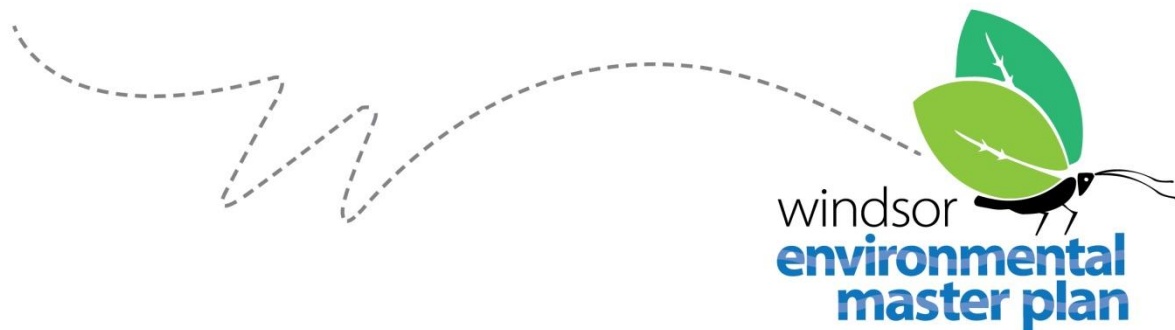


## ENVIRONMENTAL MASTER PLAN



**2017**



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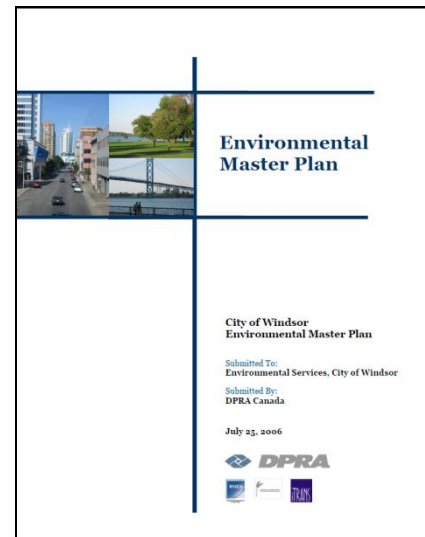
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## INTRODUCTION AND BACKGROUND

The Environmental Master Plan (EMP) was first developed in 2006 to provide a guidance document for the City of Windsor to address environmental issues. A simple vision led to a set of goals that formed the foundation for municipal action to improve the City's environment. The Plan was unanimously approved at Windsor City Council on July 24<sup>th</sup> 2006. Through this Plan, we aspire to make Windsor cleaner, greener, healthier, and more sustainable. Most of the actions refer to the Corporation of the City of Windsor's activities and operations, underpinning its intent of leading residents, industry, and stakeholders by example. The EMP reflects the city's commitment to enhancing environmental performance and facilitating social well-being and economic prosperity. This update is the renewal of that perpetual commitment.

Designed for local leadership, the EMP utilises the influence and outreach of the municipality, and comprises community feedback to meet its goal of prioritizing community interests. The EMP incorporates valued public opinions, acquired through actively sought public engagement and participation. City staff, agencies, boards, and the general public were consulted during the development of this update. An increase in community awareness was successfully reached through active community engagement throughout the development process. This plan was developed in-house by the Environment Sustainability Coordinator and a summer student. A decade of implementation and lessons learned forged the path for the development of a more relevant and effective updated Environmental Master Plan. As suggested in the previous EMP, progress of environmental performance has been regularly tracked and documented in multiple "Reports on the State of our Environment".



A key component of the updated plan is the consideration of climate change and its impacts on the residents of Windsor. Impacts such as more extreme and unpredictable weather conditions and an increase in vector-borne diseases place the health and well-being of the community in jeopardy. Recognizing the changing climate and the consequent changes in social, economic, and environmental context is key to coping with and conquering the challenges posed by this adverse and undesirable phenomenon. The EMP is implemented alongside many other City of Windsor Plans including our Climate Change Adaptation Plan and Community Energy Plan.

Considering only environmental aspects in this Environmental Master Plan update would prohibit achieving overall community benefit. Instead, a comprehensive and integrated approach is essential to recognize the undeniable interconnectedness and interdependence of the environment, economy, and society. Therefore, the Plan does not stand on a pier of environmental performance alone, but also incorporates economic and social aspects which are crucial to the overall health and

quality of life of Windsorites. Continuous research, civic engagement, and community involvement will result in policies, strategies and actions that promote healthy, safe and sustainable communities within the city. The Plan models the concept of treating sustainability as a way of life rather than an environmental issue. The actions outlined depict what the city is considering over the short and long term to improve the City's environment. However, just like in the planning and development process, cooperation of our residents is imperative to the success and progress of this ongoing initiative. After all, it is the collective actions of a community that bring about desired change.



*“Those communities that manage to prosper in this century will be those that plan for change and make sustainable choices; not only to adapt to changing circumstances but also to seize new opportunities as they arise.”*

*From A Plan for Sustainability and Resilience in Canada's Capital Region*

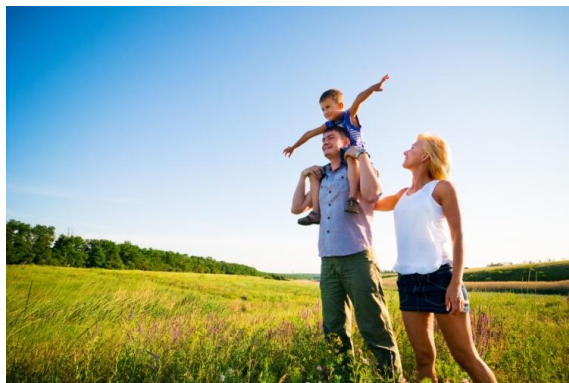
## TIES TO HUMAN HEALTH AND THE ECONOMY

Human health is closely linked to the health of the environment. Factors such as air quality, water quality, land use and proximity to green space as well as access to resources determine the overall well-being of a community. The goal of creating healthier communities, through the implementation of the Environmental Master Plan, necessitates the consideration of economic and social factors as they affect the environment and human health. Health of the natural environment, social cohesion and economic vitality are also the foundation of sustainability, which is necessary to improve the quality of life for current and future generations.

### Air Quality

Due to our location across from Detroit, as well as being a major hub for the automotive industry and a city heavily dependent on cars for commuting, Windsor's air quality is a persistent matter of concern. Vehicle and industry emissions are two main sources of release for pollutants such as nitrogen oxides (NO<sub>x</sub>) and Volatile Organic Compounds (VOCs). These pollutants, along with carbon monoxide (CO) react with sunlight to create ground level ozone. Ozone pollution causes various respiratory illnesses, ranging from coughing and chest pain, to bronchitis and asthma, and even permanent damage to lung tissue (EPA, 2014).

Particulate matter (PM), another type of air pollutant, is most impactful on human health (World Health Organization, 2016). Inhalation can result in cardiovascular and lung diseases, and can lead to heart attacks and cancer (World Health Organization, 2016). It has been linked to premature death and lower birth weight as well (World Health Organization, 2016). Recent studies have indicated its link to cognitive impairment, especially among older adults (Blaszczak-Boxe, 2015), and increased mental health risks among children (Blaszczak-Boxe, 2016).



Estimates state air pollution costs more than \$1 billion a year in hospital admissions, emergency room visits, and absenteeism (Environment and Climate Change Canada, 2012). A 10% decrease in ground level ozone and fine particulate matter can prevent hundreds of premature deaths, thousands of hospital room visits, and millions of activity days in Canada, saving hundreds of million dollars for the medical system (Environment and Climate Change Canada, 2012).

Indoor air quality is often not treated with the gravity it deserves. Household items such as furniture, carpets, candles, cleaning products, and building materials such as paint, solvents, and insulation can release VOCs into the air in your home (World Health Organization, 2016). Damp or leaky places in the house are an excellent breeding ground for mould. Chronic exposure to mould can lead to



various health impacts, ranging from headaches, diarrhea, vomiting, trouble breathing, to depression, multiple sclerosis, hemorrhage, liver damage and low immunity and fertility (Mercola, 2011). Indoor air pollution and the build-up of indoor moisture which facilitates mould growth can be reduced by allowing good ventilation in the house.

Air quality has a direct impact on the agriculture, fishing, and tourism industries. Higher air quality means increased productivity in these industries (Environment and Climate Change Canada, 2012). Greenhouse gases (GHGs) such as carbon dioxide, methane and sulphur dioxide, all associated with air pollution, are also the biggest climate change contributors (Air Pollution, n.d.). Higher temperatures increase the occurrence and intensity of smog (Miller, 2017), thus establishing a two-way cause-and-effect relationship between air pollution and climate change. This combination is also associated with increased heart diseases and pollen allergies (Miller, 2017).

## Water Quality

About three decades ago, the Detroit River was identified as an Area of Concern (AOC) due to poor water quality and environmental degradation (Environment and Climate Change Canada, 2017). In the past three decades, the release of pollutants into the river has decreased tenfold due to the investment in wastewater treatment and the enforcement of Provincial and Municipal regulations (Environment and Climate Change Canada, 2017).

The water quality of the Detroit River influences a considerable amount of economic activity. The river and the nearby banks and beaches are popular tourist spots which entertain various water sports and water-related activities. Many people fish the Detroit River, and the market for fishing equipment,



canoes, and other water sport and safety gear, is heavily dependent on its health. Various events and seasonal markets by the river also generate considerable economic activity. Therefore, the river enhances employment and income generation, and promotes economic growth and activity in Windsor. It also fosters social connections by serving as a community space where people can get together and socialize, and encourages physical activity such as walking and biking.

It is important to remember that whatever goes into the river eventually flows into Lake Erie, which is a primary source for drinking water, fishing and recreation, and an essential part of the Essex Region's ecosystem. Pollutants such as phosphorus cause the formation of blue-green algae in the lake, which contains toxins and causes oxygen deficiency in water, and can block sunlight that is necessary for other organisms to survive. While the toxins are detrimental to human, wildlife, and fish health, the oxygen deficiency can cause fish to suffocate (Bejankiwar and Bunch, 2016). Nutrient pollution, leading to algal blooms, can lead to beach closures and drinking water advisories, which is both inconvenient and undesirable for the economy. Climate change can worsen the situation by causing oxygen levels to

lower due to rising temperatures, and causing storms which churn up nutrients settled at the lake bed, providing algae with more phosphorus to feed on (Bejankiwar and Bunch, 2016).

Climate change induces erratic weather patterns and increases the frequency and severity of extreme weather conditions, such as storms and floods. In the flood that occurred in September, 2016 affecting Windsor and Tecumseh, nearly \$108-million in insured damages were claimed (Taekema, 2016). This amount represents only the insured property, the actual total economic damage is estimated to be much higher (Taekema, 2016). Our susceptibility to climate change is a major indicator of our well-being as a community.

## **The Urban Environment**

Efficient road design plays a major role in the enhancement of economic prosperity and health. Traffic calming techniques such as speed humps, bike lanes, and diagonal parking are known to reduce flow of traffic, encourage more responsible driving, increase pedestrian safety, and encourage walking and biking (Project for Public Spaces, 2009). They can benefit businesses as they allow people better opportunity to notice shops by the streets, instead of just speeding past them. Complete streets ensure safe, comfortable, and convenient travelling for people, regardless of their age, ability, or mode of transport, making the use of public transit and active transportation easier to adopt. Active transportation, or human-powered transportation, such as walking, cycling, skateboarding, etc., can contribute extensively to decreasing greenhouse gas emissions, and save people money on gas and parking (Public Health Agency of Canada, 2014). It can save hundreds of million dollars spent on healthcare due to heart disease, high blood pressure and type 2 diabetes related to physical inactivity (Public Health and Emergency Services, n.d). It has also been linked to improved mental health, as the use of active transportation can prevent depression, and driving has been associated with higher amounts of stress and social isolation (Public Health and Emergency Services, n.d). Well-designed roads decrease the chances of traffic congestion, and consequent road rage (Town of Markham, 2011).

The presence or absence of nature in close vicinity has psychological effects on human beings. Being closer to nature reduces stress, a condition known to trigger various mental and physical health problems, both short-term, including fatigue, difficulty concentrating, acute insomnia, etc., and long-term, including weight gain, depression, heart disease, etc (House et al., 2017). Exposure to nature has been linked with healthier birth weight in babies, and reduced Attention Deficit Hyperactivity Disorder (ADHD) symptoms in children (House et al., 2017). Studies have shown that patients heal much faster when their hospital room contains a window providing a scenic natural view (House et al., 2017). Green space and trees also reduce air pollution and the effects of extreme heat as they reduce land surface temperatures (Zupancic, Westmacott, & Bulthuis, 2015). Various plants species, especially trees, can capture and filter all the major air pollutants discussed above (Zupancic, Westmacott, & Bulthuis, 2015).

A neighborhood with more greenery, open spaces, and access to natural amenities is more in demand, and supports the housing market (House et al., 2017). Shops in central business districts that have a high-quality tree canopy can boost economic growth, as people are willing to spend 9-12% more

for goods and services in such areas, and are more likely to travel longer distances to shop in a greener atmosphere (House et al., 2017). Enhanced connection to nature facilitates productivity and increases job satisfaction, and a healthier work force means better business (House et al., 2017). Studies conducted in the USA indicate that investment in parks and natural spaces can save up to 36% of healthcare costs (Wolf, 2017).



Social cohesion and a sense of inclusiveness are often cited as reasons behind prevalence of good mental and physical health in a community, and accessible parks and recreational facilities offer community members with an ideal setting for socializing (House et al., 2017). Green spaces in neighborhoods can bring together a greater number and a more diverse group of people, implying that natural infrastructure enhances the opportunities for building social connections (Brinkley and Wolf, 2016). Youth in cohesive communities are also less likely to engage in disruptive behaviors, as close-knit communities are more likely to provide better guidance to the young adults, in a collective manner (House et al., 2017).

Complete communities, similar to complete streets, are a suitable solution to sprawling communities. Urban and sub-urban sprawling causes increased infrastructure costs, consumer expenditures, travel time, congestion delays, traffic accidents, pollution emissions, and obstructs the formation of complete streets (Gruel, 2015). High-density complete communities facilitate the development of complete streets and ensure that spaces and resources are being properly utilized through mixed use development, enabling residential, commercial, cultural, institutional, and industrial facilities to co-exist in the community and provide opportunities for the people to live and work in close proximity (Symbiotic Cities Network, n.d). Low density developments mean higher costs such as energy and water bills, and a higher property tax base (Gurin, 2003). Sprawling also results in air pollution as the communities are more automotive-dependent, and people burn a large amount of fuel commuting to places they need to go to (Gurin, 2003). Moreover, it reduces the natural environment around the city, reducing green spaces and also uses up more space than required.

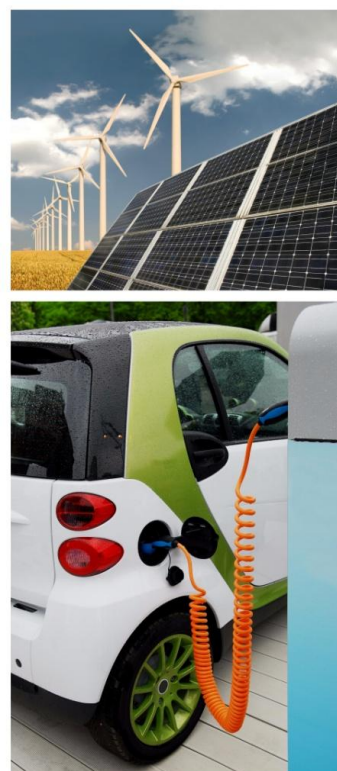
## Resources

Using resources efficiently not only helps conserve valuable resources for current and future generations, but also helps preserve environmental quality. Less organic waste generated (i.e. food waste) results in less methane generation at landfills, and recycling decreases the stress on virgin resources (Recycling and Climate Change, 2014). Recycling uses less energy compared to making a product from scratch. For example, one ton of paper recycled can save 17 trees, 7,000 gallons of water, 380 gallons of oil, 3.3 cubic yards of landfill space and 4,000 kilowatts of energy – enough to power an average Canadian household for 4 months – and reduce greenhouse gas emissions by one metric ton (West, 2017).

Electricity production from non-renewable resources contributes heavily to climate change through methane and carbon dioxide emissions, while renewable energy sources produce little to no greenhouse gases. In addition, use of renewable energy puts much less stress on water resources and prevents water pollution caused by natural gas drilling. It boosts economic activity through job opportunities as the renewable energy industry is more labor-intensive than the non-renewable energy sector. Moreover, the cost of production is lower and more stable compared to other energy industries (Union of Concerned Scientists, 2013).

As we know from Windsor's Community Energy Plan, in 2014 our community spent \$842 million dollars on energy (electricity, natural gas, and transportation fuels). It is anticipated that energy costs will increase by 120% at the lower risk range and by 280% at the higher risk range by 2041. This would increase annual energy costs from \$842 million per year to \$1.8 billion and \$3.1 billion per year respectively. This is a huge economic burden that can be mitigated through better energy management and resource conservation.

Environment is the aggregate of natural, social, and economic conditions that influence the lives of people. In a city, health and safety, local natural environment conditions, the economic situation and the quality of social interactions determine the quality of life of residents. A healthy and prosperous community grows in each sector by dealing with adversities such as pollution, resource consumption, city design and climate change. A good Environmental Master Plan incorporates all the aspects of sustainability, and sees the opportunity in challenging situations.





## LINKAGES TO THE 20-YEAR STRATEGIC VISION

The 20-Year Strategic Vision serves as a cornerstone for Council and City administration when making decisions with respect to programs, services, and infrastructure, and provide the community with an avenue for input on the future of the City. Through this vision, City Council identified jobs, reputation, and quality of life as Council themes. The EMP works in alignment with the 20-Year Strategic Vision.

20- Year Vision	2017 Environmental Master Plan
<b>We will Change Our Future.</b>	
<b>Jobs – Through a diversified economy, and by supporting entrepreneurship and small business, Windsor will have jobs</b>	<p>The EMP was developed with consideration of the triple bottom line: environment, social and economy and many of the actions listed in the plan link closely with federal and provincial initiatives to grow and diversify the economy through green jobs.</p> <p>The federal government’s commitment to address climate change and grow the economy is outlined in the Pan-Canadian Framework on Clean Growth and Climate Change: “We will continue to grow our economy and create good jobs as we take ambitious action on climate change. We will work to ensure that the Pan-Canadian Framework opens new opportunities for Canadian businesses to not only maintain but also enhance their competitiveness”.</p> <p>Similarly, the Province of Ontario’s Five-Year Climate Action Plan outlines a transition to a low-carbon economy. “Businesses and industry will benefit from programs and initiatives to help them thrive in a low carbon economy. The province will continue to build Ontario’s clean-tech sector. It will work to retain existing businesses, protect existing jobs and create new ones. It will support innovation and productivity, business certainty and stability.”</p>
<b>Reputation – Through celebrating all successes, emphasizing its fiscal sustainability, and encouraging favourable conversation about the city, Windsor will be a positive place.</b>	<p>The 2006 Environmental Master Plan was born out of City Council’s recognition that to improve Windsor’s reputation and quality of life addressing environmental concerns was required. In 2005, City of Windsor residents were surveyed about the overall quality of Windsor’s environment, only 4.8 % believed that it was better than that of other Ontario Cities.</p> <p>Since the approval of the 2006 Environmental Master Plan, three Reports on the State of the Environment (ROSE) have been developed. These reports track environmental performance over time. As indicated in the 2017 ROSE report, most environmental indicators are tracking in alignment with the goals of the EMP. However, more needs to be done to convey our successes to Windsor residents and across the country. Additional objectives have been added under Goal E: Promote Awareness to help improve the</p>



reputation of Windsor's environment.

The City of Windsor is already being acknowledged for their leadership on climate change issues. Health Canada and the Institute for Catastrophic Loss Reduction (ICLR) have published a number of case studies highlighting work on extreme heat and the urban heat island undertaken by the City of Windsor. The City of Windsor has also received accolades for the innovative Retention Treatment Basin that reduces combined sewer overflows into the Detroit River.

**Quality of Life – By strengthening the city as a whole through supporting its neighbourhoods and districts, encouraging convenient transit and transportation options, and excellent service delivery, Windsor will provide a high quality of life for all.**

The EMP reflects the City's commitment to enhancing environmental performance and facilitating social well-being and economic prosperity.

The EMP's 5 goals provide direction to improve the Quality of Life of Windsor residents:

Goal A: Improve Air Quality – To be proactive with community groups, industry and other levels of governments to improve Windsor's air quality.

Goal B: Improve Water Quality – To be proactive in managing wastewater, stormwater and potable water to improve Windsor's water quality.

Goal C: Responsible Land Use – To enhance our community through naturalization, reforestation, park and urban planning, densification and community initiatives.

Goal D: Increase Resource Efficiency – To increase resource efficiency, conserve water and energy and reduce waste.

Goal E: Promote Awareness – To foster an engaged community and staff that appreciates and protects its local environment through active communication.

The EMP was created with the understanding of the direct relation between the environment, to human health and the economy which is clearly articulated in the introduction section of the EMP. Progress is tracked through regular Reports on the State of the Environment (ROSE).

## A CORPORATE ENVIRONMENTAL COMMITMENT

The Environmental Master Plan will continue to be grouped with other City of Windsor Master Plans underneath our Community Strategic Plan and our Official Plan.

### 20-Year Strategic Vision

### Official Plan

Environmental  
Master Plan

Climate  
Change  
Adaptation  
Plan

Community  
Energy Plan

Greening  
the Fleet  
Plan

Parks and  
Outdoor  
Recreation  
Master Plan

Bicycle  
Use  
Master  
Plan

Corporate  
Energy  
Plan

Asset  
Management  
Plan

Other City  
of Windsor  
Plans

Administered by Environmental  
Sustainability & Climate Change Office

### Strategic Direction

*The City of Windsor is committed to being a leader through its daily actions and services to enhance the environment for present and future generations.*

### Guiding Principles

While implementing the Environmental Master Plan, the City of Windsor will:

- ❖ *Form Partnerships:* We will pursue partnerships between the City and the community, other governments, private and voluntary sectors to work towards solutions to environmental challenges and opportunities.
- ❖ *Engage Residents:* We will build awareness, actively involve stakeholders, and seek feedback on the Plan's progress.
- ❖ *Focus on Innovation and Balance:* We will review and consider best practices while balancing economic, social and ecological considerations.
- ❖ *Work Together:* Internally, the Corporation and its agencies will collaborate and communicate about the Plan's implementation.
- ❖ *Lead By Example:* We will act as leaders by providing responsible and proactive service to our residents.
- ❖ *Track Our Progress:* We will monitor, evaluate, and report on the Plan's progress to Council and the community-at-large and implement follow-up actions.
- ❖ *Achieve Realism:* We will strive for a balance between ambitious and achievable planning.

## Goals

The strategic direction, guiding principles and goals form the foundation for the Environmental Master Plan. The City is committed to a balanced and realistic approach for implementation of the Plan that provides due consideration for all five goals.

These goals differ slightly from the goals in the original EMP. Improving Air and Water quality are now separate goals, and Creating Healthy Communities and Greening Windsor have been combined into Goal C – Responsible Land Use.



### **Goal A – Improve Our Air Quality**

To be proactive by partnering with community groups, industry and other levels of governments to improve Windsor's air quality.



### **Goal B – Improve Our Water Quality**

To be proactive in managing wastewater, stormwater and potable water to improve Windsor's water quality.



### **Goal C – Responsible Land Use**

To enhance our community through naturalization, reforestation, park and urban planning, densification and community initiatives.



### **Goal D – Increase Resource Efficiency**

To increase resource efficiency, conserve water and energy and reduce waste.



### **Goal E – Promote Awareness**

To foster an engaged community and staff that appreciates and protects its local environment through active communication.



## Goal A – Improve Our Air Quality

- ❖ To be proactive by partnering with community groups, industry and other levels of governments to improve Windsor's air quality.

Clean air improves human health and mitigates climate change. It is essential for the well-being of vulnerable populations, namely children and older adults, who make up more than one-third of Windsor's population. Outdoor air pollution is mainly caused by emissions due to the combustion of fossil fuels for industry, transportation, space heating and power generation. Along with government actions, addressing the issue of air pollution will require cooperation from the local community. The actions below are intended to drive economic prosperity through the implementation of various air pollution reduction measures. Together, the municipal government and Windsorites can help address this trans-boundary issue, and contribute to mitigation of this global problem.

### **Objective A1: Develop strategies to reduce cross-border air pollution**

Lead: Environmental Sustainability & Climate Change

Assist: Windsor Essex County Environment Committee, Windsor Essex County Health Unit

#### **Actions:**

- Advocate for Windsor's local air quality issues at the regional, provincial, and federal levels in the United States and Canada and with industry representatives.
- Gather air quality baseline information for comparison purposes. Publish and track in the Report on the State of the Environment.
- Identify partnerships with other agencies, governments and businesses.
- Liaise with the Ministry of the Environment and Climate Change to increase environmental testing and compliance within the City.

#### **Indicators:**

- Number of Low Risk Air Quality Health Index Days
- Number of Special Air Quality Statement Days and Smog and Air Health Advisory Days
- Ground Level Ozone

### **Objective A2: Increase use of environmentally-friendly products in City facilities to improve indoor air quality**

Lead: Facilities, Departmental staff who purchase products

Assist: Environmental Sustainability & Climate Change, Human Resources

#### **Actions:**

- Implement and promote recommendations made in the Sustainable Purchasing Policy and Guide specifically related to general building maintenance (paint, sealants, adhesives and other building materials) janitorial cleaning products as well as furniture and office systems.
- Continue to promote and advocate for the Scent Safe Workplace Procedure.
- Test municipal buildings for Radon.

## Objective A3: Reduce the City's contribution to poor air quality days

Lead: Operations, Fleet, Parks, Transit Windsor, Environmental Sustainability & Climate Change

### Actions:

- Update the Greening the City Fleet Manual.
- When purchasing for fleet replacement, continue to include wording in the tenders with respect to “lower emitting vehicle” options and automatic shut-off for idling vehicles.
- Continue to implement the Fleet Winter Maintenance Policy.
- Replace older maintenance equipment used by Parks staff with equipment that produces fewer emissions.
- Develop a plan to further limit and monitor dust at constructions sites.
- Develop a plan to modify City of Windsor operations on poor air quality days.
- Implement recommendations in the Corporate Climate Action Plan (2017) such as increasing Transit ridership, advancing transit vehicle replacement and exploring alternative propulsion vehicles.
- Develop a program to replace public transit buses regularly to improve efficiency.
- Develop an electric charging strategy for electric vehicles.
- Increase the tree canopy coverage of the City.



### Indicators:

- Corporate Fuel Consumption
- New Greening of the City Fleet Plan
- Transit Windsor Ridership
- Tree Canopy Cover

## Objective A4: Reduce and monitor community greenhouse gas emissions

Lead: Environmental Sustainability & Climate Change

Assist: Windsor Essex County Health Unit

### Actions:

- Work with various stakeholders and partners to implement the Community Energy Plan (2017) relating to local air quality including:
  - Encouraging a modal shift towards public transit;
  - Encouraging active transportation;
  - Fostering the adoption of electric vehicles;
  - Continuing to advance smart energy systems.



- Continue to track corporate and community greenhouse gas emissions as part of the Federation of Canadian Municipalities Partners for Climate Protection as well as the Compact of Mayors<sup>1</sup>, and publish in the Report on the State of the Environment.

#### **Indicators:**

- Community Greenhouse Gas Emissions (targets to align with the Community Energy Plan, 2017)
- Corporate Greenhouse Gas Emissions (targets to align with the Corporate Climate Action Plan, 2017)

### **Objective A5: Implement and educate residents on the City of Windsor's Anti-Idling By-law**

Lead: Environmental Sustainability & Climate Change, By-law Enforcement

Assist: Windsor Essex County Health Unit

#### **Actions:**

- Develop and implement a city-wide Idling Awareness Campaign to educate residents and businesses on the economic and environmental impacts of idling vehicles.
- Work with school boards and individual schools to educate students, staff and parents about the effects of idling at schools.
- Develop and implement a targeted enforcement plan at idling hot spots.

#### **Indicators:**

- Idling Awareness Campaign

### **Objective A6: Improve the City's traffic flow to reduce vehicular emissions**

Lead: Traffic Operations, Transportation Planning

Assist: Transit Windsor

#### **Actions:**

- Reduce unnecessary and unwarranted all-way stops. Focus on transit and heavy trucking routes to reduce wait times.
- Promote public transit priorities to reduce transit delay and promote schedule adherence and service reliability.
- Invest in "road diets" where possible whereby the number of travel lanes and/or effective width of the road is reduced in order to reduce speeding, increase active transportation and improve safety.
- Promote increased and smoother traffic flow, for all modes (public transit, cyclists and pedestrians) by using Intelligent Transportation Systems (ITS), e.g. to improve signal coordination, provide priorities for public transit and introduce electronic way-finding and transit route information.
- Adjust signal timing to improve traffic flow due to construction projects.
- Continue to upgrade existing and newly installed video detectors (video technology and induction loops) to reduce vehicular idling.

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<sup>1</sup> The Compact of Mayors is a global network of cities pledging to reduce greenhouse gas emissions, enhance resilience to climate change, and track progress in a standardized and transparent manner

## **Objective A7: Improve the City's public transportation system to increase ridership**

Lead: Transit Windsor

Assist: Infrastructure & Geomatics, Operations, Transportation Planning

### **Actions:**

- Complete the Transit Service Delivery Review.
- Continue to explore and invest in Regional Transit.
- Include Transit Windsor in road reconstruction projects and incorporate public transit needs into street design.
- Complete a Route Assessment Study to improve efficiency.
- Update the Transit Windsor Master Plan.
- Continue to invest in smart technologies such as the Transit Windsor online app.
- Direct promotional activities toward improved health and quality of life through increased physical activity walking to and from transit stops. Focus on recommended 30 minutes of physical activity per day in bouts of 10 minutes or more.
- Use capital funding to build and invest in our transit system.
- Investigate Bike Share options



### **Indicators:**

- Route Assessment Study
- Updated Transit Windsor Master Plan

## **Objective A8: Reduce the number of single-occupancy vehicle trips of staff and residents**

Lead: Environmental Sustainability & Climate Change, Human Resources

Assist: Transit Windsor, Windsor Essex County Health Unit, Transportation Planning

### **Actions:**

- Create education campaigns to:
  - Encourage staff and residents to get out of their cars for at least one week;
  - Promote “flex hours” to allow for carpooling to work;
  - Promote benefits of a car-free life-style: better health, lower cost.
- Participate in Open Streets events to promote alternative methods of transportation.
- Promote the Transit Windsor corporate pass.
- Promote use of existing Active Transportation infrastructure and its expansion.
- Direct promotional activities toward improved health and quality of life through increased physical activity. Promote recommended 30 minutes of physical activity per day in bouts of 10 minutes or more.
- Recruit and identify sponsor funding to reinstitute free bus rides on poor air quality days.

- Investigate partnerships with industry and surrounding municipalities for City car pool vans and parking ([www.carpool.ca](http://www.carpool.ca)).
- Continue to provide incentives to City staff to leave their cars at home such as discounted bus passes and end-of-use facilities.
- Support alternative work styles such as telecommuting, or working from home one day per week to reduce greenhouse gas emissions.

#### **Indicators:**

- Participant in Open Streets
- Total vehicle kilometres travelled

### **Objective A9: Develop, expand and maintain a connected network of safe bicycling and walking facilities**

Lead: Transportation Planning, Planning, Parks

Assist: Environmental Sustainability & Climate Change, Windsor Essex County Health Unit, Infrastructure and Geomatics, Operations, Development and Right of Way Division

#### **Actions:**

- Develop and Implement an Active Transportation Master Plan including cycling, walking and public transit and associated policies, procedures, standards and best practices.
- Develop a Complete Streets Policy
- Continue to provide long-term committed funding to expand Windsor's existing commuter and recreational cycling and walking networks.
- Include cycling and walking facilities in road reconstruction projects and incorporate active transportation needs into street design.
- Establish bike friendly design requirements for municipal roads, and at municipal buildings, public spaces, parks and transit stops.
- Establish bike-friendly design requirements and bike parking policy for public, private and institutional facilities.
- Improve the cycling-transit and walking-transit links.
- Promote bicycling and walking as a healthy alternative for residents and staff.
- Promote injury prevention messaging and education such as bike safety, wearing helmets, rules of the road for cyclists etc.
- Ensure new developments include sidewalks and target existing neighbourhoods without sidewalks for expansion of walking facilities.



#### **Indicators:**

- Length of cycling network
- Active Transportation Plan
- Percentage of roads with one or more sidewalks



## Goal B– Improve Our Water Quality

- ❖ To be proactive in managing wastewater, stormwater and potable water to improve Windsor’s water quality.

Access to safe, clean and sufficient water is an undeniable determinant of human well-being. Water quality is a pressing issue as the Detroit River is a center of various economic and social activities, and has direct connection with the health of Windsorites. Water pollution and subsequent degradation of the environment and ecosystem has been a topic of concern for decades now, and although significant progress has been made there is much more that needs to be done. It is important for us to act responsibly, understanding the link between wastewater, the quality of water in our surface water bodies, and our drinking water supply. Healthy water bodies contribute to a healthy ecosystem and a healthy community.

### Objective B1: Invest in our sewers and wastewater treatment plant infrastructure

Lead: Infrastructure & Geomatics, Pollution Control, Operations, Environmental Sustainability & Climate Change

#### **Actions:**

- Develop an education program on what causes sewer and treatment plant overflows and how they can be reduced (i.e. downspout disconnection, fats, oils & grease, flushable wipes).
- Develop a Sewer Use Master Plan that:
  - Provides an understanding of how the City’s sewer network will respond to various rainfall intensities;
  - Determine flooding risks across the City;
  - Determine appropriate changes to stormwater management practices to reduce risk to the sewer network.
- Investigate the potential for a Retention Treatment Basin on the West side of Windsor.
- Continue to implement the City’s soft separation program (i.e. replacement of combined sewers).
- Continue to upgrade the City’s remaining “over/under” sewers.
- Enhance and enforce Windsor’s current Sewer Use By-law.

#### **Indicators:**

- Percent removal of total phosphorus, suspended solids, and the biological oxygen demand of treatment plant effluent
- Wastewater treatment plant bypass
- Sewer Use Master Plan
- Combined sewer outfall volumes based on annual rainfall

## **Objective B2: Improve stormwater management to reduce the risk of flooding to residents**

Lead: Essex Region Conservation Authority, Environmental Sustainability & Climate Change, Infrastructure & Geomatics, Development and Right of Way Division, Operations, Parks, Pollution Control

### **Actions:**

- Develop Stormwater Guidelines that:
  - Reflect MOECC's guidelines;
  - Addresses stormwater retrofits in developed areas;
  - Uses modeling and best practices to map and apply best stormwater management practices (e.g. source control, end of pipe, pollution prevention), and determine where cash-in-lieu can best be applied.
- Continue to acquire data to inform the condition and functional performance of the network (i.e. fog testing, zoom camera).
- Investigate funding mechanisms on a cost recovery basis for stormwater management.
- Implement recommendations as outlined in the City's Climate Change Adaptation Plan.
- Undertake low impact development projects and strategies such as rain gardens, porous pavement, bioswales etc. as part of road or parking lot reconstruction projects.
- Confirm funding to maintain and monitor low impact development features.
- Continue to use our parks for temporary excess rainwater storage and low impact development features to deter basement flooding.
- Protect, preserve and enhance our urban natural areas and wetlands which naturally provide flood control.
- Encourage downspout disconnection and basement flooding subsidy program
- Acquire lands to enhance flood protection.
- Work with ERCA to acquire lands in the City under the Clean Water, Green Spaces Program.

### **Indicators:**

- Stormwater Guidelines
- Amount of Wastewater Treated

## **Objective B3: Reduce water pollution discharges from City operations**

Lead: Operations, Parks, Facilities, Departmental staff who purchase products

### **Actions:**

- Continue with the City's salt management and snow management programs to include safer alternatives where appropriate.
- Buy and use product alternatives with lower toxic levels (for example, natural fertilizers, such as compost or peat, environmentally friendly cleaning products).



- Decrease pesticide use in City parks and where necessary, continue to use herbicidal vinegar where practical.
- Increase recycling in order to reduce waste going to landfills or waterways.
- Identify tree planting opportunities adjacent to water courses in an effort to improve the water quality before stormwater runoff enters the Detroit River Watershed.

#### **Indicators:**

- Pesticide Use

### **Objective B4: Improve the health of the Detroit River Watershed and Great Lakes Waters**

Lead: Environmental Sustainability & Climate Change, Pollution Control

Assist: Essex Region Conservation Authority, Detroit River Canadian Clean Up

#### **Actions:**

- Work to protect and preserve all remaining natural shorelines.
- Continue to educate residents on the hazards of flushable wipes, oil, litter and chemical disposal down drains and sewers. Promote awareness of:
  - The City's Household Chemical Waste (HCW) Depot and Reuse Centre;
  - The importance of downspout disconnection;
  - The City's two wastewater treatment plants.
- Support the Essex Region Conservation Authorities' ongoing watershed monitoring programs and their restoration program so that naturalization and tree planting in the Detroit River Watershed remains a priority.
- Support the bi-national Remedial Action Plan (RAP) to restore the Detroit River.
- Consider partnering with the following groups for source water protection and monitoring:
  - Environment and Climate Change Canada/Ontario Ministry of Environment and Climate Change;
  - Detroit River Canadian Cleanup (DRCC);
  - Great Lakes Institute for Environmental Research (GLIER);
  - Little River Enhancement Group (Lil'Reg);
  - Friends of Turkey Creek.
- Continue Windsor's Involvement in the Yellow Fish Road program.



- Advocate for Windsor's local water quality issues at the regional, provincial, and federal levels in the United States and Canada.
- Liaise with the Ministry of Environment and Climate Change to increase environmental testing and compliance within the City.
- Identify sources of plastics and microplastics into the Detroit River and identify strategies to reduce the sources
- Implement the Source Water Protection Plan.

#### **Indicators:**

- Detroit River Beneficial Use Impairments
- Average total phosphorus concentrations in Little River and Turkey Creek

### **Objective B5: Reduce the per capita use of treated municipal water**

Lead: Facilities, Environmental Sustainability & Climate Change, Parks, Enwin

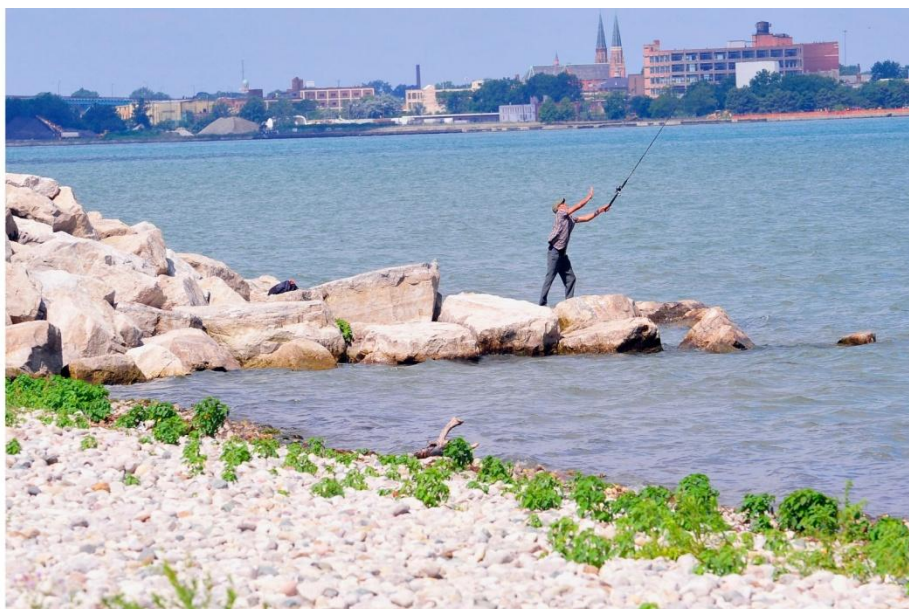
Assist: Infrastructure and Geomatics

#### **Actions:**

- Develop water conservation strategies for new and existing City buildings and facilities including water re-use in outdoor and indoor recreation facilities.
- Maintain existing water distribution system to reduce water loss.
- Develop strategies to store stormwater for parks irrigation.
- Continue to sell rain barrels at a discounted price to reduce the use of treated water for watering plants and lawn use.

#### **Indicators:**

- Total Water Consumption





## Goal C – Responsible Land Use

- ❖ To enhance our community through naturalization, reforestation, park and urban planning, densification and community initiatives.

Land use planning measures should be such that the full potential of available land is reached in a sustainable way. While it is essential to allot land to housing, industry and education, there needs to be sufficient green space and improved road connectivity for all road users. Use of unused or vacant land should enhance the quality of life for residents, for example, through urban farming, creation of green space, or by building developments to support the economy. This process of repurposing or redeveloping land is known as land recycling, and it facilitates social and economic vitality and sustainability. It helps address the issues of urban sprawl and climate change by increasing density, reducing dependence on automobiles and increasing green space. Efficient land use techniques help preserve natural heritage and enhance ecological diversity and service. Healthier natural systems provide ecological services such as purification of water and air, pollination of plants and increased recreational opportunities to the benefit of human health.

### **Objective C1: Encourage in-fill and higher density in existing built areas**

Lead: Planning

Assist: Windsor Essex County Health Unit, Windsor Essex Economic Development Corporation

#### **Actions:**

- Promote concentration, encourage adaptive reuse of buildings, especially heritage buildings in core areas. These buildings already have infrastructure in place: streets, sewers, schools, transit.
- Identify opportunities for higher density development to support alternatives to driving (transit, cycling, walking, etc).
- Examine current policies and by-laws; provide incentives for infill/higher density; set minimum density requirements.
- Design commercial and residential land use to maximize access to public transit.
- Support the existing Brownfields Redevelopment Strategy and implement its work plan.
- Continue the implementation of community improvement plans to encourage investment in older neighbourhoods.
- Monitor the success of the Brownfield Redevelopment Community Improvement Plan. Focus on beautification and renewal of existing built areas.

#### **Indicators:**

- Population Density in the core area of Windsor
- Number of Records of Site Condition filed (indicator of how many brownfields are being repurposed)

## Objective C2: Investigate the feasibility of a Regional Growth Plan

Lead: Planning & Building

Assist: Windsor Essex County Health Unit, Essex Region Conservation Authority

### **Actions:**

- Based on the provincial context for well managed growth with regard to surrounding regions, continue to investigate a “Regional Approach to Managing Growth” in Windsor/Essex County.
- The benefits of such a growth management plan can include:
  - Service and transportation efficiencies;
  - Coordinated approach to green space linkages;
  - Long term consideration of land use patterns;
  - Attenuating the adverse consequences of rapid growth on areas in the region that are rapidly expanding;
  - Managing population density.
- Continue discussions and plans to develop a Regional Growth Plan that targets regional trends, green space allocations, transportation planning and growth management.

### **Indicators:**

- Regional Growth Plan
- Shared public transit services

## Objective C3: Incorporate sustainable development into the design of neighbourhoods, homes and businesses

Lead: Planning & Building, Environmental Sustainability & Climate Change

Assist: Windsor Essex County Environment Committee, Windsor Essex County Health Unit

### **Actions:**

- Develop a Green Building Standard for new development and retrofits.
- Advertise the Green Building Standard to homeowners and developers, as legislation and building codes allow. The guide may include the consideration of:
  - Green roofs/cool roofs;
  - Low impact development (rain gardens, bioswales, permeable pavement etc.);
  - Rainwater retention;
  - Energy efficiency;
  - Active transportation facilities;
  - Underground parking;
  - Windows in office buildings which can be opened;
  - Improved temperature control systems;
  - Alternative energy sources;
  - Access to public transit.

- Work with developers to encourage best practices and the integration of the ideas listed above. Create incentives for sustainable design by builders and demand for sustainable homes (and businesses) by residents (and business owners) through the development of an education campaign about the advantages of scoring high on the Green Building Standard (i.e., energy and cost savings).
- Identify best practices to improve heat resilience in homes and businesses (ex. options for passive cooling, shading, etc.)
- As part of the Official Plan review, work with small businesses to improve streetscapes and interactivity (encouraging local community development).
- Identify and take advantage of provincial and federal programs for funding and best practices.
- Create incentives for businesses and neighbourhood development which incorporate age-friendly facility design and accessible, safe routes to and from homes, schools and businesses.
- Work with developers to maintain as many trees as possible.
- Expand the public right-of-way to enhance the opportunities for tree plantings, stormwater management, active transportation options, and urban heat island mitigation.

#### **Indicators:**

- Green Building Standard
- Number of buildings participating in the Green Building Standard

### **Objective C4: Expand public understanding of the value of natural spaces and native plants**

Lead: Parks, Environmental Sustainability & Climate Change

Assist: Essex Region Conservation Authority, Windsor Essex County Health Unit

#### **Actions:**

- Undertake a Natural Capital Report to show the true value of natural space and trees.
- Develop an engagement strategy to improve community acceptance of naturalization programs as well as using parks for short term rainwater storage.
- Promote the health benefits of using green spaces for accessible and safe physical activity.
- Promote the preservation and protection of our natural spaces including the Ojibway Prairie Complex, Peche Island, South Cameron Natural Area, Devonwood Conservation Area, etc.
- Promote the use of native plants in our parks as well as to the public.
- Cultivate native plants in our greenhouses for use in parks as well as for sale at the annual plant sale.



#### **Indicators:**

- Natural Capital Report



## **Objective C5: Develop a coordinated approach to invasive species in parks, natural areas and the public right-of-way**

Lead: Parks, Operations, Pollution Control, Environmental Sustainability & Climate Change, Infrastructure and Geomatics

Assist: Essex Region Conservation Authority

### **Actions:**

- Develop and implement a coordinated Phragmites Control Program across City departments.
- Track and monitor the outcome of any approaches used to control Phragmites.
- Continue to identify and track new invasive species and develop strategies to minimize their impact.
- Develop strategies for other invasive species in parks and natural areas.

### **Indicators:**

- Phragmites Control Program

## **Objective C6: Acquire or transition additional lands for integration into our parks, natural areas and natural heritage system**

Lead: Parks

Assist: Legal, Planning, Essex Region Conservation Authority

### **Actions:**

- Actively seek out opportunities to increase and protect parkland, natural areas and naturalize spaces especially in locations where there is a deficit in the amount of green space.
- Work with the Essex Region Conservation Authority, community associations, school boards and residents to restore, expand and enhance natural heritage features and functions on public and private property.
- Set acquisition targets for parks and natural areas, in particular the remaining unprotected natural areas within and around the Ojibway Prairie Complex and South Cameron Natural Area.
- Increase the amount of naturalized areas within parks.
- Source funding opportunities to secure lands.

### **Indicators:**

- Natural Areas Percent Coverage
- Designated Natural Heritage Land
- Amount of Maintained and Natural Parkland

## Objective C7: Protect, enhance and expand the quality and condition of our natural areas and wetlands

Lead: Parks

Assist: Planning, Essex Region Conservation Authority

### Actions:

- Develop management plans for our unique and rare ecosystems in Windsor: the Ojibway Prairie Complex, Peche Island and South Cameron Natural Area.
- Prepare Management Plans for natural area components and individual sites:
  - Identify issues that are currently impairing the quality of the natural area (i.e. habitat fragmentation/degradation, invasive species, incompatible human uses, littering, vandalism, erosion, etc.);
  - Identify strategies & actions to address the various issues and enhance our natural areas.
- Implement Management Plans & actions (i.e. actively managing tall grass prairie by prescribed burns).
- Continue to implement Species at Risk protection measures in all areas of Windsor and develop strategies to improve their status.
- Monitor the quality and condition of our natural area components (i.e. integrity, biodiversity, health, etc.).
- Provide multi-use buffer zones around natural areas and wetlands.
- In conjunction with the creation of an Urban Forest Management Plan, conduct a Canopy Cover study of the City and set a new goal to increase the City's canopy cover



### Indicators:

- Natural Area Management Plans
- Urban Forest Management Plan
- Canopy Cover Study

## Objective C8: Protect and enhance the quality and condition of our urban forest canopy

Lead: Parks

### Actions:

- Update the street tree inventory of all city owned trees along the right of way to better understand the health, structure and biodiversity of our Urban Forest. This will also help identify the gaps and open areas void of trees as well as high risk trees in order to reduce risk, personal injury and damage claims.

- Assess our urban forest and canopy cover by developing a Strategic Urban Forest Management Plan to better understand the environmental goods and services that our urban forest provides.
- Increase the tree canopy cover of the City by setting a new target for canopy cover through the planting and tending of newly planted trees.
- Develop Official Plan policies for new development to require mitigation and compensation for the loss of urban forest vegetation.
- Naturalize and expand our urban forest and canopy cover using native species where appropriate.
- Create incentives for the planting of native tree species and the preservation of existing trees; for example:
  - Encourage species diversification and lead by example through our various tree planting events with local partners;
  - Launch a “tree drive” by encouraging companies to donate trees and celebrate the achievements we have made with other corporate sponsors;
  - Communicate with developers who approach the City in order to preserve trees;
  - Work with Forests Ontario’s Heritage Tree Program to identify large and historic trees.
- Promote the planting of flowering trees, fruit trees, or pollinator tree species where appropriate.
- Explore the potential for a private tree cutting by-law as well as the effectiveness of other Municipal tree cutting by-laws.

#### **Indicators:**

- City owned trees planted and removed
- Private tree cutting by-law

### **Objective C9: Increase connectivity within and between our parks and natural areas**

Lead: Parks, Essex Region Conservation Authority

Assist: Planning, Infrastructure & Geomatics, Transportation Planning, Legal

#### **Actions:**

- Conduct an assessment of the current state of Windsor’s parks and natural areas linkages by performing a Landscape Analysis. Include the number of hectares of parks and natural areas that is “linked” to each other as a baseline.
- Identify linkage improvement opportunities and reflect these in Official Plan updates.
- Develop strategies for acquiring these strategic lands through the following mechanisms:
  - Development Applications;
  - Purchase;
  - Park Dedication;
  - Land Swap;
  - Conservation Easements;
  - Land Trust;
  - Voluntary property tax fund;
  - Land contribution by public agencies.

- Work with surrounding municipalities to plan for and strengthen natural linkages across municipal boundaries.
- Incorporate the use of eco-passages to support the movement of wildlife between natural areas.
- Acquire properties through the development process.
- Develop a natural heritage offsetting process.

**Indicators:**

- Parks Landscape Analysis

**Objective C10: Support education, engagement and local food production**

Lead: Environmental Sustainability & Climate Change, Parks

Assist: Legal

**Actions:**

- Implement and expand upon the Community Garden on Municipal Property Policy.
- Actively promote the use of underutilized, vacant City of Windsor property for the use of community gardens.
- Encourage Windsor's Farmers Markets.
- Develop and promote local food system through education including programs for kids.
- Explore the potential for an urban bee cooperative or a chicken cooperative on municipal property.
- Promote the health benefits of drinking water over sugar-sweetened beverages for hydration.
- Promote the use of Essex Windsor Solid Waste Authority's compost.

**Indicators:**

- Number of Community Gardens

**Objective C11: Work with the Windsor Essex County Health Unit to develop a Food Strategy**

Lead: Windsor Essex County Health Unit, Social Policy and Planning, Environmental Sustainability & Climate Change

**Actions:**

- Engage in a comprehensive community food assessment to inform a food strategy.
- Build on the development of the Windsor Essex County Food Charter and the food system work of various organizations.
- Assess the viability of a regional Food Council or Committee.
- Include the need for data gathering to further understand the local food system and the opportunities for improvement.

### **Indicators:**

- Food Strategy
- Regional Food Council



### **Objective C12: Incorporate cooling designs and features into public spaces to protect residents from extreme heat and ultraviolet radiation exposure**

Lead: Parks, Facilities

Assist: Planning, Windsor Essex County Health Unit

### **Actions:**

- Increase the number of artificial shade structures in public places.
- Plan for shade (shadow casting) to fall where needed during peak ultraviolet radiation exposure intervals.
- Improve access to drinking water facilities in public spaces.
- Consider the environmental and health effects of plastic, rubber or other materials when designing and installing playgrounds, splash pads and road medians.
- Increase the number of splash pads, cooling stations, water bottle re-fill stations and other water features in public places.
- Work with Federal and Provincial governments to maximize funding opportunities.

### **Objective C13: Enhance and increase natural shade as a climate change adaptation measure**

Lead: Parks, Environmental Sustainability & Climate Change

Assist: Windsor Essex County Health Unit

### **Actions:**

- Continue to research the urban heat island effect and its impact in Windsor.
- Enhance tree coverage to reduce the human health risk of heat.
- Promote additional health benefits of natural shade in reducing ultraviolet radiation exposure.

- Plan for dense shade in parks, playgrounds, spectator areas of sports fields and other public spaces frequented by children and vulnerable populations.
- Ensure active transportation routes are planned with natural shade.
- Review tree species for viability under a changing climate and adjust tree planting practices accordingly.
- Incorporate Best Management Practices for naturalization and tree planting. Use local seed for the propagation of trees and incorporate Assisted Migration studies and practices where applicable.
- Undertake assisted migration of tree species to minimize the risk to canopy cover due to climate change.

**Indicators:**

- Number of trees planted and removed



## Goal D – Increase Resource Efficiency

- ❖ To increase resource efficiency, conserve water and energy and reduce waste.



Resources are finite - even renewable resources should only be used at a rate that is below their regenerative capacity. In addition, extraction and use of resources often causes pollution. The more resources we use, the more waste and wastewater is generated which needs to be treated. Solid and organic waste in landfills occupies a significant amount of space, is a threat to air quality due to greenhouse gas emissions, and pose a risk to ground water quality. Newer landfills such as those currently operated by the Essex-Windsor Solid Waste Authority employ new technologies to mitigate the historic risk posed by landfills (i.e. flaring of methane to reduce greenhouse gas emissions and leachate collection systems to reduce impacts on ground water quality). However, it is still necessary to use resources responsibly, carefully determining the necessity of using a resource, and following the “reduce, reuse, recycle” principle. In addition, energy generation is not only expensive, but is detrimental to air and water quality. Through building a resilient energy system and ensuring wise use of energy by the Corporation and by Windsorites, we can enhance our lifestyle and drive economic development.

### **Objective D1: Decrease community energy consumption and greenhouse gas emissions**

Lead: Environmental Sustainability & Climate Change, Planning and Building, Transportation Planning

Assist: Windsor Essex County Health Unit, Asset Planning, Enwin

#### **Actions:**

- Work with stakeholders to implement the Community Energy Plan.
- Complete a business case for district energy expansion.
- Complete detailed energy mapping of the city to support economic businesses cases and future policy decisions relating to energy.
- Work to create an education campaign for residents (to create demand) and builders (to create supply) about the environmental and financial benefits of energy efficient homes and businesses.
- Investigate the possibility of reducing development charges for developers of energy efficient homes and businesses.
- Explore the potential for a deep energy retrofit program for homes and businesses.

#### **Indicators:**

- District Energy Business Case
- Detailed Energy Mapping
- Deep Energy Retrofit Program
- Community Greenhouse Gas Emissions (Goal A)

## **Objective D2: Decrease corporate energy consumption and greenhouse gas emissions**

Lead: Asset Planning, Operations, Facilities, Transit Windsor, Environmental Sustainability & Climate Change

Assist: Enwin

### **Actions:**

- Implement and update the Corporate Energy Management Plan and the Corporate Climate Action Plan.
- Implement retrofits and energy saving mechanisms with a payback time and greenhouse gas reductions.
- Consider energy consumption, lifecycle costing and greenhouse gas emissions when planning capital projects.
- Develop an energy awareness campaign for municipal employees.
- Assess current water usage across all municipal buildings.

### **Indicators:**

- Corporate Energy Consumption
- Corporate Greenhouse Gas Emissions (Goal A)

## **Objective D3: Consider environmental design in newly constructed or retrofitted municipal buildings**

Lead: Development and Right of Way Division, Environmental Sustainability & Climate Change, Facilities

### **Actions:**

- Consider environmental design in all new buildings and retrofits.
- Encourage the use of cool roofs for municipal buildings.
- Continue the reuse of existing buildings (and materials) where it is environmentally-friendly and cost-effective.
- Recycle building materials where possible.
- Require partners to consider environmental design.

### **Indicators:**

- Municipal Green Building Standard
- Cool Roof Policy



## **Objective D4: Increase the diversion rate of recyclable material at all City facilities**

Lead: Facilities, Environmental Services

Assist: Essex Windsor Solid Waste Authority

### **Actions:**

- Undertake a corporate waste audit program and develop a corporate waste baseline, reductions targets and monitoring strategy.
- Publish waste audit results to city staff as part of a solid waste diversion education campaign.
- Install composters or digesters at select city facilities as pilot projects and monitor their success.
- Implement a standard recycling program for all city facilities that includes signage, containers and education.
- Provide training for facilities staff with respect to any changes in recycling procedures.
- Focus reminders and incentive programs on any problem areas.
- Encourage contractors and suppliers to make recycled-content products available.
- Use savings from waste prevention efforts to offset the costs of buying recycled products in those instances where they cost more.
- Continue to promote the use of municipal water.

### **Indicators:**

- Corporate Waste Diversion Rate

## **Objective D5: Increase community waste diversion through recycling and composting**

Lead: Essex Windsor Solid Waste Authority, Environmental Services, Facilities, Parks, Recreation

### **Actions:**

- Expand the use of recycling bins in public facilities and other spaces such as parks.
- Conduct a study to determine the most appropriate composting program for the City of Windsor and implement at an appropriate time.
- Investigate strategies for waste reduction such as, but not limited to, garbage bag limits.
- Formalize a waste diversion plan for events at Festival Plaza and other special events – this could include mandatory use of the hydration station, use of recyclable food containers only, and mandatory waste stations with garbage, paper and plastic receptacles with proper labelling.
- Identify strategies to reduce single use plastic items (ex. plastic straws, bags, etc.)

### **Indicators:**

- Community Diversion Rate
- Total Waste Sent to Landfill
- Waste Diversion Plan for Special Events

## **Objective D6: Integrate environmental sustainability and climate change into Asset Management**

Lead: Asset Planning

Assist: Operations, Development and Right of Way, Infrastructure & Geomatics, Pollution Control, Parks, Facilities, Environmental Sustainability & Climate Change, Transit Windsor

### **Actions:**

- Build life-cycle cost into decision making.
- Consider economic, social and environmental factors, also known as the “triple bottom line” when making decisions about capital or operating expenditures.
- Consider the effects that capital projects will have on operating budgets and adjust operating budgets accordingly to ensure proper maintenance of assets.

### **Indicators:**

- Number of projects undergoing Triple Bottom Line assessments

## Goal E – Promote Awareness

- ❖ To foster an engaged community and staff that appreciates and protects its local environment through active communication.



To enhance the quality of life for Windsorites, we all need to develop a deeper understanding and awareness about environmental issues and act accordingly. Acting to achieve a healthier environment would be impossible without appropriate knowledge generation among the people who live, work and visit here. Awareness and understanding enables people to become literate in why they need to protect and conserve the natural environment, and how to do it. Through our public education and outreach programs we seek to educate and involve staff, students, residents and visitors in environmental sustainability education, foster environmental stewardship and promote lifestyle practices beneficial to individual and community health. We are always seeking to develop better communication with our citizens, and the public is always encouraged to participate and provide input into decisions affecting their environment.

### Objective E1: Promote the link between environmental health and human health to Windsor residents

Lead: Environmental Sustainability & Climate Change, Transportation Planning, Windsor Essex County Health Unit

#### Actions:

- Develop and promote a campaign to get staff and residents active and outdoors. This may include:
  - Encouraging students to discover healthy ways of getting to school every day;
  - Promoting walking and biking along trails as leisure activities for families and seniors.
- Support and promote ongoing environmental health initiatives within the City.
- Partner with the Windsor Essex County Health Unit to promote the link between environmental health and human health. This could include, but is not limited to the Air Quality Health Index, active transportation, sun protection, vector borne illnesses and extreme heat.



### Objective E2: Report on the progress of the implementation of the Environmental Master Plan

Lead: Environmental Sustainability & Climate Change

#### Actions:

- Develop, every two years, a brief update to Council on the progress of Environmental Master Plan implementation.

- Continue to produce a Report on the State of Our Environment to be presented every 4 years to City Council reporting on indicators used to monitor the implementation of the Environmental Master Plan.

#### **Indicators:**

- Report on the State of the Environment

### **Objective E3: Conduct a regular survey of environmental attitudes with residents and staff**

Lead: Environmental Sustainability & Climate Change, Communications

Assist: Windsor Essex County Health Unit

#### **Actions:**

- Conduct an environmental attitudes survey once every four years. Coordinate questions and timing with any other City surveys.
- Compare the results of the survey and integrate results into the Report on the State of Our Environment.

#### **Indicators:**

- Environmental Awareness Survey (Attitudes towards the environment questions)

### **Objective E4: Develop a corporate environmental education strategy**

Lead: Environmental Sustainability & Climate Change

Assist: Human Resources, Communications, Asset Planning, Environmental Services

#### **Actions:**

- Identify focus areas for an environmental education strategy – likely focus on individual actions that staff, Council and contractors can take to improve the City’s environment.
- Develop an environmental education strategy to:
  - Focus on individual actions that can be taken to improve the environment, including but not limited to solid waste management, recycling, sewer use, climate change and energy;
  - Develop training material for new staff to expose them to the EMP;
  - Develop incentives to encourage participation in environmental activities and events;
  - Use creative methods for information dissemination about environmental activities (i.e. weekly email, information sheets, awards, prizes, quarterly information sessions);
  - Develop ways to recognize environmental leaders and achievements across the Corporation.





- Set up an Environmental Champion program for all City facilities where the champion is responsible for ensuring environmental measures in their facility are functioning properly. This could include recycling receptacles, energy saving measures, environmental information etc.
- Establish a Green Team to generate new ideas and help develop and coordinate environmental activities within the corporation.

#### **Indicators:**

- Environmental Champion Program
- Green Team

### **Objective E5: Maintain a web-based environmental information site**

Lead: Environmental Sustainability & Climate Change, IT, Communications

#### **Actions:**

- Maintain the Environmental Master Plan website which includes:
  - Windsor's current environmental initiatives, programs and policies;
  - Report on the State of Our Environment indicators;
  - Contact information;
  - References;
  - Links to more information.

#### **Indicators:**

- Current Environmental Master Plan Website
- Number of visits to the website

### **Objective E6: Increase awareness among residents and stakeholders of the City's environmental programs, policies and initiatives**

Lead: Environmental Sustainability & Climate Change, Parks (Ojibway Nature Centre)

Assist: Communications, Recreation & Culture, Windsor Public Library, Essex Windsor Solid Waste Authority, Transit Windsor, Windsor Essex County Health Unit, Transportation Planning

#### **Actions:**

- Lead by example by showcasing ongoing environmental initiatives in local media.
- Promote City of Windsor programs including but not limited to:
  - Hazardous waste drop-off (batteries, used oil, hazardous materials, old medicines, etc.);
  - Anti-idling by-law;
  - Waste water treatment plant processes;
  - Separate and combined sewers;
  - Climate change adaptation and mitigation;



- Transit Windsor;
  - Active Transportation.
- Continue to provide environmental education at public events such as Earth Day, Open Streets, the Children’s Water Festival, waste water treatment plant open houses etc.
- Develop an education campaign that may include:
  - Social media;
  - Videos;
  - Newsletters or Targeted flyers;
  - Radio advertisements.
- Incorporate environmental themes into art, culture and recreational programming.
- Display environmental exhibits at Windsor’s museums and community centres.
- Ensure City of Windsor environmental information is available to the public at community centres and libraries.
- Continue to deliver environmental programming to elementary, secondary and post-secondary schools.

**Indicators:**

- Awareness of Environmentally Related Programs (Environmental Attitudes Survey Question)
- Number of public events attend
- Number of school presentations

**Objective E7: Continue to invest and develop partnerships**

Lead: Environmental Sustainability & Climate Change, Communications, Parks

**Actions:**

- Maintain current partnerships and continue to share information, resources and lessons learned.
- Actively seek out new partnerships moving forward.
- Partner with corporate entities to encourage proper environmental practices through joint education.
- Work with Corporate Partners to identify sponsorship opportunities.
- Encourage involvement of Corporate Partners at environmental events.

**Indicators:**

- Number of partnerships

## **Objective E8: Ensure involvement of residents and stakeholders in environmental decision-making**

Lead: Environmental Sustainability & Climate Change, Planning & Building, Transportation Planning, Parks, Communications

### **Actions:**

- Continue to create forums for stakeholders and residents input and dialogue (i.e. open houses, workshops, etc) when developing various environmental Plans and Policies.
- Continue to advertise public sessions through local media and on the City's website.
- For specific environmental issues, develop specifically targeted communication strategies.

## **Objective E9: Showcase Windsor's Environmental Commitment outside the Region**

Lead: Environmental Sustainability & Climate Change, Communications

Assist: Tourism Windsor Essex Pelee Island, Windsor Essex County Health Unit

### **Actions:**

- Work with outside groups (i.e. federal/provincial governments, agencies) to disseminate Windsor's success.
- Share lessons learned and successes with other municipalities through formal or informal networking opportunities (ex. Clean Air Partnership, Quest).
- Attend and highlight Windsor's accomplishments at conferences and workshops.
- Develop study tours for appropriate conferences being held in Windsor highlighting our successes.
- Apply for awards for environmental innovation

### **Indicators:**

- Number of presentations given
- Number of case studies documented
- Number of tours provided

**"People always focus on the negative about Windsor...We need to change the story people tell"**

20-Year Strategic Vision

## IMPLEMENTATION

The Environmental Master Plan is meant to be a guiding document for the municipality on a range of environmental issues. The objectives and actions touch on issues that affect every department in the City, therefore it needs to be integrated into the existing management framework. This has been slowly occurring since the original EMP was adopted by Council in 2006.

The Environmental Master Plan will continue to be administered by Environmental Sustainability & Climate Change staff. This group also oversees implementation of our Climate Change Adaptation Plan and Community Energy Plan (includes a Corporate Climate Action Plan). Staff will continue to work with various departments to provide resources and expertise as these departments work towards implementing their EMP objectives and actions. In addition, Environmental Sustainability & Climate Change staff will continue to implement their own environmental education and projects, as well as work with external agencies and partners to share resources and implement various objectives and actions.

### Reporting and Communication

As recommended in the original Environmental Master Plan, an update to Council on implementation is completed every two years. In addition, a Report on the State of our Environment is completed every four years documenting our progress on Environmental Master Plan indicators and implementation. The Environmental Canvas (next page) is a living document showcasing environmental Plans, policies, and other documents adopted by the City of Windsor. The Environmental Master Plan web pages are maintained by Environmental Sustainability & Climate Change Staff to provide information to the public about EMP initiatives as well as environmental education.

### Funding

The Environmental Master Plan has a dedicated operating budget for its staff, education campaigns, small projects and other initiatives. In addition, many grant opportunities are available and are successfully awarded to Environmental Sustainability & Climate Change staff or various other administrative departments for EMP related programs and initiatives. Challenges exist when various administrative departments look to implement EMP objectives and actions though they have no additional funding in their budgets. Many environmental initiatives have upfront costs, however are financially sustainable over the long term. The City of Windsor's Asset Management Plan seeks to build in lifecycle costing and climate change considerations which will strengthen the argument for sustainability projects.



## Goal A – Improve Our Air Quality



- Transit Master Plan (2006)
- Bicycle Use Master Plan (2001)
- Corporate Climate Action Plan (2017)
- Greening of the Fleet Plan (2012)
- Anti-idling by-law (2017)
- Pedestrian Generator Sidewalk Policy (2007)
- Traffic Calming Policy (2015)
- Windsor Area Long Range Transportation Study (1998)
- All Way Stop Policy (2005)
- Healthy Home Guide
- Scent Safe Workplace Procedure (2013)
- Member, Southern Ontario Clean Air Council

## Goal B – Improve Our Water Quality



- Climate Change Adaptation Plan (2012)
- Sewer Use by-law
- Downspout Disconnection Service
- Basement Flooding Protection Subsidy Program
- Household Chemical Waste Depot
- Sewer separation program
- Climate Adaptation House

## Goal C – Sustainable Land Use



- Rediscover Our Parks – Parks and Outdoor Recreation Master Plan (2015)
- Municipal Cultural Master Plan (2010)
- Community Gardens on Municipal Property Policy and Program (2014)
- Adopt-A-Park Policy (2013)
- Tree Planting of Carolinian Species Policy (1994)
- Ojibway Nature Centre
- Brownfield Redevelopment Strategy (2010)
- School Neighbourhood Policy (2016)
- Urban Heath Island Effect Study (2012)
- Designing Parks to Improve Thermal Comfort in Summer (2014)
- Downtown Windsor Heat Island Study (2015)
- Parks, Trails and Recreation Maps

## Goal D – Use Resources Efficiently



- Community Energy Plan (2017)
- Corporate Energy Management Plan (2014)
- Asset Management Plan (2013)
- Sustainable Purchasing Guide and Policy (2015)
- EWSWA Solid Waste Management Master Plan (2011)
- Hydration Station
- Public Spaces Recycling
- Energy Retrofit Program
- Recycling Centre Open House
- Recycled Construction Materials Policy (2015)
- Policy to Promote Municipal Tap Water (2015)
- Solid Waste Collection Calendar

## Goal E – Promote Awareness



- Earth Day celebration Committee
- Resources for teachers • Windsor Essex County Environment Committee
- Children's Water Festival • Open Streets Windsor
- Video: Waste Water: Where Does it Go? • Wastewater treatment plant open houses and tours
- Windsor Bike

# City of Windsor Environmental Canvas

*A record of Plans, policies, and other documents relating to the environment*

# Environmental Master Plan

City Departments

City Agencies

Supported by numerous stakeholders and the Community

Environment & Climate  
Change Canada

Windsor Port Authority

Community Garden  
Collective

Ministry of Energy

Caesar's Windsor

Community Housing  
Corporation

Sandwich Teen Action  
Group

Various Municipalities

Little River  
Enhancement Group

University of Windsor

Federation of Canadian  
Municipalities

Greater Essex County  
District School Board

Union Gas

Essex County Field  
Naturalists Club

Enwin

St. Clair College

Quest

Canadian Red Cross

Trout's Unlimited  
Canada

Crime Stoppers

Essex County Catholic  
School Board

United Way

Walpole Island First  
Nations

Health Canada

ICLEI

Citizen's Environmental  
Alliance

Downtown Windsor  
Community Collaborative

Detroit River Canadian  
Clean Up

Clean Air Partnership

Ministry of Environment  
& Climate Change



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