

Final

Appendix D –Environmental Analysis

Ottawa Centre EcoDistrict

Ottawa, Canada

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www.ottawaecodistrict.org

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Highlights and Conclusions

Highlights

The highlights of the data collected are as follows. References are included within the report.

- The City and the National Capital Commission (NCC) have a strong focus on preserving and enhancing green space in the downtown core.
- Stormwater management is a priority for the City and a key component of the Ottawa River Action Plan.
- Commercial and residential consumption of electricity in the OCED has declined slightly from 2011 to 2013.
- From 2008 to 2012 GHG emissions in City of Ottawa facilities fell by approximately 30 percent and community emissions fell by 24 percent largely due to the provincial phase out of coal as a fuel for electricity generation.
- The greatest GHG challenge in the transportation sector is the continued reliance on single occupant vehicle travel.
- Since 1986 the number of cars arriving downtown in the morning peak period has decreased while the number of people arriving downtown has increased. As a result, the City of Ottawa has decided that future planning of the downtown transportation system will focus on improving the capacity and quality of service for people, rather than private vehicles.
- Ottawa enjoys a higher level of transit ridership than any other Canadian city of a similar size and has a goal to increase the modal share of public transit from 22 percent in 2011 to 26 percent in 2031.
- The City of Ottawa has over 1,400 km of cycling pathways with plans to expand to over 2,500 by 2031. The NCC has over 800 km of multi-use pathways.
- Modal share targets for cycling from 2011 to 2031 are as follows: within the Greenbelt to increase from four to eight percent; and within the Inner Area to increase from eight to 12 percent.
- Walking in the core has plateaued. It was 51 percent in 2011 and the City has a goal of increasing it to 52 percent by 2031.
- City data indicates that only 16 percent of waste from multi-residential buildings is recycled or composted. The OCED has 25 buildings of this type within its borders.

- Increasing on-street waste diversion and diversion within the Industrial, Commercial and Institutional (IC&I) sectors are City waste management objectives.

Conclusions

This environmental analysis points to the following opportunities for the OCED.

- C1. Work with the City and the NCC to enhance natural spaces, improve access to waterways and create pocket parks (both permanent and temporary or 'pop-up' parks).
- C2. Work with the Ward Councillor to suggest innovative approaches to park creation that qualify for cash-in-lieu of parking funding.
- C3. Work with the NCC and others (such as the Ottawa Riverkeeper) to support commitments to protect and enhance the Rideau Canal and the Ottawa River.
- C4. Work with private sector landlords and other stakeholders to look for opportunities to better manage stormwater before it enters either the sewer system or local waterbodies. Pervious pavement, bio swales and other options may be considered.
- C5. Promote steps being taken by the City and others to manage stormwater. Public awareness can enhance buy-in and where appropriate assist with behaviour change.
- C6. Continue to play a 'dot-connector' role by being a catalyst for collaboration between various levels of government, utilities, stakeholders, and the broader community on GHG reduction and all other environmental issues.
- C7. Promote electric vehicles as a low carbon mode of personal transportation. If you have to drive a car, make it an EV.
- C8. Take action that will make it easier and safer to cycle as this will help to increase the modal share of cycling.
- C9. Work with the City and its partners to increase waste diversion in multi-residential buildings.

C10. Look for opportunities to improve waste diversion in on-street receptacles and by working with small businesses that do not have access to recycling or composting.

Findings

Introduction

The purpose of this analysis is to assemble a baseline of key environmental indicators for the Ottawa Centre EcoDistrict (OCED) from existing sources and to draw conclusions from these indicators.

The data will be reviewed and updated on a regular basis as data sources are updated. The conclusions will be adjusted based on changes to the data.

The City of Ottawa refers to the Central Area in some studies including the Employment Study and the Inner Area in others including the Transportation and Cycling Master Plans. **Exhibit 1** is a map showing the outline of the OCED within the Central Area. Exhibit 2 is a map showing the outline of the OCED within the Inner Area.

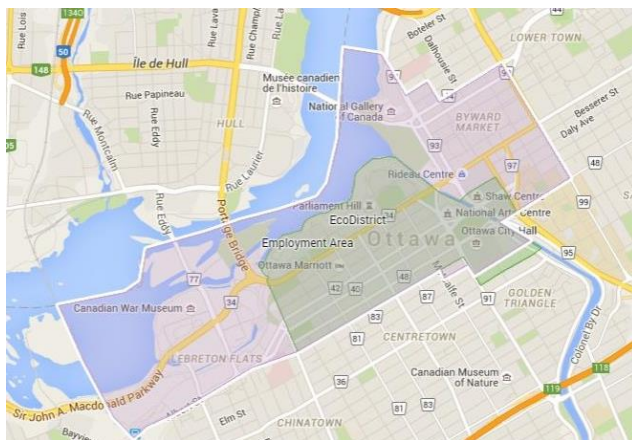


Exhibit 1: Map of OCED within Central Area

The EcoDistrict is the green area and the Central Area is marked in pink.

Greenspace

During the community engagement process many participants indicated that they value greenspace. Three of the top 10 suggestions focused on greenspace.

- Improve the quality of green space downtown including clean parks that become people places
- Connect urban gardeners with downtown gardens
- Increase the number of native trees in the EcoDistrict

Greenspace Master Plan

The City of Ottawa proposes two strategies to connect every home in Ottawa to a larger network of greenspace that spans the urban area:

- Implement key sections of the recreational pathway system identified in the Pathway Network for Canada's Capital Region; and
- Prepare a Green Street Strategy to explore ways that Green Streets could be used to provide connections within the Urban Greenspace Network and contribute to the greening of municipal infrastructure.¹

In its Greenspace Master Plan, the City proposes a vision that aligns well with the goals of the OCED.

Council's vision for greenspace is broad and takes in a continuum of lands, ranging from waterways and remnant woodlands to manicured downtown pocket parks. It also includes lands that are not usually considered as greenspace, such as stormwater management ponds and other infrastructure lands, plus the landscaped lands around major institutions and business parks.²

The emphasis on pocket parks and waterways is ideally suited to the downtown core. With the Rideau Canal and the Ottawa River as our two most significant greenspace features, these areas create some of the most dynamic greenspace in the City. However creating new greenspace is difficult given the value of land, the amount of transportation infrastructure and the density of buildings. Therefore any kind of pocket park approach needs to be considered.

¹ City of Ottawa, [Greenspace Master Plan Strategies For Ottawa's Urban Greenspaces](#), 2006, pg. 7.

² [Same as above](#), pg. 6.

Cash-in-lieu of Parkland Funds Policy

Within the Planning Act at the City of Ottawa, there are provisions that allow developers to pay if they cannot provide park space, which is otherwise known as 'cash-in-lieu'. The money collected through cash-in-lieu is used to create parklands within the City according to the Cash-in-lieu of Parkland Funds Policy.

The policy indicates that 60 percent of funds collect in a Ward are to be spent within that Ward. The OCED is entirely within Somerset Ward which tends to receive the highest amount of cash-in-lieu contributions.

As a result there may be opportunities to work with the City to use some of these funds to develop pocket parks within the EcoDistrict.

Canada's Capital Core Area Sector Plan

The Government of Canada (GOC) and the National Capital Commission (NCC) both have a significant role to play in reducing the ecological footprint of operations and in improving the quality of greenspace in the OCED. In 2005 the NCC developed Canada's Capital Core Area Sector Plan (Core Area Plan) which covers a number of areas including greenspace. It indicates that the principle planning constructs are "sustainable development, the healthy communities movement and smart growth."³

In relation to open spaces, parks and public places, a priority of the NCC is to "imagine, plan and manage these spaces and places in a sustainable fashion, by seeking to preserve, improve and use these resources in an optimum and responsible way."⁴ This priority is aligned with the OCED focus on improving the quality of green space downtown.

There are two particular opportunities identified by the NCC that relate to waterways.

Rideau Canal - Enhance the role of the Canal as one of the key structuring physical features of the National Capital Region, redefine the Canal area's open spaces and structures as urban waterfront parks oriented to the Canal, and work with Parks Canada and the City of Ottawa to establish strong pedestrian linkages along and over the Canal and between the Canal and neighbouring streets and districts.

³ National Capital Commission, [Canada's Capital Core Area Sector Plan](#), 2005, pg. 11.

⁴ [Same as above](#), pg. 13.

Ottawa River - Protect and enhance the River as a witness of our cultural and natural heritage and protector of natural landscapes and features, as a guarantor of our quality of life, an economic development agent, and point of contact between places, communities and people.⁵

The Core Area Plan also focuses on maintaining and expanding parks and open spaces that serve a wide variety of purposes from environmental preservation to health and wellness.

Stormwater Management

Ottawa has a large and complex physical infrastructure system dedicated to stormwater management. The City's Wet Weather Infrastructure Master Plan promotes updating of the Sewer Design Guidelines to ensure that designs are resilient to climate change. Each component may be impacted by climate change and offers opportunities for stormwater management adaptation measures.⁶

With the increased occurrence of storm events, including heavy rains, conveyance systems are very important. In the Central Area there is concern over the combined sewer system which is currently designed to release sewage directly into the Ottawa River if the system becomes overloaded.

Another issue is stormwater flowing directly into streams and rivers of all sizes including submerged and seasonally submerged outfalls, and then into the Ottawa River and beyond. Stormwater can pick up contaminants like motor oil and carry them into the waterbodies if water is flowing too fast to be contained by the conveyance system.

The City of Ottawa is working on stormwater management adaption with an objective of providing cost effective opportunities to implement stormwater management measures in Ottawa. Infrastructure rehabilitation programs are great opportunities to integrate long-term adaption programs into the rebuilding efforts within the costs envelope provided to infrastructure renewal.⁷

⁵ [Same as above](#), pg. 14

⁶ City of Ottawa, [Adaptive Approaches in Stormwater Management](#), 2013, pg. 22

⁷ [Same as above](#), pg. 44.

Energy and Climate Change

Electricity Consumption in the OCED

A Technical Working Group made up of OCED Board members and former Steering Committee members formed in 2014 with the goal of determining the baseline for energy consumption for the OCED. The data source for electricity consumption was Hydro Ottawa which was able to collate the energy data using postal code information and to divide it into residential and commercial consumption. The breakdown of customer accounts can be found in **Exhibit 3** and the breakdown of energy consumption data from the years 2011 to 2013 can be found in **Exhibit 4**.

Exhibit 3: Table – Total Electricity Customers in OCED

| | Customers | % of total |
|------------------------------|-----------|------------|
| Residential customers | 4545 | 86% |
| Commercial customers | 755 | 14% |
| Total customers | 5300 | 100% |

Exhibit 4: Table – Total Electricity Consumption in OCED

| | 2011 | 2012 | 2013 | % of total |
|---|---------|---------|---------|------------|
| Residential yearly MWh consumption | 14,756 | 14,618 | 14,278 | 2% |
| Commercial yearly MWh consumption | 697,735 | 682,776 | 665,701 | 98% |
| Total yearly MWh consumption | 712,491 | 697,395 | 679,979 | 100% |

There are three very important observations.

- Residential customers are 86 percent of the market but they account for only 2 percent of consumption.
- Commercial customers are only 14 percent of the market but they account for 98 percent of consumption.
- Commercial consumption declined from 2011 to 2013 which is an overall reduction of 5 percent or 32,000 MWh.

The data collection exercise was not easy and does not provide individual building data. If possible, the OCED will work with its partners to calculate consumption data each year and will work with the utilities to try to better understand what accounts for the changes in consumption year over year.

A more robust analysis that included time of use and source of electricity would be required to estimate the reductions in GHGs.

Climate Protection

In 2014 the City of Ottawa released its Air Quality and Climate Change Management Plan. The following observations and commitments are directly relevant to the OCED.

- The OCED has committed to helping the City of Ottawa achieve its target of a 20 percent reduction per capita in greenhouse gas (GHG) emissions by 2024.⁸
- “Between 2004 and 2012, Ottawa grew by approximately 86,000 people, yet Hydro Ottawa sales remained relatively static at around 7,500 Giga Watt hours (GWh) per year. In short, per capita consumption of electricity is declining.”⁹
- “Collaboration is needed amongst various levels of government, utilities, stakeholders, and the broader community to effect change.”¹⁰
- “Most transactions and energy use in Ottawa fall outside the direct and indirect control of the City. However, the municipality is well positioned to educate, promote, incent, and facilitate changes in community behaviours.”¹¹
- From 2008 to 2012 emissions in City of Ottawa facilities fell by approximately 30 percent and community emissions fell by 24 percent largely due to the provincial phase out of coal as a fuel for electricity generation.¹²
- “The greatest challenge facing Ottawa’s transportation sector is the ... continued reliance on the automobile as the preferred mode of travel.”¹³

⁸ City of Ottawa, [Air Quality and Climate Change Management Plan Main Report](#), 2014, p. 30.

⁹ [Same as above](#), pg. 6.

¹⁰ [Same as above](#), pg. 7.

¹¹ [Same as above](#), pg. 8.

¹² [Same as above](#), pg. 24-25.

¹³ [Same as above](#), pg. 25.

- The document also points to opportunities for the City to increase its use of electric vehicles for fleet purposes. In addition, to help reduce community emissions, the City has an opportunity to install EV charging stations at City facilities and in downtown City parking lots.

Three of the City's top five priorities¹⁴ for future action involve working with partners to:

- “Provide Ottawa residents with the information and tools they need to make informed decisions”;
- “Give assistance to those who want to make their homes, businesses, and investment properties more energy efficient and resilient”; and
- “Provide direction and certainty to the design and construction industry for the creation of sustainable urban spaces and structures.”

The OCED can support the City as it monitors progress against the following performance measurement indicators¹⁵.

- “Reduce per capita electricity use by 6% by 2020;”
- “Achieve the modal split targets contained in the Transportation Master Plan;” and
- “Achieve the waste generation and waste diversion targets contained in Ottawa’s Waste Plan.”

Transportation

Transportation benefits are included in the Economic Analysis but modal shifts to active transportation provide environmental and health benefits. Public transportation provides environmental benefits and often includes health benefits when combined with walking or cycling to the point of departure.

Walking

Walking is a zero emission form of travel that is practical up to 3 km from the final destination. The modal share of walking in the Inner Area of Ottawa was 51 percent in

¹⁴ [Same as above](#), pg. 31.

¹⁵ [Same as above](#), pg. 32.

2011 and the City has a goal of increasing it to 52 percent by 2031.¹⁶ It has the following environmental benefits.

- Where walking replaces the use of a motor vehicle, there is a reduction in air pollution, greenhouse gas emissions, and traffic noise. In addition, walking does not have the environmentally disruptive effects of raising dust and ground vibrations.¹⁷

Cycling

Cycling is a zero emission form of travel that is practical up to 10 km from the final destination. In Ottawa:

- “the target for city-wide cycling mode share in 2031 (i.e. the proportion of all morning peak period trips made by bicycle) [is] eight percent inside the Greenbelt and five percent city-wide.”¹⁸
- The modal share for cycling in the Inner Area is eight percent and the target is 12 percent for 2031.¹⁹

The environmental benefits of cycling are similar to as noted above for walking.

Electric Vehicles

OCED research shows that increased use of electric vehicles in place of internal combustion engine vehicles will have a positive impact on the environment. Specific facts include:

- In Canada, 28% of GHG emissions are produced from transportation and the use of cars is one of the biggest contributors.²⁰
- EVs produce 60 to 80 per cent fewer greenhouse gas emissions over their life cycle than conventional cars.²¹

¹⁶ City of Ottawa, [Ottawa Pedestrian Plan 2013](#), pg. ES2.

¹⁷ [Same as above](#), pg. 9.

¹⁸ City of Ottawa, [Ottawa Cycling Plan 2013](#), pg. 54.

¹⁹ [Same as above](#), pg. ESii.

²⁰ World Wildlife Fund, [Transportation rEVolution: Electric Vehicle Status Update – 2014](#), pg. 3.

²¹ [Same as above](#), pg. 12.

- The efficiency of electric motors compared to traditional gas makes them more environmentally friendly even if the charge power source is from fossil fuel.²²

Public Transportation

“Ottawa enjoys a higher level of transit ridership than any other Canadian city of a similar size. OC Transpo’s share of travel in the morning peak period was just over 22% in 2011, and this Plan aims to increase that mode share to 26% by 2031.”²³ With the coming of Phase 1 of the light rail transit (LRT) in 2018, OC Transpo will have a new, exciting and efficient way to get even more passengers to and from the OCED.

Waste

Currently apartments, condos and multi-units recycle only 16% of their waste.²⁴ The City of Ottawa recently launched its Blue Bag program for apartments and multi-unit residences. Property managers can make arrangements with the City and its service provider to obtain the new bags as well as support material to allow them to increase waste diversion.²⁵

The City of Ottawa also has programs to collect waste in public spaces using specific receptacles in public right of ways. Two recent pilot projects have been launched on Laurier Avenue West and Elgin Street where new on-street recycling bins have been installed. If successful, it is conceivable that it will be extended to other parts of Ottawa.

Waste management and recycling services for businesses and organizations are contracted through private companies and regulated by the Province of Ontario. Most businesses and organizations have to comply with Ontario's 3Rs Regulations and have waste diversion programs in place.

Small businesses and organizations have the option of requesting services from the City through its Yellow Bag Program if they generate 16 bags or less of garbage every two weeks. If located in a building with multiple business tenants then they must all be participants and together they cannot exceed the 16 bag limit.²⁶

²² [Same as above.](#)

²³ City of Ottawa, [Transportation Master Plan 2013](#), pg. 53

²⁴ City of Ottawa, [Superintendents Handbook](#), 2015.

²⁵ City of Ottawa, [Property Owners/Property Managers/Superintendents](#), 2015.

²⁶ City of Ottawa, [Yellow Bag Program](#), 2015.

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