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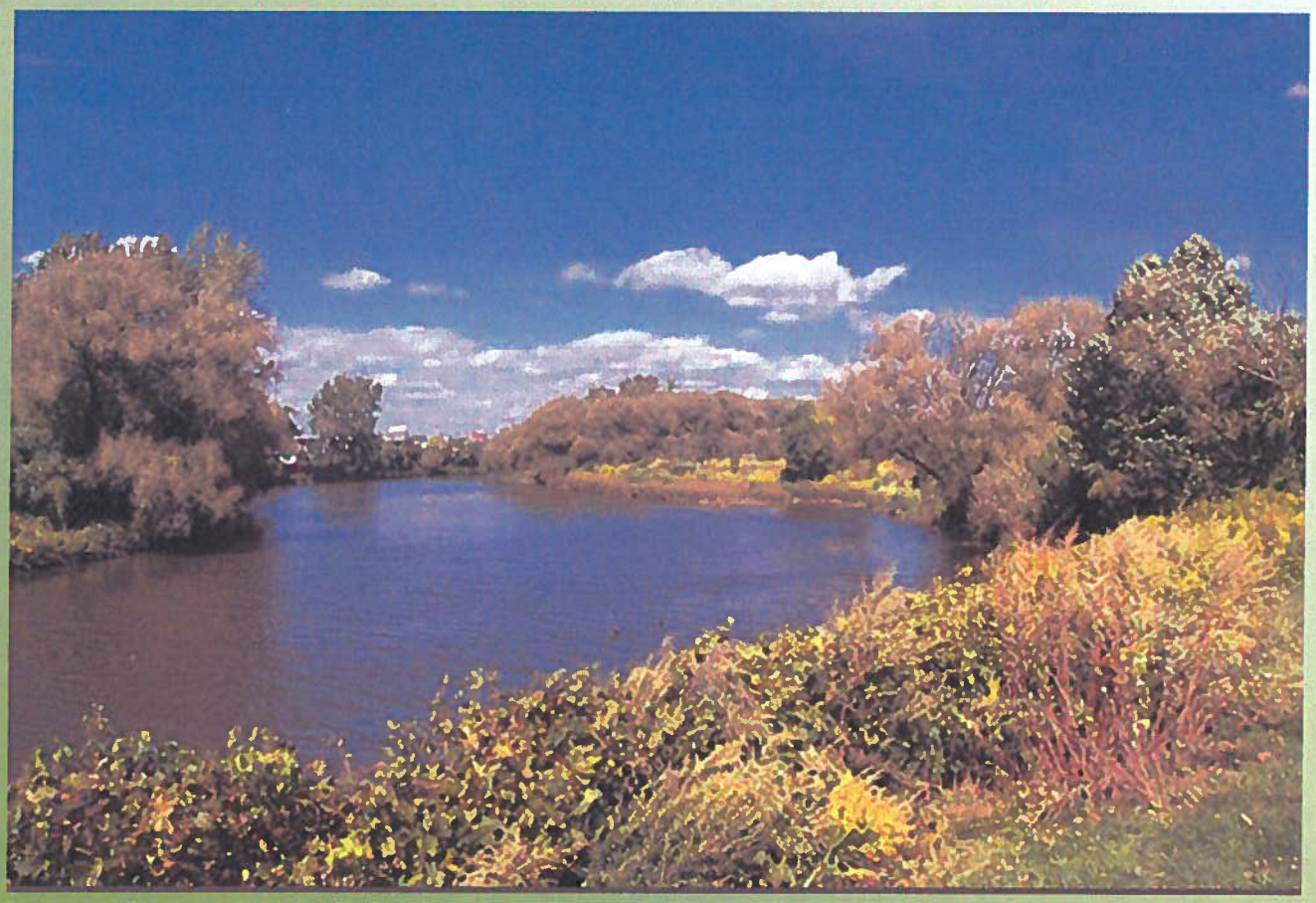
Erie County Environmental Management Council



Seneca Bluffs Natural Habitat Park

2013 State of the Environment Report

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Acknowledgements

This document was developed by the current Erie County Environmental Management Council (ECEMC) members, as well as members who served through May 31, 2013, and was approved at their July 16, 2013 meeting.

The ECEMC's mission is two-fold: 1) advise county government on local environmental concerns; and 2) provide a liaison between the community and county government. The majority of ECEMC members are representatives from municipal Conservation Advisory Committees. There are also twelve at-large members who are environmental professionals and/or activists. The Chair of the ECEMC is Jim Simon, who is an at-large member. Anne Bergantz representing the Town of Orchard Park is the Vice Chair and Melanie Hamilton representing the Town of Hamburg is the Secretary. The following is the current list of ECEMC members and their association:

At- Large Members: Sarah Bishop; George Besch; Paul Furhmann; Rosa Gonzalez; David Hahn-Baker; Lauren Makeyenko; Carrie Merrit; Jim Simon; Laurie Stillwell; Don Stribick; Tim Vaeth; and Brenda Young. Municipal Representatives: Douglas Bartlebaugh - Alden; Conn Keogh – Amherst; Don Owens – Aurora; Michael P. Monin – Boston; Leonard Pero – Brant; Dennis Sutton – Buffalo; Elizabeth Meunier – Clarence; Ronald Fraser – Colden; Lamont Beers – Eden; Fred Streif – Elma; David Mosher - Evans; Jere Hoisington - Farnham (V); Sam Akinbami - Grand Island; Melanie Hamilton – Hamburg; Adrienne Punturiero - Hamburg (V); William Kolacki – Holland; Kathleen Johnson - Kenmore (V); Ralph Miranda – Lackawanna; Julius McCann – Lancaster; Tim Kelly - Lancaster (V) ; Beth Ackerman – Marilla; Lewis Tandy – Newstead; Anne Bergantz - Orchard Park; Gene Parzych – Sardinia; Kevin Burd – Tonawanda; Peter Tarnawskyj – Wales; and Evelyn Hicks - West Seneca.

Assistance in the preparation of this document was also provided by staff from the Erie County Department of Environment and Planning, as well as Sarah SanGiovanni, an intern through the University at Buffalo Master in Urban Planning Program. The ECEMC thanks Sarah for her hard work on this report.

Key Recommendations

The Erie County Environmental Management Council's State of the Environment report sets the stage for strategic planning and priority-setting for the allocation of resources to address environmental issues facing Erie County. The report is divided into ten sections: Air Quality, Climate Change, Contaminated Sites, Ecosystem Health, Energy, Land Use, Solid Waste Management, Toxic Emissions, Transportation, and Water Quality. The following summary of priorities highlights the key recommendations made in those sections.

The Environmental Management Council looks forward to working with County staff and leadership to support and implement these priorities.

Recommendations Requiring County Leadership

Energy

Recommendation	County Role	EMC Role	Funding Source	Partners
Work to implement the projects identified in the Western New York Region's Sustainability Plan funded through the New York State Energy Research and Development Authority (NYSERDA) Cleaner, Greener Communities Program, particularly the creation of a County Green Team, planning and infrastructure for County parks, and establishment of the Sustainable Business Roundtable.	Pursue funding through the NYSERDA Cleaner Greener Sustainability Program to develop and implement a County Sustainability Plan.	Support County involvement with the Sustainable Business Roundtable through suggesting businesses to the County team. Provide a vehicle for public involvement in the County Planning efforts.	New York State Energy & Research Development Authority & United States Environmental Protection Agency	New York State Energy & Research Development Authority; Erie County Department of Environment & Planning; University at Buffalo
Become a Climate Smart Community - a New York State program whereby communities can become a Climate Smart Community by signing a pledge and then measuring their carbon footprint and implementing projects to reduce that footprint.	Sign on to the Climate Smart Community Pledge. Conduct a Greenhouse Gas (GHG) inventory and create a Climate Action Plan for Erie County operations. Implement plan and GHG reduction strategies.	Assist with communicating the program to local municipal officials and community groups.	New York State Department of Environmental Conservation (NYSDEC) and New York State Energy & Research Development Authority (NYSERDA)	NYSDEC, NYSERDA, and Erie County Department of Environment & Planning
Hire an Energy Officer to specifically oversee County energy use in its many buildings, including pursuing state and federal funding for projects which conserve energy and implement renewable energy projects.	Establish funding either through a grant or in the county budget and hire an Energy Officer.	Help identify potential candidates.	New York State Energy & Research Development Authority (NYSERDA), County Budget, Energy Conservation Bonds	NYSERDA, The Regional Economic Development Council, University at Buffalo
Establish an Erie County Green Team to work with the Energy Officer to coordinate behavior based energy conservation projects, as well as other waste reduction projects, within County facilities.	Provide the top down leadership from the County Executive to the department heads to the employees to establish a commitment from every department to participate.	Participate as members of the green team. Help transfer the benefits of the green teams efforts to the local government level.	New York State Energy & Research Development Authority (NYSERDA), County Budget, Energy Conservation Bonds	NYSERDA, The Regional Economic Development council, UB

Ecosystem Health

Recommendation	County Role	EMC Role	Funding Source	Partners
Complete the tree inventories at Akron Falls and Como Lake Parks so that the ash trees can be identified and assessed.	Secure funding and hire a contractor to complete the tree inventory. Work with the local academia and community groups to coordinate the collection of additional data on the attributes and condition of the inventoried trees.	Assist with public outreach.	New York State Department of Environmental Conservation (NYSDEC)	Partnerships for Regional Invasive Species Management (PRISMs), WNY Emerald Ash Borer Task Force, Medaille College, Daemen College
Seek additional funding through the New York State Department of Environmental Conservation to conduct tree inventory at more County Parks, as it will for Akron Falls and Como Lake Parks.	Seek additional funding.	Provide letter of support.	New York State Department of Environmental Conservation (NYSDEC)	NYSDEC, Partnerships for Regional Invasive Species Management (PRISMs)
Continue the eradication of giant hogweed on any County property.	Provide adequate staff, training, and resources.	Share training information with municipalities.	County budget/existing resources	New York State Department of Environmental Conservation (NYSDEC), PRISM

Land Use

Recommendation	County Role	EMC Role	Funding Source	Partners
Support the Erie County GIS office in mapping the existing infrastructure and natural resources to inform smart growth planning and development priorities.	Allocate funds or identify grant funding	Review new and existing maps to provide local context. Also provide connections between the County GIS system and the existing municipal GIS programs as well as the GIS needs of our local communities.	New York State Energy & Research Development Authority (NYSERDA), New York State Department of Environmental Conservation (NYSDEC), United States Environmental Protection Agency Great Lakes Restoration Initiative	Buffalo Niagara Riverkeeper, local municipalities

Solid Waste Management

Recommendation	County Role	EMC Role	Funding Source	Partners
Continue to promote recycling throughout the County and support initiatives to add new materials for recycling and reuse (e.g. organic composting).	Current recycling coordinator duties.	Assist with outreach to community.	New York State Department of Environmental Conservation (NYSDEC)	NYSDEC, Solid Waste Management Boards
Address special waste disposal needs, such as household hazardous waste (HHW), with additional collection events or partnerships to promote collections.	Evaluate funding mechanisms such as placing a product stewardship tax on products such as gas, oil, paint and pesticides to create a resource to fund the disposal of HHW.	Help build the support from local municipalities, and the elected officials on the county and state level that would be involved in creating and approving this type of funding mechanism.	Create a product stewardship tax, or other funding source, that would provide adequate funding for numerous collection events as well as help support other county environmental initiatives.	New York State Department Environmental Conservation (NYSDEC), Solid Waste Management Boards
Increase awareness of waste prevention, including hazardous waste, and recycling.	Current recycling coordinator duties.	Assist with outreach to community.	New York State Department of Environmental Conservation (NYSDEC)	NYSDEC, Solid Waste Management Boards

Toxic Emissions

Recommendation	County Role	EMC Role	Funding Source	Partners
Create an education campaign, tied to the County's Household Hazardous Waste Collection program, about the opportunity consumers have to make choices that reduce toxins by purchasing less toxic alternatives.	Identify and secure resources through a grant or potentially an educational institution to support education campaign.	Act as an advisory board and vehicle for public input into the process of developing and delivering this education campaign.	United States Environmental Protection Agency (USEPA) Great Lakes Restoration Initiative, Erie County Environmental Education Institute	Municipalities and the Solid Waste Management Boards, Environmental Groups

Water Quality

Recommendation	County Role	EMC Role	Funding Source	Partners
Continue to implement best management practices, green infrastructure and technical assistance programs to accomplish runoff reduction and ideally minimize/eliminate the need for system upgrades/replacement.	Pursue and secure grants to fund the implementation of green infrastructure practices at County facilities. Also consider and evaluate the benefits associated with these practices whenever the County is making a capital investment in our government facilities.	Help facilitate the transfer of green infrastructure technology to the local municipal level and promote the success of any specific county green infrastructure or green practices	NYS Department of Environmental Conservation, US Environmental Protection Agency (USEPA), US Army Corps of Engineers, NYS Environmental Facilities Corporation	Buffalo Niagara Riverkeeper, US EPA, Erie County Division of Sewerage Management, Erie County Department of Public Works

Recommendations Requiring County Support

Air Quality

Recommendation	County Role	EMC Role	Funding Source	Partners
Support the installation of an electronic toll booth at the South Grand Island toll barrier.	Letter of support if needed	Support community organizations like Clean Air Coalition of Western New York in advocating for new technology. Letter of Support.	New York State Thruway Authority	New York State Thruway Authority

Contaminated Sites

Recommendation	County Role	EMC Role	Funding Source	Partners
Actively recommend and encourage New York State to continue funding for the State's Environmental Restoration Program (ERP) initiative which provides local governments the necessary seed money to promote brownfield clean-ups and the redevelopment of contaminated sites. The NYSDEC Brownfield Cleanup Program (BCP) is set to sunset in 2015. This means that clean-ups in this program must be completed by 2015 if tax incentives are to be obtained. The County should recommend and encourage New York State to keep the BCP current so developers will be encouraged to undertake brownfield clean-ups and redevelopment of contaminated sites.	Send letters recommending and encouraging adequate funding of these to cleanup assistance programs to the NYSDEC and state elected officials. Meet with Grisanti and our local delegation of State officials to discuss and encourage their action to fund these programs.	Send letters recommending and encouraging adequate funding of these cleanup assistance programs to the NYSDEC and state elected officials. Utilize connections to the local municipalities and communities to initiate an outreach effort to get all municipalities involved in effort to get state to properly establish adequate funding for these programs.	This effort would not need any outside funding.	Local Municipal officials, New York State Department of Environmental Conservation (NYSDEC)

Transportation

Recommendation	County Role	EMC Role	Funding Source	Partners
Consider bike infrastructure needs in all road and planning projects.	Letter of Support	Letter of Support	NYS Department of Transportation	GO Buffalo
Support organizations working on complete streets and alternative transportation projects, such as Go Bike and the Buffalo Niagara Medical Campus (BNMC).	Letter of Support	Letter of Support	NYS Department of Transportation, NYS Energy Research and Development Authority	BNMC, GO Buffalo

Air Quality

The Issue:

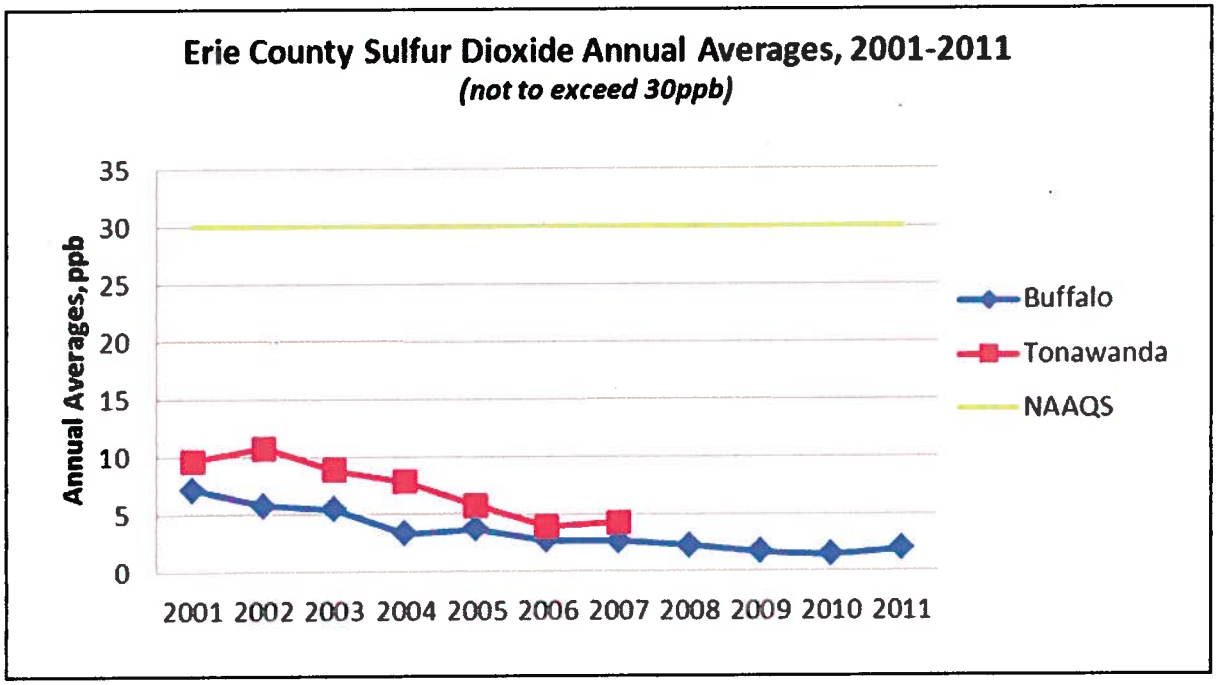
Air in Western New York enters the state principally through the prevailing westerly winds blowing across the heavily industrial Midwestern states. When it arrives, it already contains significant contamination.

In Erie County, ambient air impurities are emitted from area sources (e.g. dry cleaners, gas stations and auto body paint shops), point sources (such as major industrial facilities, chemical plants, steel mills, oil refineries, power plants and hazardous waste incinerators), and mobile sources that include on-road vehicles (cars, trucks, buses) and off-road equipment (ships, airplanes, agricultural and construction equipment).

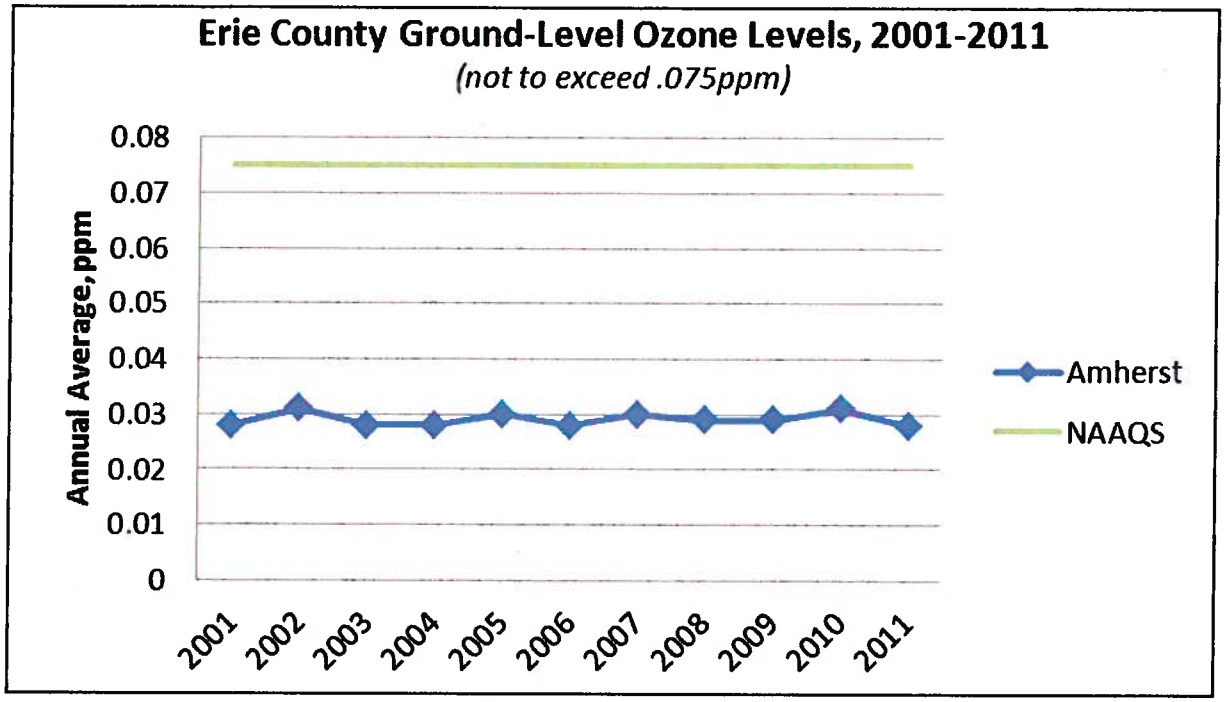
Continuous exposure to contaminated air contributes to serious health problems including cancer, respiratory ailments, and heart disease. Poor air quality has serious economic impacts because it is directly linked to an increase in missed work days and emergency room visits.

The Indicators:

The Clean Air Act Amendments of 1990 require the United States Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health. In Erie County, the New York State Department of Environmental Conservation (NYSDEC) is responsible for regulating Ambient Air Quality. Erie County has the most ambient air sampling locations in NYSDEC's upstate Ambient Air Monitoring Network. There are four continuous sampling sites in Amherst, Tonawanda, Buffalo and Lackawanna. These facilities are required to measure air quality to determine whether or not the state's ambient air meets the prevailing NAAQS. This report will focus on sulfur dioxide and ground level ozone levels in Erie County from 2001-2011. Both pollutants are regulated by NAAQS.



Source: NYSDEC Buffalo and Tonawanda Air Quality Monitoring Stations



Source: NYSDEC Amherst Air Quality Monitoring Station

The Assessment:

Sulfur dioxide (SO2) and ground-level ozone pollution are associated with several health and environmental impacts. Sulfur dioxide is a byproduct of the combustion of coal and petroleum typically emitted from industrial sites. At high concentrations, short-term (5 minute to 24 hour) exposures to SO2 have been shown to increase asthma symptoms and associated emergency room visits. SO2 emissions lead to acid rain and the formation of atmospheric particulates, when inhaled can cause or aggravate respiratory illnesses. Habitat suitability and plant community health are also impacted by sulfur dioxide.

Data from the above chart indicate that over the period sulfur dioxide levels within Erie County have remained consistently below NAAQS recommendations. However, levels for Tonawanda exceed those of Buffalo, suggesting that people residing in areas close to Tonawanda are at a higher health risk. These findings may be a product of the fact that the point source that emits the greatest amount of sulfur dioxide in Erie County is located in Tonawanda. C. R. Huntley, a coal-fired power plant, emits 48,484 tons of sulfur dioxide per year. This figure is nearly ten times greater than the next highest emission facility, Bethenergy located in Lackawanna, and is greater than the next top 25 emission facilities in Erie County combined. In October 2011, the NYDEC updated the 2009 Tonawanda Community Air Quality Study, reporting that levels of the ambient concentrations of benzene and other air pollutants within the Tonawanda community had been reduced.

According to the EPA, 93% of SO2 emissions in Erie County are due to the combustion of fuel, with 63% of fuel pollution stemming from the burning of coal for electricity generation.

In the upper atmosphere ozone protects the Earth from damaging ultraviolet radiation. At the ground level ozone is an environmental and health hazard. Excessive levels of ground-level ozone can produce respiratory disease, damage crops, depress commercial forest yields, and jeopardize the long term health of the environment. Ground-level ozone can also trigger haze over communities, restricting visibility, and placing drivers and pedestrians at higher risks for accidents. Ground-level ozone

concentrations for Erie County are monitored at the Amherst air monitoring station.

Ozone levels in Erie County have remained relatively constant, fluctuating very little between .02 parts per million (ppm) and .04 ppm every year. Ozone content in the air at ground level is due to a combination of Nitrous Oxide pollution and Volatile Organic Compounds (VOCs) Mobile sources are responsible for most of both of these pollutants in Erie County, accounting for 66% of nitrous oxides and 41% of VOCs. VOC emissions in Erie County were also found to be due to solvent sources to a similar degree (40%).

The Recommendations:

The EMC recommends that Erie County:

- Support environmental non-profit organizations, such as the Clean Air Coalition of Western New York (CACWNY), that are dedicated to reducing air pollution. Community activism in Tonawanda spearheaded by the CACWNY contributed to enforcement actions by the EPA and NYSDEC against Tonawanda Coke, a major source of industrial emissions in the area.
- Support the installation of an electronic toll booth at the South Grand Island toll barrier.
- Partake in programs that encourage the public to take steps to reduce their own footprint on air quality. Included in this would be educating residents about outdoor burning restrictions, and the health and safety hazards of outdoor burning. With funding provided by the EPA, the DEC offers a grant initiative to help municipalities with public outreach and the purchase of equipment to provide alternative means for disposal of organic waste.
- Help alert the public when local air quality does not meet safety standards. Doing so will help reduce citizen exposure to harmful pollutants.

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[i] USEPA. "Sulfur Dioxide: Health"
[ii] NYSDEC, "Tonawanda Community Air Quality Survey"
[iii] USEPA, "State and Local Summary of Sulfur Dioxide Emissions"
[iv] USEPA, "State and Local Summary of VOCs and Nitrous Oxides"

Climate Change

The Issue:

Building Resiliency in Erie County in the Face of Climate Change

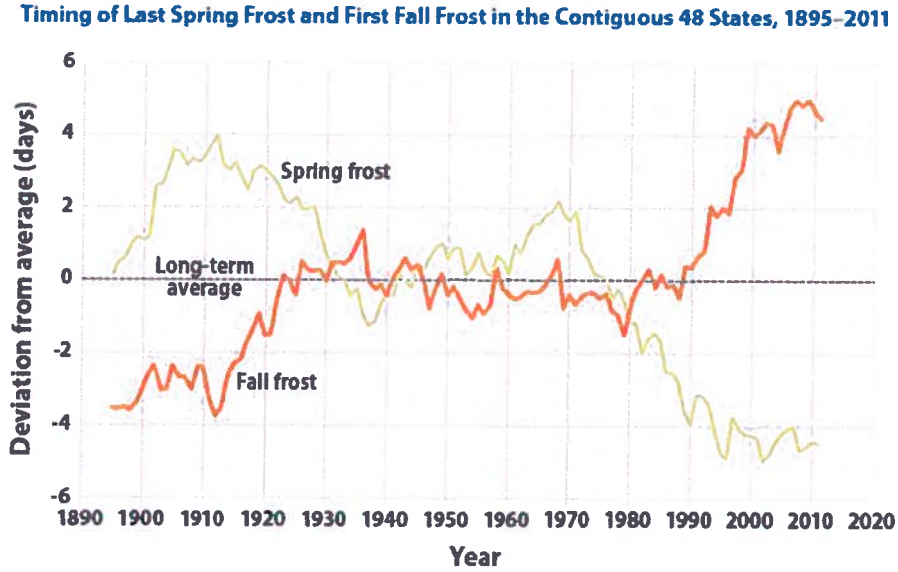
Whether it is addressing the aftermath of super storms, record high temperatures, or record low lake levels, a changing climate is impacting the quality of life in Erie County.

Situated strategically in the Great Lakes Region of North America, the potential consequences of climate change is a growing concern that impacts all sectors of Erie County, including our health, economic development, quality of life, local governance, and policy making.

The economic, environmental, and social consequences are being felt globally. Therefore, the economy of the future requires that we evaluate and develop strategies that will provide the best possible outcome for Erie County and the Region. Working to adapt, mitigate and plan around climate change will cost less money today than it will tomorrow.

The Indicators:

According the United States Environmental Protection Agency (USEPA), "the final spring frost is now occurring earlier than at any point since 1895, and the first fall frosts are arriving later. Since 1980, the last spring frost has occurred an average of about three days earlier than the long-term average, and the first fall frost has occurred about two days later." The chart below illustrates this trend.

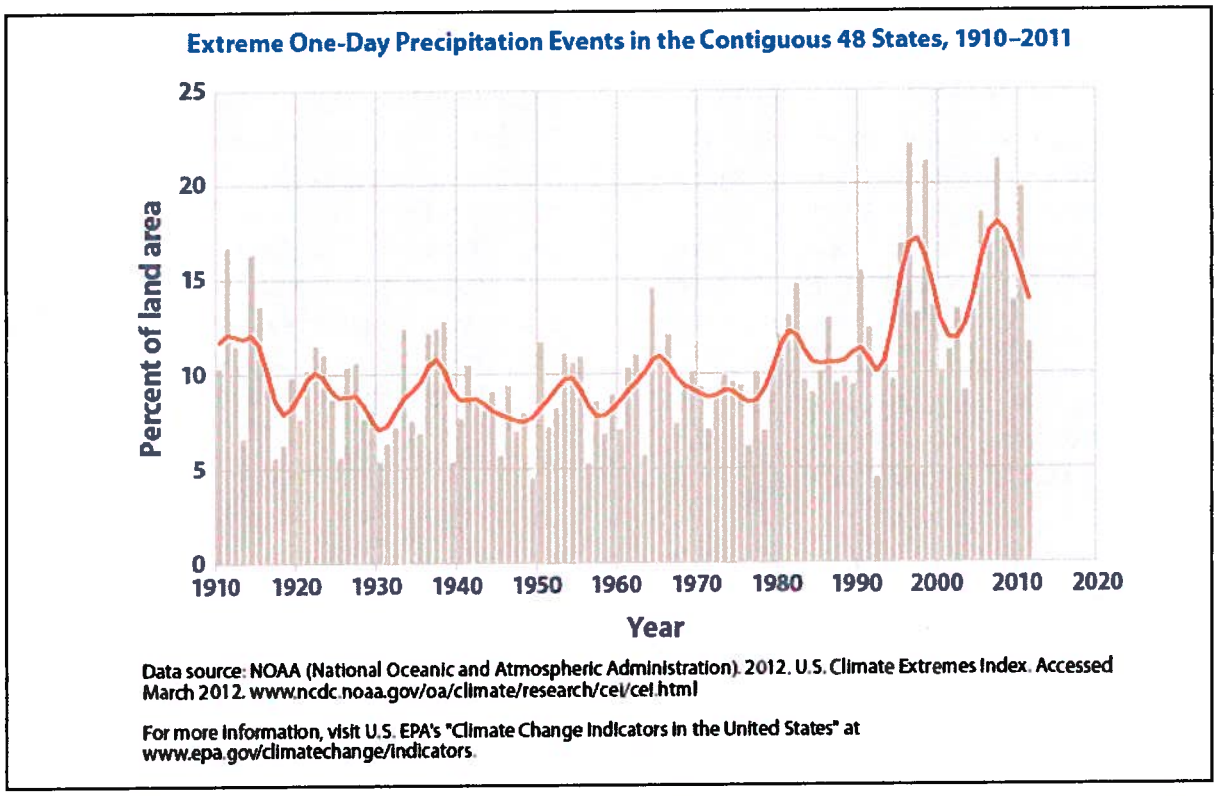


Data source: Kunkel, K.E. 2012 update to data originally published in: Kunkel, K.E., D.R. Easterling, K. Hubbard, and K. Redmond. 2004. Temporal variations in frost-free season in the United States: 1895–2000. Geophys. Res. Lett. 31:L03201.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climatechange/indicators.

http://www.epa.gov/climatechange/science/indicators/society-eco/growing-season.html

Another indication of a changing climate is an increase in extreme one-day precipitation events. According to the USEPA, "in recent years, a larger percentage of precipitation has come in the form of intense single-day events. Eight of the top 10 years for extreme one-day precipitation events have occurred since 1990. The prevalence of extreme single-day precipitation events remained fairly steady between 1910 and the 1980s, but has risen substantially since then. Over the entire period from 1910 to 2011, the portion of the country experiencing extreme single-day precipitation events increased at a rate of about half a percentage point per decade (5 percentage points per century)."



http://www.epa.gov/climatechange/science/indicators/weather-climate/heavy-precip.html

The Assessment:

According to the **United States Global Change Research Program, Second National Assessment (2009)** Great Lakes communities can expect:

- Increasing heat waves, decreasing air quality, and the increase of insect and waterborne disease that will affect public health and quality of life.
- The likely increase in precipitation in summer and spring including more heavy downpours, and greater evaporation in summer could lead to more periods of flooding and water deficits.
- Increased heat waves, floods, droughts, insects, and weeds. A thorough review of contemporary best management practices will help alleviate the challenges of managing crops, livestock, forests and public lands, and will, if undertaken with a comprehensive understanding of food security, help to mitigate and adapt to climate change.
- Native species will face increasing threats from rapidly changing climate conditions, pests, diseases, and invasive species.

There is an opportunity to react, adapt, and mitigate the changes that climate change is expected to bring, and proactively address the causes that will impact the social, economic, and environmental well-being of Erie County. While climate change is no doubt a global challenge, it is also an opportunity for the County to develop and implement innovative solutions to protect its lands, infrastructure, buildings, workforce, and residents through new policies and practices.

The Recommendations:

The EMC recommends that Erie County:

- Seek funding for proactive planning to adapt to climate change. This work would involve convening the relevant department heads from County Departments to measure and monitor the Counties response to climate change and implement recommendations from the Erie County DEP and the Legislature.
- Work to implement the projects identified in the Western New York Region's Sustainability Plan funded through the New York State Energy Research and Development Agency (NYSERDA) Greener, Cleaner Communities Program, particularly the creation of a County Green Team, planning and infrastructure for County parks, and establishment of the Green Business Roundtable.
- Become a Climate Smart Community. The New York State Department of Environmental Conservation manages this program whereby communities can measure their carbon footprint and implement projects to reduce that footprint.
- Discover more data related specifically to Erie County, such as temperature and rainfall information. Opportunities for funding this work should be pursued through various grant sources.

Contaminated Sites

The Issue:

Contaminated sites are areas where chemical pollution or other hazardous materials are concentrated in the environment to such an extent that human and environmental health is or could be impacted. Of special concern to Erie County are those contaminated sites that have been classified as brownfields. Defined as "any real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant," brownfields connect urban and environmental issues by the challenges they pose to both.

Brownfield properties pose challenges to developers due to the cost, time, and liability risks associated with their clean-up and redevelopment. Because they tend to be located in urban centers, they contribute to patterns of sprawl by discouraging infill development and incentivizing development of green fields. Contamination in the soil, surface water, or groundwater of an area threatens the well-being of a community and weakens its ecosystem. Our region's industrial past has left Erie County with several such sites, the presence of which undermines efforts to revitalize the area's vibrant urban legacy.

In Erie County, the assessment and management of contaminated sites is the responsibility of the New York State Department of Environmental Conservation (NYSDEC). The NYSDEC:

- Maintains an inventory of inactive hazardous waste sites;
- Remediates priority sites; and
- Manages the State and Federal hazardous waste manifesting documentation system

In addition, New York offers incentives in the form of technical and financial assistance, as well as liability relief, to encourage the clean-up and reuse of contaminated sites by both the public and private sectors.

The promises of such programs are many: brownfield redevelopment raises the tax base, decreases health risks, protects open space, and minimizes public burden by encouraging the efficient use of existing land and infrastructure. These benefits and the many forms of assistance available for their fulfillment should make cleaning up and reusing these sites a top priority for Erie County policy makers.

The Indicators:

Progress on Erie County's remediation of contaminated sites over the past year will utilize the 2011, 2012 and 2013 NYSDEC Environmental Site Remediation Database. The NYSDEC generates annual reports that provide updates regarding both the classification and remediation progress for the sites listed in their Inactive Hazardous Waste Sites Register (Class 1-5) as well as reports that summarize the annual progress and clean-up accomplishments associated with unlisted sites through the brownfield and other voluntary clean-up initiatives (Class A & C). An explanation of the classification code is presented below:

Classification Code: 1

The classification assigned to a site at which:

a. contamination constitutes a significant threat to public health and the environment; and

b. the significant threat to public health and the environment is causing, or presents an imminent danger of causing, either irreversible or irreparable damage to the environment.

Classification Code: 2
The classification assigned to a site at which:

a. the disposal of hazardous waste has been confirmed and the presence of such hazardous waste or its components or breakdown products represent a significant threat to the environment or to health as described in subdivision (a) above; or
b. hazardous waste disposal has not been confirmed, but the site has been listed on the Federal National Priorities List (NPL).

Classification Code: 3
The classification assigned to a site at which:

- contamination does not presently constitute a significant threat to public health or the environment, as described in subdivision (a) above.

Classification Code: 4
The classification assigned to a site which:

- has been properly closed but that requires continued site management, consisting of operation maintenance, and monitoring.

Classification Code: 5
The classification assigned to a site which:

- has been properly closed in a setting where a consequential amount of hazardous waste or its constituents remain, but do not require continued operation, maintenance and/or monitoring. No further action required.

Administrative Classifications:

Classification Code: A
The classification assigned to a non-registry site in any remedial program where work is underway and not yet complete (i. e., Brownfield Cleanup Program, Environmental Restoration Program, and Voluntary Cleanup Program sites).

Classification Code: C
The classification used for sites where the Department has determined that remediation has been satisfactorily completed under a remedial program (i. e., State Superfund, Brownfield Cleanup Program, Environmental Restoration Program, Voluntary Cleanup Program).

Environmental Site Remediation Progress, 2011-2013

Site Class	*Description*	*2011*	*2012*	*2013**
Class 1	Causing, or presenting an imminent danger of causing, irreversible or irreparable damage to public health or the environment: immediate action is required	0	0	0
Class 2	Significant threat to public health or the environment: action required	22	22	22
Class 3	Does not present a significant threat to the environment or public health-action may be deferred	7	7	7
Class 4	Site properly closed: requires continued management	29	30	31
Class 5	Site properly closed: does not require continued management	4	3	0
Class A	A non-registry contaminated site undergoing remediation which is incomplete	37	41	51
Class C	A non-registry contaminated site that has been satisfactorily remediated	57	62	67

Source: NYSDEC Environmental Remediation Database
**As of January 2013*

The Assessment:

Positive Progress:

- No increase in the number of Class 1 or Class 2 sites
- Increase in Class 4 sites
- Increase in Class C sites that have been satisfactorily remediated

Negative Changes:

- Increase in Class A Sites where remediation has not yet been completed

The Recommendations:

The current remediation programs available in the County are addressing many contaminated sites. However, the list of classified sites is extensive and it is important that Erie County, local governments, and the private sector continue to collaborate with the NYSDEC to utilize clean-up programs. Erie County should:

- Continue to assist and support local municipalities and the private sector in participating in the state brownfield clean-up program and other voluntary clean-up programs, which convert contaminated sites into developable tax paying properties.
- Actively recommend and encourage New York State to continue funding for the State's Environmental Restoration Program (ERP) Initiative which provides local governments the necessary seed money to promote brownfield clean-ups and the redevelopment of contaminated sites.
- The NYSDEC Brownfield Cleanup Program (BCP) is set to sunset in 2015. This means that clean-ups in this program must be completed by 2015 if tax incentives are to be obtained. The County should recommend and encourage New York State to keep the BCP current so developers will be encouraged to undertake brownfield clean-ups and redevelopment of contaminated sites.
- Facilitate and realize remediation of contaminated lands utilizing the NYS Department of State Brownfield Opportunity Area program. Doing so will help create jobs, improve surrounding property values, restore ecological habitats, provide public access to waterways, and enhance recreational opportunities.
- Implement green infrastructure techniques to remediate aging buildings, encourage redevelopment of brownfields, protect taxpayers from the burden of new infrastructure expenditures, protect the County's natural spaces, wetlands, farms, and forests, and spur economic growth.
- Erie County should market shovel-ready properties to companies out of state, and across the US-Canadian border, to encourage new development and business to move back into the County, and help decrease the trend of people being forced to leave Erie County to find employment.

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[i] New York State Department of Environmental Conservation, "Environmental Cleanup and Brownfields."
[ii] City of Buffalo, "Queen City in the 21st Century," 16

Ecosystem Health

The Issue:

The Erie County Environmental Management Council recognizes that ecosystem health is more than invasive species; however this chapter is focused on invasive species because they are a major threat to the health and vitality of our ecosystems. The extent and density of invasive species are also indicators of the biological health of natural and unmanaged landscapes. They can be defined as non-native (or alien) species to the ecosystem and whose introduction causes, or is likely to cause, economic and/or environmental harm to that ecosystem. These can be plants, animals, or other organisms that compete or displace native species and the ecological values and services they provide. Two invasive species causing concern in Western New York are the giant hogweed and the emerald ash borer.

Giant hogweed (Heracleum mantegazzianum) is one of few North American invasive species that can cause ecological harm as well as pose a significant public health risk. Its sap, in combination with moisture and sunlight, can cause severe skin and eye irritation, painful blistering, permanent scarring and blindness. It has been federally listed as a noxious weed, and its public health impacts remain the most important motivation for attempts to control its spread. Its environmental effects remain significant; giant hogweed thrives in wet areas along streams and rivers, outcompeting native species through the shading effects of its large leaves.

The emerald ash borer (EAB), (Agrilus planipennis) is an asian beetle that has the potential to infest and kill all North American ash tree species in the genus Fraxinus, including green, white, black, and blue ash. In New York, 900 million ash trees are at risk. Because green and white ash trees are keystone species, their loss due to EAB could lead to the degradation of their entire ecosystem. Trees that become infested typically die within 2 to 4 years and create "hazard tree" liability to public and private landowners. To date, nearly 50 million ash trees in the U.S. have fallen victim to this invasive species since its discovery in Michigan in 2002.

Initial EAB infestations have been primarily located in Michigan and Ohio. As of 2012, the insect is quickly spreading around the Great Lakes States and Canada. It has been found in 3 counties in Western New York, including Erie County. Erie County urban and rural ash tree cover is estimated to be 15% of total tree cover. All EAB infested trees in urban areas are potential hazard trees to homes and infrastructure and ash in rural, aquatic habitats represent a habitat modification that can exacerbate the spread of invasive plants. EAB spread is expected to accelerate throughout Erie County from areas of known infestations. The United States Department of Agriculture and New York State Department of Agriculture and Markets is currently conducting EAB biological control research in Erie County. (USDA-APHIS/ARS/FS. 2012. Emerald Ash Borer, Agrilus planipennis (Fairmaire), Biological Control Release and Recovery Guidelines. USDA-APHIS-ARS-FS, Riverdale, Maryland.

http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/EAB-FieldRelease-Guidelines.pdf

Other invasive species, such as Japanese knotweed (Polygonum cuspidatum), common reed (Phragmites australis), purple loosestrife (Lythrum salicaria), common mugwort (Artemisia vulgaris), Zebra mussel (Dreissena polymorpha)and Quagga mussel (Dreissena rostriformis bugensis) cause significant impacts to terrestrial and aquatic habitat. However, EAB and giant hogweed represent current economic impacts and health risks.

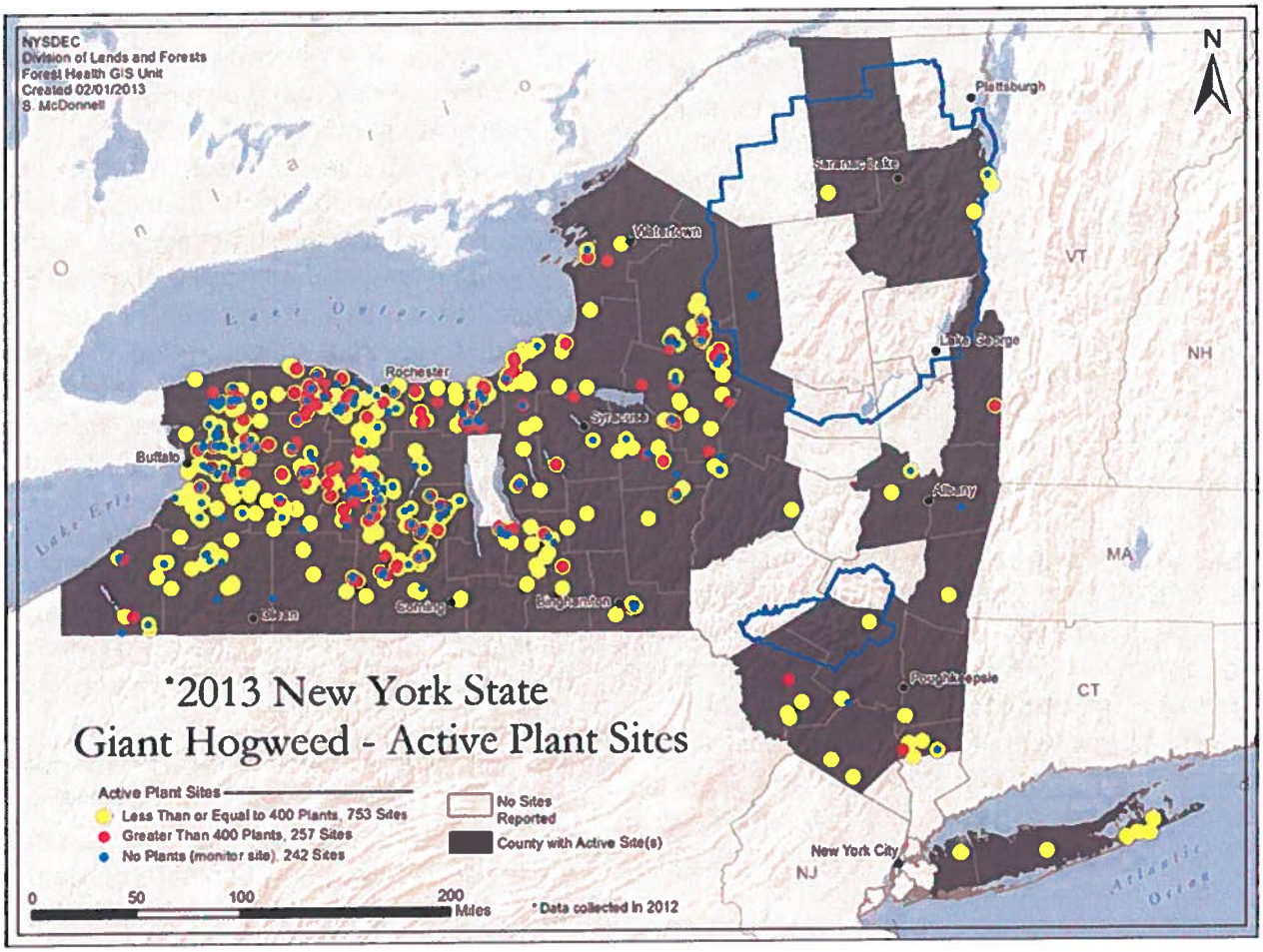
These highly invasive species continue to displace native species and degrade wildlife habitats as well as disrupt food web dynamics. These invasive species are not only a growing problem in Western New York, but throughout the Great Lakes Basin

The Indicators:

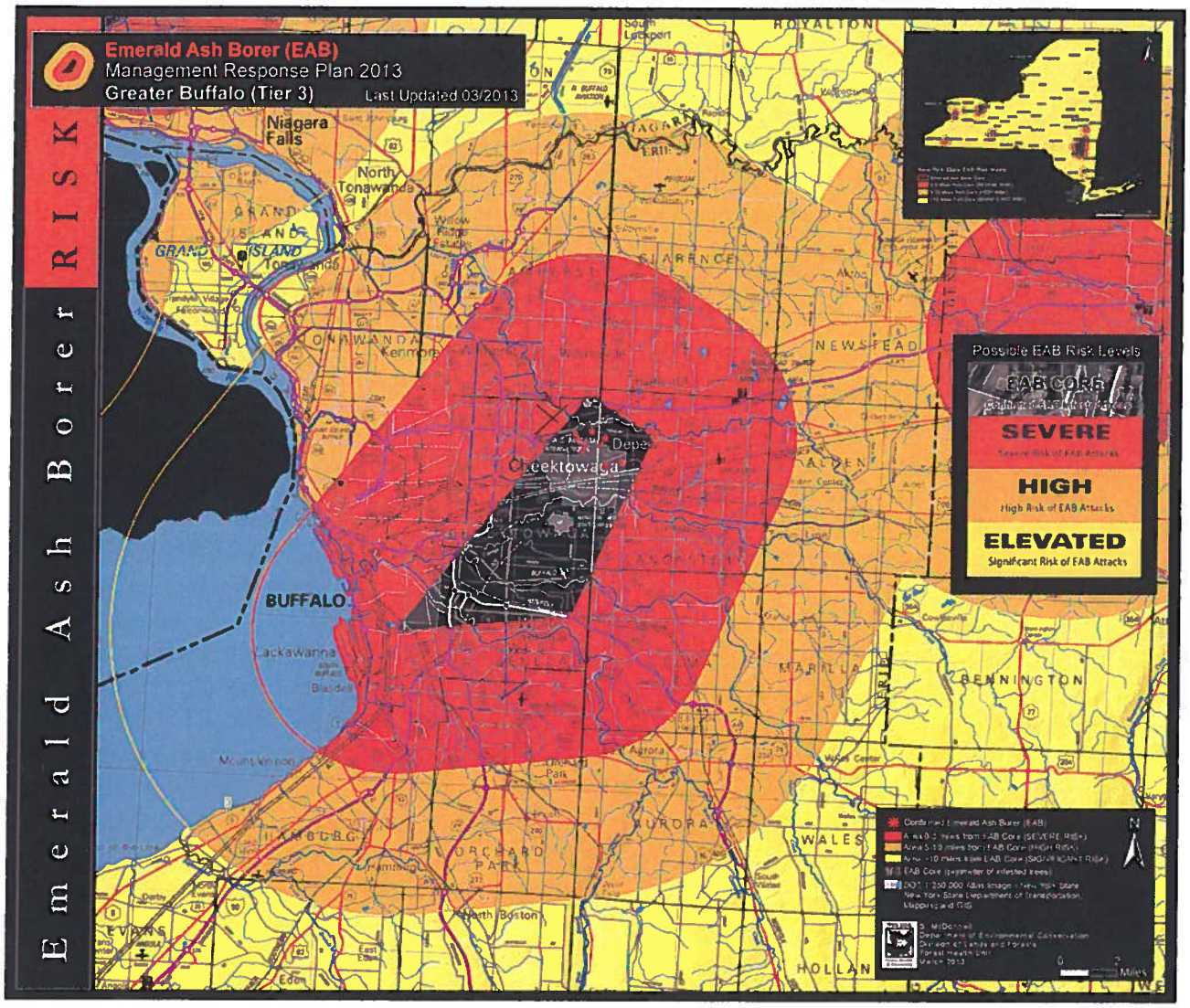
Two indicators are used to assess NY's level of risk due to invasive species:

- The Giant Hogweed Statewide Distribution Map
- The Greater Buffalo EAB Risk Map

Both resources are provided by the New York State Department of Environmental Conservation and can be used to identify the threat posed to Erie County by invasive species.



Source: NYSDEC



Source: NYSDEC

The Assessment:

Giant Hogweed has been found in Western New York for over ten years. Most recently, it was identified within the Buffalo River Corridor at the Seneca Bluffs Natural Habitat Park. In total, 181 reports of Giant Hogweed have been reported in Erie County. The NYSDEC has established a giant hogweed hotline and set up regional giant hogweed response teams to address incidence of the plant through formal identification and control methods. Giant Hogweed is, however, difficult to eradicate. Due to its tuberous perennial roots, many herbicides are only partially effective, and complete removal of the plant is also challenging . Several seasons of consistent removal techniques will be necessary to fully prevent the return of this annual plant.

To date, emerald ash borer discoveries have been on the rise. The first infestation of EAB in Erie County was reported in Buffalo's South Park in June 2011, where at least a dozen trees were identified. Other infestations were confirmed in the Lancaster area in August 2011 and West Seneca in the spring of 2012. Although the natural spread of EAB is about two miles per year, it is believed that econom-

ic activity such as the shipping of potentially infested firewood is speeding this process. As such, the New York State Department of Agriculture and Markets has released emergency regulation expanding EAB quarantine areas to all areas south of the New York State Thruway, and east to the state border, except for Rockland, Westchester, Nassau and Suffolk counties and New York City. This will become effective on May 1, 2013.

Western New York is shown to be at significant risk for EAB invasion, in part because of the region's high concentration of ash trees. New York's highest concentration of ash trees are found in Western New York, specifically in Erie County, Niagara County, and across the Lake Ontario Plain. However, it is important to note that to date only 1% of New York's ash trees have been infested and that preventative actions can still be taken to protect those that remain. Emerald ash borer-related tree mortality has been shown to grow exponentially 4 years after the insect has been introduced to an area. In Western New York, this means that the present is the most imperative time to protect against this invasive species.

Erie County and the Buffalo Niagara Riverkeeper, along with several other private and public partners, have implemented invasive species management plans at sites along the Buffalo River to eradicate invasive species such as Japanese knotweed, phragmites, purple loosestrife, and common mugwort; and restore natural habitat. The US Army Corps of Engineers has approved $500,000 in federal funding to conduct a Great Lakes Pilot Invasive Species Eradication Project to test a variety of both chemical and mechanical techniques for addressing these species at the Times Beach Nature Preserve. This project is in year two of a five year control and management plan that includes habitat restoration.

Education and outreach are critical measures that must be executed in order to deliver important information about invasive species for the health, safety and welfare of Erie County residents and the natural community. Currently Partnerships for Regional Invasive Species Management (PRISM) has an administrator at Buffalo State College; the hiring of a local coordinator for the program is anticipated. PRISMs' goal is to prevent or minimize the harm caused by invasive species on New York's environment, economy and the health and well-being of the State's citizens. PRISM will coordinate invasive species management functions including coordinating partner efforts, recruiting and training citizen volunteers, identifying and delivering education and outreach, establishing early detection monitoring networks and implementing direct eradication and control efforts. Also the Cornell Cooperative Extension Invasive Species Program (CCE ISP) has a Regional Invasive Species Educator in the Erie County Cornell Cooperative Extension Office in East Aurora who will work primarily with the Western and Finger Lakes PRISMs and will be an integral part of the overall statewide Invasive Species Educator Team of the CCE ISP.

The Recommendations:

The EMC recommends that Erie County should:

- Complete the Tree Inventory at Akron Falls and Como Park so that the ash trees can be identified and assessed.
- Seek additional funding through the New York State Department of Environmental Conservation to conduct tree inventory at more County Parks, as it has for Akron Falls and Como Park.
- Pass a policy banning the planting of tree monocultures at any County led or funded projects to discourage the spread of future infestations or diseases.
- Continue the eradication of giant hogweed on any County property.

- Post educational signage reading invasive species as they occur on County property.
- Engage the New York State Partnership for Regional Invasive Species Management (PRISM) program through the western New York PRISM for project funding opportunities and resources to promote community education and outreach.

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[i] New York State Invasive Species Clearinghouse, "Giant Hogweed"
[ii] NYSDEC, "Giant Hogweed"
[iii] Ibid.
[iv] New York Invasive Species Clearinghouse, "Emerald Ash Borer" http://www.nyis.info/
[v] NYSDEC, "Emerald Ash Borer (EAB)"
[vi] IMapInvasives, "New York User Tools Report: Species: Heracleum mantegazzianum, County: Erie"
[vii] New York State Invasive Species Clearinghouse, "Giant Hogweed"
[viii] New York Invasive Species Clearinghouse, "Emerald Ash Borer"
[ix] NYSDEC, "Emerald Ash Borer"
[x] Ibid

[xi] Ibid
[xii] Ibid
[xii] Herms, Daniel PhD, Ohio State, "EAB-Induced Ash Mortality in the Upper Huron River Watershed, 2012

Energy Use

The Issue:

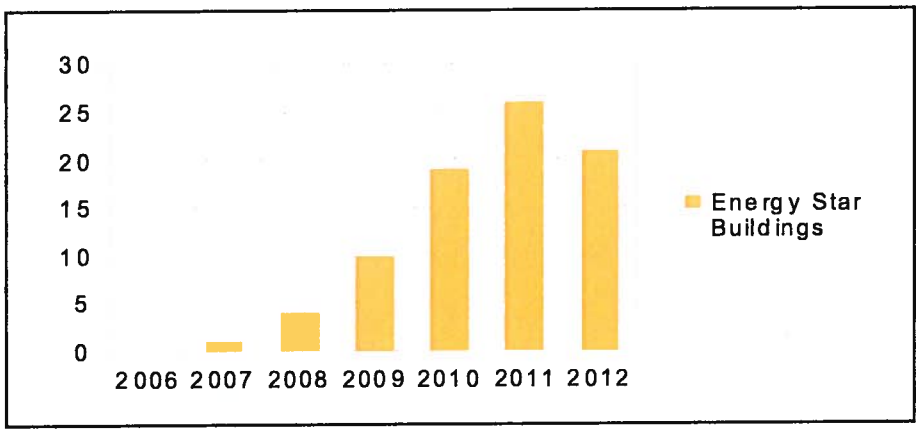
Reliable, affordable and environmentally responsible energy use is key to the County's economic growth and quality of life. In the United States, buildings account for about 40% of primary energy consumption. Numerous federal and state policies and incentives focus on reducing energy usage in the residential, commercial and industrial sectors. New buildings must be designed to meet local energy codes, but new and existing buildings should also be expected to meet aggressive energy use targets that reduce costs as well as environmental impacts.

Increasing energy demand, global climate change, and constrained energy supplies are likely to impact how energy affects our community in the future. Energy efficiency in buildings is a fast and highly cost effective solution for saving energy, saving money, and reducing greenhouse gas emissions. The Environmental Protection Agency Energy Star program provides a turnkey platform that can be leveraged to promote energy efficiency throughout the community. Energy Star is a joint program of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy dedicated to saving money and protecting the environment through energy efficient products and practices.

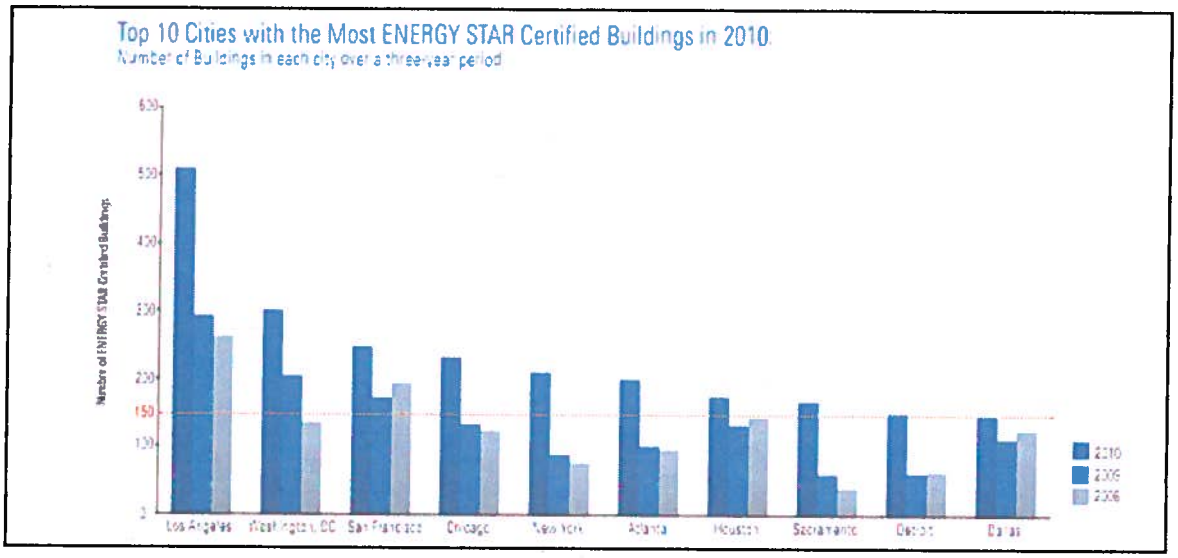
Energy Star offers a proven strategy for efficient energy management with easily accessible tools and resources. EPA's Energy Star Portfolio Manager is a tool for organizations to track and manage energy. It is a widely accepted standard national platform for benchmarking energy use and identifying the most energy efficient measures in buildings in the United States. Comparable data is accessible to examine energy and water benchmarking trends and metrics. Local governments, organizations, and others can use the process to promote energy efficiency, water efficiency and greenhouse gas reduction initiatives in our communities.

The Indicators:

Energy Star Labeled buildings in Erie County



Source: EPA / EnergyStar.gov



The Assessment:

Energy Star Labeled Buildings in Erie County have been on a steady increase since 2008, adding approximately 5 buildings per year. 2012 did see a slight decrease, some of which can be attributed to buildings becoming certified under different rating systems. The program provides pre-established framework for quality control and quality assurance.

Controlling and cutting costs is important for the success of all organizations, public and private. Reducing energy use and increasing energy efficiency is a proven strategy for cutting and controlling costs; however, energy waste is still prevalent throughout organizations. Mitigating energy waste can be hampered by a lack of resources applied to energy management. Energy management is generally characterized by decentralization and a reactive posture. Energy efficiency measures must include an element of "Behavioral Based Energy Efficiency Measures" to ensure success.

The Recommendations:

The EMC recommends that Erie County pursue several efforts in order to conserve energy within the County:

- Hire an Energy Officer to specifically oversee County energy use in its many buildings, including pursuing state and federal funding for projects which conserve energy and implement renewable energy projects.
- Establish an Erie County Green Team to work with the Energy Officer to coordinate behavior based energy conservation projects, as well as other waste reduction projects, within County facilities.
- Continue to work with community partners, such as PUSH Buffalo, to help more residents access resources for energy conservation projects and seek ways to help fund projects for those residents that cannot qualify for existing loan programs.
- Continue to work with partners to create and provide support for a Sustainable Business Roundtable, a business organization with the goal of increasing the implementation of sustainable practices such as energy conservation projects.

[i] http://www.eia.gov/tools/faqs/faq.cfm?id=86&t=1
[ii] http://www.bpa.gov/energy/n/behavior.cfm

Land Use

The Issue:

Land use is a broad topic that affects and is impacted by all areas of the built and natural environment. This report will define land use as a fundamental environmental and ecological concept and tool that helps citizens and governments determine planning, zoning, conservation, and protection of land. Land use is the basis on which we determine and protect our environmental quality as well as identify and characterize open space, habitat, natural areas, and their relationship to development and developed areas including farmland, commercial, industrial and urban areas. Land use impacts everything and is subject to many competing demands. It is the basis for a vital economy, sustainable neighborhoods, strong rural communities and improved access and mobility. We rely on our land resources for energy, agriculture, forestry, recreation, cultural amenities, and ecological services that protect the quality of our air, water, and overall environment. The health of both our human and ecological communities relies on responsible land use planning.

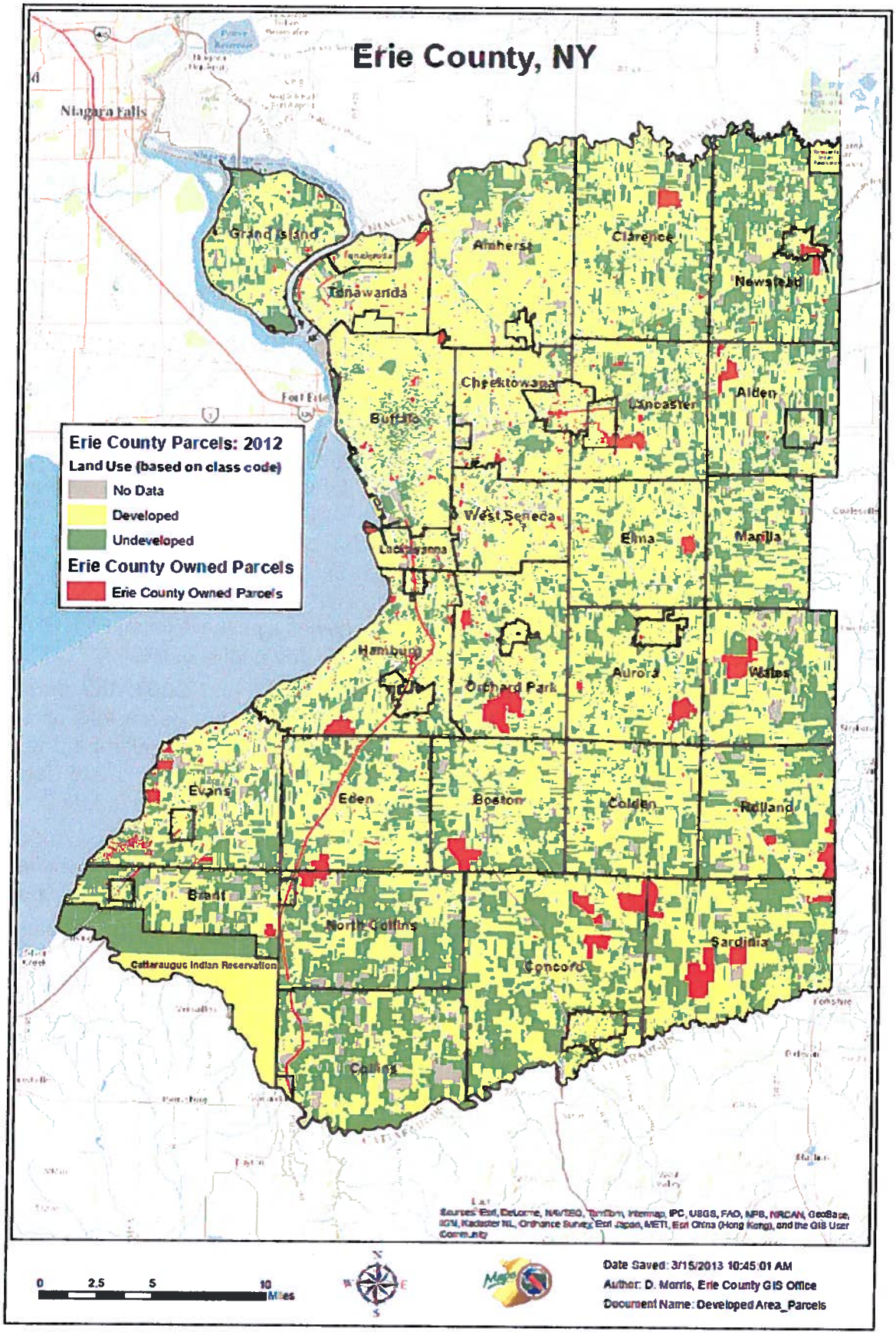
Erie County's natural landscape provides valuable ecological services that can be quantified- water treatment, stormwater management, and air quality improvement. The loss of rural, agricultural, and environmentally-sensitive lands as a result of growing urbanization brings with it higher levels of impervious surfaces, less forest cover, expansion of public water and sewer infrastructure, and longer commutes with attendant greenhouse gas emissions. This places the region's best agricultural lands, major riparian corridors, wetlands, floodplains, and forests under greater stress and at more risk.

Prior to the adoption by the Erie County Legislature in 2006 of the Erie and Niagara Counties' Framework for Regional Growth, the County had no planning tool to conserve valuable natural resources and better channel new development. Although the Framework is a valuable initial start, further specificity and monitoring of the Framework's policies and development targets is essential.

The Indicator:

Land use is a fundamental indicator of environmental integrity. Assessing our land use in terms of environmental and ecological integrity relies on the creation of a baseline of quantifiable understanding.

The Erie County Department of Environment and Planning has created a land use map that compares acres of developed land with acres of undeveloped land within Erie County. Classifications are based on parcel class code data, which is constantly updated throughout the year by the Erie County Department of Real Property Tax Services. "Developed" parcels include those coded under the major categories of: residential, commercial, recreation and entertainment, community services, industrial and public services. Note that an exception was made under the major category of "recreation and entertainment". Parcels in this category which are coded as improved beaches, camps and camping facilities, parks, playgrounds athletic fields and picnic grounds are included as "undeveloped" areas. In addition, "Undeveloped" parcels include the following codes: agricultural, vacant land, and wild, forested, conservation lands and public parks. The "no data" categorization is due to differences in the two databases used to create the map: the assessors' and the tax mapper. The tax mapper database is maintained by the County, whereas the assessors' databases are maintained by the municipalities.


Erie County, NY
Niagara Falls
Grand Island
Tonawanda
Amherst
Clarence
Newstead
Cheektowaga
Lancaster
Alden
Buffalo
West Seneca
Lackawanna
Elma
Marilla
Hamburg
Orchard Park
Aurora
Wales
Evans
Eden
Boston
Colden
Holland
Brant
North Collins
Sardinia
Cattaraugus Indian Reservation
Concord
Collins
Erie County Parcels: 2012
Land Use (based on class code)
No Data
Developed
Undeveloped
Erie County Owned Parcels
Erie County Owned Parcels
0 2.5 5 10 Miles
Date Saved: 3/15/2013 10:45:01 AM
Author: D. Morris, Erie County GIS Office
Document Name: Developed Area_Parcels

The Assessment:

The above map demonstrates that Erie County contains 341,425 acres of developed land and 249,244 acres of undeveloped land. In terms of population, there are .37 acres of developed land and .27 acres of undeveloped land per capita in the county. Note that the map also includes 35,226 acres of "undetermined" land use, which reflects a difference in data as explained above.

The broad terms "developed" and "undeveloped" used in this map are inclusive of several different types of more specific built and natural land uses. Below, three of these land uses that are particularly important for community and environmental health- wetlands, farmlands, and urbanized areas- are evaluated in more detail.

Wetlands

Many of the wetlands that were originally in Western New York have been destroyed by dredge and fill activities, drainage, development, pollution, and natural causes. Floodplain and riparian areas that buffer surface water have diminished as well. Erosion, flooding, and sedimentation have resulted. Wetlands, floodplains, and healthy riparian corridors provide natural open space, filter pollutants from water, provide flood protection, recharge aquifers, maintain dry season stream flows, stabilize shorelines from erosion, and provide habitat for fish and wildlife.

NYS regulates wetlands greater than 12.4 acres or of unusual local importance. As of February 2012, Erie County had 319 NYS regulated wetlands totaling 19,940 acres. That is an increase of 46 acres from 2008, represents 3 percent of the County land area and affects 2,600 landowners. Wetlands are continually reassessed – new wetlands are added, boundaries adjusted, and wetlands removed. (www.dec.ny.gov/lands/5124.html, accessed April 4, 2012).

The number of U.S. Army Corps of Engineers (ACOE) federal jurisdiction wetlands has expanded significantly in Erie County, particularly with the inclusion of the Northeast Wetland delineation supplement adapted in March 2010. This expansion has impacted all aspects of development, land disturbance and the planning and designing of future projects.

Farmland

Agriculture plays an important role in the County's economy. In 2009, Erie County's food system generated $9.9 billion in sales and supported 82,000 jobs. Agricultural activity provides employment, supports the local food system and is essential to the region's food security. Well-managed, privately held agricultural lands also have environmental and social benefits: they act as a natural stormwater filtration system, provide food and cover for wildlife, conserve environmentally sensitive lands and maintain scenic, cultural, and historical landscapes. The loss of farms and farm acreage has a negative impact on the County's economy and quality of life.

Between 2002 and 2007, the most recent available data, there was a loss of 74 farms and 12,391 acres of farmland in the County. As of 2007, there were 1,215 farms and 149,356 acres of farmland in Erie County.

One of the keys to Western New York's resurgence will be recognizing that our land is a unique and valuable asset. Erie County has the soils, the climate, and the water needed to grow food. The returns from land used for well-practiced farming will be such that the value of an acre of farmland will surpass that of land sold for development.

Urbanized Area

The region's urbanized area has increased rapidly over the past several decades, while population has declined, leaving fewer people to pay for increased infrastructure. From 1980 to 2000, the urbanized area in Erie and Niagara Counties increased by 101 square miles, from 266 square miles in 1980 to 367 square miles in 2000. Over the same time, the

County's population decreased by 66,011. The Framework for Regional Growth graphically depicts the change in urbanized area in Erie County over that time within the context of regional growth (urbanized area is reported on a Metropolitan Statistical Area basis – Erie and Niagara Counties – as defined by the U.S. Census Bureau).

The Recommendations:

The EMC recommends the following actions be taken regarding land use issues:

- The Erie County Legislator should continue to support local municipal Conservation Easement programs that preserve open space, direct development toward areas with existing infrastructure, keep property on the tax rolls, and preserve public funds by adopting the local laws that enable this program.
- Erie County should continue to work with the Erie County Soil & Water Conservation District to increase riparian buffer zones.
- Erie County DEP should work with community partners to implement the recommendations made in the 2012 Erie County Agriculture and Farmland Protection Plan.
- Erie County's GIS Office should partner with Buffalo Niagara Riverkeeper to make public baseline environmental indicator information that will be critical tools to help determine net gain and loss of environmentally significant areas over time and will help determine strategies to protect our environmental heritage for generations to come.
- Continue to develop County wide land protection programs and models that explore land banking, energy production and infrastructure concerns, natural resources extraction, farmland and open space protection, wetlands protection, green and wildlife corridors, public access, education, and threats assessments.
- Focus all economic development efforts in areas with existing infrastructure to discourage sprawl.
- Support the Erie County GIS office in mapping the existing infrastructure and natural resources to inform smart growth planning and development priorities.

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[i] Room at the Table
[ii] Framework for Regional Growth
[iii] 2007 Census of Agriculture Land

Solid Waste Management

The Issue:

Municipal Solid Waste (MSW), more commonly known as trash or garbage, consists of everyday items we use and then discard. Proper management of MSW should follow United States Environmental Protection Agency's hierarchy by incorporating, in order of priority, a combination of waste reduction, recycling, energy recovery and landfilling. The EPA reports that, on average, individuals generate 4.43 pounds of MSW per day with approximately 1.5 pounds recycled or composted.

The management of MSW in Erie County is administered at the town level of government. This has resulted in diverse MSW collection, recycling and disposal operations across 44 cities, towns and villages. The collection of MSW may be accomplished by municipal employees or through town contracts with private disposal firms. In still others, it is up to the individual homeowner to either arrange for pickup by a private firm for collection or take refuse to a central municipal transfer station.

The processing of recyclables and MSW disposal is done by private companies in Erie County. MSW in Erie County is either sent to the Chaffee Landfill in southern Erie County, Modern Landfill or Allied Landfill in Niagara County or the Covanta MSW Incinerator in Niagara Falls.

There are two Solid Waste Management Boards (SWMBs) in Erie County. The Northwest SWMB encompasses the six larger suburban municipalities in Erie County. The Northeast Southtowns SWMB represents thirty seven suburban and rural municipalities. The City of Buffalo, for MSW planning purposes, is independent and is not a member of either SWMB. The SWMBs act in an advisory capacity for MSW management. The Erie County Department of Environment and Planning (ECDEP) provides administrative and logistical support for the SWMBs reporting requirements to the New York State Department of Environmental Conservation (DEC). Each SWMB is also required to develop and implement a Solid Waste Management Plan (SWMP). Every ten years this plan must be updated to reflect changes in federal, state and local regulations

The Indicators:

The selected indictors for solid waste are:

- Annual tons of MSW generated
- Annual tons of household hazardous waste collected at County events

Waste reduction and recycling efforts are captured in the annual tons of MSW generated in the County. This is a more accurate portrayal of waste reduction and recycling efforts than looking at recycling rates which are influenced by many factors. For example, the overall recycling rate might decrease based on waste reduction efforts, such as designing lighter packaging or reducing consumption of materials.

The household hazardous waste collected by the County is one indicator of the amount of these hazardous chemicals in the waste stream, as well as demand for this program. It should be noted, however, that these programs depend on the volunteer efforts of residents to bring their waste in on a Saturday morning which represents a small percentage of the population.

The Assessment:

The charts below summarize the selected indicators.

MSW Generated In Erie County

Year	Approximate Total Tons of MSW Generated	Pounds of MSW Generated per Capita*	Pounds of MSW Generated per Person per Day
2009	829,619.13	1,805.40	4.95
2010	774,553.78	1,685.57	4.62
2011	661,447.25	1,439.43	3.94

*Erie County population of 919,040 (2010 census)
Source: NYS DEC landfill and incinerator reports

Household Hazardous Waste Events

Year	Number of Events	Number of Participants	Pounds of Pesticides Collected	Gallons of Other* Waste Collected
2007	4	3,089	15,150	32,709
2008	3	2,630	9,846	44,327
2009	3	2,740	13,832	46,785
2010	2	1,967	9,415	31,680
2011	2	1,651	9,215	43,530
2012	2	2,421	6,752	50,737

* Includes paint, oil, antifreeze, gasoline, aerosols, adhesives, acids and oxidizers
Source: Erie County DEP

These figures show a reduction in MSW generated, which may be attributed to enhanced City of Buffalo and Town of Amherst recycling programs.

The County's Household Hazardous Waste Program continues to draw large numbers of participants and collect thousands of gallons of hazardous waste. The demand for these events has increased, while the number of events has decreased. This often results in long waits for residents with more than 1,000 participants at each of the two events held in 2012.

The Recommendations:

The December 2010 DEC MSW plan entitled "Beyond Waste, A Sustainable Materials Management Strategy for New York State" calls for a number of regulatory and voluntary programs, such as:

- Employing waste prevention strategies first, with the goal of reducing solid waste disposal to 0.6 pounds per capita by 2030.
- Encouraging the reinforcement of recycling requirements by municipalities for all individuals, whether they are at home, at work, at school or in public spaces.
- Restricting the disposal of recyclables and hazardous products where recovery options are readily available.

Erie County should focus efforts on the aforementioned three objectives by doing the following:

1. Waste Prevention

Erie County has the opportunity to lead by example in the area of waste prevention by initiating efforts to reduce or eliminate waste generation in County government operations. To determine needs and opportunities, first an internal waste audit is needed. Waste prevention could include packaging reduction and returns, inventory management and materials reuse. Materials without reduction opportunities would then be evaluated for recycling options to ultimately minimize total waste generation. Contracts and current disposal accommodations would then be re-evaluated for further reduction. Once this process is completed, Erie County should then share that information with local municipalities.

2. Recycling Reinforcement

In addition to internal waste elimination, the County needs to support waste reduction and recycling for municipalities, residents and businesses. The County should continue its relationship with the two suburban Solid Waste Management Boards (SWMBs) to work toward achieving goals and objectives stated in their respective Solid Waste Management Plans.

Administrative and logistical support of the two Boards is critical to their continued viability and regulatory compliance. This has been achieved by securing a New York State Department of Environmental Conservation Municipal Waste Reduction & Recycling State Assistance Program Grant, which is currently funding a full time Recycling Coordinator at Erie County DEP to assist SWMBs. The EMC further recommends that the Recycling Coordinator should:

- focus on educating the public regarding the cost savings associated with waste reduction and recycling; and
- explore legislation to reduce waste, such as a plastic bag ban.

3. Special Waste Disposal Needs

Since 1988, Erie County has played a unique role in offering programs which provide disposal opportunities to residents, schools, businesses and municipalities for problematic waste streams that should not be placed with regular trash and require special handling and disposal. These programs include the Household Hazardous Waste Collection Program, the Conditionally Exempt Small Quantity Generator Program, the Pharmaceutical Waste Collection Program and Electronic Waste Recycling Program.

As in the 2012 report, The EMC recommends increased funding for staff and program expenses for these programs, so that more household education and collection events can be held or, ideally, a permanent drop off facility established. Currently the events are too infrequent to adequately serve the public. Public education for proper waste paint and pesticide disposal along with oil, battery and electronics recycling is also needed. Product stewardship legislation for paints, fluorescent bulbs and propane cylinders should be encouraged at the state level to mitigate the impact of these problem wastes. Recent changes in state regulations for non-alkaline batteries and electronic wastes have increased recycling opportunities available to the public. Residents, local officials and businesses should be kept informed as waste disposal and recycling options change. To that end, the EMC recommends that the County Recycling Coordinator compile and update a recycling guide for municipalities to reference regarding specific products such as compact fluorescent light bulbs and tires.

The EMC also recommends that the County consider developing legislation similar to other municipalities that call for the ban of such items as plastic bags used at grocery and convenient stores and Styrofoam food packaging.

Toxic Emissions

The Issue:

Toxic emissions, or the introduction of contaminants into the natural environment, pose a major threat to our County's water, air and land resources. They have been shown to cause instability, disorder, harm and discomfort to all physical systems and living organisms impacted by their release. Given their potential for irreversible environmental damage, it is imperative to address community concerns regarding toxic emissions and their sources.

In Erie County, most toxins originate from human-made sources, including:

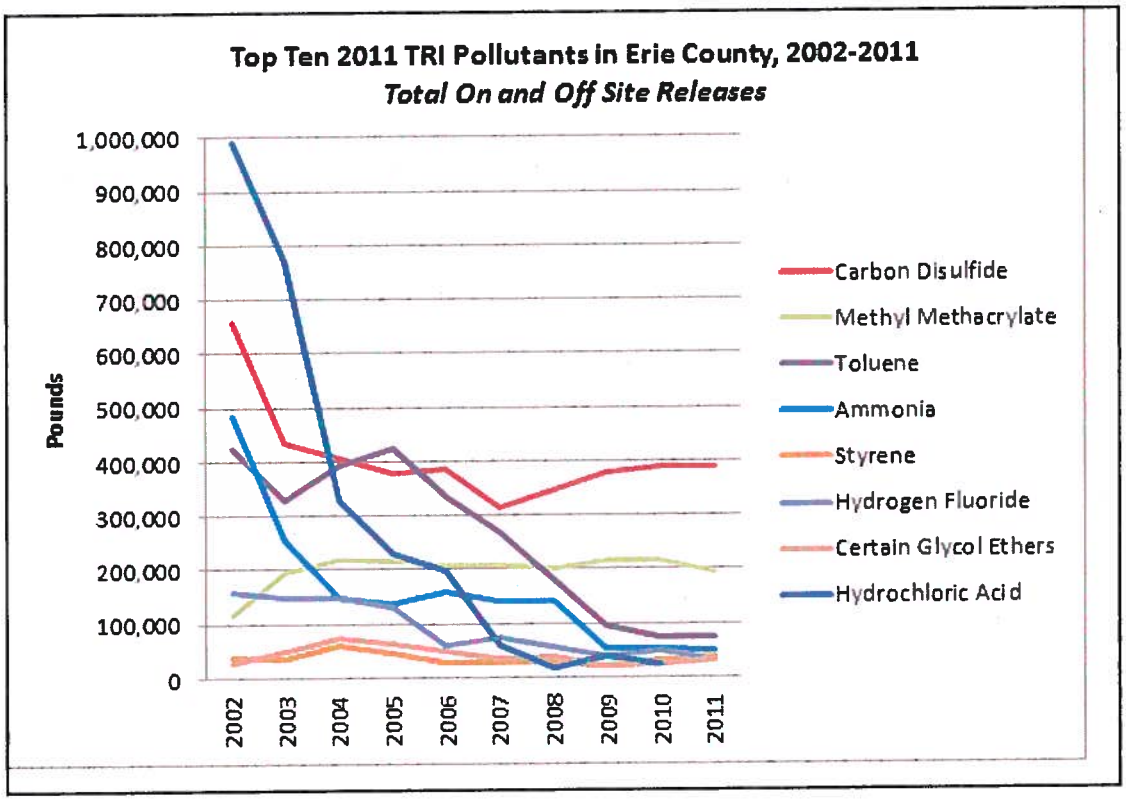
- Mobile Sources (cars, trucks, buses)
- Stationary/Point Sources (factories, refineries, power plants)
- Indoor Sources (building materials, cleaning solvents)
- Non-Point Sources (stormwater runoff)

The responsibility of regulating chemical releases and their storage is shared between federal and state governments. On both levels, the United States Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC) monitor toxic releases and facilities responsible for those emissions. These agencies also use public education on how to manage polluting facilities through recycling, energy recovery and toxic material treatment.

It is an unfortunate reality that our environment is exposed to hundreds of toxic pollutants that are emitted from thousands of individual sources on a daily basis. Finding and eliminating them all will be impractical. Therefore, in order to reduce toxic emissions, we must properly identify, monitor, and regulate the most prevalent pollutants and their sources.

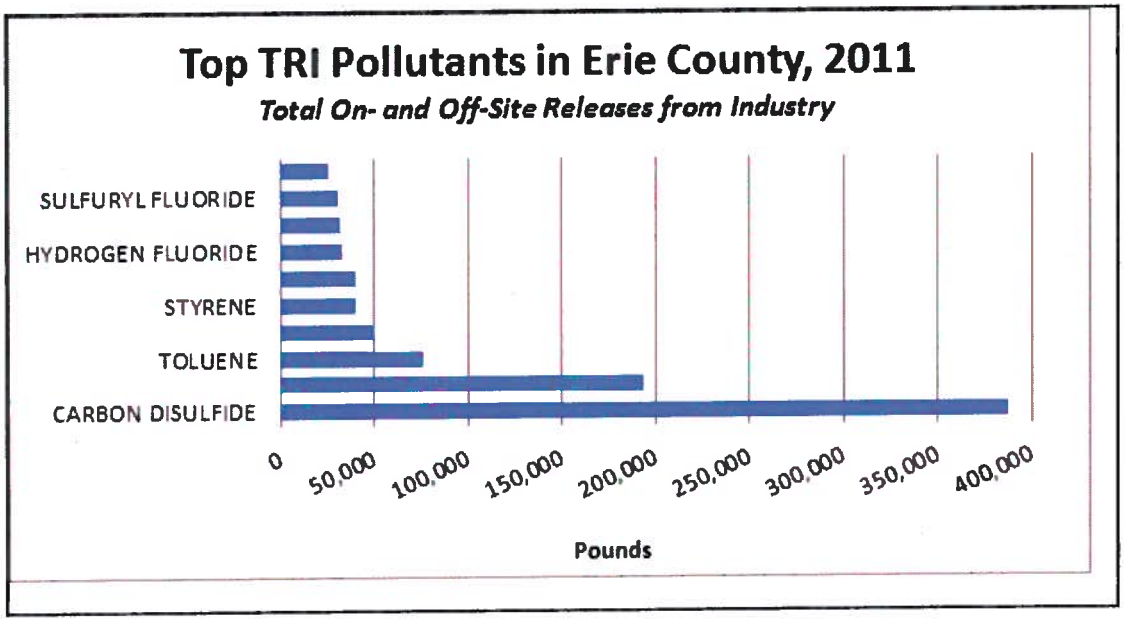
The Indicators:

The EPA Toxic Release Inventory (TRI) to assess toxic emission levels across Erie County. The TRI is a publicly available EPA database that contains information on toxic chemical releases and waste management activities reported annually by certain industries, as well as federal facilities. The program requires polluters to fill out clear statements of toxins released, and makes the data available to the public.



Source: Environmental Protection Agency TRI database

The following graph is a record of the main pollutants in Erie County taken from the EPA Toxic Release Inventory, updated in 2011. Each toxin listed impairs the health of the environment, as well as society



Source: Environmental Protection Agency TRI database

The Assessment:

From the above graph, it is clear that in 2011 the most prevalent pollutant in Erie County was Carbon Disulfide. While concentrations of this pollutant have been relatively stable since 2009 (moving from 379,448 lb in 2009 to 387,687 lb pounds in 2011), generally there has been an increasing trend of Carbon Disulfide since 2007. Also notable in the 2011 TRI report is the appearance of two new pollutants: Vinyl Fluoride (39,952 lb) and Sulfuryl Fluoride (31,356 lb) have not been included in TRI reports for Erie County prior to 2011.

Carbon Disulfide is a clear, colorless to faintly yellow liquid used in manufacturing processes.[i] In Erie County, environmental release of Carbon Disulfide has a single point source: 3M Co. in Tonawanda. The largest sponge factory in the world, 3M has shown an increasing trend of Carbon Disulfide releases from 2007 (316,478 on and off site disposal pounds) to 2011 (387,687 on and off site disposal pounds).[ii] Carbon Disulfide is considered toxic due to the risks it poses to human cardiovascular, central nervous system, and reproductive health.[iii]

Vinyl Fluoride releases in Erie County originate from the DuPont Yerkes Plant in Tonawanda, NY. The plant employs over 700 people and manufactures acrylics used by the building industry. Vinyl Fluoride is a colorless, odorless gas that has been classified as a probable human carcinogen.[v] 2011 is the first year since 1990 that DuPont has recorded releases of this chemical.[vi]

Sulfuryl Fluoride releases in Erie County are from ADM Milling Co., a flour-milling company located in Buffalo. ADM has operated the mill since 1993, and 2011 is the first year that releases of sulfuryl fluoride have been recorded from the facility since 1990.[vii] Sulfuryl Fluoride is a gaseous restricted use pesticide used to control drywood termites, beetles, and other insects that can be found in wooden structures. The pesticide is listed as restricted use due to the risks it poses to the human central nervous and respiratory systems.[viii]

The Recommendations:

Erie County can help reduce the community's reliance on the products and services that contain or emit toxins during their manufacturing process by:

- Creating an education campaign, tied to the County's Household Hazardous Waste Collection program, about the opportunity consumers have to make choices that reduce toxins by purchasing less toxic alternatives.
- Establish an internal County green team, as recommended in the energy chapter, to look at the County's procurement of toxic products.

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[i] OSHA
[ii] EPA TRI
[iii] OSHA
[iv] EPA TRI
[v] DuPont Product Safety Sheet
[vi] EPA TRI
[vii] EPA TRI
[viii] Cornell CCE

Transportation

The Issue:

In the past century, the extension and improvement of transportation networks have had the greatest impact on the development of US metropolitan areas.

These developments have provided greater personal freedom, but come with severe environmental consequences. Suburban growth, which is facilitated by the development of extensive transportation networks, continues to affect natural resources and agricultural land. Traditional walkable neighborhoods have been supplanted by sprawling edge-cities, which have increased automobile dependence, leading to higher concentrations of air pollution, increased infrastructure costs, and health concerns.

As a result of urban sprawl and the increased dependence on the automobile, our environment has become increasingly exposed to greater levels of emissions from exhaust. These emissions pollute our air, cause health-damaging smog, and contribute to climate change. Such developments are not environmentally sustainable in the long run, and action is needed to slow sprawl and lessen our dependence on the automobile.

The Indicators:

To assess the degree to which Erie County has become dependent on its transportation network, we will utilize three indicators:

- 2000 - 2009 Population Change by U.S. Census Tract
- Texas Transportation Institute Urban Area Report 1982-2012
- 2011 Vehicle Miles Traveled in Erie County (Greater Buffalo Niagara Regional Transportation Council)

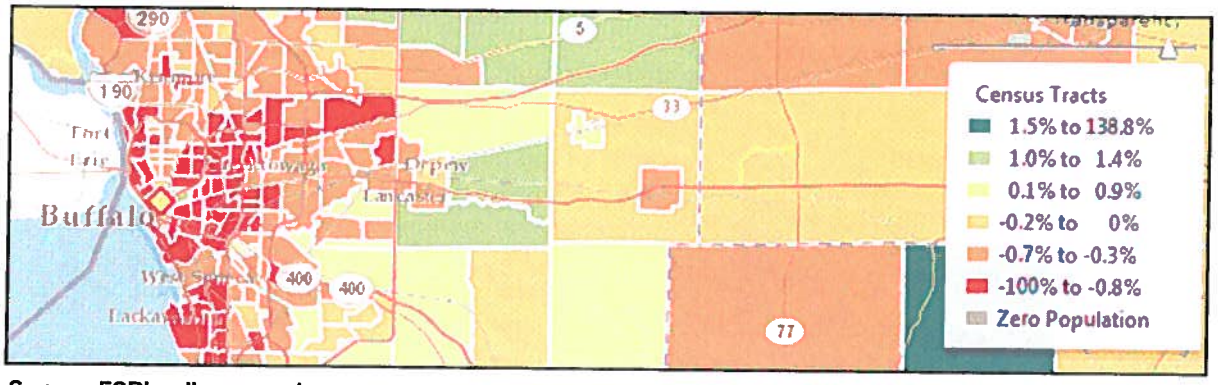
Every year the Texas Transportation Institute (TTI) publishes their annual Urban Area Report for the major metropolitan areas in the nation. The report provides several performance measures that indicate transportation trends and evaluate the severity of roadway congestion between the years of analysis.

Vehicle Miles Travelled (VMT) data indicate the total number of miles that residential vehicles have driven in a given area. This is a useful measure of study, as it can be used to determine the extent to which people are reliant upon driving compared to other means of travel. The Greater Buffalo Niagara Regional Transportation Council collects VMT information from federally-funded roads in Erie and Niagara counties. This information is available through the Transportation Data Management System, located on their website: **http://www.gbnrtc.org.**

The Assessment:

This map below was prepared by Erie County's Geographic Information Systems (GIS) Office using the ESRI online mapping system, and shows population change by census tract from 2000-2009.

POPULATION CHANGE BY CENSUS TRACT, 2000-2009



Source: ESRI online mapping

From the map it is evident that the greatest population decline was experienced in the area's urban centers like Buffalo, Lackawanna and Tonawanda. At the same time, it is evident that the greatest population growth was experienced in the outer-ring suburbs that surround these urban centers. These findings suggest a gradual population shift over the period from the central cities and the inner-ring suburbs farther out into the area's outer-ring suburbs.

The following chart lists relevant 1982 and 2011 performance measures from the TTI Urban Area Report related to travel and congestion trends within the Buffalo MSA.

Buffalo MSA Urban Area Report 1982-2011

	1982	2011	% Change
Daily Vehicle Miles of Travel (1000s)	3,980	6,931	74.1
Daily Public Transit Passenger Miles (Millions)	106	102	-3.8
Annual Delay per Commuter (Hours)	8	33	312.5
Excess CO2 due to Congestion (Million lbs.)	50	234	368.0
Annual Congestion Total Dollars Cost (Millions)	55	474	761.8

Source: TTI Urban Area Report 2012

The chart indicates an increase in personal automobile use throughout the time period specified. Annual Public Transit miles were lowest in 2004 at 71 million miles, with the amount raising steadily to 87 million miles in 2010 and then increasing to 102 million miles in 2011. Despite this increasing trend, however, public transit passenger miles remain lower than they were in 1982 despite the overall increase in vehicle miles travelled within Buffalo.

These trends have given rise to health and economic consequences for the Buffalo MSA. As automobile use has increased, congestion has more than tripled. Sedentary behaviors such as driving or sitting in traffic pose public health risks in terms of rising incidence of obesity. Idling traffic also significantly worsens air quality in land surrounding highways. Carbon Dioxide emissions, which pose a threat to environmental health, are also shown to be increasing. Overall, congestion has raised costs in the Buffalo MSA, and provides a significant opportunity for economic savings if it can be reduced.

It is the job of the Greater Buffalo Niagara Regional Transportation Council to coordinate transportation planning efforts for Erie and Niagara counties. The GBNRTC has determined that in 2011 Erie County had a total of 17,358,025 vehicle miles travelled. In collecting this data, the GBNRTC only accounted for roads that qualify for federal funding; therefore, the true VMT value is actually higher than reported. As this organization continues collecting such data, it will be possible for Erie County to measure its progress towards reducing automobile travel locally.

The Recommendations:

The EMC recommends that Erie County:

- Support the NFTA extending the Metro to the University at Buffalo's North Campus
- Seek funding opportunities for alternative fuel vehicles for the County fleet
- Consider bike infrastructure needs in all road and planning projects
- Support organizations working on complete streets and alternative transportation projects, such has Go Bike and the Buffalo Niagara Medical Campus

Water Quality

The Issue:

As part of the Great Lakes basin, Erie County recognizes its water resources as essential to the health and vitality of the community – environmentally, economically, and socially. These resources are valuable for aesthetic, recreational, personal, and occupational purposes and are a key asset to the County's commercial, industrial, and agricultural sectors.

Erie County is home to plentiful and diverse water resources that define our region. There are 17 major watersheds and 36 major streams in the County draining into Lake Erie or the Niagara River. Industrial, agricultural, suburban, and urban development greatly impact surface and groundwater quality in Erie County.

Tainted water supplies may cause chronic health effects that occur long after repeated exposure to contaminants. Health issues, such as cancer, liver and kidney damage, disorders of the nervous system and birth defects can occur. The atmosphere contains water vapor that evaporates from water bodies; evaporation from polluted sources may increase pollutant concentrations in precipitation and may introduce pollutants that produce acid rain. In Erie County, acid rain occurs due to emissions that originate in the Midwest. Contaminated water also affects important ecosystem functions and places undue stress on wildlife.

In Western New York, numerous wastewater conveyance and treatment projects have been completed since the "Clean Water Act" was passed. These projects have fostered major gains in local water quality. However, the aging infrastructure of storm sewers, sanitary sewers, and septic systems makes it difficult to prevent the contamination of the County's fresh water resources. Federal, state and local organizations are tasked with protecting and enhancing water quality, and providing standards and criteria to protect human health and the environment.

The United States Environmental Protection Agency (USEPA) has established standards for ground water, surface water, and drinking water. Criteria are also in place for water quality, nutrient levels, and recreational safety.

The New York State Department of Environmental Conservation (NYSDEC) is responsible for monitoring water quality in the state. The NYSDEC regulates wastewater treatment and disposal and is responsible for monitoring recreational and drinking water quality.

At the local level it is the mission of the Erie County Water Quality Committee (ECWQC) to protect and improve water quality. The ECWQC is responsible for developing and maintaining a Water Quality Strategy for Erie County (see January 2011 Water Quality Strategy) and fosters collaboration among local governments and stakeholders. Buffalo Niagara Riverkeeper (BNR), a science-based, community focused, advocacy non-profit, works closely with the ECWQC to protect and remediate local water resources.

Also at the local level Erie County Soil and Water Conservation District (SWCD) provides technical assistance to landowners and units of government in Erie County for the conservation of natural resources. The District addresses a broad spectrum of resource concerns including erosion control, localized flood prevention, water conservation and use, wetland, groundwater, water quality and quantity, nonpoint source pollution, forestland protection , wildlife, recreation waste water management and community development. Erie County SWCD is the only local organization that works with the agricultural community in addressing agricultural nonpoint source pollution through the delivery of a farm planning and manage-

ment program called Agricultural Environmental Management (AEM) and is the only local organization that is able to apply for and receive state cost-share funding to assist farms in protecting water quality, and to keep farms regulatory compliant and economically viable.

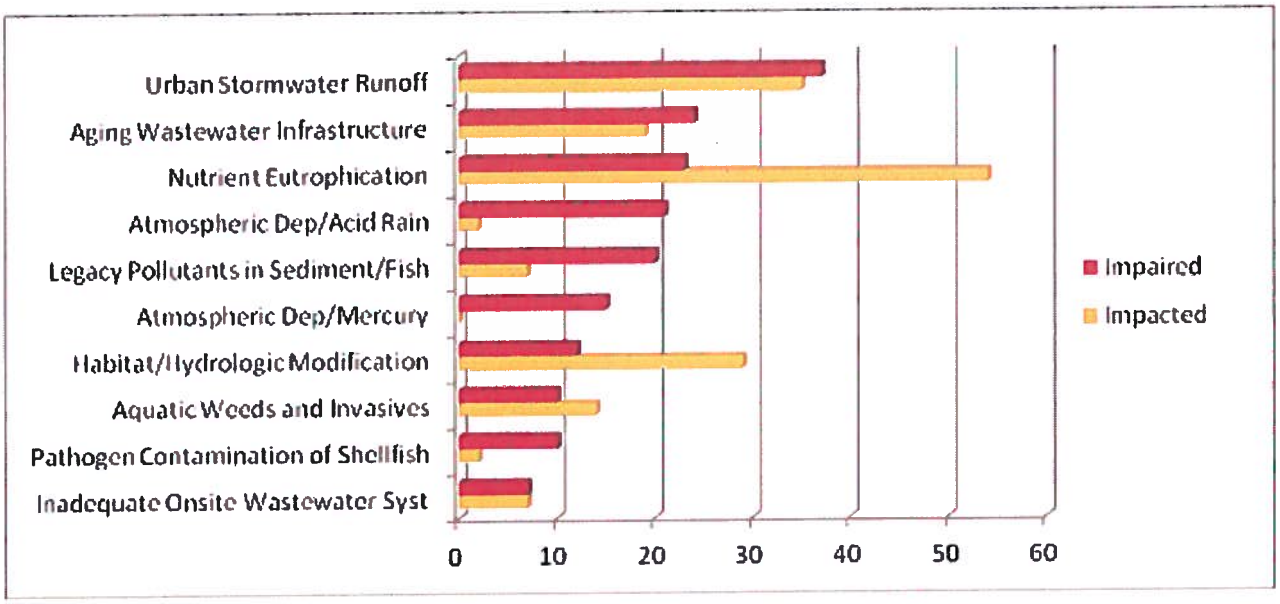
Additionally, the Western New York Stormwater Coalition (WNYSC) is made up of 42 regulated Municipal Separate Storm Sewer Systems (MS4s) in Erie and Niagara counties. They work together and share resources to develop a stormwater management program to protect local waterways and enhance the quality of life in our region.

Finally, Erie, Cattaraugus, and Chautauqua counties collaborate in the Lake Erie Watershed Protection Alliance (LEWPA). The mission of LEWPA is to foster collaboration and partnerships within the watershed to address regional water quality and quantity concerns and in doing so, protect and enhance our Lake Erie resource.

The Indicators:

This report's assessment has been based on the 2012 NYSDEC Water Quality Report.

The NYSDEC Water Quality Assessment is compiled by the NYSDEC Division of Water using monitoring data and information from programs within and outside the department. It contains assessments for just over half of the nearly 5,000 water bodies identified across the state. The information indicated in the study is considered representative of the causes/sources of water quality impairment throughout the state. The assessment identifies the top ten water quality issues facing New York State water supplies. It illustrates the occurrence of each cause/source as a percentage of all water bodies assessed as impaired (red) or impacted (yellow).



Note: Frequency totals do not equal 100% because categories are not mutually exclusive.

The Assessment:

For impaired waters, urban stormwater runoff is the most serious threat to Erie County water quality. Stormwater runoff is generated when precipitation from rain and snowmelt flows over land or impervious surfaces such as paved streets, parking lots, and rooftops. Consequently, it accumulates and transports chemicals, nutrients, sediment, and debris. Effective stormwater systems filter and capture pollutants from stormwater through bio-infiltration or other green infrastructure methods before allowing it to join receiving waters.

Combined Sewer Systems and MS4s are the two types of wastewater conveyance systems used to manage sewage and surface runoff (i.e. stormwater).

Combined Sewer Systems, typical in older urban cities, combine stormwater and sanitary sewage during precipitation/snowmelt events. When the volume of combined flow exceeds the capacity of the sewers, the combined system, by design, relieves itself by discharging excess flow into local waterways. The release of this combined flow, raw sewage and stormwater, is known as a Combined Sewer Overflow or CSO. MS4s keep stormwater separate from sanitary sewers waste. Unfortunately, rapid population growth in MS4 communities has pushed the capacity of sanitary sewers to the limit which may result in the discharge of raw sewage to local waterways via storm sewers. The release of sewage into a separate storm sewer system is known as a Sanitary Sewer Overflow or SSO.

Nearly 30% of these systems in Erie County are in excess of 60 years old. The improvement of water quality will require upgrades to wastewater treatment infrastructure, including collection and conveyance systems, CSOs and Publicly Owned Treatment Works (POTWs). To avoid overflow, sanitary sewer system capacity needs to be increased. However, due to the age and condition of the infrastructure, billions of dollars are required to replace or upgrade sanitary sewers. A conservative cost estimate has been set at over $35 billion over the next 20 years to update New York's municipal wastewater infrastructure.

For impacted waters in New York State, nutrient eutrophication is the most serious threat. Nutrient eutrophication occurs when high levels of phosphorus and nitrogen promote accelerated algae and plant growth that results in depleted oxygen levels. In "dead zones," where oxygen levels are so low that aquatic life can no longer be supported, this condition is termed hypoxia.

The sources of phosphorus and nitrogen leading to nutrient eutrophication are many. These sources include treatment plant discharges, urban/suburban runoff, agricultural activities that result in animal waste, fertilizers, and sediments washing into water bodies, flow from inadequate onsite septic systems, and atmospheric deposition.

Recent efforts to protect Lake Erie from nutrient eutrophication have included the 2011 Lake Erie Bi-national Nutrient Management Strategy, prepared by the Lake Erie Lake-wide Management group.

The Recommendations:

The EMC recommends that Erie County do the following:

- Continue to invest in upgrading/replacing infrastructure, such as current projects being pursued by the Erie County Division of Sewerage Management that will reduce contaminated overflows by increasing capacity and improving treatment.
- Continue to implement best management practices, green infrastructure and technical assistance programs to accomplish runoff reduction and ideally minimize/eliminate the need for system upgrades/replacement.
- Continue to provide leadership for the WNY Stormwater Coalition, Erie County Water Quality Committee and Lake Erie Watershed Protection Alliance, and to support regional collaboration with Buffalo Niagara Riverkeeper. These organizations pursue and promote regional watershed initiatives that encompass and benefit entire watersheds rather than piecemeal municipal projects that fragment watersheds.
- Actively recommend and encourage New York State to more equitably distribute funding to watershed coalitions throughout New York State through the Environmental Protection Fund as a way of encouraging regional resource management.
- Support and maintain adequate funding to Erie County Soil & Water Conservation District in its mission to provide technical assistance to Erie County and its residents.

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