



City of Windsor's ROSE:
**Report On the State of our
Environment**



2013

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Executive Summary



As part of the City of Windsor’s Environmental Master Plan (EMP) Implementation, a number of environmental indicators are tracked over time. These indicators are categorized according to the 5 Goals of the Environmental Master Plan:

Goal A

Improve Our Air & Water Quality

Goal B

Create Healthy Communities

Goal C

Green Windsor

Goal D

Use Resources Efficiently

Goal E

Promote Awareness

A Report on the State of our Environment to be completed every four to five years was suggested in the EMP as a way to report on the environmental indicators being tracked. In this report, a trend analysis of each indicator has been completed; various City of Windsor projects benefitting the environment have been summarized; and areas to move forward towards further implementation of the EMP have been identified.

A summary of the trends for each indicator can be found in Table 1. To simplify the information, a checkmark was used if the trend of the indicator aligned with the goal, and an “X” was used if the trend of the indicator did not align with the goal (also see “How to Interpret the Graphs” section of this report).

Executive Summary

Table 1 – Summary of the goal, trend and result for each environmental indicator monitored.

	Goal	Trend	Result
Goal A – Improve Our Air and Water Quality			
Air Quality Index			
Good Air Quality Days			
Smog Days			
Ground Level Ozone			
Quality of Municipal Drinking Water (Number of Boil Water Advisories)			
Water Consumption			
Quality of Wastewater			
Lou Romano Water Reclamation Plant			
Little River Pollution Control Plant			
Amount of Wastewater Treated			
Wastewater Treatment Plant Bypass			
Detroit River Quality			
Tributary Surface Water (Phosphorus Concentration)			
Goal B – Create Healthy Communities			
Community Gardens			
Trails			
Population Density			
Commuting			
Sustainable Construction			
Sport and Recreation Facilities			
Participation in Registered Programs			
Goal C – Green Windsor			
Natural Areas		Not enough data	
Natural Heritage			
City Owned Trees Planted and Removed			
Amount of Maintained and Natural Parkland			
Pesticide Use			
Brownfield Conversion			

Executive Summary

Table 1 Cont.

Goal D – Use Resources Efficiently			
Energy Consumption			
Buildings	↘	↗	✗
Sewage Treatment	↘	↘	✓
Streetlights & Traffic Signals	↘	↘	✓
Solid Waste Management			
Total Refuse Sent to Landfill	↘	↔	✗
Diversion Rate	↗	↔	✗
Fuel Use	↘	↘	✓
Greenhouse Gas Emissions			
Corporate	↘	↘	✓
Community	↘	↘	✓
Goal E – Promote Awareness			
Web-Based Outreach	Not enough data		
Attitudes Towards the Environment	Qualitative data		
Awareness of Environmentally-Related Programs	↗	↗	✓

Many of the environmental indicators are moving towards their desired goal. Of the indicators that received a negative result, many were not moving away from their goal but were unchanged. This demonstrates that the environment in Windsor is improving in many ways. Many factors have played a role in these results, including but not limited to City of Windsor operations and Federal (Canadian and American) and Provincial/State policies, as well as community action. Windsor as a community can be very proud of the impact we are having on the environment.

Moving forward, the City of Windsor will continue to implement the Environmental Master Plan. There is still much work to be done to continue improving our environment. This includes monitoring these environmental indicators and reporting their results in further Reports on the State of our Environment. Tracking of indicators as well as other environmental information can be found on the City of Windsor website at www.windsorenvironmentalmasterplan.ca.



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Introduction

Background

Windsor's first Report on the State of our Environment (ROSE) was completed in 2008 and approved by City Council in 2009. This report was identified in Windsor's Environmental Master Plan (EMP) as a way to monitor the Plan's ongoing implementation and progress. The 2008 ROSE provided baseline data, which can now be built upon. The ROSE is a way to track specific environmental indicators over time. It is our hope that these indicators will improve as a result of changes to corporate policy and operations, as well as community action.

This 2013 Report on the State of our Environment provides trends in data collected from 2007 through 2012. The ROSE will continue to be updated approximately every four years.

As described in the original ROSE, the indicators chosen to be monitored over time were discussed with a group of City staff and community partners. In most cases, the indicators were chosen because they were relatively easy to track and they gave insight into the state of the environment. This is not an exhaustive list of environmental indicators, and there may be various factors influencing them. For example, the weather plays a role in many of the water quality indicators.

The indicators included in the ROSE have been grouped and presented in alignment with the five goals in the EMP:

Goal A

Improve Our Air & Water Quality

Goal B

Create Healthy Communities

Goal C

Green Windsor

Goal D

Use Resources Efficiently

Goal E

Promote Awareness

The indicators that were chosen focus on the priorities that Council set out for the EMP, namely, to focus on the actions of the corporation and items that the City can control, in the context of larger environmental change. The focus was also kept as "local" as possible: the Working Group focused on indicators that reflect the health of Windsor's environment. Therefore, there are linkages from local actions and conditions to national priorities and issues, such as climate change.

Introduction

Over time, the intent of the ROSE is to track changes in Windsor's environment. In addition, this report allows us to reflect on the implementation actions we have successfully completed as well as continue to look forward as to how we can continue to make improvements in our dedication to the environment.

Indicator Updates

Over time, the selection of indicators being examined and reported upon may change. Indicators may no longer be relevant due to changes in regulations, for example, or because community priorities have shifted and new indicators should be considered. In addition, some indicators have undergone changes either in how the data is collected over time or how it is being reported. These changes will always be marked with an asterisk (*) to ensure proper data transparency.

The following indicators have been either added or removed since the 2008 ROSE:

Indicators Removed
Illness Costs of Air Pollution

Indicators Added
Tributary Surface Water
Community Gardens

Illness Costs of Air Pollution

The indicator, Illness costs of air pollution was removed from the 2013 ROSE, as this is not something that either municipal operations or Windsor residents have control over. This information is useful when making the case to improve air quality, but the changes in financial costs of air pollution over time do not serve as a good indicator for Windsor's environment.

Tributary Surface Water

Tributary Surface Water health has increased in importance due to the frequent blue-green algae blooms occurring in Lake Erie. This indicator reports on the average concentration of Total Phosphorous in Windsor's two tributaries.

Community Gardens

Another important indicator added to this year's ROSE is Community Gardens. Since 2008 the local food movement in Windsor has gained much momentum, and the number of community gardens in Windsor has been increasing. This is an important environmental indicator to monitor as it limits food miles, pesticide and fertilizer use, promotes biodiversity, as well as contributes to a healthy community.

Introduction

The following Indicator has had its name changed since the 2008 ROSE:

Original Indicator Name
Combined Sewer Overflow

New Indicator Name
Wastewater Treatment Plant Bypass




Wastewater Treatment Plant Bypass

This change was made to better reflect what was being measured for this indicator. Combined sewer overflows (CSOs) occur as a result of old combined sewer infrastructure. During a rain event, this type of sewer is unable to handle the increase in water volume, and water is discharged directly to the Detroit River. These types of discharges are difficult to measure, and currently the City of Windsor is not directly measuring these types of overflows. Wastewater Treatment Bypass occurs when water reaching a wastewater treatment plant exceeds the plant's design capacity due to a rain event. The water bypasses the plant and is discharged into the Detroit River. This is measured at each wastewater treatment plant. Therefore, "Wastewater Treatment Plant Bypass" is a more appropriate name for this indicator.

How to Interpret the Graphs

Results

Legend

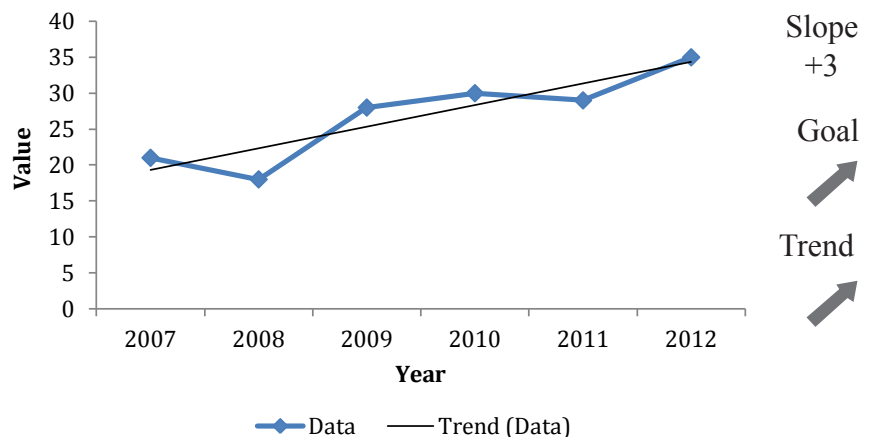
-  An upward goal or trend
-  A downward goal or trend
-  A trend that is unchanged

To determine if the Indicator is improving or declining over time, a trend line will be included on most figures. Trend lines with a slope greater than +1 will be considered to be increasing and those with a slope less than -1 will be considered to be decreasing. Slopes in between and including -1 and +1 will be considered to be unchanged. Trends will only be analysed if there are more than two data points available.

Some indicators are measured more qualitatively than quantitatively. These indicators will be rated as having an upward or downward trend on a case-by-case basis.

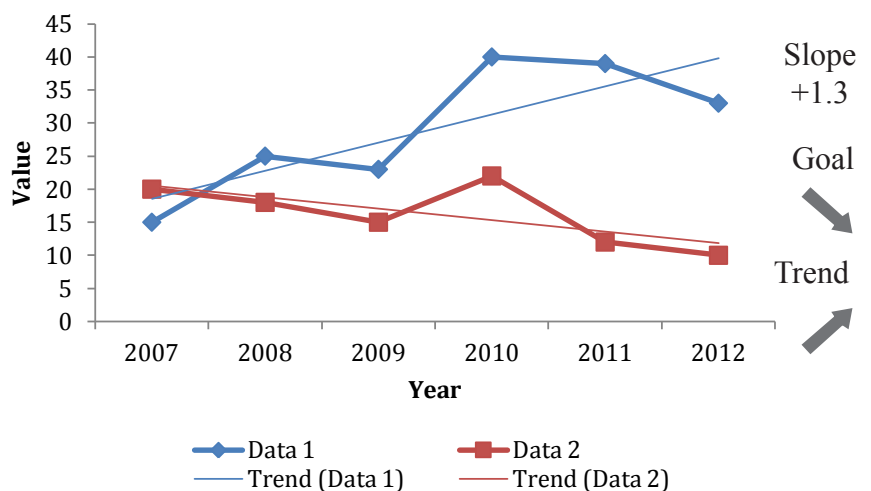
Sample Graph (A)

This graph shows data for an Indicator where the goal is to achieve an increase in the value over time (e.g. increase bike facilities, improve water quality, etc.). The direction of the goal arrow for these types of indicators is upward. In this sample, the trend is also upward since the trend line has a slope of +3. The trend is aligned with the goal.



Sample Graph (B)

This graph shows data for an Indicator where the goal is to achieve a decrease in the value over time (e.g. number of smog days, energy consumption, etc.). The direction of the goal arrow for these types of indicators is downward. In this sample, the slopes of the two data sets are averaged. The trend is upward since the trend lines have an average slope of +1.3 (if the average slope was -1.3 the trend would be downward). Therefore, the trend is not aligned with the goal.



Goal A: Improve Our Air & Water Quality

Indicators

Air Quality Index

Air quality is important for healthy cities. The Air Quality Index (AQI) measures air quality and the amount of smog days caused by Windsor's daily aggregated activities. A better air quality index means that Windsor as a community is healthier, as residents will spend fewer hours per day exposed to harmful air pollution.



Figure 1.1 - Number of Good or Very Good Air Quality Days.

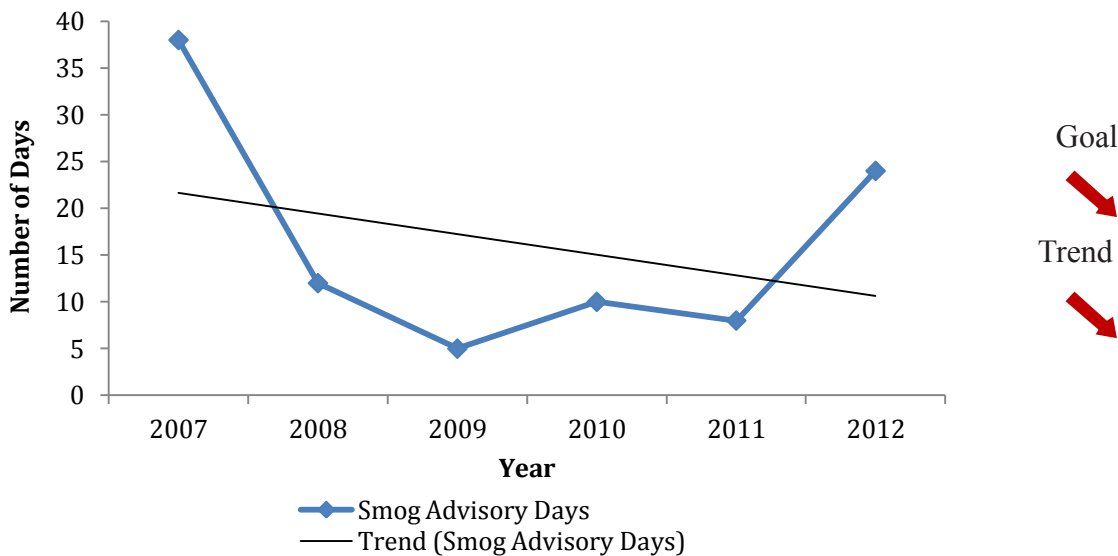


Figure 1.2 - Number of Smog Advisory Days.

Goal A: Improve Our Air & Water Quality

Ground Level Ozone

Ground level ozone is produced in emissions from burning fossil fuels, coal plants, factories, evaporated gas, paints and solvent fumes. Ground level ozone is the primary air pollutant responsible for smog advisories. Ozone irritates the lungs, and can cause significant health problems for people at risk.

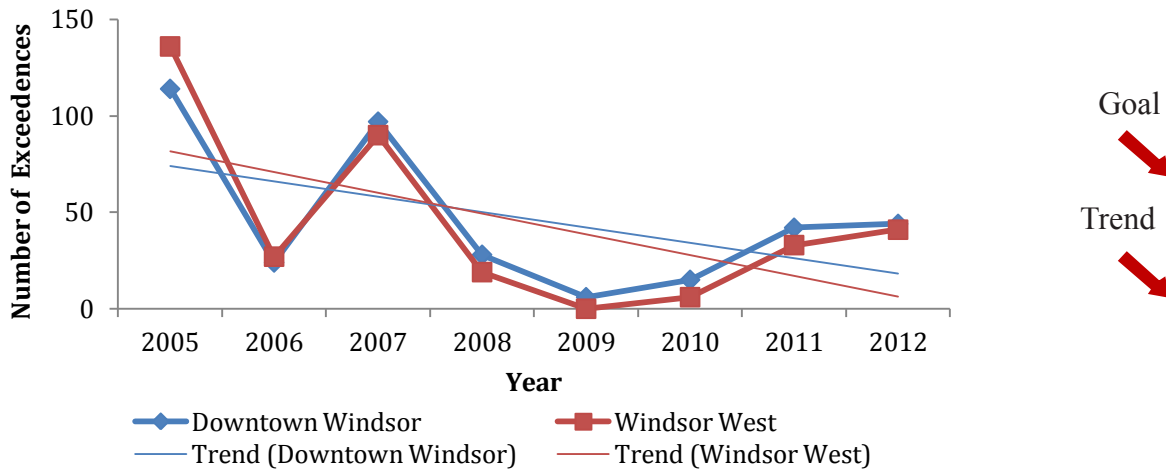


Figure 1.3 - Number of One-hour Exceedences of Acceptable Ground Level Ozone Concentrations (as set by the Ministry of the Environment).

Quality of Municipal Drinking Water

Clean drinking water is important to the health and well-being of all Windsorites. Maintaining and providing clean and safe drinking water is of the utmost importance to the City of Windsor. The number of Boil Water Advisories is one way to monitor water quality. A Boil Water Advisory is issued in the event of a possible microbiological contamination.

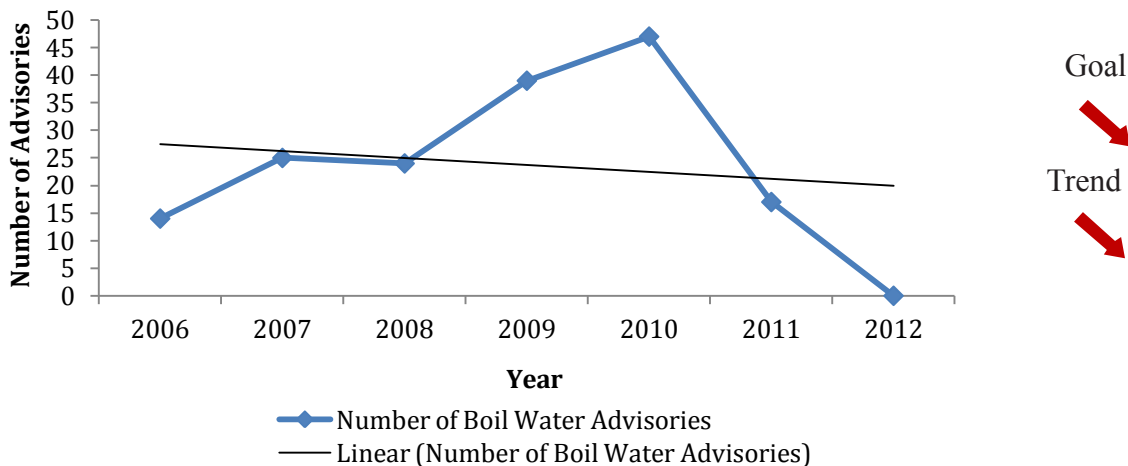


Figure 1.4 - Number of Boil Water Advisories Issued by the Windsor Essex County Health Unit.

Goal A: Improve Our Air & Water Quality

Water Consumption

A lower amount of water consumption may indicate better water conservation on the part of the community as a whole.

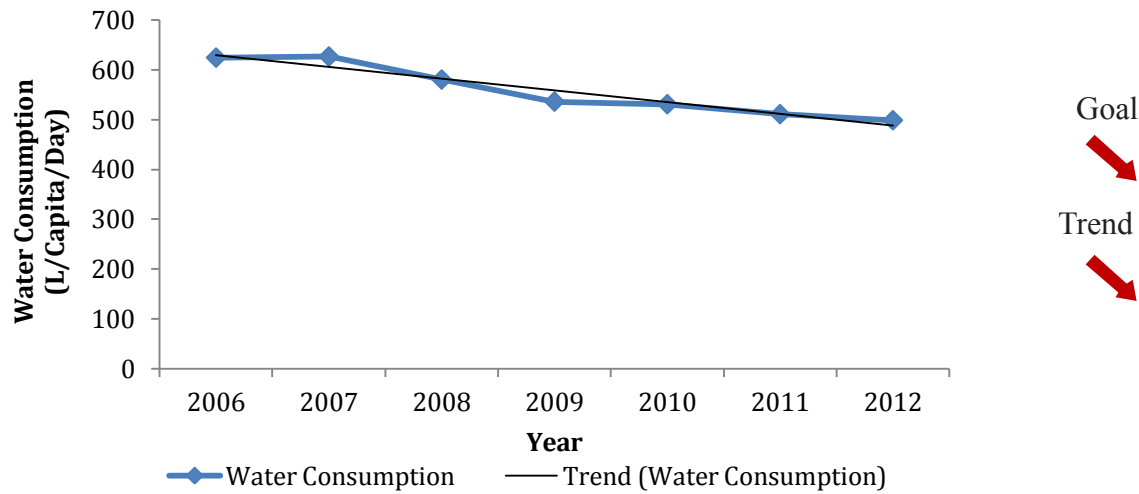


Figure 1.5 - Water Consumption in Litres per Capita per Day.

Quality of Wastewater

Treating wastewater is vital for maintaining water quality. Wastewater treatment removes particulate matter/sediments, and both organic and inorganic pollutants before the water is discharged into a local body of water. In Windsor, treated wastewater is discharged into the Detroit River. Treatment plants strive for a high percentage of removal for biological oxygen demand, suspended solids and total phosphorous to protect the health of the river ecosystem.

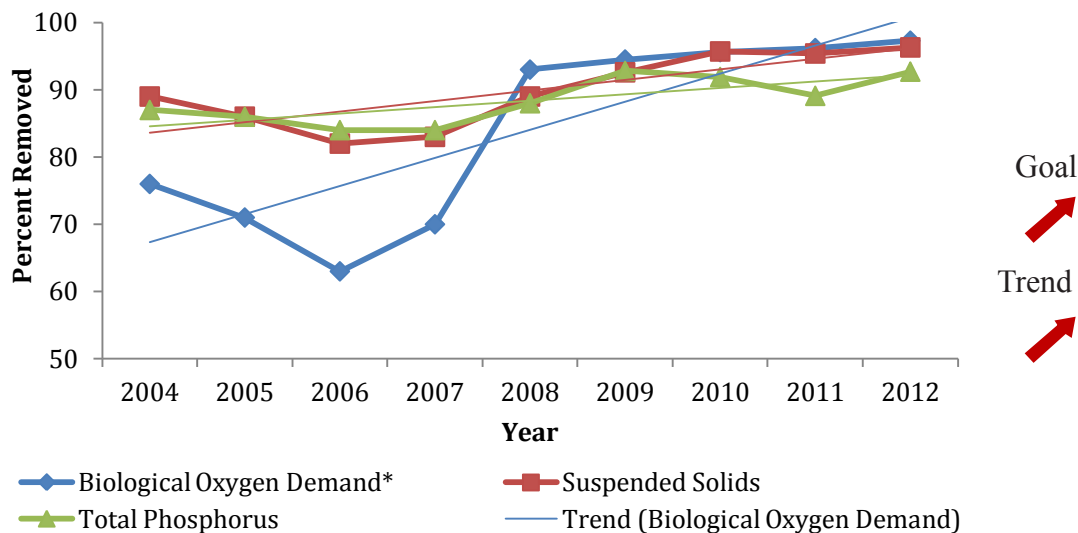


Figure 1.6 - Contaminant removal at Lou Romano Water Reclamation Plant.

*In 2007 the Lou Romano plant began measuring Carbonaceous Biological Oxygen Demand (BOD) in its effluent in place of Total BOD. This does not allow for a completely direct comparison.

Goal A: Improve Our Air & Water Quality

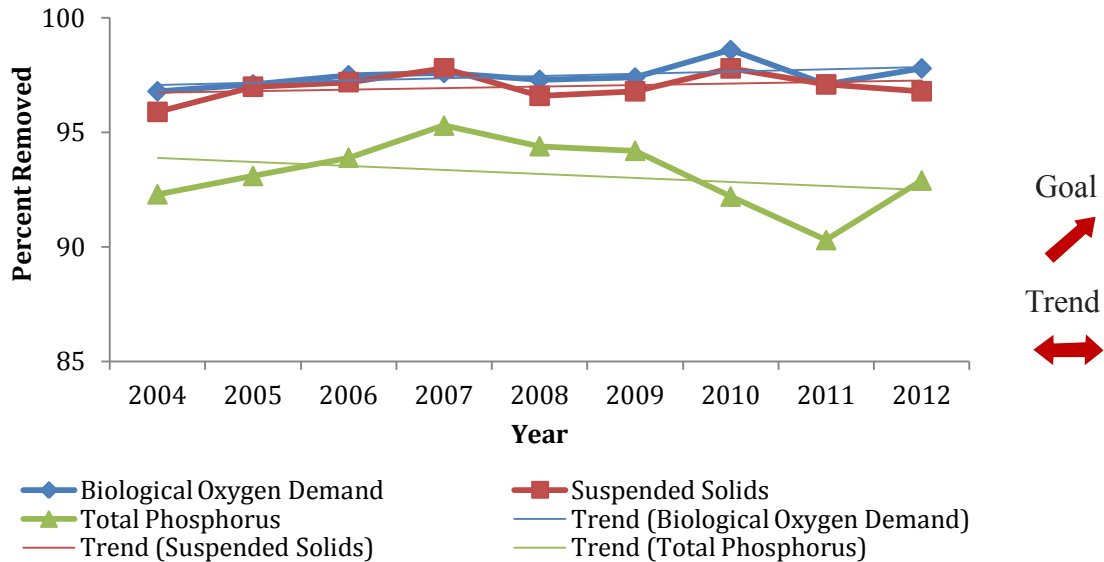


Figure 1.7 - Contaminant Removal at Little River Pollution Control Plant.

Amount of Wastewater Treated

The amount of wastewater being treated indicates the amount of water each household is using, in addition to the amount of stormwater that is sent to the treatment plants. A lower amount can indicate better water conservation on the part of the community. Additionally, this number is impacted by the stormwater collected by combined sewers and sent to the wastewater treatment plants.

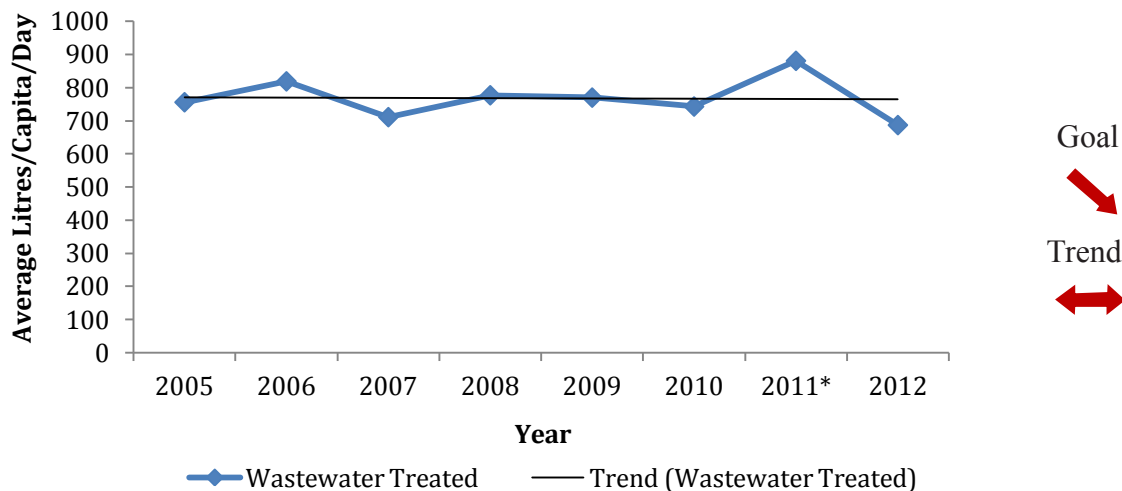


Figure 1.8 - Total Amount of Wastewater Treated.

*In 2011, total rainfall in Windsor measured 1,568.2mm compared to the average total rainfall of 805mm. This well-above-average rainfall contributed significantly to the large amount of wastewater treated at each plant in 2011.

Goal A: Improve Our Air & Water Quality

Wastewater Treatment Plant Bypass

A wastewater treatment plant bypass occurs when wastewater reaching a wastewater treatment plant exceeds the plant's design capacity, often due to a rain event. This data is tracked at both of Windsor's wastewater treatment plants. All bypass events at Windsor's treatment plants receive some level of treatment before discharge.

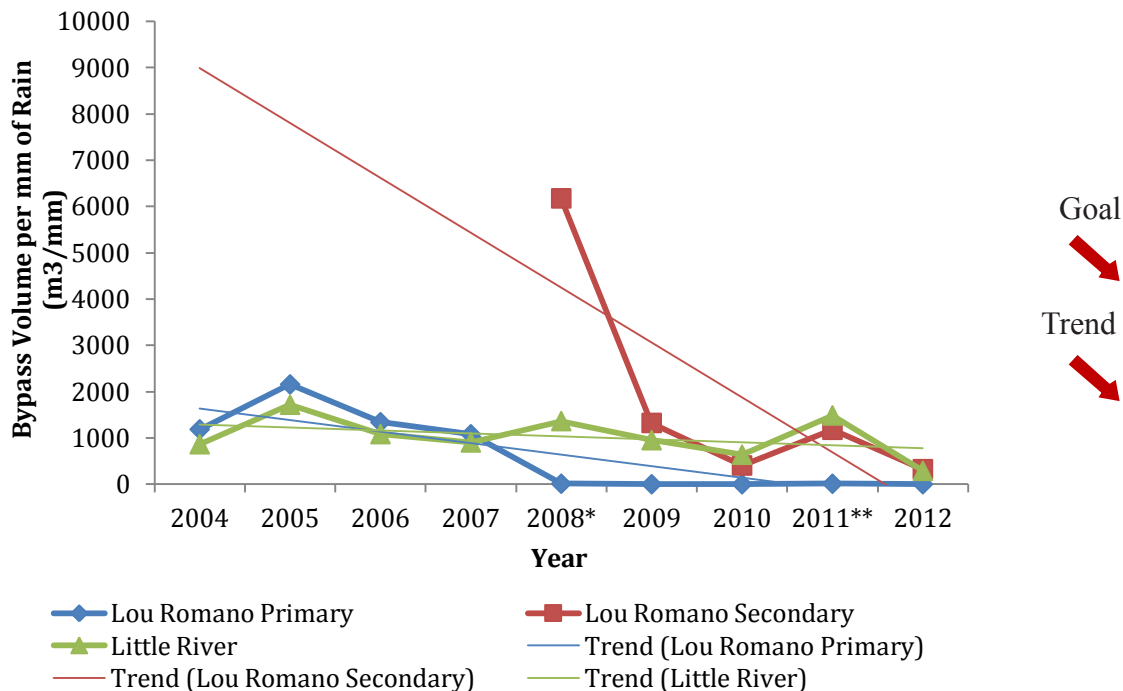


Figure 1.9 - Wastewater Treatment Plant Bypass Volumes Normalised for Amount of Rainfall.

*In 2008, the Lou Romano Water Reclamation Plant was undergoing an expansion of its primary treatment processes from 165 Megalitres to 275 Megalitres and upgrading the facility to include 220 Megalitres of secondary treatment. The secondary treatment process experienced some difficulties during the initial operation phase resulting in a greater amount of secondary treatment bypass.

**In 2011, total rainfall in Windsor measured 1,568.2mm compared to the average total rainfall of 805mm. This well-above-average rainfall contributed significantly to the bypass amounts at each plant in 2011.

Goal A: Improve Our Air & Water Quality

Detroit River Quality

The Detroit River was listed as a Great Lakes' Area of Concern in the 1980s. The Detroit River Canadian Cleanup (DRCC) is a community-based partnership between industry, government (including the City of Windsor), academics, environmental organizations and citizens that work together to improve the health of the Detroit River ecosystem. The DRCC initiative, implemented as part of the Canada-U.S. Great Lakes Water Quality Agreement, tracks the status of 14 potential beneficial water use impairments (BUIs) that indicate the health of different parts of the ecosystem. Progress is being made through restoration and monitoring. Since the 2008 ROSE was written, the DRCC partners have proposed changing the status of several BUIs.

Table 1.1 – The Status of Detroit River Beneficial Use Impairments as of July 2013. Updates since the 2008 ROSE are denoted in red.

	Beneficial Use Impairment	2008 Status	Current Status
1	Restrictions on fish and wildlife consumption	Impaired (fish)	Impaired (fish)
2	Tainting of fish and wildlife flavour	Unknown	Proposed Not Impaired
3	Degradation of fish and wildlife populations	Impaired	Impaired
4	Fish tumours or other deformities	Impaired	Impaired
5	Bird or animal deformities or reproductive problems	Impaired	Impaired
6	Degradation of benthos	Impaired	Impaired
7	Restrictions on dredging activities	Impaired	Impaired
8	Eutrophication or undesirable algae	Not impaired	Not impaired
9	Restrictions on drinking water consumption, or taste and odour problems	Not impaired	Not impaired
10	Beach closings	Impaired	Proposed Not Impaired
11	Degradation of aesthetics	Impaired	Impaired
12	Added costs to agriculture or industry	Impaired	Not impaired
13	Degradation of phytoplankton and zooplankton populations	Unknown	Proposed Not Impaired
14	Loss of fish and wildlife habitat	Impaired	Impaired

Goal

Trend


Goal A: Improve Our Air & Water Quality

Tributary Surface Water

Turkey Creek (Grand Marais Drain) and Little River are the two major tributaries of the Detroit River within the City of Windsor. The Essex Region Conservation Authority (ERCA) monitors the phosphorous content of these two tributaries as well as others. Total phosphorus is a nutrient that can become elevated due to urban and rural land uses associated with fertilizer use, pet and wildlife droppings and faulty septic systems. Excess phosphorus in freshwater promotes the growth of algae. When the algae dies, dissolved oxygen in the water is consumed to biodegrade the algae. This process is called eutrophication. When the level of oxygen is reduced due to eutrophication the fragile ecosystem becomes strained and can lead to fish and wildlife deaths and poor water quality.

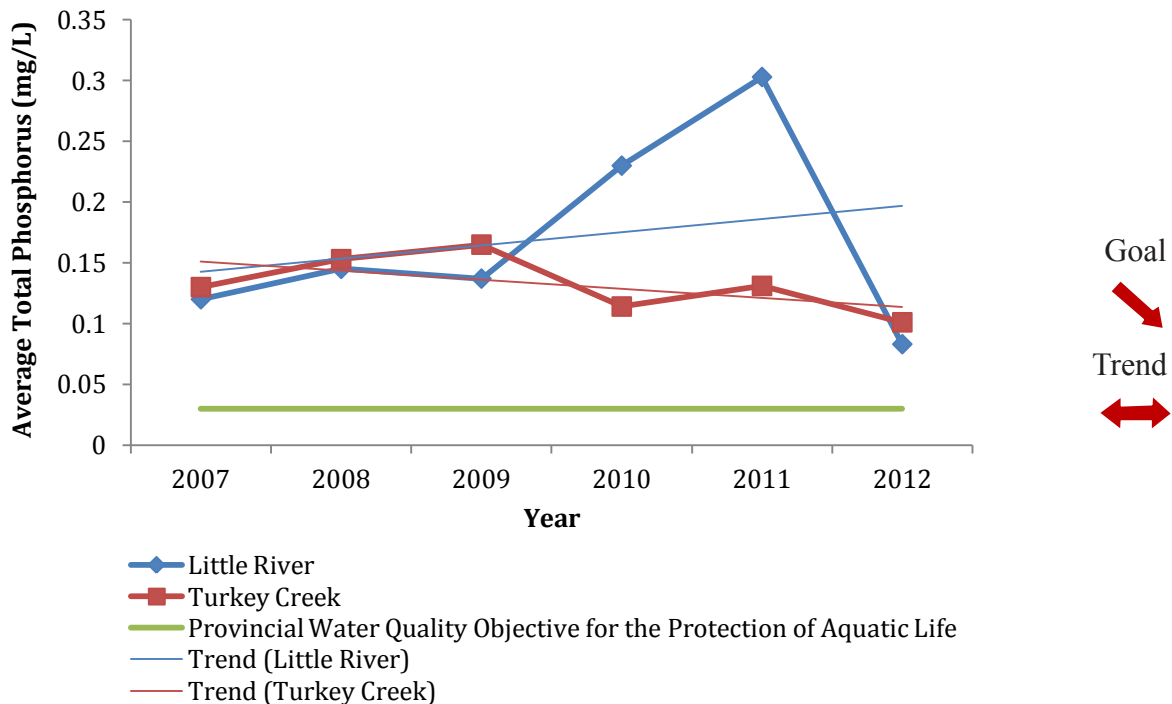


Figure 1.10 - Total Phosphorus in Windsor Tributaries.

Goal A: Improve Our Air & Water Quality

City of Windsor Initiatives

Transit Windsor Initiatives

Transit Windsor currently operates 29 hybrid bus units, which decreases fuel consumption and therefore reduces air pollution caused by buses. They have also implemented the SmartDriver for Transit program. The intent of the program is to reduce fuel consumption and exhaust emissions by educating drivers on how the engine uses fuel, how exhaust emissions affect the environment, how fuel use affects engine maintenance and how much fuel might be saved through fuel-efficient driving.

Retention Treatment Basin

The City of Windsor has invested capital and resources to decrease combined sewer overflows (when wastewater and stormwater are discharged from a combined sewer system directly into the river during heavy rainstorms) thereby improve Detroit River water quality. This issue has been improved upon through the construction of an underground retention treatment basin (RTB) in 2010-2011, which captures flows from interceptor chambers east of Caron Avenue to reduce combined sewer overflow (CSO) discharges to the Detroit River during wet weather events. The RTB also provides primary treatment during intense storm events.

Downspout Disconnection

Downspouts collect rainwater from roofs and are used to carry water away from a home. Many downspouts are connected to the sewer system. During rain events, the added water they convey can overload the sewers and, depending on where you live, can lead to combined sewer overflows that pollute local waterbodies. Disconnecting a downspout and installing a rainbarrel helps conserve water and reduces the volume of rainwater unnecessarily entering the sewers. Under By-Law 26-2008, parts of the City require mandatory disconnection to decrease the frequency and impacts of combined sewer overflows. In 2011 and 2012 the City of Windsor offered free downspout disconnection to all areas of Windsor and also offered free rainbarrels to residents who participated in the downspout disconnection program. In 2013, the program is still free for all residents, however, rainbarrels are no longer available.

Sewer Separation

Some areas in Windsor are serviced by combined sewers, which carry both storm water and wastewater to the wastewater treatment plants but also have a direct outfall to a local waterbody (e.g., the Detroit River). This type of system was originally designed to protect treatment plants from overload. However, during periods of heavy rain, the large amount of stormwater overloads sewer pipes, mixes with sanitary waste and discharges into a watercourse leading to bacterial pollution. Furthermore, the additional stormwater volume may exceed the capacity of the treatment plants, and partially treated water bypasses the treatment plant and goes directly to the Detroit River. The City of Windsor is working diligently to separate combined and degraded sewers to reduce combined sewer overflow events and the amount of stormwater going to the treatments plants.

Goal A: Improve Our Air & Water Quality

Phosphorus Free Fertilizer

In 2010, the Parks & Facilities department began using phosphorus free fertilizer in parks and sports fields. This limits the amount of phosphorus that may enter our waterways.

Updating IDF Curves

In 2012 the City of Windsor allocated funding in the budget to update the rainfall intensity duration and frequency (IDF) curves. This work will be completed through the Essex Region Conservation Authority in partnership with interested local municipalities. This will help us better prepare and design for the potentially wetter weather ahead.

Sewer Flow Monitoring and Hydraulic Modelling

City administration is proceeding with flow monitoring and hydraulic modelling of the City's sewer system, which will help in developing a Master Plan for storm and sanitary sewers. The City has also purchased permanent flow monitoring equipment that will assist the City's treatment plants in making decisions to optimize system capacity.

Source Water Protection Plan

In consultation with the Essex Region Conservation Authority a Proposed Source Water Protection Plan was released in 2012. The Plan is a management strategy that looks at the current and future sources of municipal residential drinking water within the Essex Region. The Plan identifies the potential threats to these sources and develops actions and programs to reduce or eliminate these risks. To download a copy of the Source Water Protection Plan, please visit www.essexregionsourcewater.org.

Green the Fleet Plan

In 2012 City Council approved the Greening of the City Fleet Plan. This Plan aims to reduce the effects of vehicle fuel consumption on air quality by implementing a number of measures: minimizing the size of our fleet, ensuring vehicles are the appropriate size for the job, introducing hybrid vehicles and conducting fuel efficient driver training and preventative maintenance programs. In addition, automatic shut-offs are a standard feature on heavy equipment and an anti-idling device pilot program was recently implemented on gasoline pickup trucks. The corporate fleet has been downsized by 8% since 2009. Windsor Police Services and our corporate fleet operate nine and one hybrid vehicles respectively.

Goal A: Improve Our Air & Water Quality

Areas to Move Forward

- ❑ Complete a City of Windsor Smog Day Action Plan;
- ❑ Evaluate use of anti-idling devices on gasoline pickup trucks;
- ❑ Implement a rainbarrel water collection program on select City properties to show water conservation techniques;
- ❑ Consider stocking and selling rainbarrels at a discounted price – have them available at the Household Chemical Waste (HCW) Depot and Reuse Centre – to reduce the use of treated water for watering and lawn use;
- ❑ Complete a Storm and Sanitary Sewer Master Plan;
- ❑ Develop an anti-idling education campaign;
- ❑ Promote increased and smoother traffic flow for all modes (including cyclists and pedestrians) by using Intelligent Transportation Systems (ITS), e.g. to improve signal coordination, provide priorities for transit and introduce electronic way-finding and transit route information.

Goal B: Create Healthy Communities

Indicators

Community Gardens

Community gardens growing vegetables and native flowering plants promote biodiversity and limit the use of pesticides and manufactured fertilizer, thereby providing access to a source of healthy, fresh food for the community. They also foster community spirit and can turn a vacant piece of property or part of a City park into a thriving neighbourhood gathering place.

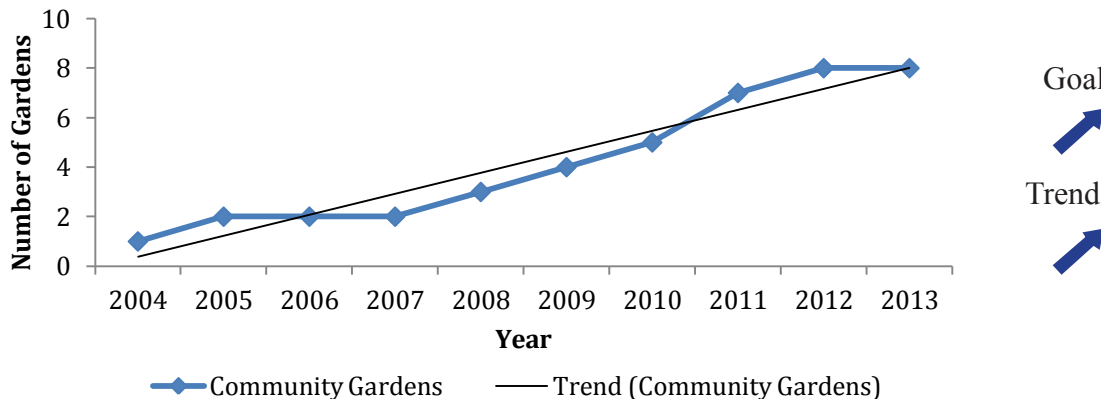


Figure 2.1 - Number of Community Gardens.

Trails

Populations that walk, bike, and participate in outdoor sports have a more active lifestyle than those that do not. Cities with active, engaged citizens are healthier, more vibrant and economically competitive places. Multi-use trails are dedicated trails located both off-road and within the public right of way that may be used for mixed uses, including mobility devices, walking, running or bicycling. Bike Facilities include Sharrows (road markings indicating that cyclists and motorists share the lane), signed bicycle routes and bicycle lanes.

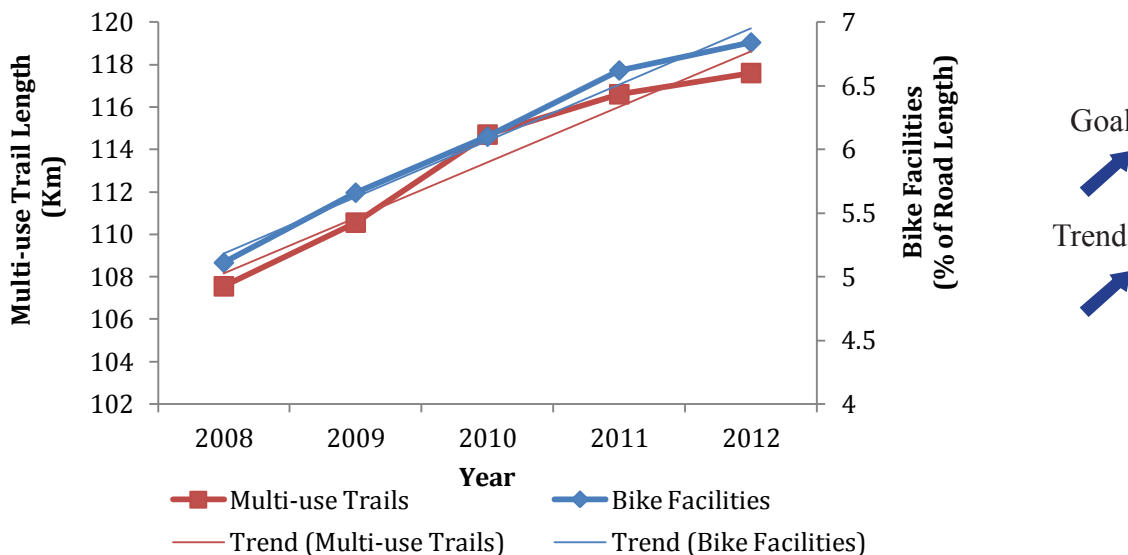


Figure 2.2 - Amount of Bicycling Facilities and Multi-Use Trails.

Goal B: Create Healthy Communities

Population Density

Urban density is an indicator of how sustainable a city's built form is. Density influences the design and form of the city and how people interact within it, as well as the effectiveness of transit. A more dense population is more resource-sustainable.

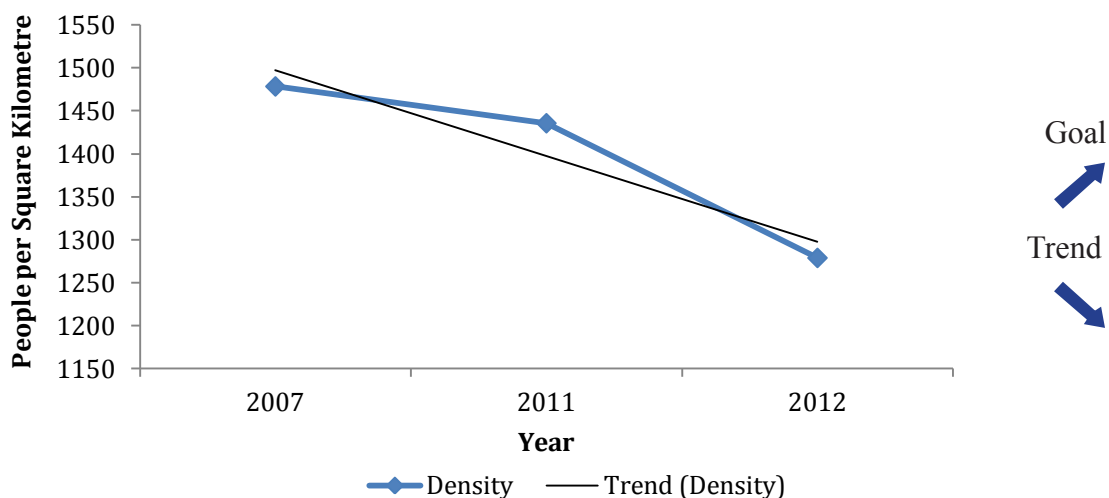


Figure 2.3 - Windsor's Population Density.

*2007 and 2012 population data is predicted using Canada Census data from 2006 and 2011 respectively.

**From 2007 to 2012 Windsor's population has decreased while the Windsor area has remained the same.

Commuting

Commuting rates determine the number of kilometres driven, in total, by Windsorites. The greater the number of kilometres driven, the higher the impact will be on air quality and congestion. This impacts the health of residents and the environment.

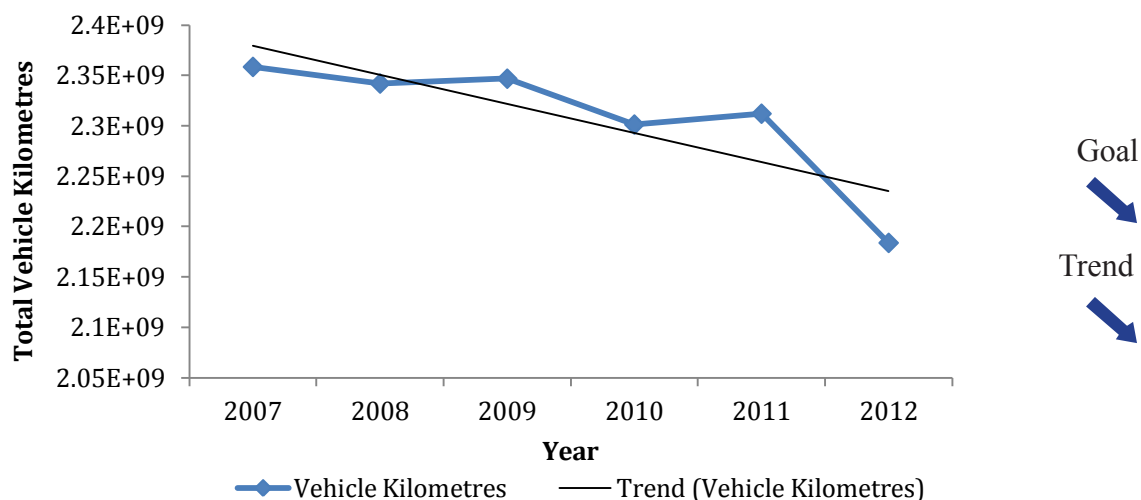


Figure 2.4 - Total Vehicle Kilometres Travelled.

Goal B: Create Healthy Communities

Sustainable Construction

Green buildings and design, which includes LEED and other rating systems, are fundamental to energy-efficient, environmentally-sustainable development in Windsor. Sustainable construction practices help save water, reduce green house gas (GHG) emissions, and contribute to the health and quality of life of communities. Projects registered since the last ROSE report are listed in red.

Table 2.1 – LEED Registered Projects

Building	Registration Date	Certification Date	Certification Level
Target, Devonshire Mall	February 2013	May 2013	LEED for Retail
La Bella Strada	September 2011		
HMCS Hunter	April 2010		
City of Windsor Fire Hall No. 7	January 2010		
Ojibway Nature Centre	December 2009	October 2012	Silver
Union Gas Windsor District Office	January 2008	April 2011	Gold
Dr. David Suzuki Public School	June 2007	November 2011	Platinum
Ecole secondaire de Windsor	March 2007	May 2013	Gold
University of Windsor Centre for Engineering Innovation	November 2006		
Toldo Medical Education Building	November 2006		

Goal

 Trend


Goal B: Create Healthy Communities

Sport and Recreation Facilities

Sports and recreation centres are important places for people to participate in the activities they enjoy the most. Offering a wide variety of programs and services improves the participation rate and therefore the health and vitality of the community.

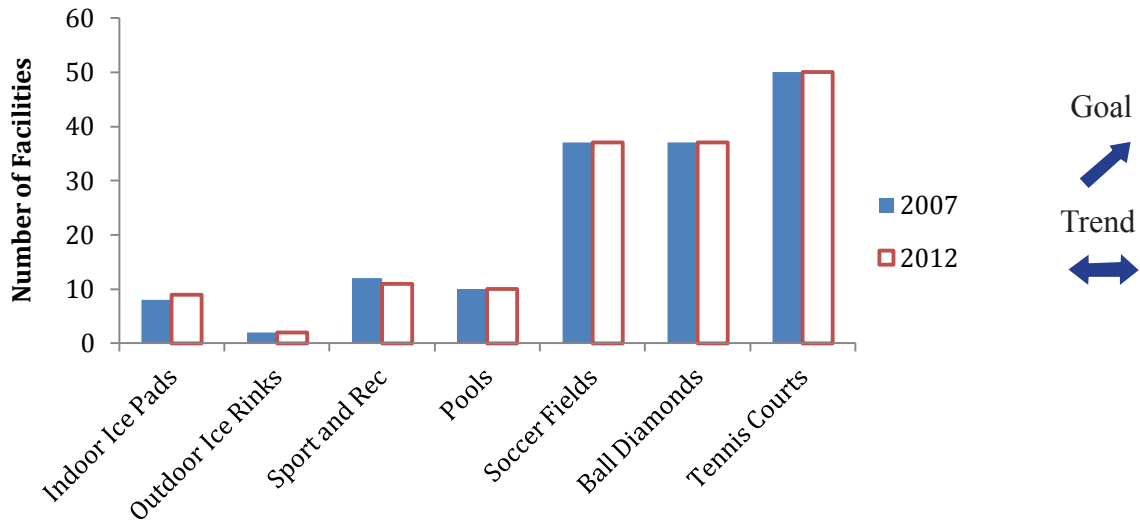


Figure 2.5 - Number of Sport and Recreation Facilities.

Participation in Registered Programs

The number of people participating in programs is an indication of an active community. The more people participate, generally the more active, involved and healthier the community will be.

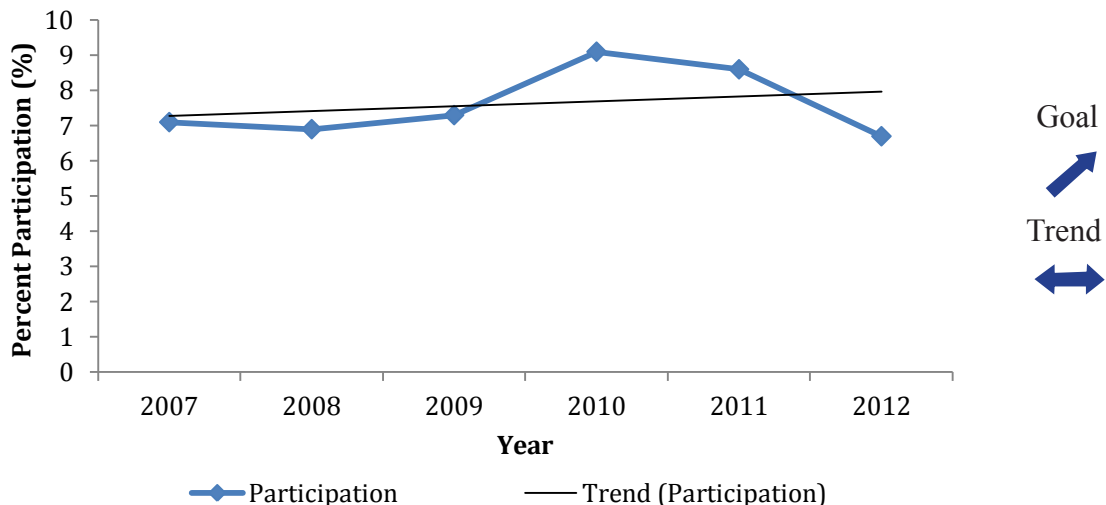


Figure 2.6 - Percentage of the Population Participating in Registered Programs.

Goal B: Create Healthy Communities

City of Windsor Initiatives

Seed and Feed Initiative

In 2012, Windsor City Council approved a Food Security Initiative in the form of a Community Garden Expansion Strategy, with a maximum of \$100,000 in one-time funding towards either the development of new community gardens or the expansion of existing community gardens. This initiative was branded “Seed & Feed” and provided grant funding to eligible applicants whose proposals demonstrated that their community garden project would provide fresh produce to people who may otherwise go without it. As a result of this program, ten community gardens were given funding to either begin or expand their operations.

Active Transportation Initiatives

In 2011 the City of Windsor partnered with the Waterfront Regeneration Trust to extend the Waterfront Trail through the City of Windsor, connecting to the Town of Tecumseh to the east and the Town of LaSalle to the west, adding an additional 620 kilometres to the trail. The City administers the Crossing Guard Program, responsible for the safety of Elementary school children, who walk to and from school by crossing them safely across City intersections. We also provide in-kind support to the Health Unit for their Active & Safe Routes to School program. Windsor received a bronze level Bicycle Friendly Communities Award in 2011.

Incentives to Increase Population Density

The Development Charges By-law (70-2010) includes an initiative that offers partial exemption of development charges for residential infill development in core areas of Windsor. The purpose of this initiative is to encourage new residential construction or residential redevelopment in Windsor’s downtown and historical community main streets through reduced development costs. This initiative helps to reduce urban sprawl which can have impacts on a number of environmental indicators including decreasing vehicle kilometres travelled and improving water quality (due to less impermeable pavement).

Streetscaping using Sustainable Practices

During the recent repaving of Wyandotte Street West and Erie Street, many sustainable street design practices were incorporated to help create a healthier community. Shared-lane markings, or Sharrows, indicating that cyclists and motorists share these lanes for travel, were added to encourage cycling. An increase of benches and lighting were included to promote safety and walkability. Curb extensions, or bumpouts, were used as a traffic calming measure, and planter boxes with a variety of trees and shrubs were incorporated to add shade and other environmental benefits.

Goal B: Create Healthy Communities

Sustainable Construction

The Ojibway Nature Centre is a LEED certified building with many environmentally sustainable attributes. Rain water from the roof is diverted to the Matchette Road pond and the bird viewing water feature, and a reflective white roof help to reduce both heat loss in the winter and heat gain in the summer. In addition, a living green roof covers approximately 30% of the roof area. Drought-tolerant plants were used for landscaping, and a tertiary sewage system was used, reducing potable waste water by 100%. Granite from the road bed of the Ambassador Bridge was salvaged and reused in the building.

Fire Hall No. 7 is awaiting LEED certification. This building has a 9.6 kW solar photovoltaic system on the roof and radiant floor heating supplied by natural gas. There are occupancy and daylight sensors throughout the building to improve energy conservation, and the use of locally manufactured materials was maximized to minimize the impact of transportation. A rainwater harvesting cistern and truck wash water recycling system minimizes water consumption.

The Rt. Hon. Herb Gray Parkway Project

The City of Windsor has worked with consultants developing the Windsor Essex Parkway, a multi-lane highway being developed on the city's west end. Many environmental practices have been used to develop the highway, including the removal and re-planting of species at risk plants, as well as the removal and protection of species at risk fauna, in particular Butler's Gardersnake and Eastern Foxsnake. Native species will be planted along a 20 km multi-use trail when the project is completed. This trail will tie in with existing neighbourhood trails. Provincially Significant Wetlands that were disturbed to allow for the Parkway will be compensated for at a ratio of 3:1.

Goal B: Create Healthy Communities

Areas to Move Forward

- ❑ Complete the City's Transit Master Plan (TMP) to increase ridership;
- ❑ Participate in International Car Free Day September 22nd;
- ❑ Reinstigate free bus rides on smog days;
- ❑ Identify priority areas for connectivity among the City's walking facilities;
- ❑ Develop a work plan to expand the walking network in priority areas;
- ❑ Complete a guidebook outlining best practices for new development;
- ❑ Develop a partnership with Trans-Canada Trail;
- ❑ Continue to implement recommendation from the Bicycle Use Master Plan and update this plan in the future;
- ❑ Complete a Transit Study for the downtown region;
- ❑ Set minimum density requirements;
- ❑ Design commercial and residential land use to maximize access to public transit;
- ❑ Investigate the possibility of reducing development charges for developers of energy efficient homes and businesses;
- ❑ Develop a Regional Growth Plan in collaboration with county municipalities.

Goal C: Green Windsor

Indicators

Natural Areas

The percentage of natural areas in Windsor is one indicator of our ecological integrity. Natural areas include all forest, wetland and prairie features larger than 0.5 hectares (1.25 acres) but do not include parks, lawns and other intensively managed areas. These areas help to improve air quality, prevent flooding, store carbon, reduce water pollution impacts, as well as provide critical habitat for various urban flora and fauna.

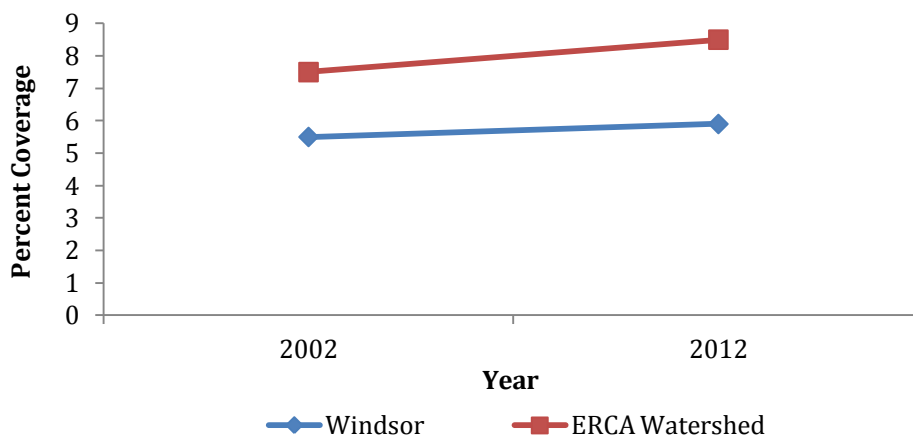


Figure 3.1 - Percent Coverage of Natural Areas in Windsor and the ERCA Watershed.

*Windsor 2002 data based on the Biodiversity Conservation Strategy Report (BCS), ERCA 2002. ERCA Watershed 2002 data based on ERCA BoD Report FA 48/02. All 2012 data is from the Essex Region Natural Heritage Strategy Study (ERNHSS), ERCA 2012/13. The minimum size of forest patch identified was 0.5 hectares in 2002 and 0.1 hectares in 2012. The data source for non-wetland features that was used in 2002 was a 2000 digital aerial photo, and in 2012 a 2008 digital aerial photo. The data source for wetland features in 2002 and 2012 was the Ontario Ministry of Natural Resources (OMNR).

**Trends are only assessed on indicators with more than two data points.

Goal C: Green Windsor

Natural Heritage

Natural Heritage lands provide for the protection and conservation of Windsor's most environmentally significant and sensitive natural areas, including provincially designated areas of natural and scientific interest (ANSI) and wetlands. Natural Heritage lands are similar to Natural Areas with the exception that Natural Heritage Lands are designated as such in the City of Windsor's Official Plan. There is overlap between land designated as Natural Heritage and natural areas, however some natural areas may not be designated as Natural Heritage.

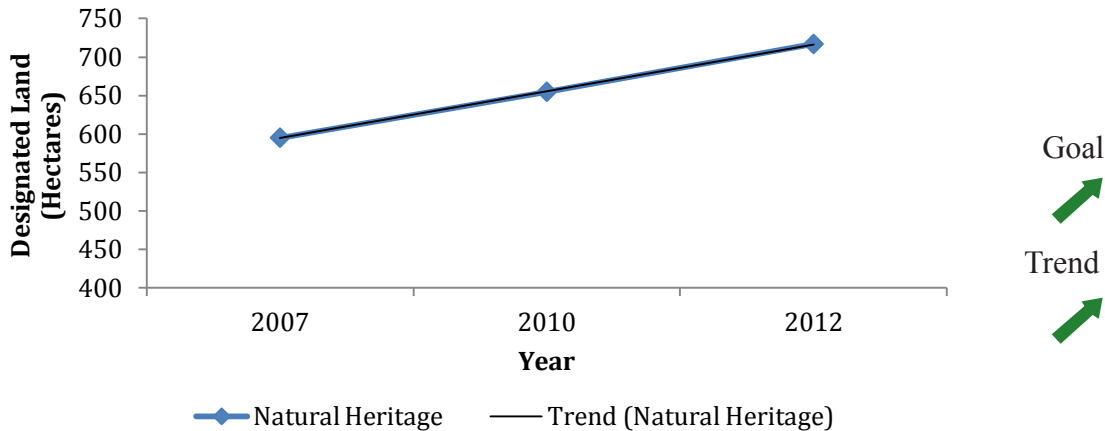


Figure 3.2 - Amount of Land Designated as Natural Heritage in Windsor's Official Plan.

City Owned Trees Planted and Removed

Trees play an important role in the health of our city. Trees filter air and water pollution, and help prevent severe flooding. The more trees there are, the healthier the social and natural environment will be for us and future generations.

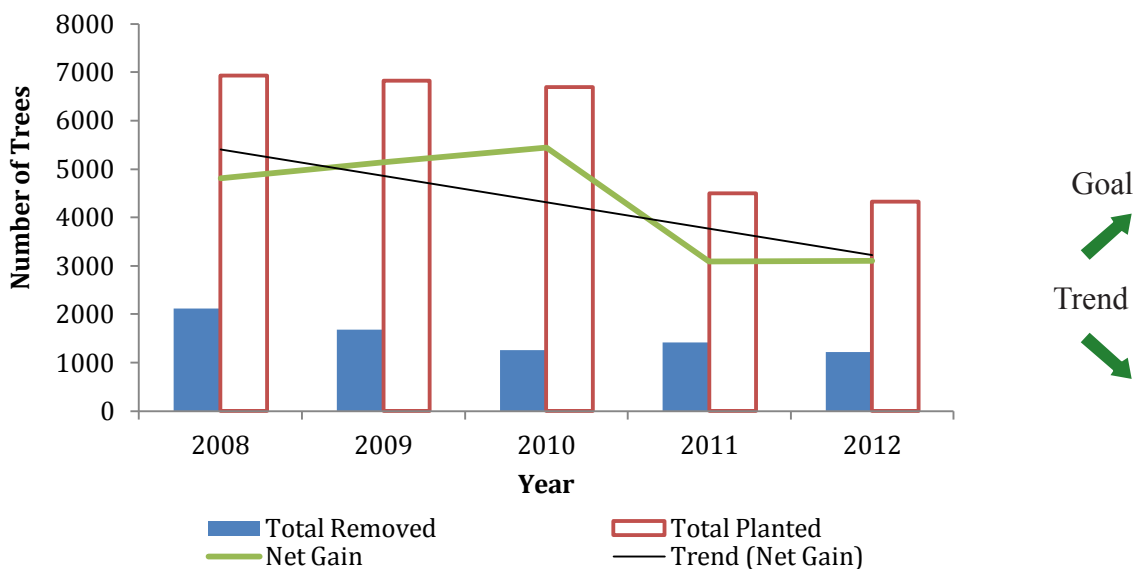


Figure 3.3 - Number of City-owned Street Trees Planted and Removed.

*A large amount of trees were planted in 2008, 2009 and 2010 to counteract the loss of many Ash trees killed by the Emerald Ash Borer.

Goal C: Green Windsor

Amount of Maintained and Natural Parkland

The higher the amount of natural parkland available to the public, the greater the degree of exposure and interaction between the public and nature will be. Other benefits include opportunities for people to enjoy outdoor activities and recreation.

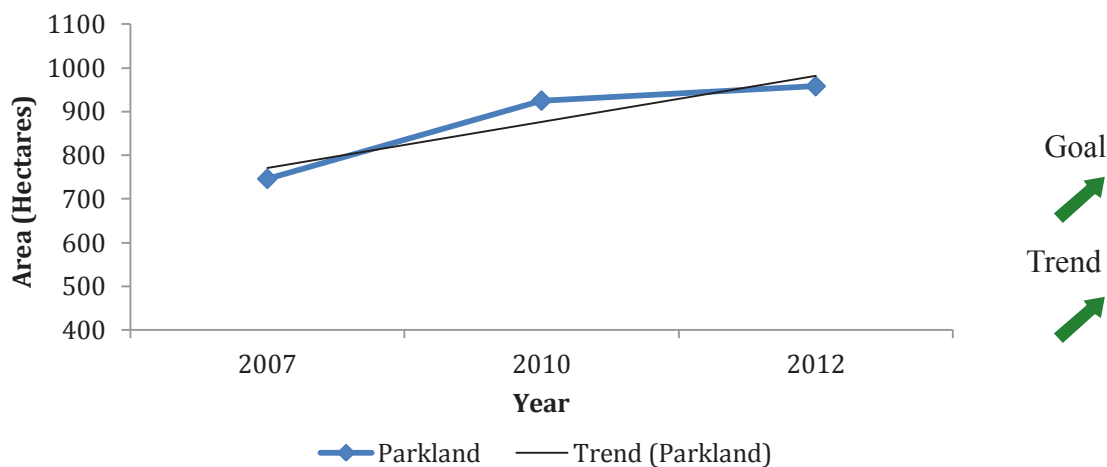


Figure 3.4 - Amount of Maintained and Natural Parkland.

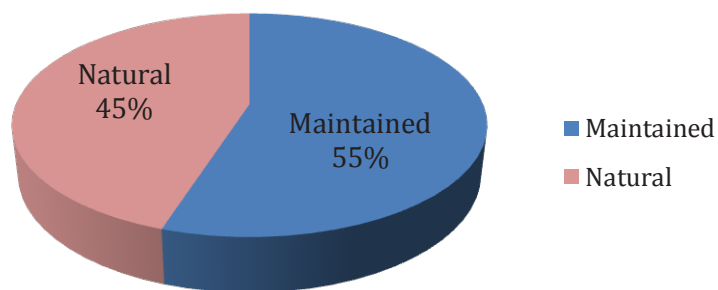


Figure 3.5 - 2012 Maintained and Natural Parkland Proportions.

Goal C: Green Windsor

Pesticide Use

Pesticides are harmful to the environment and to human health. The amount of pesticide used is one determinant of toxicity exposure for each community. In 2009 the Province of Ontario imposed legislation on the use of commercial pesticides. City of Windsor property such as sidewalks and golf courses are exempt from this legislation. Where possible, the City uses herbicidal vinegar on these areas.

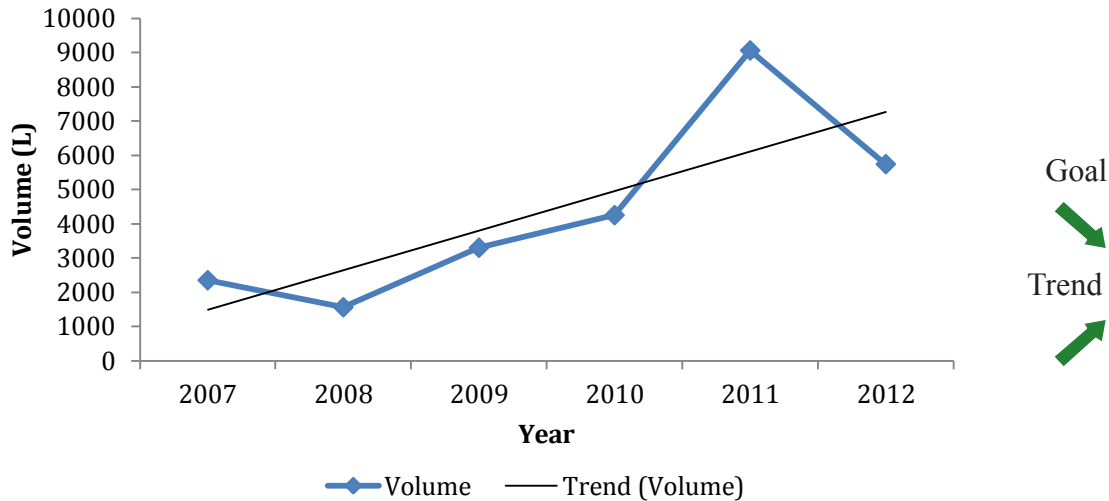


Figure 3.5 - Amount of Pesticide Used.

Brownfield Conversion

Brownfields” are abandoned, idled or underused properties where expansion or redevelopment is complicated by a real or perceived environmental contamination as a result of historical industrial or commercial land use practices. Records of site condition (RSC) are filed with the Ministry of the Environment any time a property moves to a more sensitive land use. The number of RSC’s filed annually is a general indication of how many brownfields are being repurposed.

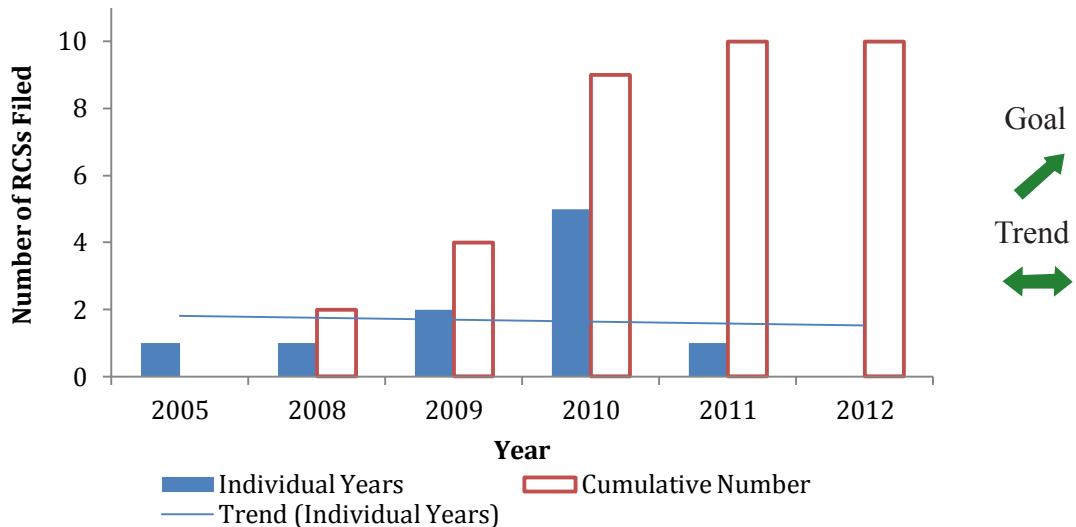


Figure 3.6 - Number of Records of Site Condition (RSCs) Filed.

Goal C: Green Windsor

City of Windsor Initiatives

Brownfield Conversion Incentives

The City of Windsor adopted a comprehensive Brownfield Redevelopment Strategy and Community Improvement Plan (CIP) in 2010, which created brownfield-supportive planning policies, an inventory of redevelopment opportunities, financial incentive programs, and a municipal leadership strategy. The approval of the Strategy and CIP was the result of nearly five years of study and consultation, which began in October 2005. The Brownfield Redevelopment CIP applies City-wide and contains a number of financial incentive programs that encourage the clean-up and redevelopment of brownfield sites. Council has approved three grant applications under the CIP to date.

Ojibway Parkway Pipe Bursting Project

The City of Windsor has replaced over 3,000 feet of deteriorated sanitary sewers located adjacent to the Ojibway Prairie Complex. The pipe was originally built in 1917 and was in such a state of deterioration that it was likely contaminating the surrounding soils. Using a trenchless technology called “pipe bursting”, many environmental benefits were achieved. A significant number of mature oak trees were saved using this less invasive process, as opposed to conventional open cut drilling. In addition, special work precautions and the education of staff ensured the protection of any endangered species on the property. This project also resulted in a multi-use trail on Ojibway Parkway from Broadway Street to Weaver Road totalling 1.3km.

Grand Marais Drain Concrete Channel – Dougall Avenue to Huron Church

In 2012, the City of Windsor and the Essex Region Conservation Authority (ERCA) completed a Class Environmental Assessment (EA) for the Grand Marais Drain concrete-lined channel from Dougall Avenue to Huron Church. The EA identified alternative channel designs for an improved Grand Marais Drain with an emphasis on establishing a more sustainable, ecologically desirable and aesthetically pleasing flood-control channel. If eventually implemented, the potential benefits of transforming the concrete-lined portion of the Grand Marais Drain include improvement of natural heritage and local ecology, improvement of site aesthetics, restoration of pedestrian linkage between neighbourhoods, construction of existing trails and new recreational opportunities along the channel corridor, enhancement of linear park development along the corridor, and the creation of sediment control facilities to reduce sediment loading to the drain and ultimately to the Detroit River.

Acquisition of Parkland

The City of Windsor has continued to acquire parkland. Areas such as the Spring Garden ANSI have now been fully acquired by the city.

Goal C: Green Windsor

Planting of Native Tree Species

Where possible, native tree species are planted in City of Windsor parks and public areas. These species can include, but are not limited to Hackberry, Tulip Tree, Red Oak and Kentucky Coffeetree. A concerted effort to plant native species has taken place along the waterfront. To increase the genetic diversity of our urban forest, non-native and ornamental trees are also planted.

Native Plant Garden at the Lou Romano Water Reclamation Plant

As part of the Lou Romano Water Reclamation Plant expansion completed in 2010, administrative offices were moved to trailers in the front yard of the plant. Upon completion of the project, the City partnered with the Essex Region Conservation Authority to plant native flowers and trees instead of the turf grass originally proposed. The native wildflowers in the garden provide a beautiful forefront to the treatment plant while saving the City money (no mowing or watering grass). Many environmental benefits were achieved such as water conservation and increased biodiversity.

Sustainable Lawn Care Practices

Applying practices such as top-dress, over-seeding and aeration has allowed the City of Windsor Parks & Facilities department to decrease pesticide use in parks and on sports fields. When necessary, more environmentally friendly pesticides are used, such as herbicidal vinegar or an iron-based pesticide.

Naturalization By-Law

A property standard by-law (3-2006) now includes naturalized areas, and no longer requires mowing of these areas. However, there must be a buffer strip containing trimmed grass or ground cover. This encourages property owners to naturalize pieces of their property where applicable.

Naturalized Area Management

Naturalized areas such as the Ojibway Prairie Complex are managed to enhance native plant and animal species that thrive in their native environment. Management strategies include prescribed burns of the Carolinian prairie in order to regenerate these plants. Other City of Windsor properties have been naturalized including Titcombe Park and the shoulders of the E.C. Row Expressway. This type of management is expected to increase.

Goal C: Green Windsor

Grand Marais Drain Improvements – Dougall Avenue to Walker Road

In 2013, the City of Windsor and the Essex Region Conservation Authority (ERCA) completed a Class Environmental Assessment (EA) for the Grand Marais Drain improvements from Dougall Avenue to Walker Road. The main purpose of the EA was to look at improving the functioning of the drain to increase the flow capacity to the 1:100 year storm event. Other benefits that were identified in the EA to be implemented are the creation of natural habitat features through the planting of trees and shrubs and the installation of rock structures that would benefit both animal and plant species. The creation of a sediment control facility in the vicinity of the Howard Avenue off-ramp was also identified to reduce sediment loading to the drain and ultimately to the Detroit River.

Urban Heat Island Effect Study

During the summer of 2012 the City partnered with Health Canada to produce an Urban Heat Island Study. The study included a review of policies and best practices being adopted in other regions and used this research to recommend actions that may be feasible in this area. To supplement the study, a heat vulnerabilities map of the City of Windsor was developed and included heat imaging as well as statistical information on vulnerable communities in Windsor.

Green Infrastructure

In 2012 the City of Windsor Planning department experimented with green infrastructure technology to increase the soil volume beneath our sidewalks. This helps trees planted there to have better access to soil and water, enabling them to grow to their potential. Trees planted this way have a canopy almost double the size of trees planted using traditional methods.

Official Plan Environment Chapter Update

The Planning Department at the City of Windsor has been undertaking a review and update of the Environment Chapter in the City's Official Plan. The drafted changes to the Plan include streamlining environmental designations, updating sustainability policies to include climate change initiatives as well as updating Schedules to include Provincially Significant Wetlands. The intent of the update is to strengthen and add policy that will help to preserve, maintain and enhance Windsor's natural features and to be consistent with Provincial policy. The drafted policy is expected to come into effect sometime in early to mid 2014.

Goal B: Create Healthy Communities

Areas to Move Forward

- ❑ Naturalize underutilized lands to the extent possible;
- ❑ Complete an update to the Parks Master Plan;
- ❑ Set acquisition targets for the Greenway system;
- ❑ Provide incentives for new Carolinian tree species planted on private property, where appropriate;
- ❑ Conduct an assessment of the current state of Windsor's Greenway System Linkages by performing a Landscape Analysis;
- ❑ Prepare Management Plans for Greenway System components and individual sites;
- ❑ Explore potential for a private tree by-law;
- ❑ Support native plant and community gardens through community partnerships.

Goal D: Use Resources Efficiently

Indicators

Energy Consumption

Total energy consumption is one measure of how efficient and sustainable a community or business is. Home heating and cooling is one of the largest sources of energy use. Using energy efficient appliances and light bulbs, as well as practicing conservation helps to reduce energy use.

The City of Windsor started keeping detailed records of energy consumption beginning in 2010. No comparable data is available for 2007, 2008 and 2009.

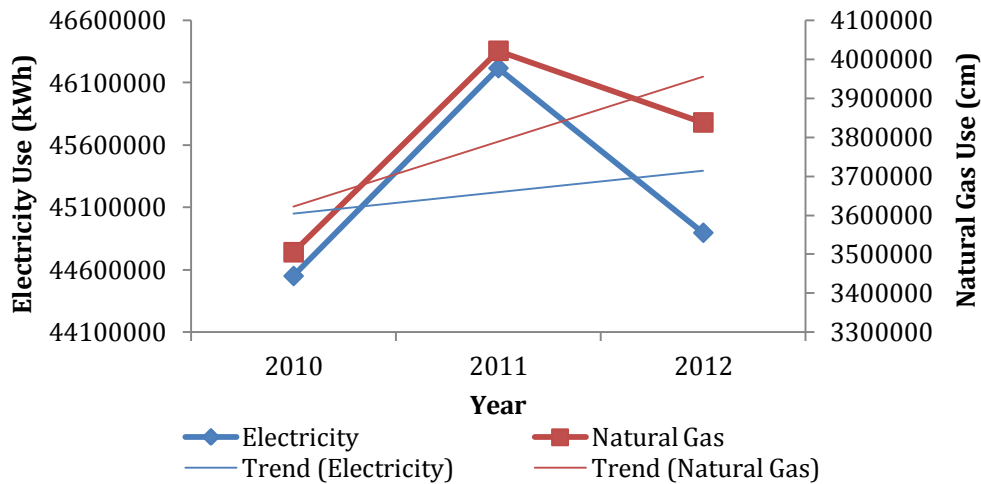


Figure 4.1 - Corporate Energy Consumed by Buildings.

Goal



Trend

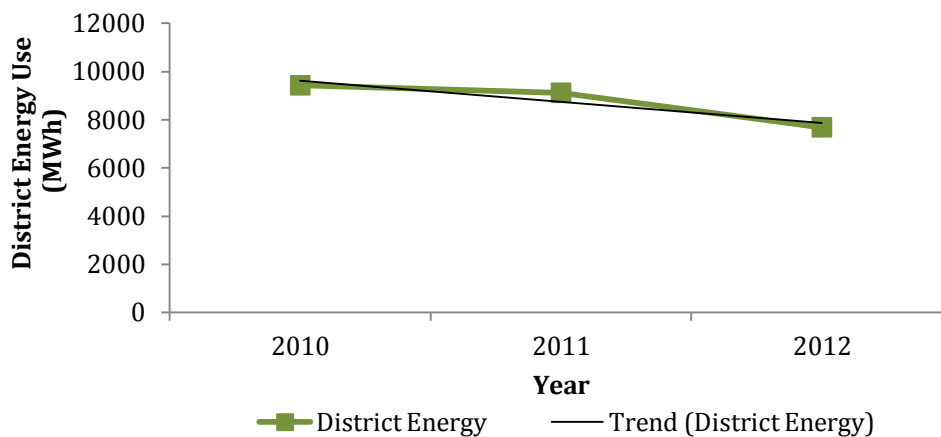


Figure 4.1a - Corporate Energy Consumed by Buildings - Continued.

Goal D: Use Resources Efficiently

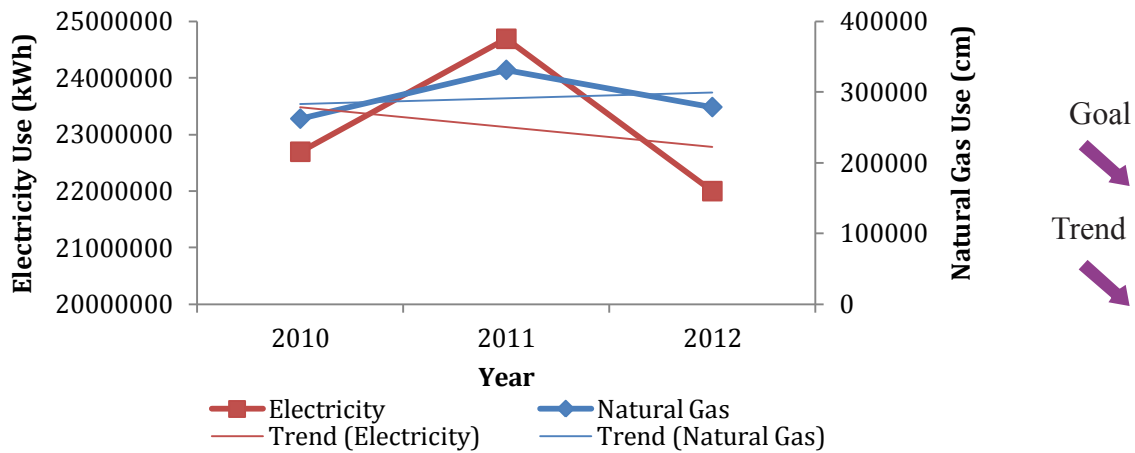


Figure 4.2 - Corporate Energy Consumed by Sewage Treatment.

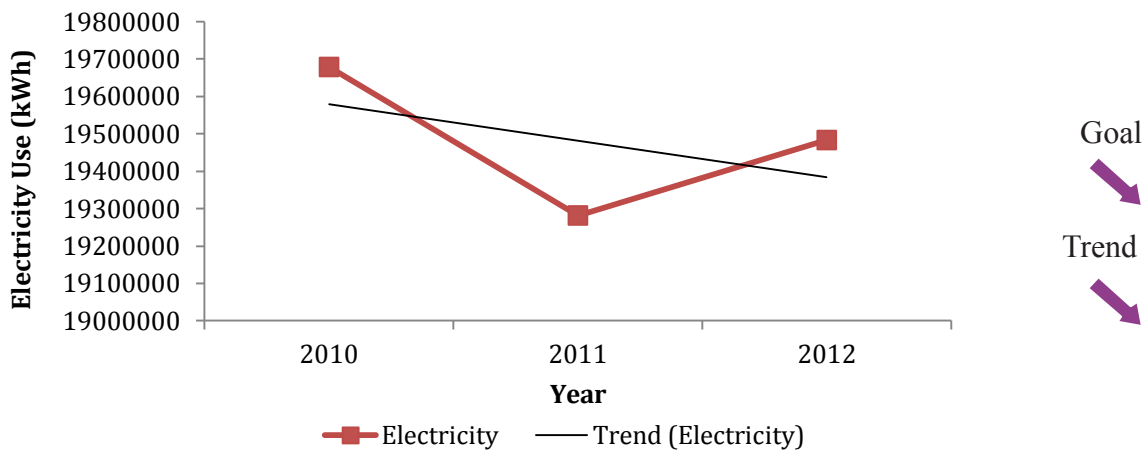


Figure 4.3 - Corporate Energy Consumed by Streetlights & Traffic Signals.

Goal D: Use Resources Efficiently

Solid Waste Management

A decrease in the amount of total refuse sent to landfill may reflect an increase in backyard composting or product re-use, such as re-usable water bottles. The diversion rate considers the percentage of recyclable products (plastic, paper, paint, batteries etc) and yard waste being collected. The higher the waste diversion rate, the more waste that is diverted from landfill. Preventing waste from reaching landfill through waste management benefits our health and the environment.

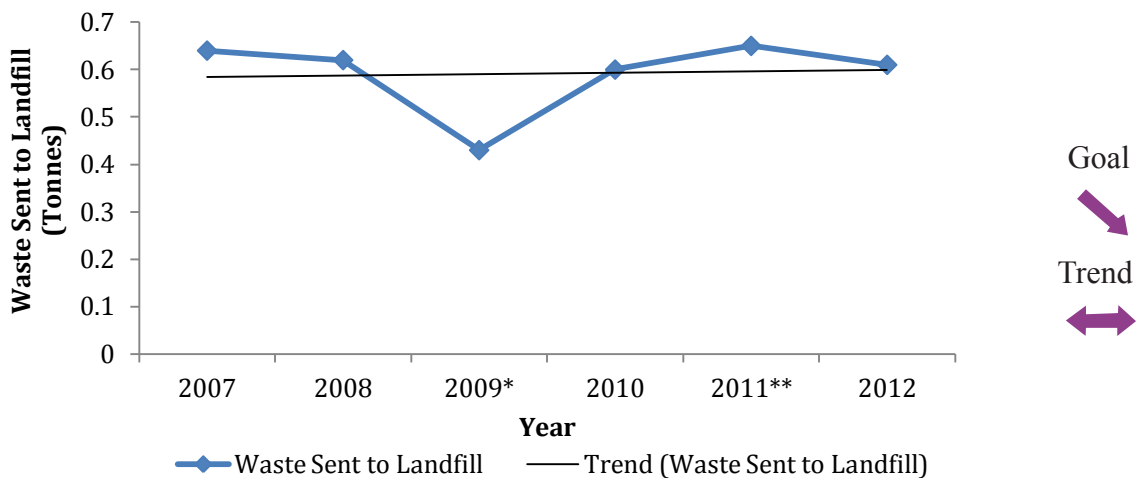


Figure 4.4 - Total Amount of Waste Sent to Landfill.

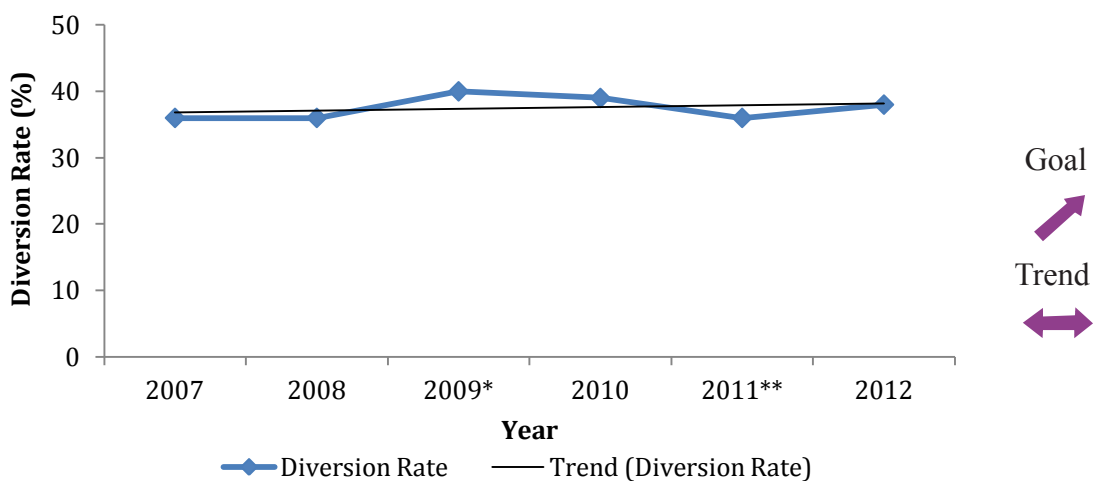


Figure 4.5 - Percentage of Solid Waste Diverted from Landfill.

*In 2009 a unionized worker strike occurred and garbage pick up stopped for several months which had an impact on the amount of waste sent to landfill and subsequently the diversion rate.

**2011 was the first year that the City of Windsor contracted out garbage to a private company.

Goal D: Use Resources Efficiently

Fuel Use

Fuel use causes negative effects on air quality and human health. As vehicles are replaced by the City of Windsor, consideration should be given to fuel-efficient vehicles and the right size of vehicles. In the meantime, proper maintenance of vehicles will impact total fuel usage.

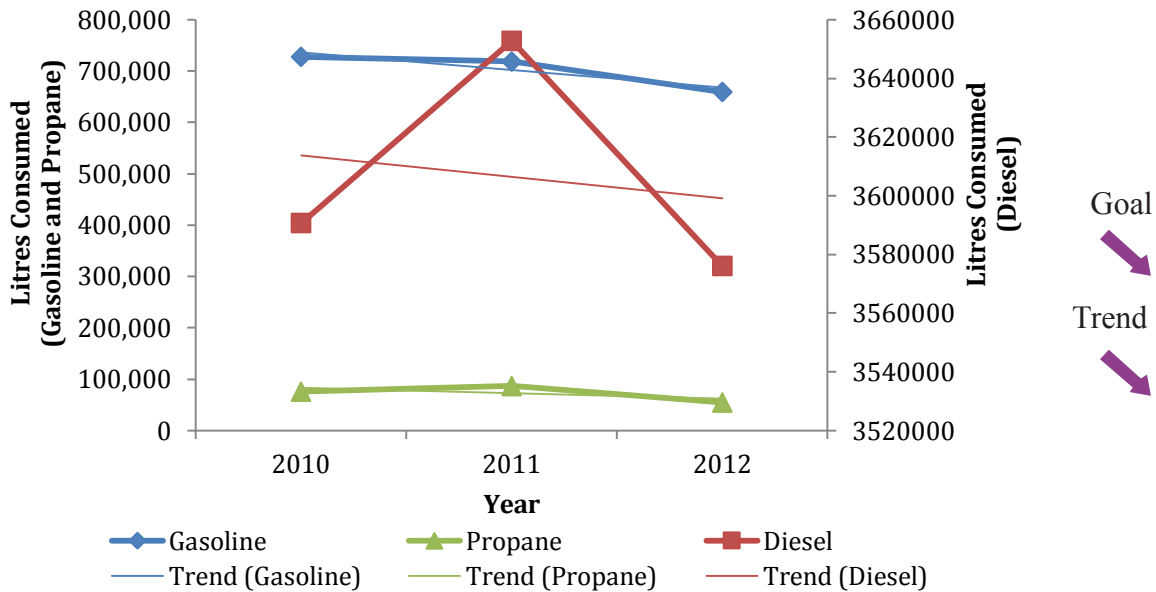


Figure 4.6 - Fuel Consumption by Type.

*From 2010 onward the City of Windsor no longer tracks long-distance vehicle use by staff or operates garbage trucks. Data collected previous to 2010 was not included for this reason. Fuel use from all City of Windsor vehicles, local vehicle use by staff, Parks equipment, Fire & Rescue Services and Transit Windsor is included in this indicator.

Goal D: Use Resources Efficiently

Greenhouse Gas Emissions

Greenhouse gas emissions (including carbon dioxide, nitrous oxide and methane) are linked to increases in human influenced climate change. High levels of greenhouse gases also contribute to poor air quality. The greenhouse gas inventory includes electricity and natural gas consumption, fuels required for vehicles and waste disposal. Greenhouse gas emissions are inventoried for both the City of Windsor and the community at large.

Corporate

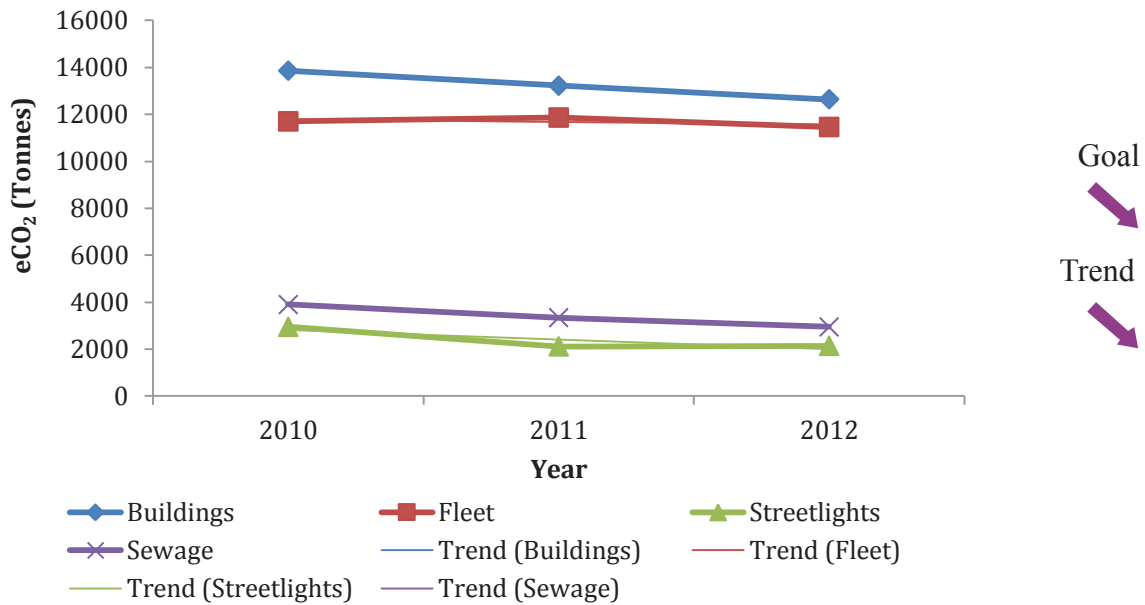


Figure 4.7 - Corporate Greenhouse Gas Emissions.

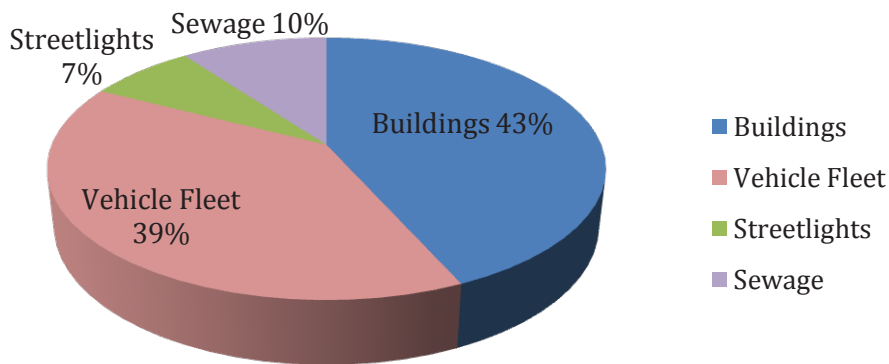


Figure 4.8 - 2012 Corporate Greenhouse Gas Emissions by Sector.

Goal D: Use Resources Efficiently

Community

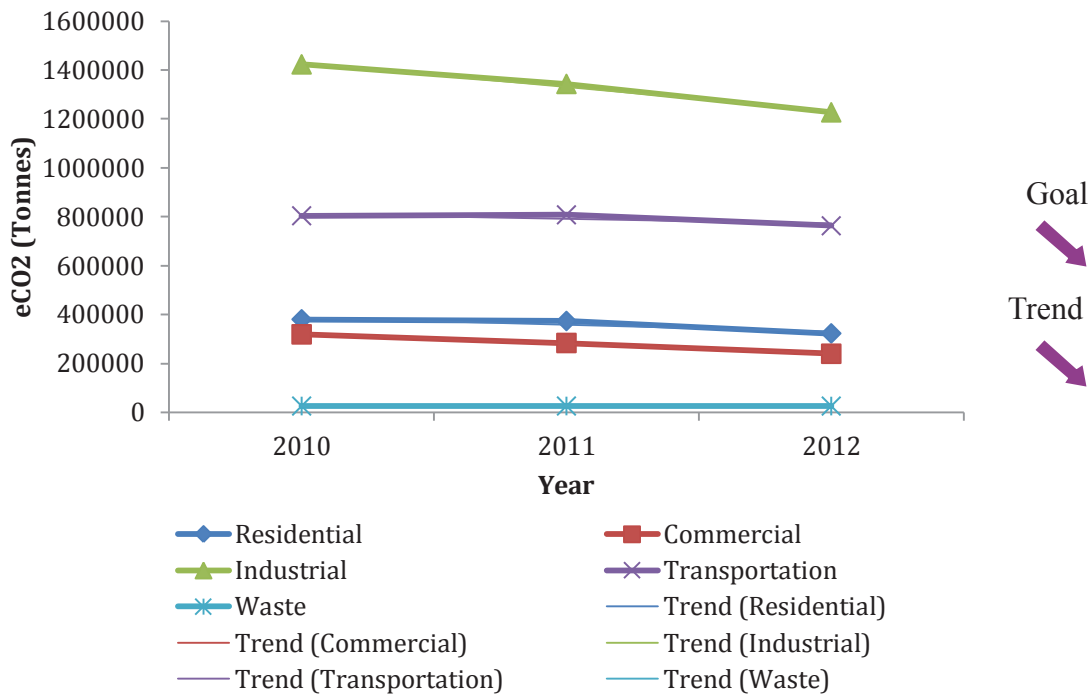


Figure 4.9 - Community Greenhouse Gas Emissions.

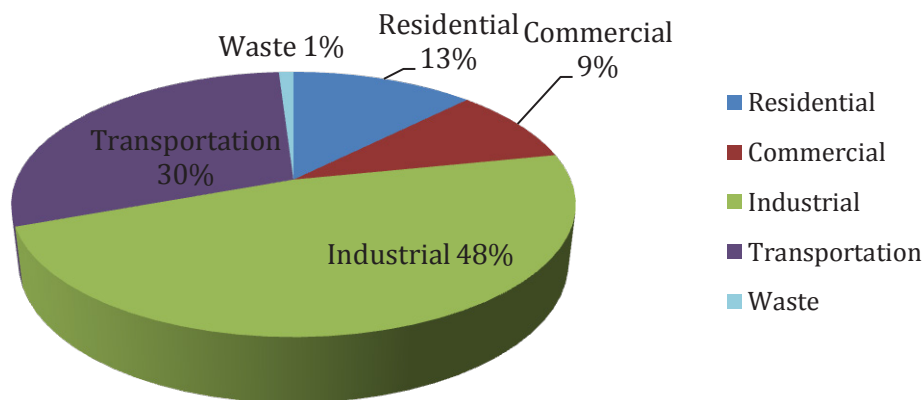


Figure 4.10 - 2012 Community Greenhouse Gas Emissions by Sector.

Goal D: Use Resources Efficiently

City of Windsor Initiatives

Hydration Station

The City of Windsor partnered with Stay Cool Windsor Essex to purchase a 375 US Gallon mobile water trailer for use at sporting events and festivals. The “Hydration Station” helps keep Windsor residents cooler during the hot summer months, decreasing their chance of heat illness. It is also a great way to limit the amount of single-use plastic water bottles needed at events, as there are water fountains and faucets to fill water bottles on the unit.

Recycling Facilities in Parks

The City of Windsor and the Essex Windsor Solid Waste Authority partnered to provide public space recycling at twelve city parks (Mic Mac, Ganatchio Trail, Ford Test Track, and nine riverfront parks between the Ambassador Bridge and Pillette Road). Ninety (90) recycling containers were purchased and installed side-by-side with existing garbage containers. Appropriate labels for the recycling and garbage containers were installed.

Art Carts

The City of Windsor now operates two solar powered golf carts, which provide tours of the riverfront Sculpture Garden to residents and visitors of Windsor. These carts replaced two electrical golf carts, therefore reducing energy consumption and greenhouse gas emissions.

Energy Retrofit Program

The energy efficiency program began implementation in 2010 and included the following measures: upgrades to lighting, building efficiency, mechanical equipment and controls, as well as incorporating renewable energy. To date the City has implemented \$2,370,300 in energy and water saving measures. These measures are anticipated to achieve annual hydro, gas and water savings of nearly \$250,000.

Renewable Energy Projects

As part of the energy efficiency retrofit program, three solar outdoor pool water heating systems were incorporated into Lanspeary, MicMac and Remington Park pools. In addition, the City recently received an Ontario Power Authority Feed-In-Tariff (FIT) contract to install a 350 kW solar PV roof mounted system at the new Windsor International Aquatic and Training Facility. The system will produce approximately 518,00 kWh annually, generating \$275,000 per year over the life of the 20 year contract.

Goal D: Use Resources Efficiently

New Embedded Energy Manager

Through the Ontario Power Authority's "Save on Energy" program, the City has created a new position entitled Supervisor of Energy Contracts. This position is 80% funded by the Ontario Power Authority. This employee will assist with numerous new and ongoing energy initiatives, including implementation of energy savings opportunities within the corporation's building and facility portfolio.

Conversion of Street Lights to LED

After two successful pilot projects using LED fixtures on Raymond and Matchette, the City, in 2012, replaced the 100 pedestrian lights in the Sandwich area with LED fixtures. Then in 2013, the City replaced the street lights on Ottawa Street with LED fixtures. The City is studying the business case to convert all street lights to LED fixtures citywide.

EWSWA Accepts More Plastic for Recycling

In the spring of 2012, the Essex-Windsor Solid Waste Authority distributed a new larger Blue Box (23 gal) to every single family residence in the City of Windsor and Essex County. The new larger Blue Box allowed for increased capacity, thereby paving the way for the addition of new materials. New materials included plastic trays, plastic clamshell containers, and plastic cups. City of Windsor residents received flyers, recycling guides, newsletters, and postcards for educational purposes. Radio and newspaper campaigns accompanied this new initiative. An increase in materials at the curb was immediately noticeable after residents received their bigger Blue Box.

EWSWA Truckload Sales

The Essex-Windsor Solid Waste Authority conducts Truckload Sales with the goal of providing environmental products to residents at a reasonable cost. The spring 2013 Truckload Sale was held in the parking lot of the City of Windsor Environmental Services Building. The sale was very well attended and in four hours the following items were sold:

- 300 Backyard Composters;
 - 300 Rainbarrels;
 - 160 Recycle Boxes;
 - 26 Green Cone Digesters;
 - 3,000+ bags of Garden Gold Compost.
-

Tunnel Plaza Environmental Considerations

The new tunnel plaza has been designed with environmental features in mind. As a prescribed air quality mitigation measure, a layered planting of deciduous and coniferous trees will be laid out in the boulevard separating the queue lanes. These trees will block and/or funnel vehicle exhaust gas away from nearby apartment buildings, as well as help filter the air of contaminants. In addition, a screening wall covered with large, broad-leaved ivy will further capture particulate matter from vehicles. LED lightings will be used for all new streetlights along the roadways and parking lots.

Goal D: Use Resources Efficiently

Areas to Move Forward

- ❑ Develop and adopt an environmentally friendly purchasing policy;
- ❑ Investigate current paper use patterns and set a percentage-of-paper reduction goal, and then solicit creative ideas for paper reduction from staff;
- ❑ Develop a Corporate Energy Plan;
- ❑ Develop a municipal “heritage first” policy to reuse existing buildings (and materials) in core areas;
- ❑ Complete a Green/Cool Roof policy;
- ❑ Convert various Parks & Facilities equipment to solar power;
- ❑ City wide update of streetlights to LED;
- ❑ Explore weekly recycling pick up to help increase waste diversion rates;
- ❑ Continue to increase recycling and composting education for residents and commercial businesses;
- ❑ Look into the use of recycled concrete and asphalt for municipal projects.

Goal E: Promote Awareness

Indicators

Web-Based Outreach

The internet is a network of users and an important and evolving form of communication. The number of people who visit the Environmental Master Plan section of the City of Windsor website is one indicator of the level of public interest in our programs and projects. It can also indicate how aware people are of the City's programs/initiatives.

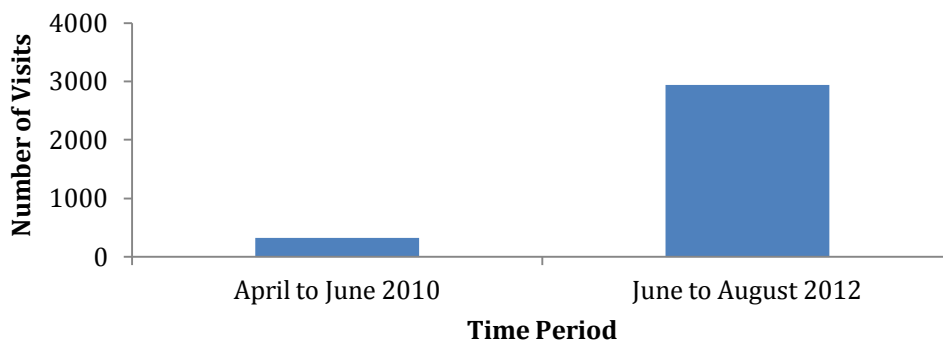


Figure 5.1 - Number of Visits to the Environmental Master Plan Website (www.windsorenvironmentalmasterplan.ca).

*Trends are only assessed on indicators with more than two data points.

Attitudes towards the Environment

The first City of Windsor Environmental Attitudes Survey was completed in November 2005. A similar study was repeated in 2011. The findings from the surveys are intended to help the City better understand and assess residents' current attitudes and opinions about Windsor's environment.

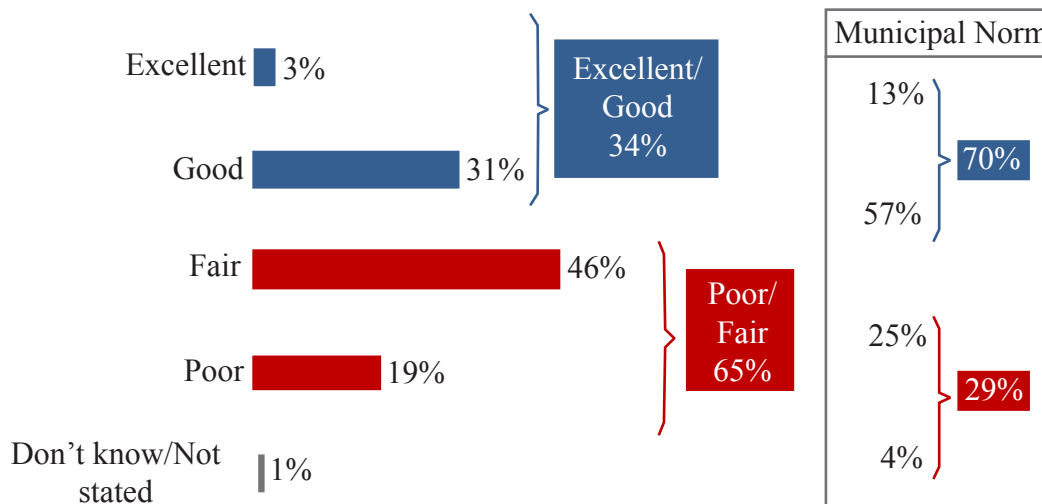


Figure 5.2 - 2011 Environmental Attitude Survey Question Results: How would you rate the overall quality of the environment in the City of Windsor today?

Goal E: Promote Awareness

Table 5.1 – Top Three Environmental Concerns Voiced by Windsor Residents during the 2005 and 2011 Environmental Attitudes Survey

	Top 3 Concerns (2005)	Top 3 Concerns (2011)	Municipal Norm
1.	Air Quality (41.8%)	Air pollution/quality (28%)	Water pollution/quality/supply (25%)
2.	Water Quality (10.5%)	Pollution (unspecified) (23%)	Amount of Green space/parks/trees (16%)
3.	Road Congestion (7.6%)	Water pollution/quality/water supply (19%)	Air pollution/quality (11%)

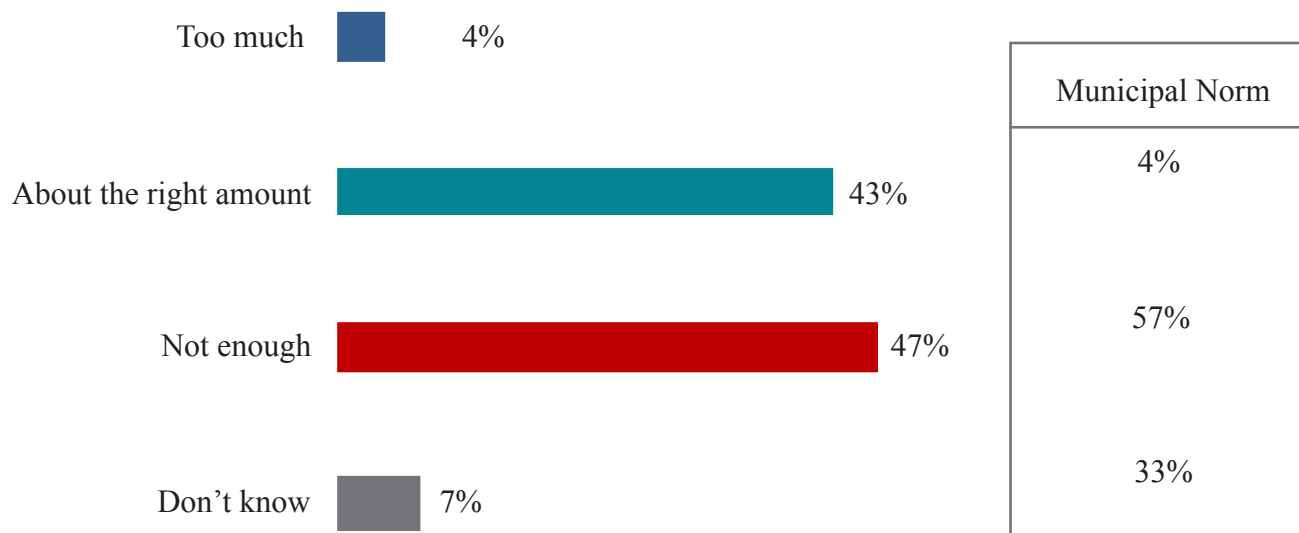


Figure 5.3 – 2011 Environmental Attitude Survey Question Results: How do you feel about the amount of time and resources the City of Windsor spends on activities related to preserving and protecting the local environment? Would you say they are doing too much, about the right amount, or not enough?

Goal E: Promote Awareness

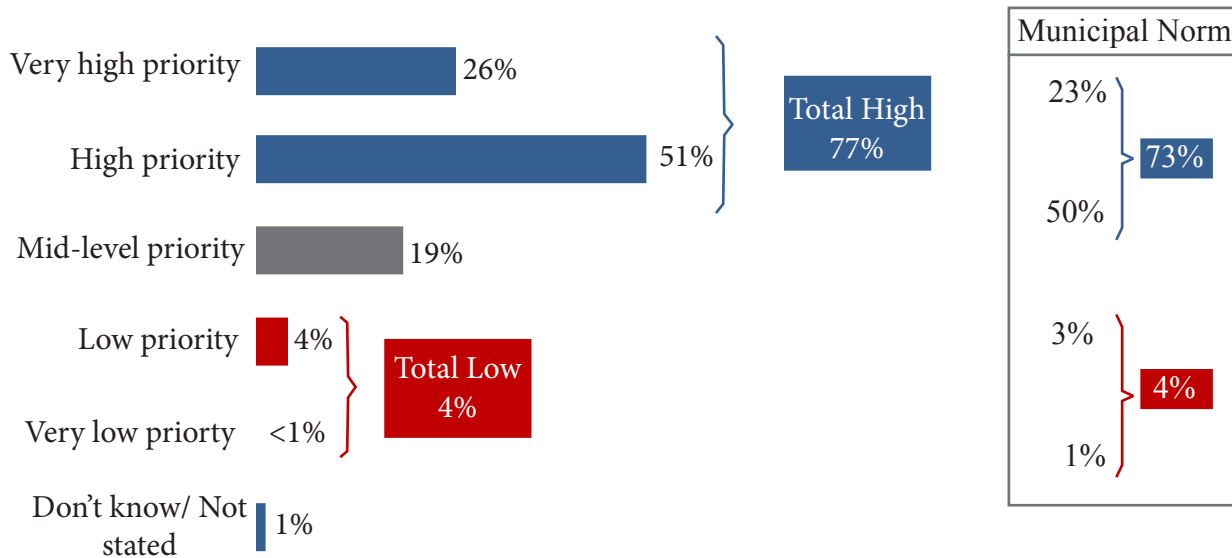


Figure 5.4 – 2011 Environmental Attitude Survey Question Results: Compared to all of the issues facing the City of Windsor today, how high a priority do you think local leaders should place on preserving and protecting the local environment? Do you think this should be a...?

Awareness of Environmentally Related Programs

As part of the Environmental Attitudes Survey, a question was posed to each participant to gauge their knowledge of existing environmental programs and services offered by the City of Windsor. The success of any environmental program will be closely tied to the level of knowledge and understanding by the community.

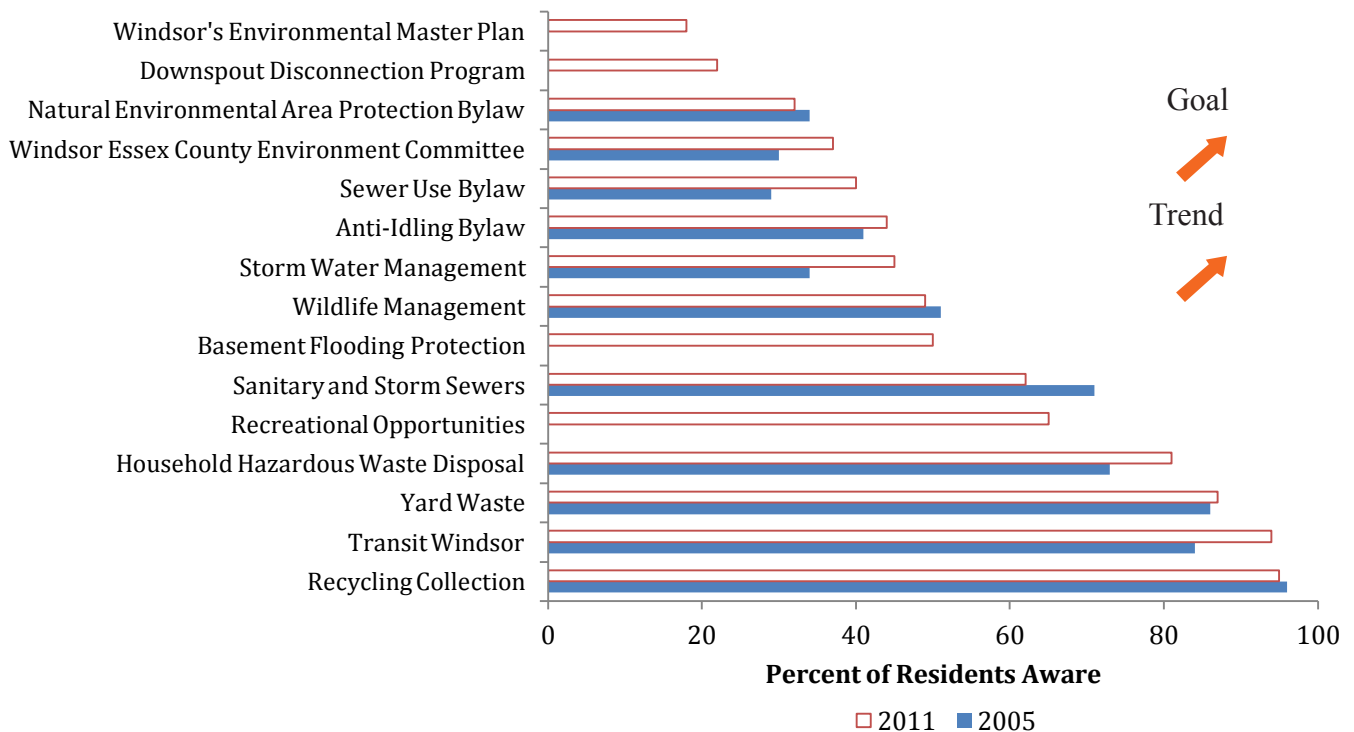


Figure 5.5 - Windsor Resident's Awareness of Environmental Programs.

Goal E: Promote Awareness

City of Windsor Initiatives

Earth Day

The City of Windsor has continued to partner with the Essex Windsor Solid Waste Authority to host Earth Day every year, with great success! In recent years, the event has had a “Local Food” theme, which has encouraged many new vendors and activities. Earth Day Windsor Essex usually takes place on the Sunday after Earth Day (April 22nd).

Community Plantings

The City of Windsor offers community planting events every year with various community groups. A diverse group of trees are planted in key locations throughout the city. The focus of these events is education for kids.

Promotional Advertisements

To promote the City of Windsor’s environmental initiative and programs, various departments place advertisements in the City of Windsor Activity Guides. In addition, the City of Windsor has partnered with the Essex Windsor Solid Waste Authority along with the Detroit River Canadian Cleanup organization to bring Windsor residents Enviro Tips, a newsletter showcasing actions homeowners can do to help the environment.

EnWin Partnership for Earth Hour

Every year the City of Windsor signs a proclamation declaring Earth Hour and encouraging Windsor residents to participate by turning off their lights and electronic devices for one hour. The City of Windsor turns off all non-essential lighting and electronic devices for Earth Hour. The City of Windsor has recently partnered with EnWin Utilities to educate students about the importance of energy conservation on Earth Day.

Essex Region Children’s Water Festival

The City of Windsor has continued to partner with the Essex Region Children’s Water Festival (CWF) which promotes water conservation, water attitude, water technology, water science and water protection. The Essex Region Children’s Water Festival offers hands-on curriculum based activities, discussions and demonstrations. Over fifty interactive displays challenge students to consider the importance of groundwater and surface water not only to themselves as individuals but to society at large. The CWF educates approximately 3,500 children per year, as well as utilizing 100 high school students per day as volunteer educators to staff the activities daily during the 5 day festival.

Goal E: Promote Awareness

Recycling Centre Open House

The City of Windsor has continued to partner with the Essex-Windsor Solid Waste Authority for its annual Open House at the Recycling Centre. Over 400 residents attended this event in 2013, which featured tours of the Recycling Centre, Drop Off Depot and Compost Pad. Other activities available included a Shop Green Challenge as well as various environmental information booths to visit.

Climate Change Adaptation Plan

In 2012 City Council approved the Climate Change Adaptation Plan. This document outlines where Windsor is more vulnerable to the impacts of climate change, many of which we are already seeing today. The health impacts of increased heat as well as the impacts of more frequent, intense rain storms have been identified as our top two concerns. The Plan proposes many “adaptation actions” to help make Windsor more resilient to the effects of climate change.

Healthy Home Guide

Are you interested in making your own toxin-free cleaning products? Be sure to pick up a copy of the Healthy Home Guide produced by the City of Windsor. This guide provides many recipes for cleaning products using every day ingredients.

Wastewater: Where does it go?

The City of Windsor and the Detroit River Canadian Cleanup partnered to produce an educational video on wastewater treatment. This included what should and should not be flushed down the drain, as well as a detailed look at how water is treated at the City’s Lou Romano Water Reclamation Plant. A 30 second Public Service Announcement was produced from the video and aired on the local CTV channel from April to September 2013 as well as in a local movie theatre in March 2013. You can view the video here: <https://www.youtube.com/watch?v=oaXth88i7rk> (search Wastewater: Where does it go?).

Yellow Fish Road Program

The City of Windsor continues to offer participation in the Yellow Fish Road program, created by Trout Unlimited Canada. Many Girl Guide and Boy Scout groups have participated in this program by painting yellow fish next to storm drains with non-toxic paint, to remind people that anything going into these drains runs untreated into the Detroit River.

Education in Schools

Upon request, staff will present to school groups about how wastewater and water are treated using an EnviroScapes model of a city. Students can watch water flow through sewers to each plant, and learn about what happens if contaminants are poured into storm drains.

Goal E: Promote Awareness

Areas to Move Forward

- Develop an environmental education strategy that is tailored towards staff, Council, and contractors;
- Develop stormwater education materials;
- Continue and build upon sewer use education strategies.

Conclusion



This document is the first in Windsor to show comprehensive trends on environmental indicators over time. These indicators help City administration monitor their progress towards improving the environment. Results assessed can inform policy or operational procedures, as well as contribute to an update of the Environmental Master Plan.

Many of the environmental indicators are moving towards their desired goal. Of the indicators that received a negative result, many were not moving away from their goal but were unchanged. This demonstrates that the environment in Windsor is improving in many ways. Many factors have played a role in these results, including but not limited to City of Windsor operations, Federal (Canadian and American) and Provincial/State policies, as well as community action. Windsor as a community can be very proud of the impact we are having on the environment.

Moving forward, the City of Windsor will continue to implement the Environmental Master Plan. There is still much work to be done to continue improving our environment. This includes monitoring these environmental indicators and reporting their results in further Reports on the State of our Environment. Tracking of indicators as well as other environmental information can be found on the City of Windsor website at www.windsorenvironmentalmasterplan.ca.

