

APPENDIX “A” City-Led Projects Recommended to Receive 2024 Climate Change Reserve Funding

Project Title /Applicant	Summary Description	Funding
<p>Macassa Lodge B Wing Expansion – Climate Resilience Measures</p> <p>Office of Energy Initiatives, Public Works</p>	<p>CLIMATE MITIGATION INITIATIVE</p> <p>This 65,000 square foot expansion to the existing Macassa Lodge Long Term Care Facility (236,000 square feet) will accommodate 20 existing residents and an additional 44 residents. Reserve funding will contribute to a larger pot of funding to enable the incorporation of:</p> <ul style="list-style-type: none"> • Air Source Heat Pump Technology for building space heating and domestic hot water generation. • Enthalpy wheel heat recovery to reduce ventilation energy consumption. • High performance building envelope including high performance windows and increased wall and roof insulation. • Variable speed hydronic pumping systems, to reduce energy consumption by reducing speed of the pump in response to reduce volume demand. • Variable speed fan systems, to reduce energy consumption by reducing speed of the fan in response to reduced air volume demand. <p>Continue to investigate emerging technology opportunities to include in the design as follows:</p> <ul style="list-style-type: none"> • Solar Photovoltaic panels • Solar Wall technology • Low intensity development stormwater management • Light Harvesting <p>Full project implementation will result in a 74% reduction in natural gas consumption resulting in an annual greenhouse gas emission reduction of 157.2 tCO₂e.</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Supports actions found under the ‘Transforming Our Buildings’ transformation category. The Plan’s Low Carbon Scenario calls for: -Reducing energy intensity in all municipal buildings by 60% by 2050. -By 2050 all new municipal buildings achieve net zero emissions.</p>	<p>\$200,000</p>

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	<p>-By 2050, 50% of municipal buildings will add rooftop solar PV, covering 30% of the building’s electrical load.</p>	
<p>Recreation Centre Pool Heat Reclamation</p> <p>Office of Energy Initiatives, Public Works</p>	<p>CLIMATE MITIGATION INITIATIVE</p> <p>This project is a piloting of technology new to the municipality and will see installation of a heat reclamation system in Riverdale & Huntington Park indoor pools. Waste heat will be captured from the required draining of heated water to run through a heat exchanger and transfer the heat to the incoming make-up water. This process will decrease the amount of natural gas needed to heat the make-up water, thereby reducing natural gas consumption and associated greenhouse gas emissions.</p> <p>Implementation of a heat reclamation system for the Riverdale and Huntington Park municipal indoor pools will result in an estimated 22 tCO_{2e} annual reduction in greenhouse gas emissions through reduced natural gas consumption.</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Supports actions found under the ‘Transforming Our Buildings’ transformation category. The Plan’s Low Carbon Scenario calls for: -reducing energy intensity in all municipal buildings by 60% by 2050.</p>	<p>\$225,000</p>
<p>EcoDiesel Fuel Replacement Program</p> <p>Fleet Services, Public Works</p>	<p>CLIMATE MITIGATION INITIATIVE</p> <p>This request is for funds to purchase Petro-Canada EcoDiesel™ to replace the current biodiesel used to operate City vehicles and equipment. Petro-Canada EcoDiesel™ is a newly developed product made with hydrotreated renewable diesel. Hydrotreated renewable diesel is an alternative fuel produced from renewable materials like virgin seed oils, tallow, and used cooking oil. The final product is a high-quality, low-carbon intensity, renewable diesel. It can reduce GHG emissions by up to 60% compared to conventional biodiesel. This is a new, innovative product that expands on the City’s use of biodiesel to dramatically reduce</p>	<p>\$185,000</p>

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	<p>GHG emissions in the short term.</p> <p>Funding is for the purchase of 3 million litres of EcoDiesel fuel, enabling a greenhouse gas emission reduction of approximately 6,593 tCO₂e when used to replace conventional biodiesel. Fuel switching is a quick way to realize greenhouse gas emission reductions.</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Action 10 - Establish then implement a city-wide EV Strategy (residential, commercial, and municipal) (City's Green Fleet Strategy includes transitional steps via low carbon fuels to get the fleet to EV status over time)</p>	
<p>Solar Powered Ambulance Fleet</p> <p>Hamilton Paramedic Services</p>	<p>CLIMATE MITIGATION INITIATIVE</p> <p>This project will enable the piloting of an innovative solar panel system designed for ambulances. Since ambulances draw continual power to ensure the pharmaceuticals and medical diagnostic equipment within the vehicle are in a temperature-controlled environment, and that patients are comfortable, the vehicle must be plugged in or running to maintain battery capacity. When inside a designated station, shore power plugs are provided for this purpose. When outside shore power is not available. Installing solar panels on vehicles will enable the auxiliary batteries to continue to run on solar power rather than on fuel thereby reducing greenhouse gas emissions generated from constantly idling vehicles. By retrofitting the fleet of 59 ambulances with solar panels, this directly advances renewable energy use within the City's corporate fleet and reduces fuel consumption from vehicle idling. The initiative also brings the co-benefit of reducing air emissions at hospital emergency areas.</p> <p>It is anticipated that a reduction of more than 160 tCO₂e will be realized annually with the implementation of these specialized solar panels on all 57 ambulances in the fleet.</p>	<p>\$240,000</p>

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	<p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Action 10 – Establish then implement a city-wide EV Strategy (residential, commercial, and municipal)</p>	
<p>Electric Street Sweeper Transportation Division, Public Works</p>	<p>CLIMATE MITIGATION INITIATIVE The all-electric Bucher CityCat VR50e street sweeper has a custom-designed Bucher Battery Pack tailored to the sweeper. This proven technology will reduce the City’s environmental footprint while achieving low noise emissions and meeting Council approved initiatives, climate goals and downtown cleanliness. There are no greenhouse gas emissions with this vehicle versus a conventional sweeper which contributes ~89 tCO2e/year. Climate Reserve funding will cover the cost difference between a regular sweeper and the all-electric model.</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Action 10 - Establish then implement a city-wide Electric Vehicle Strategy (residential, commercial, and municipal)</p>	<p>\$120,000</p>
<p>Electric Maintenance Vehicles Transportation Division, Public Works</p>	<p>CLIMATE MITIGATION INITIATIVE Funding will enable the purchase of one electric bike lane sweeping vehicle and one electric bike lane inspection vehicle and the associated charging infrastructure for these vehicles. The City currently does not have cycling lane sweepers or inspection vehicles and so does not have comparative greenhouse gas emissions data; however, our sidewalk sweepers generate approximately 486 tonnes/year (via consumption of 180,000L of diesel). These emissions could be entirely avoided by the purchase and use of electric alternatives.</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Action 10 – Establish then implement a city-wide EV Strategy (residential, commercial, and</p>	<p>\$403,000</p>

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	municipal)	
<p>Making NFP Housing Climate Resilient</p> <p>Housing Secretariat, Healthy & Safe Communities</p>	<p>CLIMATE MITIGATION/ADAPTATION INITIATIVE</p> <p>This project will support up to six social housing pilot projects with additional funding secured through the Climate Change Reserve to implement additional measures to enhance climate mitigation and adaptation features. These are projects that are emerging as part of the Housing Accelerator Fund work that is being administered by the City's Housing Secretariat.</p> <p>Any realized greenhouse gas emissions cannot be determined until the funding is allocated to up to six social housing projects.</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation: Action 6c: Finance and deliver mass deep energy retrofit program for the residential sector, scaling up to city-wide program considering development of a commercial retrofit program Climate Change Impact Adaptation Plan: Action 3.4 - Align ongoing efforts within the City to continue expanding affordable housing to protect vulnerable populations to reduce climate-related impacts from extreme weather and temperatures</p>	<p>\$250,000</p>
<p>Development Incentive Program for Bayfront Industrial Area</p> <p>Economic Development Division, Planning & Economic Development</p>	<p>CLIMATE MITIGATION/ADAPTATION INITIATIVE</p> <p>The Bayfront Industrial Area Retrofit Grant is intended to assist building owners that cannot financially justify the investment needed for deep retrofits and/or that have not considered the long-term benefits of such a retrofit. The Bayfront Industrial Area needs a catalyst to initiate this change to support future private investment. Through the Economic Development Division’s current Leadership in Energy and Environmental Design (LEED) Community Improvement Plan comprehensive review, staff are seeking to develop and implement a new program to support sustainable retrofits of these buildings within the Bayfront Industrial Area. Staff have identified this gap in current program offerings as retrofits of existing buildings generally do not result in</p>	<p>\$250,000</p>

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	<p>meaningful tax uplift to the City, which is the existing source of funding under the current Leadership in Energy and Environmental Design (LEED) Community Improvement Plan tax increment program (i.e. no new tax revenue means no grant to support sustainability efforts).</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Action 6c - Finance and deliver mass deep energy retrofit program for the residential sector, scaling up to city-wide program considering development of a commercial retrofit program Climate Change Impact Adaptation Plan: Action 10.1 - Provide guidance to local businesses on how to maintain business continuity (e.g. supply chain) during extreme weather (i.e. through business continuity planning, green business practices, adaptation measures, etc.)</p>	
<p>Low Impact Development/ Green Standards Training & Implementation</p> <p>Growth Management Division, Planning & Economic Development</p>	<p>CLIMATE MITIGATION/ADAPTATION INITIATIVE</p> <p>Funding will assist with implementation of the Low Impact Development Site Servicing Guidelines through the designation of funds for a training program for internal staff and external consultants. Site Servicing Guidelines will be applicable to all future site plan control applications once the guidelines are in place. Therefore, there is a need to ensure that both staff and external consultants are fully trained on the implementation of the guidelines. Applying the Site Servicing Guidelines to both the preparation and the review / approval of site plan control applications will be a new process for all involved. Applicants will be required to provide documentation of how the Site Servicing Guidelines are applied within the application, including the design criteria for the subject site (targets), the description of Low Impact Development Best Management Plan measures, operation and maintenance requirements and a Site Works Certificate Form. City staff will be required to review this information and determine if the appropriate design criteria are being utilized.</p> <p>Relevant Climate Action Strategy Actions</p>	<p>\$50,000</p>

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	<p><i>Climate Change Impact Adaptation Plan:</i> Action 1.1 - Develop requirements for the incorporation of Low Impact Development (LID) features and green infrastructure into new development and redevelopment projects and consider watershed and landscape scales in the development of plans and objectives.</p>	
<p>If Trees Could Talk Public Education Initiative</p> <p>Forestry & Horticulture, Public Works</p>	<p>CLIMATE MITIGATION/ADAPTATION INITIATIVE</p> <p>This technology enables the development of ‘personalities’ for selected trees as a creative way to engage and communicate with residents regarding the benefits and challenges that trees can face depending on the planting environment.</p> <p>Tree data will be gathered and hosted on a publicly accessible dashboard and dedicated social media platforms and will include:</p> <ul style="list-style-type: none"> -Dendrometer data to monitor how trees respond to fluctuations in environmental conditions such as rainfall and drought. -Soil life sensors data to assess and forecast the impacts of climate change on the health of our urban forest. -Sap flow as an indicator of the tree's response to environmental conditions such as temperature changes. <p>These metrics all provide insight into the impacts of climate on a tree’s ability to survive and thrive, enabling staff and residents to see how climate change affects our urban forest. This information and public understanding will assist staff in better supporting the urban forest into the future and will enable residents to better understand the impacts of climate change on tree health and well-being, helping residents to better care for their own neighbourhood trees. Data generated through this project can also be made available to academic researchers and anyone else who might be interested through OpenData.</p> <p><i>Relevant Climate Action Strategy Actions</i> <i>Climate Mitigation Plan:</i> Action 23 - Set a target of 50,000 trees planted per</p>	<p>\$28,500</p>

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	<p>year within City boundaries</p> <p>Climate Adaptation Plan:</p> <p>Objective 8: Monitor, maintain and improve the diversity and resiliency of urban trees and forests.</p> <p>Action 8.1: Work with local partners to continue tree planting and preservation, explore community partnerships and naturalization programs to reduce urban heat island and enhance ecosystem function.</p>	
<p>Air Conditioning in Hamilton Rental Housing – Feasibility Case Study</p> <p>CityHousing Hamilton</p>	<p>FEASIBILITY STUDY – ADAPTATION INITIATIVE</p> <p>This project involves a detailed feasibility study and the preparation of a publicly available case study that assesses the feasibility of providing in-suite air conditioning at three of CityHousing Hamilton's main building archetypes:</p> <ul style="list-style-type: none"> • Natural Gas-heated Townhouses; • Natural Gas-heated Apartment buildings; and • Electrically-heated Apartment buildings. <p>By evaluating the technical and financial implications of providing in-suite air conditioning at each of these common forms of rental housing in Hamilton, the City of Hamilton will be in a better position to understand what is necessary to support and enable future adaptation efforts associated with the climate risk of extreme heat in rental housing.</p> <p>Relevant Climate Action Strategy Actions</p> <p>Climate Change Impact Adaptation Plan:</p> <p>Action 3.3 - Coordinate local efforts to address excessive indoor temperatures in rental housing</p> <p>Action 3.4 - Align ongoing efforts within the City to continue expanding affordable housing to protect vulnerable populations to reduce climate-related impacts from extreme weather and temperatures</p>	<p>\$150,000</p>
<p>Fleet Services Electric Vehicle and GRID Feasibility Assessment</p> <p>Office of Energy Initiatives, Public Works</p>	<p>FEASIBILITY STUDY – MITIGATION INITIATIVE</p> <p>The feasibility assessment will review City facilities Fleet Services has previously identified as suitable charging locations and provide high level costing, identify any necessary electrical upgrades, and assess current available capacity. These feasibility assessments are needed because, as fleet greening efforts continue across City divisions, informed action must be taken to ensure a reliable</p>	<p>\$150,000</p>

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	<p>network of vehicle charging infrastructure is available.</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Action 10 – Establish then implement a city-wide Electric Vehicle Strategy (residential, commercial, and municipal) The Plan’s Low Carbon Scenario calls for 100% of new municipal small and light-duty vehicles to be electric by 2040.</p>	
<p>Organics Management – Phase 2 Feasibility Study</p> <p>Waste Management Division, Public Works</p>	<p>FEASIBILITY STUDY – MITIGATION INITIATIVE</p> <p>The detailed feasibility study for preferred Source Separated Organics (SSO) and Leaf & Yard (L&Y) waste management options will provide valuable data including the estimated project dollar cost/tonne CO2e reduction achieved for each option. These insights can guide future decisions and strategies for the management of the City’s Organic and Leaf /Yard waste streams.</p> <p>The options being evaluated in this project have estimated Biogas Generation rates of 6,900 – 9,150 m3/hr at 60% methane. The estimated renewable natural gas (RNG) production is 173 - 229 m3/hr.</p> <p>Relevant Climate Action Strategy Actions Climate Mitigation Plan: Action 17 – Technical feasibility study of expanded anaerobic digestion facilities Action 20 - Technical + financial analysis for expanded organics collection and diversion</p>	<p>\$250,000</p>
TOTAL		\$2,501,500