

February 7, 2022
Niagara Region
1815 Sir Isaac Brockway
St. Catharines, Ontario, L2V 4T7

Attn: Dave Heyworth, Bob Gale, Barbara Greenwood, Peter Nicholson and Jim Bradley

RE: Niagara Official Plan: Settlement Area Boundary Expansions

I attended the public meeting on January 26th, 2022, as well as several public organized meetings and have received several calls from landowners within proposed urban expansion areas that simply do not want their lands included within an urban area. Their lifestyle is rural-agricultural, and the future of this lifestyle is in jeopardy (e.g., Last Chance Horse and Pony Rescue, Town of Fort Erie). The public is questioning the justification for urban expansions over urban intensification, and the selection of certain areas over others. Urban sprawl is simply not good environmental planning and should not be Niagara's future. I call this the "Field of Dreams Approach", that "if you build it, they will come" verses planning for a true growth need. One that allows our children to afford and to buy houses here.

I was disheartened to find that "smart growth" planning has relapsed in this region, and that staff recommendations were overthrown by a pro-development council (Fig. 1). The public expects

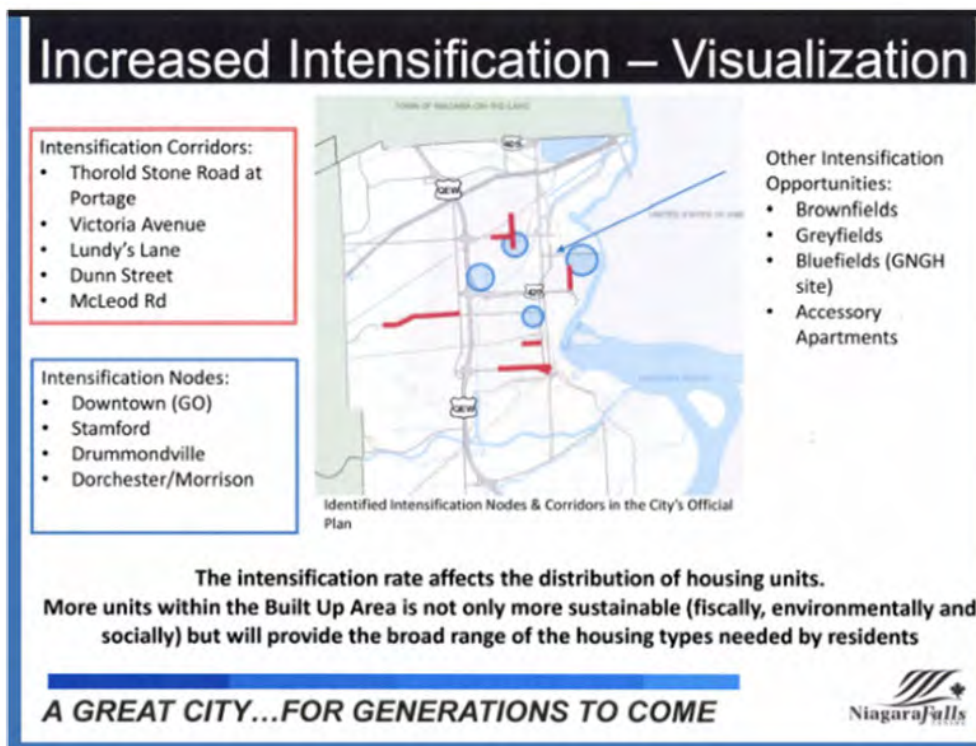


Figure 1. City of Niagara Falls Staff recommendations for Urban Intensification verses urban sprawl

Kraft Drain Watershed and Chippawa: Ecological Restoration Approach and Green Urban Planning Proposal

This is an unsolicited proposal prepared by 8Trees Inc.

For the Province of Ontario, Region of Niagara, Town of Fort Erie, City of
Niagara Falls, and the Greater Niagara Community

About the Author

I lived in the Niagara Region most of my life. During this time, I served 35 years for the province as a biologist. I am a retired public servant and opened an environmental consulting business to continue my research and to mentor new environmental professionals.

Since 2018, I have been drawn into the development planning process by a concerned public because of my history as the Management Biologist for the Niagara-Hamilton and Haldimand areas. I evaluated most wetlands in this region and completed detailed fisheries studies for the Niagara River Remedial Action Planning Process (NRRAP). I have also co-authored two recovery strategies for species at risk and I am continuing my long-term population research on several local species at risk populations. Since I retired from MNRF, I graduated with a master's degree in Ecology and Evolution from Brock University. My thesis investigated flood survival strategies in overwintering temperate snakes, which is applicable to wetlands and climate change. I have several published works on reptiles, and I am a sworn expert in provincial and federal court in a variety of areas (e.g., biology, wetlands, snakes, amphibians, freshwater turtles, fish, and fish habitat). I am also a nationally certified Environmental Professional (EP) and an internationally certified Ecological Restoration Practitioner (CERP).

I prepared this report in response to a growing public concern about the proposed expansion of urban boundaries, development intensification within newly expanded areas and the sustainability of our natural heritage. I present an ecological analysis and restoration approach for consideration for finding a common ground for environmental protection and development planning. I hope the report will help the public, landowners, and authorities to find a common balance during this time of urbanization.

I consider this document a work in progress.

Anne Yagi M.Sc., EP, CERP

President

8Trees Inc.

Introduction

We acknowledge that Niagara has a rich cultural and indigenous heritage and is located within the traditional lands of the Six Nations people as affirmed by the 1701 Fort Albany Treaty and is recognized as traditional harvesting territory of the Haudenosaunee people. Niagara is home to a rich community of native flora and fauna and a variety of species at risk, the preservation and recovery of sensitive ecosystems is important to the First Nations community (Letter from Six Nations to 8Trees, 2021).

As the Niagara Region enters a 30-year development planning cycle, urban expansion is proposed around several urban areas and rural settlements to meet a projected demand for human population growth beyond nothing Niagara has seen before. The urban growth areas are proposed predominantly within the agricultural-rural landscape of south Niagara. The reason the expansion is proposed for south Niagara over any other part of the region is a direct result of the provincial Green Belt policy.

The “Green Belt Policies” state that they were designed to protect “Ontario’s farmland, communities, forests, wetlands and watersheds” (Green Belt Plan, 2017). However, the Green Belt does little to protect Niagara’s Wetlands because only 4.6% of our remaining wetlands are located within the Green Belt boundaries, leaving 95.4% outside the planning protection area (Fig. 1). This means in the case of Niagara the Green Belt is pushing urban development into direct conflict with our remaining wetlands and our highest biodiversity areas.

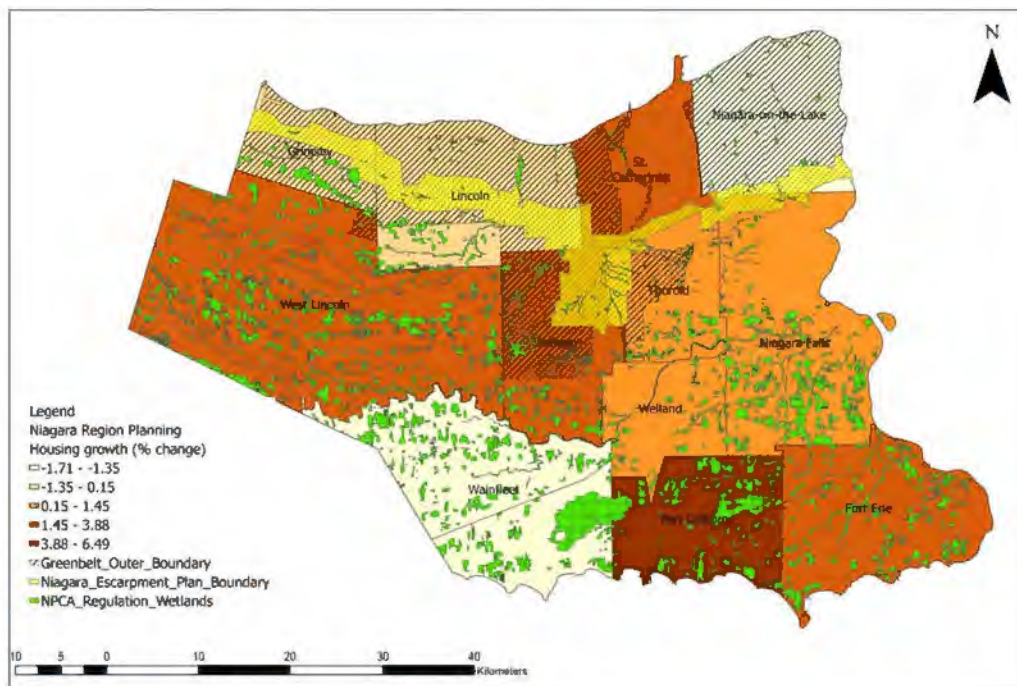


Figure 1. The Green Belt Planning Policy protects lands within the Niagara Escarpment and Fonthill Moraine and northward to Lake Ontario from further urbanization. This amounts to protecting only 4.6% of Niagara’s remaining Wetlands

This also means the protection of 95.4% of the remaining wetlands in Niagara depends upon the provincial policy statement, Niagara Region environmental policies, municipal policies, Conservation Authority regulations and policies and the Environmental Impact Study (EIS) process.

Environmental Impact Studies in Niagara

“An Environmental Impact study is a tool for objectively assessing the environmental impacts of a proposed development or site alteration. The EIS must be based on good scientific data and analysis that are technically defensible and that adequately address impacts on environmental features and functions.” – Niagara Region (2018).

An EIS is intended to be scientific and therefore, the final land decisions depend upon maintaining the objectivity and scientific integrity of the EIS process. I have reviewed hundreds of consultant reports including EISs during my career at MNRF. However, in this region the EIS product is more of an art form contextualized and crafted within the scoped terms provided by the planning authorities. This first step loses objectivity and gains in bias, where an unbiased approach would not be limited to the scoped view. There are always opportunities to develop a balanced approach between restoration and development, however proper scientific methods must be applied to be defensible.

Most EISs for the Niagara Region often contain little science beyond the minimum requirements. The scoped view of the EIS misses evaluating important ecological functions and restoration opportunities because the areas outside of the mapped features are not evaluated or included in the impact analysis. Therefore, we need observational data to establish proper reference sites. The scientific process also should not end with the date the policy was written or approved. Many approved sampling protocols are very outdated yet are the only methods accepted by the planning authorities. Science continues to improve overtime, with testing new methods, data collection and analysis. Newer sampling methods not included in provincial protocols should be acceptable with scientific peer review. This is why the Ontario Wetland Evaluation System (OWES) continues to evolve and maintain integrity after nearly 40 years of application in this province. The wetland evaluation record is open for critique and new information.

Biodiversity and Wetlands

According to the Wetland Strategy of Ontario, *“wetlands are the most productive and diverse habitats on earth, ... and they play a vital role in supporting Ontario’s rich biodiversity and provide essential ecosystem services toward human health and wellbeing (MNRF, 2017).*

Biodiversity is a measure of the variety of native species in an ecosystem. Biodiversity and the presence of wetlands are highly correlated which means most of our biodiversity is not protected within the Green Belt. Our wetlands and therefore our biodiversity reside primarily within the agricultural and rural landscape of south Niagara and are in direct conflict with expanding urban boundaries. The urban areas are planned around the mapped features, and this is a concern because much of our most vulnerable biodiversity uses these same open spaces to move between habitat features. Therefore, most of our vulnerable wildlife is not protected within the confines of policy protected mapped features.

Species with complex life cycles such as some insects and fish, and all reptiles and amphibians must move between habitat features to complete their annual life cycle events, such as hibernation, gestation, nesting, breeding, and development. Wetlands in this region remain under direct threat from drainage, filling, land conversion, fragmentation, past land use, ecological succession, presence of ecological traps and invasive species colonization. Therefore, our biodiversity remains under direct threat by their association within wetlands. All of Ontario freshwater turtles are listed as a species at risk under federal classifications (COSEWIC), many of our snakes and our only lizard species are also at risk. The Fowler’s toad which inhabits features along the Lake Erie Shoreline is endangered. The Western Chorus Frog, once thought to be secure, is showing signs of decline in the Niagara region. The Wood Frog has the broadest range in North America, and is also showing signs of decline locally, likely due to climate change effects. The entire Ontario range of the Northern Dusky and Allegheny Mountain Dusky salamander only exists in seepage areas along the Niagara River shoreline. The natural heritage system was not mapped with wildlife corridor movement in mind because the entire natural heritage system is fragmented by roads, housing, and other anthropogenic structures. Countless reptiles and amphibians are killed on the roads annually. The shorelines of Niagara are the oldest natural corridor features and therefore are very important areas for wildlife. However, this corridor is not mapped as part of our natural heritage system, and it is our shorelines that make this region a unique wildlife area. **Therefore, the planning framework in Ontario will not be able to address declining biodiversity, without addressing the wildlife corridor function and the continual degradation of wetlands without actually adopting an ecological restoration strategy.**

Ecological Restoration and Core Areas

An ecological core area is a natural feature that has been retained on the landscape for at least 100 years. In the 1930s most of south Niagara was ploughed and the only areas left alone were too hazardous, rocky, or too wet. If a natural feature remains today, they represent our **true ecological core areas** (example; Fig.3). These ecological cores retain our natural history, our native seed bank, and true ecosystem functions. In some special places these core areas retain our natural history back to the last glaciation (Nagy, 1992). This history is retained within our peatlands. Niagara has some of the oldest and largest peatlands in southern Ontario that were formed from post glacial lake rises, such as Wainfleet Bog, Humberstone Bog, Willoughby Bog and Point Abino Bog (Nagy, 1992; Sarvis, 1990; Pengelley, 1990; Tinkler, 1994). These areas are our true ecological core natural heritage as they are thousands of years old and are irreplaceable. However, this does not mean they are pristine because they are continually being impacted by anthropogenic effects such as ongoing municipal **drainage**, filling, peat soil mining, eutrophication, contamination, habitat loss and degradation. Nothing in the planning process helps to address and reverse these ongoing damages as the main priority to protect and maintain our Natural Heritage and biodiversity.

Ecological Traps

Many ecological core areas have previously farmed lands surrounding them that have regenerated into forested areas since the 1930s. It is within these regenerating lands where we see negative ecological impacts and the source of further degradation to the core features. Areas that have regenerated since the 1930s have less ecological value due to their young age, past land use (e.g., farming reduces overall quality of the soil from the natural state), loss of natural seed bank, and harboring of invasive species. Regenerating lands in this region also tend to contain **ecological traps** that harm wildlife. **An ecological trap is habitat that is attractive to wildlife because it is suitable during certain times of the year, but it does not support their long-term survival (Battin, 2004).** These traps need to be properly evaluated and confirmed through study to understand how to manage the land for ecological restoration. These regenerating lands have the potential to have great ecological value through active restoration and management.

The largest ecological trap and the most studied one in Niagara is contained within the former peat mined fields of the **Wainfleet Bog ecosystem**. This trap causes periodic population declines in endangered species, Massasaugas and three species at risk turtles (Yagi et al., 2020; Yagi and Litzgus, 2012). This is because the mined peatland is hydrologically connected to a municipal drain that is actively managed to clear out beaver dams. This causes unnatural

hydrologic cycles within the bog ecosystem. A natural bog hydrology is stable with shallow incremental seasonal changes due to localized precipitation variability. The Wainfleet Bog experiences rapid dry downs when beaver dams are removed from connected municipal drains. This action increases carbon emissions equivalent to 40,000 cars per year and contributes to global warming.

The Provincial Policy and Restoration

According to the Provincial Policy Statement,

- *Natural Features and areas shall be protected for the long term.*
- *The diversity and connectivity of natural features in an area and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.*

The provincial policy statement (PPS) allows for restoration, but this is not happening as a priority in Niagara. I suspect the EIS process favours the removal of natural features deemed to be “degraded” over restoration of ecological function and the planning authority accepts this outcome without “peer review”.

Peer review is an important part of the application of the scientific method. A current example of this kind of outcome within the planning process is the site for the new South Niagara Hospital, where a 2.64- ha **ecological core natural area** with regeneration up to 3 ha total was removed to make way for the new hospital (Fig. 2).

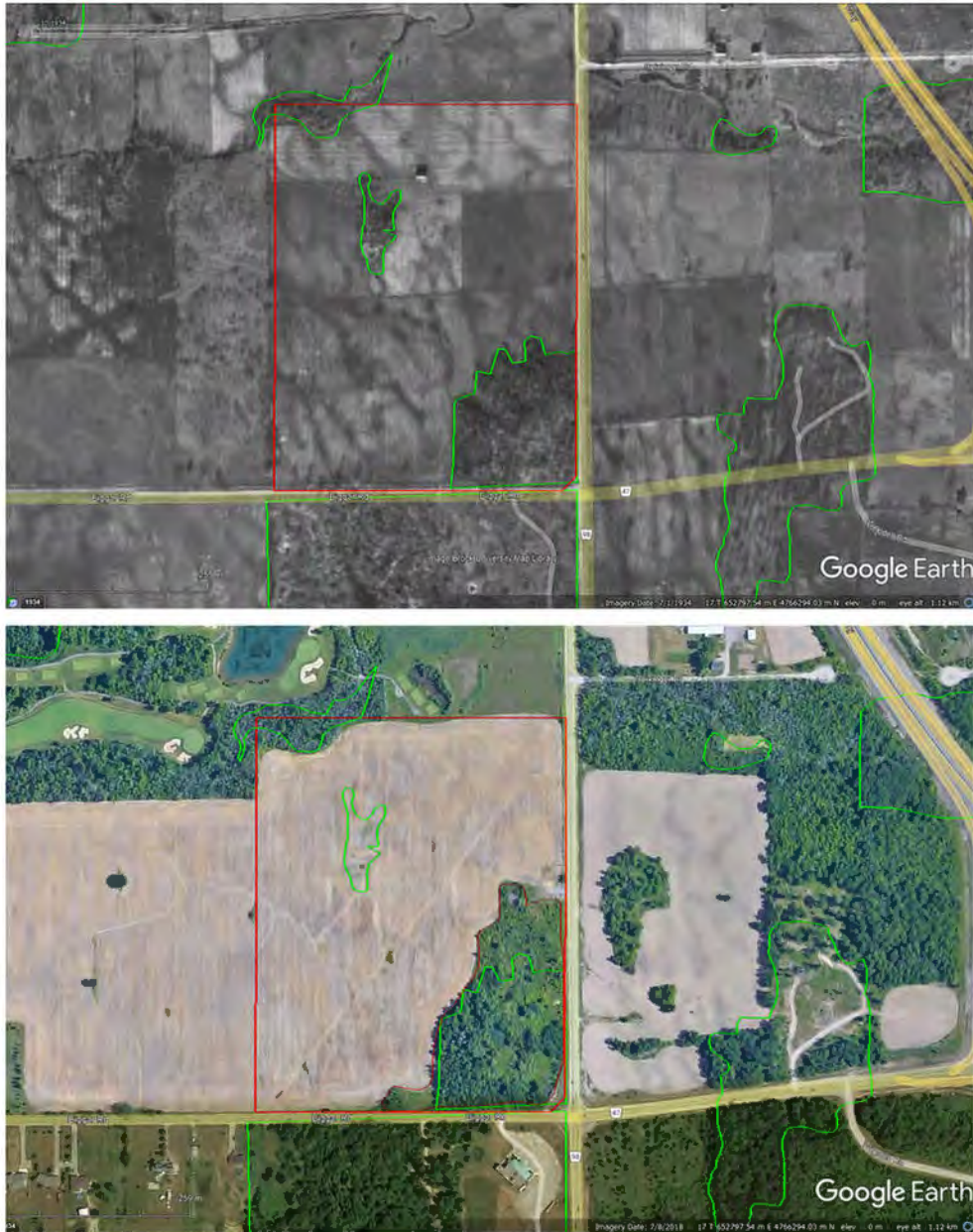


Figure 2. This is the new South Niagara Hospital Site- note the rural-agricultural setting. The top image is 1934 and the bottom image is 2018. The green outlined areas that overlap within the modern-day aerial image, are ecological core features because they were present on the landscape at least since 1934. Natural areas that extend beyond the green outline are younger regenerated lands. The ecological core and natural area in the SE corner were removed in 2021 to make way for the new hospital.

Natural Heritage System

During my career with MNRF, I witnessed how the Natural Heritage system was mapped. A botanist from Toronto did the mapping by applying rules used for the Oak Ridges Moraine. If a wildlife biologist did the mapping, the results would likely be quite different. Vegetation communities and plant dispersal limitations are important considerations for evaluating the

protection of land in between features. However, these should not be the only criteria because wildlife move through the landscape differently than plants. For example, if an aquatic biologist mapped the Natural Heritage system, every surface water channel, shorelines, and other water features would be mapped and protected with a vegetative buffer. The basis of this premise is scientifically sound because bare surface water open systems create conditions for erosion and transportation of soil particles, nutrients, and contaminants into sensitive ecological areas (i.e., fish habitat) resulting in poor water quality and habitat in the receiving water body (Castelle et al., 1994; Moglen, 2000; Sutton et al., 2010; Bachman et al., 2016). Therefore, the provincial Natural Heritage system was not mapped using an objective evaluation system that considered both terrestrial and aquatic linkages. There is no system when there are arbitrary disconnections. There was also no public consultation or scientific rigor used to map areas between ANSIs, wetlands or woodlands. The entire process was not ground-truthed. Therefore, **the EIS process is the only scientific part remaining in gathering the ground-truthed data for the final land use decisions.**

Planning Buffers

Wildlife land use is also not necessarily considered in various regional environmental protection policies, such as the vegetative protection zone (VPZ). Planning buffers are now automatic requirements around all mapped features because it is assumed by the planning authorities that buffers protect natural ecosystems, but is this true? It is common knowledge that disturbances are important to achieve vegetation community diversity within our landscape and that an absence of disturbance promotes ecological succession.

Buffers around terrestrial features will not sustain an open meadow habitat. This is because when a buffer is not managed it quickly (in a few years) becomes infested with invasive species that creep into the natural feature causing biodiversity declines. In this region, areas left to naturalize tend to become infested with invasive Phragmites, Common and Glossy Buckthorn and Black Alder. These species are a serious direct threat to our terrestrial and aquatic ecosystems, and our biodiversity (Ontario Invasive Species web site). If the goal is to have an open meadow buffer around a terrestrial feature, then that buffer must be **regularly maintained** or else biodiversity declines. Within the agricultural-rural landscape the open space around features is maintained by regular disturbances (ploughing, mowing, digging, trimming, cutting etc..) which helps to lessen the expansion of invasive species and promotes areas for wildlife movement and dispersal. The consideration of low impact walking trails, overland grassed swales in this area may help maintain open space functions along terrestrial

systems, except when roads cross these features. The Wainfleet Bog is a good example of where a 300m buffer setback from a managed drainage system is a necessary action. This is achievable by returning the drain to its original pre-peat mining location which is 300m south of the bog feature (Fig. 4).

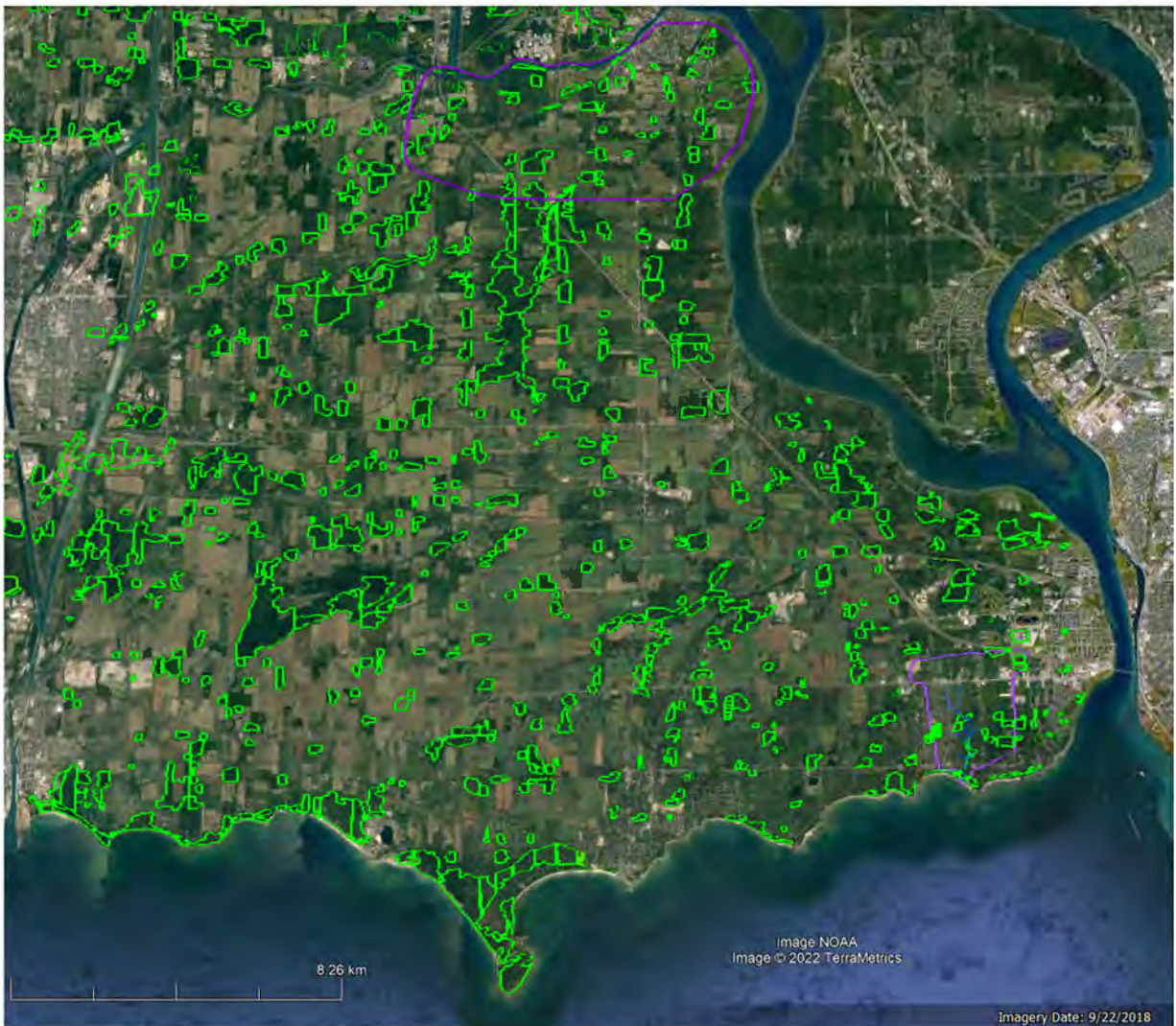


Figure 3. South Niagara Falls to Fort Erie. The green outlined areas are ecological core features because they have been on the landscape the longest and therefore inherently have retained the greatest ecological function and importance. The two purple areas are Kraft Drain (Fort Erie) and Chippawa (Niagara Falls) currently located within urban boundaries.

Addressing the Drainage Issues in Wainfleet Bog – A Drainage Proposal

1. Hydrology control point for mined peatland
2. Abandon drain
3. Increase buffer
4. Re-instate original drain
5. Barrick Rd Allowance

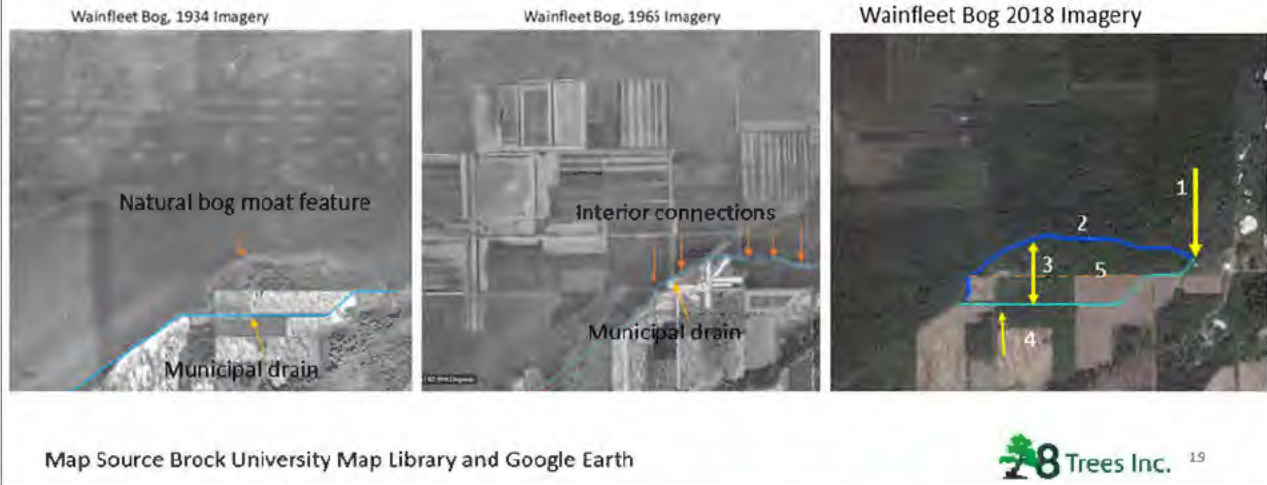


Figure 4. Ecological restoration project recommended by 8Trees and our delegation of experts to mitigate the ecological trap effects caused by ongoing Municipal drainage of this Nationally Significant Wetland Ecosystem which is habitat to one of the two remaining Carolinian endangered populations of Massasauga rattlesnake, Eastern Ribbonsnake (special Concern), habitat for four species at risk turtles, Whippoorwill (threatened), Short Eared Owl (special concern) and many other rare species. The Municipal Drain (Biederman Drain) was moved northward into the bog edge to facilitate drainage for peat mining circa 1940s. Peat mining no longer occurs in this ecosystem and drainage of the bog ecosystem is not required. Moving the drain back to the 1930s alignment will allow the ecosystem to heal from the past, allow farmers to drain their lands for farming and allow the peatland to sequester carbon once again. Please see www.8Trees.ca for more information.

Ecological restoration offers an opportunity to reverse the declining trends in our biodiversity and by restoring ecological functions and provides opportunities for reducing the effects of climate change on our society. By combining restorative actions to our ecological systems will be able to protect them for our future generations.

South Niagara Falls to Fort Erie has seen the greatest amount of naturalization since the 1930s (Fig. 3). However, abandoned land, is damaged land in an ecological context, from the past land use. For example, most of the naturalized areas retain features (ditches, plough furrows, shallow dips) that attract amphibians for breeding, but the hydroperiod (i.e., amount and length of time water is held in the feature) is shortened by ongoing drainage and the progeny have no chance to survive. These are ecological traps and their continual presence on the landscape causes wildlife population declines.

Planning examples

It is common knowledge that the agricultural-rural landscape has the highest biodiversity and urban areas have the lowest. Therefore, the standard urbanization approach of the agricultural-rural landscape will lower our biodiversity. This is no longer an acceptable growth practice. The following are urbanizing restoration planning area examples that we identified using our core ecological evaluation approach. We recommend these areas for ecological restoration using innovation green urbanizing development planning.

1. Kraft Drain Watershed, Town of Fort Erie
2. South Welland River and Lyons Creek Chippawa

Kraft Drain Watershed

This watershed is located entirely within the urban boundary of Fort Erie (Fig. 5). Since it is

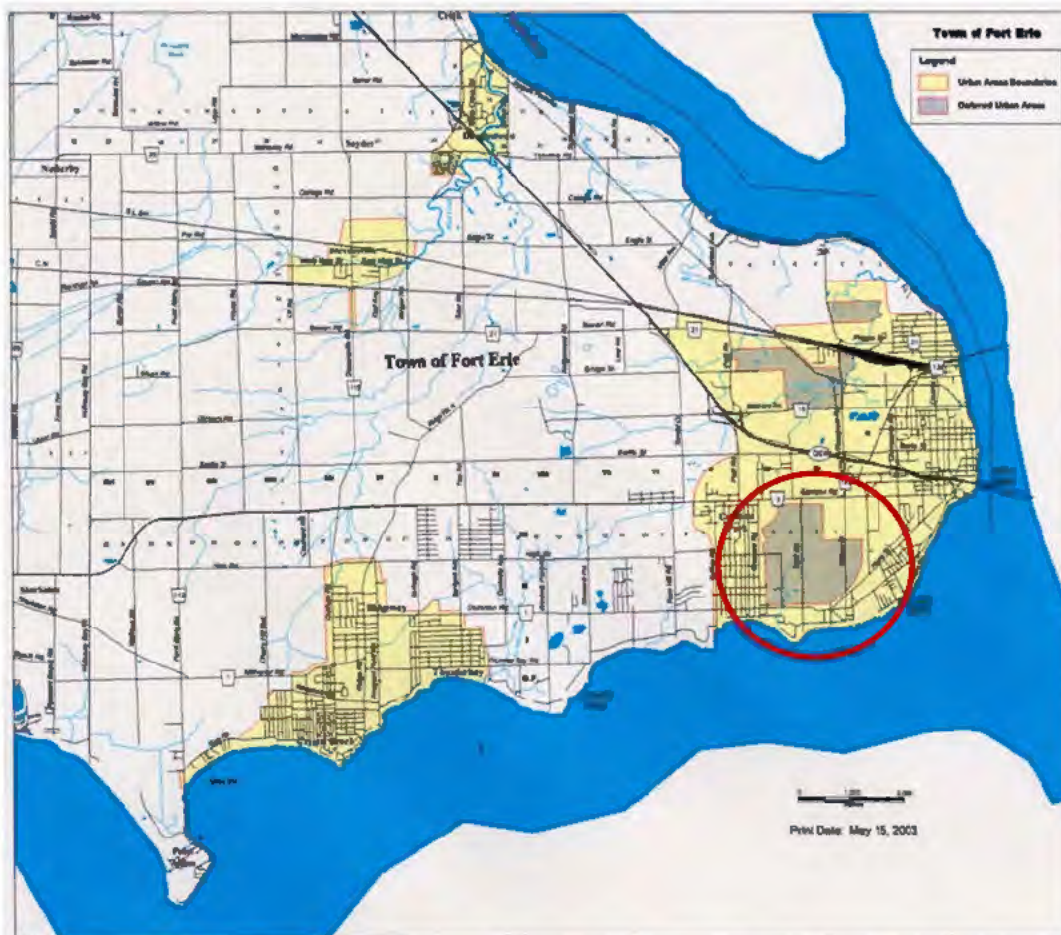


Figure 5. Urban Boundary Town of Fort Erie is shaded yellow. The Kraft Drain wetland complex is located in the southeast portion of town

within the urban boundary it is surrounded by infrastructure such as deep road ditches, sewer,

subterranean concrete pipes, and other infrastructure making for an ideal urban expansion area (Fig. 5). The area also contains remnants of a natural creek valley and a large, deep municipal drainage feature through the middle which extends east beyond the natural watershed boundary (Fig. 6 and 7). The reason the natural areas in this watershed still exist today is because there are evaluated wetlands. The wetland complex is considered provincially significant because the Fowler's toad (endangered species; COSEWIC, 2010; COSSARO, 2010) breeds in the creek at the confluence with the Lake Erie Shoreline (MNRF, 2004). This function should not change provided the water quality and quantity associated with the creek mouth is protected in the long term. The creek mouth area is important for the toad to use as breeding sites especially during times of elevated lake levels. Otherwise, the Fowler's toad does not use the forested upstream wetland areas. Other amphibians such as the Western Chorus frogs (threatened Great Lakes/St Lawrence; COSEWIC, 2008), Wood Frogs and Spring peepers would use the upper wetland areas in a sustainable manner if the wetland hydroperiod was improved. The wetland areas above Dominion Rd are degraded with a shortened hydroperiod and are likely ecological traps due to ongoing drainage and unmanaged naturalization process. Retaining ecological traps in the watershed will lead to declines in these species which may eventually place them on the Species at Risk List. The Western Chorus frog was once abundant in the agricultural -rural landscape of Quebec and along the north shore of Lake Ontario as well as the Carolinian areas along Lake Erie. This species is listed as threatened by COSEWIC and COSSARO and is under review for the Carolinian population once thought to be secure.



Figure 6. 1934 aerial imagery depicting the Ecological Core Areas within the Kraft Drain watershed they are outlined in Green. The original creek channel is also shown. The watershed is outlined in purple.

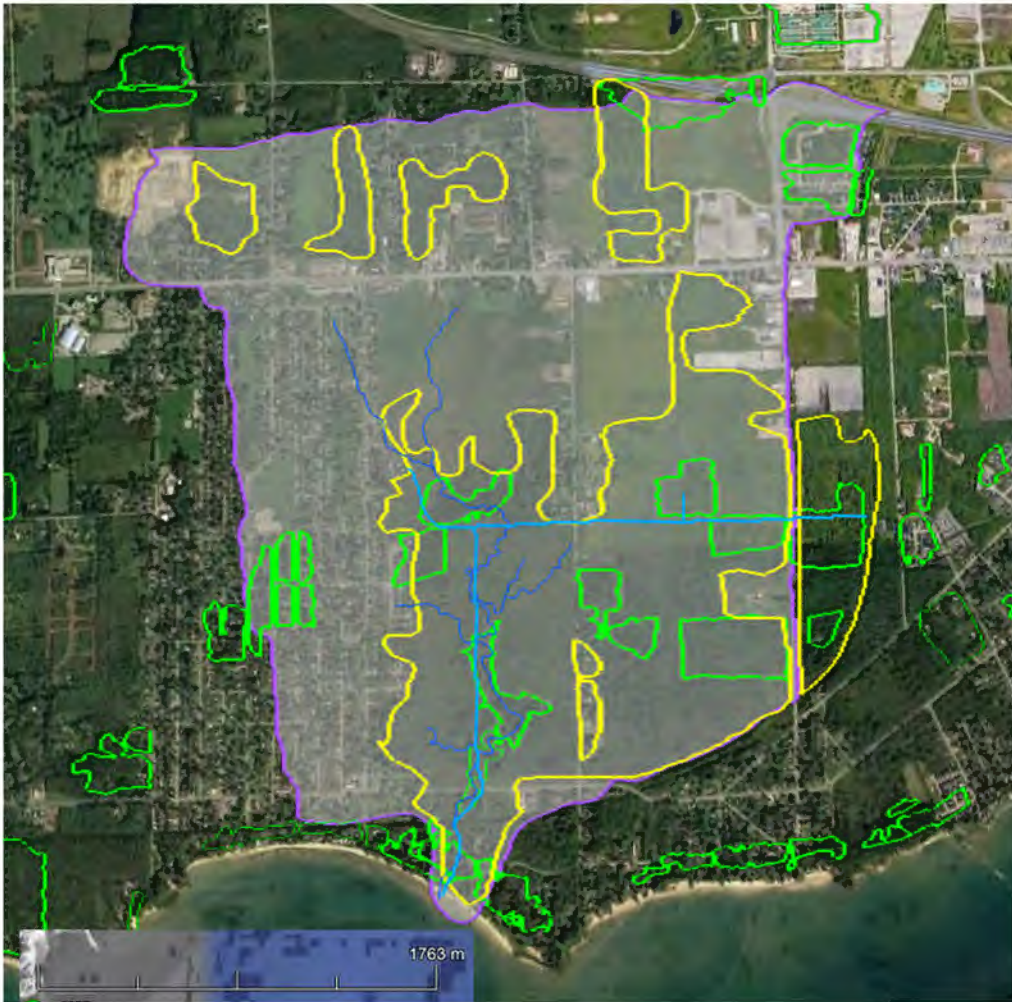


Figure 7. 2018 aerial imagery of ecological core area some of which have low density housing, however most of the watershed area is now regenerated lands. The original creek and the Municipal Drain area shown

Given the proximity of this wetland complex to urban areas, the Kraft Drain watershed would be suitable for urban development provided the wetlands are restored and ecological functions are maintained. This is an excellent area to showcase wetland restoration to protect our biodiversity and mitigate the effect of climate change. Therefore, I recommend restoring the hydroperiod by restoring the creek and wetland core areas. This will allow for some development within the adjacent regenerated areas provided stormwater is conveyed above ground (no wet stormwater ponds- no stormwater pipes) within meadow-grass surface swales for biological treatment. Please see Humber Flats example from the Vaughn area in Appendix. This type of surface conveyance is ecologically superior to any engineered subterranean approach and allows for open space to be maintained and wildlife movement within and between features without the need for across road movement. Wetland mapping and the evaluation record should be updated following restoration.

A second planning example area south of the Welland river in Chippawa is within the newly expanded urban boundary and there is an active re-zoning application before the planning authorities to allow intensive urbanization in a known ecologically sensitive area where the Welland River and Lyons Creek converge (Fig. 8). Although within a new urban boundary the landscape remains rural-agricultural, and the proposed intensification will change how wildlife can safely move between Lyons Creek and the Welland River forever. The EIS did not acknowledge the significance of the merging of these ecosystems and how wildlife used the open space through the former Oaklands golf course or the trailer park in the east. There was also no impact analysis of these aspects and limited work evaluating the function of ecological core areas. The EIS did not assess the impacts of engineered stormwater sewers and wet stormwater ponds as ecological traps to wildlife or as impactful to the receiving water bodies or recommend alternative designs to mitigate the harmful effects of urbanization on sensitive wildlife.

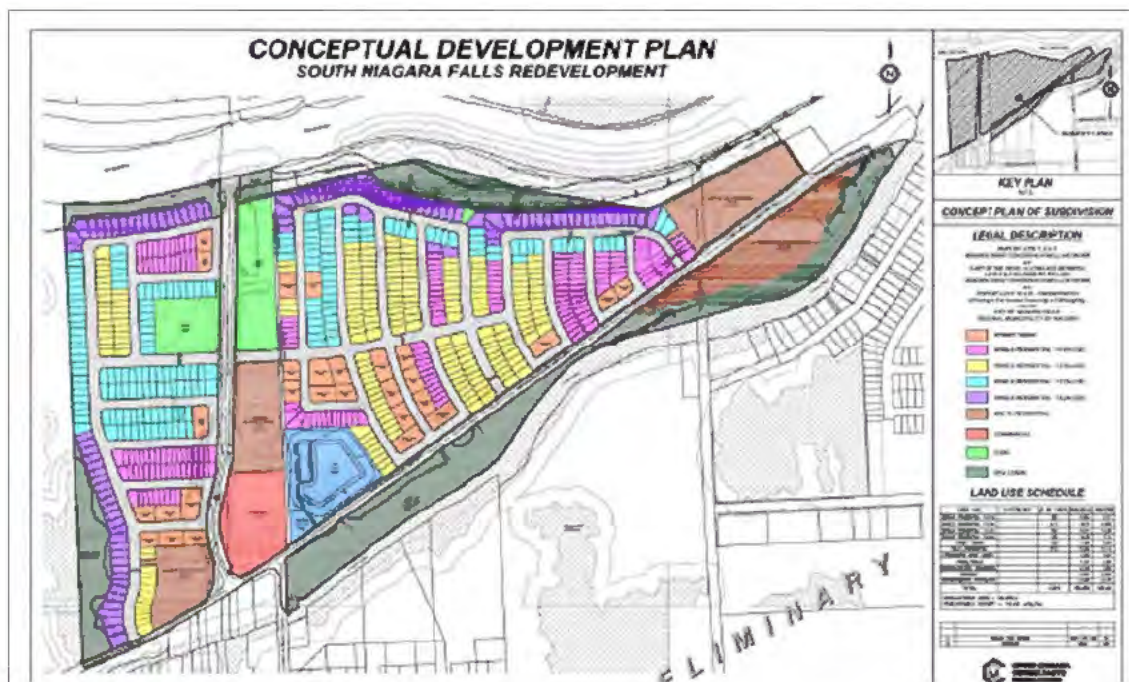


Figure 8. Proposed Development Plan for Chippawa at the confluence of Welland River and Lyons Creek two ecologically sensitive areas

A third example also in Chippawa “Chippawa East” proposes another classic urban sprawl design completely isolating a portion of the provincially significant wetland Ussher’s Creek from east to Ussher’s creek, west to Lyons Creek and east to the Niagara River (Fig. 9). And the woodland immediately south is not a mapped natural heritage feature despite being a core ecological area (Fig. 10). The need to retaining ecological functions is very important for lands south of the Welland River or our biodiversity will continue to decline.

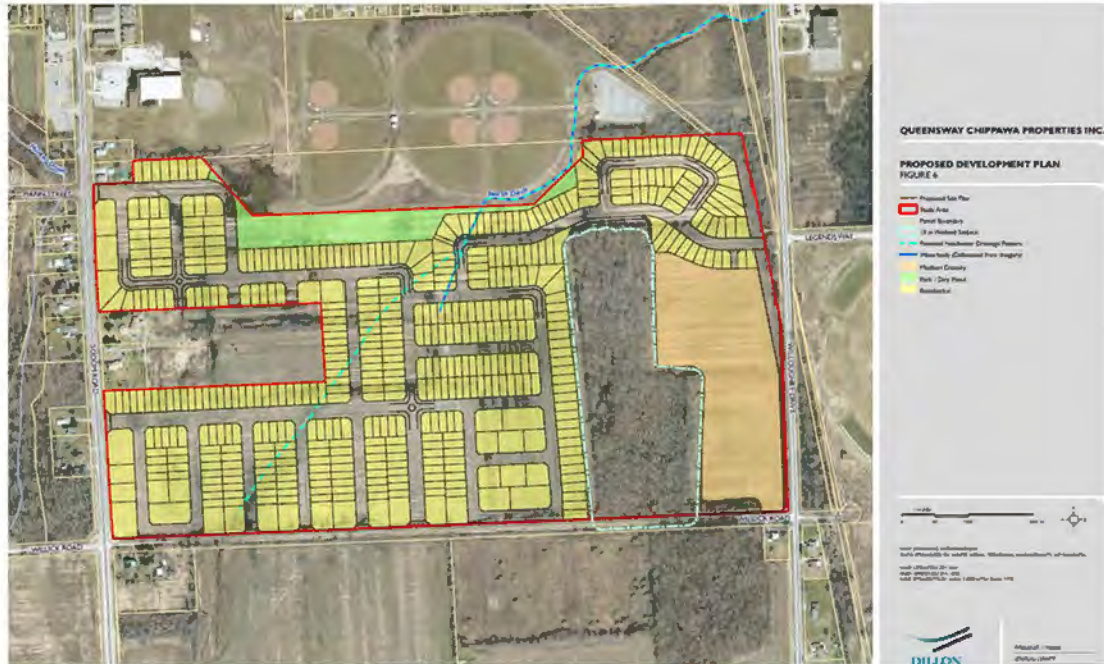


Figure 9. Chippawa East urban sprawl design increasing fragmentation and loss of ecological functions.



Figure 10. 1934 aerial imagery show Ecological Core Areas exist within the proposed urban intensification areas. The proposed planning designs will not protect ecological functions to support our declining biodiversity. Ecological core areas are defined in the text as natural features present in the 1930s that still remain today.

How to Ensure Wildlife Corridor Function is maintained within an urbanizing landscape

Wildlife populations that are most vulnerable to fragmentation and isolation are reptiles and amphibians. Most of our herpetofauna (reptiles and amphibians) are at risk in Ontario. Some of the reasons are habitat loss and fragmentation. They are often killed on roads or persecuted by people who fear them. For Example, Snapping turtles have a long life span (>100 yrs) but the loss of a few adults a year can cause local population declines as there is a high mortality in young turtles with most eggs not hatching due to predation. When many local populations are in decline they can be extirpated from the area. This is how species get listed as endangered. In Niagara the Timber Rattlesnake and Spring Salamander are extirpated. The Wood Frog and Western Chorus Frog are showing localized declines in Niagara. Overall, we have very few current observations for the majority of our native herpetofauna. Therefore, Niagara is data deficient. To help deal with data deficiencies, 8Trees has created a free citizen science smart phone app called “My Field App”. Data is first certified and then provided to the Global Biodiversity Information Facility (GBIF.org) and is available directly or through GBIF. Better data provides for better planning decisions.

Ecopassages for Wildlife

Eco passages, designed for reptiles are different for fish, amphibians, and mammals. There is a great deal on new information available in this mitigation method. A properly designed Eco passage can provide for some reduced mortality caused by road traffic.

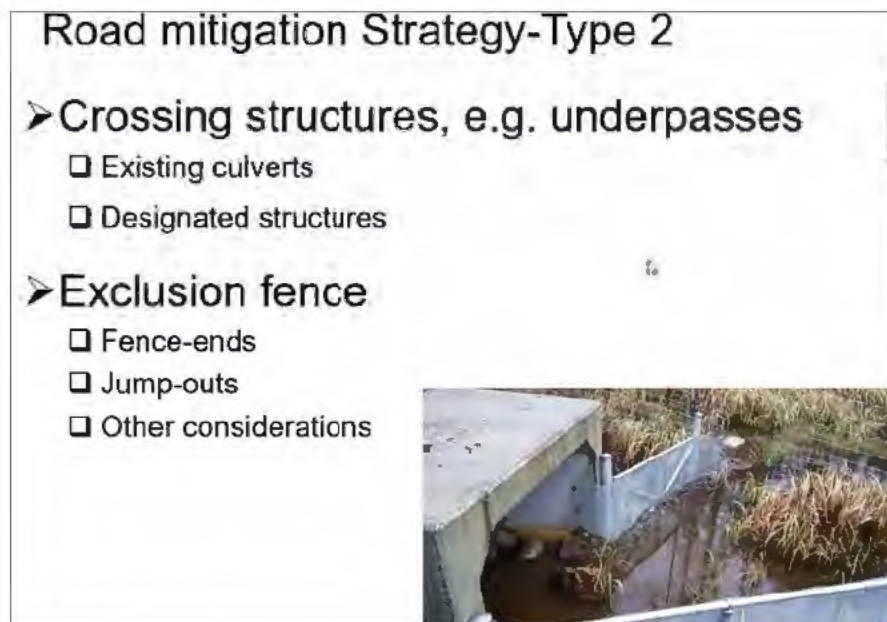


Figure 11 From Ontario Turtle workshop K. Gunson

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Appendix Example Humber Flats Oak Ridges Moraine

Feature: Richmond Hill rooftop and road stormwater treatment through overland linear swale/trail system



Figure 12 Humber Flats, Richmond Hill, Dec 2004

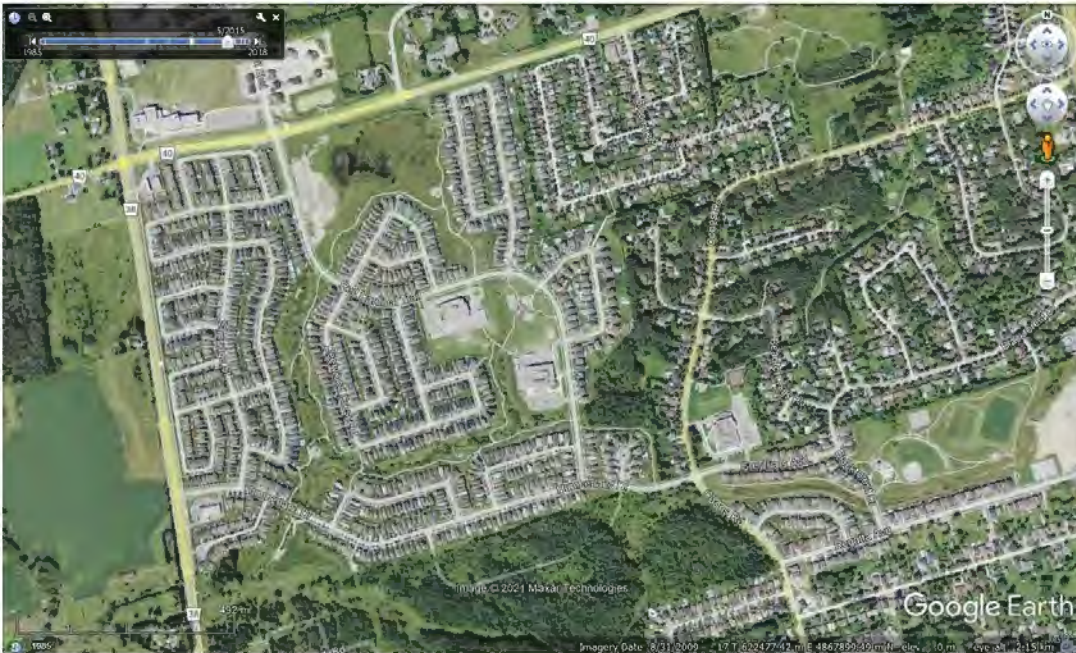


Figure 13 Humber Flats, Richmond Hill, Sept 2009

EXAMPLE HUMBER FLATS, Richmond Hill – Design Elements & Publicity

The screenshot shows a website for 'landscape planning limited'. At the top right is a blue circular logo with a white wave-like shape. The company name 'landscape planning limited' is displayed in a light grey font. Below the logo, the text 'landscape architect' is faintly visible. The main content area features a green leaf icon next to the heading 'HUMBER FLATS ECO PARK | Richmond Hill, ON CLIENT | H&R Developments'. A paragraph of text describes the park's design goals and features. To the right, under the heading 'SAMPLE PROJECTS:', a list of projects is shown, with 'Humber Flats Eco Park' highlighted in green. At the bottom, a navigation menu includes 'HOME', 'ABOUT', 'OUR WORK', 'CURRENT', and 'CONTACT'. Under 'OUR WORK', a list of categories is provided, with 'ENVIRONMENTAL' highlighted in green.

landscape architect
landscape planning limited

 **HUMBER FLATS ECO PARK** | Richmond Hill, ON
CLIENT | H&R Developments

The Eco Park was designed to form a green corridor between the natural features (Mallard marsh, Cardinal Woods and the East Humber River), while improving biological diversity & ecological functions; and providing recreational & educational opportunities. Key elements include the reshaping of the land to direct water flow patterns & maximize storm water recharge as it enters the Humber River, and the use of native plant species to provide habitat & food for wildlife. As part of the Town's 'Walk on the Wild Side', the Eco Park trail system also features a series of custom designed interpretive sign panels.

SAMPLE PROJECTS:

- Doncrest Valley Trail
- Humber Flats Eco Park**
- SWM Ponds Thornhill Woods
- WEA Open Space
- SWM Pond Vettore Village

HOME ABOUT **OUR WORK** CURRENT CONTACT

- RECREATIONAL
- RESIDENTIAL
- CORPORATE
- COMMUNITY
- ENVIRONMENTAL**
- INSTITUTIONAL

Oak Ridges Moraine Walk



The Oak Ridges Moraine Walk introduces you to a variety of landscapes and ecosystems that make this area incredibly unique. The Oak Ridges Moraine Walk links together the East Humber River, Cardinal Woods, Mallard Marsh and Briar Nine Park and Reserve.

The Humber Flats Ecopark, another site along this Walk, is an interesting example of how urban development has been designed to incorporate a diverse community of ecosystems within an urban setting. Not only do the trails provide a great way to keep active, but there is a really good chance that you

will catch a glimpse of a red-winged black bird or hear the call of a green frog along the way.

The variety of wildlife habitats and natural features along the Oak Ridges Moraine Walk make it an exciting part of the Town to explore. The entire trail circuit which passes through Beaufort Hills Trail, Humber Flats Ecopark, and Briar Nine Park and Reserve is 6 km long, requiring approximately 2 hours at a leisurely pace. Wheelchair accessible routes are provided at Beaufort Hills Park and Humber Flats Ecopark. Parking is available at Russell Tilt Park.

The screenshot shows the Ontario Trails website interface for the Oak Ridges Moraine Walk. At the top, there are navigation links for 'Find a Trail', 'Connect', 'Learn', and 'Lend a Hand'. Below this is a large image of a paved trail winding through a dense forest. The main heading is 'Oak Ridges Moraine Walk'. Underneath, there are tabs for 'OVERVIEW', 'TRAIL DETAILS', 'SUPPORT TRAILS', and 'SEARCH READY'. The overview text describes the trail's unique landscapes and ecosystems, mentioning the East Humber River, Cardinal Woods, Mallard Marsh, and Briar Nine Park and Reserve. It also highlights the Humber Flats Ecopark as an example of urban development incorporating diverse ecosystems. A 'Download PDF - Printable PDF' button is prominently displayed. To the right, there is a map showing the trail's location, a 'Follow trail path' button, and a 'SHARE THIS TRAIL' section with social media options. Below that, trail statistics are listed: LENGTH 6.2 km and DIFFICULTY 3 stars. The 'ACTIVITIES' section lists Hiking, Cycling, and Cross Country Skiing. The 'HOURS OF OPERATION' is listed as Year-round. The 'CONTACT THE TRAIL' section provides the contact information for the Toronto and Region Conservation Authority: 416.661.6800 and a link to their website. The 'WEATHER' section shows 'Today' as Wednesday. At the bottom, there is a note: 'Information provided by the Town of Richmond Hill website.'

better planning decisions because of climate change and biodiversity declines. Where there is an agricultural-rural landscape we have the highest biodiversity, and within urban areas we have the lowest. Therefore, by simple projection, urban sprawl equals biodiversity decline. Now that the public has seen what is planned by their elected councils, let them speak up at the upcoming election. I recommend that any decisions on urban expansion wait until after the upcoming election.

Based upon my 40 years of experience in this region, from an environmental perspective the most egregious areas planned for urban expansion are.

1. Fonthill Kame Moraine East: Merritt Rd Pelham-Thorold Expansion and including a new road construction through a provincially significant wetland complex. New Roads are not permitted through provincially significant wetlands- they are development. A “right of way” is not an existing road. There is an unusual gap in the Green Belt mapping in this area (Fig. 2). This area should have been mapped within the Green Belt protection area due to ecologically sensitive groundwater discharge areas, ecological core areas and surface water wetland-terrestrial ecosystems.

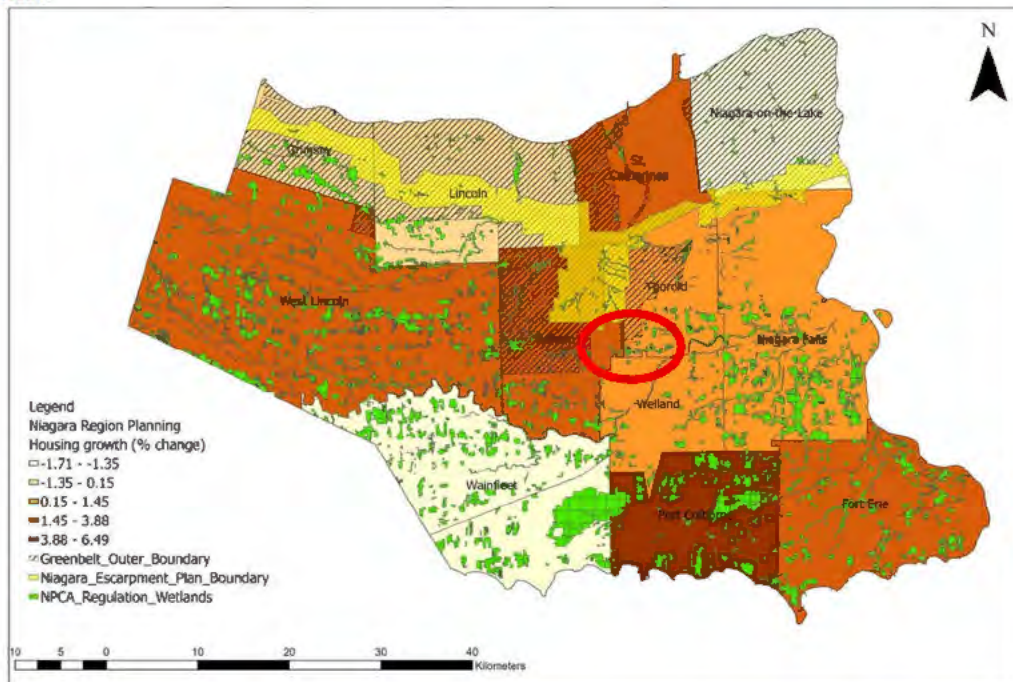


Figure 2. A questionable gap in the Green Belt Plan (black hashed area) exists in Pelham-Thorold. Within true Ecological Core areas with sensitive groundwater, surface water and biodiverse wetland-forest ecosystems.

2. South of the Welland River- City of Niagara Falls- this is where many ecologically sensitive ecosystems (Welland River, Grassy Brook, Ussher’s Creek, Lyons Creek and the Upper Niagara River) converge. This is an exceptional biodiverse area that will decline with the current highly engineered urban designs. There are no good environmental planning design examples in this region to draw from to provide for wildlife linkages (See Humber Flats design in Appendix).

3. Town of Fort Erie – This area usually has a low population growth. There are many undeveloped lands within the current urban boundaries (e.g., Netherby X QEW; Kraft Drain). Urban expansion and sprawl should be accompanied with good environmental designs in areas that make ecological sense and limited to willing landowners. Limiting sprawl by providing alternative lands within existing urban centres should provide a realistic growth need for the Town of Fort Erie (See attached Environmental Development planning Approach).

The attached report contains ecological rationale, concepts, methods, and examples that are applicable to lands being altered from agricultural-rural landscape into urban. Environmentally friendly designs will help mitigate the harmful effects of fragmentation, isolation, and new roads. To maintain ecological functions, we need to first restore our impacted core wetlands to meet global concerns over Carbon emissions, help manage climate change effects and to improve habitat functions within our Natural Heritage system for sensitive wildlife species.

I am available to meet and discuss the contents of my proposal, at your convenience



Anne Yagi M.Sc., EP, CERP
President
8Trees Inc.
Attch.

cc. Ministry of Municipal Affairs and Housing, Northern Development Mines Natural Resources and Forestry, Ministry of Environment Conservation and Parks, Niagara Peninsula Conservation Authority, Town of Pelham, City of Thorold, City of Niagara Falls, Town of Fort Erie, Town of Wainfleet, City of Port Colborne, Town of West Lincoln