



**CITY OF HAMILTON**  
**CITY MANAGER'S OFFICE**  
**Digital and Innovation Office**  
**and**  
**HEALTHY AND SAFE COMMUNITIES DEPARTMENT**  
**Public Health Services - Healthy Environments Division**  
**and**  
**PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT**  
**Economic Development Division**

<b>TO:</b>	Mayor and Members General Issues Committee
<b>COMMITTEE DATE:</b>	August 8, 2022
<b>SUBJECT/REPORT NO:</b>	Hamilton Region Decarbonization Hub (CM220013/HSC22046/PED22176) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
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<b>SUBMITTED BY:</b>  <b>SIGNATURE:</b>	Cyrus Tehrani Chief Digital Officer & Director of Innovation City Manager's Office 
<b>SUBMITTED BY:</b>  <b>SIGNATURE:</b>	Kevin McDonald Director, Healthy Environments Division Healthy and Safe Communities Department 
<b>SUBMITTED BY:</b>  <b>SIGNATURE:</b>	Norm Schleeahn Director, Economic Development Planning and Economic Development Department 

**RECOMMENDATION(S)**

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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.

- (a) That the Hamilton Region Decarbonization Hub, as outlined in Report CM220013/HSC22046/PED22176 and detailed in Appendix “A” and Appendix “B” to Report CM220013/HSC22046/PED22176 be approved;
- (b) That should Transition Accelerator be successful in acquiring funding from the other partners in the Hamilton Region Decarbonization Hub as outlined in Appendix “A” to Report CM220013/HSC22046/PED22176 that staff be authorized to contribute 7.5 percent of total 4-year funding, or up to a maximum of \$240,000 for the Hub, to be funded equally between the Economic Development Investment Reserve Account 112221, Climate Change Reserve Account 108062 and Smart City Capital Project Account 3381959501; and
- (c) That should the Transition Accelerator be successful in obtaining the funding as outlined in Appendix “A” to Report CM220013/HSC22046/PED22176, Council approve the single source procurement, pursuant to Procurement Policy #11 – Non-competitive Procurements, for technical and expert consulting services for Hamilton Regional Decarbonization Hub, at the upset limit of \$240,000 and that the City Manager be authorized to negotiate, enter into and execute a Funding Agreement / Memorandum of Understanding and any ancillary documents required to give effect there to with Transition Accelerator and any additional partners in relation to the Hamilton Region Decarbonization Hub, in a form satisfactory to the City Solicitor.

## **EXECUTIVE SUMMARY**

Attaining a net-zero society is a massive undertaking and one of the most critical challenges facing humanity in the twenty-first century. To date, most solutions are being developed sector by sector. The Hamilton Region Decarbonization Hub (the “Hub”) will bridge the gap between a sector-specific emissions reduction paradigm to a regional approach where multiple sectors and sources of emissions are reduced/eliminated. This strategic approach allows for optimal design of supply or value chains for clean energy, while accelerating economic development opportunities and driving decarbonization.

The Hamilton Region Decarbonization Hub presents an evolution sector-based reduction target concepts into a full, regional Decarbonization Hub, centred on both low carbon hydrogen and low carbon electricity and their interconnections. Transition Accelerator will work to leverage City of Hamilton funding contributions to secure higher levels of government and other private funding sources. This funding will be used to create this Decarbonization Hub that will work through The Transition Accelerator’s Blue Print for Change that includes an iterative methodology that aims to:

- Understand the systems that is being transformed, the strengths, weaknesses, technology, business model and social innovations poised to disrupt existing systems;

- Codevelop technical feasibility pathways in concert with key stakeholders and innovators drawn from industry, government, Indigenous communities, academia, and other groups which is informed by the first step;
- Analyse and prioritize pathways to assess costs, benefits, trade-offs, to create compelling and credible business cases that include major GHG emission reductions;
- Advance the journey of the most capable decarbonization pathways by informing innovation strategies, engaging partners and helping to launch consortia-led projects within a Hub formation.

The Hamilton Region Decarbonization Hub proposes that the challenge of decarbonizing, be reframed from sector-specific decarbonization into a system level change, where solutions to decarbonize local industry can also help decarbonize other sectors and emissions sources such as transportation, buildings, and other industries (i.e. Advanced Manufacturing). These sectors represent Hamilton's three largest sources of emissions with industrial, transportation and residential/commercial representing 64%, 19%, and 14% respectively from Hamilton's 2016 community energy and emissions baseline year.

This initiative falls in line with the City of Hamilton's mission to reach net-zero carbon emissions by 2050, which was borne out of the City Council's approved motion declaring a climate change emergency in 2019. In addition, it aligns across various city priorities specifically – Economic Development Action Plan, pending Advanced Manufacturing Strategy, Climate Change Action Strategy, the Community Energy and Emissions Plan technical pathway to net-zero, and the Smart City/Intelligent Community focus areas.

### **Alternatives for Consideration – Not Applicable**

### **FINANCIAL – STAFFING – LEGAL IMPLICATIONS**

**Financial:** There is a \$240,000 financial implication to be supported, equally split between Economic Development Investment Reserve Account 112221, Climate Change Reserve Account 108062 and Smart City Capital Project Account 3381959501. There are no additional budgetary requirements.

**Staffing:** There are no additional staffing implications for the city to support the Hub. Resource support will be supported by existing staffing compliment within Digital, Innovation and Strategic Partnerships, Economic Development and Healthy & Safe Communities.

**Legal:** Legally, the Hub will be accountable to the individual funding entities as prescribed in the legal documents formalizing the relationship between the

Hub and the funder. The Hub's Management/Leadership Team will discuss effective progress against Key Performance Indicators (KPIs) detailed in legal documents, agree on desired changes and that those and any changes have final sign-off authority by the City Manager.

## **HISTORICAL BACKGROUND**

The Transition Accelerator (The Accelerator), is a not-for-profit entity that was created to work with researchers, industry, government, elected officials, and Indigenous and civil society leaders to direct disruptions to solve business and social challenges, while building emissions reductions and elimination into the solutions. (Refer to <https://transitionaccelerator.ca/blueprint-for-change/>)

Using the four-step methodology, The Accelerator works with groups to create visions of what a socially and economically desirable net-zero future will look like and build out transition pathways that will enable Canada to get there. The Accelerator's role is that of an enabler, facilitator, and force multiplier that forms coalitions to take steps down these pathways and get change moving on the ground.

In working with communities across Canada, the Accelerator has further refined its methodology and improved its utility while minimizing the cost and time required. Experience that the Accelerator has gained in establishing and operationalizing Canada's first Hydrogen Hub in the Edmonton Region -- Edmonton Region Hydrogen Hub (<https://erh2.ca/>), and in working to explore the feasibility of hubs in other regions across Canada (South-eastern Alberta Calgary, Regina, Moose Jaw, Sarnia-Lambton, Quebec) has propelled the organization to be a trusted body and a voice of authority in creating these solutions.

The Accelerator proposes to launch a Hamilton Region Decarbonization Hub – a first of its kind in Canada. A pilot with a potential of national and international interest and scale, addressing key industries and applicable sectors, is at the intersection of multiple government priorities, including large-scale decarbonization, 2050 net-zero targets, and private and public investment to drive an equitable and sustainable economy in Canada.

This initiative aligns with the City of Hamilton's mission to reach net-zero carbon emissions by 2050, which was borne out of City Council's approved motion declaring a climate change emergency in 2019. The declaration directed staff to start to work on a plan to achieve net-zero carbon emissions by 2050, in line with Intergovernmental Panel on Climate Change (IPCC) recommendations on how to limit global warming to 1.5 degrees Celsius. The Draft Climate Change Action Strategy was received by Council on June 1<sup>st</sup>, 2022. Within this strategy includes the Community Energy and Emissions Plan (CEEP) which details implementation actions that will transition the entire community to net-zero carbon emissions by 2050.

Climate change action is not just an environmental opportunity, but also a social and economic opportunity. The Hub touches on many priority areas identified in the 2021-2025 Economic Development Action Plan received by Council October 20<sup>th</sup>, 2021. Specific alignment to the Draft Climate Change Action Strategy, Community Energy and Emissions Plan and Economic Development Action Plan are outlined in Appendix “B”.

Focusing on environmental and economic opportunities will accelerate Hamilton’s climate change action to reduce greenhouse gas emissions, while supporting economic vitality and global competitiveness. Supporting this innovative Hub will help to improve Hamilton’s environmental and economic resiliency, which in turn will help Hamilton continue now, and in the future, to be the best place to live, play and work.

## **POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS**

The proposed single source procurement of technical and expert consulting services to create the Hamilton Region Decarbonization Hub with Transition Accelerator is in accordance with By-law 20-205 as amended, the City’s Procurement Policy, Policy 4.11 Non-Competitive Procurement.

## **RELEVANT CONSULTATION**

Relevant consultations were held with the following parties internally and within the City of Hamilton:

- Digital, Innovation and Strategic Partnerships, City Manager’s Office
- Government Relations and Community Engagement, City Manager’s Office
- Air Quality and Climate Change, Healthy and Safe Communities
- Economic Development, Planning and Economic Development
- Legal and Risk Management, Corporate Services

### **Relevant consultations held with the following external parties include:**

- Arcelor Mittal Dofasco (AMD)
- Bay Area Climate Change Council
- Canadian Steel Producers Association (CSPA)
- Energy suppliers: Atura, Air Liquide, Mitsui, Suncor
- Federal Economic Development Agency for Southern Ontario (FedDev Ontario)
- Hamilton Anchor Institutions Leadership (HAIL)
- Hamilton Chamber of Commerce
- Hamilton Utilities Corporation & Hamilton Community Enterprise
- Ontario Ministry of Energy

- Ontario Ministry of Economic Development, Job Creation and Trade (MEDJCT)
- Ontario Ministry of the Environment, Conservation and Parks (MECP)
- McMaster University
- Mohawk College
- Natural Resources Canada (NRCAN)
- Stelco

## **ANALYSIS AND RATIONALE FOR RECOMMENDATION(S)**

The Government of Canada passed the Canadian Net-Zero Emissions Accountability Act, which has adopted by Parliament in June 2021, which requires the development of emission reduction targets to drive Canada to a net-zero society by 2050. For some sectors like personal transportation, there are already viable commercial offerings like electric passenger vehicles and existing net-zero compatible energy supplies like clean electricity grids. Governments have recognized this opportunity for early action and are implementing policy, regulation, and funding to speed the transition to zero emitting vehicles.

However, sector specific emissions reduction plans, the staple of a 30-year phase of emissions reductions, are increasingly being understood to be insufficient to drive Canada to net-zero emissions by 2050 in the world's current paradigm of emissions elimination. In response, leaders including the Federal Minister of Natural Resources have been calling for the development of new decarbonization models that recognize the interconnectivity of the value chains of sectors like heavy industry, transportation, energy and buildings.

Further, the global consumers will soon require the decarbonization of full supply chains, not simply the decarbonization of product production processes. Global businesses now understand this is a must. For example, Toyota is asking suppliers to report Carbon Dioxide (CO<sub>2</sub>) emissions on an annual basis and commit to an annual reduction of at least 2%, in addition to other environmental initiatives that focus on carbon, water, materials and biodiversity. Another example is Volvo Group, who within the partnership with SSAB (a Swedish steel company), has launched a way for a more sustainable transport and infrastructure system adopted for the future by collaboration with SSAB on development, serial production, and commercialization of the world's first vehicles made of fossil-free steel.

For companies committed to limiting their footprint and decarbonizing, it is imperative to look beyond one's own operations to identify opportunities for improvement both up and down the supply chain. By demanding better, more sustainable products, customers can be the impetus for change.

Additional and accelerated action to transition to a prosperous net-zero carbon community is an environmental, health and economic opportunity. The Hamilton Region Decarbonization Hub proposes an innovative coalition to address Hamilton's largest greenhouse gas emission sources. According to the Draft Hamilton's Climate Change Action Strategy, specifically the Community Energy and Emissions Plan (CEEP), if Hamilton continues on its 'Business-as-Planned' scenario, it is expected community-wide emissions will increase by approximately 10% from the 2016 modelled baseline.

Industrial emissions are currently Hamilton's largest greenhouse gas emission sources, representing 64%, or 5,594,389 tonnes of Carbon Dioxide Equivalent (CO<sub>2</sub>). By and large steel production represents the vast majority of these emissions. The Hamilton Region Decarbonization Hub is an innovative coalition that will bring together leading expertise and talent to address these, and other emission sources. This work will form an important part of Hamilton's Climate Action implementation strategy as it relates to the Low-Carbon Transformations within the CEEP. Although the agreements and/or memorandum of understandings still need to be created, it is intended the Hub will help to achieve the following actions:

**Low-Carbon Transformation #1: Innovating Our Industry**

- Establish a net-zero industrial working group and zero emissions industry program
- Establish and support a clean-tech accelerator

**Low-Carbon Transformation #3: Changing How We Move**

- Establish a commercial fleet decarbonization working group

**Low-Carbon Transformation #4: Revolutionizing Renewables**

- Technical analysis of green hydrogen potential and creation of a hydrogen hub

Further alignment with the draft Hamilton's Climate Action Strategy and with the approved Economic Development Action Plan, including additional potential spin-off benefits for environmental, social and economic benefits see Appendix "B" attached Report CM22013/HSC22046/PED22176.

There is potential for innovative pilot projects and research that would be co-created within the Hub including (but not limited to):

- Low-carbon/net-zero carbon solutions for Steel sector logistics and transportation;
- Reducing/eliminating emissions in industrial on-site equipment fleets;
- Integrating hydrogen as complimentary to renewable energy power generation;
- Techno-economic analysis on assessing future clean electricity supply and demand requirements for decarbonization; and

- Techno-economic analysis on what economies of scale can be achieved in a clean hydrogen and Carbon Capture System (CCS) market that benefit industrial users.

Emissions elimination has also emerged recently as a dominant global investment paradigm. Jurisdictions that can convince investors that they have a credible, capable and compelling plan to drive to net zero emissions will quickly become preferred jurisdictions for investment. The model proposed here is purpose-fit designed to create pathways to net-zero emissions for Hamilton and creating a world leading jurisdiction that is driving emission-free economic development from theory to practice.

## **ALTERNATIVES FOR CONSIDERATION**

Council may decide not to endorse the idea of Hamilton Regional Decarbonization Hub, or revise the total funding proposed from the City of Hamilton.

## **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

### **Economic Prosperity and Growth**

Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

### **Healthy and Safe Communities**

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

### **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 CM220013/HSC22046/PED22176: Proposed Hamilton Region Decarbonization Hub Funding Breakdown



Appendix “B” to Report CM220013/HSC22046/PED22176: Draft Climate Change Action Strategy, Community Energy and Emissions Plan and Economic Development Action Plan Alignment