in energy costs (23% avoided energy use in 2021).

- Town solar panels generated 663,550 kWh of emission free electricity in 2021.

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