

1. **STATUS UPDATE ON THE AIR QUALITY AND CLIMATE CHANGE  
MANAGEMENT PLAN AND THE RENEWABLE ENERGY STRATEGY  
(ENERGY EVOLUTION)**

**COMPTE RENDU SUR LE PLAN DE GESTION DE LA QUALITÉ DE L'AIR ET  
DES CHANGEMENTS CLIMATIQUES ET SUR LA STRATÉGIE D'ÉNERGIE  
RENOUVELABLE (ÉVOLUTION ÉNERGÉTIQUE)**

**COMMITTEE RECOMMENDATIONS AS AMENDED**

**That Council:**

1. **Receive the Air Quality and Climate Change Management Plan update attached as Document 1;**
2. **Receive the information on the status of the City's Renewable Energy Strategy (Energy Evolution), as described in this report, and;**
3. **Approve the establishment of a Sponsors Group, comprised of Councillors Chernushenko, Moffatt, Nussbaum, Brockington, and Hubley to assist staff in the next phase of their work on the Renewable Energy Strategy (Energy Evolution), as described in this report.**

**RECOMMANDATIONS DU COMITÉ TELLES QUE MODIFIÉES**

**Que le Conseil :**

1. **Prene connaissance du compte rendu sur le Plan de gestion de la qualité de l'air et des changements climatique, ci-joint en tant que document 1 ;**

2. **Prene connaissance de l'information portant sur l'état d'avancement de la Stratégie d'énergie renouvelable de la Ville (Évolution énergétique), décrite dans le présent rapport, et ;**
3. **Approuve la création d'un groupe de parrains, constitué des conseillers Chernushenko, Moffatt, Nussbaum, Brockington, et Hubley qui sera chargé d'aider le personne dans la prochaine étape de leur travail sur la Stratégie d'énergie renouvelable de la Ville (Évolution énergétique), comme le décrit le présent rapport.**

#### DOCUMENTATION/DOCUMENTATION

1. Acting Director's report, Planning Services, Planning, Infrastructure and Economic Development Department, dated 13 February 2017.  
(ACS2017-PIE-PS-0024)

Rapport de la Directrice par intérim, Services de la planification, Service de planification, d'Infrastructure et de Développement économique daté le 13 février 2017 (ACS2017-PIE-PS-0024)

2. Extract of draft Minutes, Environment and Climate Protection Committee, 21 February 2017.

Extrait de l'ébauche du procès-verbal, Comité de l'environnement et de la protection climatique, le 21 février 2017.

**ENVIRONMENT AND CLIMATE  
PROTECTION COMMITTEE  
REPORT 13  
8 MARCH 2017**

**3**

**COMITÉ DE L'ENVIRONNEMENT ET  
DE LA PROTECTION CLIMATIQUE  
RAPPORT 13  
LE 8 MARS 2017**

**Report to  
Rapport au:**

**Environment and Climate Protection Committee  
Comité de l'environnement et de la protection climatique  
21 February 2017 / 21 février 2017**

**and Council  
et au Conseil  
8 March 2017 / 8 mars 2017**

**Submitted on February 13, 2017  
Soumis le 13 février 2017**

**Submitted by  
Soumis par:  
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**Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE      File Number: ACS2017-PIE-PS-0024**

**SUBJECT: Status Update on the Air Quality and Climate Change Management Plan and the Renewable Energy Strategy (Energy Evolution)**

**OBJET: Compte rendu sur le plan de gestion de la qualité de l'air et des changements climatiques et sur la stratégie d'énergie renouvelable (évolution énergétique)**

### **REPORT RECOMMENDATIONS**

**That Environment and Climate Protection Committee recommend Council:**

- 1. Receive the Air Quality and Climate Change Management Plan update attached as Document 1;**
- 2. Receive the information on the status of the City's Renewable Energy Strategy (Energy Evolution), as described in this report, and;**
- 3. Approve the establishment of a Sponsors Group, comprised of Councillors Chernushenko, Moffatt, Nussbaum and Brockington, to assist staff in the next phase of their work on the Renewable Energy Strategy (Energy Evolution), as described in this report.**

### **RECOMMANDATIONS DU RAPPORT**

**Que le Comité de l'environnement et de la protection climatique recommande au Conseil :**

- 1. De prendre connaissance du compte rendu sur le Plan de gestion de la qualité de l'air et des changements climatique, ci-joint en tant que document 1 ;**
- 2. De prendre connaissance de l'information portant sur l'état d'avancement de la Stratégie d'énergie renouvelable de la Ville (Évolution énergétique), décrite dans le présent rapport, et ;**
- 3. D'approuver la création d'un groupe de parrains, constitué des conseillers Chernushenko, Moffatt, Nussbaum et Brockington, qui sera chargé d'aider le personne dans la prochaine étape de leur travail sur la Stratégie d'énergie**

**renouvelable de la Ville (Évolution énergétique), comme le décrit le présent rapport.**

## **EXECUTIVE SUMMARY**

### Assumptions and Analysis

Work is on-going, with more to be completed before Energy Evolution is brought forward to Environment and Climate Protection Committee in Q4, 2017.

### **Financial Implications**

There are no direct financial implications.

### **Public Consultation/Input**

To facilitate collaboration between the municipality and community partners, staff has worked with interested Councillors, a Sounding Board, and eight working groups.

Leveraging these bodies, the project has engaged over 100 key stakeholders representing approximately 50 organizations in Ottawa. Inputs from these stakeholders have provided a great deal of both data and engagement.

Staff has also engaged Leidos Canada to undertake specific technical analysis and identify opportunities and constraints.

Staff will continue to work with these stakeholders, the formalized Renewable Energy Strategy (Energy Evolution) Sponsors Group, if approved, and consultants to develop and assess options and opportunities (to advance energy conservation, energy efficiency and renewable energy generation) for presentation in the final assessment of the options report.

## **RÉSUMÉ**

### **Hypothèses et analyse**

Le projet est en cours et d'autres étapes devront être franchies avant qu'Évolution énergétique ne soit présentée au Comité de l'environnement et de la protection climatique, au quatrième trimestre de 2017.

### **Répercussions financières**

Aucune nouvelle répercussion financière n'est associée au présent rapport.

### **Consultation publique / commentaires**

Pour faciliter la collaboration entre la Ville et ses partenaires communautaires, le personnel a travaillé avec les conseillers intéressés, un Groupe de rétroaction et huit groupes de travail.

Grâce à ces entités, le projet a attiré plus d'une centaine d'intervenants clés représentant quelque 50 organisations d'Ottawa. Les commentaires émis par ces intervenants ont permis de recueillir de nombreuses données et d'obtenir un appui solide.

Le personnel a par ailleurs retenu les services de la firme Leidos Canada pour procéder à une analyse technique spécifique, et déterminer les possibilités et les contraintes.

Le personnel poursuivra sa collaboration avec ces intervenants, le Groupe officialisé de parrains sur la Stratégie d'énergie renouvelable de la Ville (Évolution énergétique), s'il est approuvé, et les consultants afin d'élaborer et d'évaluer des options et des possibilités (de promotion de la conservation d'énergie, du rendement énergétique et de la production d'énergie renouvelable), qui seront présentées dans le rapport final sur l'évaluation des options.

## **BACKGROUND**

The City of Ottawa has been actively engaged in doing what it can to contribute to improving air quality and reducing the greenhouse gases (GHGs) and its overall

environmental footprint since 2005, with the adoption of its first Air Quality and Climate Change Management Plan (AQCCMP). This plan included the establishment of GHG inventories, the adoption of an Energy Management and Investment Strategy (which reduced both energy costs and energy use), the construction of a power generation plant at the Trail Road Waste Facility and the purchase of hybrid buses. In 2013, Ottawa was recognized by the Federation of Canadian Municipalities (FCM) as one of, at the time, 21 municipalities to have completed all five steps in FCM's Partners for Climate Change Protection Program.

The City is directly responsible for less than 10 per cent GHG production in Ottawa, meaning that the community and other levels of government need to be actively engaged if action on climate change is to increase beyond the City's sphere of influence. In May 2014, City Council approved an update to the City's Air Quality and Climate Change Management Plan (ACS2014-COS-ESD-0011). This AQCCMP does look beyond what the City is able to do on its own, and provides a framework for how Ottawa would work with the broader community to mitigate and adapt to climate change over the next 20 years. The guiding principles of this AQCCMP are as follows.

- Everyone has a responsibility to manage energy consumption and to mitigate risks.
- Collaboration is needed amongst various levels of government, utilities, stakeholders, and the broader community to effect change.
- Municipal leadership is needed to ensure an integrated and comprehensive approach across the corporation and the community.

On July 8, 2015, City Council approved the Renewable Energy Strategy project, one of the City's Air Quality and Climate Change Management Plan (AQCCMP) actions, as a 2015-2018 Term of Council priority. At that time, this project was provided with \$100,000 of base Operating Budget funding for the years 2014 and 2015. The activities related to this strategic priority directed staff to:

Complete a baseline analysis of energy supply and demand within the City of Ottawa and assess options, in collaboration with community partners, for all such

partners to advance energy conservation, energy efficiency and renewable energy generation within their respective areas of control/influence.

In February 2016 ([ACS2016-CMR-ENV-0001](#)), City Council also approved the following:

That the City continue to work with key stakeholders and community partners to reduce community-wide [greenhouse gases (GHGs)] produced within the geographic boundary of the City of Ottawa and pursue a new long-term GHG reduction target of 80 per cent below 2012 levels by 2050.

To that end, City staff brought together a group of 100 key stakeholders representing approximately 50 organizations in Ottawa to help staff define a vision, approach and process for developing the pathway options and other opportunities for recommendation to Council for the City of Ottawa's Renewable Energy Strategy, and to act as a Sounding Board for the project.

This stakeholder group, referred to as the Sounding Board, consists of individuals from local utilities, the federal government, the development industry, institutions, academia, the non-profit sector, and the private sector at large. The Sounding Board, based on a visioning exercise, is referring to the work on the Renewable Energy Strategy as "Energy Evolution".

As the City began its work with stakeholders on the City of Ottawa's Renewable Energy Strategy (Energy Evolution), both the federal and provincial governments have announced or are proceeding with major climate change initiatives of their own. In addition, the provincial government has tabled legislation, Bill 68, which recognizes that municipalities have a direct role to play in climate change matters and which, if approved without amendment, would give municipalities the authority to pass by-laws related to climate change. Some of these federal and provincial initiatives are briefly highlighted below.

The federal government continues to support global action on climate change. As a party to the Paris Agreement, Canada has committed to a number of actions and principles, including tracking emissions and keeping them in check, promoting collaborative approaches to climate action, including carbon pricing, and investing in a



low-carbon future, including mobilizing private sector investment and innovation to accelerate the adoption of clean technology.

In November 2016, the Federal Government released their 2030 plan which allocates both infrastructure and new Climate Change Funding. In December 2016, the Pan-Canadian Framework on Clean Growth and Climate Change was adopted to grow Canada's economy while reducing emissions and building resilience to adapt to a changing climate. It is intended as a blueprint to spur innovation and create good jobs across the country. There are also actions identified to reduce emissions and adapt to climate change across all sectors—from industry, to buildings, transportation and agriculture.

The 2016 Federal budget allocates more than \$5 billion over the next five years for "green infrastructure" including electric vehicle charging stations, regional electricity grid co-operation and the development of building codes. As well, as part of the North American Climate, Energy, and Environment Partnership Action Plan, the federal government committed to purchasing 50 per cent of its electricity from "clean" energy sources by 2025 and reduce emissions by 40 per cent by 2030.

Ontario's Climate Change Action Plan was adopted in June 2016 and is a five year plan to lead the Province towards a low carbon future.

As part of this plan, in December 2016, the Ontario Government announced its intention to establish the Ontario Climate Change Solutions Deployment Corporation, which will be created to use some of the cap and trade proceeds to "significantly increase deployment of low-carbon technologies that will help households, including low-income households, and small and medium enterprises reduce their carbon footprints. The corporation's activities would focus on reducing market barriers to deployment of low-carbon technologies, including through improved access to information, incentives, and strategic use of financial de-risking tools to encourage greater private sector investment, emphasizing fuel-switching, energy storage and deep energy retrofits."

Overall, the objective of the City of Ottawa's Renewable Energy Strategy is to transition Ottawa away from use and reliance on fossil fuels and towards renewable energy sources. This objective supports Council's direction to move towards a GHG reduction

target of 80 per cent below 2012 levels by 2050 and as a result these two outcomes are mutually reinforcing. The collaboration with community partners that is occurring through the Energy Evolution Sounding Board will provide the group and City staff with further information to see what other legislative or policy instruments might be needed to allow all stakeholders and the broader community to move forward on achieving progress and to take advantage of what is occurring at the federal and provincial government level as well.

## **DISCUSSION**

The purpose of this report is to provide the annual status update for the Air Quality and Climate Change Management Plan (AQCCMP), as well as a status update on the progress to date and planned next steps for Ottawa's Renewable Energy Strategy, which staff is now calling 'Energy Evolution', based on work with community partners that form the Sounding Board. The members recommended that staff change the name Renewable Energy Strategy because the term Renewable Energy is not well understood and the strategy needed to focus on conservation and efficiency as well as renewable energy.

### **Update on the Air Quality and Climate Change Management Plan (AQCCMP)**

As noted, the City is directly responsible for less than 10 per cent GHG production in Ottawa. The City continues to work on lowering that amount through the Energy Management and Investment Strategy, converting 7,000 streetlights to LED, new controls for building environmental systems and other initiatives.

The City has committed to a total of 23 initiatives that support the AQCCMP or were identified in the 2015-2018 Strategic Plan that support the Council priorities related to reducing GHGs. Some of these projects include:

- Completion of O-Train's Confederation Line Light Rail Transit Projects
- Transportation Master Plan Phase 1 Cycling Projects (2015-2018)
- Transportation Master Plan Phase 1 Pedestrian Projects (2015-2018)
- Community Pathways and Connections Program

- Cycling Safety Improvement Program
- Winter Improvements for Cyclists
- Water Environment Strategy – Phase 2
- Renewable Energy Strategy
- Increase Forest Cover
- Urban Forest Management Strategy
- Urban Natural Area Acquisition Strategy
- Energy Management and Investment Strategy (2015 -2019)

The 2017 status update for the 23 initiatives identified in the AQCCMP is provided in Document 1.

### **Update on the Renewable Energy Strategy – Energy Evolution**

As noted, City Council has provided two specific directions with respect to the development of the Renewable Energy Strategy for this term of Council: to complete a baseline analysis of energy supply and demand within the City of Ottawa and evaluate options to advance energy conservation, energy efficiency and renewable energy generation in collaboration with community partners, and to work with key stakeholders and community partners to reduce community-wide [greenhouse gases (GHGs)] produced within the geographic boundary of the City of Ottawa and pursue a new long-term GHG reduction target of 80 per cent below 2012 levels by 2050.

Community consultation and collaboration is key to the achievement of both objectives.

### **Community and Stakeholder Engagement**

To facilitate collaboration between the municipality and community partners, staff has engaged with interested Councillors, members of the Councillor Sponsors Group established on February 24, 2016 to work on green building initiatives, a community Sounding Board, and eight working groups. See Document 2 for a list of stakeholders

helping to develop the options and Document 3 for details on Sponsor Group and community partner consultation.

A formalized Energy Evolution Sponsors Group will also be established by the Environment and Climate Protection Committee Chair Chernushenko. Chair Chernushenko, and Councillors Moffat, Nussbaum and Brockington have met to discuss Energy Evolution but it has not been a formalized Sponsors Group. The purpose of the Group is to assess ways in which the City can advance energy conservation, energy efficiency and renewable energy generation in collaboration with community partners.

The Sounding Board consists of 100 key stakeholders, representing approximately 50 organizations in Ottawa to define the vision, approach and process for developing the pathway options and opportunities and to help the City develop its Renewable Energy Strategy.

A Communication and Engagement Working Group has branded the exercise Energy Evolution and received endorsement from the Sounding Board. A Visioning Working Group was created from the Sounding Board to develop a vision and approach intended to guide the project's outcomes and implement Council's direction. It is based on the Council approved guiding principles of the AQCCMP and intended to guide the direction of the Renewable Energy Strategy project.

The Vision Statement established by the Visioning Working Group and endorsed by the Sounding Board is:

**Ottawa is a thriving city powered by clean, renewable energy.**

The achievement of this vision will require residents, businesses, organizations, and governments to make a sustained transition away from current dependence on fossil fuels by:

- a) Reducing energy use through conservation and efficiency.
- b) Increasing the supply of renewable energy through local and regional production.
- c) Prioritizing the procurement of clean, renewable energy.

The Sounding Board also established goals for Energy Evolution. They are to:

- Help to meet or exceed locally established energy reduction targets.
- Develop local renewable energy generation opportunities.
- Improve energy security.
- Advance economic development objectives.
- Reduce environmental impact.
- Complement long-term municipal land use, transportation, and infrastructure master plans.
- Create opportunities for residents to own or to invest in local energy systems and for businesses to supplement their primary income with additional revenue.
- Bring groups together to facilitate information sharing and development of joint solutions.

The vision, approach and goals have directed work done to date by the Sounding Board and Working Groups and will help focus the evaluation of options and opportunities being developed in pathway studies.

### **Baseline Analysis of Energy Consumed in Ottawa**

In the development of Ottawa's Renewable Energy Strategy (Energy Evolution), it is important to identify, understand, and build on an accurate baseline of energy supply and demand.

To meet Council's direction to create a baseline of energy supply and demand within Ottawa, Leidos Canada was contracted to complete a baseline analysis for overall energy consumption in Ottawa in 2015. The preliminary work has been completed. The energy data was analysed in three ways:

- Energy use by sector (residential; commercial, institutional, and industrial; and transportation).

- Energy use by supply type (electricity, natural gas, heating oil, propane, diesel, and gasoline).
- Energy supply by origin (locally generated or imported into Ottawa).

Key findings from the analysis were:

- Ninety-two per cent of all energy used is from three energy sources: natural gas, electricity, and gasoline. Natural gas accounted for 39 per cent of the total energy used, followed by electricity at 28 per cent and gasoline (retail sales only) at 26 per cent. The remaining 8 per cent came from a combination of propane (3 per cent), heating oil (3 per cent), and diesel (1 per cent).
- The industrial/commercial/institutional sector was the biggest user accounting for 39 per cent of total energy used, followed by the residential sector at 34 per cent and the transportation sector at 27 per cent.
- Nearly all of Ottawa's energy was generated outside of Ottawa in 2015. Only 5 per cent of Ottawa's energy was generated locally.

Of note, the energy baseline was calculated using the best data available at the time and may be revised for Q4, 2017 if better information becomes available.

### **Renewable Energy Generation Pathway Studies**

There are many pathways to achieving substantial increases in energy conservation, energy efficiency and renewable energy generation.

A series of pathway studies and technical briefings are being developed to look at how specific energy technologies may increase renewable energy generation in Ottawa and where the greatest opportunities are for conservation and efficiencies for transportation, buildings, waste management and storage.

Collectively, these pathway studies will be used in combination with the baseline analysis to complete an overall assessment of future renewable energy potential and opportunities for Ottawa. The pathway studies consider the overall potential and

constraints that are likely to reduce uptake of a technology, as well as any control or influence that the City and its community partners may have.

The final report will recommend that business cases for the most promising pathway opportunities be developed with community partners to achieve the greatest impact on achieving a transition from fossil fuels to renewable energy sources.

A list of pathway studies is being considered along with their potential for contributing to either renewable energy generation, or energy efficiency and conservation is provided in Table 1. They will be refined and details will be provided in the Q4 report.

**Table 1 – Pathways Studies (Interim Results)**

<b>Pathway Studies</b>	<b>Potential Impact</b>
<b>Renewable Energy Generation</b>	
Solar – Large Scale	Medium
Solar – Commercial Rooftop	Medium
Solar – Residential	Small / Medium
Waterpower	Small
Heat pumps – Air and ground source	Large
Biogas for renewable natural gas and electricity	Medium
Biomass for renewable fuels and heat	Small / Medium
District energy systems	Large
Wind	Small
<b>Buildings</b>	
Existing Buildings – Conservation and Efficiency	Not yet defined

<b>Pathway Studies</b>	<b>Potential Impact</b>
Fuel Substitution – Fossil Fuel to solar, heat pumps, biomass, and surplus base load power	Not yet defined
Higher Efficiency New Building Standards (e.g. Net Zero, Passive)	Not yet defined
Mid Density Buildings	Not yet defined
Urban intensification	Not yet defined
<b>Transportation</b>	Not yet defined
Fuel Switching – Renewable Fuels and Hydrogen	Not yet defined
Electric Vehicles – Fleet and Commercial	Not yet defined
Electric Vehicles – Personal Use	Not yet defined
Reduced Vehicle Use – Transit, Cycling and Walking	Not yet defined
<b>Other</b>	Not yet defined
Waste Management	Not yet defined
Storage	Not yet defined

## **2017 CATALYST PROJECTS**

On December 9, 2016, Council approved the 2017 budget and one-time funding of \$300,000 for Energy Evolution to pilot catalyst projects that will increase energy conservation, energy efficiency, and renewable energy generation in Ottawa. Funds must be spent by December 31, 2017.

These are one-time funds. As staff has delegated authority to allocate the funding for these catalyst projects, a selection process was developed to evaluate the proposals.



Ecology Ottawa was contracted to pilot an on-line application, compile applications and complete the first round of proposal review. The application was sent to Sounding Board members as many had shovel-ready projects that have the potential to demonstrate catalyst changes meeting the objectives of this project.

Proposals were submitted through an on-line application December 15, 2016 – January 6, 2017 and were assessed on a variety of criteria including:

- Potential to increase energy conservation, energy efficiency, or renewable energy generation.
- Potential to scale project up in the future.
- Measurable community benefits.
- Leveraging community assets.
- Projects could be completed by December 31, 2017.
- Focus areas (buildings, transportation, energy supply, etc.).
- Geographic location (urban, suburban, and rural).
- Amount requested.

Recommendations for successful applicants were then reviewed by staff and the Director of Planning Services. The selection process and project descriptions are provided in Document 4. The evaluation criteria and respective weighting is provided in Document 5.

Based on staff recommendations, eight catalyst projects have been approved in urban, suburban, and rural wards as listed in Table 2 below.

Table 2 – Approved Catalyst Projects

Project Name	Lead Organization	Location	Funding Allocated
OCH Tenant Engagement Project	Ottawa Community Housing	Ward 4 Ward 12 Ward 13 Ward 16	\$70,000
Urban Innovation Pods	prototypeD TEAM Inc.	City-Wide Specific locations TBD	\$22,000
Solar PV Hot Water	JAZZ Solar Solutions	City-Wide (Rural preference) Specific rural location TBD	\$57,500
Ottawa Business Energy and Efficiency Profile and Ottawa EV Days	EnviroCentre	City-Wide	\$32,500
ClimateWise Retrofit Project	Canada Green Building Council	City-Wide Specific locations TBD	\$53,000
Low Temperature Ice Flooding	City of Ottawa	City Arena	\$35,000
Surplus Electric Base Load for	Hydro Ottawa Ltd	City Wide	\$30,000

Project Name	Lead Organization	Location	Funding Allocated
Building Thermal		Specific location TBD	

As smaller scale pathway demonstration projects, collectively the catalyst projects can be used to increase energy literacy, pilot technologies and enable different approaches that have potential to lead a change towards efficient renewable energy use and conservation. Leveraging 'Catalyst Projects' to serve as pilot projects in 2017 will, staff believes, provide a foundation for subsequent projects and actions.

Successful applicants will be required to provide periodic check-ins with staff to ensure the projects are on track. Lessons learned will be completed by staff at the completion of the Catalyst Projects.

## NEXT STEPS

Staff will continue to work with the Sponsor Groups, stakeholders, internal staff and consultants to deliver the final baseline report and pathways options and report to the Environment and Climate Protection Committee in Q4 2017.

The Q4 report will include:

- Energy consumption and GHG projections for Ottawa to 2050.
- An assessment of how current and planned initiatives align with Council directed GHG emission reduction targets.
- Completed pathway study options and a recommendation that business cases for the most promising pathway opportunities be developed with community partners to achieve the greatest impact on achieving a transition from fossil fuels to renewable energy sources.
- An assessment of opportunities for Energy Evolution to inform policy, such as the Official Plan.

- Governance options and a recommendation for a governance structure to implement and monitor Energy Evolution beyond report in Q4 2017.

The work remaining to complete the Q4 report includes:

- Completing remaining pathway studies.
- Developing a tool to model different pathway scenarios.
- Assessing options and opportunities to advance energy conservation, energy efficiency and renewable energy generation in Ottawa.
- Determining a governance structure to engage community partners in advancing Energy Evolutions goals and objectives.

## **RURAL IMPLICATIONS**

There are no rural implications associated with this report.

## **CONSULTATION**

The project has engaged over 100 key stakeholders representing about 50 organizations in Ottawa. See Document 2 for the full list of stakeholders helping to develop the options and Document 3 for detail on sponsor and community partner consultation.

To date, consultation has included:

- Meetings with interested Councillors.
- Three Sounding Board Meetings.
- Sixteen Working Group Meetings.
- Six community outreach presentations (ex. to Hydro Ottawa Key Account holders, Ottawa Carleton District School Board, Development Review Sub-Committee, etc.).
- One presentation to the Environmental Stewardship Advisory Committee.

Staff will continue to work with these stakeholders to develop and assess options.

### **COMMENTS BY THE WARD COUNCILLORS**

This is a City-wide report – not applicable.

### **LEGAL IMPLICATIONS**

There are no legal impediments to the implementation of the recommendations outlined in this report.

### **RISK MANAGEMENT IMPLICATIONS**

There are no risks associated with this report.

### **ASSET MANAGEMENT IMPLICATIONS**

The information documented in this report is consistent with the City's Comprehensive Asset Management (CAM) Program ([City of Ottawa Comprehensive Asset Management Program](#)) objectives. Implementation of renewable energy, air quality and climate change management plans assists to fulfil the City's obligation to deliver quality services to the community. As business cases are developed, their analysis recommendations will demonstrate delivery of the plans in a way that balances service levels, risk, and affordability.

### **FINANCIAL IMPLICATIONS**

There are no direct financial implications.

### **ACCESSIBILITY IMPACTS**

There are no accessibility impacts associated with this report.

### **ENVIRONMENTAL IMPLICATIONS**

This work will assist to achieve our goals of sustainable environmental services.

## **TERM OF COUNCIL PRIORITIES**

This work aligns to the Sustainable Environmental Services (ES) Strategic Priority:

To provide sustainable environmental services that balance protection of our natural resources and support the planned growth of the city with the duty to ensure fiscal sustainability and meet legislative requirements in the delivery of municipal services.

## **SUPPORTING DOCUMENTATION**

Document 1 Status Update of the 2015-2018 Strategic Air Quality and Climate Change Management Plan (AQCCMP)

Document 2 Energy Evolution Stakeholder List

Document 3 Sponsor and Community Partner Consultation

Document 4 Catalyst Project Section Process and Descriptions

Document 5 Catalyst Project Evaluation

## **DISPOSITION**

Following approval by Council, staff will carry out the recommendations in this report, as appropriate.

## **Document 1 - Status Update of the 2015-2018 Strategic Air Quality and Climate Change Management Plan (AQCCMP)**

### **BACKGROUND**

In May 2014, Council approved the update to the Air Quality and Climate Change Management Plan (AQCCMP), a framework for how Ottawa will mitigate and adapt to climate change over the next 20 years ([ACS2014-COS-ESD-0011](#)). The Plan set new goals and objectives, a greenhouse gas reduction target, and performance measures.

The AQCCMP is guided by the following principles:

- Everyone has a responsibility to manage energy consumption and to mitigate risks.
- Collaboration is needed amongst various levels of government, utilities, stakeholders, and the broader community to effect change.
- Municipal leadership is needed to ensure an integrated and comprehensive approach across the corporation and the community.

In July 2015, the AQCCMP was identified as a strategic priority within the 2015-2018 City Strategic Plan, which gave budgetary approval to initiatives that will support the goals and objectives of the AQCCMP. A status update of the AQCCMP was provided to Environment and Climate Protection Committee in February 2016 ([ACS2016-COS-ESD-0005](#)), with staff being directed to provide follow-up updates in 2017 and 2018.

### **ACTIONS TO SUPPORT THE AQCCMP IN THE 2015-2018 TERM OF COUNCIL**

A total of 23 initiatives were identified that support the goals and objectives of the AQCCMP, and which were to be initiated in the 2015-2018 Term of Council. 16 of these were identified as strategic initiatives under the corporate strategic plan and represent close to \$1.8B in budgetary approval. See Table 1 below for a list of Strategic Initiatives supporting the AQCCMP.

**Table 1: 2015-2018 Term of Council Strategic Initiatives supporting the AQCCMP**

<b>SI #</b>	<b>Strategic Initiative</b>	<b>Lead Dept.</b>
4.	Completion of O-Train's Confederation Line Light Rail Transit Projects	TS
7.	Transportation Master Plan Phase 1 Cycling Projects (2015-2018)	TS
8.	Transportation Master Plan Phase 1 Pedestrian Projects (2015-2018)	TS
9.	Community Pathways and Connections Program	TS
13.	Cycling Safety Improvement Program (CSIP)	TS
14.	Winter Improvements for Cyclists	PWES
15.	Traffic, Pedestrian and Road Safety Enhancements	TS
18.	Water Environment Strategy – Phase 2	PWES
19.	Increase Forest Cover	PWES
20.	Air Quality and Climate Change Management Plan	PIED
21.	Stormwater Management (SWM) Retrofit Master Plan	PIED
22.	Renewable Energy Strategy (Energy Evolution)	PIED
23.	Urban Forest Management Plan	PIED
24.	Urban Natural Area Acquisition Strategy	PIED
26.	Waste Diversion in Parks, Buildings and Grounds Services Operations	RCFS



27.	Energy Management and Investment Strategy (2015-2019)	RCFS
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Legend: TS = Transportation Services, PWES = Public Works and Environmental Services; PIED = Planning, Infrastructure, and Economic Development; RCFS = Recreation, Culture and Facility Services

Seven additional actions are being undertaken by the corporation that support the goals and objectives of the AQCCMP, but that were not identified within the Strategic Plan (Table 2 below).

Two of these initiatives – the Municipal Green Fleet Plan and the Subwatershed Planning – are being funded using the \$2.5M Term of Council budget for the AQCCMP.

The remaining initiatives do not require additional funding.

**Table 2: Additional Actions Supporting the AQCCMP Strategic Initiative**

No.	Action	Lead Dept.
1.	Municipal Green Fleet Plan	TS
2.	Subwatershed Planning	PIED
3.	Energy Performance Brief	PIED
4.	Green Building Policy for the Construction of Corporate Buildings	PIED
5.	Electric Vehicle Charging Station Project	PIED / RCFS
6.	Hazard Mitigation Plan (Emergency Management Program)	EPS
7.	GHG Inventory Methodology Review	PIED

Legend: TS = Transportation Services; PIED = Planning, Infrastructure, and Economic Development; RCFS = Recreation, Culture and Facility Services; EPS = Emergency and Protective Services

In addition to the initiatives outlined in the 2015-2018 City Strategic Plan, staff continue to explore opportunities to implement further short term initiatives to support the AQCCMP.

## **2016 PROJECT MILESTONES**

In 2016, the City demonstrated continued leadership on the climate change file, achieving a number of project milestones that further support the AQCCMP. Highlights of achievements in 2016 include:

- Continued work on the Confederation Line, including connecting the entire length of the downtown tunnel and commencement of station construction.
- Opened the O'Connor Street bike lane section from Firth Avenue to Laurier Avenue, and the Cyrville Road cycling facility.
- Enhanced the pedestrian crossings along Queen Elizabeth Drive at two locations, the paved shoulders on MacFarlane Road, and the sidewalks on Cyrville Road.
- Improved and upgraded cycling safety at 10 locations across the city.
- 134 City buildings now have curbside black bins; 139 have curbside blue bins.
- On-going winter maintenance of the 40 km winter cycling network.
- Council approval of the Water Environment Strategy – Phase 2.
- Planted a total of 150,382 trees.
- Development of the draft Urban Forest Management Plan.
- Completed memo to Council on funding sources for acquisition of urban natural features.
- Motion passed to allow Transportation Services staff to purchase hybrid and electric vehicles in 2017 and 2018 on behalf of their clients when hybrid and

electric options exist in the market, where those vehicles meet operational needs and where there is available funding to purchase them.

- Installed anti-idling devices in the entire fleet of City ambulances.
- Launched a Vehicle Telematics trial for municipal fleet vehicles.
- Acquired nine hybrid sedan vehicles for By-law Services.
- Completed the Mud Creek Subwatershed Study.
- Reviewed and updated the Emergency Management Program's Hazard Mitigation Plan, as well as the Hazard Identification Risk Assessment.
- Implemented \$1M worth of capital projects at city facilities, including converting 7,000 streetlights to LED and introduction new controls for building environmental systems.
- Received LEED certification for three (3) city facilities.
- Lansdowne has received Silver Plan Pre-Certification (Stage 2) under the LEEDTM for Neighbourhood Development program and joins four neighbourhoods in Ontario and 15 across Canada that are leading the way in sustainability.
- Several new City buildings have been registered for LEED certification.

### **LOOKING FORWARD TO 2017/2018**

Looking ahead, the City will continue to demonstrate climate change leadership, with the following project achievements anticipated to be completed in 2017 and 2018.

- Installation of electric vehicle charging stations on five City sites in partnership with Electric Circuit in Q1 2017.
- Completion of the Energy Performance Brief in Q2 2017.
- Completion of the Urban Forest Management Plan in Q2 2017.

- Completion of Energy Evolution in Q4 2017.
- Construction of the Western Rideau pathway, the Mackenzie Avenue bike track, and the Shefford Road pathway.
- Construction of new sidewalks on Bridgestone Drive, Cyrville Road, Gardenway Drive, and St. Laurent Boulevard.
- Construction of Campeau Drive and Pedestrian Safety enhancement projects, and the Trans Orleans Pathway.
- Continued winter maintenance of the 40 km cycling network, as well as continuation of cycling safety improvements across the city.
- Continued development of the Cycling Network Patrol Program.
- Completion of the Jock River Reach 2 Subwatershed Study, and initiate Beckett's Creek Subwatershed Study.
- Development of a corporate electric vehicle charging station policy for City property.
- Fleet Services to have an active membership in Electric Mobility Canada to remain current with industry developments and technological advancements.
- Launch a pilot project for ambient temperature rink flooding.
- Pilot a device that will determine when to use an electric boiler instead of a natural gas boiler to reduce GHG emissions and cost.
- Continued conversion of streetlights to LED.
- On-going review and update of Emergency Management Program's Hazard Mitigation Plan, as well as the Hazard Identification Risk Assessment.
- On-going construction of the Confederation Line, with completion in 2018.
- Ongoing LEED certification of City facilities.

- Certification of Lansdowne for LEED Neighbourhood Development (ND).

### **GLOBAL COVENANT OF MAYORS FOR CLIMATE AND ENERGY AND ENVIROCENTRE'S CARBON 613 PROGRAM**

In addition to corporate initiatives in 2016, the City also demonstrated leadership in the community by joining two climate change related initiatives: the Global Covenant of Mayors for Climate and Energy and Envirocentre's Carbon 613 program.

#### Global Covenant of Mayors for Climate and Energy

In April 2016, Mayor Jim Watson formally committed the City to join the Global Covenant of Mayors for Climate and Energy (formerly called the Compact of Mayors). The Global Covenant is described as "the world's largest coalition of mayors promoting and supporting voluntary action to combat climate change and move to a low-carbon economy". Cities participating in the initiative have up to three years to meet a series of requirements to fully comply, including setting a greenhouse gas reduction target, tracking progress in meeting said target, and preparing for the impacts of climate change. The City is undertaking to fulfill all of these requirements.

#### Carbon 613

In June 2016, the City joined EnviroCentre's Carbon 613 program. Carbon 613 is described as a "made-in-Ottawa, target-based sustainability program for businesses". The City joined as both a program catalyser and a program member. As part of its membership, the City commits to setting a GHG reduction target, and to tracking and reporting out on the corporation's annual emissions.

## **Document 2 – Energy Evolution Stakeholder List**

To date, Energy Evolution has engaged over 100 individuals representing about 50 organizations in Ottawa:

- Aspen Solar Management
- Building Owners & Managers Assoc (BOMA)
- Bullfrog Power
- Canada Green Building Council (CaGBC)
- Canada Science and Technology Museum Corporation
- Canadian Association for Renewable Energies
- Carbon Impact Consultants
- Carleton University
- City of Ottawa
- Clean Air Partnership
- Clean Energy Canada
- Domicile Development Inc.
- Eastern Ontario Landlords Organization
- Ecology Ottawa
- Enbridge Gas
- Energy Ottawa
- EnviroCentre
- Federation of Canadian Municipalities

- Government of Canada Public Works/Public Services and Procurement Canada (PSPC)
- Greater Ottawa Home Builders Association (GOHBA)
- Healthy Transportation Coalition
- Hydro One
- Hydro Ottawa
- IESO
- Invest Ottawa
- J. Michael Wiggin Consulting
- Leidos
- Lumos Energy
- Minto
- Morrison Hershfield (CaGBC)
- National Capital Commission (NCC)
- National Research Council (NRC)
- Natural Resources Canada (NRCan)
- Ottawa Centre EcoDistrict
- Ottawa Chamber of Commerce
- Ottawa Community Housing (OCH)
- Ottawa Renewable Energy Co-op (OREC)
- Ottawa-Carleton District School Board

- Public Works (SSC/SPC)
- QUEST
- Regional Group
- Remote Energy Security Technologies Collaborative Inc (RESTCo)
- RND Construction
- Smarter Shift
- Sustainable Eastern Ontario
- Taggart (Tamarack)
- Transport Canada
- University of Ottawa
- VRTUCAR
- Windmill Developments



### **Document 3 – Sponsor and Community Partner Consultation**

Consultation has occurred with:

#### **1) Councilor Sponsors Group**

A Councillor Building Sponsors Group has been formally established to support the development of Energy Evolution.

At the Council meeting on February 24, 2016, staff was directed to work with a Sponsors Group consisting of the Chairs of the Environment (Councillor Chernushenko), Transportation (Councillor Egli), and Planning Committees (Councillor Harder) as well the Transit Commission (Councillor Blais) to assess ways in which the City can help improve the energy performance of new and existing residential and commercial buildings.

This Sponsors Group has participated in Sounding Board meetings and has been invited to participate in relevant Working Group meetings.

A formalized Renewable Energy Strategy (RES) Sponsors Group will also be established by Councillor Chernushenko. Councillors Chernushenko, Moffat, Nussbaum and Brockington have met to discuss Energy Evolution, but it has not been a formalized Sponsors Group. The purpose of the RES Sponsors Group is to assess ways in which the City can advance energy conservation, energy efficiency and renewable energy generation in collaboration with community partners.

#### **2) Sounding Board**

To facilitate collaboration between various levels of government, City departments, utilities, stakeholders, and the broader community, a Sounding Board was established to:

- Provide direction, ideas and resources to the development of the Plan
- Build interest within the community
- Participate in the Sounding Board sessions
- Participate in working group meetings, as needed

- Provide timely feedback on draft documents and recommendations

The Sounding Board is comprised of 100 key stakeholders, representing approximately 50 organizations in Ottawa and includes representatives from utilities, the Federal Government, development industry, institutions, academia, non profit sector, and the private sector. See Document 2 for a list of stakeholders helping to assess options.

Initially, staff identified 25 key stakeholders to participate in a scoping session to help determine the direction of the Council motion. Throughout the process, Sounding Board members have been asked and encouraged to identify other stakeholders and invite them to the process.

The Sounding Board has met three times over the project and has also responded to three surveys and provided input on the Visioning Working Group's recommendations for the name, vision, and communication materials including a logo and info graphic. The Working Group met three times and proposed a draft vision to the Sounding Board through an online survey.

### **3) Working Groups**

The following eight Working Groups have been established to facilitate discussion on specific aspects of the Plan:

- Vision
- Communication and Engagement
- New Buildings
- Existing Buildings
- Transportation
- Energy Supply and Distribution
- Funding
- Governance

Working Group Members are expected to contribute actively to the Working Groups by participating in meetings, contributing ideas and resources and providing timely feedback on draft documents and recommendations. Members may also contribute by building interest within the community, carrying out research, conducting pilots or identifying opportunities and supporting implementation under their influence or control.

With the exception of the Governance Working Group, all working groups have met one-three times. The Governance Working Group will meet once options have been developed.

#### **4) Community Presentations**

Staff has delivered six community presentations to:

- Hydro Ottawa's key account holders.
- Environmental Stewardship Advisory Committee.
- The Ottawa-Carleton District School Board Environment Committee.
- The City of Ottawa's Development Review sub-committee.
- Glebe Community Association.
- Capital Ward Solar Boat Cruise.

**Document 4 – Catalyst Project Selection Process And Descriptions**

The selection process included:

- Review of applications by three Ecology Ottawa panelists and the City of Ottawa Energy Evolution project manager.
- Review of 15 short-listed applications by the Energy Evolution project team.
- Follow up questions with 10 applicants about their proposed projects.
- Approval of eight submissions by staff and the Director of Planning Services.

Below is additional detail on the successful project applications. Evaluation criteria is included in Document 5.

Number	Project Name	Lead Organization	Location	Description	Recommended Funding
1	OCH Tenant Engagement Project	Ottawa Community Housing	Ward 4 Ward 12 Ward 13 Ward 16	This project will combine technological solutions with tenant engagement reduce energy consumption use in buildings that are bulk metered. OCH will install energy savings equipment such as LED lights and programmable thermostats in units, a real time energy display and monitoring system in the lobby of bulk metered buildings, and carry out a tenant engagement program about how to use the new technology in the building.	\$70,000
2	Urban Innovation Pods	prototypeD TEAM Inc.	City-Wide Specific locations TBD	prototypeD will design and construct two solar powered, off the electrical grid “innovation pods” that can be used to demonstrate innovative products and services. Future applications may explore possibilities for sustainable infill (such as Coach Houses) and affordable housing. The pods will be prefabricated, custom designed, locally built (within the Ottawa valley).	\$22,000
3	Solar PV Hot Water	JAZZ Solar Solutions	City-Wide (rural preference) Specific rural location TBD	JAZZ Solar Solutions will provide and install a Solar Photovoltaic (PV) system to heat Domestic Hot Water (DHW). As a technology, Solar PV appears to be overtaking from traditional solar thermal technology because of the ongoing large cost reductions in Solar PV technology. These cost reductions are increasing the scope for Solar PV that may eventually see it competitive with even the lowest cost fossil fuels.	\$57,500
4	Ottawa Business Energy	EnviroCentre	City-Wide	The Business Energy and Emissions Profile (BEEP) will provide a visualization and digital	\$32,500

	and Efficiency Profile and Ottawa EV Days		Ward 1 Ward 3 Ward 17	dashboard of business community GHG emissions by sector across the city and identify the areas with the greatest potential for achieving reductions.  Ottawa Electric Vehicle (EV) Days will provide drivers with opportunities to test drive an EV, talk to EV owners and learn about financial incentives provided by the Province of Ontario. In 2017, EV Days will be held in three locations: Barrhaven, Orleans, and Sparks Street.	
5	ClimateWise Retrofit Project	Canada Green Building Council	City-Wide  Specific locations TBD	This project is designed catalyze comprehensive energy retrofits by helping 5 building owners complete energy audits, explore how to make the retrofit financially viable, support in the implementation of the retrofits. The project will also support the retrofit economy through the creation of an Existing Building Task Force managed by the CaGBC Ottawa Chapter.	\$53,000
6	Low Temperature Ice Flooding	City of Ottawa	City Arena	This project will pilot the use of technology to flood ice surfaces with ambient temperature water, eliminating the use of natural gas and reducing the use of electricity.	\$35,000
7	Surplus Electric Baseload for Building Thermal	Hydro Ottawa Ltd	City Wide  Specific location TBD	This project will develop and pilot a functional device that will decide when to use an electric boiler instead of a natural gas boiler to GHG emissions and cost. The project would be implemented at an existing City facility that has both types of boilers.	\$30,000
<b>Total</b>					<b>\$300,000</b>

**Document 5 – Catalyst Project Evaluation**

Evaluation Criteria	Points
Does the project support efforts to make a sustained transition away from our dependence on fossil fuels by reducing energy use, increasing renewable energy supply or prioritizing the procurement of clean, renewable energy?	1-10
Is the project either an inspiring demonstration project that, if successful, could be scaled up in the future, or one that lays the foundation for future scalable initiatives?	1-10
Does the project present a clear benefit to the community? Are the community benefits measurable?	1-10
Does the project leave Ottawa stakeholders or communities better informed about the clean energy transition and better positioned to engage in activities that support the transition?	1-5
Does the project serve to leverage existing community resources in a way that will further add to the overall level of investment dedicated to advancing the goals of the Energy Evolution?	1-5
Is there an evaluation component built into the project design that will allow the City and other stakeholders to assess project impacts and how the project might be scaled up in the future?	1-5
Can the project be implemented in a timely way?	1-5
Does the project present a plausible argument for how it will be sustained after City funding is completed?	1-3

<p>Do the recommended projects represent:</p> <ul style="list-style-type: none"><li>• Multiple focus areas (buildings, transportation, etc.)</li><li>• Diverse geographic locations (urban, suburban, and rural)</li><li>• A range of project funding requests (large, medium, small)</li></ul>	<p>Other considerations</p>
	<p><b>Max 53</b></p>