



**City of Hamilton
PUBLIC WORKS COMMITTEE
AGENDA**

Meeting #: 21-003
Date: February 19, 2021
Time: 1:30 p.m.
Location: Due to the COVID-19 and the Closure of City Hall

All electronic meetings can be viewed at:

City's Website:

<https://www.hamilton.ca/council-committee/council-committee-meetings/meetings-and-agendas>

City's YouTube Channel:

<https://www.youtube.com/user/InsideCityofHamilton> or Cable 14

Alicia Davenport, Legislative Coordinator (905) 546-2424 ext. 2729

	Pages
1. APPROVAL OF AGENDA	
(Added Items, if applicable, will be noted with *)	
2. DECLARATIONS OF INTEREST	
3. APPROVAL OF MINUTES OF PREVIOUS MEETING	
3.1. February 1, 2021	4
4. COMMUNICATIONS	
5. DELEGATION REQUESTS	
5.1. Geoff Ondercin-Bourne and Ed Reece, Council of Canadians, respecting Solar Retrofitting of Public Buildings in Hamilton (for today's meeting)	19
6. CONSENT ITEMS	

- 6.1. Interview Sub-Committee to the Public Works Committee Minutes - February 19, 2021 23

7. PUBLIC HEARINGS / WRITTEN DELEGATIONS / VIRTUAL DELEGATIONS

8. STAFF PRESENTATIONS

- 8.1. Corporate Energy and Sustainability Policy (PW14050(a)) (City Wide) 26

9. DISCUSSION ITEMS

- 9.1. Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6) 96
- 9.2. City of Hamilton’s Cemeteries By-law Update (PW21005) (City Wide) 104
- 9.3. Moving Hamilton Towards a Zero Plastic Waste Plan (PW21006) (City Wide) (Outstanding Business List Item) 116

10. MOTIONS

11. NOTICES OF MOTION

12. GENERAL INFORMATION / OTHER BUSINESS

- 12.1. Amendments to the Outstanding Business List

- 12.1.a. Items Requiring a New Due Date:

- 12.1.a.a. Proposed City Hall Forecourt Security Enhancements

Item on OBL: ABI

Current Due Date: February 19, 2021

Proposed New Due Date: March 22, 2021

13. PRIVATE AND CONFIDENTIAL

- 13.1. Appointments to the Keep Hamilton Clean and Green Committee for the 2018-2022 Term

Pursuant to Section 8.1, Sub-section (b) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-section (b) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to personal matters about an identifiable individual, including City employees.

14. ADJOURNMENT

3.1



PUBLIC WORKS COMMITTEE MINUTES 21-002

1:30 p.m.

Monday, February 1, 2021

Council Chambers

Hamilton City Hall

71 Main Street West

Present: Councillors A. VanderBeek (Chair), N. Nann (Vice-Chair), C. Collins, J.P. Danko, J. Farr, L. Ferguson, T. Jackson, S. Merulla, E. Pauls, and M. Pearson

Absent with Regrets: Councillor T. Whitehead – Personal

THE FOLLOWING ITEMS WERE REFERRED TO COUNCIL FOR CONSIDERATION:

1. **Intersection Control List (PW21001) (Wards 1, 8, 9 and 13) (Item 6.1)**

(Pearson/Danko)

That the appropriate By-law be presented to Council to provide traffic control as follows:

Intersection		Stop Control Direction		Class	Comments / Petition	Ward
Street 1	Street 2	Existing	Requested			
Section "C" Flamborough						
(a)	Rosebough Street	Oak Avenue	EB/WB	NB/SB	A	Sightline issues, converting to All-way 13
Section "E" Hamilton						
(b)	Davis Crescent	Kingsview Drive	NC	WB	A	Housekeeping, missing stop control 9
(c)	Prince George Avenue	Churchill Avenue	NC	NB	A	Housekeeping, missing stop control 8

Intersection		Stop Control Direction		Class	Comments / Petition	Ward
Street 1	Street 2	Existing	Requested			
(d) Paisley Avenue North	Dalewood Crescent	EB/WB	NB/SB	B	Road reconstruction	1

LegendNo Control Existing (New Subdivision) - **NC**Intersection Class: **A** - Local/Local **B** - Local/Collector **C** - Collector/Collector**Result: Motion CARRIED by a vote of 9 to 0, as follows:**

NOT PRESENT - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

2. Maintenance Standards for Municipal Highways Policy (PW18096(a)) (City Wide) (Item 9.1)**(Ferguson/Pearson)**

That Appendix "A" to Report PW18096(a) respecting Maintenance Standards for Municipal Highways Policy be approved.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

**3. Locke Street South Business Improvement Area (BIA) Lighting (Ward 1)
(Item 10.1)****(Danko/Pauls)**

WHEREAS, residents of Kirkendall and the Locke Street South BIA patrons previously enjoyed enhanced seasonal lighting on the hydro poles along Locke Street;

WHEREAS, the outlets were removed when Alectra replaced all hydro poles along Locke Street South in 2018; and,

WHEREAS, improvements to the lighting on the street increases activity and vitality to the neighbourhood and promotes a healthy and engaged community;

THEREFORE, BE IT RESOLVED:

- (a) That \$5,000 be provided to the Locke Street Business Improvement Area to help support the addition of outlets to the hydro poles from the Ward 1 Area Rating Capital Reinvestment Discretionary Fund (3301909100); and,
- (b) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

**4. Inch Park Play Structure Improvements, 400 Queensdale Avenue East,
Hamilton (Ward 7) (Item 10.2)****(Pauls/Nann)**

WHEREAS, the play structure and safety surfacing located within Inch Park at 400 Queensdale Avenue, Hamilton has reached end of life;

WHEREAS, this community amenity is a valuable recreation opportunity for children, youth and families within the Inch Park neighbourhood and beyond, especially during the Covid 19 pandemic;

WHEREAS, the Hamilton Challenger Baseball Association has a long running and successful inclusive baseball program located in Inch Park;

WHEREAS, the Hamilton Challenger Baseball Association has partnered with the City of Hamilton, to fundraise and support the implementation of a fully inclusive play structure; and,

WHEREAS, a collaboration of Parks capital funding, Ward 7 Capital Infrastructure Reserve and fundraised dollars will provide opportunities for fully inclusive play equipment, accessible rubber surfacing, and shade provision options;

THEREFORE, BE IT RESOLVED:

- (a) That \$150,000 of funding be allocated from the Ward 7 Capital Infrastructure Reserve #108057, to support the implementation of a new inclusive Inch Park play structure, rubber surfacing and shade opportunities, be approved; and,
- (b) That the General Manager of Public Works, or their designate, be authorized and directed to approve and execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

5. Ferguson Avenue North Beautification (Ward 2) (Item 10.3)

(Farr/Merulla)

WHEREAS, following the considerable damage that was caused by the occupation of approximately 80 tents at Hamilton's largest encampment site during the summer of 2020, dozens of Ferguson Street residents participated in a walk-a-bout with the Ward Councillor in an effort to share their ideas on how we may restore and enhance their public realm;

WHEREAS, there is interest from Ward 2 residents for enhanced beautification on Ferguson Avenue North from Cannon Street East to Barton Street East;

WHEREAS, beautification in the form of planting beds and hanging baskets are appreciated by residents and visitors to the City of Hamilton;

WHEREAS, beautification increases the public profile of the City of Hamilton;
and,

WHEREAS, there is currently no funding in the Horticulture Section for the proposed enhancement;

THEREFORE, BE IT RESOLVED:

- (a) That staff be directed to install 5 perennial shrub beds on Ferguson Avenue North, from Cannon Street East to Barton Street East, at a cost of \$10,000 to be funded from Ward 2 Capital Infrastructure Reserve (#108052);
- (b) That hanging baskets be installed on existing light standards on Ferguson Avenue North, from Cannon Street East to Barton Street East, at a cost of \$8,000 to be funded from the Ward 2 Capital Infrastructure Reserve (#108052);
- (c) That \$19,050 and 0.16 FTE for the annual planting, irrigation and maintenance of perennial shrub beds and hanging baskets on Ferguson Avenue North, from Cannon Street East to Barton Street East, to be included in the Environmental Services Division's 2021 annual base operating budget, be approved; and,
- (d) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents for the installation and annual maintenance of additional beautification to Ferguson Avenue North, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

6. Montgomery Park Pedestrian Lighting Improvements (Ward 4) (Item 10.4)**(Merulla/Collins)**

WHEREAS, Montgomery Park is an active community park in Ward 4 with pathways that promote active transportation through the community;

WHEREAS, parks provide local opportunities for physical fitness and recreation, throughout the year;

WHEREAS, pedestrian pathway lighting exists in a portion of Montgomery Park, supporting commuters and park users, and is in need of lifecycle replacement; and,

WHEREAS, the northern pathway loop and southern pathway loop area of Montgomery Park pathway is not currently lit and park users would benefit with the addition of pedestrian pathway lighting;

THEREFORE, BE IT RESOLVED:

- (a) That \$194,577 be allocated from the Ward 4 Special Capital Re-Investment Reserve, to implement new pedestrian pathway lighting along the north and south pathway loops of Montgomery Park and that the existing pathway lights be replaced;
- (b) That \$4,500 for the annual cost of electricity and maintenance for Montgomery Park pedestrian lighting improvements, to be added to the Parks and Cemeteries Section's 2021 annual base operating budget, be approved; and,
- (c) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

7. Father Sean O’Sullivan Memorial Park Improvements, 1139 Greenhill Avenue, Hamilton (Ward 5) (Item 10.5)**(Collins/Merulla)**

WHEREAS, the play structure located at Father Sean O’Sullivan Memorial Park, 1139 Greenhill Avenue, Hamilton was originally installed in the early 1990s; and,

WHEREAS, the play structure has surpassed its useful life span and needs to be replaced;

THEREFORE, BE IT RESOLVED:

- (a) That a play structure and safety surfacing be installed at Father Sean O’Sullivan Memorial Park, 1139 Greenhill Avenue, Hamilton, at an estimated cost of \$120,000 to be funded from the Ward 5 – Capital Infrastructure Reserve #108055; and,
- (b) That the General Manager of Public Works, or their designate, be authorized and directed to approve and execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nringer Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

8. Dover Park Improvements, 66 Dover Drive, Hamilton (Ward 5) (Item 10.6)**(Collins/Merulla)**

WHEREAS, the Hamilton Wentworth District School Board ordered the removal of the City owned play structure at Sir Isaac Brock School, 130 Greenford Drive, Hamilton;

WHEREAS, the City owns Dover Park at 66 Dover Drive, Hamilton, which is adjacent to Sir Isaac Brock School; and,

WHEREAS, residents have requested the installation of a replacement play structure at Dover Park;

THEREFORE, BE IT RESOLVED:

- (a) That a play structure and safety surfacing be installed at Dover Park, 66 Dover Drive, Hamilton, at an estimated cost of \$100,000 to be funded from the Ward 5 Capital Infrastructure Reserve #108055; and,
- (b) That the General Manager of Public Works, or their designate, be authorized and directed to approve and execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

9. Red Hill Neighbourhood Park Improvements, 320 Albright Road, Hamilton (Ward 5) (Item 10.7)

(Collins/Ferguson)

WHEREAS, the Hamilton Wentworth District School Board has sold the former Red Hill School at 300 Albright Road which is adjacent to the City's Red Hill Neighbourhood Park;

WHEREAS, the Hamilton Wentworth District School Board has also indicated the pending closure of Elizabeth Bagshaw School at 350 Albright Road, which is also adjacent to the Red Hill Neighbourhood Park; and,

WHEREAS, the sale and pending sale of these properties has and will result in a loss of green space and recreation opportunities in the area;

THEREFORE, BE IT RESOLVED:

- (a) That a play structure and safety surfacing be installed at Red Hill Neighbourhood Park, 320 Albright Road, Hamilton, at an estimated cost of \$100,000 to be funded from the Ward 5 Capital Infrastructure Reserve #108055;
- (b) That \$8,900 and 0.03 FTE for the annual cost of maintenance and contribution to the Capital Reserve for replacement, to be included in the

Parks and Cemeteries Section's 2021 annual base operating budget, be approved; and,

- (c) That the General Manager of Public Works, or their designate, be authorized and directed to approve and execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

10. Road Resurfacing and Sidewalk Replacement on Oakland Drive (between Kentley Drive and Ellingwood Avenue) and Ellingwood Avenue, Hamilton (Ward 5) (Added Item 10.8)

(Collins/Jackson)

- (a) That Public Works staff be authorized and directed to resurface the roads and replace the sidewalks on Oakland Drive, Hamilton, between Kentley Drive and Ellingwood Avenue, at an estimated cost of \$590,000 to be funded from the Ward 5 Area Rating Reserve Account (#108055);
- (b) That Public Works staff be authorized and directed to resurface the roads and replace the sidewalks on Ellingwood Avenue, Hamilton, at an estimated cost of \$410,000, to be funded from the Ward 5 Area Rating Reserve Account (#108055); and,
- (c) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls

YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

FOR INFORMATION:**(a) CHANGES TO THE AGENDA (Item 1)**

The Committee Clerk advised of the following changes to the agenda:

7. PUBLIC HEARINGS / WRITTEN DELEGATIONS / VIRTUAL DELEGATIONS

7.1 Timothy Taylor and Tiffany Bound-Koocher respecting a Petition to Lower the Speed Limit on Upper Gage Avenue between Stone Church Road East and Rymal Road East (Ward 6) (approved on January 11, 2021)

7.1(a) Added Petition

11. NOTICES OF MOTION (Item 11)

11.1 Road Resurfacing and Sidewalk Replacement on Oakland Drive (between Kentley Drive and Ellingwood Avenue) and Ellingwood Avenue, Hamilton (Ward 5)

(Nann/Ferguson)

That the agenda for the February 1, 2021 Public Works Committee meeting be approved, as amended.

Result: Motion CARRIED by a vote of 9 to 0, as follows:

NOT PRESENT - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

(b) DECLARATIONS OF INTEREST (Item 2)

There were no declarations of interest.

(c) APPROVAL OF MINUTES OF THE PREVIOUS MEETING (Item 3)**(i) January 11, 2021 (Item 3.1)****(Pauls/Merulla)**

That the Minutes of the January 11, 2021 meeting of the Public Works Committee be approved, as presented.

Result: Motion CARRIED by a vote of 9 to 0, as follows:

NOT PRESENT - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

**(d) PUBLIC HEARINGS / WRITTEN DELEGATIONS / VIRTUAL DELEGATIONS
(Item 7)****(i) Timothy Taylor and Tiffany Bound-Koocher respecting a Petition to Lower the Speed Limit on Upper Gage Avenue between Stone Church Road East and Rymal Road East (Ward 6) (approved on January 11, 2021) (Item 7.1)**

Timothy Taylor addressed the Committee respecting a Petition (Added Item 7.1(a)) to Lower the Speed Limit on Upper Gage Avenue between Stone Church Road East and Rymal Road East (Ward 6).

(Pauls/Ferguson)

That Councillor Jackson be granted an extension to the five minute time limit.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek

YES - Ward 12 Councillor Lloyd Ferguson
YES - Ward 10 Councillor Maria Pearson

(Jackson/Pauls)

That the delegation from Timothy Taylor, respecting a Petition (Added Item 7.1(a)) to Lower the Speed Limit on Upper Gage Avenue between Stone Church Road East and Rymal Road East (Ward 6), be received and referred to Transportation Operations & Maintenance staff for appropriate action.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
YES - Vice Chair - Ward 3 Councillor Nrinder Nann
YES - Ward 4 Councillor Sam Merulla
YES - Ward 5 Councillor Chad Collins
YES - Ward 6 Councillor Tom Jackson
YES - Ward 7 Councillor Esther Pauls
YES - Ward 8 Councillor John-Paul Danko
NOT PRESENT - Ward 14 Councillor Terry Whitehead
YES - Chair - Ward 13 Councillor Arlene VanderBeek
YES - Ward 12 Councillor Lloyd Ferguson
YES - Ward 10 Councillor Maria Pearson

(ii) Peter Nielsen respecting the Trillium Open Space - Erosion Protection Plan (approved on January 11, 2021) (Item 7.1)

Peter Nielsen addressed the Committee respecting the Trillium Open Space - Erosion Protection Plan, with the aid of a presentation.

(Pearson/Ferguson)

That the delegation from Peter Nielsen, respecting the Trillium Open Space - Erosion Protection Plan, be received and referred to appropriate staff for review and a report back to the Public Works Committee.

Result: Motion CARRIED by a vote of 9 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
YES - Vice Chair - Ward 3 Councillor Nrinder Nann
YES - Ward 4 Councillor Sam Merulla
NOT PRESENT - Ward 5 Councillor Chad Collins
YES - Ward 6 Councillor Tom Jackson
YES - Ward 7 Councillor Esther Pauls
YES - Ward 8 Councillor John-Paul Danko
NOT PRESENT - Ward 14 Councillor Terry Whitehead
YES - Chair - Ward 13 Councillor Arlene VanderBeek
YES - Ward 12 Councillor Lloyd Ferguson
YES - Ward 10 Councillor Maria Pearson

(e) NOTICES OF MOTION (Item 11)

- (i) Road Resurfacing and Sidewalk Replacement on Oakland Drive (between Kentley Drive and Ellingwood Avenue) and Ellingwood Avenue, Hamilton (Ward 5) (Added Item 11.1)**

(Collins/Jackson)

That the Rules of Order be waived to allow for the introduction of a Motion respecting Road Resurfacing and Sidewalk Replacement on Oakland Drive (between Kentley Drive and Ellingwood Avenue) and Ellingwood Avenue, Hamilton (Ward 5).

Result: Motion CARRIED by a 2/3's majority by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson
 YES - Ward 7 Councillor Esther Pauls
 YES - Ward 8 Councillor John-Paul Danko
 NOT PRESENT - Ward 14 Councillor Terry Whitehead
 YES - Chair - Ward 13 Councillor Arlene VanderBeek
 YES - Ward 12 Councillor Lloyd Ferguson
 YES - Ward 10 Councillor Maria Pearson

For further disposition of this matter, refer to Item 10.

(f) GENERAL INFORMATION / OTHER BUSINESS (Item 12)

- (i) Amendments to the Outstanding Business List (Item 12.1)**

(Nann/Ferguson)

That the following amendments to the Public Works Committee's Outstanding Business List, be approved:

- (a) Items Requiring a New Due Date:**
- (i) Redevelopment / Reuse of the former King George School Site, at 77 Gage Avenue North**
 Item on OBL: V
 Current Due Date: March 22, 2021
 Proposed New Due Date: June 14, 2021
- (ii) Certificate of Recognition (COR™) Program**
 Item on OBL: AQ
 Current Due Date: Q1 2021
 Proposed New Due Date: June 14, 2021

- (iii) Wastewater Treatment Plant Bypass and Combined Sewer Overflow Reporting
Item on OBL: AAM
Current Due Date: December 7, 2020
Proposed New Due Date: May 3, 2021
- (iv) City of Hamilton's Cemeteries Business Plan
Item on OBL: AAO
Current Due Date: February 19, 2021
Proposed New Due Date: March 22, 2021
- (v) Municipal Class Environmental Assessment and Conceptual Design of Ancaster Elevated Water Reservoir
Item on OBL: AAP
Current Due Date: Q1 2021
Proposed New Due Date: June 14, 2021
- (vi) Enhanced Inspections and Monitoring - Hamilton Water and Wastewater
Item on OBL: ABB
Current Due Date: Q2 2021
Proposed New Due Date: June 14, 2021
- (vii) Correspondence from Jim MacLeod, Vice President, Ancaster Village Heritage Community requesting the creation of a Community Safety Zone (CSZ)
Item on OBL: ABH
Current Due Date: February 19, 2021
Proposed New Due Date: September 20, 2021
- (viii) Stormwater Gap Evaluation
Item on OBL: ABM
Current Due Date: Q1 2021
Proposed New Due Date: March 22, 2021
- (b) Items Considered Complete and Needing to be Removed:
 - (i) Minimum Maintenance Standards Changes
Addressed as Item 2 on today's agenda - Report PW18096(a)
Item on OBL: AC

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
 YES - Vice Chair - Ward 3 Councillor Nrinder Nann
 YES - Ward 4 Councillor Sam Merulla
 YES - Ward 5 Councillor Chad Collins
 YES - Ward 6 Councillor Tom Jackson

YES - Ward 7 Councillor Esther Pauls
YES - Ward 8 Councillor John-Paul Danko
NOT PRESENT - Ward 14 Councillor Terry Whitehead
YES - Chair - Ward 13 Councillor Arlene VanderBeek
YES - Ward 12 Councillor Lloyd Ferguson
YES - Ward 10 Councillor Maria Pearson

(g) ADJOURNMENT (Item 14)

(Pearson/Farr)

That there being no further business, the Public Works Committee be adjourned at 2:31 p.m.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Ward 2 Councillor Jason Farr
YES - Vice Chair - Ward 3 Councillor Nrinder Nann
YES - Ward 4 Councillor Sam Merulla
YES - Ward 5 Councillor Chad Collins
YES - Ward 6 Councillor Tom Jackson
YES - Ward 7 Councillor Esther Pauls
YES - Ward 8 Councillor John-Paul Danko
NOT PRESENT - Ward 14 Councillor Terry Whitehead
YES - Chair - Ward 13 Councillor Arlene VanderBeek
YES - Ward 12 Councillor Lloyd Ferguson
YES - Ward 10 Councillor Maria Pearson

Respectfully submitted,

Councillor A. VanderBeek
Chair, Public Works Committee

Alicia Davenport
Legislative Coordinator
Office of the City Clerk

5.1

Request to Speak to Committee of Council

Submitted on Wednesday, February 3, 2021 - 5:44 pm

==Committee Requested==

Committee: Public Works Committee

==Requestor Information==

Name of Individuals: Geoff Ondercin-Bourne & Ed Reece

Name of Organization: Council of Canadians

Contact Number: [REDACTED]

Email Address: [REDACTED]

Mailing Address:
[REDACTED]

Reason(s) for delegation request: I will be making a presentation in support of solar retrofitting public buildings in Hamilton, based on the written submission I have forwarded to the City Clerk.

Will you be requesting funds from the City? No

Will you be submitting a formal presentation? No

Council of Canadians, Hamilton Chapter
General Issues Committee Presentation

Monday, February 8, 2021, 3 p.m.

On behalf of the Hamilton chapter of the Council of Canadians, we ask that Council consider a strategy by which the City can meet the climate emergency and at the same time save money and create local jobs. This can be done by expanding the local installation of renewable energy sources, specifically solar panels placed on municipal buildings.

Cities are starting to realize that the shift to renewable energy can be a huge financial boon for the municipality. All monies spent on gas and oil leave Ontario. This is a powerful argument for Hamilton to generate renewable energy right here. The money stays in the community, especially if it is small scale energy production such as solar panels on homes, businesses and municipally owned buildings. This generates local jobs that pay well and likely will mean more taxes collected by the municipality.

Given that Hamilton is examining a new Community Energy Plan for the City, there is an opportunity here to expand local solar power energy production. For example, the City can suggest and provide subsidies for the installation of solar panels or solar water heating systems in new buildings, both municipal and private.

Another opportunity presents itself in regards to the municipal facilities roof replacement program. Given that the City is looking at the replacement of a number of facility roofs over the next few years, it would be possible to plan for the addition of solar panels on these roofs. Structural roofing upgrades may not be necessary as lower-weight panels are now a definite option.

Many communities **are** already taking significant steps towards local renewable power generation. Here are a few examples with accompanying links to municipal websites.

Halifax:

Green Municipal Fund

- “Between 2008 and by 2011 the City of Halifax reduced greenhouse gas (GHG) emissions by more than 10,000 tonnes per year through a combination of energy efficiency retrofits and more efficient building designs.”

“In 2009, the city created a sustainable building fund to redirect energy cost savings from these initiatives toward funding for future projects. Since then, the fund's annual energy savings deposits have grown from \$350,000 to over \$750,000 and have helped to finance millions of dollars' worth of energy upgrades, including those undertaken through the city's Solar City initiative.

<https://www.halifax.ca/home-property/solar-projects/about-solar-city-halifax>

Red Deer: Community Generation Capacity Building Program

Alberta implemented a Micro-Generation program for individuals and small business, which is off the grid, and a Community Generation where energy is sold back to the grid

- Red Deer College has surged beyond its own goals for renewable energy by installing a 1.6-megawatt [solar system](#), the largest on any post-secondary institution in Canada.

<https://mccac.ca/programs/community-generation-capacity-building-program/>

Kingston:

Since April 2004, energy savings from assessing and rating large municipal building and retrofit projects, the city has implemented a system called 'net metering'.

- "Net metering allows the City to send electricity generated from Renewable Energy Technologies...for a credit, reducing our electricity costs. Excess generation credits can be carried forward for a consecutive 12-month period to offset future electricity costs. The goal is to over-generate during the summer months and use up the excess credits during the winter months."

<https://www.cityofkingston.ca/residents/environment-sustainability/climate-change-energy/climate-action-plan/toolkit/renewables>

Toronto

- [TransformTO](#), Toronto's climate action strategy identifies several key goals, including that 75 per cent of energy must come from renewable or low carbon sources by 2050.

High Performance New Construction Program

- Buildings generate about half of the greenhouse gas emissions in Toronto today. Through its [High Performance New Construction Program](#), the City offers incentives to help building owners and design/decision-makers make buildings more energy efficient.

<https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/>

Vancouver

- "...Under Vancouver's Zero Emissions Building Plan for new construction, approximately 40% of buildings existing today will be replaced with new buildings by 2050. Specifically:

...Similar to Vancouver's approach for new buildings, we will set annual carbon pollution limits for most existing buildings that decrease over time. This regulatory approach provides

a clear signal for trades to invest in training, suppliers to begin sourcing needed systems, and for building owners to start long-term planning toward zero emissions.

<https://vancouver.ca/green-vancouver/vancover-climate-emergency.aspx>

More details and references can be provided to Council as required.

To conclude, Council can meet the climate emergency, save money, generate jobs locally and move Hamilton in the direction of becoming a Green New Deal Community by adopting this strategy.

Specifically, we ask that Council direct City staff to identify all possibilities for installation of solar panels on municipal buildings, especially as roof repair and replacement occurs, and bring back recommendations to Council that identify initial costs, payback times, and any significant risks to installation.

Thank you.



Hamilton

**INTERVIEW SUB-COMMITTEE TO THE PUBLIC WORKS COMMITTEE
MINUTES 21-001**

12:30 p.m.

Friday, February 19, 2021

**Due to COVID-19 and the Closure of City Hall,
this meeting was held virtually.**

Present: Councillors N. Nann (Chair) and E. Pauls (Vice-Chair)

**Absent with
Regrets:** Councillor S. Merulla – City Business

FOR INFORMATION:

(a) CHANGES TO THE AGENDA (Item 1)

The Clerk advised that there were no changes to the agenda.

(Pauls/Nann)

That the agenda for the February 19, 2021 meeting of the Interview Sub-Committee to the Public Works Committee be approved, as presented.

Result: Motion CARRIED by a vote of 2 to 0, as follows:

YES - Chair - Ward 3 Councillor Ninder Nann
NOT PRESENT - Ward 4 Councillor Sam Merulla
YES - Vice Chair - Ward 7 Councillor Esther Pauls

(b) DECLARATIONS OF INTEREST (Item 2)

There were no declarations of interest.

(c) APPROVAL OF MINUTES OF PREVIOUS MEETING (Item 3)**(i) March 4, 2020 (Item 3.1)****(Pauls/Nann)**

That the Minutes of the March 4, 2020 meeting of the Interview Sub-Committee to the Public Works Committee be approved, as presented.

Result: Motion CARRIED by a vote of 2 to 0, as follows:

YES - Chair - Ward 3 Councillor Nrinder Nann
NOT PRESENT - Ward 4 Councillor Sam Merulla
YES - Vice Chair - Ward 7 Councillor Esther Pauls

(d) PRIVATE & CONFIDENTIAL (Item 4)

The Committee deemed that a Closed Session discussion of Item 4.1 was not required, and approved the following in Open Session:

(i) Closed Session Minutes – March 4, 2020 (Item 4.1)**(Pauls/Nann)**

That the Closed Session Minutes dated March 4, 2020 be approved, as presented, and remain confidential.

Result: Motion CARRIED by a vote of 2 to 0, as follows:

YES - Chair - Ward 3 Councillor Nrinder Nann
NOT PRESENT - Ward 4 Councillor Sam Merulla
YES - Vice Chair - Ward 7 Councillor Esther Pauls

(Pauls/Nann)

That the Interview Sub-Committee to the Public Works Committee move into Closed Session for Item 4.2 respecting Vacancies on the Keep Hamilton Clean and Green Committee, pursuant to Section 8.1, Sub-section (b) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-section (b) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to personal matters about an identifiable individual, including City employees.

Result: Motion CARRIED by a vote of 2 to 0, as follows:

YES - Chair - Ward 3 Councillor Nrinder Nann
NOT PRESENT - Ward 4 Councillor Sam Merulla
YES - Vice Chair - Ward 7 Councillor Esther Pauls

(ii) Vacancies on the Keep Hamilton Clean and Green Committee (Item 4.2)

Staff were provided with direction in Closed Session.

(e) ADJOURNMENT (Item 5)

(Pauls/Nann)

That there being no further business, the Interview Sub-Committee to the Public Works Committee be adjourned at 12:54 p.m.

Result: Motion CARRIED by a vote of 2 to 0, as follows:

YES - Chair - Ward 3 Councillor Nrinder Nann
NOT PRESENT - Ward 4 Councillor Sam Merulla
YES - Vice Chair - Ward 7 Councillor Esther Pauls

Respectfully submitted,

Councillor N. Nann, Chair
Interview Sub-Committee to the
Public Works Committee

Alicia Davenport
Legislative Coordinator
Office of the City Clerk

PW14050(a)
Item 8.1



Hamilton

**CORPORATE ENERGY AND
SUSTAINABILITY POLICY**

PUBLIC WORKS COMMITTEE

February 19, 2021

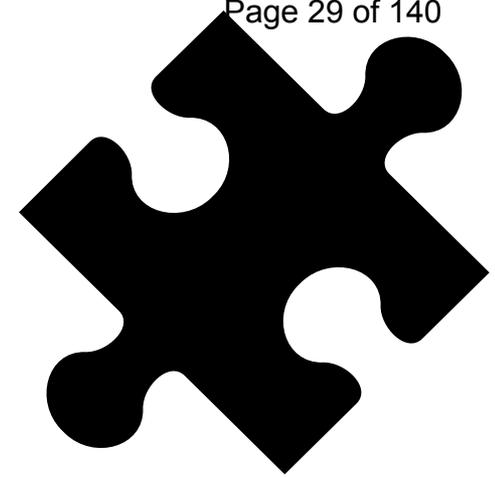
Policy Background

- 2007 Corp. Energy Policy;
- 2008 Energy Commodity Policy;
- 2014 Combined Corp. Energy and Commodity Policies;
- **2021 Corporate Energy & Sustainability Policy.**

NEW

Energy = Emissions





How does it all fit together?

- **Climate Change Emergency:**
led by Healthy & Safe Communities;
- **Community Energy and Emission Plan:**
led by Planning and Economic Development;
- **Corporate Energy and Sustainability Policy:**
led by Public Works (Energy, Fleet and Facilities Management)
- **Climate Resiliency Program:**
Led by Public Works (GM's office);



CLIMATE CHANGE EMERGENCY

Operational Plans & Strategies (City Owned Assets)

- Green Fleet Plan, Transit Strategy
- Corporate Building Efficiency
- Water & Wastewater



Community Energy & Emission Plan



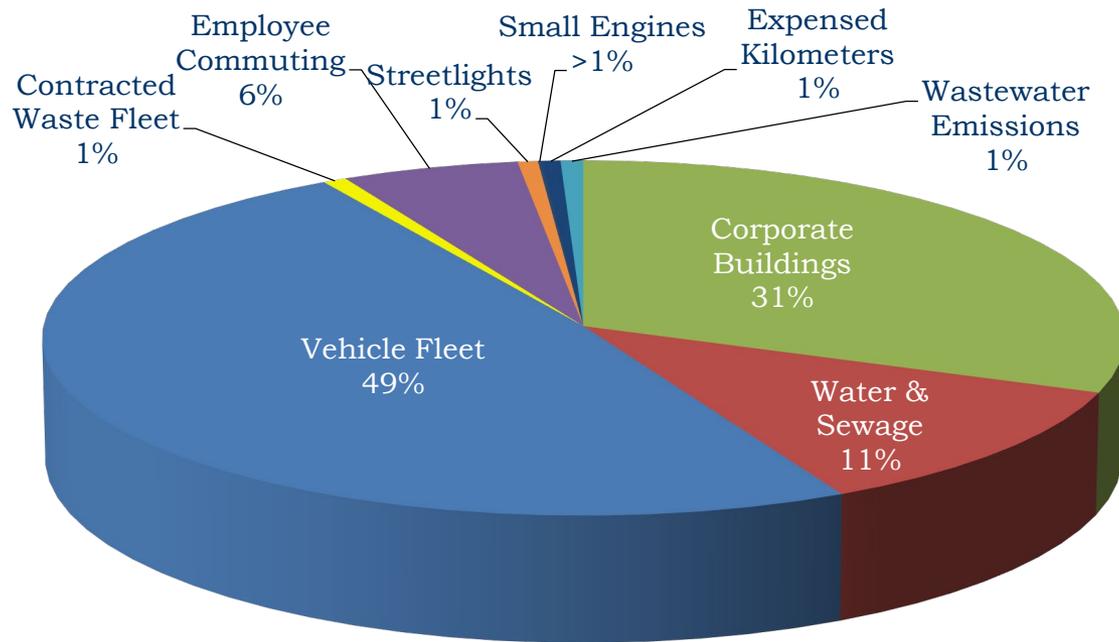
Corporate Energy & Sustainability Policy '07



Community Plans & Strategies

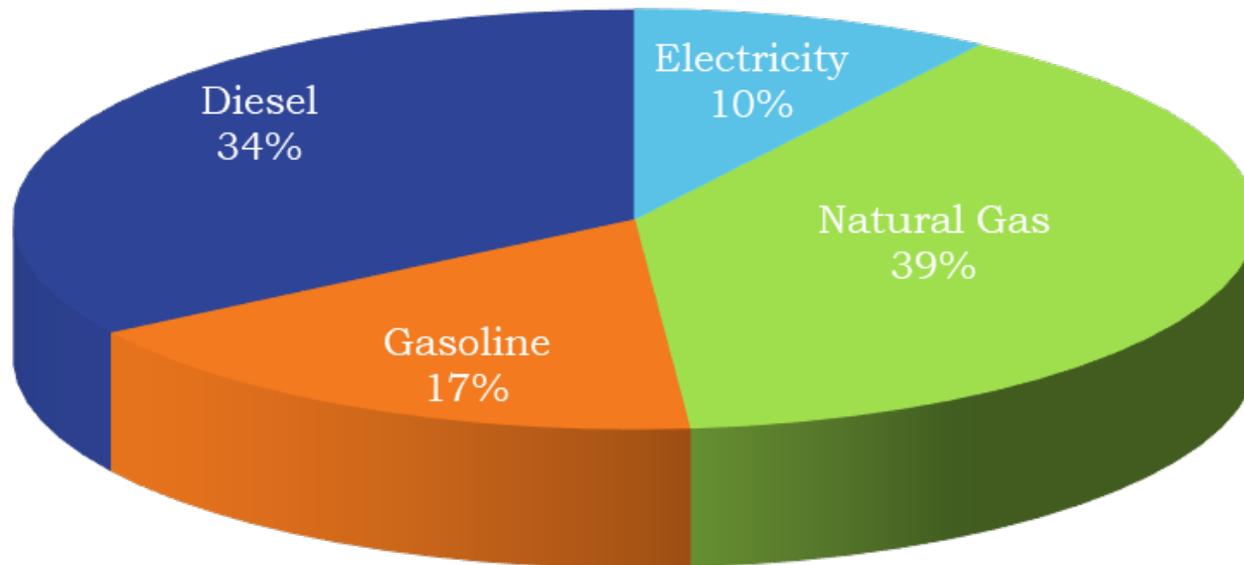
Corporate Emissions (2018)

(92% from Fleet, Buildings & Water/Wastewater)



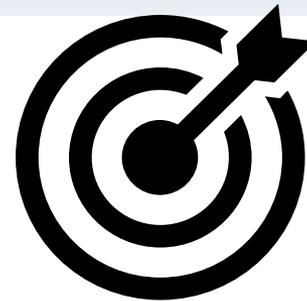
Corporate Emissions (2018)

(90% from Diesel, Gasoline and Natural Gas)



Corporate Energy & Emission Targets

Year	Energy Intensity	Greenhouse Gas Emissions New (old)
2030	45%	50%
2050	60%	100% (80%)



Mantra for buildings and most operations:

1. Energy Efficiency

(often the best use of limited funds);

2. Renewable Energy opportunities

(only after the building is as efficient as possible);

3. Renewable Energy Credits

(once we have exhausted all other options, we consider renewable energy credits).

Policy = bumpers on bowling lane!



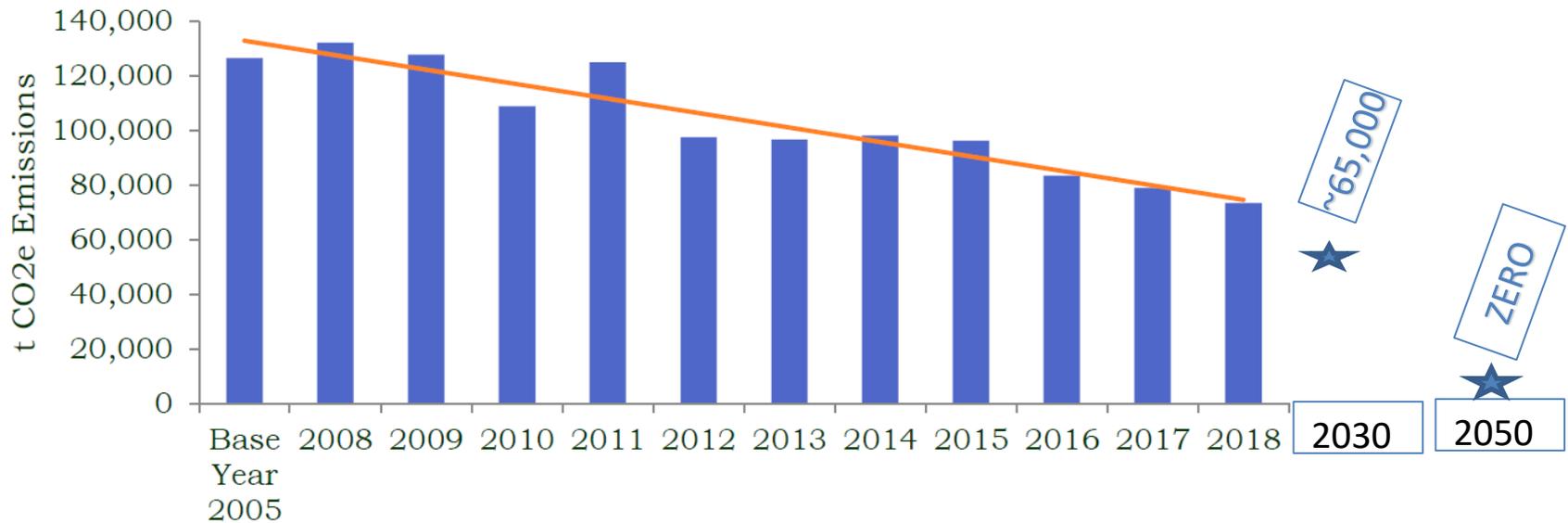
Areas of focus:

- **Transit:**
 - Replace diesel buses with low emission options;
 - Manage CNG bus fleet and look to offsets/credits as needed.
- **Green Fleet Plan:**
 - Ensure acquisitions undergo life cycle analysis and target low emission options.
- **Renewable Energy Optimization:**
 - Solar PV;
 - Renewable Natural Gas (RNG);
 - Renewable Electricity.
- **Building Retrofits:**
 - Optimize high emission sites as a priority;
 - Optimize heat recovery where possible;
 - Life cycle analysis for HVAC systems, envelope to minimize energy use.
- **Water and Wastewater:**
 - Manage energy use throughout the system;
 - Leverage biogas production for renewable energy purposes.

Annual Reporting and Activities Continue

- Energy & Commodity Reports
- Provincial requirements addressed
- Manage ongoing regulatory changes, billing, rate options, etc

We do have a pathway to met our targets





CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Energy, Fleet and Facilities Management Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	February 19, 2021
SUBJECT/REPORT NO:	Corporate Energy and Sustainability Policy (PW14050(a)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Tom Chessman (905) 546-2424 Ext. 2494
SUBMITTED BY:	Rom D'Angelo, C.E.T.; CFM Director, Energy, Fleet and Facilities Management Public Works Department
SIGNATURE:	

RECOMMENDATION

- (a) That the City of Hamilton adopt the revised Corporate Energy and Sustainability Policy attached as Appendix "A" to Report PW14050(a);
- (b) That all Boards and Agencies be encouraged to adopt the policy and actively participate towards the stated reporting, targets and goals; and
- (c) That staff provide annual corporate-wide energy updates to the Public Works Committee reporting on energy results and progress.

EXECUTIVE SUMMARY

The City of Hamilton's (City) first Corporate Energy Policy (Report PW07127) was created and adopted by Council in 2007. The original policy was further updated in 2014 (PW14050). This revision, now the Corporate Energy and Sustainability Policy, calls for greenhouse gas (GHG) emission reduction targets of net zero or 100% (was 80%) by 2050. The previous interim target of 50% GHG reduction by 2030 remains unchanged.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

SUBJECT: Corporate Energy and Sustainability Policy PW14050(a) (City Wide)
- Page 2 of 8

The Corporate Energy and Sustainability Policy (CESP) has several enhancements from the previous versions. The Climate Change Emergency declaration by City council in March 2019 reiterated the need to focus on GHG emission reductions. Our current data shows 92% of the City's corporate emissions are represented by Fleet (49%), Corporate Buildings (31%) and Water/wastewater (12%) based on 2018 emission inventory data. This clearly establishes our focus on these portfolios and to that end the policy language and targets remain critical. The addition of the word Sustainability is important since the energy policy has always had direct impact on emissions. Lower energy use delivers lower emissions. The policy has a broader impact than just energy, so this new title more accurately describes the scope of the targets, actions and deliverables.

The Corporate Energy and Sustainability Policy is designed to facilitate achievement of City-wide corporate energy and emission reduction targets, address legislated reporting requirements, define policies for capital investment related to energy conservation and demand management along with policies related to energy procurement and address regulations concerning greenhouse gases and other targeted emission reductions.

Specifically, policy actions include:

- Base Building Standards;
- Project Approval Processes;
- Incentive/ Funding Programs, Life Cycle Analysis;
- GHG Emissions, Reporting and Protocol;
- Fuel Reduction Targets;
- Hamilton Water Energy Reporting;
- Energy Reserve;
- Energy Efficient Lighting;
- Building Automation Systems;
- Sustainable Building;
- Energy Efficient Equipment;
- Generation, Cogeneration, District Energy and Renewable Energy;
- Emergency Generators and Back-Up Power Systems;
- Monitoring and Verification;
- Building Labelling;
- Energy Procurement;
- Renewable Energy.

Key portfolios can take policy guidelines and develop their own implementation plans. For example, Transit will be able to address their emissions with a vehicle purchasing strategy that includes low emission electric or hydrogen fuel cell options plus an emission reduction plan for the compressed natural gas fleet. Fleet is finalizing a Green Fleet strategy that will speak to low emission vehicle options. Hamilton Water is focused

SUBJECT: Corporate Energy and Sustainability Policy PW14050(a) (City Wide)
- Page 3 of 8

on energy and emissions from specific language in this policy plus playing a major role in the renewable energy portfolio. Corporate buildings will continually be assessed for energy efficiency and emission reduction strategies and these options will be brought forward to council for consideration. Adoption of the CESP will encourage consistency in reporting on results and setting of operational and efficiency guidelines to support the overall corporate and city-wide targets.

Key targets are outlined in Table 1 which show the 2030 and 2050 milestones. It should be noted that the original targets that were established in 2007 indicated targets for 2020, 2030 and 2050.

Table 1: Corporate Energy Intensity and GHG Emission Reduction Targets

Year	Energy Intensity	GHG Emissions
2030	45%	50%
2050	60%	100%

The current targets align with adjacent communities and our local efforts. One key local initiative is the development of a Community Energy and Emission Plan to address targets and actions across all City-wide sectors including residential, commercial and industrial. Led by Planning and Economic Development and working with representative stakeholders from each sector along with the retained consultant, the Community Energy and Emission Plan is expected to be completed and brought to council in 2021.

Alternatives for Consideration – N/A

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Policy targets for energy efficiency and emission reduction through consistent management aim to control costs through efficiency gains and operational changes. Projects are directed to be reviewed on a case by case basis for life cycle costing, allowing the City to best decide which project option will deliver the lowest ongoing costs and targeted reduction. Awareness of key performance indicators like energy intensity guides optimized use within Corporate buildings. Without policy and efforts by staff, the City could end up paying higher operational costs.

Staffing: N/A

Legal: Supply contracts and other energy related agreements will continue to be vetted by legal services. Energy producers, suppliers and related contracts will continue to follow the commodity policy language as per this policy.

SUBJECT: Corporate Energy and Sustainability Policy PW14050(a) (City Wide)
- Page 4 of 8

HISTORICAL BACKGROUND

In 2005 Hamilton City Council approved the concept of an energy office (formerly, the Office of Energy Initiatives) now Public Works, Energy Initiatives section in Energy, Fleet and Facilities Management, to be created to formalize and centralize responsibility for energy management in the City by focusing on how and where the City was spending money on energy and to look for ways to save and reduce energy consumption.

The original Corporate Energy Policy from 2007 outlined many areas for energy efficiency and optimization. Building on the original policy and its update in 2014, coupled with defined targets, the City has been able to identify and bring forward various business cases that support the policy, reduce operating costs and achieve reduction in GHG's.

Since 2005 (the base year), the policy and staff assigned to manage the policy actions has evolved. There have been several milestones and enhancements that contribute to the ongoing efforts and actions that lead the City towards development of policy and achieving targets.

- In 2006, The Office of Energy Initiatives (OEI) was formed. The duties established for the OEI included focus on energy cost and consumption, and ways to reduce both. The major responsibilities were:
 - Corporate Energy Policy (including commodity procurement);
 - Operations of renewable generation;
 - Utility rate management;
 - Utility billing errors and adjustments;
 - Energy monitoring, verification, benchmarking and analysis;
 - Metering, sub-metering and customer utility billing;
 - Energy conservation and demand management;
 - Regulatory Compliance and Reporting;
 - Environmental Emission Reductions;
 - Stewardship and Education.

- In November 2007, the City's first Corporate Energy Policy (PW07127) was approved. This policy document called for a review after five years.

- In 2008, the City's first corporate Energy Commodity Policy (PW08144/FCS08114) was approved. This document outlined the policy around

SUBJECT: Corporate Energy and Sustainability Policy PW14050(a) (City Wide)
- Page 5 of 8

commodity purchasing, supplier qualifications, hedging protocols, reporting and risk management for energy commodity purchasing for city assets.

- In August 2009, at the Committee of the Whole, an Information Report titled Corporate Energy Report- Year End 2008 (PW09069) was received by Council. The report outlined the annual corporate energy savings and avoided cost savings as of the year end 2008. This was the first annual report for corporate energy results.
- In 2013, Council approved the Board of Health (BOH) Climate Change Actions 2012 Report (BOH13024) recommendation of 80% reduction in Green House Gas (GHG) emissions by 2050.
- In May, 2014 Public Works Committee, the updated Corporate Energy Policy (CEP) was approved (PW14050). This report outlined updated energy intensity targets for 2030 and 2050. In addition, the 2014 policy included the emissions reduction target established by the BOH, along with an interim target for 2030. And, the Energy Commodity Policy was combined with the 2014 CEP.

Each year the Corporate Annual Energy report is created to report on the results for key performance indicators established in the CEP and to communicate ongoing efforts around energy project activities, rates optimization, commodity purchasing and bill recoveries. Details in the annual report include specific utility costs, savings, avoided costs, incentives received, and other project updates. As of 2018, the annual report also includes a Greenhouse Gas (GHG) emissions inventory for city-owned assets. These reports are posted online at www.hamilton.ca/energy.

Staff in the Energy Initiatives section remain responsible for the duties established when the energy office was formed. Energy efficiency project activity and utilities management are the basis for the office. However, as the energy industry has evolved, so have the policies and initiatives required to ensure we meet our targets. The Climate Change Emergency declaration has placed emphasis on the reduction of GHG emissions. Advancements in technology, climate regulations, sustainable building, and renewable energy are necessary considerations when making energy-related decisions. Corporate-wide adoption of the CESP encourages consultants and project managers to evaluate energy efficient and low emission alternatives properly, so that diligent life cycle analysis is performed to make informed decisions and to ensure that staff conform to policy while maximizing available incentives. The Energy Initiatives section is poised to act as a resource for these considerations and the CESP is a guideline for achieving the target results.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

SUBJECT: Corporate Energy and Sustainability Policy PW14050(a)) (City Wide)
- Page 6 of 8

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The Corporate Energy and Sustainability Policy provides overall targets and operational standards and requirements but allows room for individual portfolios to adapt plans and policies within their respective areas to support the achievement of those overall targets and goals. Some policy actions within the CESP, particularly around projects, building and lighting standards, procurement etc. outline specific actions that may be utilized in all areas where applicable. However, it is expected that achievement of the targets may require individualized policies to support those efforts. For example, updates to Fleet and Transit policies would include specific measures for vehicle optimization which would have a positive impact on greenhouse gas emissions within our community. Decisions that include but are not limited to adopting new fuel sources (i.e. electric, hydrogen fuel cell, compressed natural gas or biofuels), enhancing driving habits, or modifying vehicles all impact and relate to the Green Fleet Strategy being updated throughout 2020.

In addition to the reports to Council on annual results of energy reductions, commodities and emissions inventory, the CESP recognizes that there are currently provincial regulatory reporting requirements for corporate site energy and emission data. The data is and will continue to be provided to the province annually as per the legislation. There is also a Conservation and Demand Management (CDM) plan reporting requirement that calls for reports every 5 years. The last report was submitted in 2019 and continues to be monitored. Reporting will be updated as required, should legislation change in the future.

RELEVANT CONSULTATION

Review, consultation and feedback was solicited internally from management and front-line staff including Transit, Facilities, Fleet, Hamilton Water, Environmental Services, Healthy and Safe Communities, Planning and Economic Development and Finance. Input was also acquired from other sources including actions and priorities outlined in the activities resulting in the City confirming the Climate Change Emergency. This led to formation of a Climate Change Task Force which is staffed by representatives across the City. There has also been activity led by Planning and Economic Development to develop a Community Energy Plan which has provided input to this policy through community wide stakeholder sessions which overlap with the Corporate areas of focus such as energy efficiency and emission reduction.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Corporate policies around managing energy, efficiency and addressing climate change is integral to the City meeting its council approved mandates. With legislative pressures for communities to reduce their energy usage and GHG emissions, the revised

SUBJECT: Corporate Energy and Sustainability Policy PW14050(a) (City Wide)
- Page 7 of 8

Corporate Energy and Sustainability Policy builds upon the success of prior policies and guide decisions and investment in energy efficiency to address rising utility costs and an aging infrastructure.

Previous versions of the policy have led to excellent business cases for efficiency investments by conducting prudent life cycle analysis and considering operational efficiencies and incentive opportunities in project upgrades and infrastructure investment. Incremental costs for energy efficient upgrades often pay for themselves in lower utility costs and contribute to the energy intensity and emission reduction targets. As of 2019, the energy intensity target for corporate buildings is a reduction of 25% compared to the base year of 2005.

Table 2: Energy Intensity Comparison in Equivalent kilowatt hours per Square Foot (ekWh/sqft)

Energy Intensity	2005	2018	2019	2019 vs 2005	2019 vs 2018.
City Total (ekWh/sqft)	45.69	34.13	34.34	-25%	0.6%

The 2018 GHG emissions inventory for corporate assets is a reduction of 42% compared to the base year.

The revised Corporate Energy and Sustainability Policy is intended to further build on prior successes, and update and revise specific policy actions to adapt to changes in the energy industry and evolving regulatory environment, including development of greener technologies, renewable resources and climate actions. Using the policy as a guideline, those making decisions for upgrades to corporate assets (i.e. in buildings, fleet and operations) will have a strategic plan to make all necessary considerations that help the City to meet overall targets and goals.

The policy also outlines specific actions relating to the management of commodities, utilities usage and costs data and reporting. There continues to be energy cost pressures, therefore tracking utility data including regulatory impacts and the effects of efficiency activities is key to measuring success and identifying areas of focus.

Managing commodity costs through wholesale supply agreements and procurement and hedging strategies has been successful in the past. Hedging agreements can offer price certainty by mitigating volatility which is paramount when managing budgets. The policy continues to specify rules governing supply arrangements and reporting for commodities. Details on commodities actions and results are presented annually in a report to council.

SUBJECT: Corporate Energy and Sustainability Policy PW14050(a) (City Wide)
- Page 8 of 8

Utilities management policy actions (including rates optimization, bill recoveries and reporting on key performance indicators) are measured and reported by Energy Initiatives staff. This includes GHG emissions from energy use. Overall this data, and impacts from efficiency projects, forms the foundation for reporting on results against the baseline year in the annual energy report.

Overall, the City needs to prioritize the following to deliver the desired results with all remaining and unavoidable costs:

- Using less energy (through efficiency efforts);
- Considering renewable energy options, including the possibility of renewable energy credits;
- Operational and process improvements;
- Promoting energy and cost awareness; and
- Supply management strategies

Establishing clearly defined energy targets along with a heightened focus on energy management are integral to the City meeting its goals 60% energy intensity reduction and 100% emission reductions by 2050.

ALTERNATIVES FOR CONSIDERATION

N/A

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure

Hamilton is supported by state-of-the-art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to report PW14050(a) - Corporate Energy and Sustainability Policy

2020

Corporate Energy and Sustainability Policy

CITY OF HAMILTON

ENERGY, FLEET AND FACILITIES MANAGEMENT DIVISION
PUBLIC WORKS DEPARTMENT

EXECUTIVE SUMMARY..... 3

1.0 MITIGATION OF ENERGY CONSUMPTION..... 5

 1.1 Corporate Energy and Sustainability Committee (CESC) 6

 1.2 Annual Reporting 6

 1.3 Building Environmental Standards 7

 1.4 Existing Buildings 9

 1.5 Retrofits and Capital Renewal/Life Cycle Replacements 9

 1.6 Major Renovations and New Construction 12

 1.6.1 Evaluation of LEED and Green Building Design Options 12

 1.7 Occupied Spaces Energy Management Policies..... 13

 1.7.1 Temperature Setback: Smog / Constrained Electricity Supply Days 13

 1.7.2 After Hours ‘Lights Out’ Program..... 13

 1.7.3 Leased Office Spaces – Terms for Leases..... 14

2.0 EMISSIONS / GREENHOUSE GASES (GHG) 14

 2.1 GHG Targets..... 14

 2.2 GHG Emissions Reporting 15

 2.3 GHG Protocol..... 15

 2.4 Validation and Verification..... 15

3.0 FLEET AND TRANSIT FUEL CONSUMPTION 15

 3.1 Fleet Vehicles..... 16

 3.2 Transit Vehicles..... 16

4.0 HAMILTON WATER 17

5.0 SPECIFIC POLICIES 18

 5.1 Energy Reserve 18

 5.2 Verification and Validation of Utility Bills 20

 5.3 Energy Projects - Lifecycle Cost Analysis 20

 5.4 Lighting Technology 21

 5.5 Energy Management Standard – Building Automation Systems (BAS) 21

 5.6 Roof Capital Replacement Evaluation..... 23

 5.7 Energy Efficient Equipment Purchasing 23

 5.8 Energy Education and Awareness 24

 5.9 Electricity Generation, Cogeneration, District Energy and Renewable Energy 24

 5.10 Emergency Generators / Back-up Power Systems 26

5.11 Sustainable Buildings Policy 26

 5.11.1 Sustainability in Design and Construction of City-Owned Buildings: 26

 5.11.2 Sustainability in existing City-Owned buildings: 27

 5.11.3 Sustainability in City Acquisition of Existing Buildings: 27

 5.11.4 Sustainability in City Owned Buildings Leased to Others: 28

 5.11.5 Sustainability in City-leased Buildings: 28

5.12 Measurement and Verification..... 28

5.13 Building Labelling 29

6.0 SPECIFIC POLICIES – ENERGY PROCUREMENT 30

 6.1 Demand Response 30

 6.2 Peak Demand Response and Tracking..... 30

 6.3 Transportation Fuels 30

 6.4 Utility Supply and Rate Management 31

 6.5 Energy Contract Management 31

 6.6 Renewable Energy 31

7.0 ENERGY COMMODITY POLICY 32

 7.1 PART I - POLICY STATEMENT AND INTERPRETATION 32

 7.2 PART II - DESIGNATION AND DELEGATION OF RESPONSIBILITIES 34

 7.3 PART III - PROCUREMENT POLICIES 36

 7.4 PART IV - REPORTING REQUIREMENTS 39

 7.5 PART V - ROLE OF CITY COUNCIL 40

8.0 DEFINITIONS 43

9.0 REFERENCES 45

EXECUTIVE SUMMARY

The City of Hamilton’s (City) first Corporate Energy Policy (PW07127) was created and adopted by Council in 2007. This policy calls for a review every five (5) years. Regular review of the policy is beneficial to further define its goals, targets and policy actions as regulatory framework, technologies and energy industries evolve.

The latest City of Hamilton’s Corporate Energy and Sustainability Policy (CESP) will be maintaining its current corporate energy intensity reduction targets of 45% in 2030 and 60% in 2050 as compared to a 2005 base year. The original target of 20% reduction by 2020 was met, and the current energy intensity reduction is 25% less than the base year. Meeting these targets will also put Hamilton on track to become a net zero carbon municipality.

The purpose of the CESP is to provide City staff and external stakeholders with a set of guidelines and protocols to assist in the making of decisions or choices relative to energy using equipment, processes, systems and activities. The intent for these guidelines, once they are implemented will lead to further energy reduction and further emissions reduction which will result in a direct benefit the City of Hamilton financially and environmentally.

In 2008, the City created and approved the City’s first corporate Energy Commodity Policy (PW08144/FCS08114). The Energy Commodity Policy is intended to provide the framework necessary to allow The City of Hamilton the means to procure the necessary quality and quantity of energy commodities in an efficient, timely, and cost-effective manner, while maintaining the controls necessary for a public institution in accordance with the Energy Commodity Policy. The energy Commodity Policy was integrated into the Corporate Energy Policy in 2014 to form one cohesive policy document for ease of reference and continues with this iteration of the Corporate Energy and Sustainability Policy herein.

The CESP is also integral to the success of meeting the revised environmental emission targets established through the climate change task force. The previous target for 50% greenhouse gas emissions remains, a new target of net zero emissions by 2050 has been put in place. This result can be achieved through a combination of energy conservation and demand management, renewable energy supply and through the purchase of environmental offsets e.g. carbon credits. The City’s revised energy and emission targets are outlined in the table below.

Table 1: Corporate Energy Intensity and Emission Reduction Targets

Year	Energy Intensity Reduction Targets	Emissions Reduction and Offset Target
2030	45%	50%
2050	60%	100% (Net 0)*

* Revised target, previously 80% reduction by 2050.

The focus of this policy continues to be on corporate energy and sustainability activities, dealing with City owned assets.

The City of Hamilton's CESP is designed to:

- Facilitate the achievement of City-wide energy and emission reduction targets;
- Address legislated reporting requirements;
- Define policies for capital investment related to energy;
- Define policies related to energy procurement;
- Address regulations concerning greenhouse gases (GHG) emissions.

The City of Hamilton's CESP incorporates the following key focus areas:

1. Mitigation of Energy and Fuel Consumption

- Reduction of energy and fuel use to facilitate achievement of specified targets

2. Specific Energy and Sustainability Policies and Policy Actions

- Base Building Standards;
- Project Approval Processes;
- Incentive/ Funding Programs, Life Cycle Analysis;
- GHG Emissions, Reporting and Protocol;
- Fuel Reduction Targets;
- Hamilton Water Energy Reporting;
- Energy Reserve;
- Energy Efficient Lighting;
- Building Automation Systems;
- Sustainable Building;
- Energy Efficient Equipment;
- Generation, Cogeneration, District Energy and Renewable Energy;
- Emergency Generators and Back-Up Power Systems;
- Monitoring and Verification;
- Building Labelling;
- Energy Procurement;
- Renewable Energy.

3. Energy Commodity Policy

- All Energy specific purchasing policy related to the: commodities, sales, delivery (rates) and storage of energy commodities including hedging agreements. Detailed in section 7.0.

4. Legislated Programs and Reporting Requirements

- The Public Works, Energy Initiatives section will be responsible for reporting on all City of Hamilton corporate energy consumption reductions, cost savings

initiatives and associated environmental emission reductions associated with energy conservation, sustainability and demand management on an annual basis at a minimum as required by the current provincial legislation.

- At least once every year, energy consumption, energy intensity, GHG emissions and energy costs will be reported to City council describing the performance of the City's energy program.
- Additionally, Public agencies are required to report annually to the province and publish on the provincial website and intranet site and make available to the public in printed forms at its head office, the public agency's Energy Consumption and Greenhouse Gas Emission Template as required by current legislative requirements.
- As required by current provincial legislation, Public agencies are required to submit to the Minister, publish on its website and intranet site and make available to the public in printed forms at its head office, the public agency's five year conservation and demand management plan to outline the actions to reduce and optimize energy use and reduce environmental emissions and throughout all City departments.

5. Boards and Agencies

- All City Boards and Agencies are encouraged to adopt the revised policy and actively participate towards the stated reporting, targets and goals.

6. Alignment with Community Energy Plan

- City of Hamilton is encouraged to actively participate towards the stated reporting, targets and goals of the community-based plan once that plan is endorsed by Council.

The City has maintained a commitment to managing the energy portfolio within the ever-evolving energy and regulatory environment, incorporating energy related policies and energy efficiency into project and operational decision-making and setting targets to achieve reductions in energy intensity and GHG emissions. The specific focus areas of the policy are further defined in the sections to follow.

1.0 MITIGATION OF ENERGY CONSUMPTION

Building on the success of the CESP to date (25% energy intensity reduction as of 2019); it is necessary that the City continue to move forward with its energy and sustainability strategy.

The City will need to achieve its targets through a combination of:

1. Corporate Energy and Sustainability Committees;

2. Annual reporting on energy use, energy intensity, emissions and energy management plan;
3. Building Environmental Standards;
4. Monitoring and Targeting of Existing/New/Retrofitted Buildings;
5. Investment in Energy Efficiency - Existing Buildings;
6. Implementation of Energy Efficient Design - Major Renovations / New Construction;
7. Implementation of Energy Management Policies related to Renewable Energy, Environmental Impact;
8. Optimization of energy use by Hamilton Water;
9. Prudent management of energy commodity purchasing.

1.1 Corporate Energy and Sustainability Committee (CESC)

The CESC provides a vehicle for key staff to work together in developing energy plans and strategies from each of their divisions. The CESC will continue to have lead responsibility and accountability for achieving future energy reduction targets.

Policy Actions – CESC

- Each committee shall consist of key representatives from within the divisions including Directors, Managers and other members of the management section as well as project managers and advisors e.g. Energy Initiatives section.
- Each CESC will oversee the development of respective Energy Conservation and Development Plans for achieving targeted results.
- Each CESC will monitor energy intensity, energy usage, GHG emissions, where applicable to address areas of concern, promote best practices and develop measures for energy efficiency improvements and GHG emissions reductions.

1.2 Annual Reporting

At least once every year energy intensity, energy consumption, emissions and energy costs will be reported to City council describing performance of the City's energy program for City-owned assets using various key performance indicators (KPIs). KPIs assist in tracking progress and identifying areas of concern or focus for energy and emissions reductions. These reports are to be posted on the City web site.

In addition, reporting of corporate energy use, emissions or other energy-related items, including Conservation and Demand Management (CDM) plans are required to be submitted to provincial and/or federal regulatory bodies. CDM plans are currently required by the province to be reviewed, evaluated and updated every five years.

Policy Actions – Corporate Annual Reporting

- The Public Works, Energy Initiatives section will be responsible for reporting on all of Hamilton corporate energy intensity, energy consumption, emissions, costs, consumption reductions, cost savings initiatives, conservation and demand management on an annual basis.
- The Public Works, Energy Initiatives section will be responsible for reporting on all of Hamilton corporate energy consumption, associated emissions, energy conservation and demand management plans when and as required by provincial and/or federal legislation.

1.3 Building Environmental Standards

Efficient building operation must be defined in order to be managed. Once standards for efficient operation are quantified, operation and maintenance effectiveness can be measured.

The following temperature settings apply to all City facilities unless a deviation from the standard is required as determined by Facilities Management due to mechanical or system limitations:

Policy Actions – Base Building Minimum Standards (Building Temperatures)

- Indoor temperature settings will follow ASHRAE standards for indoor temperature target of 22 C. All spaces during occupied periods will be set at 22 degrees Celsius (72°F) during the winter and 24 degrees Celsius (75°F) during the summer. Where available, occupants will be given the temporary capability of varying temperature +/- 1 degree Celsius (2°F), resulting in 21-23°C (70-73°F) for heating and 23-25°C (74-77°F) for cooling.
- Indoor temperature settings in all spaces during unoccupied periods will be set at 18°C (64°F) during the winter and 27°C (81°F) during the summer. The exception is for pre-heating or pre-cooling periods necessary to maintain building system performance during occupied periods, especially during adverse weather conditions.

Occupants who control their own thermostats are required to adhere to these temperature standards also. In City leased office spaces, temperature conditions for occupied and unoccupied period within the Energy Policy should be established as part of building lease agreements if applicable.

The following indoor pool water temperature settings apply to all City facilities operating pools unless a deviation from the standard is required as determined by Facilities Management due to mechanical or system limitations:

Policy Actions – Base Building Minimum Standards (Pools)

- Main pools should not exceed 29.4°C (85°F);
- Warm/teaching pools should not exceed 34.4°C (94°F);
- During the Summer (mid-June to mid-September), decrease the main pool temperatures to 28.9°C (84°F). For the remainder of the year, set at no higher than 29.4°C (85°F).

A performance standard must be measurable and quantifiable. The following are examples of additional standards of performance for City of Hamilton buildings:

Policy Actions – Base Building Minimum Standards

- Domestic hot water tank temperature (50°C).
- Minimum light levels in offices, hallways, storage areas, etc. set according to IES guidelines and further detailed in Section 5.4.
- Maximum CO₂ level in offices, resident spaces, etc. (e.g. 700 ppm above ambient)
- Fan operation: when outdoor air temperature permits, provide free cooling any time the outdoor temperature is below the required system supply temperature outdoor air intake dampers are to be optimized for energy efficient operation while maintaining indoor air quality.

When it comes time to evaluate energy efficiency measures (e.g. lighting retrofits, control of fresh air volume using CO₂, etc.), these should provide useful guidelines that can be adopted with the Energy Initiatives section approval.

Definitions of the standards are not arbitrary. The standards must reflect building code requirements, good Operation & Maintenance practices, and occupant needs.

The National Energy Code of Canada for Buildings (NECB) is an energy code for New Buildings that defines a set of minimum energy performance requirements for various building components. The *National Energy Code of Canada for Buildings 2017* (NECB), sets out technical requirements for the energy efficient design and construction of new buildings. NRC and NRCan are publishing this interim edition of the NECB in response to proposals received that improve the overall energy performance of buildings over the 2015 edition. Modelling for these changes indicates a potential energy efficiency improvement of between 10.3 and 14.4 % over the NECB 2011. The 2017 edition is an important step toward Canada's goal for new buildings, as presented in the Pan-Canadian Framework, of achieving 'Net Zero Energy Ready (NZER)' buildings by 2030.

In terms of Building environmental standards in this section, there are several general best practices that are recommended to be followed by any facility with HVAC equipment. These are listed below:

- Provide thermostats and controls that allow HVAC equipment to be controlled in each `Thermal Zone` within the facility.
- Provide Automatic Controls that shut-off ventilation systems when spaces are unoccupied and for nighttime setback of heating and cooling systems.
- Provide Outdoor Air Dampers that close automatically when the ventilation system is turned off.
- Provide ventilation `economizers` that can bring in extra outdoor air for free-cooling and water-side economizers that can save energy by bypassing the chiller plant.
- Right size equipment for each space and provide air-balancing to all areas. Use equipment with maximum possible efficiency for each application.
- Provide heat recovery of exhaust gases where feasible.
- Provide sealing of all ductwork, and insulation and protection of ductwork located outside of conditioned spaces.

1.4 Existing Buildings

Conservation and Demand-Side Management (CDM) activities include efficiency upgrades to energy consuming systems. CDM Retrofits tend to be initiatives where a new energy efficient technology or group of technologies are added or retrofit within a facility or group of facilities. These measures can benefit the City through:

- Reduced Energy Demand & Consumption
- Reduced Energy Costs
- Reduced Environmental Emissions (GHG reductions)
- Reduced Maintenance Costs and improved reliability
- Reduced Exposure to Energy Market Volatility (Risk Mitigation)
- Improved Working Environments
- Improved Productivity

1.5 Retrofits and Capital Renewal/Life Cycle Replacements

Capital Renewal/ Life Cycle Replacements are generally managed by the division who carries responsibility for operating and maintaining the existing or original equipment e.g. *Public Works, Energy, Fleet and Facilities Management*. Typical projects include major capital replacements of chillers, boilers, roofs, windows, HVAC, fans, pumps, piping etc. The intent is to make CDM part of the City's normal course of business for all facility and operational retrofits, including capital renewal and life cycle replacement projects.

Policy Actions – Project Approval Process

- This policy mandates the Energy Initiatives section involvement in the review of projects at the earliest possible concept stage. Energy Initiatives section approval of projects will only be given with appropriate review and life cycle analysis. This ensures that options for improving energy efficiency are considered, evaluated and quantified in terms of life cycle costing analysis, including cost, maintenance and emission reductions.
- Projects can continue to be managed by the division who carries responsibility for operating and maintaining existing or original equipment or the Energy Initiatives section can take the project lead as required (lighting, Building Automation Systems, renewable energy or new technology applications).

Typical equipment to be considered for this process includes:

- HVAC equipment (e.g. boilers, chillers, pumps, motors etc.);
- Lighting and controls;
- Building envelope (e.g. roofs, insulation, windows and doors etc.);
- Water use (e.g. pools, toilets, water reclaim etc.);
- BAS (Building Automation System) controls;
- Process improvements;
- Back-up generators;
- Any other energy consuming device.

These types of projects generally follow 4 phases:

1. Project Identification & Feasibility - Energy Audits, Feasibility Analysis or Detailed Condition Assessments;
2. Planning & Budgeting - Project Financing, Incentives, Business Case & Approvals;
3. Implementation – Tender, Project Execution, Project Management, Commissioning;
4. Monitoring & Verification – Measure and verify results, report achievements.

Policy Actions – Incentive / Funding Programs, Life Cycle Analysis, Approvals

The Energy Initiatives section will be a resource for implementation and follow-up of the recommended five (5) step process (below). In the following recommendations all facility and operational CDM retrofits and capital renewal/ life cycle replacement projects are required to adopt the following procedures.

- 1) Identify government and utility funding programs (incentives):

Incentives funding opportunities for CDM projects and feasibility studies are available.

Most government and utility funding programs are designed to encourage greater levels of energy efficiency or CDM activities which would not have been normally achieved without these funds. As new energy efficient product costs decline or become more cost effective due to higher utility rates, and as design techniques become main stream, through code changes or reduction targets achieved, funding for these activities will likely be reduced or eliminated altogether. It should be noted that all funding programs are established with a defined or limited budget. The main goal is to ensure we secure all eligible incentives.

Some funding programs are prescriptive (product specific) while others consider custom measures, often requiring detailed engineering analysis. In some cases, a feasibility study may be necessary.

It should be noted that most government and utility incentive /funding programs will NOT provide incentives for project feasibility studies or CDM retrofit / renewal projects that have been initiated by way of a purchase order prior to incentive application approval. Pre-approval of incentive-based projects before the project is initiated is the norm.

2) Determine the project base case(s) vs. the alternative CDM option(s):

For CDM retrofit projects the “base case” is usually the existing equipment. For Capital Renewal/ Life Cycle Replacement Projects the “base case” is typically the standard efficiency replacement option.

In some cases, the funding can be for prescriptive measures. Nevertheless, the existing, base case and energy efficiency options must all be considered for tracking and reporting purposes.

3) Identify the following for each option on an annual and life cycle cost basis:

- Associated project / equipment costs;
- Energy consumption and energy demand (e.g. kWh, kW, GJ, M3, L – see definitions);
- Energy consumption reduction, demand reduction and cost savings;
- Emission reduction;
- Maintenance and operational savings;
- Impact with and without financial incentives or funding.

Energy rate escalators should be factored in using most recent data and forecasts. Determining the equipment cost, energy consumption, emission reduction and cost savings associated with all options is necessary for qualifying for incentive funding and for internal tracking purposes.

4) Provide Project information to the Energy Initiatives section:

Project information will be used by the Energy Initiatives section for tracking, monitoring and verification for reporting to City Council and Senior City Management, including incentives.

- 5) Identify project recommendations for proceeding with the base case or the more energy efficient option and reasons/ rationale why:

Complying with these steps will ensure that energy efficiency and emissions are considered in all projects and for incentives applications which will in most cases compare an energy efficient option to a base case. It also provides the City with the ability to track all energy saving initiatives and their environmental and cost savings.

1.6 Major Renovations and New Construction

Major Renovations are similar to new construction in that they involve major capital and planning involvement. New Construction projects involve the complete design, development and construction of a new facility.

1.6.1 Evaluation of LEED and Green Building Design Options

To promote energy efficiency and environmentally friendly building practices, the City of Hamilton encourages LEED (Leadership in Energy and Environmental Design) design where practical. LEED construction will be compared to other options using Life Cycle Costing to assist on deciding whether the City wishes to use LEED or other design alternatives, according to end use requirements and budget constraints.

Such design alternatives include zero carbon buildings, which are buildings that are highly energy efficient and fully powered from on-site and/or off-site renewable energy sources or through procured carbon offsets to fully offset carbon emissions associated with the operations. The ZCB-Design Standard provides requirements that guide the design of new buildings and the retrofit of existing ones, to best empower buildings to achieve zero carbon operations. For ZCB-Design v2 certification, design must carefully consider embodied carbon, refrigerants and airtightness.

- 1) Major Renovations (>50% gross floor area) - All major renovations of City owned facilities will require a life cycle cost assessment of the energy, financial and environmental benefits associated with:
 - Base case design;
 - LEED Certified design;
 - LEED Silver design (including ZCB).
- 2) New Construction - All new City facilities to be constructed will require a life cycle cost assessment of the energy, emissions, financial and environmental benefits associated with having the building constructed according to:

- Base case design;
- LEED Certified design;
- LEED Silver design (including ZCB);
- LEED Gold design (including ZCB);
- LEED Platinum design (including ZCB).

LEED and ZCB design for new construction and major renovations makes good business sense, in that a high-performance green building vs. conventional inefficient buildings can reduce energy consumption and greenhouse gas (GHG) emissions and result in lower ongoing operating costs.

Table 2: Sustainable Building Standards

Type	Space	LEED Gold (Including ZCB)	LEED Certified (Including ZCB)	Corporate Energy Policy (Section 5.11)
New Construction	>500m ²	✓		
	<500m ²		✓	
Major Renovations	>500m ²	✓		
	<500m ²			✓
Other Renovations	>500m ²			✓
	<500m ²			✓

1.7 Occupied Spaces Energy Management Policies

The following supplemental policies will apply for all buildings with occupied spaces that provide basic environmental services.

1.7.1 Temperature Setback: Smog / Constrained Electricity Supply Days

During smog days or electricity supply constrained periods which are typically associated with the highest peak price for energy, cooling season temperatures will be increased by an additional 2 degrees Celsius in an effort to reduce energy consumption. The Energy Initiatives section will monitor peak demand days on behalf of the City and will send notifications out to the client group to potentially shift loads to off peak hours (where operationally possible) as per Section 6.2 of this policy.

1.7.2 After Hours ‘Lights Out’ Program

The City encourages the Lights Out effort for all applicable buildings where this can be integrated without concern for safety and for successful participation in events like Earth

hour once a year. There are two challenges to overcome with lights out program. The first is technological and the second is cleaning schedules. Given this:

- The City will work towards phasing in automated lighting control upgrades on City facilities as budgets allow, so that the City can lead by example by automatically turning off unnecessary lighting in City owned facilities after hours when the buildings are unoccupied. The use of motion control will be widely integrated.
- Where manual lighting controls exist in facilities, staff will continue to educate security guards, cleaning staff and maintenance staff on the importance of lighting only areas that are necessary during unoccupied periods.

1.7.3 Leased Office Spaces – Terms for Leases

In City leased office spaces, temperature conditions for occupied and unoccupied period within the Energy Policy should be established as part of building lease agreements and should comply with Section 1.3 of this policy.

2.0 EMISSIONS / GREENHOUSE GASES (GHG)

2.1 GHG Targets

The City of Hamilton's Corporate Energy and Sustainability Policy is integral to meeting the greenhouse gas emission reduction target of net zero emissions by 2050 relative to 2005 base year. These emissions are commonly known as operational carbon.

Corporately, achieving net zero greenhouse gas emissions means it is imperative that the City reduce its emissions sources. Efforts need to be focused on reducing consumption by utilizing energy efficient measures; moving toward more renewable energy sources (e.g. hydro, wind, solar, renewable natural gas) to power and heat City facilities and run City fleet; and potentially utilize emissions trading options as they become readily available.

Operational carbon is the carbon load created with the use of energy to heat and power a building. Embodied carbon, which is the carbon that is released in the manufacturing, production, and transportation of our building materials. As we continue to lower our operational carbon there will be a growing priority to also manage our embodied carbon. This will require development of a system of new targets and limits that will typically be found in new construction. In particular, LEED v4 speaks to embodied carbon and can be managed as per sections of this policy that relate to major renovations and new construction.

2.2 GHG Emissions Reporting

Policy Actions – Annual GHG Reporting

Reporting of Hamilton’s corporate emissions will be coordinated and carried out by the Energy Initiatives section at least once per year. The results will be compiled and presented as per Section 1.2 of this policy and may be included in reporting of other City reporting requirements or those of associate membership groups as required.

2.3 GHG Protocol

Policy Actions – North American GHG Protocol

The City of Hamilton will comply with the North American GHG Protocol as the basis for its emissions calculations and in order to assess its carbon footprint.

The North American Greenhouse Gas Protocol (GHG Protocol) is the most widely used international accounting tool for government and business leaders to understand, quantify, and manage greenhouse gas emissions. The GHG Protocol, a partnership between the World Resources Institute and the World Business Council for Sustainable Development, works with businesses, governments, and environmental groups around the world to build a new generation of credible and effective programs for tackling climate change.

It provides the accounting framework for nearly every GHG standard and program in the world - from the International Standards Organization to The Climate Registry - as well as hundreds of GHG inventories prepared by individual companies.

2.4 Validation and Verification

All carbon and emission reductions will be held in title by the City of Hamilton and will be managed by the Energy Initiatives Section. This includes the calculation, validation and verification of any carbon, greenhouse gas or other environmental attribute that can be monetized.

3.0 FLEET AND TRANSIT FUEL CONSUMPTION

The City of Hamilton manages a fleet of corporate vehicles to provide fleet and transit services. The corporate fleet vehicles include various vehicle types such as buses, waste collection vehicles, snow clearing trucks, street sweepers, light weight departmental vehicles and Fire and EMS vehicles. The fuels used for these vehicles are diesel, dyed

diesel, unleaded gasoline, propane and compressed natural gas (CNG). Corporate Average Fuel Economy (CAFE) is the traditional method for measurement of the fuel consumed per 100km driven. It is used to monitor improvements in fuel consumption efficiency and fuel management activities at a high level. The City of Hamilton CAFÉ reflects various vehicles types in the fleet, which should not be confused with similar vehicle specific fuel efficiency data used by the industry. CAFE measurement and reporting excludes Fire, EMS, Police and the consumption and use of dyed diesel.

Policy Actions – Fuel Reduction Targets

Utilizing CAFE as a measurement tool, the long-term targets for the collective vehicle fleet (including Transit) is a 20% reduction in fuel economy by 2030 using 2012 as the base year. Reaching this level of improvement will be achieved through measures guided by fleet and transit plans and policies.

3.1 Fleet Vehicles

The Green Fleet Strategy will provide a framework to develop current Fleet policies that will speak to managing fuel and efficiency of the vehicles through purchasing policies, operator training, utilizing lower emissions fuels and evaluating CNG, Bio-fuels or alternate fueling methods (i.e. electric, hydrogen) for alternatives to traditional fuels. Furthermore, the City has an Anti-idling By-law and a corporate fleet policy for anti-idling that assists in reducing fuel consumption and emissions.

Reducing emissions from fleet vehicles is part of a broader GHG reduction strategy to move the City to net zero emissions in 2050 and will be achieved through measures outlined in the new Green Fleet Policy, which is owned and developed by Fleet. The latest version of the Green Fleet Policy is expected to be presented to Council in Q1 2021.

3.2 Transit Vehicles

The City's Transit division is committed to exploring new technology as it pertains to future bus procurement. For the past 6 years, Transit has been steadily replacing its diesel fleet with CNG- powered buses. This has a significant impact on reducing operating costs and a favorable impact on GHG emissions.

As viable technologies shift to more sustainable options such as electric or hydrogen fuel cell vehicles, Transit will consider non-traditional vehicle types as an addition or replacement to their fleet of buses, provided the vehicles and any associated infrastructure is economically and environmentally feasible and fits within parameters of its cohesive transportation plan for the City.

The City's fleet and transit vehicles represent 40-50% of GHG emissions for the City. Efforts made to reduce usage and emissions in this area will significantly impact the City's emissions inventory and is integral to meeting emissions targets. The CNG bus fleet will

assess credible supply options to integrate renewable natural gas (RNG) into the fuel supply to help off-set emissions.

4.0 HAMILTON WATER

Energy use by HW facilities and operations accounts for approximately 39% of the City's energy use and 28% of the associated costs in 2019. It is the City's single most significant cost and represents great potential for sustainability opportunities including efficiency and renewable energy.

Reducing energy and emissions at Hamilton Water can be accomplished through measures such as water conservation, reduction of water loss, storm water reduction, and sewer system repairs to prevent groundwater infiltration. Implementing measures to address these items lead to reductions in energy use and result in savings due to recovering and treating lower quantities of stormwater and wastewater and treating and delivering lower quantities of water. At all times water quality and reliable system operability remain the primary objectives.

Opportunities for improving energy efficiency fall into three general categories:

1. Equipment upgrades;
2. Operational efficiency;
3. Modifications to facilities.

Equipment upgrades focus on replacing items such as pumps and blowers with more efficient equipment. Operational efficiency involves optimizing the amount of energy required to perform specific functions, such as wastewater treatment. Modifications to facilities, such as installing energy efficient lighting, occupancy control and efficient heating and cooling equipment reduce the amount of energy consumed by the facilities themselves.

Policy Actions - Hamilton Water Monitoring and Targeting

To move forward with energy efficiency improvements for Hamilton Water, this Policy establishes the metrics and targets for measuring and achieving success:

- The base year for reporting results will be 2011, as applicable;
- Energy intensity for water pumping stations will be reported in terms of kWh/MLD/m;
- Energy intensity for treatment plants and wastewater pumping stations will be reported in terms of kWh/MLD;
- Maximizing renewable energy through ancillary production;
- Green House Gases and emissions will also be reported in tonnes CO₂e/MLD;
- Hamilton Water will implement an active strategy for cost efficiency while applying energy reduction/conservation methods.

An overall strategy and energy management plan that addresses the energy use at Hamilton Water will be developed and put in place to optimize energy intensity. This strategy will examine energy used for conveying and maintaining distribution of water, water treatment, stormwater and wastewater processes and further refined to suit Hamilton Water's business units.

Included in the Hamilton Water energy strategy will also be the development of renewable energy opportunities that consider various waste streams for renewable energy generation. Through this policy, the Energy Initiatives section will be consulted and provide input for life cycle analysis to evaluate these opportunities and leverage any available incentives.

As with other City of Hamilton renewable energy projects, the ownership and operation will be assessed such that the business case and other financial considerations that may benefit the City, include the option to have the Energy Initiatives section manage and operate the facility in a similar role to other existing operations (HRPI, Biogas, District Energy and Solar).

5.0 SPECIFIC POLICIES

5.1 Energy Reserve

The Energy Reserve was established to fund the Energy Initiatives section as well as other initiatives related to energy conservation and demand management (CDM). The Energy Reserve is created to fund the following activities:

- Fund the Public Works, Energy Initiatives section;
- Payback capital outlay;
- Mitigate unforeseen energy cost increases or budgetary shortfalls during the current budget cycle as a result of regulatory or utility rate adjustments;
- Energy audits and feasibility studies;
- Pilot projects for new energy technologies and renewable energy projects;
- Fund incremental retrofit project costs of higher efficiency options;
- Education and energy awareness programs.

From the previously approved council report, Corporate Energy Policy (PW07127):

- As savings in energy expenditures are identified, whether through reduced rates or energy CDM initiatives, it is proposed that the total amount of savings be base-transferred from the corresponding energy line (e.g. Hydro, Natural Gas) to the Energy Initiatives section.
- The Energy Initiatives section is also involved in reviewing historical billings from all energy suppliers. Under the microscope and with the group's specific knowledge and experience, the Energy Initiatives section has identified and will continue to identify, errors that have been made by these suppliers. These efforts

will result in recoveries of past overpayments. Recoveries from the previous budget year flow to the Energy Reserve, to be used as a source of funding.

- The Energy Initiatives section continues to identify sources of incentive funding for retrofit and other energy conservation initiatives. These incentives provided by energy suppliers and various levels of Government will help to mitigate the cost of improvements that will reduce the use of energy. These monies will be applied and directed as established within the Project Charter for the specific project as agreed to by all involved parties.
- Once the budget base for the Energy Reserve is established, all future savings in current energy expenditures could result in levy savings or could be used to fund further energy initiatives or both. Historic billing errors would continue to be directed to the Energy Reserve to fund future projects and Incentive payments would continue to be used to reduce the cost of conservation projects.
- Regarding City Boards and Agencies, the Energy Initiatives section will provide services on a contract and/or consultant basis. Any savings generated and proposed to be transferred to the Energy office, will be negotiated between the Energy Initiatives section and the Board or Agency.

Policy Actions – Energy Reserve

The Energy Reserve (112272) funds staffing costs for the Energy Initiatives section. In order to maintain a healthy reserve and secure the best leverage for funds on energy related projects, the energy reserve will also be used to fund specific and targeted projects or activities, as approved by the Manager, Energy Initiatives section to ensure compliance with the Corporate Energy and Sustainability Policy.

Funds that are attributed to any energy conservation demand management program, renewable energy revenues, energy related project revenues (e.g. leases or other payments), utility bill recovery (current year related recoveries will be returned to client budget, previous year related recoveries will go to reserve), carbon off-sets, demand response revenue and all utility incentives will be deposited into the Energy Reserve. In addition, revenue from renewable energy projects (solar lease or other) or fuel procurement (compressed natural gas or other) will be established as a means of funding ongoing activities required to manage these energy related services. Future operational budget savings will be transferred to the Energy Reserve to maintain an acceptable level of funding in the reserve.

Funds moving into or out of the Energy Reserve will be approved per this policy. These funds can be used to finance (in whole or in part) energy projects, energy studies, pilot projects and other similar activities. For instance, incremental costs for more efficient options could be financed by the Energy Reserve with the understanding that it will be paid back through savings.

5.2 Verification and Validation of Utility Bills

The Energy Initiatives section will monitor utility bills (verify and validate) for the correct application of energy rates, demand and energy consumption charges.

Policy Actions – Policy Action – Utility Bills Funds Recovery

Funds recovered through this activity will be deposited into the Energy Reserve with the following rules to apply:

- Billing recovery for costs related to usage from the current budget year will be returned to the client budget;
- Billing recovery for costs related to usage from the previous budget year will be deposited in the Energy Reserve.

5.3 Energy and Emission Reduction Projects - Lifecycle Cost Analysis

Policy Actions – Lifecycle Cost Analysis

Energy and emission related projects will be evaluated by the design/project team using Lifecycle Cost Analysis. This analysis must depict energy and emission reductions and the financial payback for the best overall outcome for the City. Designs and proposals shall include a base case option compared to more efficient options for staff to assess the long-term operating costs and emission reduction in order to make the appropriate decisions based on capital and operating budget constraints.

5.4 Lighting Technology

Policy Actions – Energy Efficient lighting Solutions

- The City will endeavor to use the most energy efficient and latest proven lighting technology as per current government Act, Regulation and or recommendation. The latest proven lighting technology has moved to the light emitting diode (LED) which is both highly efficient and a very long life which significantly reduces maintenance costs. To ensure optimum efficiency and quality, lighting shall be either Energy Star or Design Lights Consortium (DLC) Listed.
- The City will endeavor to further reduce electrical consumption by installing, where applicable, lighting controls including but not limited to daylight harvesting, occupancy, photocell and building automation system (BAS) controls.
- The City is committed to replacing or eliminating incandescent lighting where possible in order to comply with Energy Star or Design Lights Consortium Listings and any government Act, Regulation and or recommendation.

Lighting levels will be based on IES guidelines and be compliant with the Ontario Building Code (OBC). See attached links in References Section for additional lighting information.

5.5 Energy Management Standard – Building Automation Systems (BAS)

Policy Actions – BAS Modernization and Standardization

The introduction of multiple vendors created a need for a standard BAS specification that was developed by documenting the City's requirements.

- A master BAS specification will set out City's expectations that all vendors must adhere to and guidelines for hardware, software, and communication protocols.

BAS modernization policy to achieve goals and objectives noted below shall apply to:

- **New Construction:** All new City facilities to be constructed shall be evaluated for BAS installation using City's master BAS specification based on capital cost requirements, expected annual energy consumption reduction, and reasonable project payback. A general rule of thumb can be either a site of greater than 500 m² of gross floor area or annual energy consumption of over 500,000 equivalent kWh (ekWh).
- **Major Renovations (>50% gross floor area):** All major renovations of City owned facilities of greater than 50% of their gross floor area shall be evaluated for BAS retrofit using City's master BAS specification based on capital cost requirements, expected annual energy consumption reduction, and a reasonable project payback.

Moving towards a concept of internet-based open protocol Building Automation Systems (BAS) will ensure that the City will have the ability to obtain competitive pricing from a list of BAS vendors that are already pre-qualified. Using these approved prequalified BAS vendors list will provide the City with an ability to have this open system and eliminating a potential need of corporate BAS service Contracts. City staff will also provide inputs to refine and establish effective and efficient control strategies to optimize equipment performance without sacrificing occupant’s comfort or productivity.

The implementation of a Building Automation System (BAS) into existing facilities has been shown to reduce energy consumption in the order of 5%-20%, generating a return on investment in the range of 2-10 years. These systems provide flexibility for facilities to better regulate building temperatures, control indoor air quality, and allow for equipment schedules to be intricately tailored to the facilities requirements.

As BAS are modernized, they will be centrally controlled such that they can be monitored and adjusted from a single location to maintain building temperatures and quickly identify and correct energy waste. This will ensure consistent temperature control is maintained and monitored from a single location and will also build on the existing system the City already has in place for other facilities.

The goals and objectives for the BAS modernization moving forward through this policy are:

- Capital and maintenance cost reduction;
- Optimization of the existing BAS for energy consumption reduction and comfort improvement;
- Continuous expansion of the BAS to other facilities selected and prioritized by the City based on the energy consumption and savings opportunities.

The following table presents a summary of these generic guidelines:

Table 3: BAS Modernization Guidelines

Type	Gross Space	BAS Modernization	Annual Energy Consumption - ekWh	BAS Modernization
New Construction	>500m ²	✓	>500,000	✓
	<500m ²		>500,000	✓
Major Renovations	>500m ²	✓	>500,000	✓
	<500m ²		>500,000	✓

5.6 Roof Capital Replacement Evaluation

Policy Actions – Roof Replacement

As part of ongoing roof capital replacement evaluations that in addition to standard roof replacement that the feasibility of a “Green” or “White” roof be explored for City owned facilities that will be assessed using a life cycle costing analysis method. This process should also include the analysis of increasing the R value of the roof insulation if applicable.

5.7 Energy Efficient Equipment Purchasing

Policy Actions – Energy Efficient Equipment

When purchasing new equipment and appliances, the most optimal energy efficient option should be selected.

Equipment standards are identified through a long-standing standard of performance called ENERGY STAR®. The City will use Energy Star as a basis for minimum standards for energy efficiency and energy efficient products including the following:

- Household and commercial appliances
- Water heaters and other water heating equipment
- Furnaces and other space heating equipment
- Lamps and other lighting products
- Motors and transformers
- Electronic equipment
- Fenestration Products

ENERGY STAR® is trusted and a simple source that the City can use to identify products that are among the most energy-efficient on the market. Only manufacturers and retailers whose products meet the ENERGY STAR criteria can label their products with this symbol. ENERGY STAR in Canada is a voluntary program between Natural Resources Canada's Office of Energy Efficiency and organizations that manufacture sell or promote products that meet the ENERGY STAR levels of energy performance. ENERGY STAR in Canada is administered by Natural Resources Canada's (NRCan's) Office of Energy Efficiency (OEE).

We are recommending ENERGY STAR in order to:

- reduce energy costs;
- reduce electricity demand;
- reduce impact on the environment;

- Energy-efficient products on the market today can reduce energy costs by 25 to 50 percent, or even more, without compromising quality or performance;
- Investments in energy-efficient products can quickly pay for themselves and provide a significant return, making funds available for investment in your community;
- Energy-efficient products have an extended life and offer decreased maintenance;
- Incentives may be available for some equipment.

ENERGY STAR is easy to use and provides comprehensive tools and information with an online purchasing guide for specifying products that meet energy efficiency criteria.

- City Purchasing Policies adapt as a minimum standard Energy Star® rated equipment or equivalent for energy consuming devices such as appliances, photo copiers, computers, servers, computer monitors etc.
- All new and retrofit motors, heating equipment replacements (e.g. fans, pumps, water heaters, rooftop HVAC etc.,) specify premium efficiency motors as minimum standards. Where required the Energy Initiatives section will provide recommendations on minimum efficiency standards.

5.8 Energy Education and Awareness

Education and awareness programs on energy conservation, greenhouse gas emissions and climate change, play an integral role in achieving and sustaining reduction in energy use. Employ a range of educational tools to teach and educate staff about energy efficiency and the benefits of conservation to reinforce the link between individual behavior, energy use, the potential for savings, the reduction of GHG's and climate change.

5.9 Electricity Generation, Cogeneration, District Energy and Renewable Energy

Generation or cogeneration of electricity or developing district energy or renewable energy projects can be an attractive way of improving efficiency, providing security of supply and reducing environmental emissions. These projects keep revenue and jobs in our local economy. The City will investigate opportunities for growth of district energy in targeted areas of the City to enhance economic development, improved reliability, energy efficiency and foster further GHG emission reductions. District energy provides for local, clean, renewable and embedded energy systems which support energy efficiency

solutions that are integrated with other City planning processes. District Energy systems are also an excellent solution to integrated community energy planning. District Energy offers a sustainable energy solution to address future Regional Energy Planning needs.

Policy Action – Generation, Cogeneration, District Energy and Renewable Energy

- All electricity generation, cogeneration and district energy or renewable energy projects are evaluated on a case by case basis, with the aid of independent third party technical, legal and financial expertise, through the Energy Initiatives section.
- The City will only construct clean or green generation, cogeneration, biomass or renewable energy projects.
- These projects shall consider the economic impact to the City, including overall efficiency gains, security of supply, environmental impact, life cycle analysis and the local economic benefits for City.
- The Energy Initiatives section is to be included in all generation, cogeneration, district energy, energy from waste and renewable energy project reviews well in advance of commitment to ensure all legal, technical and energy related issues have been considered and to allow for potential additional analysis.
- The City of Hamilton shall implement strategies with HRPI (Hamilton Renewable Power Incorporated) to identify opportunities which exist in the generation of renewable energy. This includes initiatives which will reduce greenhouse gas emissions, maximize revenue generation for the City of Hamilton and provide a sustainable atmosphere for energy renewal initiatives. This includes accessing incentives, participation in the assessment of alternatives and the operation and management of installations, energy strategies or commitments (commodity supply contracts, hedge strategies etc.).

5.10 Emergency Generators / Back-up Power Systems

Policy Action – Emergency Generators and Back-up Power Systems

The Energy Initiatives section is to be included, with adequate time, in the review of Emergency Generators and Back-up Power Systems, noting the following:

- All new or retrofit emergency and back up generation as well as back-up power system projects be evaluated well in advance of commitment to ensure all technical, environmental impacts, and energy related issues have been considered;
- All economic (life cycle analysis), energy efficiency and environmental benefits of converting to newer cleaner fuel options such as natural gas or dual fuel generation units vs. existing diesel-powered units;
- All new and retrofit back-up generation system projects are to evaluate the costs and feasibility of “synchronization” of this equipment with the facility so that these units can potentially be used for “Peak Shaving” when favorable market conditions exist.

5.11 Sustainable Buildings Policy

Policy Action – Sustainable Buildings

The City of Hamilton will establish, implement and maintain sustainable building practices for all new builds during the acquisition, planning, design, construction, operations, maintenance, renovation, and decommissioning to meet or exceed the requirements as summarized through section 5.11 below;

5.11.1 Sustainability in Design and Construction of City-Owned Buildings:

Further to section 1.6, for new builds or major construction new City-Owned buildings will be designed and constructed in a manner that mitigates the risks and impacts of future energy and carbon pricing (e.g., through passive design strategies, durable energy conserving building envelopes, etc.) and provides flexibility to incorporate emerging technologies that become cost effective in the future. (e.g., solar ready roofs, provisions for future geothermal, energy storage, etc.)

- The City will recognize the significant resource requirements and greenhouse gas impacts of new construction, as well as the value of the embodied carbon in its existing building stock. The ZCB-Design Standard provides requirements that guide the design of new buildings and the retrofit of existing ones, to best empower buildings to achieve zero carbon operations.

- As part of the business case development, the City will assess whether an identified real estate need of its programs or services can be met through its existing building portfolio and achieved in the absence of new construction.

5.11.2 Sustainability in existing City-Owned buildings:

The City will demonstrate excellence in sustainable practices in existing City-Owned Buildings and City-occupied buildings through the establishment of a BOMA BEST-like certification program or similar. Sustainable building practices employed by the City shall include:

- Monitoring and benchmarking the performance of all City-owned buildings;
- Conducting energy efficiency audits to identify opportunities for improvement;
- Integrating energy modeling, energy audits, lifecycle cost benefit analysis and sustainable return on investment analysis methodologies into routine lifecycle replacement and capital rehabilitation planning processes;
- Strengthening the integration and accountability with the Corporate Greenhouse Gas Management Plan through the creation of multi-year building energy retrofit plans that align with budget cycles, outline proposed energy efficiency and emission reduction upgrades, provide project-specific details and anticipated lifecycle cost benefits;
- Establishing requirements for determining an optimal building portfolio upgrade/retrofit strategy that extends over multiple budget cycles in support of the Corporate Greenhouse Gas Management Plan and creating a path to zero-carbon emissions for the building portfolio;
- Publicly sharing and communicating its sustainable building practices through the establishment and implementation of a Green Building Education Program that incorporates both passive public education tactics (e.g., building signage and online information) and active public engagement and awareness.

5.11.3 Sustainability in City Acquisition of Existing Buildings:

Prior to the acquisition of an existing building the City intends to retain for its own use or for lease to others, the City shall require an energy assessment be performed and integrated into the existing pre-acquisition process. The energy assessment will determine the building's energy consumption and greenhouse gas performance and the extent of upgrades needed to raise the energy performance to an optimized level of lifecycle cost benefit.

5.11.4 Sustainability in City Owned Buildings Leased to Others:

The policy standards for existing City-owned buildings (that are leased to others who are also responsible for sustainable building practices in those buildings) applies only when incorporated within the leasing agreements at the time of lease renewal or creation of a new lease agreement.

5.11.5 Sustainability in City-leased Buildings:

The City will understand the energy use and greenhouse gas impacts of the buildings it leases from others prior to entering leases and will consider these impacts as a part of its selection criteria.

5.12 Measurement and Verification

The purpose of Energy Project Measurement and Verification (M&V) is to verify energy savings resulting from activities that influence the energy consumption of a facility. This verified information will be used to track actual savings as mandated by the Green Energy Act and our progress towards our energy intensity targets.

Policy Actions – Monitoring and Verification

Project M&V option (Basic or Enhanced) shall be driven by incentive program requirements or as directed by the Energy Initiatives section throughout this section 5.12.

Energy Project Measurement and Verification (M&V) activities are intended to cover:

- Energy Conservation Measures;
- Demand & Load Management Projects;
- Large Capital Projects;
- Renewable Energy Projects;
- City-wide corporate energy reduction goals.

The objective of Energy Project M&V is to:

- Facilitate the economic analysis of implementing energy saving measures by establishing a high confidence level in reported energy savings that are obtained through energy related projects;
- Establish a process to ensure that all significant project activities related to energy undergo an appropriate level of measurement and verification;

- Provide a method for improving accuracy of reported progress toward energy goals on a portfolio wide basis.

The M&V protocol that the Energy Initiatives section will adhere to was developed by City Staff. This protocol was designed around the International M&V protocol (IMVP) standard and was modified where appropriate to suit the needs of the City

Generally, energy project M&V activities can be grouped into two major categories: Basic and Enhanced. Basic is concerned with Utility Bill analysis. Enhanced covers engineering calculations (using stipulated values and measurements), metering and monitoring (spot, short term, or continuous measurements), and simulation models using industry standard tools such as RETScreen from Natural Resources Canada. The Save on Energy web-site also provides a detailed guideline on Project Measurement and Verification Procedures which can also be used as a reference document.

When an energy retrofit project is initiated within the City of Hamilton, both the energy savings for the project and the associated Greenhouse Gas (GHG) emission reductions are to be determined for business case summaries. These numbers may also be used to begin energy project incentives process and may, therefore, require energy savings verification for third party sources.

5.13 Building Labelling

Policy Actions – Building Labelling

The City will adopt an industry standard building ranking energy system for appropriately sized corporate buildings. The Energy Initiatives section will assess these buildings and assign them the rankings using industry standard appropriate tools. These tools will act as a benchmark comparing similar buildings and similar end uses on an energy intensity basis. This will also assist the City with energy education and awareness for staff. Building labelling will also assist in targeting the opportunities for improvement and acknowledging high performing areas.

6.0 SPECIFIC POLICIES – ENERGY PROCUREMENT

Policy Actions – Energy Procurement

The following areas will be managed by the Energy Initiatives section as indicated throughout Section 6.

6.1 Demand Response

The Energy Initiatives section will promote the utilization of City owned assets that can contribute to a reduction in electrical demand in order for the City to participate in available demand response programs. To facilitate the process, by way of this Corporate Energy policy and as stated in the Energy Commodity Policy, the Energy Initiatives section will be granted authorization to enter into such agreements on behalf of the City of Hamilton.

6.2 Peak Demand Response and Tracking

The Energy Initiatives section will undertake the daily evaluation of provincial demand, weather and temperature and price forecasts that can indicate a potential peak demand day. Such tools and information used to anticipate when peak hours are most likely to occur include time of year, time of day, the Independent Electricity Service Operator (IESO) demand forecasts and IESO real time peak market information.

During high provincial demand periods with the potential for peak demand days, which are typically associated with the highest peak prices for electricity and potential for peak setting for the IESO's Industrial Conservation Initiative (ICI) customers, the Energy Initiatives section will notify City sites via email of this potential demand period.

If site operators can reduce demand during the peak period without compromising operations and public health and safety, they shall endeavor to do so. This can include, but is not limited to:

- Lowering or adjusting operational activities to non-peak times;
- Adjusting temperature settings in buildings;
- Shutting off non-essential lighting and/or computers; and
- Lowering blinds or closing curtains to reduce heat or cooling escape.

6.3 Transportation Fuels

The Energy Initiatives section will assume the role of procuring and managing the wholesale contracts for the City's transportation fuel requirements for all City of Hamilton users. Users include Fleet, Transit, Police, Fire and EMS. Traditional fuels that are

petroleum based (diesel and gasoline) will be and continue to be managed by the Energy Initiatives section, as will any future transportation type fuels such as Compressed Natural Gas (CNG), Liquefied Natural Gas (LNG), electricity or hydrogen. These fuels will be procured according to the direction and guidelines set out in the existing Energy Commodity policy.

6.4 Utility Supply and Rate Management

The Energy Initiatives section will evaluate utility rates (electricity, natural gas, water and waste water) for the City on an ongoing basis considering evolving energy requirements, energy market regulations and supply conditions/ contacts and the City's commodity supply arrangements. The Energy Initiatives section may initiate all utility rate changes as required to manage utility supply and utility rates. This is to ensure continued supply and allow for optimization of utility metering and rates favorable to the City. The Energy Initiatives section will manage all City customer energy use data for the City's district heating, cooling, natural gas and electricity end-use customers.

6.5 Energy Contract Management

The Energy Initiatives section will manage all energy commodity, energy supply, utility rates etc., as required to maintain energy supply to the City and the City's end-use customers where the City directly supplies district energy (e.g. heating, cooling or electricity). All contracts will be managed within established City guidelines.

6.6 Renewable Energy

Although renewable and non-renewable energy both produce carbon emissions, renewable energy has a lesser to almost zero carbon emissions. compared to fossil fuels.

Policy Actions – Renewable Energy

- The City will consider, evaluate and pursue feasible renewable energy opportunities to reduce usage from traditional energy sources and to reduce emissions overall;
- The Energy Initiatives section to be included in all corporate renewable energy project evaluations prior to commitment by the City;
- The Energy Initiatives section consider acquisition of renewable energy and/or utilizing carbon credits trading as a method of meeting targets if required.

The Energy Initiatives section will work in close association with Hamilton Renewable Power Inc. (HRPI) to advance the development and growth of renewable energy for the

City of Hamilton. The Energy Initiatives section will manage existing and future operations of renewable energy sites. Existing sites include HRPI Cogeneration plants located at 900 Woodward Ave. and the Glanbrook land fill. Furthermore, a City owned biogas purification unit located at 900 Woodward Ave. processes raw methane from the waste water process, purifies it and injects the final renewable natural gas into the Enbridge distribution system.

Additional renewable energy opportunities, strategies and initiatives will be pursued through HRPI or the City as opportunities arise. These activities will reduce greenhouse gas emissions, maximize revenue generation for the City. This includes accessing incentives, participation in the assessment of alternatives and the operation and management of any installation.

Going forward and in order to meet our low emission targets it is very likely the City will need to acquire renewable energy to meet these long-term targets. However, this type of purchase should only come after all available options have been exhausted which include installing high efficiency measures first, as applicable.

Where it is found to be feasible and land and space may be available, the Energy Initiatives section supports developing renewable energy generation and where feasible, energy storage systems. Wind and Solar Energy systems may also be investigated to help offset GHG emissions from electrical energy use, especially during peak day events.

The Energy Initiatives section should be included in all corporate renewable energy project evaluations prior to commitment to ensure all legal, technical and energy related issues have been considered.

In addition, the Energy Initiatives section will evaluate any emissions reductions opportunities and/or potential for emissions/carbon credits trading in so much as they are available, economically feasible and offer verifiable options for meeting our emissions targets.

7.0 ENERGY COMMODITY POLICY

Policy Actions – Energy Commodity Policy

The following Section in its entirety outlines the policy for commodity purchasing.

7.1 PART I - POLICY STATEMENT AND INTERPRETATION

1. Purpose of Statement

In recognition of the unique position of Energy Commodities (as herein defined) energy prices are set by varying market conditions (i.e. supply and demand), fluctuating hourly, daily and seasonally. Supply challenges for these commodities and varying supply and demand have contributed to price volatility and have produced forward market price and budgetary uncertainty.

Buyers in the Ontario marketplace who wish to control commodity price risk must enter into commodity price hedging agreements, which are intended to reduce the risk of adverse price movements in a commodity. This Statement of Policies and Goals provides the framework for the purchase, sale, delivery, and storage of Energy Commodities and the consideration of price hedging by the City of Hamilton for all Energy Commodities.

2. Definitions

“City Affiliates” are those entities with which the City is not at arm’s length within the meaning of the *Income Tax Act (Canada)*.

“Contract Agent” means an external agent, contractor, consultant, or other representative hired by the City to assist with the procurement, sale, and/or delivery of Energy Commodity for the City.

“Cooperative Energy Purchasing” means coordination of City Energy Commodity purchases with Energy Commodity purchases of City Affiliates, or other organizations.

“Energy Commodities” means electricity, green power, natural gas, methane and all other petroleum based fuel products such as: diesel, bio-diesel, gasoline, fuel oil, propane and any other bulk commodity primarily used by the City for the purpose of heating and cooling of buildings and other structures, electricity generation, cogeneration, demand response programs, smart grid programs and the fuelling of City fleets, as determined by the Manager of Energy Initiatives section.

“Green Energy” means energy generated from renewable energy sources, such as certified water power, solar, biogas, biomass and wind. Other terms for Green Energy include: Green power certificates, Renewable Natural Gas, Carbon Offsets, Tradable Renewable Certificates or "Green Tags". These attributes, embodied in a certificate or through other certification, may be bought and sold either bundled or unbundled with the commodity.

3. Policy Statement

The City of Hamilton (“City”) will procure the necessary quality and quantity of Energy Commodities in an efficient, timely, and cost-effective manner, while maintaining the controls necessary for a public institution in accordance with this Energy Commodity Policy. The City will encourage the negotiation of fair Master Agreements, and agreements with Contract Agents, with respect to the purchase, sale, delivery, and storage of Energy Commodities. The City will strive to ensure that the best value is obtained, and that the financial stability of Energy Commodity suppliers meets high thresholds to ensure sustainability and reliability of supply. The City will consider commodity price hedging agreements as a means of fixing, directly or indirectly, or enabling the City to fix the price or range of prices to be paid by the City for the future delivery of some or all of a specific Energy Commodity, or the future cost to the municipality of an equivalent quantity of the Energy Commodity, where is advantageous for the City to do so.

The City will also consider opportunities for entering into agreements with utilities and other transportation and delivery supplier contracts (i.e. pipeline supply) to secure commodity supply and utility rates of specific Energy Commodities.

7.2 PART II - DESIGNATION AND DELEGATION OF RESPONSIBILITIES

1. Designated Authority - General Manager of Finance and Corporate Services

The General Manager of Finance and Corporate Services ("GMFCS") for the City of Hamilton is the designated person responsible for administrative matters pertaining to the purchase, sale, delivery, and storage of Energy Commodities, including, without limitation, determination of potential suppliers and the entering into of Master Agreements and related transactions, as well as Energy Commodity price hedging in an efficient and cost-effective manner. The GMFCS will delegate certain administrative duties and responsibilities to internal staff, particularly the Manager of Energy Initiatives, and external Contract Agents.

The General Manager of Finance and Corporate Services, or his/her authorized delegate, is authorized to enter into contracts for the purpose of engaging a Contract Agent with respect to the purchase, sale and/or delivery of Energy Commodities in accordance with Part III of this Energy Commodity Policy.

The General Manager of Finance and Corporate Services is responsible for:

- a) determining what supplier(s) are appropriate for the City to engage in negotiations in order to secure Master Agreements with respect to the purchase, sale, delivery and/or storage of Energy Commodities in accordance with this Energy Commodity Policy;
- b) determining when it would be advantageous for the City to engage Contract Agents in order to assist the City with respect to its Energy Commodity procurement strategy and determining which Contract Agents to engage in negotiations and/or to enter into agency or other agreements with, in accordance with this Energy Commodity Policy;
- c) determining when it would be advantageous for the City, to participate in Cooperative Energy Purchasing and to coordinate such joint efforts in accordance with this Energy Commodity Policy; and
- d) determining whether a particular Energy Commodity price hedging agreement is advantageous for the City based on the considerations outlined in this Energy Commodity Policy.

2. Authorized Delegate - Manager of Energy Initiatives

The Manager of Energy Initiatives will be the General Manager of Finance and Corporate Services' authorized delegate to conduct the following:

- a) seek out, with or without the use of Contract Agents, potential suppliers of Energy Commodities and engage in negotiations with same with respect to the purchase,

sale, delivery and/or storage of Energy Commodities using the criteria for potential suppliers outlined in this Energy Commodity Policy, including the entering into of Master Agreements (with terms and conditions acceptable to the City Solicitor);

- b) execute Energy Commodity procurement, sale, delivery, and/or storage contracts and enter into Energy Commodity transactions in accordance with this Energy Commodity Policy and on terms and conditions acceptable to the City Solicitor;
- c) enter into agency agreements and/or other contracts and/or arrangements with Contract Agents and/or electric or natural gas distribution and transmission utilities or other Energy Commodity agencies and/or companies for the purpose of purchase, sale, delivery and/or storage of Energy Commodities and incentives upon approval from the General Manager of Finance and Corporate Services and on terms and conditions acceptable to the City Solicitor;
- d) enter into agreements with respect to the purchase, sale, delivery, and/or storage of Energy Commodities with City Affiliates on terms acceptable to the General Manager of Finance and Corporate Services;
- e) enter into district energy agreements (with terms and conditions acceptable to the City Solicitor) with third parties, including, but not limited to, school boards, Provincial agencies and other private or public institutions for electricity supply, heating or cooling (thermal energy);
- f) meet with the General Manager of Finance and Corporate Services, as required, and provide written reports regarding the past performance of Energy Commodity hedging agreements, future strategies and other issues as requested, as well as information with respect to the use of Contract Agents;
- g) notify the General Manager of Finance and Corporate Services, in writing, of any significant changes in the Energy Commodity hedging philosophies or policies and organization; and
- h) provide periodically, not less than annually, lists of Energy Commodity hedging agreements and agreements with Contract Agents and such other information as may be requested by the General Manager of Finance and Corporate Services.

3. Use of Contract Agents

The Contract Agent will only be authorized to act within the scope of the specific authority under any executed contract with the City and shall, in accordance with such contract, provide a number of services to the City, which may include:

- a) assisting the Manager of Energy Initiatives in developing a prudent energy procurement mix and specific procurement objectives and strategies;

- b) monitoring, analyzing and reporting on the City's procurement performance and supporting the Manager of Energy Initiatives with respect to Energy Commodity procurement, delivery and storage related matters;
- c) assisting in the selection of Energy Commodity suppliers, delivery, and/or storage agents;
- d) meeting with the Manager of Energy Initiatives as required;
- e) enter into contracts and/or arrangements (with terms and conditions acceptable to the City Solicitor) with electric or natural gas distribution or transmission utilities or other Energy Commodity agencies and/or companies for the purpose of purchase, sale, delivery and/or storage of Energy Commodities upon approval from the Manager of Energy Initiatives; and
- f) enter into district energy agreements (with terms and conditions acceptable to the City Solicitor) with third parties, including, but not limited to, school boards, Provincial agencies, and other private or public institutions for electricity supply, heating or cooling (thermal energy) upon approval from the Manager of Energy Initiatives.

7.3 PART III - PROCUREMENT POLICIES

1. Energy Commodity Suppliers, Delivery, and/or Storage Entities

In determining what suppliers, delivery and/or storage entities are appropriate for the City to engage in negotiations in order to secure Master Agreements with respect to the purchase, sale, delivery, and/or storage of Energy Commodities, the following nonexclusive considerations **will** be taken into account:

- i. past, present and projected pricing strategies;
- ii. acceptability of contract terms and conditions by the City Solicitor;
- iii. the past, present and prospective financial stability of any potential supplier, including the meeting of a minimum threshold of financial stability set in accordance with this Energy Commodity Policy;
- iv. any conflicts of interest as between the City, City Affiliates and any supplier, delivery and/or storage entity;
- v. in the opinion of the General Manager of Finance and Corporate Services, the commercial relationship between the City and/or City Affiliates and the supplier, delivery and/or storage entity has been impaired by the prior and/or current act(s) or omission(s) of such supplier or entity including but not limited to:
 - (a) a corporation, including an officer, director or shareholder of a corporation, or other person which has been involved in litigation with the City:

- (b) any corporation that is an affiliate of or successor to, or has one or more of its officers, directors or shareholders, any person or corporation described in clause (a);
- (c) the failure of the supplier, delivery and/or storage entity to pay, in full, all outstanding payments (and, where applicable, interest and costs) owing to the City by such supplier or entity, after the City has made demand for payment of same;
- (d) the refusal to follow reasonable directions of the City or to cure a default under any contract with the City as and when required by the City;
- (e) the supplier, delivery and/or storage entity refusing to enter into a contract with the City after the supplier's (or entity's) bid, proposal or other document provided in response to a City procurement document has been accepted by the City;
- (f) the supplier, delivery and/or storage entity refusing to perform or to complete performance of a contract with the City;
- (g) act(s) or omission(s) resulting in a claim by the City under a bid bond, a performance bond, a warranty bond or any other security required to be submitted by a vendor on a RFP, RFQ, RFRC, or Tender;

within the five-year period immediately preceding the date on which the supplier, delivery or storage entity enters into a contract with respect to Energy Commodities with the City;

(v.1) for the purposes of subsection (V), the prior acts or omissions of a supplier, delivery or storage entity shall also include the prior acts or omissions of: an officer, a director, a majority or controlling shareholder, or a member of the supplier (or entity) if a corporation; a partner of the supplier (or entity), if a partnership; any corporation to which the supplier (or entity) is an affiliate of or successor to, or an officer, a director or a majority or controlling shareholder of such corporation; and any person with whom that the supplier (or entity) is not at arm's length within the meaning of the Income Tax Act (Canada);

- vi. in the opinion of the General Manager of Finance and Corporate Services there are reasonable grounds to believe that it would not be in the best interests of the City to enter into a contract with the supplier, delivery or storage entity, including (without limiting the generality of the foregoing):
 - (a) the conviction of the supplier, delivery and/or storage entity or any person or entity with whom that supplier, delivery and/or storage entity is not at arm's length within the meaning of the *Income Tax Act* (Canada) of an offence under any taxation statute in Canada;
 - (b) the conviction or finding of liability of that supplier, delivery and/or storage entity under the *Criminal Code* or other legislation or law, whether in Canada or elsewhere and whether of a civil, quasi-criminal or criminal nature, of moral

turpitude including but not limited to fraud, theft, extortion, threatening, influence peddling and fraudulent misrepresentation;

- (c) the conviction or finding of liability of the supplier, delivery and/or storage entity under any environmental legislation, whether of Canada or elsewhere, where the circumstances of that conviction evidence a gross disregard on the part of that entity for the environmental well-being of the communities in which it carries on business;
- (d) the conviction or finding of liability of the supplier, delivery and/or storage entity relating to product liability or occupational health or safety, whether of Canada or elsewhere, where the circumstances of that conviction evidence a gross disregard on the part of that entity for the health and safety of its workers or customers;
- (e) the conviction or finding of liability of the supplier, delivery and/or storage entity under the financial securities legislation whether of Canada or elsewhere, where the circumstances of that conviction have, or would have, significant negative financial impact on any contract with the City.

2. Use of Energy Commodity Price Hedging Strategies/Agreements

In determining whether a particular Energy Commodity price hedging agreement is advantageous for the City, the following non-exclusive considerations **will** be taken into account:

- (i) any and all Energy Commodity purchases for which commodity price hedging agreements will be appropriate;
- (ii) that the financial position of the City will be enhanced in all likelihood by virtue of the use of such an agreement;
- (iii) that the all-inclusive contracted price and cost to the City of the associated Energy Commodity will be lower or more stable than it would be without the agreement;
- (iv) the formulation of a detailed estimate of the expected result of using such an agreement;
- (v) the formulation of the financial and other risks to the municipality that would exist with the use of such an agreement and determine if such risk would be lower than the financial and other risks to the municipality that would exist without such an agreement;
- (vi) using his/her best judgment and in his/her sole discretion determine that the agreement contains adequate risk control measures, for example:
 - 1. ensuring that if either party's credit rating falls below BBB – (S&P); Baa3 (Moody's); and/or BBB (low) (DBRS), the other party may demand Adequate Assurance of Performance. "Adequate Assurance of Performance" shall mean sufficient security in the form, amount and for the term reasonably acceptable to the City, and/or, but

not limited to being able to provide an unconditional irrevocable letter of credit or prepayment;

2. providing, in the case where a supplier has no credit rating, a guarantee from the parent corporation (assuming parent corporation meets credit rating requirements in 1 above);
3. limiting credit exposure based on a degree of regulatory oversight and/or on the regulatory capital of the other party to the agreement; and

(vii) ensure ongoing monitoring with respect to the Energy Commodity price hedging agreements.

3. Contract Agents (consultants)

The Manager of Energy Initiatives **shall** seek Council approval for a specified period of time before engaging any Contract Agents for the purposes of this Energy Commodity Policy.

4. Cooperative Energy Purchasing

The Manager of Energy Initiatives section **shall** consider engaging in Cooperative Energy Purchasing when, in his/her opinion, it would be advantageous to the City to do so based on the following non-inclusive considerations:

- (i) the possibility of economies of scale (i.e. better buying power);
- (ii) opportunities for cost-sharing of services; and
- (iii) opportunities for securing indirect financial benefits to the City.

The Manager of Energy Initiatives shall have the authority to enter into Cooperative Energy Purchasing initiatives with City Affiliates at his discretion in consultation with the General Manager of Finance and Corporate Services and the City Solicitor.

All other Cooperative Energy Purchasing initiatives shall be subject to prior Council approval.

7.4 PART IV - REPORTING REQUIREMENTS

The General Manager, Finance and Corporate Services and Treasurer, shall report to Council at least once each fiscal year with respect to any and all Energy Commodity price hedging agreements, and other Energy Commodity agreements, in place. The report shall contain, at a minimum, all requirements as set out in O. Reg. 653/05 (as it exists from time to time) and shall include:

1. A statement about the status of the Energy Commodity price hedging agreements during the period of the report, including a comparison of the expected and actual results of using the agreements;

2. A statement by the Treasurer indicating whether, in his or her opinion, all of the agreements entered during the period of the report are consistent with this Energy Commodity Policy relating to the use of financial agreements to address commodity pricing and costs;
3. An overview of any agreements with Contract Agents (including, without limitation, actual costs, services provided and frequency of use) and a statement by the Treasurer indicating whether, in his or her opinion, all of these agreements are consistent with this Energy Commodity Policy with respect to the use of Contract Agents;
4. An overview of any Cooperative Energy Purchasing initiatives and/or agreements and a statement by the Treasurer indicating whether, in his or her opinion, all of these agreements are consistent with this Energy Commodity Policy with respect to the use of Cooperative Energy Purchasing;
5. Such other information as Council may require; and
6. Such other information as the Treasurer considers appropriate to include in the report.

7.5 PART V - ROLE OF CITY COUNCIL

Council is responsible for determining, based on information provided by City staff, whether the financial implications of Energy Commodity price hedging agreements are favourable relative to alternatives, and whether the risks associated with the Energy Commodity price hedging agreements are reasonable.

In considering the report and recommendation from the General Manager, Finance and Corporate Services and Treasurer, Council is responsible for ensuring that legal and financial advice has been obtained and must consider whether the scope of the proposed Energy Commodity price hedging agreements warrants further legal or financial advice from an independent source.

**Excerpt from *Municipal Act, 2001*, Ontario Regulation 653/05
Debt-Related Financial Instruments and Financial Agreements**

COMMODITY PRICE HEDGING AGREEMENTS

5. (1) A municipality that has entered, or plans to enter, an agreement under Part II of the Act for the supply of a commodity required for a municipal system may enter into one or more financial agreements to minimize the cost or financial risk associated with incurring debt for the commodity. O. Reg. 653/05, s. 5 (1).

(2) The financial agreement must fix, directly or indirectly, or enable the municipality to fix the price or range of prices to be paid by the municipality for the future delivery of some or all of the commodity or the future cost to the municipality of an equivalent quantity of the commodity. O. Reg. 653/05, s. 5 (2).

(3) Subject to subsection (4), the municipality shall not sell or otherwise dispose of the financial agreement or any interest of the municipality in the agreement. O. Reg. 653/05, s. 5 (3).

(4) The municipality may sell or otherwise dispose of a financial agreement or an interest of the municipality in the agreement if, in the opinion of the treasurer of the municipality, the sale or disposition is in the best interests of the municipality and if either of the following conditions is satisfied:

(1.) The sale or disposition is part of a transaction for the sale of real property by the municipality relating to a change in the use of the property by the municipality.

(2.) The municipality has ceased to carry on any activity relating to the municipal system for which the commodity was being acquired. O. Reg. 653/05, s. 5 (4).

Statement of policies and goals re: commodity price hedging agreements

6.(1) Before a municipality passes a by-law authorizing a commodity price hedging agreement, the council of the municipality shall adopt a statement of policies and goals relating to the use of financial agreements to address commodity pricing and costs. O. Reg. 653/05, s. 6 (1).

(2) The council of the municipality shall consider the following matters when preparing the statement of policies and goals:

1. The types of projects for which commodity price hedging agreements are appropriate.
2. The fixed costs and estimated costs to the municipality resulting from the use of such agreements.
3. Whether the future price or cost to the municipality of the applicable commodities will be lower or more stable than they would be without the agreements.
4. A detailed estimate of the expected results of using such agreements.

5. The financial and other risks to the municipality that would exist with, and without, the use of such agreements.
6. Risk control measures relating to such agreements, such as,
 - i. credit exposure limits based on credit ratings and on the degree of regulatory oversight and the regulatory capital of the other party to the agreement,
 - ii. standard agreements, and
 - iii. Ongoing monitoring with respect to the agreements. O. Reg. 653/05, s. 6 (2)

Report on commodity price hedging agreements

7. (1) If a municipality has any subsisting commodity price hedging agreements in a fiscal year, the treasurer of the municipality shall prepare and present to the municipal council once in that fiscal year, or more frequently if the council so desires, a detailed report on all of those agreements. O. Reg. 653/05, s. 7 (1).
 2. The report must contain the following information and documents:
 1. A statement about the status of the agreements during the period of the report, including a comparison of the expected and actual results of using the agreements.
 2. A statement by the treasurer indicating whether, in his or her opinion, all of the agreements entered during the period of the report are consistent with the municipality's statement of policies and goals relating to the use of financial agreements to address commodity pricing and costs.
 3. Such other information as the council may require.
 4. Such other information as the treasurer considers appropriate to include in the report. O. Reg. 653/05, s. 7 (2).

8.0 DEFINITIONS

“**ASHRAE**” means American Society of Heating, Refrigeration and Air Conditioning Engineers.

“**CUP** (Central Utility Plant) is located within the downtown core of Hamilton and was constructed and became operational in 1977, in order to generate and distribute district energy to facilities in the downtown core. Electricity, chilled water and hot water are distributed to end use customers. Sites connected to the CUP for all or some of these services include FirstOntario Centre, the Central Library and Farmer’s Market, FirstOntario Concert Hall, Convention Centre, Parking Garage, Ellen Fairclough Building, Art Gallery, McMaster and Hamilton City Hall.

“**CDM or Energy CDM**” means Energy Conservation and Demand Management

“**Embodied Carbon**” is the sum of all the greenhouse gas emissions (mostly carbon dioxide) resulting from the mining, harvesting, processing, manufacturing, transportation and installation of building materials.

“**Energy Intensity**” means equivalent kilowatt-hours (kWh) per square foot of a building. For purposes of the Energy Policy, is the process of reducing overall energy usage or consumption of a facility or facility operations using a common measure over a specific timeframe. By measuring *energy intensity* vs. straight energy consumption reductions, we are able to account for additions or deletions in the City’s building stock. We can also account for building expansions, changes in the City’s portfolio and correct for seasonal weather variations.

“**Facility**” shall include all **City owned** buildings and grounds e.g. parks and recreation facilities.

“**GJ**” means giga-joule

“**HVAC**” means heating, ventilation, and air-conditioning.

“**IES**” means Illuminating Engineering Society – The Lighting Authority

“**IESO**” means Independent Electricity System Operator.

“**kWh**” means kilowatt hour

“**kW**” means kilowatt

“**L**” means litres

“**Life Cycle Cost Analysis**” is a method of economic analysis that sums all *relevant* project costs over a *given study period* in *present-value* terms. *It is most relevant* when selecting among *mutually exclusive project alternatives* that provide the same functional performance but have different initial costs, OM&R costs, and/or expected lives:

- Investment-related:
- Acquisition costs
- Replacement costs

- Residual value (resale or disposal cost)
- Operating-related:
 - Operation, maintenance, and repair costs
 - Energy and water costs
 - Contract-related costs (for financed projects)

“m³” means cubic metre

“NECB” means National Energy Code of Canada for Buildings

“Net Zero” means achieving overall, zero greenhouse gas emissions by balancing any emissions from energy use with carbon removal via a combination of reducing usage, changing to low or zero energy sources (i.e. renewable energy sources) changing agricultural and industrial processes and carbon offsetting.

“OBC” means Ontario Building Code

“OEB” means Ontario Energy Board

“Operational Carbon” is used to describe the emissions of carbon dioxide and other global warming gases during the in-use operation of a building.

“Operations” Operations is what the City "does" and how it delivers its "product" to customers or constituents. It is the core of a company's business. Example: Public Works, Water & Waste Water.

“Zero Carbon” means that all industrial sources of CO₂ have been converted to run on zero carbon emitting energy sources and that no more carbon emissions are being added to the atmosphere from any additional source to the natural carbon balance of the planet that existed before industrialization.

9.0 REFERENCES

Emissions:

Ontario Climate Change Action Plan

<https://www.ontario.ca/page/climate-change-action-plan>

MOE – Climate Change – Reporting on Emissions

http://www.ene.gov.on.ca/environment/en/category/climate_change/STDPROD_078899.html

GHG Protocol

<http://www.ghgprotocol.org/standards/corporate-standard>

Reports:

Energy Efficiency Trends in Canada

<https://oee.nrcan.gc.ca/publications/statistics/trends/2016/index.cfm>

Ontario's Long Term Energy Plan

<https://www.ontario.ca/page/ontarios-long-term-energy-plan>

The Intergovernmental Panel on Climate Change

<https://www.ipcc.ch/>

ICLEI – Local Governments for Sustainability

<http://www.icleicanada.org/>

Incentives:

SaveOnEnergy Programs

<https://www.saveonenergy.ca/> Enbridge (Union Gas) conservation programs

Natural Gas Programs

<https://www.uniongas.com/business/save-money-and-energy>

Standards:

Energy Efficiency Equipment Purchasing:

<http://www.canlii.org/en/on/laws/regu/o-reg-404-12/latest/o-reg-404-12.html>

Regulations Amending the Energy Efficiency Regulations:

<http://canadagazette.gc.ca/rp-pr/p1/2013/2013-10-05/pdf/g1-14740.pdf>

CAFE Standards and Regulations – EPA

<http://www.epa.gov/fueleconomy/regulations.htm>

NRCan National Building Code Canada

<http://www.nationalcodes.nrc.gc.ca/eng/nbc/>

EVO – Measurement & Verification Standards

<http://www.evo-world.org/index.php?lang=en>

BOMA Best – Standard for Certification

<http://www.bomabest.com/>

LEED Certification

<http://www.usgbc.org/leed/certification>

The Ontario Building Code

<http://www.buildingcode.online/>

Organizations/Associations:

AMO – Energy Policy

<https://www.amo.on.ca/Advocacy.aspx?searchtext=&searchmode=exactphrase&date=0;&issue=7;&category=0;>

Energy Star (US site)

<https://www.energystar.gov/>

NRCan – Energy Star in Canada

<http://www.nrcan.gc.ca/energy/products/energystar/12519>

NRCan – Energy Efficiency

<http://www.nrcan.gc.ca/energy/efficiency>

BOMA Canada

<http://www.bomacanada.ca/>

Carbon Disclosure Project – includes link to Wealthier, Healthier Cities

<https://www.cdp.net/en-US/Programmes/Pages/cdp-cities.aspx>

Illuminating Engineering Society – The Light Authority (IES)

<https://www.ies.org/>

Design Lights Consortium (DLC)

<https://www.designlights.org/>

Regulated/Energy Boards:

National Energy Board (NEB)

<http://www.neb-one.gc.ca/clf-nsi/index.html>

Ontario Energy Board (OEB)

<http://www.ontarioenergyboard.ca/OEB/Consumers>

Local Utilities:

Alectra Utilities

<https://alectrautilities.com/>

Enbridge Gas Inc. (Union Gas)

<https://www.uniongas.com/>

Pipelines:

TCPL

<http://www.transcanada.com/index.html>

Alliance

<http://www.alliancepipeline.com/Pages/default.aspx>

Vector

<http://www.vector-pipeline.com/vector/default.aspx>

Pricing and Market information:

AECO (Niska owned) storage & pricing HUB

<http://www.niskapartners.com/our-business/natural-gas-storage/aeco-hub/>

Dawn Storage & pricing HUB

<https://www.uniongas.com/storage-and-transportation/about-dawn>

IESO (demand & market prices)

<http://www.ieso.ca/Power-Data/Data-Directory>

IESO (Global Adjustment)

<http://www.ieso.ca/Sector-Participants/Settlements/Global-Adjustment-Class-A-Eligibility>

IESO (Average HOEP)

<http://www.ieso.ca/Power-Data/Price-Overview/Hourly-Ontario-Energy-Price>

EAI US Energy Information Agency (NG & Storage & Fuel)

<http://www.eia.gov/>

Gas/Oil Trading References:

Bloomberg

<http://www.bloomberg.com/energy/>

CME

<http://www.cmegroup.com/trading/energy/>

INO

<http://quotes.ino.com/exchanges/category.html?c=energy>



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Transportation Operations and Maintenance Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	February 19, 2021
SUBJECT/REPORT NO:	Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6)
WARD(S) AFFECTED:	Ward 6
PREPARED BY:	David Ferguson (905) 546-2424 Ext. 2433 Mike Field (905) 546-2424 Ext. 4576
SUBMITTED BY:	Edward Soldo Director, Transportation Operations & Maintenance Public Works Department
SIGNATURE:	

RECOMMENDATIONS

- (a) That the speed limit on Upper Gage Avenue between Rymal Road East and Stone Church Road East be reduced to 40 km/h;
- (b) That the speed limit on Royal Vista Drive between Templemead Drive and Upper Gage Avenue be reduced to 30 km/h in alignment with the school zone;
- (c) That the speed limit on Templemead Drive between Ingrid Court and Tudor Street be reduced to 30 km/h in alignment with the school zone; and
- (d) That Upper Gage Avenue between Rymal Road East and Stone Church Road East be designated as a Community Safety Zone.

EXECUTIVE SUMMARY

As a result of a fatal collision involving a pedestrian at the intersection of Upper Gage Avenue and Royalvista Drive that occurred on December 1, 2020, Council directed staff to undertake a roadway safety audit based on Vision Zero principles of Upper Gage Avenue between Rymal Road East and Stone Church Road East.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6)
- Page 2 of 8**

Transportation Operations & Maintenance completed a roadway safety audit based on the considerations requested by the Council direction and the receipt of a community petition. Several recommendations are proposed which are supported through the Vision Zero Action Plan; including speed limit reductions, designation as a Community Safety Zone, installation of digital speed signs and pedestrian count down timers at the Royalvista Drive intersection.

In addition, a comprehensive review of the built environment is being undertaken to identify if there are further opportunities for safety enhancements such as the reconfiguration of lanes on Upper Gage Avenue in proximity to the Stone Church East intersection.

Alternatives for Consideration – N/A

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Costs associated with the recommendations of this report will be funded through existing capital project budgets:

4662020053 – Engineering Priorities Vision Zero
Speed signage on Upper Gage at a cost of approximately \$1,000.

4662020930 Neighbourhood Speed Reduction Initiative
Speed signage on Royalvista Drive and Templemead Drive at a cost of approximately \$3,000.

4662020053 – Engineering Priorities Vision Zero
Community Safety Zone signage on Upper Gage at a cost of approximately \$1,000.

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

At the December 16, 2020 Council meeting, the following motion was approved:

Roadway Safety Audit of Upper Gage Avenue, between Stone Church Road East and Rymal Road East, Hamilton (Ward 6)

**SUBJECT: Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6)
- Page 3 of 8**

That Transportation Operations & Maintenance staff undertake a roadway safety audit, based on Vision Zero principles, of Upper Gage Avenue, between Stone Church Road East and Rymal Road East, to assess potential safety enhancements such as a reduced speed limit, school zone flashing lights, physical changes to the lane configuration, and the feasibility as a future location for an automated speed enforcement camera or red-light camera.

This direction is in response to a collision resulting in a pedestrian fatality that occurred on December 1, 2020 at the intersection of Upper Gage Avenue and Royalvista Drive.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

N/A

RELEVANT CONSULTATION

N/A

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Transportation Operations & Maintenance completed a roadway safety audit for Upper Gage Avenue between Rymal Road East and Stone Church Road East.

The safety audit examined safety enhancement opportunities as directed by Council, specifically:

- Speed limit reductions;
- School zone flashing beacons;
- Built environment roadway safety enhancements;
- Consideration for community safety zone designation;
- Consideration for automated speed enforcement; and
- Consideration for red light camera at the intersection of Upper Gage Avenue and Royalvista Drive.

Vehicular speed and volume data collection equipment were installed on Upper Gage Avenue on December 10, 2020 and removed on December 14, 2020. Digital speed signs (DSS) were proactively installed on December 21, 2020 along Upper Gage Avenue in proximity to the Royalvista Drive intersection. The DSS equipment provides drivers with an awareness of their speed in relation to the posted speed limit. Associated speed and volume data are also collected by this equipment which further supplements the data collected between December 10, 2020 and December 14, 2020.

SUBJECT: Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6)
- Page 4 of 8

Pedestrian countdown timers were installed at the Royalvista Drive intersection, on all four legs of the intersection to provide pedestrians awareness of their safe and legally permissible crossing times.

The safety audit for Upper Gage Avenue within the noted segment complied the following information.

Vehicle Speeds

Upper Gage Avenue between Rymal Road East and Stone Church Road East has a regulatory speed limit of 50 km/h. Based on examination of data collection that occurred between December 10, 2020 and December 14, 2020 the 85th percentile speed, which is the speed in which 85% of the total traffic is travelling at or below, was determined to be 56 km/h for southbound and 57 km/h for northbound.

The following table summarizes the volume and speed data collected to date.

Data Collection Category:	Southbound Direction:	Northbound Direction:
85 th Percentile Speed:	56 km/h	57 km/h
85 th Percentile Vehicles:	15750 (85.8%)	14572 (85%)
Total Vehicle Count:	18350	17143
Average Speed:	47.6 km/h	48.7 km/h
Annual Average Daily Traffic (AADT):	4492	4155

Safety Performance

The five-year collision analysis (2015-2019) for the intersection of Upper Gage Avenue and Royalvista Drive identified a total of four collisions, all of which are classified as non-injury collisions. All collisions involved vehicles as three for the four collisions were rear-end and the other was a sideswipe. A review of the 2020 collision data identified there was one non-injury rear-end collision and the fatal pedestrian collision that occurred on December 1, 2020.

Network screening is a 5-year analysis of collisions on the roadway network (2015-2019). For intersections, the ranking is based on all intersections that have had at least 1 recorded collision in the past 5 years. For roadway segments, the ranking is based on recorded collisions that occur on a roadway between two intersections in the past 5 years. In both instances, collisions are evaluated based on industry standard safety performance functions with additional evaluation on injury severity and collision patterns that result in injuries.

**SUBJECT: Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6)
- Page 5 of 8**

The network screening process is used to determine whether the observed safety performance at a given location is higher or lower than the average safety performance of other sites with similar roadway characteristics and exposure. The ranking allows the prioritization of locations for potential safety improvements where investing in improvements is likely to return the greatest benefit.

The following table summarizes network screening rankings for Upper Gage Avenue between Rymal Road East and Stone Church Road East up to the end of 2019.

Location:	Ranking:
Intersection of Upper Gage Avenue @ Stone Church Road East	113 out of 1,013
Intersection of Upper Gage Avenue @ Rymal Road East	534 out of 1,013
Intersection of Upper Gage Avenue @ Royal Vista Drive	911 out of 1,013
Roadway Segment of Upper Gage Avenue between Anna Capri Drive and Stone Church Road East	720 out of 4,281

A summary of findings, outcomes and next steps of the safety audit for Upper Gage Avenue are as follows.

Speed Limit Reductions

Upper Gage Avenue is designated as an arterial roadway and based on vehicle speed data and collision analysis, a reduction in speed limit would not normally be recommended. However, in further evaluating this location, identification that the intersection of Upper Gage Avenue and Royalvista Drive is a designated school crossing location with a school crossing guard and that a community petition has been received which requests a speed limit reduction supported by the Ward 6 Councillor, it is recommended that the speed limit be reduced from 50 km/h to 40 km/h between Rymal Road East and Stone Church Road East. An amendment of the City of Hamilton Traffic By-law would be required and approved, through delegated authority submission at Council upon the approval of recommendation (a) of Report PW21007.

Royalvista Drive between Templemead Drive and Upper Gage Avenue and Templemead Drive between Ingrid Court and Tudor Street are designated school zones and scheduled to receive reduced speed limits to 30 km/h as part of the Neighbourhood Speed Limit reduction project. Conversion was scheduled to be implementation in 2022. Based on the safety audit and Council direction it is recommended that the schedule be advanced and implemented in 2021. This change in schedule will not impact the timing of other neighbourhood conversions in the City as previously planned. An amendment of the City of Hamilton Traffic By-law would be required and approved, through delegated authority submission at Council upon the approval of recommendations (b) and (c) of Report PW21007.

**SUBJECT: Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6)
- Page 6 of 8**

School Zone Flashing Beacons

The Highway Traffic Act (HTA) regulates the designation of school zones and Part IX - Rate of Speed, part 128(5)(a) states that a school zone may only be designated for portions of roadways that “adjoins the entrance to or exit from a school that is within 150 metres along the highway in either direction beyond the limits of the land used for the purposes of the school”. The use of school zone flashing beacons also falls within the constraints of the HTA regulation. Therefore, Upper Gage Avenue is precluded from being designated as a school zone with associated flashing beacons as it does not conform to the HTA requirements.

Built Environment Roadway Safety Enhancements

Transportation Operations & Maintenance are examining the feasibility of lane configuration changes on Upper Gage Avenue, specifically the possible removal or alteration of the southbound curb lane as directed by Council. This work requires a comprehensive review to determine if there are any impacts to the safe and efficient operation of the intersection of Upper Gage Avenue and Stone Church Road East. Additionally, other safety enhancement opportunities relating to changes to the built environment are being examined. Transportation Operations & Maintenance will report back to PW Committee if required should the built environment review result in the need for approval of any recommended changes.

Community Safety Zone Designation

Community Safety Zones (CSZ) were permitted for use in the City after being added to the City of Hamilton Traffic By-law per Council approval on July 17, 2020 (PW20045). The intent of CSZ's is to provide road users with visual awareness that they should be diligent in their attentiveness to roadway safety when traveling in or through designated areas. A CSZ guideline was also approved to provide a consistent, repeatable, transparent and a defined method for designation of roadway segments. The guideline considers roadway characteristics such as daily traffic volume, vehicle operating speed, pedestrian volumes, collision history, and the presence (or lack of) multi-modal amenities. Candidate locations must achieve a minimum of 25 points to be considered for designation of a CSZ per the approved guideline.

An assessment of Upper Gage Avenue between Rymal Road East and Stone Church Road East using the CSZ guideline and score it as 29. Based on the ranking, CSZ designation is therefore recommended as data analysis indicates that this roadway segment does meet permissive thresholds. Further, the intersection of Upper Gage Avenue and Royalvista Drive is a designated school crossing location with a school crossing guard and that a community petition has been received which indicates

**SUBJECT: Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6)
- Page 7 of 8**

support from the community related to localized enhanced safety desires. An amendment of the City of Hamilton Traffic By-law would be required and approved, through delegated authority submission at Council upon the approval of recommendation (d) of Report PW21007.

Automated Speed Enforcement

The City's Automated Speed Enforcement (ASE) program became operational as a pilot project in October 2020 as directed by Council (PW20002). Through this pilot project two portable automated speed enforcement cameras are circulated amongst various approved locations throughout the City. Transportation Operations and Maintenance will be reporting to Public Works Committee upon the completion of the pilot, including any associated recommendations.

On December 16, 2020 Council approved an expanded list of ASE locations (PW240045a) for the ASE pilot which brought the total number of locations from 12 to 18. In consideration that the ASE program is actively in a piloting stage, locations have been previously approved and scheduled, and data does not indicate a systemic speeding issue on Upper Gage Avenue. It is not recommended that Upper Gage Avenue be included as part of the pilot. Should ASE be established as a permanent program Upper Gage Avenue could be considered for ASE operations at that time.

Red Light Camera

Red Light Cameras (RLC) are utilized at locations that have an identified collision pattern, particularly right-angle type collisions, and that could be attributed to aggressive driving behaviour and red light running. Transportation Operations & Maintenance undertakes a yearly review of all traffic signals within the City and evaluates each location for consideration of the RLC program.

RLC evaluation of the intersection of Upper Gage Avenue and Royalvista Drive ranks the it at 226 out of 620 signalized intersections. Based on the ranking, RLC operation is not recommended as analysis indicates that the intersection does not experience issues to thresholds that the RLC program seeks to mitigate when compared to other RLC candidate locations in the City.

ALTERNATIVES FOR CONSIDERATION

N/A

SUBJECT: Upper Gage Avenue between Rymal Road East and Stone Church Road East – Roadway Safety Audit Update (PW21007) (Ward 6)
- Page 8 of 8

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement and Participation

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

Healthy and Safe Communities

Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

Built Environment and Infrastructure

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

N/A



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Environmental Services Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	February 19, 2021
SUBJECT/REPORT NO:	City of Hamilton's Cemeteries By-law Update (PW21005) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	John Perrotta (905) 546-2424 Ext. 4402
SUBMITTED BY:	Craig Murdoch Director, Environmental Services Public Works Department
SIGNATURE:	

RECOMMENDATION

That City of Hamilton By-law No. 12-151, being a By-law respecting the City of Hamilton's Cemeteries, be amended as detailed in Appendix "A" attached to Report PW21005.

EXECUTIVE SUMMARY

The City of Hamilton (City) owns and operates 69 municipal cemeteries. To properly regulate and manage the cemeteries system, the City has a by-law respecting the City of Hamilton's Cemeteries (By-law 12-151). The purpose of Report PW21005 is to amend the by-law to add provisions relating to natural burials, the interment of pet remains and to make other housekeeping amendments relating to cemetery operations. The addition of the new provisions for natural burials and interment of pets will permit Hamilton Municipal Cemeteries to offer these services. The other housekeeping amendments relating to cemetery operations will modernize the by-law to address changes and best practice within the cemetery industry. By-law 12-151 was last updated in 2012.

Alternatives for Consideration – See Page 4

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: City of Hamilton's Cemeteries By-law Update ((PW21005) (City Wide)
- Page 2 of 4**

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Amendments to By-law 12-151 will permit additional opportunities for revenue.

Staffing: Not Applicable

Legal: Not Applicable

HISTORICAL BACKGROUND

The City last updated its by-law respecting the City of Hamilton's Cemeteries in 2012. There have been changes in the types of burials offered by cemeteries and cemetery practices in the last 9 years, leaving Hamilton Municipal Cemeteries By-law No. 12-151 outdated.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The City has an existing Cemetery By-law that governs the operation of the City's cemeteries, as per the Funeral, Burial and Cremation Services Act, 2002 (FBCSA), Ontario Regulation 30/11, Section 150. The recommendation in Report PW21005 is compliant with this legislation. The by-law amendment will also require the approval from the Registrar of the Bereavement Authority of Ontario as per the FBCSA, Ontario Regulation 30/11, Section 151.

RELEVANT CONSULTATION

The following groups have been consulted and are supportive of the recommendations:

Corporate Services Department - Legal and Risk Management Services Division –
Legal Services Section

Public Works Department - Environmental Services Division – Parks and Cemeteries
Section

Planning and Economic Development Department – Licensing and By-law Enforcement
Division – Licensing and By-law Services

ANALYSIS AND RATIONALE FOR RECOMMENDATION

In 2018, as per the recommendation in the Cemetery Business Plan Assessment completed by cemetery planners Lees and Associates, a master plan was developed for Mount Hamilton Cemetery, which planned for a Natural Burial Section and a Pet Burial Section. In order to create regulations for these new burial options, a by-law

**SUBJECT: City of Hamilton's Cemeteries By-law Update ((PW21005) (City Wide)
- Page 3 of 4**

amendment is required to establish the regulations that will govern these new burial options.

The following housekeeping items were changed for the following reasons:

New additions to By-Law:

- 1) Pallbearers:
To reduce the risk and liability to municipal cemetery staff, we will no longer provide this service, which is outside our standard level of service.
- 2) Memorial Benches and Memorial Niche Benches:
For liability and aesthetic reasons, memorial benches and memorial cremation niche benches are to be purchased and supplied by the City of Hamilton.
- 3) Pictures, Etchings and Photographs on Monuments and Markers:
To clarify requirements and regulations pertaining to the installation of pictures, etchings and photographs on memorials and reduce the City's liability for damages that may occur.
- 4) Outer Interment Container – Material:
To require a casket to be placed in a concrete outer container for burials in certain sections within our cemeteries, and when caskets are interred at extra depth for the health and safety of cemetery operational staff, and to maintain the integrity of the casket during the excavation of future casket burials in the same lot. This does not apply to the Natural Burial Section.

Changes to By-Law:

- 1) Definitions:
To establish definitions for the Natural Burial and Pet Burial Sections and repeal the existing definition of cemetery to include both new burial options.
- 2) Hours of Interment:
To revise the last scheduled booking time a burial is permitted from Monday to Friday from 3:30pm to 3:00pm, to avoid unnecessary overtime costs for cemetery operational staff.
- 3) Scattering:
To clarify requirements and regulations on the scattering of human remains. This amendment will not permit the scattering of cremated remains on burial lots, restricting this method of disposition to designated scattering grounds. Each

**SUBJECT: City of Hamilton's Cemeteries By-law Update ((PW21005) (City Wide)
- Page 4 of 4**

scattering right purchased shall be limited to one scattering opportunity for one set of cremated human remains.

The by-law amendments proposed will permit the Parks and Cemeteries Section to establish a Natural Burial and Pet Burial Section. The housekeeping items will assist in the daily cemetery operations and bring our operations in line with industry best practises.

ALTERNATIVES FOR CONSIDERATION

Council could decide to not approve the full recommendation of Report PW21005 and direct staff to remove the provisions relating to natural burials and/or the interment of pets or any of the housekeeping/best practice revisions. This would require staff to revise Appendix "A" attached to Report PW21005 and present a new By-law respecting the City's Cemeteries to the Public Works Committee for approval.

Financial: This could result in lost revenue opportunities

Staffing: Not Applicable

Legal: Not Applicable

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure

Hamilton is supported by state-of-the-art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PW21005 – Proposed Amendment to the City of Hamilton Cemeteries By-law 12-151

Appendix “A” to Report PW21005
Page 1 of 8

Authority: Item ,
 Report ()
 CM:
 Ward: City Wide

Bill No.

CITY OF HAMILTON

BY-LAW NO. 21-XX

**To Amend By-law No. 12-151, being a By-law Respecting the City of Hamilton’s
 Cemeteries**

WHEREAS Council enacted a By-law Respecting the City of Hamilton’s Cemeteries being By-law 12-151; and

AND WHEREAS this amending by-law amends By-law 12-151 to add provisions relating to natural burials, the interment of pets, and to make other housekeeping amendments relating to cemetery operations.

NOW THEREFORE the Council of the City of Hamilton enacts as follows:

1. The amendments in this By-law include any necessary grammatical, numbering and letter changes.
2. That subsection 3.1 to By-law No. 12-151 be amended by repealing the definition of “cemetery” and replacing it with the following definition:

“**cemetery**” means land set aside to be used either for the interment of human remains or for the scattering of cremated human remains (in designated sections, only), interment of pet remains (in designated sections, only) and includes a mausoleum, columbarium or any other structure or building intended for interment that is situated on the land.

3. That subsection 3.1 to By-law No. 12-151 be amended by adding the following definitions:

“**Natural Burial Grave**” means any Interment Right in a Natural Burial Section which permits the interment of human remains in a biodegradable casket, container, shroud, or cremation urn.

“**Natural Burial Section**” means an area within a cemetery which is specifically designed to permit human remains to be returned to the earth as naturally as possible.

Appendix "A" to Report PW21005
Page 2 of 8

"Pet Burial Section" means an area within a cemetery that is reserved for the interment of both human and animal remains.

4. That subsection 6.8 to By-law No. 12-151 be repealed and replaced with the following:

6.8 Human Remains

Only human remains shall be interred in a lot, unless the interment takes place in a designated Pet Burial Section of the cemetery.

5. That Part 6 to By-law No. 12-151 be amended by adding subclause 6.16.1 as follows:

6.16.1 Outer Interment Container- Material

- (a) The Cemetery reserves the right to require an outer Interment container made of concrete or other comparable materials in certain areas of the Cemetery as noted on the Tariff of Charges and the Interment Rights Certificate at the time of sale.
- (b) Interments placed at extra depth require an outer Interment container made of concrete or other comparable materials, where space permits.

6. That Subsection 6.17 to By-law No. 12-151 be repealed and replaced with the following:

6.17 Hours for Interments

Interments may take place between the hours of 9:00 a.m. and 3:00 p.m. from Monday to Friday and between the hours of 8:30 a.m. and 11:30 a.m. on Saturdays of three-day weekends. Notwithstanding the foregoing, an interment may take place on any day and at any time:

- (a) with the advance permission of the Director and for the applicable fee; or
- (b) set out in a certificate issued by the Ministry of Health or an order issued by the Coroner's Office.

7. That Subsection 6.18 to By-law No. 12-151 be repealed and replaced with the following:

6.18 Scattering

Appendix "A" to Report PW21005
Page 3 of 8

- (a) No person shall scatter cremated human remains in a cemetery. Notwithstanding the foregoing, if scattering grounds have been set aside, cremated human remains may be scattered in such scattering grounds with the advance notice; and,
 - (i) a Certificate of Cremation under the Vital Statistics Act has been issued;
 - (ii) all applicable fees under the Tariff of Charges have been paid; and,
 - (iii) a Scattering Rights Contract has been signed.
 - (b) No person shall scatter cremated human remains on a cemetery lot containing human remains.
 - (c) Where a scattering is permitted under this By-law, it shall be performed by a member of the cemetery staff, or a member of the cemetery staff shall be in attendance when the cremated remains are scattered within the designated Scattering Ground.
 - (d) Each purchase of scattering rights shall be limited to one (1) scattering opportunity for one (1) set of cremated human remains.
8. That Part 6 to By-law No. 12-151 be amended by adding subclause 6.18.1 as follows:

6.18.1 Pets or Other Animals

6.18.1.1 Requirements for Interment

No pets or other animals are permitted to be interred on cemetery grounds, except where:

- (a) the interment takes place in a designated Pet Burial Section of the cemetery;
- (b) the applicable fee under the Tariff of Charges for an interment within the Pet Burial Section has been paid;
- (c) permission of the Director has been granted and is shown on the Certificate of Interment Rights; and
- (d) the pet or other animal is in the cremated form or, if not in the cremated form, enclosed within an approved container no larger than 24 inches in length and 18 inches in width and height.

6.18.1.2 Interment of Human Remains Provisions Apply

The provisions of section 6.18.1 shall apply in addition to any other provision of this By-law that applies to the interment of human remains.

9. That Part 6 to By-law No. 12-151 be amended by adding subclause 6.18.2 as follows:

6.18.2 Natural Burial Sections**6.18.2.1 Number of Interments**

A maximum of one (1) interment of human remains that are not cremated and one (1) interment of cremated human remains, or two (2) cremated remains may be buried in each lot within the Natural Burial Section. The interment of human remains that are not cremated shall be performed at standard depth, at least two feet beneath the natural level of the ground surface.

6.18.2.2 Cremation Interment

Where Interment Rights are purchased in the Natural Burial Section with the intent of having an interment of cremated human remains as the second Interment in the grave, the interment of the cremated human remains must not proceed until the interment of human remains that are not cremated have been completed.

6.18.2.3 Witnessing the Interment

The Director may limit the number of witnesses to an interment service in the Natural Burial Section to preserve the environmental sanctity or health and safety of those persons attending the interment.

6.18.2.4 Caskets or Container for Full Body Interment

A casket, shroud or container meeting the following criteria shall be provided by a licenced funeral establishment for the Interment of human remains that are not cremated within the Natural Burial Section:

- a) Composed of sustainable and full biodegradable fibers or materials;
- b) Free of non-biodegradable resins, glues or bonding agents;
- c) Composed of interior finishing fabricated from biodegradable fibers or material;

Appendix "A" to Report PW21005
Page 5 of 8

- d) Free from high gloss finish lacquers, paints or prepared surfaces that are non-biodegradable;
- e) Free of any interior liner, bag or wrapping that is fabricated from a non-biodegradable material;
- f) Free of any memento, article or personal belonging that is composed of non-biodegradable material;
- g) Fashioned to include a supportive bottom that is made from sustainable and biodegradable materials and that is stable and strong enough to be transported and placed on a grave lowering device; and
- h) Include handles in the event of a casket.

6.18.2.5 Container for Cremated Remains Interment

A container meeting the following criteria shall be provided for the Interment of cremated remains within the Natural Burial Section:

- a) Composed of sustainable and fully biodegradable fibers and material;
- b) Free of non-biodegradable resins, glues or bonding agents;
- c) Composed of interior finishing fabricated from biodegradable fibers or bonding agents;
- d) Free from high gloss finish lacquers, paints or prepared surfaces that are non biodegradable;
- e) Free of any interior liner, bag or wrapping that is fabricated from a non-biodegradable material; and
- f) Free of any memento, article or personal belonging that is composed of non-biodegradable material.

6.18.2.6 Outer Containers

No concrete, metal vaults, or other outer containers will be permitted in Natural Burial Section.

6.18.2.7 Scattering of Cremated Remains

Appendix "A" to Report PW21005
Page 6 of 8

The scattering of cremated remains will be permitted only within designated areas within the Natural Burial Section. Surface scattering is not permitted in any other area of the Natural Burial Section.

6.18.2.8 Removal of Caskets, Containers, or Cremated Remains

Interments performed within the Natural Burial Section will be regarded as permanent and irreversible from the interment date as all Interments are performed using biodegradable containers. The Cemetery shall have no obligation to disinter any remains within the Natural Burial Section unless required to do so by applicable law or court order. Where ordered to disinter human remains that are not cremated or cremated human remains, the requesting party shall be responsible to pay any and all fees associated with the disinterment.

6.18.2.9 Human Remains

Human remains to be interred within the Natural Burial Section shall be free from embalming solutions, prosthetics and any other non-naturally occurring elements.

6.18.2.10 General Care of Natural Burial Graves

In order to preserve the natural environment, the use of pesticides within the Natural Burial Section will not be permitted.

6.18.2.11 Planting Restrictions

No person shall place live or artificial plant material on a grave within the Natural Burial Section.

6.18.2.12 Tributes of Remembrance

To preserve the natural setting, no person shall place an article of any kind within the Natural Burial Section.

6.18.2.13 Memorialization

To preserve the natural surroundings of the Natural Burial Section, no person shall place a memorial on a grave within the Natural Burial Section.

6.18.2.14 Inscription on Communal Memorial

Appendix "A" to Report PW21005
Page 7 of 8

Inscriptions on a communal memorial feature within the Natural Burial Section as provided by Hamilton Municipal Cemeteries may be purchased by paying the applicable fee under the Tariff of Charges.

10. That Part 6 to By-law No. 12-151 be amended by adding subclause 6.18.3 as follows:

6.18.3 Pallbearers

For safety reasons, municipal cemetery staff are not permitted to act as pallbearers during a funeral service. All funeral service providers shall contract out pallbearer services to companies with staff specifically trained and insured for this purpose or use their internal staff.

11. That Schedule A to By-law No. 12-151 be amended by adding subclause 1.10.1 and 1.10.2 under the heading General as follows:

1.10.1 Memorial benches and Memorial Niche benches:

Memorial benches and memorial niche benches shall be purchased through the Hamilton Municipal Cemetery office by paying the applicable fee under the Tariff of Charges. Memorial benches and a concrete pad with a minimum size of 3' x 6' x 4" shall be installed by Cemetery staff.

1.12.1 Pictures, Etchings and Photographs on Monuments and Markers:

- (a) Prior to the placement of any picture, etching or photograph on a monument or marker, the written consent of the Interment Rights Holder(s) shall be provided to cemetery staff.
- (b) Pictures, etchings and photographs shall be in keeping with the dignity and decorum of the cemetery. If, in the opinion of the Director, a picture, etching or photograph is not in keeping with the dignity and decorum of the cemetery, they may have such inscription removed at the cost of the Interment Rights Holder or their heir or representative.
- (c) Pictures or photographs must be manufactured in a permanent, weather resistant material.
- (d) Pictures, etchings or photographs of a non-permanent material will be removed and disposed of by the Cemetery without notification and at the cost of the Interment Rights Holder or their heir or representative.

Appendix "A" to Report PW21005
Page 8 of 8

- (e) The Cemetery assumes no responsibility or liability for a picture, photograph or etching on a monument or marker that becomes lost, faded, cracked, damaged, or needs to be removed.

12. This By-law shall come into force on the day the Registrar approves it.

13. That in all other respects By-law 12-151 is confirmed.

PASSED this _____, 2021

F. Eisenberger
Mayor

A. Holland
City Clerk

DRAFT



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Environmental Services Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	February 19, 2021
SUBJECT/REPORT NO:	Moving Hamilton Towards a Zero Plastic Waste Plan (PW21006) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Ryan Kent (905) 546-2424 Ext. 7686
SUBMITTED BY:	Craig Murdoch Director, Environmental Services Public Works Department
SIGNATURE:	

RECOMMENDATION

- (a) That Appendix "A" attached to Report PW21006 respecting the City of Hamilton Strategy to Reduce Single-Use Plastics be approved;
- (b) That staff continue to participate in consultation opportunities and provide comments on behalf of the City, on proposed Federal and Provincial legislation related to single-use plastics; and
- (c) That matter respecting Moving Hamilton Towards a Zero Plastic Waste Plan, be identified as completed and removed from the Outstanding Business List.

EXECUTIVE SUMMARY

At the May 13, 2019, Public Works Committee meeting and approved at Council on May 22, 2019, staff were directed to report back with information on the feasibility of the City of Hamilton (City) creating a Zero Plastic Waste Plan. The purpose of this report is to seek approval of the proposed City of Hamilton Strategy to Reduce Single-Use Plastics outlined in Appendix "A" attached to Report PW21006.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 2 of 10**

Single-Use Plastics (SUPs) have become increasingly problematic in recent years. This includes being a major source of litter (and the associated environmental impacts of this) and that most of these products are not recyclable. In addition, most compostable alternatives to SUPs do not fully compost during accelerated composting processes and end up in landfill. These issues have prompted both the federal and provincial governments as well as local and regional municipalities to take action on SUPs. These provincial and federal actions include bans on certain SUPs and the development of policies to reduce the production and consumption of SUPs.

The proposed strategy outlined in Appendix “A” attached to Report PW21006 focuses on what the City can do to reduce the generation of SUPs through its own operations and activities, while at the same time providing guidance to both residents and businesses within the City on how to reduce SUPs. The strategy aims to prevent duplication of work currently drafted in any known provincial or federal plans.

Alternatives for Consideration – N/A**FINANCIAL – STAFFING – LEGAL IMPLICATIONS**

Financial: All costs associated with promotional and educational materials in the proposed strategy will be provided in existing operating and capital budgets. This cost is estimated to be approximately \$1,000. If, through the implementation of the strategy, it is found to be feasible to install infrastructure upgrades for water fill/hydration stations at City-owned golf courses, these funds will be obtained through the annual capital budget request by the applicable asset owner. The installation of water/fill hydration stations in parks are currently installed at the request of Councillors and would be paid for through alternate funding sources. The installation of water fill/hydration stations installed in City facilities are replaced on an as needed basis based on available capital funds. As such, there is no financial implication to the installation of water fill/hydration stations in parks or within City-owned recreation centres. Each water fill/hydration station inside a building costs approximately \$3,500 - \$4,000 and water fill/hydration stations installed outside cost approximately \$25,000 to \$30,000 (as part of multi-hydration stations).

Staffing: N/A

Legal: N/A

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 3 of 10**

HISTORICAL BACKGROUND

Provincial discussion paper on Reducing Litter and Waste in our Communities

On March 6, 2019, the Ontario Ministry of Environment, Conservation, and Parks (MECP) released Reducing Litter and Waste in Our Communities: Discussion Paper which included key areas for action on reducing plastic waste going into landfills and waterways and providing rules for compostable products and packaging. Following the release of this discussion paper, on March 18, 2019, Bill 82 - Single-use Plastics Ban Act, passed first reading in the Ontario legislature. The Bill includes measurable targets and timelines for the reduction and eventual elimination of the distribution and supply of SUPs in Ontario and immediate elimination of some SUPs. No further actions on SUPs has occurred at the provincial level.

City of Hamilton Motion to Create a Zero Plastic Waste Plan

On May 22, 2019, Hamilton City Council approved the following motion:

That staff report back to the Public Works Committee with information on the feasibility of the City of Hamilton creating a Zero Plastic Waste Plan that includes:

- (a) Quantify single-use plastics, polystyrene foam and other products that never were or are no longer accepted by our municipal recycling program and identify items that have readily available re-useable or compostable alternatives;
- (b) Investigate options for the City of Hamilton to develop a strategy to enable businesses, City facilities and City permitted events to move towards zero plastic waste when alternatives are available;
- (c) Review regulatory options for the City of Hamilton to limit or eliminate the acceptance of polystyrene foam and single-use plastics at City landfills, including public education, consultation with business, supplementation of provincial regulations and other methods of increasing landfill diversion rates; and,
- (d) Report back with any costs or savings that may be incurred or realized by implementing a City-led Zero Plastic Waste plan.

Federal discussion paper on an Integrated Management Approach to Plastic Products to Prevent Waste and Pollution

On October 7, 2020, the federal government released the discussion paper titled A Proposed Integrated Management Approach to Plastic Products to Prevent Waste and Pollution with the consultation and commenting period ending on December 9, 2020.

This discussion paper included the following four main objectives of the federal government on SUPs:

OUR Vision: To be the best place to raise a child and age successfully.
 OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.
 OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 4 of 10**

- Eliminate certain sources of plastic pollution;
- Strengthen domestic end-markets for recycled plastics;
- Improve the value recovery of plastic products and packaging; and
- Support innovation and the scaling up of new technologies

The discussion paper also included three mechanisms that the federal government is planning to use to meet these objectives:

- Bans and/or restrictions on SUPs – to reduce the purchase/generation of SUPs.
- Performance standards – require a minimum amount of recycled content for certain plastic products and packaging to increase the demand for recycled plastics.
- End-of-life responsibility of SUPs – establish a consistent federal program of extended producer responsibility where producers of all plastics, including SUPs, are responsible for managing their products throughout their lifecycle with, for example, consistent terminology/material categories and meeting recycling targets for the material they produce.

This discussion paper is the most recent step by the federal government towards creating regulations to manage SUPs and has identified that new regulations will be in place sometime in 2021 to support the plan outlined in the discussion paper.

By endorsing the Strategy outlined in Appendix “A” attached to Report PW21006, we will further align with the corporate goals and areas of focus for climate change mitigation and adaptation.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The recommendations in Report PW21006 comply with the guiding principles of the City’s Solid Waste Management Master Plan, Healthy Food and Beverage Action Plan and the Corporate Climate Change Task Force goals and focus areas.

RELEVANT CONSULTATION

The following groups have been consulted and are supportive of the recommendations included in this report.

Corporate Services Department– Legal and Risk Management Services Division and Financial Services Division

Public Works Department - Environmental Services Division – Recycling and Waste Disposal Section and Parks and Cemeteries Section

Public Works Department - Energy, Fleet and Facilities Management Division

Healthy and Safe Communities Department – Sport Services and Business Support
Waste Management Advisory Committee

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 5 of 10**

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The following information provides details as requested in the motion approved at the May 22, 2019 Council meeting.

Item (a) of the motion speaks to quantifying SUPs and advising if these items have never been or are no longer accepted in Hamilton's recycling program and identify items that have readily available re-usable or compostable alternatives. Table 1 identifies common SUPs generated in Hamilton as well as their current and previous status in the City's blue box program. As shown, most of these items are not currently accepted in the City's blue box program.

Table 1: Common SUPs in Hamilton

Single-Use Plastic Product	Currently Accepted in Hamilton's Blue Box Program?	Previously Accepted in Hamilton's Blue Box Program?
Beverage bottles	Yes	Yes
Black plastic take-out containers	No	Yes
Coffee cups	No	No
Coffee cup lids	No	Yes
Coffee pods	No	No
Plastics dishes (bowls, cups and plates)	Yes	Yes
Plastic grocery bags	Yes	Yes
Plastic straws	No	No
Plastic takeout trays	Yes	Yes
Plastic utensils	No	No
Polystyrene takeout trays, meat trays, plates & cups	No	Yes

Reusable and Compostable Alternatives to SUPs.

Currently, there are reusable alternatives that are readily available for all the items listed in Table 1 (other than takeout trays and containers). Reusable water bottles, shopping bags, coffee mugs, straws and utensils are sold by many retailers and in the case of straws and utensils, are often sold with travel cases and/or tools to assist in cleaning them. However, despite these readily available options, SUPs are still significantly more popular than reusable options.

Compostable alternatives to SUPs are increasing in popularity; however, these items pose their own challenges. As these products are marketed as being compostable, residents dispose of them in the green bin and all materials disposed of through the City's green bin program are processed at the City's Central Composting Facility (CCF).

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 6 of 10**

The CCF has a three-phase process that all material must comply with to be broken down into compost to meet Ontario standards for agricultural use. Phases one and two is where all received material is placed in aerated tunnels to initiate the breakdown of the organic material. Phase three involves first screening the material to remove any material that is either not compostable or that hasn't broken down sufficiently before curing the material. The total amount of time for this process at the CCF is approximately 35 to 42 days.

Currently, there aren't any provincial or federal standards governing what constitutes a compostable product and therefore, when a product is marketed as compostable, it's typically done through an industry certification such as Biodegradable Products Institute (BPI). To obtain this certification a product must break down significantly in 84 days and this is typically done in a lab environment under ideal conditions. Because of the time discrepancy between the CCF process and that of industry certifications, staff carried out tests on 19 products marketed as compostable alternatives to SUPs to determine their suitability with the City's process. During the test, 74% (14) of the products tested were removed during the screening process and all products removed during the screening process ended up in landfill. The screening process removes items that exceed 37mm or 1 ½ inches in size. The five remaining products that were not screened out were designated as problematic by City staff because these products have the potential to contaminate the compost and put it at risk of not passing quality testing. This is because they break down into what could be considered foreign matter/sharps and the current limit of this material in compost is 0.5% based on Ontario compost standards. More detailed information on the testing is included in Appendix "A" attached to Report PW21006.

Notwithstanding that these items will not break down sufficiently in the process at the CCF, they may be appropriate to include in backyard composters or other commercial composting facilities. An important note on the products that were screened out is that although they did not break down sufficiently, the testing concluded that some of these products can provide benefit to the compost by increasing carbon levels, transferring bacteria and adding structure to the composting mass. Examples of these products include bamboo spoons and bowls and paper straws. The results of these tests concluded that there are significant limitations to the benefits of products currently marketed as compostable and most of these products will end up in landfill. The tests concluded that some of the materials that were screened out can be recommended by staff as acceptable alternatives to SUPs. These products if littered, would also not have the same negative effects on the environment as their SUP counterparts. The SUPs that have readily available compostable alternatives found to provide some benefit to the CCF process are listed in Table 2.

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 7 of 10**

Table 2: SUPs with Staff-Approved Compostable Alternatives

Single-Use Plastic Item	Compostable Alternative(s) Recommended by Staff
Plastic bowls	Bamboo and pressed paper bowls
Plastic plates	Paper plates
Plastic straws	Bamboo or paper straws
Plastic take-out container/tray	Paper or pressed fibre container and clamshells
Plastic utensils	Bamboo cutlery

The SUPs listed in Table 2 are included in the federal discussion paper as items that will most likely be included in a federal ban. In addition to the concern of how slowly compostable alternatives break down is the increased cost to purchase these items compared to SUPs. For example, according to suppliers, at today's prices, plastic straws cost approximately \$0.01/each compared to \$0.05 per paper straw, and plastic plates cost approximately \$0.04 each compared to \$0.16 for each compostable plate. Although this is a significant increase in costs to replace SUPs with compostable alternatives, the use of these alternatives will be required as a result of the implementation of a federal ban on the six SUPs mentioned in the discussion paper and is not associated with the implementation of the strategy as outlined in Appendix "A" attached to Report PW21006. When purchasing compostable alternatives if a federal ban comes into effect, staff will make every effort to procure the most cost-effective alternatives that provide the greatest benefit to the composting process used by the City. In addition, costs for these products should come down due to mass production and purchasing of the compostable alternatives.

Item (b) in the motion directs staff to investigate options for the City to develop a strategy to enable businesses, City facilities and City permitted events to move towards a zero plastic waste plan when alternatives are available. The term zero waste is a difficult goal to achieve; however, staff have developed the strategy as outlined in Appendix "A" attached to Report PW21006 that includes options on how the City can reduce the generation of SUPs and plastic waste at City facilities and City permitted events as well as provide guidance for businesses on how to reduce SUPs. This strategy, will work in conjunction with federal actions described in the discussion paper including providing guidance to businesses on SUPs, as opposed to imposing bans on certain SUPs. Bans on SUPs that businesses would need to comply with are planned to be included in federal legislation.

Item (c) in the motion requests information (c) related to regulatory options for Hamilton to reduce or eliminate SUPs. A growing number of municipalities in Canada have implemented (or are considering implementing) bans on certain SUPs including the following cities: Toronto, Vancouver, Montreal, Victoria and Edmonton. These bans generally select an item such as plastic shopping/grocery bags and require that no retail location within the municipality be permitted to provide these to patrons. After

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 8 of 10**

consultation with staff in Legal Services, it was determined that this regulatory option would be problematic for the City to implement. This is due to the high probability of legal challenges by either residents or businesses and the difficulty of enforcing such a ban. In October 2019, the Retail Council of Canada sent a letter to the Ontario Minister of Environment, Conservation and Parks voicing concern over how problematic bans on SUPs in different jurisdictions would be to businesses and that such bans should be implemented at a province-wide level. A City-wide ban would also require significant resources prior to implementation as they often require meaningful public consultation. A second regulatory option is for the City to implement a landfill ban on certain SUPs.

These types of bans have been successfully used in other municipalities to increase the capture of divertible materials in blue boxes and green bins. However, landfill bans are only practical if the material being banned has another accessible option for how it can be disposed. In the case of most SUPs (such as plastic straws and cutlery), there aren't any other disposal options for these items other than landfill and including them in a landfill ban would most likely result in residents disposing of them in the blue box. This would result in an increase in the contamination of the blue box and increased costs to the City.

The federal discussion paper proposes a federal ban on six SUPs which, if implemented, would eliminate the need for bans at the municipal level for these items. The items currently identified to be included in a federal ban are included in table 3.

Table 3: SUPs Proposed in Federal Ban

Food packaging and service ware made from plastic that is difficult to recycle (including foamed plastics, black plastic, PCC, oxo-degradable plastic and multiple/composite materials that have one or more plastics)
Plastic cutlery
Plastic stir sticks
Plastic straws
Plastic grocery/take out bags
Six-pack rings

Due to the rationale against implementing regulatory options such as City-wide bans or landfill bans on SUPs, including the federal government's proposed ban on SUPs, staff are not recommending this approach currently. Instead, staff is recommending that the City implement the strategy outlined in Appendix "A" attached to Report PW21006 that focuses on limiting the generation of SUPs through City operations and events on City-owned property and providing residents and businesses with public education on how to reduce their use of SUPs. By reducing the generation and use of SUPs this would reduce the amount of material going to landfill resulting in increased diversion rates.

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 9 of 10**

The proposed strategy found in Appendix “A” attached to Report PW21006 has two primary objectives. First, to decrease the use and disposal of SUPs within the City’s operations and on City property and second, to provide educational materials to businesses and residents to encourage a shift to reusable and compostable alternatives where practical. These objectives will be met by implementing 14 action items under four Strategic Pillars. In creating this strategy staff have considered the proposed mechanisms included in the federal discussion paper and eliminated any duplication. As noted above, the federal discussion paper includes the banning of six SUPs, enacting mandatory targets for recycled content in plastic products and packaging and establishing a system of extended producer responsibility for plastics. Additionally, the discussion paper includes establishing standards for compostable alternatives to SUPs.

Although staff have not included these items in the proposed strategy, staff support these pieces included in the federal discussion paper. An example of how staff have avoided duplication with the discussion paper is that the City’s proposed strategy doesn’t include any actions to ban or eliminate SUPs that the federal government is planning on including in a ban as seen in Table 3. The strategy instead focusses on two SUPs common in City operations and events on City property: single-use water bottles and single-use coffee cups and lids. The four Strategic Pillars and 14 action items are outlined below.

Strategic Pillar 1 – Promotion and Education

This includes promoting reusable products to residents through presentations that are part of current programs, information imbedded in existing educational material (waste guides and City website) and creating new informational material for businesses and special events. Additionally, staff will create a business recognition program for businesses that follow best practices to reduce SUPs.

Strategic Pillar 2 – City Infrastructure

This will focus on continuing to install water fill/hydration stations in City facilities and parks, as well as staff investigating the value in installing water fill/hydration stations at City-owned golf courses. Water fill/hydration stations in parks will be installed at the request of Councillors and would be paid for through alternate funding sources.

Strategic Pillar 3 – Financial Incentives & Fees

Staff will investigate and implement the most effective method of reducing the consumption of single-use coffee cups (and lids) at City facilities such as arenas and at events on City property. An example of a method that will be investigated would be to reduce the fee to purchase coffee if the patron has their own reusable cup and does not require the purchase of a single use cup provided by the food vendor. Different fees and incentives (including the dollar amount of these) on single-use coffee cups sold at facilities will be investigated with the most effective approach being implemented. To

**SUBJECT: Moving Hamilton Towards a Zero Plastic Waste Plan
(PW21006) (City Wide) - Page 10 of 10**

reduce single-use coffee cups at events, staff will investigate financial penalties for event organizers that fail to follow the City's guidelines to reduce SUPs.

Strategic Pillar 4 – Bans on SUPs in City Facilities and on City Property

This will focus on how staff and visitors at City facilities can reduce the use of single-use coffee cups and single use plastic water bottles by establishing rules for organizers of events on City property and how staff meetings and other gatherings in City facilities are run. It will also include banning the sale of single-use water bottles at City facilities and on City property where sufficient water fill/hydration stations are present. Reducing the use and/or sale of plastic water bottles on City property is consistent with the Healthy Food and Beverage Policy approved by Council in May 2018.

Item (d) in the motion was to determine costs and savings related to the recommended strategy. The proposed strategy to reduce SUPs has two potential costs. First, is the purchasing and installation of water fill/hydration stations. This cost to install a new outdoor water fill/hydration station is approximately \$25,000 to \$30,000 per each and the cost to install a new indoor water fill/hydration station is approximately \$3,500 - \$4,000 each. If staff determine that it is operationally feasible to install these stations, the cost will be included as part of the annual capital budget process. There is also an ongoing operating cost of outdoor water fill/hydration stations at golf courses of approximately \$5,000 per unit and this cost could be included in the operating budgets of the golf courses where they are installed. The cost of designing and printing promotional and educational material is estimated to be approximately \$1,000 and will be absorbed through existing capital and operating budgets.

ALTERNATIVES FOR CONSIDERATION

N/A

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure

Hamilton is supported by state-of-the-art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PW21006 – City of Hamilton Strategy to Reduce Single-Use Plastics.

City of Hamilton Strategy to Reduce Single-Use Plastics

Table of Contents

City of Hamilton Strategy to Reduce Single-Use Plastics	1
Executive Summary	2
Background.....	2
The Impact of Single-Use Plastics	2
Council Motion	3
Single-Use Plastics and Alternatives	3
Testing of Single-Use Plastics Alternatives.....	5
Federal Discussion Paper on Management Approach.....	7
Hamilton’s Strategy to Reduce Single-Use Plastics	8
Objectives	8
Scope.....	8
Strategic Pillar 1 – Promotion and Education.....	10
Actions.....	10
Strategic Pillar 2 – City Infrastructure.....	10
Actions.....	10
Strategic Pillar 3 – Single-use Plastic Bans in City Facilities and on City Property	11
Actions.....	11
Strategic Pillar 4 – Financial Incentives and Fees.....	12
Actions.....	12
Evaluation of the Strategy	13
Sales and Inventory Monitoring.....	13
Corporate Strategic Alignment	13
Public Opinion/Alignment with SWMMP	13
Conclusion	13
Appendix “A” – City Buildings.....	14

Executive Summary

In response to Council direction, staff have developed the following strategy to directly reduce the generation of single-use plastic products through City of Hamilton (City) operations and to provide guidance on how the generation of single-use plastics can be reduced by residents and businesses. This strategy includes why it's necessary for this policy to be implemented for Hamilton to be an environmentally responsible organization as well as information on what alternatives to single-use plastics are available and feasible. This strategy also supports the proposed federal management approach on single-use plastics released as a discussion paper on October 7, 2020.

How the City will accomplish the goal of reducing the amount of single-use plastics generated is defined in this strategy through 14 action items which fall under four Strategic Pillars.

Background

The Impact of Single-Use Plastics

The Science Assessment of Plastic Pollution (released jointly by Environment and Climate Change Canada and Health Canada on October 7, 2020), states that “Since the 1950s, the production and use of plastics has been increasing faster than that of any other material”. The increased production of plastic products gave rise to single-use plastic items gaining popularity. This was because of their convenience as these items could be used once and thrown away without having to be washed for reuse. However, despite the popularity of plastics and some of their benefits, plastic products that are designed as single-use plastics (SUPs) have in most cases, negatives that outweigh their benefits. The term “single-use plastic product” was defined by the European Union in May, 2019 as “a product that is made wholly or partly from plastic and that is not conceived, designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to the producer for refill or re-used for the same purpose for which it was conceived.” Hamilton’s strategy to reduce SUPs has adopted this same definition.

There are two significant problems associated with SUPs. First, the vast majority of these products are not able to be recycled due to their composition and design and therefore cannot be included in blue box programs resulting in them being landfilled. Often these products are produced in a way that combines different materials that cannot be separated to allow products to be recycled (coffee cups are mainly paper-based but also have a thin plastic liner), are so small and light that they cannot be captured through current separation technologies or, are of such low quality of plastic that there is no end market for them (polystyrene take-out containers contaminated with food), or any combination of these.

The second significant problem with single-use plastics is that when they are littered, they result in negative impacts on the environment. The Province’s discussion paper on “Reducing Litter and Waste in Our Communities” (2019) states that almost 10,000

Appendix “A” to Report PW21006
Page 3 of 15

tonnes of plastic debris ends up in the Great Lakes each year and more than 80% of litter collected during volunteer clean ups along Great Lakes’ shorelines is plastic. Included in the federal “Strategy on Zero Plastic Waste” (2018) are the devastating impacts of SUPs littered in the environment as they pollute waterways, harm wildlife and damage habitat and fisheries.

Because of the negative impacts related to SUPs, these products have received increasing media attention in recent years, prompting individuals, businesses and legislators to begin looking for ways to reduce or eliminate them as much as possible.

Council Motion

In May 2019, in acknowledgement of the environmental impacts of plastic pollution, restrictions on what the City can accept in the blue box program, low waste diversion rates, actions by other municipalities along with other contributing factors, City Council directed staff to report back to the Public Works Committee with information on the feasibility of the City creating a Zero Plastic Waste Plan. Council direction for the plan was:

- That it quantifies SUPs that never were or are no longer acceptable in the blue box program
- That it identifies reusable or compostable alternatives to single-use plastics
- That it includes regulatory options for the City to reduce or eliminate single-use plastics
- It includes any costs or savings to implementing a plan

In addition to the items listed above, this strategy includes a list of actions for the City to either investigate and/or implement to reduce the amount of SUPs generated through City operations.

Single-Use Plastics and Alternatives

There are many examples of SUPs that are used in Hamilton and examples of the most common SUPs can be found in Table 1 along with their status as it pertains to Hamilton’s blue box program. The majority of SUPs are not recyclable and need to be disposed of in the garbage in Hamilton and other jurisdictions. There are three items listed in Table 1 that were previously accepted in Hamilton’s blue box program but no longer are due to reduced end markets for these products and/or contamination issues associated with them.

Appendix “A” to Report PW21006
Page 4 of 15

Table 1: Status of Common SUPs in Hamilton's Blue Box Program

Single-Use Plastic Product	Currently Accepted in Hamilton's Blue Box Program?	Previously Accepted in Hamilton's Blue Box Program?
Beverage bottles	Yes	Yes
Beverage bottle lids	No	Yes
Coffee cups	No – accepted in green bin	No
Coffee cup lids	No	Yes
Coffee pods	No	No
Plastics cups and plates	Yes	Yes
Plastic straws	No	No
Plastic takeout trays	Yes	Yes
Plastic utensils	No	No
Polystyrene takeout trays, plates & cups	No	Yes

All the products listed in table 1, other than plastic and polystyrene takeout trays, have reusable alternatives available to the public. Reusable coffee pods and mugs, straws, water bottles, plates and utensils are commonly sold and some in convenient travel options. However, due to the convenience of disposable SUPs, they are still more popular than the reusable options. In response to the impact SUPs are having on the environment, and to maintain the convenience of throwaway options, compostable alternatives to SUPs are increasing in popularity and availability. Compostable single-use products are marketed as having a decreased environmental impact by having the ability to biodegrade in the natural environment. Figure 1 includes examples of some popular alternatives. Although these products are marketed as having reduced environmental impacts, associated negatives of pressed paper and PLA products include that they don't biodegrade the same as products currently accepted in Hamilton's green bin program (such as food waste and paper towels). Pressed paper and PLA based plastics take considerably longer to decompose, even in ideal environments produced in commercial compost facilities. Other issues with this type of material include utilizing agricultural space to produce plastics versus food and that its similarity to petrol-based plastics can result in contamination of the recycling process as it can be easily confused with traditional plastics.

Appendix “A” to Report PW21006
Page 5 of 15

	
<p>Fibre-based products – these are paper-based (pressed or non-pressed paper) or made from unprocessed fibre material such as bamboo</p>	<p>Bioplastics – these include polylactic acid (PLA) which is a vegetable based plastic material very similar to petrol-based plastics usually made of corn starch, tapioca root or sugarcane</p>

Figure 1: Examples of available Compostable Products

These alternative products are often branded with a compostable certification. Compostable certifications, such as BPI (Biodegradable Products Institute), rely on test methods that are generally not consistent with the process of municipal compost facilities. To be certified as compostable, a product must break down significantly in 84 days and this is usually done in a lab environment under ideal conditions. Currently, there are no provincial standards in Ontario for what can be branded as compostable in a retail setting.

Testing of Single-Use Plastics Alternatives

City staff conducted tests at Hamilton’s Central Composting Facility (CCF) to determine whether products certified or marketed as compostable alternatives to SUPs can be processed fully. To date, staff have completed two separate tests following the Compost Council of Canada protocol; the first from August to September 2019 and the second from January to February 2020. The same products were included in each test and included bamboo alternatives (such as spoons and bowls), PLA cups and classic white paper plates. A total of 19 alternative products were tested. During the test, 74% (14) of the products tested were removed during the screening process and all products removed during the screening process ended up in landfill. Even though five products were not screened out, due to their small size (such as PLAs) they were designated as problematic by City staff because these products have the potential to contaminate the compost and put it at risk of not passing quality testing because they break down into what could be considered foreign matter/sharps. The current limit of this material in compost is 0.5% based on Ontario compost standards.

Appendix “A” to Report PW21006
Page 6 of 15

Table 2: Results of Product Testing

Product	Accepted in Green Bin?	Screened Out?	Problematic or Non-Problematic
Bamboo Bandage	No	No	Problematic
Bamboo Bowls	Yes	Yes	No
Bamboo Skewers (Type 1)	Yes	Yes	No
Bamboo Skewers (Type 2)	Yes	Yes	No
Bamboo Spoons	Yes	Yes	No
Chopsticks	Yes	Yes	No
Compostable Coffee Pod	No	No	Problematic
Compostable Food Wrap	No	No	Problematic
Coral Forks	No	No	Problematic
Fiber-Based Cutlery	Yes	Yes	No
Paper Clamshell Take Out Container	Yes	Yes	No
Paper Cup	No	Yes	Problematic
Paper French Fry Boat	Yes	Yes	No
Paper Plates	Yes	Yes	No
Paper Straws	Yes	Yes	No
Paper Water Cooler Cup	Yes	Yes	No
PLA Cups	No	Yes	Problematic
PLA Straws	No	No	Problematic
Plant Based Bag	Yes	Yes	Problematic

Although the products removed during screening ended up in landfill, some of this material could be reintroduced to the compost process. The products that could be reintroduced into the process are categorized as non-problematic because when they are included in phases one and two, they can provide some benefit to the compost by increasing carbon levels, transferring bacteria and adding structure to the composting mass. Examples of these products include bamboo spoons and bowls and paper straws. The case for these materials not being problematic is strengthened by the fact that they will not contribute to contamination of the compost if they do make their way through the screening process.

The test results at the CCF concluded that plant-based plastics cannot be composted in Hamilton and other compostable products that are alternatives to SUPs will benefit the composting process but will eventually end up in landfill. The results also confirmed that the benefits of most products marketed and/or labelled as compostable alternatives

Appendix “A” to Report PW21006
Page 7 of 15

to SUPs are limited. These single-use products come with additional negatives and are in most cases detrimental to the composting process used by the City. These results are consistent with sorting direction from other municipalities as Toronto, Peel Region, Halton Region and Waterloo Region (to name a few) do not allow for compostable items such as cutlery to be placed in their green bin programs. Any alternatives to SUPs that are recommended through this strategy will be deemed at minimum, to be non-problematic to Hamilton’s CCF’s composting process.

Federal Discussion Paper on Management Approach

On October 7, 2020, the federal government released the discussion paper “A proposed integrated management approach to plastic products to prevent waste and pollution” which builds on previous actions of the federal government on SUPs including signing the Oceans Plastics Charter (June, 2018), developing the Canada-Wide Strategy on Zero Plastic Waste (Phase 2 released in July, 2020) and the Science Assessment of Plastic Pollution (October, 2020). This discussion paper outlines the approach the federal government is proposing to take to support the reduction of SUPs. This approach includes the following objectives: eliminating certain sources of plastic pollution; strengthening domestic end-markets for recycled plastics; improving the value recovery of plastic products and packaging; and, supporting innovation and the scaling up of new technologies. There are three tools proposed in the discussion paper to accomplish these objectives:

- Bans and/or restrictions on certain SUPs
- Performance standards to reduce or eliminate environmental impact and stimulate demand for recycled plastics
- End-of-life responsibility of SUPs through extended producer responsibility

These tools will be formalized in regulations planned to be in effect by the end of 2021. Along with naming the tools above, the discussion paper includes high-level details of what will be included under each. For the Federal ban, this includes naming six items proposed to be included and the criteria for how these items were selected. The proposed items are listed in table 3.

Table 3: Federal SUP Ban

Items Proposed in the Federal SUP Ban
• Grocery/take-out bags
• Plastic straws
• Plastic stir sticks
• Plastic cutlery
• Beverage six-pack rings
• Food packaging and service ware made from plastic that is difficult to recycle (including foamed plastics, black plastic, PCC, oxo-degradable plastic and multiple/composite materials that have one or more plastics)

Performance standards include determining a minimum percentage of recycled content for plastic products (possibly by sector, material or resin type), establishing rules for measuring and reporting on the recycled content in materials and developing technical guidelines to formalize standards that need to be followed when meeting performance standards. End-of-life responsibility includes increasing collection and recycling rates, minimizing material sent to landfills and establishing conditions for innovation to create a circular economy for plastics.

Hamilton’s Strategy to Reduce Single-Use Plastics

Objectives

The primary objective of Hamilton’s Strategy to Reduce Single-Use Plastics (SUPs) is to decrease the use and disposal of SUPs within City operations and on City property. This will be achieved by cultivating a shift in the behavior of City staff, residents, businesses and event organizers through an approved list of action items. This strategy will prioritize the first two Rs in the 3Rs hierarchy; reduction and reuse for example reusable water bottles and coffee mugs; before providing appropriate compostable alternatives to SUPs and actions that promote recycling of SUPs.

The second objective of the strategy will be to provide promotion and education materials to businesses and residents to encourage a switch to reusable alternatives. Care has been given in drafting this strategy to ensure no duplication with the proposed actions in the federal government’s discussion paper. An example of this is the omission of any action on the SUPs proposed to be included in a federal ban as seen in Table 2 above.

Scope

Council’s original direction in the motion from 2019 was “That staff report back to the Public Works Committee with information on the feasibility of the City creating a Zero Plastic Waste Plan”. After investigation and consultation with Legal Services, staff have determined that although a “Zero Plastic Waste Plan” may not be feasible at the Municipal level, a strategy to reduce SUPs is. The scope of this strategy focuses on how City operations can reduce the generation of SUPs while providing guidance to how local businesses and residents can reduce their dependence on these products without creating actual requirements. There are several reasons for these limitations in scope. First, Legal Services was consulted on the implications of implementing a City-wide ban on SUPs and concerns raised included whether a plastic ban is within the jurisdiction of a municipality. A City-implemented ban would require approval from Ontario’s Ministry of Environment, Conservation and Parks. Enacting a City-wide ban would also require stakeholder consultation and if passed, will almost surely be challenged, requiring legal resources to defend the City’s position. Because of the jurisdictional limitations, the strategy will focus on promoting voluntary reduction efforts to help reduce SUPs generated by residents and at businesses in the City.

Appendix “A” to Report PW21006
Page 9 of 15

The second reason for why an outright ban on SUPs across the City is out of scope is the pending regulations described in the federal discussion paper. Any bans included in federal regulations would over rule those implemented by the City.

This strategy defines work that staff will be carried out to reduce the amount of SUPs that the City generates. This work includes 14 action items under four Strategic Pillars as seen in Table 4 and described in detail below.

Table 4: Strategic Pillars and Action Items

Strategic Pillar	Action Items
1. Promotion and Education	<ul style="list-style-type: none"> • Use current education tools such as the annual waste guide to educate on reducing SUPs • Expand education efforts on SUPs to include in-person activities and virtual tools • Create educational material for businesses on reducing SUPs
2. City Infrastructure	<ul style="list-style-type: none"> • Replace drinking fountains in City parks with stations that permit the filling of water bottles • Investigate installing outdoor water fill stations at City-owned golf courses • Continue to install water fill stations in arenas, municipal service centres and other City buildings
3. Bans on SUPs in City Facilities	<ul style="list-style-type: none"> • Update Public Health policies to require compostable single-use items over SUPs • Investigate feasibility of requiring all events receiving City waste services to have water fill stations and banning the sale of water bottles • Require operators of concession stands, cafes etc. on City property to use City-approved compostable alternatives to SUPs • Develop a policy to ban single-use coffee cups and water bottles at organized events in City buildings • Require office kitchenettes to be supplied with reusable glassware • Investigate banning the sale of water bottles in facilities with water fill stations

Appendix “A” to Report PW21006

Page 10 of 15

4. Financial Incentives and Fees	<ul style="list-style-type: none"> • Determine best approach to reducing the sale of single-use coffee cups at City facilities (fees or incentives) and implement • Investigate enforcement options for operators that do not comply with fees and incentives
----------------------------------	---

Strategic Pillar 1 – Promotion and Education

Actions

1. The reduction of SUPs will continue to be promoted in annual recycling and waste guides and will be expanded to include the City’s website. This messaging was first included in the 2020/2021 Waste Guide; however, there will be an increased focus on the reduction of SUPs in future waste guides. The City’s website will also include a page dedicated to promoting the reduction of SUPs. This action item will attempt to make Hamilton residents more aware of the problems surrounding SUPs, why they should attempt to reduce their use of them and how to achieve this. This action item will also take advantage of an existing, familiar medium to communicate these messages and removing additional costs to the City in the process.
2. Education efforts will be expanded to include promoting the reduction of SUPs at community events and other engagement opportunities. Community Outreach staff currently share tips for reducing SUPs with grade school classes who tour the education room at the CCF. Much like action item 1 under this Strategic Pillar, this action utilizes existing programming to provide awareness to remove additional costs to the City. If moving forward, education takes place with virtual tools such as educational videos, then these will be updated to include information on replacing SUPs with reusable or compostable options based on readily available options and their compatibility with the process at the CCF.
3. Produce informational material to help businesses reduce SUPs. This action will include providing guidance to restaurants and food trucks on reducing the generation of certain SUPs including single-use coffee cups and/or single-use water bottles. This could provide information on the most effective methods to reduce single-use coffee cups through incentives or fees and allowing patrons to have reusable water bottles filled.

Strategic Pillar 2 – City Infrastructure

Actions

1. Parks and Cemeteries will continue to replace aged water fountains with multi-functional water stations with the ability to fill reusable water bottles. City parks are well used by the community, including the use for public events and sports tournaments. Providing visitors to parks with the ability to fill reusable water bottles will encourage the use of reusable water bottles and reduce the use of single-use plastic water bottles.

Appendix “A” to Report PW21006
Page 11 of 15

2. Investigate the feasibility of installing a water bottle fill station(s) at City’s Municipal Golf Courses. If these were installed, City staff would promote the water bottle fill stations to patrons through signage and its website. Providing user of golf courses and recreational facilities with an easily accessible way to fill their water bottles has the potential to reduce the amount of single-use water bottles disposed of at these locations. In 2019, a total of 1,630 water bottles were sold at Kings Forest Gold Course between the lounge and beverage carts. The cost of installing outdoor water bottle fill stations is between \$25,000 and \$30,000, with potential additional costs depending on the distance from existing water lines. In addition to this capital cost, there is also an annual operating cost of approximately \$5,000 for opening and closing the fill station and any other associated operating costs such as maintenance, graffiti and water. If any of these water-fill stations are installed the capital costs will be covered through funds in existing budgets.
3. Continue to install water bottle fill stations in arenas, Municipal Service Centres and other City buildings. These water bottle fill stations have already been installed in numerous City buildings. This action will evaluate moving forward with this throughout all locations/buildings included in the scope if they don’t already have these stations installed (included as Appendix “A”).

Strategic Pillar 3 – Single-use Plastic Bans in City Facilities and on City Property
Actions

Although the federal government is proposing a list of SUPs to include in a ban, this strategy is proposing to ban SUPs that are not currently being contemplated for inclusion in the federal plan but are still considered problematic. The items that will be included in the ban for City operations are: hot and cold beverage cups and lids (most notably single-use coffee cups) and single-use water bottles.

1. Update Public Health “Requirements for Food Vendors at Special Events” to indicate that compostable single-use products are required over plastic where possible, and to provide a list of acceptable compostable single-use products until such time that a federal ban is enacted. Public Health requirements for food vendors at special events currently include that “Only disposable eating utensils (examples: plastic knives, forks, spoons, paper plates and cups) shall be provided to customers.” This can be updated to include that these disposable utensils must be of a type approved by the City.
2. To support enforcement through action item 2 under Strategic Pillar 3, investigate the requirement for all events on City property requesting waste diversion services from the City to provide water fill stations to patrons and require that no vendor at the event sells single-use water bottles to patrons. This investigation will include coordination with the Special Events Advisory Team and through the application process to hold events on City property.
3. Require that operators of all concession stands, cafeterias, cafes/coffee shops etc. on City property included in Appendix “A”, be required to use compostable alternatives to SUPs approved by the City where reusable options, or elimination of

Appendix “A” to Report PW21006**Page 12 of 15**

products is not possible. If the federal government establishes a standard for how “compostable” is defined, then this standard will replace any standard established by the City.

5. Develop a policy to ban the use of single-use coffee cups and water bottles at staff organized meetings and other gatherings on City property (including staff meetings and Advisory Committee meetings). Encourage outside staff or other visitors to bring reusable mugs if coffee is being provided.
6. Require offices that have kitchenette infrastructure to be supplied with reusable glassware and water jugs for meetings that include outside staff.
7. Investigate the ban of single-use water bottles at all City facilities that are equipped with water fill stations.

Strategic Pillar 4 – Financial Incentives and Fees

Actions

1. Investigate different incentives, either fees or savings, to promote the use of reusable alternatives to single-use coffee cups at concession stands, cafes etc. located within City buildings. This will include staff investigating what approach and dollar figure is most effective in changing the behaviour of residents/patrons resulting in an increased use of reusable items. Potential approaches include either a fee for using a single-use coffee cup or an incentive for bringing a reusable coffee mug. This investigation will most likely include piloting the potential approaches at selected City-owned or operated buildings and is necessary as the most difficult aspect of implementing a fee or incentive is determining what an appropriate dollar figure is. The value cannot be so low that it is considered insignificant but cannot be so high that it is considered unreasonable. The most effective way to determine an appropriate cost is to test different values. Once action item 1 under this Strategic Pillar is complete, implementation of incentives or fees will proceed at 26 City buildings and facilities (listed in Appendix “A”) and will include municipal service centres, arenas and community centres, parks, operational facilities, golf courses and one senior centre, but will not include contracted out, volunteer-run or seasonal concession stands. Additionally, the most appropriate method will also be implemented by vendors at events on City property.
2. Investigate enforcement mechanisms for operators and vendors at special events that do not provide the incentive or apply the fee when patrons use single-use hot/cold beverage cups at events or fail to provide event patrons with the ability to fill reusable water bottles through water fill stations. This action includes requiring events to either be held in parks equipped with water fill stations or for the organizer to secure a mobile water fill station approved by the City or both. This may include investigating what water fill options are necessary based on the size of the event being held.

Evaluation of the Strategy

Evaluating this strategy on an ongoing basis will be key in ensuring it meets its objectives and ultimately the strategy being successful. This evaluation will be carried out through waste audits, monitoring the sale of SUPs at City facilities and reporting on the progress of the strategy through different methods such as the Waste Management Advisory Committee and through the annual Clean and Green report.

Sales and Inventory Monitoring

Staff will monitor the procurement of SUPs targeted by the action items identified in this strategy to determine if there is any change in the demand and use of these materials.

Corporate Strategic Alignment

City of Hamilton Corporate Climate Change Strategy – This strategy supports Goals 1 and 5 of the City’s Corporate Climate Change Strategy. Replacing outdated water fountains in City parks supports the action item to retrofit existing corporately owned assets to improve energy efficiency and reduce GHG emissions. While the water fountains themselves may not directly reduce GHG emissions, the reduced reliance on disposable water bottles will.

Clean and Green Strategy – The City’s Clean & Green Hamilton Strategy encourages behaviour that supports a clean and green community. It provides context and guidance for the development of policies, programs and initiatives that promote and enhance cleanliness, aesthetics and environmental stewardship across Hamilton. This strategy demonstrates commitment to the purpose of the Clean & Green Strategy.

Public Opinion/Alignment with SWMMP

In support of updating its Solid Waste Management Master Plan, the City undertook a public opinion survey on waste from January 6 to February 7, 2020. One of the open-ended questions included in the survey was “Should the City explore options for reducing single-use items (i.e. plastic bags, plastic straws, plastic cutlery, plastic take-out containers and single use cups)?”. Of the 3,923 responses to this question, 3,343 (85.2%) of respondents answered that they do believe that the City should explore options to reduce single-use plastics.

Conclusion

The 14 action items included in “The City of Hamilton’s Strategy to Reduce to Single-Use Plastics” establish a clear path forward for how the City can potentially reduce the generation of single-use plastics while maintaining consistency with other City policies and not conflicting with the federal management approach proposed in the discussion paper. This strategy emphasizes the importance of reduction and reuse options prior to considering compostable alternatives, as these products can be problematic to Hamilton’s processing system at the Central Composting Facility. In lieu of potentially pending bans on single-use plastics by the federal and provincial governments, this strategy maintains in its scope what the City can do within its own operations and providing appropriate guidance to businesses and residents.

Appendix "A" to Report PW21006

Page 14 of 15

City of Hamilton Buildings

Building Name	Type of City Operation	Type of SUP Generator
1. City Hall	Municipal service centre	Coffee shop
2. Lister Block	Municipal service centre	Coffee shop
3. Beverly Community Centre & Arena	Arena	Recreation-run concession stand
4. Carlisle Community Centre & Arena	Arena	Recreation-run concession stand
5. Chedoke Twin Pad Arena	Arena	Recreation-run concession stand
6. Dundas J.L. Grightmire Arena	Arena	Recreation-run concession stand
7. Glanbrook Arena and Auditorium	Arena	Recreation-run concession stand
8. Inch Park Arena	Arena	Recreation-run concession stand
9. Bill Friday Lawfield Arena	Arena	Recreation-run concession stand
10. Morgan Firestone Arena	Arena	Recreation-run concession stand
11. Dave Andreychuk Mountain Arena and Skating Center	Arena	Recreation-run concession stand
12. Pat Quinn Parkdale Arena	Arena	Recreation-run concession stand
13. Rosedale Arena	Arena	Recreation-run concession stand
14. Saltfleet Arena	Arena	Recreation-run concession stand
15. Stoney Creek Arena	Arena	Recreation-run concession stand
16. Valley Park Arena	Arena	Recreation-run concession stand
17. Harry Howell Arena	Arena	Recreation-run concession stand
18. Chedoke Golf Course	Golf course	Food service, restaurant & concession stand
19. King's Forest Golf Course	Golf course	Food service, restaurant & concession stand
20. Millgrove Community Park Concession	Park	Recreation-run concession stand
21. Dundas Driving Park	Park	Recreation-run concession stand
22. Joe Sam's Leisure Park	Park	Recreation-run concession stand

Appendix "A" to Report PW21006
Page 15 of 15

23. Bayfront Park Concession	Park	Recreation-run concession stand
24. Sackville Hill Seniors Centre	Seniors Center	Cafeteria
25. Wentworth Street Operations Center	City Operational Facility	Cafeteria
26. Mountain Transit Centre	City Operational Facility	Cafeteria