Environment And Climate Review

Diverting waste from landfills offers environmental benefits ranging from reducing greenhouse gas (GHG) emissions and conserving resources to protecting ecosystems and promoting a more sustainable future.[1,2] Recycling not only reduces the use of resources in making products but also other resources used in their production.

An expansion of the City's recycling capacity at the Coronation Eco Station in a manner that supports projected growth is likely to have GHG emission reduction benefits into the future. In addition, the Coronation Eco Station expansion incorporates climate resilience and adaptation measures for the site that are aligned with The City Plan and Climate Change Adaptation and Resilience Strategy.

Due to its history, the Coronation Eco Station site was evaluated for contamination risks. At this time, there is no known contamination that poses a risk to human health, environment and the property.

Specific interactions between the Coronation Eco Station Expansion plans and key environment and climate risks and opportunities are provided below.

GHG Emissions Reductions	
The project has an inherent GHG benefit by reducing landfill gas and considers reducing GHG emissions associated with the activities at the site.	An expansion of the Coronation Eco Station is likely to result in increased recycling volumes, particularly as the city grows. Diverting waste from landfills has the benefit of reducing methane emissions from landfill gas. While an increased volume of cars at the facility will lead to some increased GHGs from vehicle emissions, the amount of methane emissions avoided is likely to be much higher as methane is a potent GHG (28 times the warming potential of carbon dioxide (CO2) over a 100-year period)[3]. Traffic flow and greater operational space at the expanded eco station may reduce wait times which results in less vehicle idling time and reduced GHGs. Installation of EV charge stations on site for staff further improves overall GHG emissions reductions related to this site, as does the promotion of active

[1] Environment Canada, Municipal Solid Waste Management
[2] US EPA Recycling Basics and Benefits
[3] Government of Canada, Reducing Methane Emissions

	transportation through secure bike lockups, staff showers and private change areas. Although not required due to its smaller size, the Coronation Eco Station Expansion's design has many features aligned with C627 Climate Resilience Policy in considering embodied as well as operational carbon reduction strategies. This includes renovating rather than building a new facility, upgrades to the building envelope, upgrades to the HVAC system, energy efficient lighting, and on-site renewable energy with solar PV. On-site renewable energy generation provides the added benefit of controlling energy costs while directly reducing GHG emissions.
Climate Resilience and Adaptation	
The project considers the climate resilience aspects of the new facility in many of its design choices.	There are a number of considerations in the Coronation Eco Station expansion design that support climate resilience and adaptation. Climate change is expected to lead to more extreme weather events such as drought and flooding in the future.[4] The Coronation Eco Station expansion design reduces water consumption on site through the use of low flow fixtures and plumbing. In addition, the design incorporates drought tolerant plants and native plantings to reduce future water requirements and provide bird and pollinator habitat. On-site plants and trees have the added benefit of providing cooling on hot summer days which reduces air conditioning load. The Coronation Eco Station expansion design includes installation of features that support flood mitigation such as Low Impact Development (LID) and increased surface permeability through more naturalized areas. LID can help to reduce localized flooding by incorporating plants, engineered soils and natural processes to capture stormwater runoff close to its source.[5]
Site Contamination	
Site contamination has been investigated	Infrastructure improvements and redevelopment projects may be complicated and time intensive where environmental

[4] City of Edmonton Climate Change Adaptation and Resilience Strategy
[5] EPCOR, LID in Edmonton

and has been assessed as having no known contamination that poses a risk to human health, environment or the property.	sampling reveals soil or groundwater contamination. Provincial regulations requiring contaminant management, including possible remediation could lead to additional work before redevelopment takes place. There have been various uses of the Coronation site which did or could have introduced contaminants to the soil or groundwater. In 2019 and 2023, Environmental Site Assessments were completed to evaluate the potential contamination from the dry cleaners, storage tanks, CN rail spur line, CoE Roadway Maintenance Yard, scrap metal recycling yard, cement silos and the oil transfer station. There were no findings that indicated a concern for human health, environment and the property. In addition to the on-site soil and groundwater investigation, there are two active Risk Management Plans (RMPs) within adjacent properties. In 2024, there were no findings that indicated a concern for human health.

The Coronation Eco Station expansion project has links to several parts of The City Plan, the City's Climate Resilience Policy C627, Climate Change Adaptation and Resilience Strategy, as well as the 25-year Waste Strategy.

Alignment with The City Plan

The Coronation Eco Station expansion project is aligned with environment and climate change aspects of The City Plan in the following areas:
1.4.1.5 Provide supports for residents, organizations and businesses to reduce energy use and greenhouse gas emissions and adapt to climate change.
2.1.3.1 Require investigation of potentially contaminated sites and, where appropriate, require remediation to ensure site suitability.
2.3.1.4 Strategically expand infrastructure capacity to enable future redevelopment and intensification in alignment with priority growth areas.
2.4.2.1 Manage the impacts of climate change on City assets in the design, maintenance and retrofit of buildings and infrastructure.

Alignment with C627

<u>Climate Resilient Design and Construction of City Buildings Administrative Procedure</u>

- The City will recognize the significant resource requirements and greenhouse gas impacts of New Construction, as well as the amount and impact of the Embodied Carbon in its existing building stock.

- All New Construction shall be designed and constructed to mitigate the risk and impacts of climate change (e.g. flood resilience, reduce heat island effect, etc).

Climate Resilient Existing City Buildings Administrative Procedure

- The City will strive to continuously reduce energy use and greenhouse gas emissions in its existing Buildings in support of long-term corporate, community, provincial and national climate change targets and priorities.

Alignment with Climate Change Adaptation and Resilience Strategy

- Action 5: The City of Edmonton conducts climate change impact assessments on existing assets, ongoing maintenance programs, planned retrofits, and new infrastructure developments.
  Description: We will develop a process for Edmonton to apply a climate lens risk management approach so that we can then access federal infrastructure funding. Beyond that, this action includes asset level climate resilient assessments and improvements to support climate resilient infrastructure.
- Action 13: The City of Edmonton in partnership with EPCOR develops and implements an urban flooding resilience program.
  Description: We will work with partners to make Edmonton more resilient to urban flooding events, and integrate changes to our climate into stormwater management approaches.

Alignment with 25-year Waste Strategy

- Advancing efforts to improve the overall system effectiveness to help divert 90 per cent of waste from landfill, an activity which will reduce overall emissions as well.