

ThePlanningPartnership

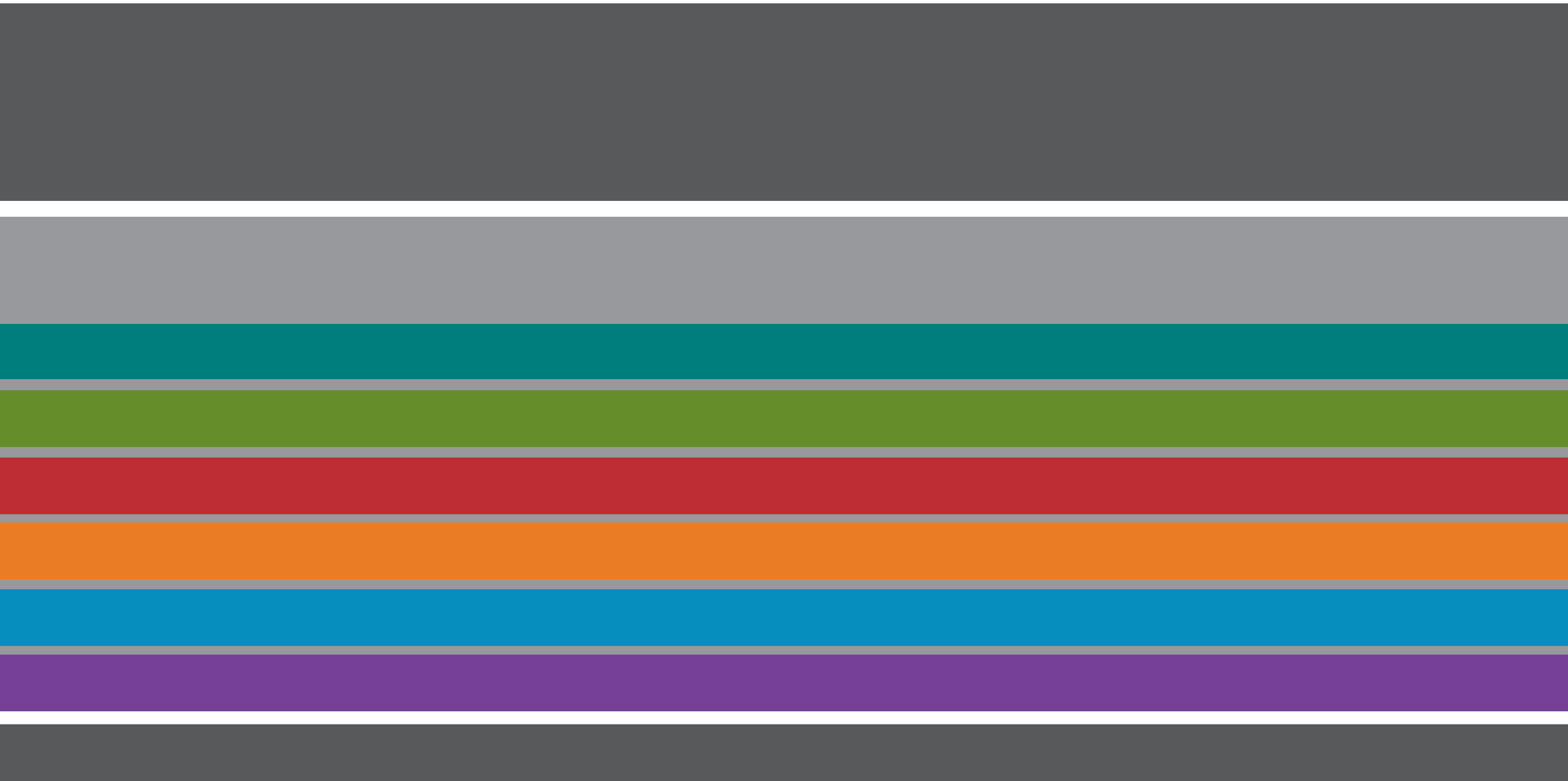
in association with

PLAN B Natural Heritage • Baird & Associates • TCI Management Consultants • Archaeological Services Inc.

June • 2010

CITY OF BRANTFORD

WATERFRONT MASTER PLAN



WATERFRONT MASTER PLAN

CITY OF
BRANTFORD

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The Brantford Waterfront Master Plan is the product of a 12 month process that reflects the input of the community through four workshops to enable broad based participation in the evolution of ideas that became the framework for this Plan. The team worked almost daily with the City's project manager, and met regularly with a group of very committed senior staff who advised the team with respect to each component of the Master Plan:

City of Brantford Staff Advisory Team

Tricia Givens, Project Manager and Senior Policy Planner

Matt Reniers, Director Policy Planning

Susan Sager, Manager, Tourism and Marketing

Maureen Sinclair, Director Parks and Recreation

Terry Spiers, Director Environmental Services

Stephen Naylor, Director Current Planning

Other staff input:

Vicki Armitage, Coordinator Parks Design and Development

Lucy Hives, Senior Current Development Planner

We also gratefully acknowledge the input received from the Grand River Conservation Authority throughout the project.

Waterfront Task Force

The Waterfront Task Force met with the team several times during the project and ensured that community concerns were being addressed at every milestone. The Waterfront Task Force was comprised of:

Mayor Hancock

Councillor Ceschi-Smith (Chair)

Councillor Carpenter

Councillor Kinnermen (Vice Chair)

Councillor McCreary

Councillor Sless

Committees of Council

Volunteers on the Committees of Council also met with the team at each one of the workshops. We thank the input received from the Committees including:

Parks and Recreation and Waterfront Advisory Committee

Environmental Policy Advisory Committee

Tourism Advisory Board

Heritage Advisory Committee

Brownfields Advisory Committee

Economic Development Advisory Committee

Multi-Use Trail and Bikeway Advisory Committee

Many, many **residents** attended every workshop and had ongoing correspondence with the team on a regular basis. We greatly appreciate the input received, in particular from those representing Exceptional Waters, Brantford Steelheaders, Keep our River Public, Grand River Mines Society, the Brant Eagle Project and Mary Lou Knechtel. The Master Plan simply would not have been complete without the input from those who helped us understand the significance of the natural and cultural heritage features of the Grand River and its tributaries.

Consulting Team

A complexity of issues was addressed at every stage of the planning process. It demanded a team that could work together and build on the strengths of each other's expertise to gradually evolve the framework for the Master Plan. It demanded that every member of the team listen carefully and learn from the incredible depth of knowledge in this community.

The Planning Partnership

Donna Hinde, Project Management

David Leinster, Landscape Architecture

Harold Madi, Urban Design

Ron Palmer, Planning

Philip Weinstein, Community Planning

Mike Tocher, Landscape Architecture

Joe McLeod, Arboriculture

Karina Fortin, Coordination and Report Design

Brett Hoornaert, Mapping

Leanna Lalonde, Graphics

David Mugford, Graphics

PLAN B Natural Heritage

Brad Bricker, Ecology

Tyler Hoar, Vegetation and Wildlife Habitat

Assessment, Bald Eagle Habitat Management

Guidelines

Jeremy Jackson, GIS Mapping and Analysis

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Liaison

Rebecca Sciarra, Cultural Heritage

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Nicole Chow, GIS

Chris Gibbons, Fieldwork

TCI Management Consultants

Jon Linton, Economic Development

WATERFRONT VISION

Overall Framework



Core Environmental Features, Restoration Areas, Parks & Linear Parks on Dyke

Parks :

1. Mohawk Park
2. Alfred Watts Park (potential)
3. Rehabilitated Landfill (long term public use)
4. Belliew Park & John Wright Soccer Complex
5. New Park at boat launch
6. Gilkison Flats
7. Cockshutt Park
8. Lorne Park
9. Fordview Park
10. Brant's Crossing
11. Waterworks Park
12. Brant Conservation Area
13. New Park
14. New Park
15. New Park
16. Series of new parks planned in SW Brantford

Potential Development Areas

Potential Cultural Heritage Landscapes

Waterfront Access

Primary Waterfront Trail

Riverside Footpaths

Green-street Connections

Urban / Waterfront Interface

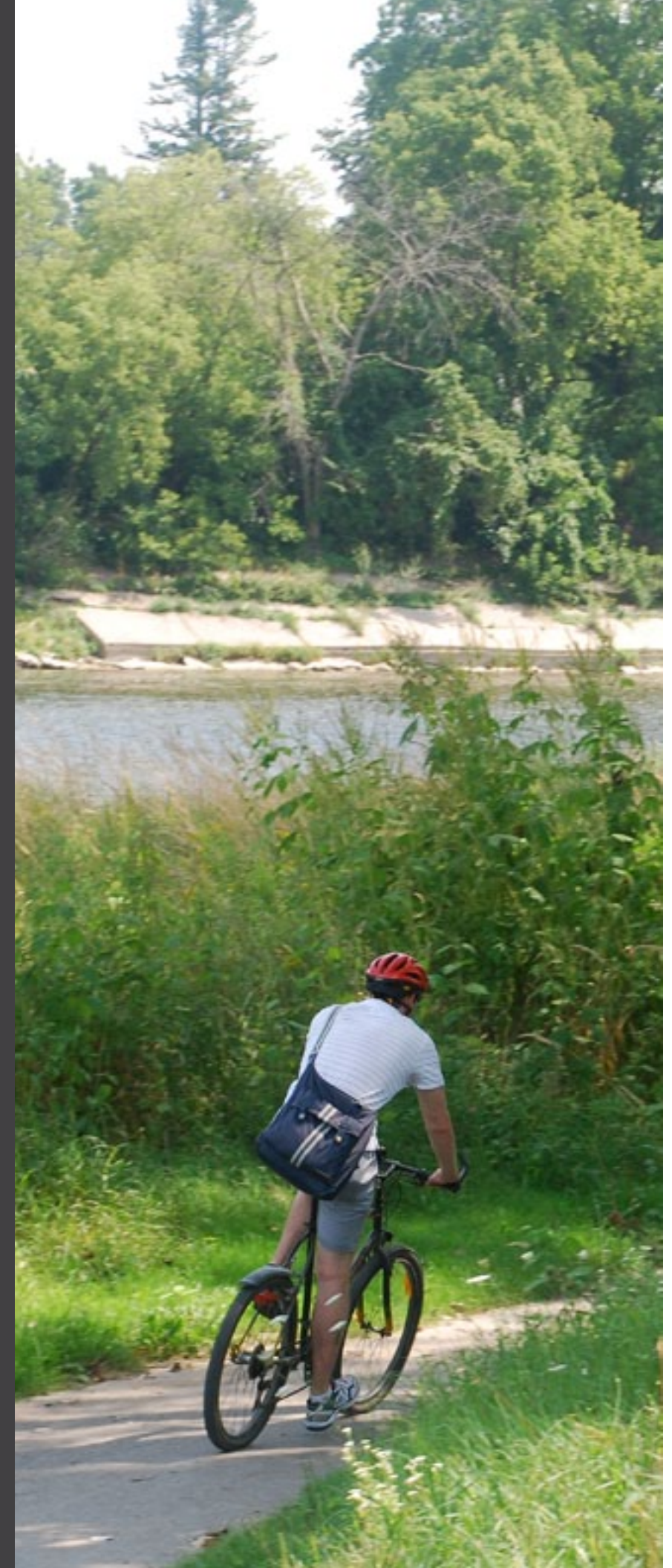
Waterfront Vision

The Grand River and its tributaries are the lifeblood and a defining image of the City of Brantford. The Grand River valley has a great diversity of natural features and is enriched with an extraordinary historic legacy, evident of the Aboriginal and European cultures that have settled this land for over 11,000 years. The Waterfront Master Plan will respect and reinforce this legacy and will define bold new directions that build on the tremendous successes of the City and its partners, who together have established 70 km of trails and hundreds of acres of public space.

The **WATERFRONT MASTER PLAN** will set forth a **FRAMEWORK TO PROTECT THE GRAND RIVER AND ITS TRIBUTARIES** as a fundamental public resource for the residents of Brantford.

- **NATURAL FEATURES** will be protected and enhanced and the cultural heritage will be interpreted so that all can understand and appreciate this area's rich history.
- The **TRAILS** will be easily identified and accessed, and the network will become a widely recognized destination.
- A diversity of places to **ACCESS** the water will be offered, providing for a variety of educational, recreational and leisurely activities that celebrate the Grand River and that will engage residents and visitors alike.
- **APPROPRIATE DEVELOPMENT** on adjacent lands will recognize the significance of these locations; be rooted in best practices in city building; strive for design excellence; and contribute positively to the waterfront and Brantford's image.

And finally, the **WATERFRONT MASTER PLAN WILL INSPIRE ALL RESIDENTS TO EMBRACE THIS VISION FOR SUSTAINABILITY AND BECOME STEWARDS OF THIS VITAL ENVIRONMENT.**



FUNDAMENTAL PILLARS OF THE VISION

Fundamental Pillars of the Vision

The pillars form the foundation for key directions and strategies for the environment, parks, access, heritage and culture, destinations and neighbourhoods and districts.



Link & Enhance Natural Features Systems

The Grand River valley and its tributaries are the framework for extensive natural features that include woodlands, wetlands, fens, cultural meadows and prairie landscapes. The significance of many of the natural features have been recognized through designation of Provincially Significant Wetlands, an Earth Science Area of Natural and Scientific

Interest, a Life Science Site and Environmentally Sensitive Areas. A fundamental pillar of the Vision is to protect the natural features along the Grand River and its tributaries through buffers to adjacent development and to further enhance them through restoring abutting fields that could provide critical connecting links of the natural features.



Protect the Water Quality

The Grand River is the only source of drinking water for the City of Brantford. Protection and enhancement of water quality in the Grand River is of paramount importance to sustain both human and aquatic life, as well as other species, such as Bald Eagle and waterfowl, that depend on the River. Of equal importance is the protection of groundwater quality/quantity and flow paths, particularly in the Northwest sector of the City, which is identified as both a Source Protection Area (SPA) and an Intake Protection Zone (IPZ) for the Municipal Water Intake located just above Wilkes Dam. The protection of groundwater quality and quantity is also critical to sustain natural features such as the prairie fen, Tufa Mounds, Provincially Significant Wetlands, coldwater fish habitat, stream baseflow/temperature, and other natural features that are dependent upon the groundwater regime. The Grand River and its tributaries support a diverse aquatic ecosystem that includes habitat for several species at risk that are protected under the Federal Species

At Risk Act and the Provincial Endangered Species Act. Whiteman's Creek and D'Aubigny Creek are coldwater tributaries to the Grand River, which provide habitat for coldwater fish species such as brook and brown trout. The Grand River in the Northwest sector of the City also supports an Exceptional Waters designation upstream of the pedestrian/servicing bridge. This designation is largely in part due to the existing water quality, groundwater discharge to the channel, and the associated fish and aquatic community that occurs in this reach of the Grand River. One of the fundamental pillars of the Vision is to protect and enhance water quality through protection of existing natural features, enhancements to core natural areas, naturalized stream buffers, implementation of Best Management Practices for stormwater management (e.g. first-flush bio-swales at storm sewer outlets, retro-fits in older urban neighbourhoods), and protection/enhancement of the groundwater recharge/discharge regime.



Protect the Integrity of the Dyke

Dykes are flood control structures that protect areas in the City of Brantford that are located within the flood plain. The Grand River Conservation Authority is responsible for the maintenance and management of the dyke system. This includes regular inspections to ensure that the dykes are well maintained, that they provide the level of protection that is required and that their integrity is not compromised.

Access to the dyke system is very important and should be restricted to authorized vehicles. Access routes for inspections and maintenance must be maintained. No filling or excavation can be permitted on or adjacent to the dykes. Vegetation control is important. Excessive growth can obscure problems and tree roots can threaten the stability of the dyke itself. Vegetation on the dyke slope should ideally consist of closely trimmed grass.



Value Heritage Resources

The City of Brantford has a rich cultural heritage record that traces Aboriginal settlement patterns that date back 11,000 years and which also documents later European settlement activities. The Grand River plays an important role in communicating this extraordinary heritage record. Archaeological investigations along the Grand River have documented a wide range of sites, from camps of people who moved into southern Ontario at the end of the last Ice Age to the large and complex agricultural settlements of their descendants in the sixteenth and seventeenth centuries A.D. The Grand River also retains numerous

above ground heritage resources including architecturally, historically, and contextually significant buildings and areas that may be considered valued cultural heritage landscapes such as the Mohawk Park and Canal, the Alfred Watts Hydro Generating Station, and the Holmedale neighbourhood. These resources present an opportunity to tell the story of 11,000 years of settlement and should be thoroughly understood before changes in land use occur.



Manage Naturalized Riverside Parks & Plan for Recreation that Depends on a Waterside Location

The City has assembled extensive parkland along the Grand River. Parks include Waterworks Park, D'Aubigny Creek Park, Lorne Park, Fordview Park, Brantford and District Civic Centre and Gilkison Flats. These parks support a variety of largely passive recreation uses. Being in public ownership is a critical first step in managing use of these sensitive water's edge locations. A fundamental pillar of the Vision is to manage the landscape

character of the riverside parks to enhance the natural features and habitat of the Grand River and its tributaries. These special locations demand careful selection of recreation uses that depend on a water side location. Trails, picnic areas, lookouts and access for canoes and kayaks, are examples of appropriate uses for River side parks.

Celebrate & Leverage the Trails

Brant Waterways Foundation, Grand Valley Trail, Trans Canada Trail, the City's Trails Committee and the City have been responsible for building 70 km of recreational trails along the Grand River. These trails are a remarkable resource for walking, cycling, cross country skiing and snow shoeing. There is an opportunity to leverage the investment

in the trails with improved interpretative signs, directional signs, distance markers, trail heads, rest areas, and other amenities along trail loops. The trail system is an obvious attraction for residents, and can be marketed to visitors with an enhanced level of supporting facilities and amenities.

Create & Promote the Waterfront Cultural Corridor

A fundamental pillar of the Waterfront Master Plan is to promote authentic tourism and economic activities that respond to and capitalize upon the natural, historic and cultural resources of the water, the shore and the natural features. The Brantford Waterfront presents an unparalleled opportunity to attract residents and visitors to the water. Building on the significant ecological, cultural and archaeological features of the area, the Grand River and its tributaries will be recognized as the City's Waterfront Cultural Corridor, a

destination for interpretation and celebration of the rich natural and cultural history. Diverse needs can be exceptionally well met along the River, but this requires careful planning. Creating destinations and places of distinct character involves developing existing and new areas for gathering and celebration, entertainment, commemorative sites, education centres and unique recreation opportunities.

Plan for a Sensitive Urban Interface

It is imperative that the Grand River, its tributaries and the natural features they support are protected. A sensitive interface to adjacent development is an essential condition required to protect, maintain and enhance the ecological functioning of the system of

natural features. The interface includes a buffer, setbacks to built features, and appropriate uses that front, face and feature the natural heritage system.

Be a Model for Environmental Stewardship

Protection of the natural heritage system will be the responsibility of many stakeholders. It is not possible for a single agency or group to protect the natural heritage system alone. It is essential for agencies and groups to work together, and for members of our community to recognize their individual responsibility in reaching this goal. The City, other government agencies, interest groups as well as the 90,000 residents living in

Brantford will all have a role to play in protecting, for example, vegetation communities, fish and wildlife habitat, water quality and ground water sources. Enhanced awareness, and information on eliminating use of pesticides, appropriate landscape planting, effects of human activity on wildlife habitat, etc. will be essential to building a community wide understanding of the imperative for protecting Brantford's natural heritage system.

Plan Based on the Watershed

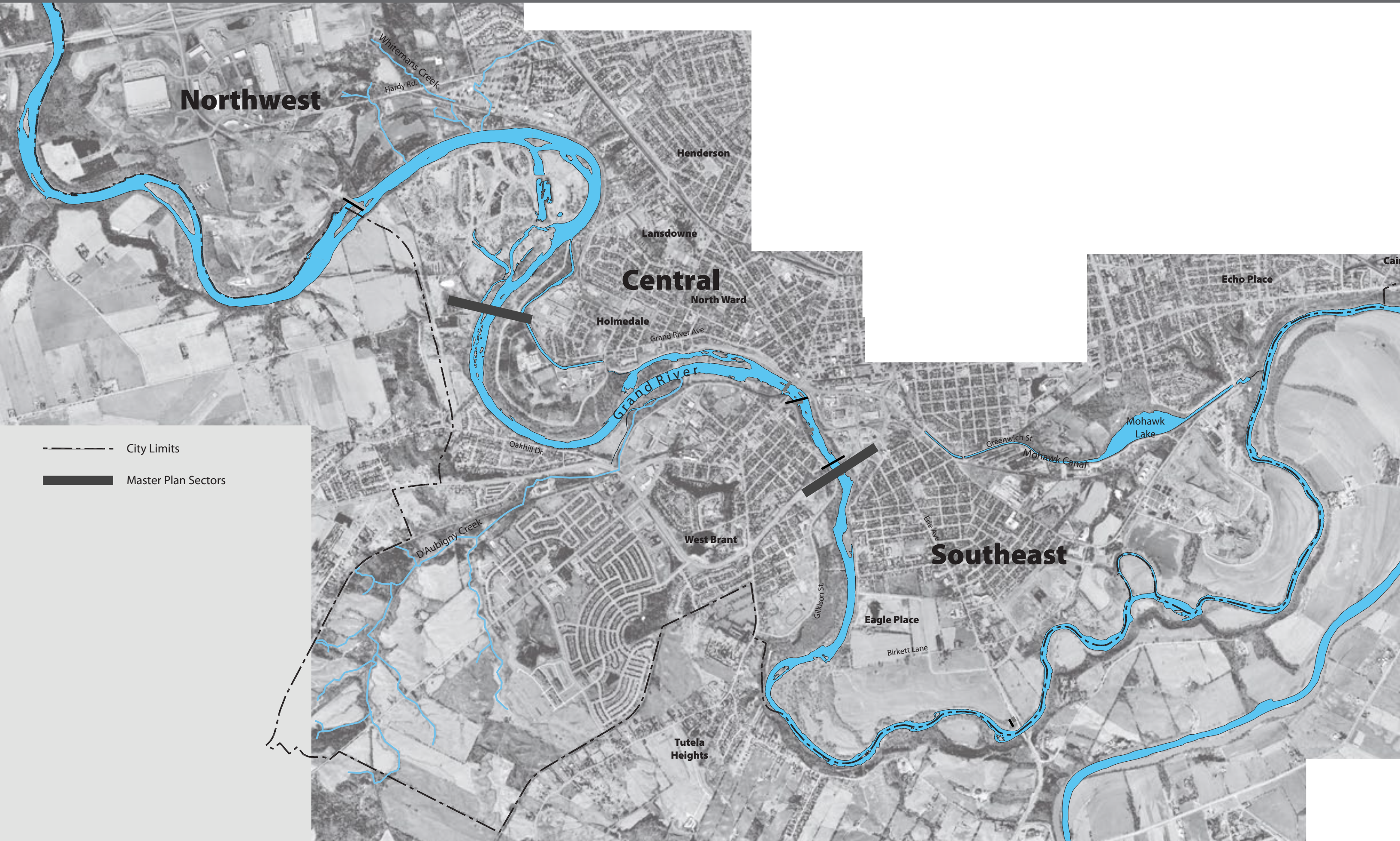
The Grand River corridor within the City of Brantford is part of a 300 km long watershed that stretches from Dufferin County to Lake Erie. It is the largest watershed in southern Ontario. The watershed measures 6,800 square kilometers, 20% larger than the size of Prince Edward Island. Within the City, the River and its associated natural areas, including tributaries represent the core natural heritage features in the waterfront master plan study

area. The protection, enhancement and restoration of the natural heritage system is based on an ecosystem and watershed approach, which recognizes the strong relationship to natural features outside of municipal limits. This Waterfront Master Plan should serve to inform the objectives and initiatives for the ongoing protection and repair of the Grand River in other municipalities in the watershed.



THE MASTER PLAN

Study Area



- City Limits
- █ Master Plan Sectors

The Master Plan

The Brantford Waterfront Master Plan is intended to guide decisions with respect to lands along the Grand River, its tributaries and the Canals. Almost 100 years ago, a report to the City's Parks Commission talked about the imperative of public space along the Grand River. Since that time, the City's leaders have assembled a vast amount of parks and open space, and began to protect natural and heritage features. Today, Brantford faces another historic opportunity - to protect the Northwest and Southeast Sectors of the Grand River and to plan for growth that is distinctly sensitive to restoring natural systems. The destiny of the City is inextricably linked to the River - it's the only source for drinking water, it's the spine of the parks system, it's the focus for recreation, it's the core of the natural heritage system and it's the centre of 11,000 years of settlement.

Committed leadership will be the catalyst to realize the vision. It also depends on stewardship by all Brantford residents as these lands are too vast for City staff to be solely responsible for its care and maintenance. There are very dedicated volunteers who donate thousands of hours to enhance the waterfront. The goal is to create a Waterfront Master Plan that will provide a framework to guide the actions over the short to long term and will be a model for planning to protect the Grand River in other urban centres in its watershed.

The City's objectives for this study were to develop:

- a Waterfront Vision Statement;
- guiding principles;
- a Waterfront Master Plan, including Official Plan policy; and,
- an implementation strategy, including a list of priorities, timing and cost estimates.

The three phase study was prepared within a framework of consultation organized around four key consultation events:

1. Waterfront Summit, September 2009

The Waterfront Summit was organized to share information on existing conditions with respect to:

- parks, recreation, access and community;
- natural features, fish and wildlife habitat;
- shoreline conditions; and,
- archaeology, heritage and culture.

Working sessions were held with:

- representatives of interest groups, organizations and agencies;
- Waterfront Task Force and City Councillors; and,
- Committees of Council.

During the evening there was an open public session that began with the presentation summarizing the team's understanding of existing conditions, additional findings from the day's discussions, followed by focused table group discussions on:

- archaeology, heritage and culture;
- natural features, fish and wildlife habitat;
- trails;
- parks and recreation; and,
- shoreline conditions.

2. Design Workshop - Principles and Guiding Frameworks November 2009

The Design Workshop was held at the Mohawk Park Pavilion on November 3, 4 and 5, 2009. The consulting team set up a temporary design studio and worked on the Waterfront Master Plan for three days and nights. The workshop was comprised of a combination of focused working sessions for the consulting team to develop/describe/diagram ideas, organized site tours with anyone interested in participating, opportunities to meet one-on-one with a member of the team and sessions to review work-in-progress with various stakeholders. Every evening consisted of a public session where residents were invited to drop in to review the team's work as it evolved over the course of the three days. The outcome of the three day workshop was presented on the final day.

3. Workshop - Site Specific Concepts, January 2010

The purpose of the third workshop was for the team to discuss the overall framework for the Waterfront Master Plan as developed at the November workshop and to explore ideas for locations identified in the Study's Terms of Reference where there are key opportunities for change. The workshop was comprised of a combination of focused working sessions with various groups, design sessions for the team, drop in centres and presentations.

4. Culminating Public Information Session April, 2010

A culminating information session was conducted to share the preliminary recommendations of the Waterfront Master Plan. The day comprised of sequential working sessions with City staff, representatives of various interest groups, the Waterfront Task Force, Council and Committees of Council and the public.

Study Area

The Brantford Waterfront is comprised of lands abutting the Grand River, its tributaries, the canals and Mohawk Lake. It includes lands below the defined top of bank and/or in the floodplain, as well as lands abutting or adjacent to these areas, which are considered within the sphere of influence. The waterfront includes the broad range of land uses including natural features, parks, industrial uses and neighbourhoods. Lands at the interface between the waterfront and urban areas are particularly important because their form, quality and character impact how the waterfront is experienced and in turn shape the image of the City. Addressing this interface is about addressing the "front" in waterfront. All great waterfronts have great "fronts" as shaped by the spaces, streets, uses and buildings that frame the water's edge. Therefore, guidance for neighbourhoods and districts adjacent to the waterfront is an integral part of the Master Plan. As the waterfront is the largest, continuous public space through the

centre of the City, the urban interface not only impacts how the waterfront is experienced, it also shapes the look and feel of Brantford as a whole.

Components of Report

The Waterfront Master Plan begins with the Vision Statement, a broad mission to guide the planning and design of waterfront lands. It is intentionally broad in scope as it should have longevity to provide a frame of reference and reminder of the spirit and intent of the Waterfront Master Plan.

The Vision Statement is supported by 10 pillars to serve as broad, yet tangible objectives for protection, enhancement and management of natural features and for shaping change in neighbourhoods, districts, parks and trails.

An overview of the legacy of settlement along the River and the state of the environment set the context for the Master Plan.

The Waterfront Master Plan is described according to six components, or lenses:

- environment;
- parks;
- access;
- heritage and culture;
- destinations; and,
- neighbourhoods and districts.

Each component includes fundamental principles, a framework plan and a description of key initiatives.

Finally, the Waterfront Master Plan includes an implementation strategy that outlines suggestions for management, priorities for action, responsibilities, and order of magnitude costs and an outline of amendments to planning policy.

The Bald Eagle Habitat Management Recommendations are part of the Waterfront Master Plan and have been included in an appendix.

**A LEGACY OF
& ITS**

SETTLEMENT RELATIONSHIP TO THE RIVER



Heritage in Water

With a rich history of water infrastructure, the City of Atlanta has a long tradition of providing clean, safe water to its residents. The Atlanta-Fulton County Stadium was the first stadium to be built with a water treatment plant. The stadium's water treatment plant was a landmark in the city's history, and it is now a part of the city's heritage. The stadium's water treatment plant was a landmark in the city's history, and it is now a part of the city's heritage.

A Legacy of Settlement & its Relationship to the River

The City of Brantford is located in the Grand River watershed, a region with a cultural history that begins approximately **11,000 years ago** and continues to the present. Due to the diversity and richness of its natural environment, the region has supported human habitation since the first peopling of Ontario. The landscape of the study area is bisected by relict shorelines of glacial lakes that formed high plateaus overlooking the River. These were attractive locations to early hunters for viewing herds of game. Another major factor influencing occupation of the area was the large concentration of fertile silt soils along the floodplain of the Grand, which represented easily tilled soils for early agriculturalists. A natural low spot along the River bank has always been attractive to people who needed to cross, and by historic times, the spot repeatedly used south of the present-day Lorne Bridge became known as “Brant’s Ford.”

Attesting to the importance of this area as a focus of human settlement, are the dozens of archaeological sites that have been registered along the Grand River dating to almost every millennium between 11,000 years ago and today. The majority of pre-contact sites represent the remains of small camps occupied for short lengths of time, as people moved throughout their traditional territories on a seasonal basis. The relatively large number of early villages documented in the Brantford region points to this portion of the Grand River as having been one of the core areas of the agricultural “revolution” that occurred towards the end of the **first millennium A.D.** In the following centuries, larger and more permanently occupied agricultural villages were established in conjunction with smaller camps and hamlets.

Six Nations leaders and residents have significantly affected the regional development of the Brantford area.

In Brantford, there are several Aboriginal communities that date back to the late eighteenth century and include the Mohawk Village where Joseph Brant lived, and Cayuga Heights, a village located directly north of the great Oxbow in the Grand River. Other significant sites include Davisville and Tutela Heights. Davisville is a community located on Mohawk Chief Thomas Davis’ farm, south of Hardy Road in Northwest Brantford, which dates to the **early nineteenth century**. Tutela Heights is an early Aboriginal settlement centre located south of the Grand River beyond the existing city boundary. It was named for the Tutelo people who travelled north from New York State with the d Nations after being incorporated into the Iroquois villages prior to the American Revolution. Many occupants of this settlement, situated south of present-day Tutela Heights Road, died during the cholera epidemic of **1832**.

After the Mohawk village was established, non-Aboriginal traders were attracted to “Brant’s fording place” to do business with the villagers. The permanent population did not begin to grow until **1823** when the principal thoroughfare between London and Hamilton, known as Colborne Street in Brantford, was completed. The new village became officially known as Brantford in **1827**, and was incorporated as a Town by an Act of Parliament on July 28, **1847**, and gained city status in **1877**. By the mid-nineteenth century, it was flourishing as a commercial centre, largely due to the advantages of shipping produce via the Grand River route and the Hamilton to London Road.

The Grand River itself is an important transportation system that has facilitated the movement of people and goods for centuries. In the nineteenth century, the development of the Grand River Navigation Company canal raised water levels to facilitate navigation and attract industry and development. Controlling the River current by constructing dams and races has since become an integral part of Brantford’s history, as it provided the power for mills, distilleries and other early commercial enterprises. Water-powered mills were an early enterprise on the Grand River, although more grist than saw mills were built due to the early exhaustion of timber stands in the neighbourhood. By the late **1820s**, there were two dams located below the present-day Lorne Bridge, one supplying a grist mill and the other a saw mill. In the **1830s**, the Wilkes family operated a grist mill and a distillery, the latter built in 1830 on what was known as Waterworks Creek. During the late nineteenth-century in the Holmedale area, a number of fibre mills were in operation along a newly constructed hydraulic canal, including the Holmedale Woolen Mills established by William Slingsby and the Craven Cotton and Wincey mills started by Clayton Slater.

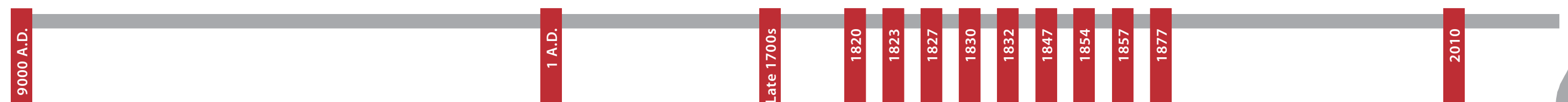
The Grand River Navigation Company was proposed as part of the larger Welland canal enterprise of William Hamilton Merritt, who recognized the commercial importance of a link to the Grand River. It was argued that the construction of a series of canal locks and dams to facilitate navigation between Brantford and Dunnville would greatly enhance the marketability of many products that originated in the region, including pine timber and plaster mined from the gypsum beds along the Grand. The canal significantly enhanced the growth

of Brantford’s commerce and population in the years before the railway was built. Three miles away from the town site of Brantford, an unnamed village grew up around the lock at the foot of present-day Locks Road, and it boasted a hotel, distillery, potash and soap-making factory, paper mill and passenger steamboat landing, in addition to residences clustered along the towpath. The nearby village of Cainsville was laid out by the Grand River Navigation Company. The importance of the canal to the increased commercial and population growth in the area was undercut by the arrival of the railway to Brantford in **1854**.

Today, the Grand River and the Canals are the setting for rich industrial history. Downtown Brantford has been recognized for the character of its built form, with Brant Avenue designated as a Heritage Conservation District. The Holmedale neighbourhood is a beautiful planned community dating to the early part of the 19th century.

The Grand River presents a natural focal point to human settlement, enterprise, and recreation.

Brantford Timeline



STATE OF THE ENVIRONMENT



State of the Environment

The Grand River is a Canadian Heritage River which flows 300 km from its source in the Dundalk Highlands to Port Maitland on Lake Erie. The stretch of the Grand River from Paris to Brantford has been identified as “Exceptional Waters” by the Grand River Conservation Authority because of the exceptional:

- fish habitat;
- Carolinian forested river valley,;
- recreation opportunities;
- history of settlement; and,
- source of municipal water.

The 35 km stretch of the Grand River through the City of Brantford supports some of the Province’s most unique and sensitive natural heritage features. It is one of Southern Ontario’s most significant valley systems providing habitat for a rich diversity of terrestrial, wetland and aquatic species. The River also provides an important riparian corridor function facilitating the dispersal of species between natural areas. During the spring and fall, the Grand River valley provides important stop-over habitat for neo-tropical songbirds and other migrants. The reaches of the Grand River through the City of Brantford support a diverse coolwater/ warmwater fishery, including species that are protected under the Endangered Species Act.

Brantford is home to a large concentration of provincially significant plant communities. The Perched Fens Provincially Significant Wetland (PSW) in the Northwest is one of only two known locations of this type of plant community in the Province. The Brantford Perched Fens support a large number of species, including several provincially tracked rare species that are typically restricted to Great Lakes shoreline habitats. This suggests that the Perched Fens are relics of shoreline vegetation that existed over 12,500 years ago in association with former Glacial Lake Warren.

Other notable natural heritage features in the Northwest Sector of the City include the Grand River Forest Environmentally Sensitive Area (ESA), the Brantford Northwest (Davisville Swamp) Provincially Significant Wetland (PSW) Complex and the Tufa Mounds Provincially Significant Earth Science Area of Natural and Significant Interest (ANSI). Combined, the Grand River Forest ESA and the Brantford Northwest (Davisville Swamp) PSW represent the largest, most intact natural area that remains in the City of Brantford.

The presence of the perched prairie fens with marl deposits and other PSW features associated with valley slopes, terraces and cut-off meanders in the Northwest is directly related to the unique and highly sensitive groundwater regime that occurs in this area. The high rates of infiltration within this area sustain the unique natural heritage features and hydrogeological processes associated with the Northwest. The groundwater regime in the Northwest is also very important for sustaining stream baseflow, temperature regime, water quality and the fish community in the Grand River, as well as the tributaries originating in the Davisville Swamp PSW.

Maintenance of the quality and quantity of groundwater inputs to the river, as well as contributions from tributaries, such as Whiteman’s Creek, are critical to protect and sustain Brantford’s drinking water supply, which is drawn from a Municipal water intake located above Wilkes Dam. It is also critical to sustain the fishery and for maintaining ice-free wintering waterfowl habitat, and habitat for species such as bald eagle that over-winter in the Northwest section of Brantford.

The balance of the Grand River through the City of Brantford contains relatively small, remnant natural areas interspersed among the built-up

urban areas. Features include Gilkison Flats, a riparian forest complex with bottomland wetlands, Birkett Lane floodplain woods, Mohawk Lake/canal and Oxbow Wetlands (PSW feature), as well as the Mohawk Park oak woodland, an urban forest jewel comprised of mature, spreading oaks with prairie species in the understorey. Narrow bands of riparian forest and old field meadow occur in a patchy distribution along the edge of the Grand River from Birkett Lane, east towards the landfill site and the Mohawk Canal.

Of particular note is D’Aubigny Creek, a groundwater fed coldwater stream that supports habitat for brook, brown and rainbow trout. Riparian wetlands associated with the creek and its tributaries are designated as part of the D’Aubigny Creek PSW complex. It provides an important corridor function between natural areas to the South west of the City (e.g. D’Aubigny Creek Swamp ESA) and the Grand River. The wetlands and coldwater fishery are sustained by high rates of infiltration adjacent, well-drained upland areas.

The sensitive natural features in the Grand River watershed and in the Province of Ontario. These features include:

- Grand River – Canadian Heritage River, Exceptional Waters designation (upstream of Wilkes Dam), habitat for a diverse assemblage of fish, wildlife and plants, and major species dispersal corridor;
- Habitat for numerous provincially tracked rare species, including several species protected under the Endangered Species Act.
- Coldwater tributaries to the Grand River supporting habitat for trout species (e.g. Whiteman’s Creek, D’Aubigny Creek);
- Grand River Forest ESA and Brantford Perched Fens (12,500 year old relict of shoreline vegetation associated with former Glacial Lake Warren);
- Tufa Mound Earth Science ANSI – marl formations (tufa) associated with sensitive hydro-geological features and functions;
- Davisville Swamp PSW and associated Tufa Mound ANSI, and coldwater brook trout streams;
- D’Aubigny Creek PSW – linkage corridor function between Grand River and natural areas to the South west(D’Aubigny Creek Swamp ESA);
- Mohawk Lake/Canal and Oxbow Wetlands PSW;
- Numerous remnant prairie, savannah, and oak woodlands (e.g. Hardy Road, Brantford Golf and Country Club, Brant Conservation Area, Mohawk Park);
- Deer wintering areas (Grand River Forest ESA, Davisville Swamp PSW, D’Aubigny Creek PSW);
- Waterfowl wintering areas - traditional ice-free zones on the Grand River (e.g. reach below Wilkes Dam, reaches in the Northwest); and,
- Nesting and wintering habitat for bald eagle in the Northwest.



WATER FRONT COMPONENTS

Waterfront Components

Six components have guided the inventory, analysis and recommendations for the Waterfront Master Plan. The description of the Waterfront Master Plan is organized according to its:

- Environment
- Parks
- Access
- Heritage & Culture
- Destinations
- Neighbourhoods & Districts

A number of target areas are described as a method of demonstrating the application of the vision and its pillars and the key initiatives for each of the six components.



ENVIRONMENT

The Environment Component provides the underpinning of the Waterfront Master Plan. The Waterfront Master Plan charts the course to protect, restore and enhance ground water, surface water, natural features, and habitat. Many of the significant features are already identified through policy: Provincially Significant Wetlands, Earth Science Area of Natural and Scientific Interest, Life Science Site and, Environmentally Sensitive Areas.

The City's system of natural features has a significant role to play in ensuring a healthy watershed. Initiatives identified in the Environment Component aim to achieve environmental sustainability through protection and enhancement of surface water and groundwater quality, maintenance and enhancement of existing linkage connections among natural areas, provision of buffers, re-establishment of rare plant communities such as prairie, savannah and oak woodlands, establishment of an urban forest, invasive plant species control, habitat management, and environmental stewardship and education.



PARKS

The Grand River's potential to serve as the spine for an exceptional and versatile park system is well advanced through the Central Sector of the study area where there are public parks on at least one side of the river. The Parks Component of the Waterfront Master Plan identifies over 550 ha of parkland, and key links to enhance the natural heritage system and enable a connected framework of open space. The parks provide for a range of recreation activities that are compatible with the environmental sensitivity of the River side location.



ACCESS

Roads, pedestrian and cycling trails, and River access for fishing and boating provide the spine for access in the Waterfront Master Plan. The Waterfront Master Plan seeks to establish a multi pronged approach that promotes access to and along the River within the context of sustaining the natural heritage system. The City and its partners have already built about 70 km of trail along the River and its tributaries. The Waterfront Master Plan defines a variety of trail loops that build on the existing system on street links, multi use trails and footpaths. Key streets are identified as important links to connect neighbourhoods to the waterfront. Locations for boat access and guidelines for the design of access points are intended to minimize impact on natural features.



HERITAGE & CULTURE

The diversity and richness of the natural environment in this region has supported human habitation since the first peopling of Ontario, about 11,000 years ago. Attesting to the importance of this area as a focus of human settlement are the many archaeological sites that have been registered within the City. Dozens of archaeological sites have been registered along the Grand River dating to almost every millennium between eleven thousand years ago and today. This rich heritage and culture provides the foundation for a Waterfront Cultural Corridor that builds on the identification of the Grand as a Heritage River.



DESTINATIONS

The Brantford Waterfront presents an unparalleled opportunity to create a Cultural Corridor – a destination for culture, recreation and interpretation of the rich history of the area. The Waterfront Master Plan identifies many opportunities to create destinations along the River and its tributaries to celebrate the Grand River as the centre of the City. The waterfront is an icon for Brantford - and can be the focus of festivals, events and celebrations. The vast lands along the Grand River offer sanctuary and repose, as well as places for people to gather, interact, celebrate and play. Diverse needs can be met along the Grand River with careful planning. Creating cultural and recreation destinations will require developing memorable shorelines with diverse elements that can accommodate civic gathering and celebration, commemorative sites, education centres and opportunities for recreation.



NEIGHBOURHOODS & DISTRICTS

Historic Brantford's fine grained tree lined streets, urban squares and historic houses are the envy of many communities. It provides a sound demonstration of enduring design principles that should inform the planning of newly developing or redeveloping areas. There are several areas that are suitable for development and redevelopment adjacent to the River and its tributaries. These locations present the most special situations that should demonstrate the best practices in sustainable and high quality development, urban design, architecture and natural and cultural heritage preservation. The Waterfront Master Plan also seeks to revitalize established neighbourhoods, by providing enhanced parks and trails, and protecting the natural and cultural heritage resources for the benefit of the entire City and the region.



p 27 What We Heard, Principles

p 27 The Waterfront Natural Heritage System

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ENVIRONMENT

The Environment

Following a watershed and ecosystem based approach, the Waterfront Master Plan provides for a linked system of protected, enhanced and restored natural features associated with the Grand River corridor. Key natural heritage features recognized under the Provincial Policy Statement (2005), such as Provincially Significant Wetlands (PSW's), Areas of Natural and Scientific Interest (ANSI), woodlots, fish and wildlife habitat, and habitat for Endangered/Threatened species are protected with buffers and restored/enhanced and managed in a manner that promotes long-term environmental sustainability. Central to this vision is environmental stewardship, nature interpretation, and public education that encourage the residents of Brantford and visitors to better understand and respect the rich natural heritage legacy associated with the Grand River corridor.

The Waterfront Natural Heritage System

The key elements of the Natural Heritage System for the Brantford Waterfront include:

- Grand River and tributaries (i.e. Whiteman's Creek, Northwest tributaries, D'Aubigny Creek, Mohawk Lake and Canal);
- Grand River – Exceptional Waters designation (i.e. reach south of Highway 403 bridge to the western edge of the Brant Conservation Area);
- Wetlands (i.e. provincially significant wetland [PSW], non-provincially significant, or unevaluated);
- Environmentally Sensitive Areas (ESA) (Grand River Forest);
- Woodlands;
- Rare plant communities (i.e. perched fens, prairie, savannah, oak woodland);
- Valleylands and associated floodplains, top-of-bank, and slope/erosion hazards;
- Areas of Natural and Scientific Interest (ANSI) (i.e. Tufa Mounds Earth Science ANSI);
- Fish habitat (coldwater, coolwater and warmwater);
- Wildlife habitat (i.e. deer wintering areas, waterfowl wintering areas, migration corridors, wintering, roosting and nesting habitat for bald eagle);
- Habitat of Endangered, Threatened and rare species;

- Enhancements to key natural heritage features and linkages;
- Sensitive surface water and groundwater features and hydrologic functions;
- Conservation Authority lands (i.e. Brant Conservation Area); and,
- Natural City Park land (i.e. Waterworks Park, Gilkison Flats, Mohawk Park).

The Natural Heritage System is mapped based on information contained in the sources noted in this chapter. It is mapped at a city-wide scale to set a broad framework for land use planning and urban design.

This chapter describes the components of the Natural Heritage System in the Northwest, Central and Southeast Sectors of the study area. It also summarizes the key environmental initiatives.

Information sources for mapping:

Ontario Ministry of Natural Resources

GIS mapping of:

Provincially Significant Wetlands
Evaluated wetlands and
unevaluated wetlands
Areas of Natural and Scientific
Interest

Provincially significant plant
communities
Woodlands

Deer wintering areas
Waterfowl wintering areas
Species at Risk

GRCA GIS data base

City of Brantford GIS database

Other sources:

City of Brantford Official Plan Review

Environmental Data Report, 2001

Environmental Protection Plan for
the NW Industrial Area, 1999

A Community Based Approach to
Fisheries Management in the Grand
River Watershed, 2006

Grand River Fisheries Management
Plan, 1998

Hardy Road Peer Review, 2004 & 2008

Brantford Tufa Mounds Earth Science
Area of Natural and Scientific Interest,
2005

Mohawk Lake Rehabilitation Plan,
Sediment Assessment, 1995

Mohawk Lake Revitalization Plan,
1999

Southwest Brantford, West of Conklin
Secondary Plan, Natural Heritage

Existing Conditions and Assessment
Report, 2008

What We Heard

Protection, restoration and enhancement of the natural environment, particularly the natural heritage features associated with the Northwest.

Protection of groundwater recharge/discharge functions and surface water quality.

Naturalization of public open space with native plant species to promote biodiversity and habitat creation (e.g. floodplain forests, prairie, savannah and oak woodlands).

Restoration of riparian buffer areas to improve water quality, fish habitat and strengthen linkage connections.

Controlling or restricting public access in sensitive environmental areas.

Environmental stewardship through public education, monitoring and enforcement.

Implementation and enforcement of proper erosion/siltation controls during land development within the watershed, particularly Southwest Brantford (Shellard Lane).

Principles

Protect and enhance all natural features.

Establish, protect and enhance a continuous green corridor along the Grand River and its tributaries.

Protect and improve water quality.

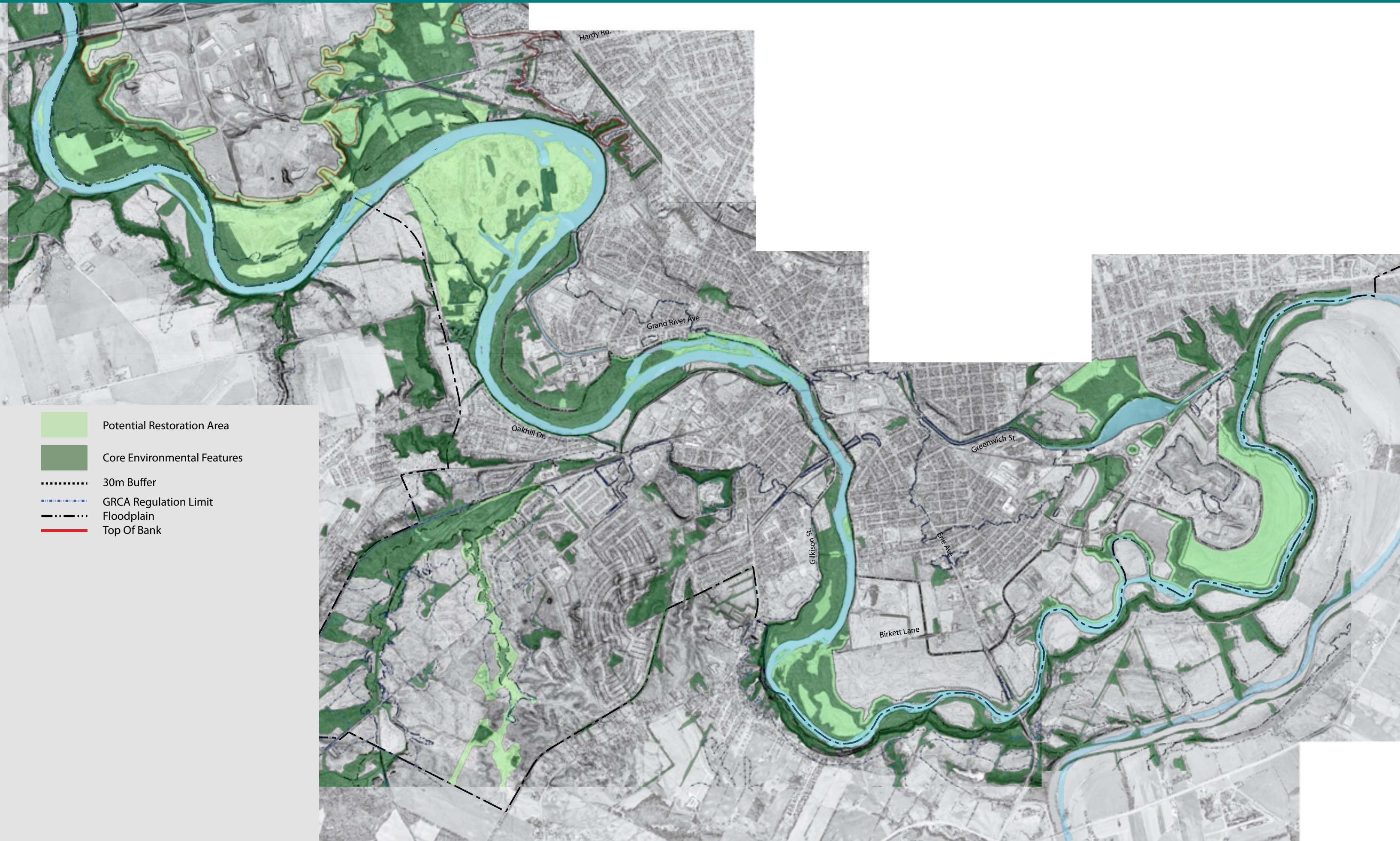
Restore the landscapes of municipal parks that flank the Grand River and its tributaries to enhance the natural heritage system.

Restore degraded landscapes adjacent to the Grand River and its tributaries.

Promote reforestation of all lands adjacent to the Grand River and its tributaries.

Develop a comprehensive interpretation and information system to encourage environmental stewardship to protect the natural heritage system.

Natural Heritage Framework



Natural Heritage / Northwest Sector Initiatives

The Natural Heritage Framework is a compilation of four maps. All maps indicate:

- the Grand River Conservation Authority Regulation Limit, a limit to control construction and building near watercourses, floodplains, slopes, and wetlands;
- floodplain as mapped by the GRCA; and,
- top of bank as mapped from the City of Brantford's GIS topographic data.

The Wetlands map indicates the location of:

- Significant Ecological Wetland Units which are wetlands that are not classified as provincially significant, but are none the less significant, as mapped by the Ontario Ministry of Natural Resources; and,
- Provincially Significant Wetlands, as identified and ranked according to the Ontario Wetland Evaluation System.

The Vegetation map indicates the location of:

- significant vegetation communities including prairie, savannah, oak woodland and the Perched Fen Provincially Significant Wetland;
- woodland including mixed, deciduous and coniferous forests; and,
- Tufa Mounds Earth Science Area of Natural and Scientific Interest, an extraordinary geological feature with relict tufa mounds formed by precipitation of calcium carbonate from groundwater springs under artesian pressure.

The Habitat map indicates:

- warmwater fisheries habitat;
- coldwater fisheries habitat;
- deer wintering areas; and,
- waterfowl wintering areas.

The Natural Heritage Framework map indicates:

- core environmental features (as outlined above);
- enhancements to core environmental features and linkages (potential restoration areas); and,
- 30 m buffer.

The limit of the Waterfront Natural Heritage System is based on a minimum 30 m buffer from the edge of the core environmental feature. It is recognized that achieving a 30 m buffer from a core environmental feature in existing built-up areas may not be feasible, however where new developments are being considered within the study area, the 30 m buffer should be implemented. It should also be noted that due to the unique character of the floodplain within the study area, which is comprised of a floodway and associated dyke system and a floodplain, a 30 m buffer from either the dyke or floodplain may not be achievable. In these situations, the 30 m buffer is based on other core environmental features. The policies regarding the buffer are included in the Implementation, Major Open Space - Waterfront Designation Section.

In regards to species of provincial interest, pursuant to the Endangered Species Act (ESA 2007), the following known species are associated with the Brantford Waterfront Master Plan study area:

Name	ESA Status
Eastern Sand Darter (<i>Ammocrypta pellucida</i>)	THR
Bird's-foot Violet (<i>Viola pedata</i>)	END
Black Redhorse (<i>Moxostoma duquesnei</i>)	THR
American Chestnut (<i>Castanea dentata</i>)	END
Eastern Hog-nosed Snake (<i>Heterodon platirhinos</i>)	THR
Butternut (<i>Juglans cinerea</i>)	END
Blanding's Turtle (<i>Emydoidea blandingii</i>)	THR
Common Hoptree (<i>Ptelea trifoliata</i>)	THR
American Badger (<i>Taxidea taxus</i>)	END
Spiny Softshell (<i>Apalone spinifera</i>)	THR
Queen Snake (<i>Regina septemvittata</i>)	THR
Chimney Swift (<i>Chaetura pelagica</i>)	THR
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	SC
Green Dragon (<i>Arisaema dracontium</i>)	SC
Northern Map Turtle (<i>Graptemys geographica</i>)	SC

Precedents for a 30 m Buffer

The Greenbelt Plan and Oak Ridges Moraine Conservation Plan. A minimum 30 m buffer is required from key natural heritage and hydrologic features.

The Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan prepared for the GRCA recommends a 30 m buffer from core environmental features, such as woodlots and provincially significant wetlands.

Sustainable Halton incorporates 30 m buffers from natural heritage features such as woodlots, wetlands and watercourses. Enhancement to the core environmental features and linkages in key areas in the Region of Halton incorporate setbacks/buffers well in excess of 30 m to meet the goals for environmental sustainability.

The Kleinburg-Nashville Focus Area Study recommends that the limits of development should be the greater of 30 m from the edge of a natural heritage or hydrologic feature or the Greenbelt Plan Natural Heritage System.

The Hanlon Creek Watershed Plan recommends a minimum 30 m setback to environmental features.

The Forbes Creek Subwatershed Study recommends a 50 m buffer to wetland features with a 250 - 300 m enhanced corridor containing natural features, buffers, the watercourses and ponds, and enhancement areas to be naturalized.

The Southwest Brantford West of Conklin Secondary Plan recommends a 30 m buffer to Provincially Significant Wetlands and cold water tributaries.

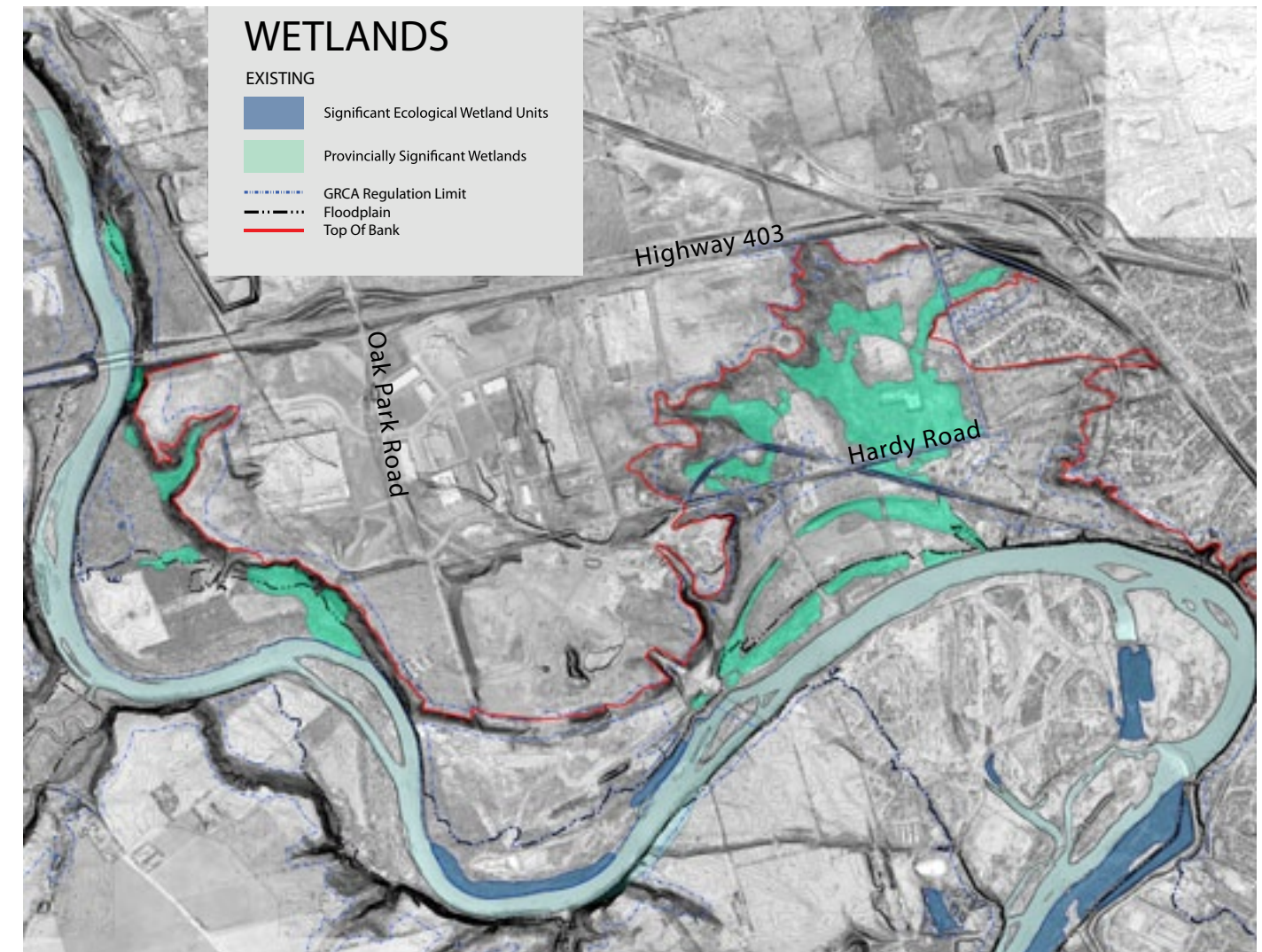
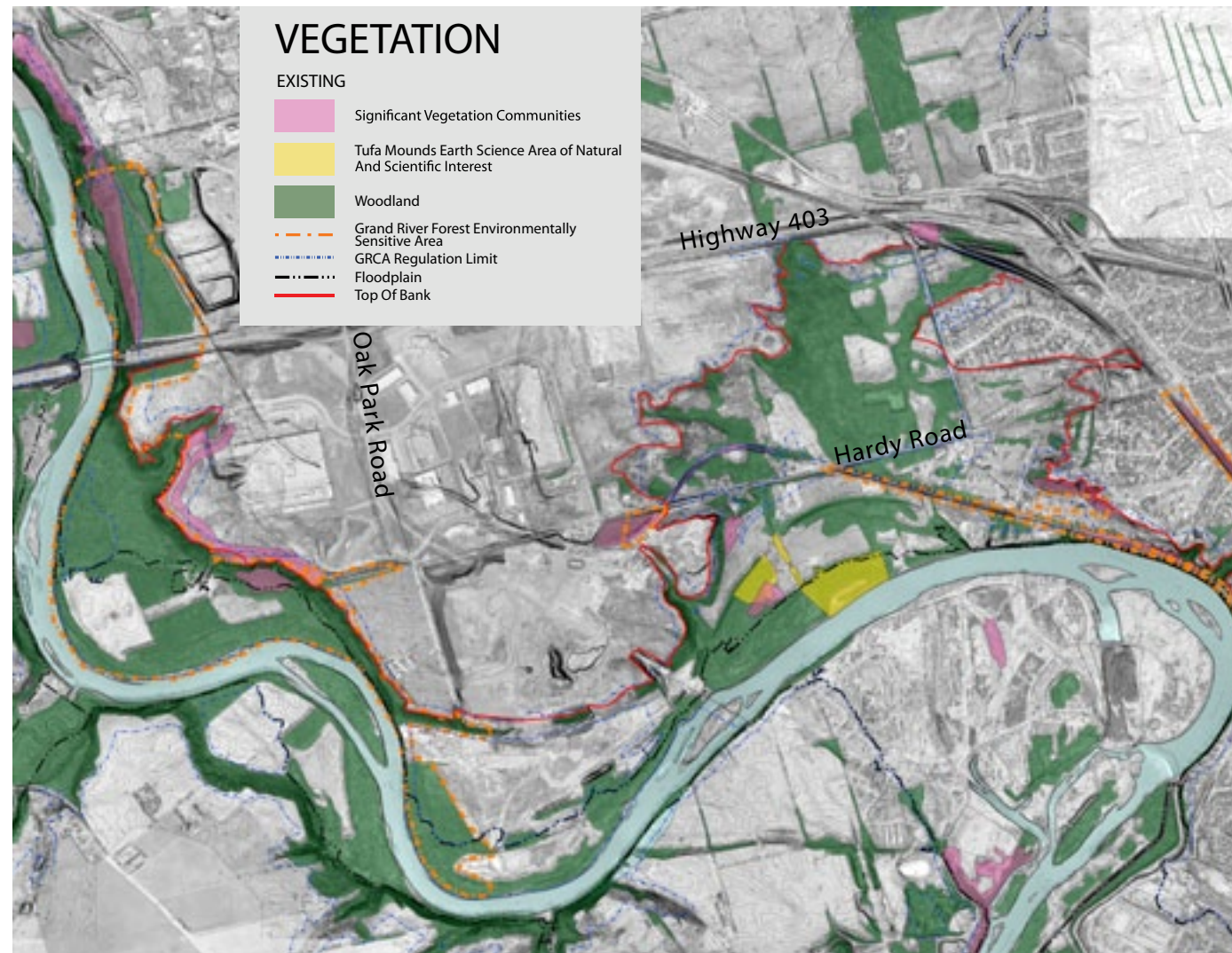
Northwest Sector

The Northwest Sector of the study area contains some of the most unique and sensitive natural heritage features found within the Grand River watershed and the Province of Ontario, some of which are relics of environmental conditions that existed thousands of years ago during the post-glacial period. The highest concentration of bio-diversity and rare species occurs within the Northwest Sector representing an essential element of Brantford's natural heritage legacy that should be protected, restored and enhanced.

The Northwest Sector exhibits unique and complex physiographic characteristics including former shoreline bluffs associated with post-glacial Lake Warren, River terraces and meander cut-offs, and hummocky topography associated with the Moffat Moraine. The sand and gravel deposits that occur in this area and the associated groundwater recharge/discharge function are strongly linked to the natural heritage features associated with the Northwest Sector.

The Grand River is identified as *Exceptional Waters* from Paris through to Cockshutt Bridge. The Exceptional Waters Program, administered by the Grand River Fisheries Management Plan Implementation Committee (GRCA), is a community based approach to identify, protect, manage and enhance rivers (and lakes) of exceptional quality so that they are managed as a "community resource asset" providing quality outdoor experiences while promoting environmental sustainability through special fishing regulations and habitat management. The Grand River provides an important corridor function for a wide variety of migrating birds, including several species of warblers and song birds, and wetland birds such as Great Egret, Great Blue Heron and several species of ducks. At the landscape scale, the Grand River valley is an important dispersal corridor for a variety of plants, animals and fish.

Northwest Sector Initiatives (continued)



Within the Northwest Sector, the Grand River, the Grand River Forest ESA, the Perched Fens, rare prairie/savannah habitat, the provincially significant Davisville Swamp wetlands, the Tufa Mounds ANSI and the Brant Conservation Area, combine to represent the largest, most intact and biological diverse natural area that remains in the City of Brantford.

The Tufa Mounds Area of Natural and Scientific Interest (ANSI) is an extraordinary geological feature associated with the Grand River valley slopes and terraces south of Hardy Road. The ANSI is characterized by the presence of early Holocene relict “tufa” mounds formed by precipitation of calcium carbonate from groundwater springs under artesian

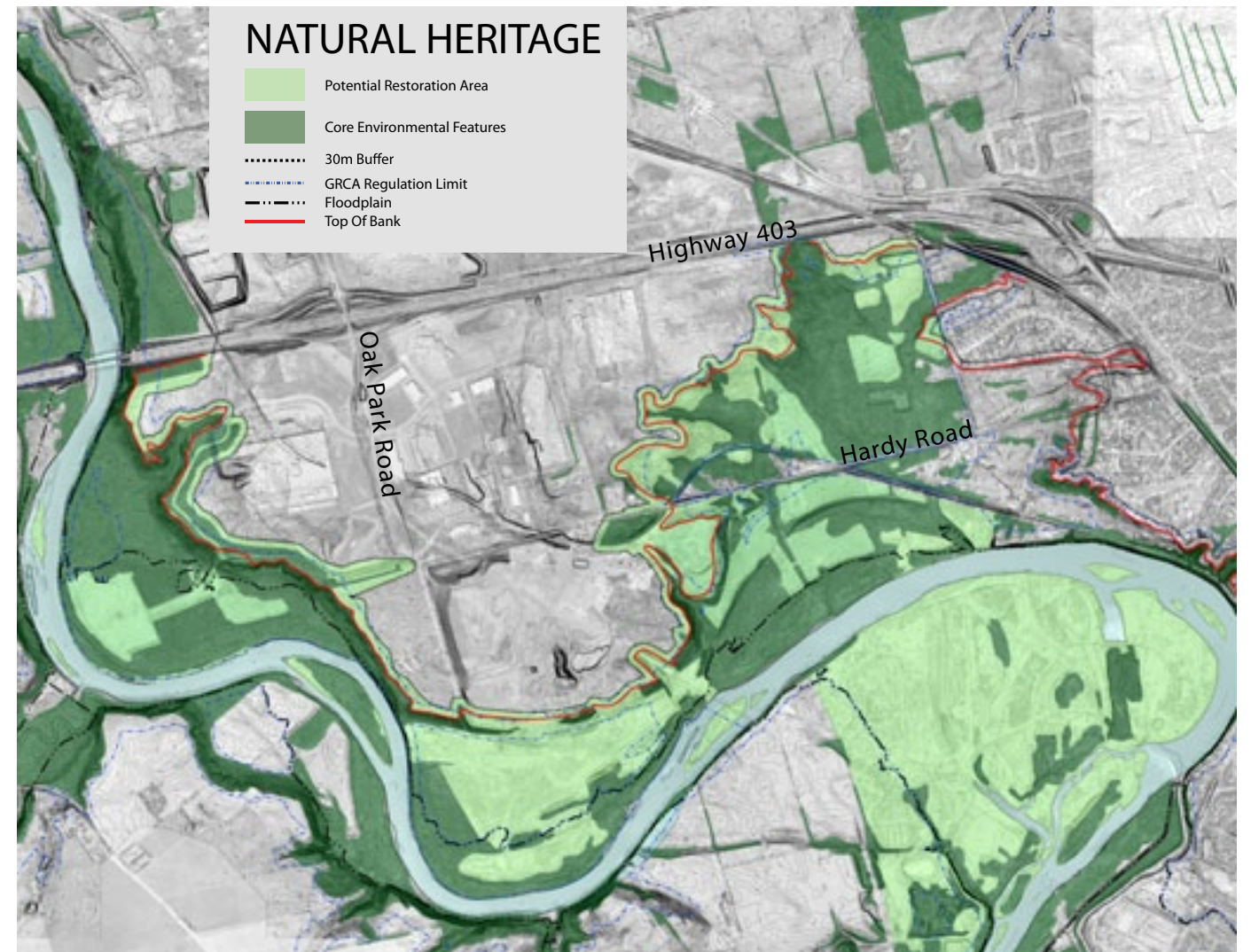
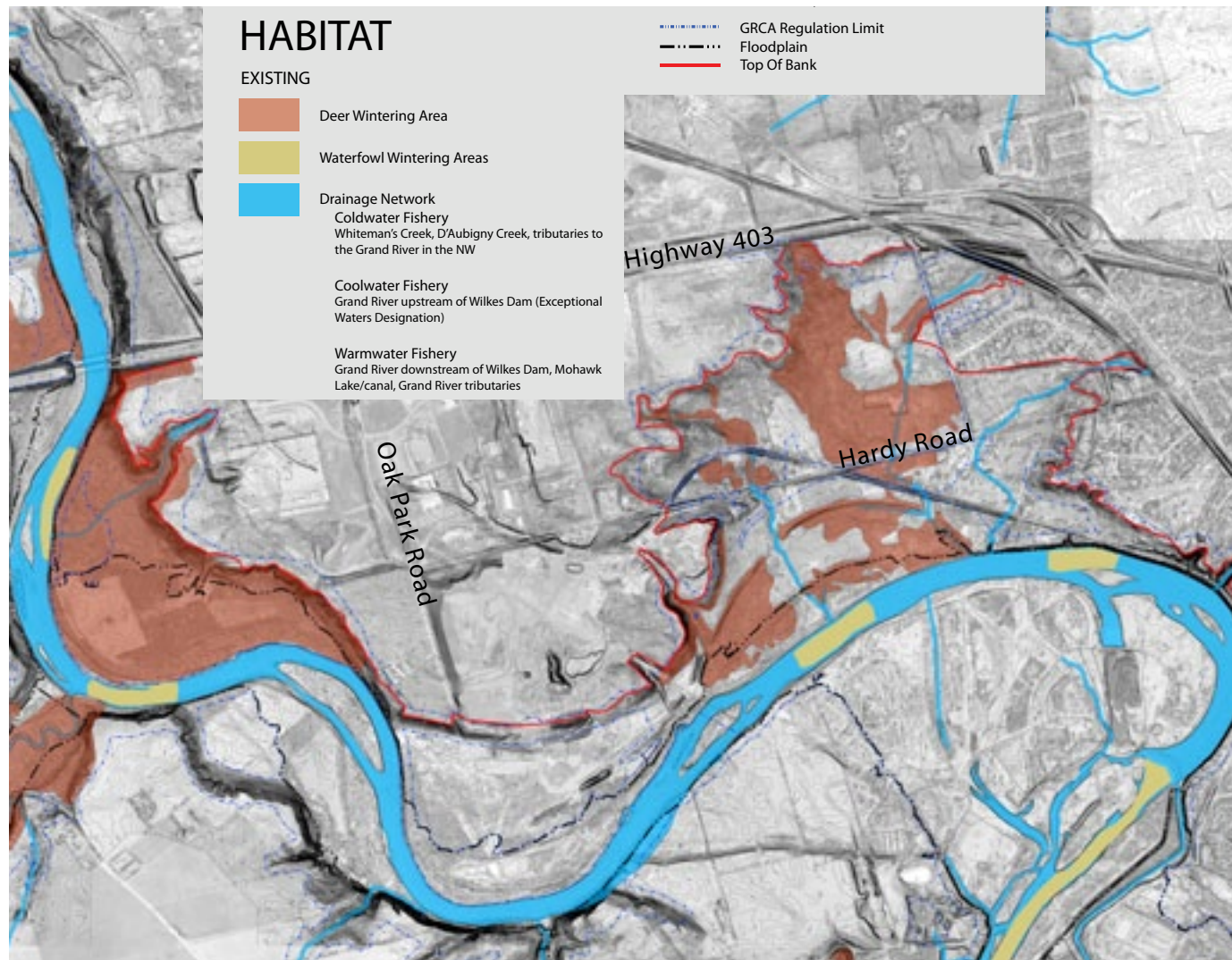
pressure. The ANSI incorporates marl deposits, a coldwater stream flowing through tufa and marl, more recent active springs with active tufa deposition, and part of the active floodplain of the Grand River. Large quantities of tufa from coldwater springs have not been previously reported in Ontario and are considered rare in Canada. The ANSI offers excellent educational, interpretive and scientific opportunities.

The Grand River Forest ESA is associated with the Grand River valley slopes/terraces and floodplain, and provides habitat for several Carolinian tree species, such as Hackberry, Sycamore, Sassafras, Hickories and Oaks. The Brantford Perched Fens are also associated with the ESA, providing habitat for relict species

with affinities for Great Lakes shorelines. The forested slopes of the ESA provide winter roosting habitat for wildlife species of Special Concern, such as bald eagle, and also support a great blue heron rookery (on the west side of the valley), and a deer wintering area.

The **Davisville Swamp PSW** is one of the largest remaining wetlands in the City of Brantford and a key core environmental feature within the Northwest. It forms the headwaters of a number of tributaries to the Grand River and provides an important groundwater recharge/discharge function. The wetland is associated with the Moffat moraine north of Hardy Road, and a meander cut-off and terrace slopes to the south of Hardy Road. The swamp habitat associated

with the wetland and the adjacent upland forest provides an important deer wintering area. The Davisville Swamp PSW serves an important linkage corridor function between natural areas associated with the Grand River valley, and provides habitat for species at risk. Protection and enhancement of this core environmental feature is of paramount importance to achieve the goal of long-term environmental sustainability. Other noteworthy natural heritage features within the Northwest sector of the City include the **Brant Conservation Area**. It supports floodplain wetlands as well as rare plant communities such as savannah and prairie that provide habitat for a variety of rare species.



The Northwest has a **highly sensitive groundwater regime** evident by the presence of the perched prairie fens with marl deposits and other PSW features associated with valley slopes, terraces and cut-off meanders. The tableland areas within the Northwest sector are comprised of well-drained sand and gravel deposits associated with the Moffat Moraine and a former glacial spillway that is bisected by the Grand River. The high rates of infiltration in this area sustain the unique natural heritage features and hydrogeological processes. The groundwater regime in the Northwest is very important for sustaining stream baseflow, temperature regime, water quality and the fish community in the Grand River, as well as the tributaries originating in the Davisville Swamp PSW.

Maintenance of the quality and quantity of groundwater inputs to the river, as well as contributions from tributaries, such as Whiteman's Creek, are critical to protect Brantford's drinking water supply, which is drawn from a Municipal water intake located above Wilkes Dam.

This section of the Grand River supports a wide range of species of fish as well as several species at risk. Sustaining the groundwater regime in this area is also important for maintaining ice-free wintering waterfowl habitat, as well as habitat for species such as bald eagle that over-winter in the Northwest section of Brantford.

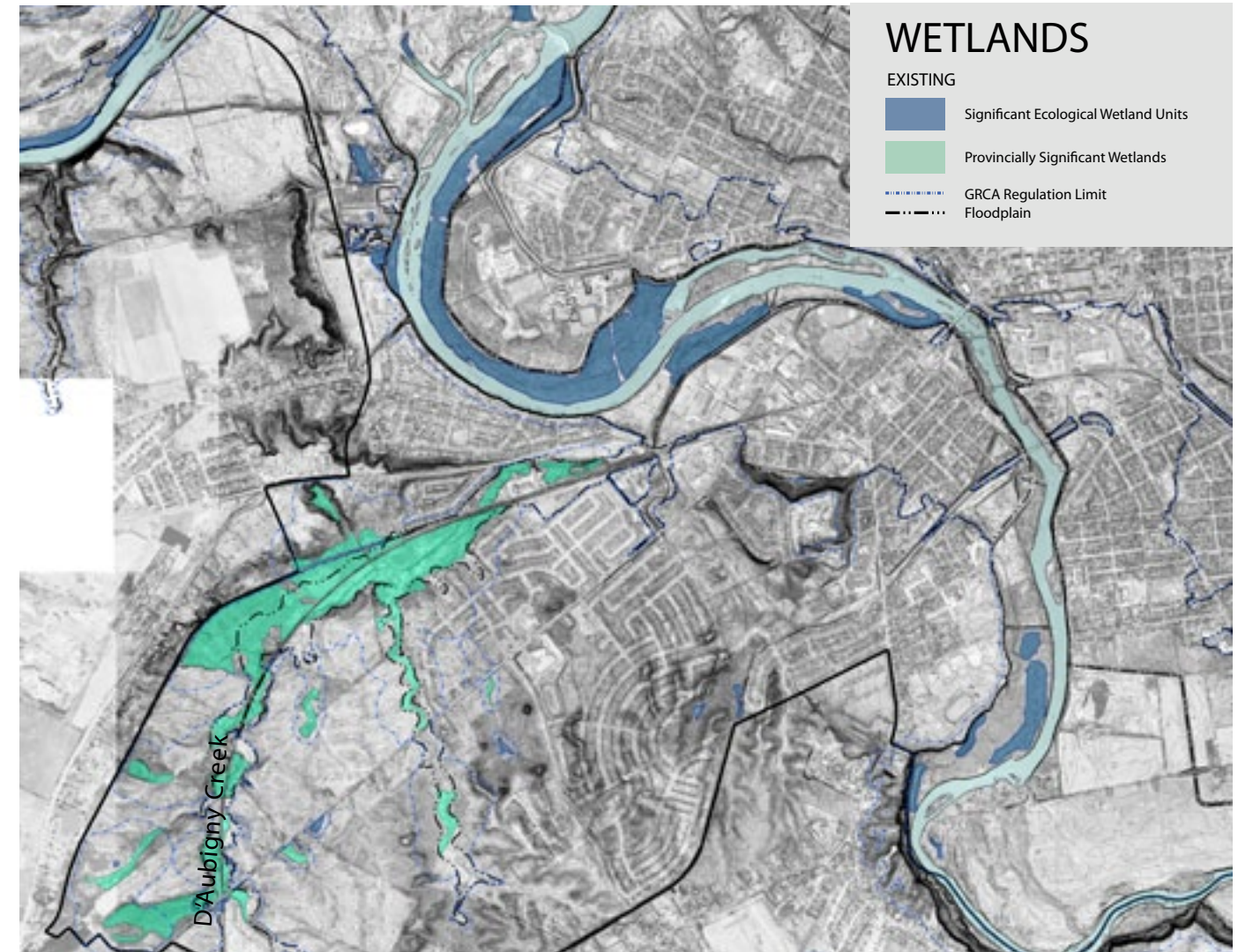
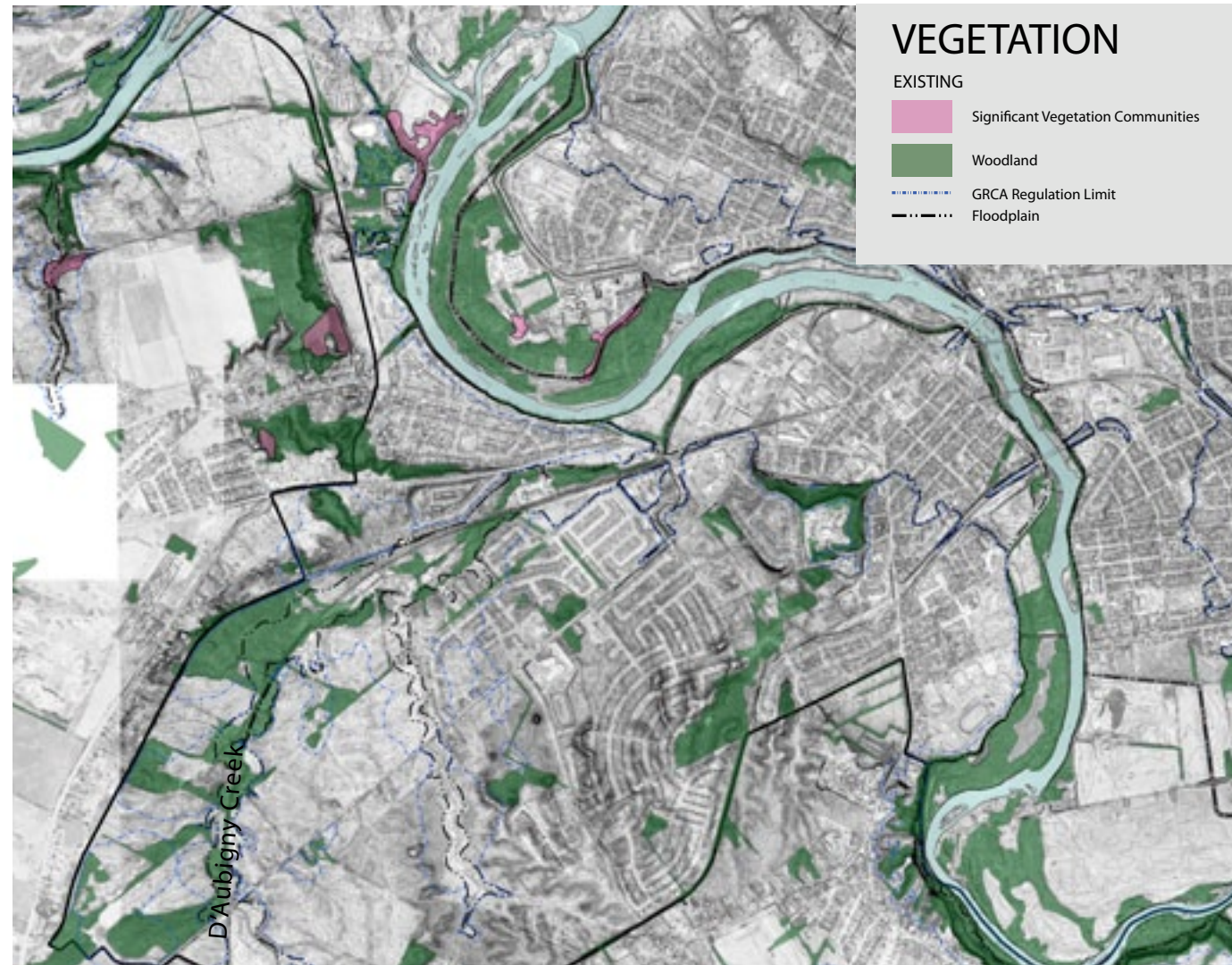
As well, **deer wintering areas**, as identified by Ontario's Ministry of Natural Resources, are identified in the Northwest sector (Grand River Forest ESA and Davisville Swamp PSW), Waterfowl wintering areas occur in traditional "ice-free" zones along the Grand River, mainly in association with groundwater influx to the River channel, and coldwater tributary confluences, and the reach below Wilkes Dam.

In the Northwest Sector, the limit of the Waterfront Natural Heritage System is defined by a 30 m buffer from the top of bank or edge of the natural feature, whichever is greater. The Limit includes the top-of-slope adjacent to the Davisville Swamp PSW and associated upland areas (north of Hardy Road, as well

as the River terraces and meander cut-off south of Hardy Road. The Limit of the natural heritage system in the Northwest Sector recognizes this important connection between natural features, surface water features and the groundwater regime.

Enhancement opportunities for the natural features, such as adjacent agricultural fields, aggregate extraction sites and cultural habitat, are identified. The lands within the 30 m buffer also provide an opportunity for passive (natural succession) and active (naturalization) restoration.

Central Sector Initiatives



Central Sector

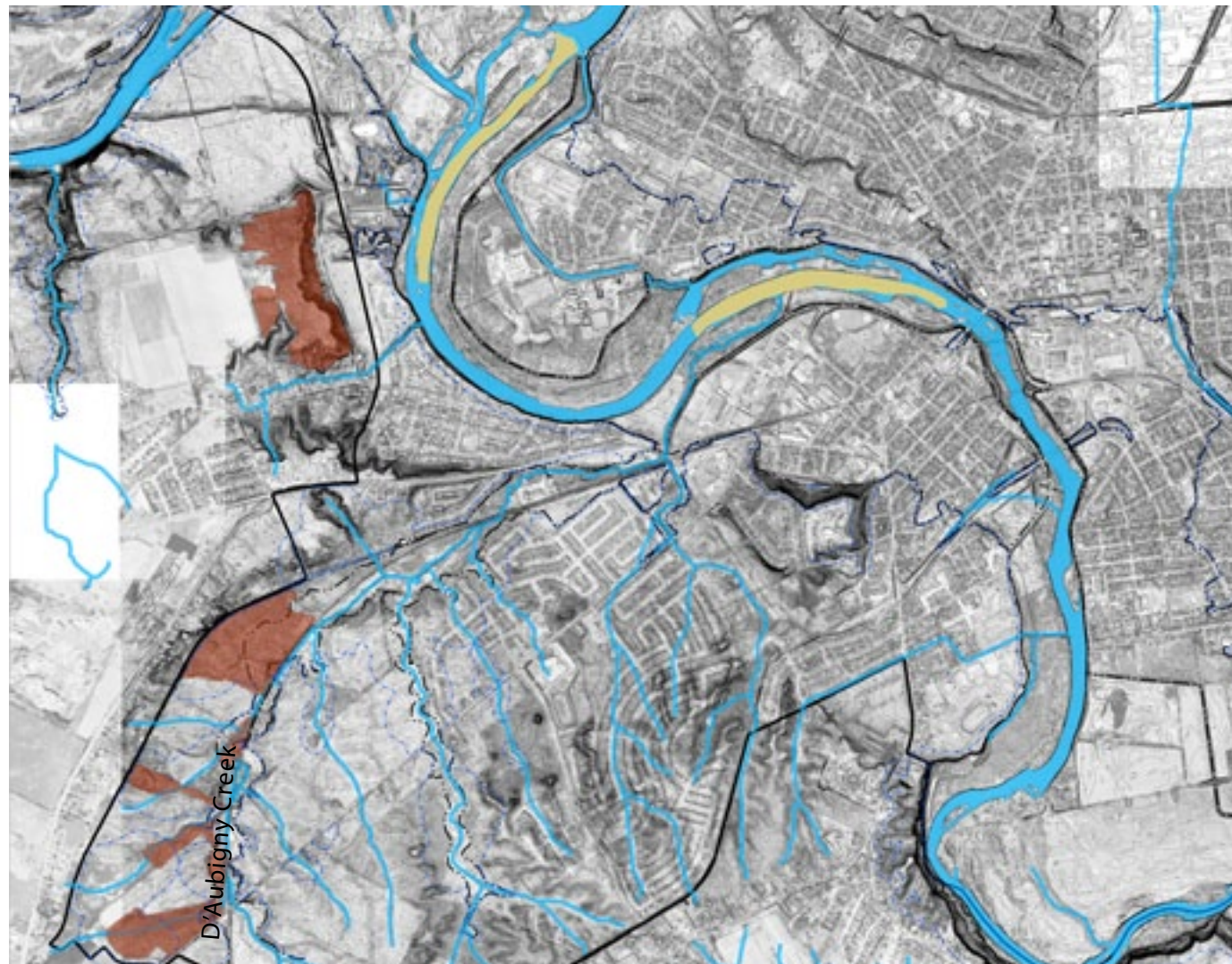
The Central Sector is the urbanized part of the City and includes the Lower Downtown and established residential neighbourhoods. Opportunities to restore the natural heritage system are limited by the built up nature of this segment. The lands in the southwest are included in the recently completed Southwest Brantford West of Conklin Secondary Plan that provides direction for these evolving neighbourhoods. The Waterfront Natural Heritage System builds on the environmental framework included in that Secondary Plan.

The key component of the Natural Heritage System in the Central Sector is Waterworks Park and its associated upland and bottomland forests and prairie communities. The mature, cottonwood forests associated with the Grand River floodplain provide suitable nesting habitat for bald eagle, a species of Special Concern, as well as important staging habitat for migrant songbirds before they move south through open urban areas. The River also provides an important source of food for birds of prey,

such as bald eagle and osprey, in the form of fish and waterfowl. Wintering habitat for waterfowl is associated with the ice-free zone below Wilkes Dam. The Brant Conservation Area, located on the opposite side of the Grand River, supports a variety of cultural, terrestrial and wetland habitats including significant plant communities such as oak savannah and prairie.

The Central Sector also includes the riparian woodlands and wetlands of Gilkison Flats

and Birkett Lane, and D'Aubigny Creek, a groundwater fed coldwater trout stream sustained by recharge in the Pleasant Ridge Road and Shellard Lane area. Gilkison Flats and Birkett Lane support a mixed lowland forest community dominated by Manitoba maple, eastern cottonwood, willow, black walnut and green ash. These riparian communities also exhibit a high percentage of highly invasive plant species such as garlic mustard, common buckthorn, amur honeysuckle, and urban avens. Disturbance



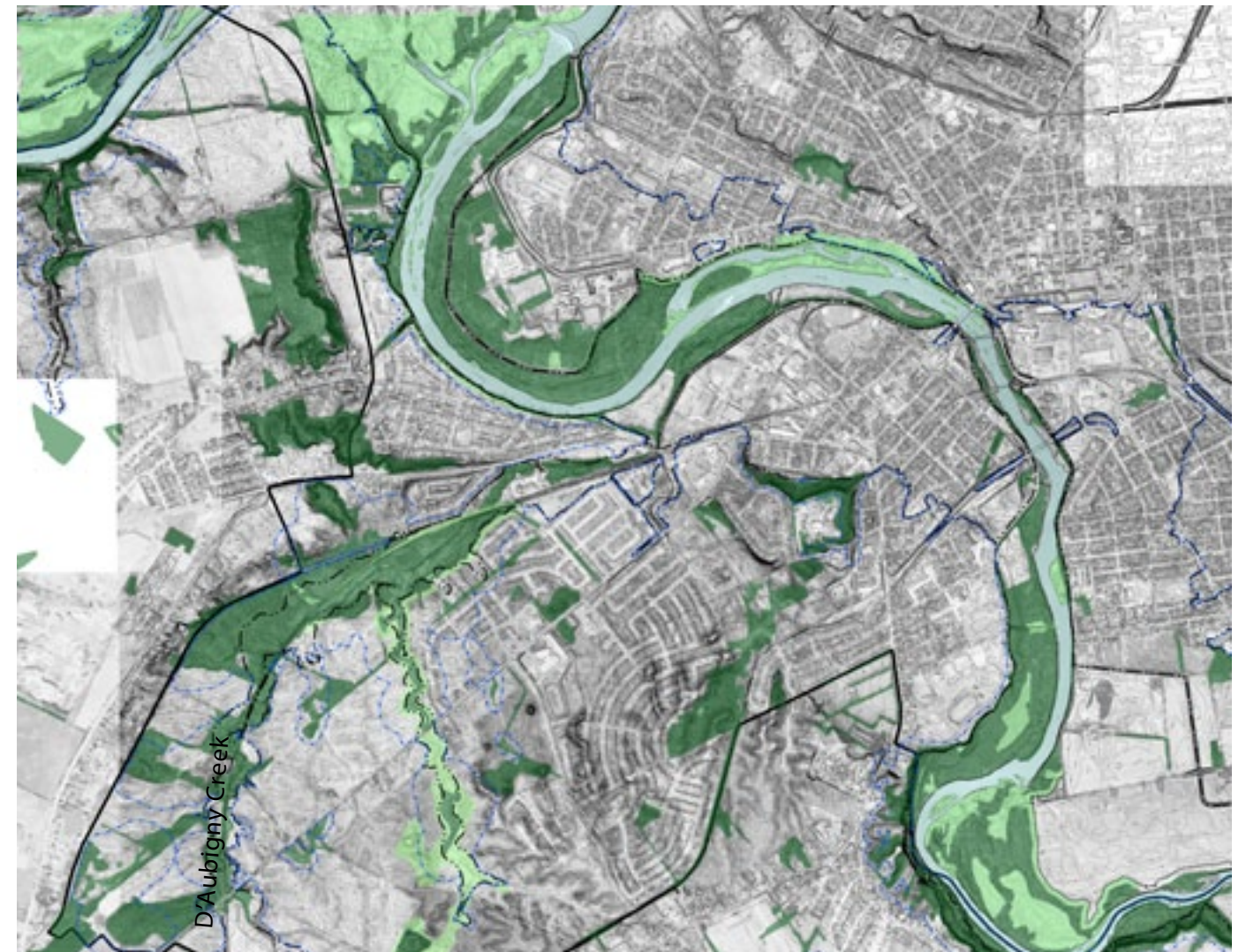
HABITAT

EXISTING

- Deer Wintering Area
- Waterfowl Wintering Areas
- Drainage Network
Coldwater Fishery
Whiteman's Creek, D'Aubigny Creek, tributaries to the Grand River in the NW
- Coolwater Fishery
Grand River upstream of Wilkes Dam (Exceptional Waters Designation)
- Warmwater Fishery
Grand River downstream of Wilkes Dam, Mohawk Lake/canal, Grand River tributaries
- GRCA Regulation Limit
- Floodplain

from off-road vehicles and informal trail creation is problematic in these areas.

The D'Aubigny Creek system supports a mosaic of provincially significant wetlands and woodlands that provide a linkage connection between the Grand River and the D'Aubigny Creek Swamp ESA to the south west. Due to the built-up character of the Central Sector, restoration opportunities are limited to narrow strips or patches along the River, existing parkland, the dyke, the open fields



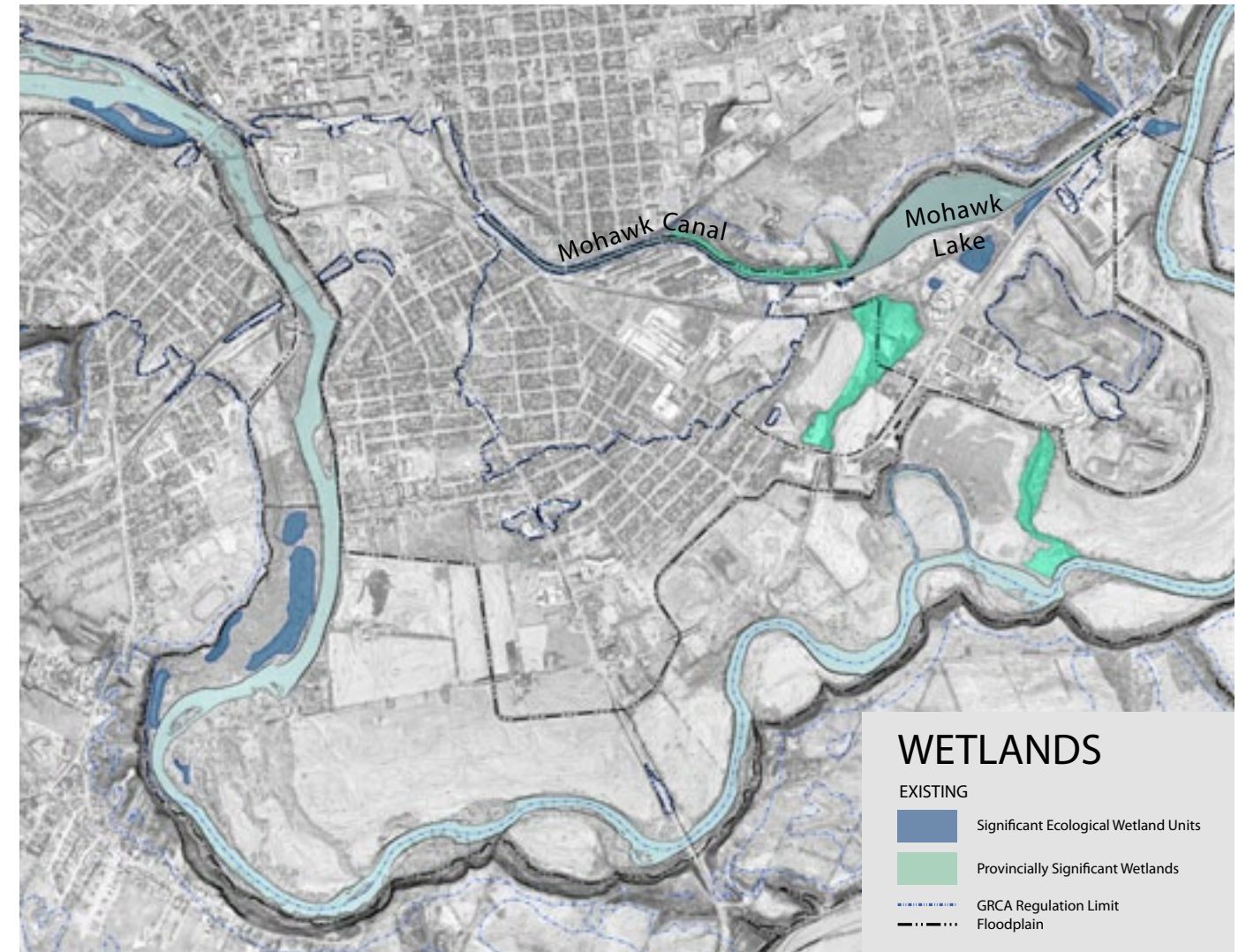
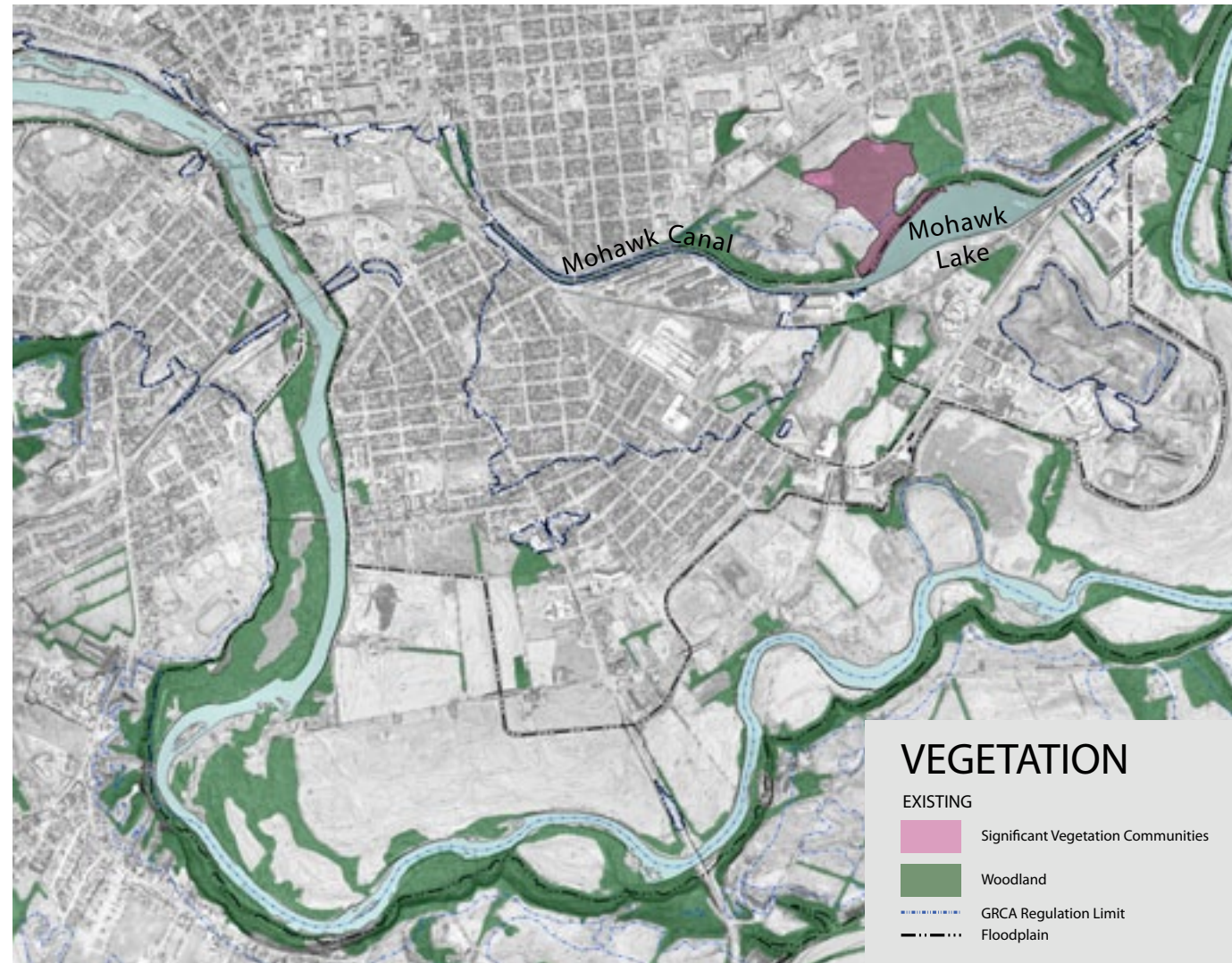
NATURAL HERITAGE

- Potential Restoration Area
- Core Environmental Features
- 30m Buffer
- GRCA Regulation Limit
- Floodplain

south of Pleasant Ridge Road, and the buffers associated with the D'Aubigny Creek system.

In the Central Sector, the limit of the Natural Heritage System is defined on the south by the floodplain or edge of riparian vegetation through the built up areas and a 30 m buffer from natural features along D'Aubigny Creek and associated tributaries.

Southeast Sector Initiatives



Southeast Sector

The Southeast Sector is characterized by a narrow, patchy band of riparian vegetation along the edge of the River. Typical tree species present along this stretch of the river include Manitoba maple, willow, cottonwood and black walnut. This section of the River provides important habitat for several species at risk, including fish, turtles and molluscs. Protection of the stream banks/channel and water quality in this reach of the Grand River is essential to sustain viable populations of these

species. Other important elements of the Natural Heritage System include the Mohawk Canal and Oxbow PSW (partially associated with cut-off river meanders), Mohawk Lake, the Mohawk Park oak woodland (provincially significant plant community), wooded ravines, and remnant woodlands. The wooded slopes on the south side of the Grand River are also a key component of the Natural Heritage System.

In the Southeast Sector, the limit of the Waterfront Natural Heritage System is defined by the floodplain through built up areas, and a 30 m buffer from the edge of channel or riparian vegetation associated with River, unevaluated wetlands and PSW's, woodlands and Mohawk Lake and canal. Enhancements to core environmental features and linkages include the buffer areas, the open habitat associated with the Birkett Lane Woods and agricultural fields located between the dyke and the River. Mohawk Lake and canal

also represents a significant restoration opportunity from a fisheries and wetland habitat perspective. The oak woodland associated with the park would also benefit from management to control invasive plants and promote regeneration of prairie species.



HABITAT

EXISTING

- Waterfowl Wintering Areas
- Drainage Network
 - Coldwater Fishery
Whiteman's Creek, D'Aubigny Creek, tributaries to the Grand River in the NW
 - Coolwater Fishery
Grand River upstream of Wilkes Dam (Exceptional Waters Designation)
 - Warmwater Fishery
Grand River downstream of Wilkes Dam, Mohawk Lake/canal, Grand River tributaries
- GRCA Regulation Limit
- Floodplain



NATURAL HERITAGE

- Potential Restoration Area
- Core Environmental Features
- 30m Buffer
- GRCA Regulation Limit
- Floodplain

Restore/Enhance Natural Areas



1. A minimum 30 m buffer is recommended from all Environmentally Sensitive Areas, Provincially Significant Wetlands, Areas of Natural and Scientific Interest, rare plant communities, valleylands, watercourses, woodlands and other wetlands. The buffer should be planted with native species indicative of the local setting.
2. Invasive plants should be removed from natural areas and replaced with native plants suitable for the habitat conditions present. Plant removal should be conducted in a phased manner to minimize habitat disruption and impacts to wildlife (e.g. nesting or over-wintering birds). Priority should be given to invasive plant control in higher quality natural areas such as those found in the Northwest sector (e.g. prairie/savannah, floodplain forests, Grand River Forest ESA). Plant material should be sourced from local nurseries or other sources deemed appropriate by the Ontario Ministry of Natural Resources (OMNR) and the Grand River Conservation Authority (GRCA).
3. To minimize habitat disruption and disturbance in sensitive natural areas, consideration should be given to closing informal trails and trail re-location. Trail closure signage combined with dense shrub plantings and selective placement of logs/slash should be used to discourage pedestrian access. Closed trails should be allowed to regenerate naturally.
4. The corridor linkage function through the Central Sector should be enhanced through a combination of native plantings within the riparian buffer zone (i.e. dense shrub thickets with trees), the creation of a meadow/prairie on the side slopes of the dyke. In the built up areas, consideration should be given to Green Roof technology and enhanced streetscape plantings to provide a source of food, cover and shelter for migrant and summer resident birds.
5. Develop a program for the on-going management of existing prairie, savannah and oak woodland habitat on public/private lands in partnership with OMNR, GRCA, City of Brantford, local interest groups and residents. A good model for this is the City of Toronto High Park - Black Oak Woodland/Savannah Management Plan (i.e. partnership between the City, MNR and local residents).
6. A rare species recovery and invasive plant species control program should be developed in partnership with OMNR, GRCA, City and other local interest groups.
7. Establish a Community Stewardship Program where volunteers are assigned to the maintenance and monitoring of a restoration site/area of their choice. Work should be structured to enable participants to work in a team guided by an experienced volunteer team leader. The teams should be organized to visit a site at least monthly to, for example, weed invasive non-native plant species, collect litter, plant meadow and prairie vegetation, and plant trees and shrub thickets. A good model for this is the Community Stewardship Program for Bring Back the Don in Toronto. This program is guided by a city staff dedicated to the role of stewardship coordinator.

Riparian Buffers (protected planting at the water's edge)



A 30 m buffer should be established along the edge of the Grand River and its tributaries. The buffer should be planted with native species indicative of the local setting. Planting themes should include the re-creation of prairie, savannah, oak woodland, riparian forest and wetland (marsh, thicket swamp) communities.

Disturbed, exposed stream banks should be stabilized using bio-engineering methods (e.g. fascines, root-wads, dense shrub plantings). Planting methods and species selection should be determined in consultation with the GRCA.

Potential Restoration Areas



Areas for enhancement are identified on the Natural Heritage Plan. These areas are in the floodplain and/ or below the top of bank and have been degraded from farming, industrial operations or landfilling. These areas can provide key connecting links to repair the health of the ecosystem and increase its resiliency to urban pressures. The areas should be planted with native tree and shrub species for naturalization.

Key Restoration Areas include:

- the connection between the Davisville Swamp Provincially Significant Wetland and the Grand River Forest Environmentally Sensitive area
- Brant Conservation Area
- the Telephone City Aggregates Site
- the landfill
- open fields and agricultural lands in the Southeast Sector adjacent to the River
- D'Aubigny Creek

The existing linkage connection between the Davisville Swamp PSW and the Grand River Forest ESA should be strengthened by a combination of active and passive restoration of existing agricultural fields and aggregate extraction areas identified on the

Natural Heritage Plan. A variety of habitat types should be considered in the restoration process (e.g. prairie/savannah, old field meadow, shrub thicket, woodland). Native plant species indicative of the surrounding landscape should be used. Restoration plans should be developed in consultation with the OMNR and GRCA.

Closed sections of landfill should be restored with plant material that is compatible with slope and soil conditions. A good precedent is the restoration done at the Essex County Landfill Site No. 3 (Maidstone) through a partnership between OMNR and the Essex Region Conservation Authority.

Native trees and shrubs for naturalization

oaks (red, white, black and bur),
maples (sugar, red, silver and black),
hickories (shagbark, bitternut),
American sycamore,
hackberry,
eastern cottonwood,
white pine,
dogwoods (red-osier, grey, alternate-leaved, and flowering),
viburnum (maple-leaved, nannyberry, high-bush cranberry),
brambles (raspberry, blackberry),
chokecherry,
serviceberry.

In addition, the study area provides habitat for approximately 50, S1-S3 ranked provincially rare plant species, mainly from prairie, savannah and oak woodland habitats.

Reforest Lands (Adjacent to the Grand River & its Tributaries)



American Forests recommends an urban forest cover of 40% (1). Brantford's forest cover is about 23.5% (2). An urban neighbourhood reforestation program should be developed to increase tree canopy cover and increase the diversity of native species.

Promote environmental stewardship, public education and restoration through establishment of an "Ecology Park" following City of Peterborough Model. Peterborough's Ecology Park provides residents with information and examples of low maintenance, natural gardening alternatives, and an affordable source of native trees, shrubs and groundcovers.

1. As according to American Forests, "Urban Tree Canopy Goals", <http://www.americanforests.org/resources/urbanforests/>

2. As according to the GRCA, "Apotex Pharmachem: Growing trees for Brantford's schoolyards", <http://www.grandriver.ca/>

Protect & Improve Water Quality



Low Impact Development (LID) stormwater management measures should be implemented including Bio-retention swales and greenways, Green Roofs, Permeable Pavers, Rain Barrels and Cisterns, Soil Amendment and Tree Box Filters. The primary objective of LID measures is to collect, detain, polish and filter post-development runoff uniformly across a site to maintain or enhance the site's pre-development hydrologic functions and inter-connections with natural heritage features/functions (e.g. wetlands, watercourses, and groundwater regime). The benefits of LID measures include improvements to surface water quality and groundwater regime, reduced demands on municipal water supply, reduced urban heat island effect, improved air quality, habitat creation, and better quality of life. LID measures are required in an increasing number of municipalities in the GTA, through sustainability action plans and OP policies.

Create "first-flush" floodplain wetlands to polish/filter runoff from urban storm drains. Creation of floodplain wetlands, particularly in the Southeast, would provide for improved water quality and water retention during floods.

Meadow/Prairie Landscape on the Dyke



Meadow and/or prairie vegetation should be established on the side slopes of the flood protection dyke. To provide for visual inspection of the dyke and repairs (where required) the vegetation should be mowed (or burned) on an annual basis. This management measure will preclude the establishment of woody species, which could undermine the integrity of the dyke. Restoration of the floodway (passive or active) should ensure that the flow conveyance function of the land is not compromised.

Extension of the Environmental Framework Beyond City Boundaries



The County of Brant should be encouraged to adopt the environmental principles and initiatives of the Waterfront Master Plan, including the implementation of 30 m buffers from the edge of natural features and restoration of agricultural land associated with the Grand River corridor.

Protect & Enhance Wildlife Habitat



Wildlife crossing signage, traffic calming measures and dry culverts should be implemented in areas with a high potential for wildlife movement between habitat patches. Priority locations to protect and enhance wildlife habitat are D'Aubigny Creek, Birkett Lane, Mohawk Canal, Waterworks Park, Brant CA, Gilkison Flats and the Northwest sector. Measures similar to those used on Hardy Road should be applied elsewhere.

Fish and wildlife habitat, and wetlands associated with Mohawk Lake and Canal should be restored following the recommendations in the Grand River Fisheries Management Plan (GRCA 1998) and previous studies completed for the City (i.e. Mohawk Lake Revitalization Plan 1999). Restoration plans should be developed in consultation with OMNR and GRCA.

Implement the recommendations from the bald eagle habitat management guidelines completed as a special study component of this Waterfront Master Plan to protect the preferred wintering and breeding habitat of this species, and to increase population size and site fidelity (see appendix). Implement the habitat management recommendations prepared for other species at risk (endangered, threatened, special concern) that have been identified within the study area.

Enhance the Landscape of Municipal Parks (Adjacent to Grand River & its Tributaries)



With the exception of Lorne Park, other City parks along the water's edge should be naturalized with native species, particularly in riparian and woodlot buffer zones. Native planting themes should include – prairie/savannah, deciduous forest, deciduous bottomland, meadow/thickets, and wetlands. In addition, most parks need forest management plans to eliminate invasive plant species from the woodland areas.

Shoreline Erosion & Flooding



Erosion and flooding are natural processes associated with the River. Erosion occurs along the outer banks of the River where flow velocities are higher. This does not constitute a problem unless development has been located too close to the eroding bank. Flooding occurs within the river floodplain, during the spring freshet and following high rainfall events. Dykes have been constructed to protect development within the flood plain. There are numerous locations along the River where development has occurred within the erosion hazard limit. In many cases, owners have attempted to address the hazard without obtaining the required permits. The result is illegally dumped scrap concrete and shoreline protection works that are not engineered and are in various states of disrepair. The City is monitoring flood and erosion threats in these locations:

Colborne Street East Landslide Area (Erosion)

- There is a history of landslides at Colborne Street East. Inclinometers showed some movement in the past year. These have been associated with elevated groundwater levels. Displacements in the upper slope were coupled with erosion at the river's edge. Based on the monitoring results, additional deformations

possibly triggering a larger scale movement are anticipated. In the meantime, proper signing of trails and regular monitoring were recommended. This should be continued.

Oakhill Drive (Erosion)

- There has been ongoing erosion and bank instability along the south bank of the Grand River that borders Oakhill Drive, which is located on the outside bend of the river meander. The erosion is progressing towards the adjacent pathway, roadway and residential development. A geotechnical investigation was undertaken for the City of Brantford. Several remedial alternatives were recommended including a rock berm. Stabilization has not yet been implemented, but should be.

Gilkison Street (Flooding)

- Gilkison Street floods regularly at the bridge, on the right side of the river (looking downstream). The flooding is most frequent during the spring freshet and the road has to be closed. No decision regarding realignment of the road or alternative remedial options to address the flooding issue has been made by the City. The City should monitor the impacts of flooding at this location and determine the best remedial options.

A Comprehensive Program of Signage, Information & Interpretation



Expand and coordinate the nature interpretation program with a comprehensive signage system to educate the public about the importance of environmental protection, restoration and good stewardship practices through use of trail side kiosks, interpretative signs, brochures, a homeowner's manual, school programs, community projects and River Watch volunteers.

Trees & Forests



Prepare a City Tree/Woodlot By-law that restricts landowners from cutting trees without a permit. The intent of the by-law is to ensure that forest management plans and tree cutting on public and private land is reviewed by the City Arborist and Ecology staff, prior to issuing a permit. Protection and enhancement of habitat for Species at Risk should be accounted for in the issuance of permits and implementation of forest management plans. Tree-cutting and forest management plans should be monitored by an environmental site inspector, hired as new staff or current arborist.

Brantford's urban forest is characterized by the Carolinian forest zone. The forests are affected by invasive species, pests and pathogens, soil erosion and limited soil volume in some locations. The City should complete an Urban Forest Management Plan for both public and private land. As an example, the City of Guelph is conducting a Plan to review the current state of the City's urban forest and to provide a long term framework to manage the urban forest on both public and private land. The City of Burlington has recently completed a draft Urban Forest Management Plan



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PARKS

The vision for the Parks component of the Waterfront Master Plan creates a unifying identity for existing and possible public parkland that could exceed 500 hectares. It identifies a continuous greenway at the water's edge, and key connections to enhance community-wide access to the park system. The vision demonstrates how this framework of parks and open space will contribute to enhancing the natural heritage system.

In 1914 landscape architects Dunnington Grubb prepared a report to the City of Brantford Parks Commission on Future Development and Improvement. The authors said that *"few cities enjoy so fine a natural setting as Brantford. ... Both River and hills are inestimable assets to citizens at large, intercepting the view of every turn with features of interest."* Almost 100 years ago, Dunnington Grubb said that *"had a definite plan been prepared in the past to which all developments were to be referred, certain lands, which used to be City property, would never have been allowed to pass into private ownership; opportunities would have occurred for acquisition of lands likely to be needed as parks in the future...and River banks would not have been delivered into the hands of railway corporations"*.

The City has a long history of its commitment to assembling parks and open spaces along the Grand River and its tributaries. By 1914, the City had acquired Waterworks Park, Mohawk Park and Lorne Park. Since that time, Gilkison Flats, Fordview and D'Aubigny Park have been assembled to create a connected system of parks and open space along the Grand River through the Central Sector of the City. There are about 250 hectares of public park and open space along the Grand. With the addition of the 185 hectares of the Brant Conservation Area and the Oakhill Cemetery (29.03 ha), there are about 465 hectares of parks and open space along the Grand River. This has been achieved as a result of the foresight of the City's elected officials over the past several decades.

The vision for the Parks component identifies several key locations for new river side public space. These locations will help to complete a network of public space along the entire Grand River corridor through the City.

The vision for the Parks component includes suggestions for:

- a continuous linear greenway along the Grand River in the Northwest and in the Southeast;
- Brant Conservation Area redesigned with an "environment first" master plan;
- enhancement to existing parks;
- new parks in the Northwest and Southeast; and,
- long term rehabilitation of the landfill as public open space.

A number of studies have been reviewed and provide the context for the recommendations in this chapter:

Brantford Core Area Waterfront Study
Downtown Master Plan
Dunnington-Grubb Report, 1914
Lorne Park Master Plan
Mohawk Lake Land Use Planning Study, 1987
Mohawk Lake Rehabilitation Plan, Sediment Assessment, 1995
Mohawk Lake Restoration and park Development Master Plan Brief
Mohawk Lake Revitalization Plan, 1999
Parks and Recreation Master Plan, 2003
Restoring the Alfred Watts Hydro Generating Plant
West of Conklin Secondary Plan, 2008
Master Plan for the Brant Conservation Area 1990

What We Heard

Need a location along the waterfront where events and festivals could take place.

Keep the waterfront public.

Need public information to educate the public on what the system has to offer and to explain the significance of the parks.

Need more public washrooms in city parks.

The Study should prevent blocking off the waterfront from public use, in particular in the Northwest and Eagles Nest Tract area.

Need more programming to the City's park system.

Principles

Provide a publicly accessible continuous linear greenway along Grand River and its tributaries.

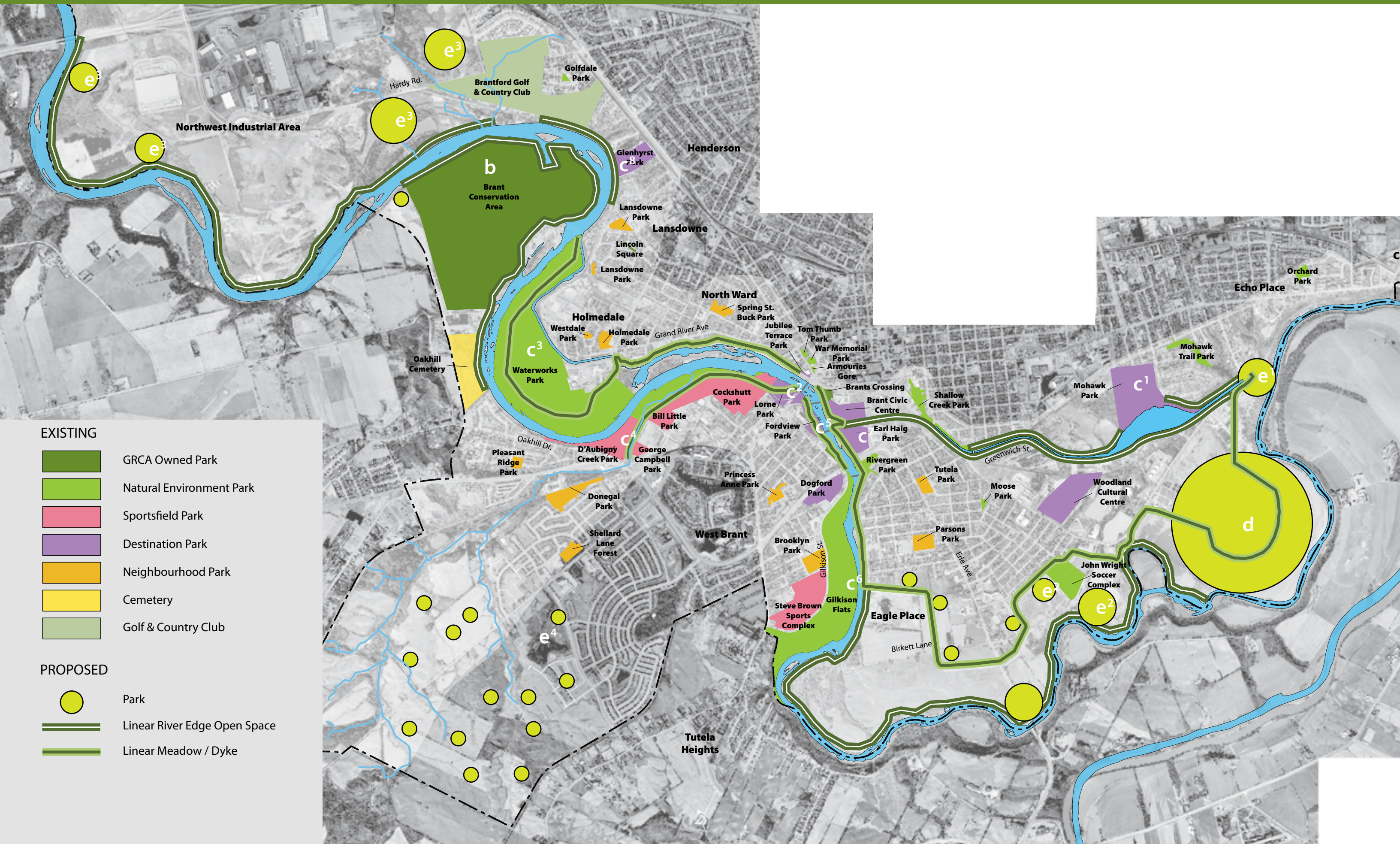
Provide a variety of parks for year round active and passive uses that complement their waterside location appealing to both residents and visitors.

Enhance the landscape character of all parks to ensure they complement the natural features.

Develop new riverside parks in the Northwest and Southeast Sectors of the study area to provide public access and a focus for recreation.

Key public lands such as including the Brant Conservation Area, landfill (in the very long term) and Mohawk Lake, Canal and Park should become demonstrations of leading edge environmental restoration as the setting for the major nodes of recreation.

Parks Framework



EXISTING

- GRCA Owned Park
- Natural Environment Park
- Sportsfield Park
- Destination Park
- Neighbourhood Park
- Cemetery
- Golf & Country Club

PROPOSED

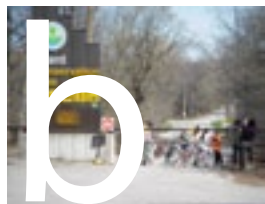
- Park
- Linear River Edge Open Space
- Linear Meadow / Dyke

This chapter describes the key initiatives for the Park component of the Waterfront Master Plan. It builds on the work outlined in special studies for specific parks, it recommends important actions to repair the landscapes of properties that are already in public ownership, it supports many of the ideas for new parks and facilities that has been tabled by the community in the past and it suggests sites to enable continued public access to the River over the long term. The Parks Map identifies the existing public park space - owned by the City or Grand River Conservation Authority. City parks have been categorized according to their dominant features/facilities as: Natural Environment, Sportsfield, Destination (facilities/amenities that attract tourists, as well as residents) or Neighbourhood.



A continuous linear greenway along the Grand River in the Northwest and in the Southeast

The City has established continuous riverside access along the Grand River through the Central Sector. This has afforded residents and visitors an opportunity to engage in a variety of recreation activities from the sports fields in Waterworks Park and D'Aubigny Creek Park to horticultural displays in Lorne Park to the natural environment park of Gilkison Flats. A continuous linear greenway will extend the opportunity for public use and access through to the Northwest and Southeast Sectors of the River. In addition, a continuous linear greenway should be enhanced along Mohawk Lake and Canal.



Redesign of the Brant Conservation Area

The Brant Conservation Area is owned by the Grand River Conservation Area. It is a popular destination for camping, and is well used by hikers, cyclists and anglers. The Conservation Authority identifies this site as a good destination for fishing with the ponds and access to the River via their boat launch. The Conservation Area also has a pool and splash pad and a day camp that is well used by visitors. Public access to the Conservation Area is controlled through a gatehouse from April to October. The Conservation Authority is considering a proposal to relocate and redesign the gatehouse.

The Conservation Authority prepared a Master Plan for the Conservation Area in 1990. As a 20 year old plan, it needs to be updated. An "environment first" master plan should be prepared for the Area. Through a master plan, the natural features and habitats could be enhanced to contribute to the natural heritage system that this Waterfront Master Plan is establishing. Originally, this site was a farmer's field and therefore, woodland is limited. Currently, most of the site and River bank continues to be devoid of trees and camping occurs at the River edge on mowed sites. This Area should demonstrate the very best in environmental practice - and this is what a site specific master plan could explore. Uses should be located within the context of a landscape plan that re-establishes natural features in the Area. A continuous greenway at the River edge with a vegetated buffer, is a starting point. Mowing within 30 m of the River edge should be eliminated. It is recommended that camp sites at the water's edge be setback to the edge of the buffer with foot paths to the River edge. A foot path should be located in the buffer to enable continuous access along the River edge, if only from October to April.



Building on the existing system of parks

The park and open space system offers a wide range of River experiences, through a variety of active and passive activities. The sites are an aggregate of some of the area's most significant natural features, and the context for this Province's earliest settlements. The parks and open spaces are the backbone of residential neighbourhoods and destinations along many kilometers of trails. The vision for the Parks component enhances the City's existing natural environment, destination and sports parks that are located adjacent to the River and its tributaries.



Mohawk Park, Lake and Canal, a destination park

Mohawk Lake and canal were initially dredged to enable a bypass to the Grand River. Later it was used to generate power. The remnants of the powerhouse and penstocks remains near the canal outlet to the Grand. Through the 1950's, Mohawk Park was a popular site for concerts, boating, fishing and picnics. Today, the lake's water quality has suffered the impact of storm water drainage and industrial discharge and the shallow turbid lake is now home to an invasive population of carp. The City completed studies to assess the best method of improving water quality and restoring aquatic habitat 10 years ago. However implementation has been stalled due to lack of funding. Improvement of water quality is an imperative first step in upgrading Mohawk Park.

Mohawk Park includes a pavilion that is a popular venue for weddings, dances and other social functions. The Park has a full range of amenities including a bandshell, sports fields, playground, disc golf and a new splash pad. With the exception of the splash pad, all of the facilities are aging and in need of upgrades.

Mohawk Park, Lake and Canal are an obvious unique amenity for Brantford. With the combination of its natural features, history and remaining heritage resources, this is an obvious location as a major focus in the Waterfront Master Plan. Consistent with the approach for the Grand River, a continuous linear greenway along the Canal is suggested. This greenway could then provide for other nodes of recreation activity. Greenwich Street and Forest Road follow the Canal and lake edge and provide access and views to this Park. These streets should be designed with special streetscape to clearly identify and celebrate their waterside location. The streetscape design to accommodate on-street parking, access to the water's edge and riparian buffers to limit access elsewhere. Fencing should be removed, all or in part, from the park side of Forest Road.



Lorne Park, a destination park

Lorne Park was purchased by the City following the report prepared in 1914 by Dunnington-Grubb. The park was originally conceived to be the starting point for two riverside drives that would wind east and west along the south bank of the Grand River. The City acquired Lorne Park and Fordview Park in 1920. Lorne Park features Brantford's finest horticultural gardens and floral attractions. The displays are a centrepiece to highlight many of the community anniversaries and special events. The carpet beds of flowers have been recognized as being among the finest in Canada. Lorne Park is a focal point of attention and functions as a western gateway to downtown.

A Master Plan for Lorne Park was prepared in 2003 following direction in the Parks and Recreation Master Plan to address issues related to parking, tour buses, traffic volume and speed on Ballantyne Drive, the alignment of the City's trail system and the possibility of other uses such as a concession or a tea house. The Lorne Park Master Plan made several recommendations including: closure of Ballantyne Drive off Colborne with access re-directed to Gilkison Street, a series of lawns, retaining the existing carpet bedding with enhanced perennial shrub planting and annuals, relocation of parking to the north side of Ballantyne, creation of a bus layby lane on the southbound lane of Colborne Street and separate paths for pedestrians and cyclists. In addition, it was recommended that the adjacent automotive use on the southeast corner of the Park should be purchased and incorporated into Lorne Park.

The Lorne Park Master Plan has not been implemented due to lack of funding. The high priority items in Phase 1 included closing Ballantyne Drive, construction of a new park access road and parking lot, construction of the bus layby lanes, improvements to paths, lighting and upgrading the plaza. The cost of the high priority item in Phase 1 was estimated to be about \$300,000 at the time the original report was written. Lorne Park is one of the City's most historic parks, and one of the City's most important destination parks. Improvements to the Park should be given priority.



Waterworks Park, a natural environment park

Waterworks Park was identified as a public park in the 1914 report to the City's Parks Commission. It was purchased by 1916 and during the 1930's, Waterworks Park became the site of extensive tree plantations. The Park is identified as having significant natural features of woodland and meadows and is a popular destination for picnicking, sports and walking. There is an extensive trail system through the Park that requires some rationalization based on a user study. The City has a Forest Management Study underway that will become the basis to manage the woodlands in the Park. This large park could accommodate other uses in the open field areas such as an off-leash area for dogs and other recreation uses such as disc golf. The chain link fencing along the entrance road should be removed and a park sign should be located at the entrance from Grand River Avenue, and specifically include snowmobile and other motorized uses, as well as trail bike use signage.



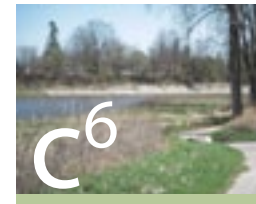
D'Aubigny Creek Park, a sports park

D'Aubigny Creek Park provides four major sports fields making it an important component of the City's supply of facilities. East of the sports fields, the Park is comprised of natural woodland along the River edge and the mouth of D'Aubigny Creek, a significant coldwater stream. A river's edge buffer along the sports fields should be re-established. Care should be taken to ensure the sports fields are designed to be compatible with the River side location, for example, by ensuring no artificial fertilizers are used. Over time, the City should consider the opportunity to relocate the fields if other park space becomes available to accommodate the sports field.



Fordview Park, a destination park

Along with Lorne Park, Fordview Park was identified in the 1914 report to the City's Parks Commission. It was developed as a park in the 1950's when the City's public works yards were relocated. It complements Lorne Park as a gateway to downtown. It also provides access to the pedestrian bridge crossing to the Brantford and District Civic Centre, a critical link in the trail system connecting both sides of the River. The trail system through the Park follows the vegetated buffer along the River edge. The Park includes some fitness stations along the trail. A key initiative for this Park is forest management to enhance the quality of the River edge woodland and its habitat.



Gilkison Flats Park, a natural environment park

Gilkison Flats Park contains the riverside woodlands east of Gilkison Street. The Park provides the setting for the City's trail system. There are some open fields along Gilkison Street that could accommodate some active recreation that could complement the sports fields in Steve Brown Park, while not affecting the natural features of the Park and not requiring extensive maintenance.



Earl Haig Family Fun Park, a destination park

Earl Haig Family Fun Park has a leisure pool, water slide, mini golf, batting cages, beach volleyball, playground wading pool and a go-kart track. The City took over the park and operation of the facilities in 1996. Following a market study in 2001, it was concluded that the City should continue to operate the facility despite a small annual operating deficit. The Parks and Recreation Master Plan recommended that the City consider the priority that should be assigned to this facility relative to other aspects of the recreation delivery system. This facility is intended to serve a regional market and is a tourist attraction. It was suggested that the City reassess its role as facility operator and owner if the facility becomes a financial burden. The site is clearly an appealing site for redevelopment because of its riverside location. Through redevelopment, the City could attain park space that could serve as both a city-wide and neighbourhood amenity.



Glenhyrst Gardens, a destination park

Glenhyrst Gardens is the location of the Glenhyrst Art Gallery of Brant that houses exhibitions by local, regional and national artists. Glenhyrst Gardens is the former residence of Edmund Lister Cockshutt, a member of the prominent Brantford industrial family, Trustees bequeathed the property including the main house, the coach house, the cottage and the grounds to the City to be used for “cultural and artistic purposes to benefit the community” with the provision that the main house be used as a “cultural centre”. The gardens were landscaped by the original owner who had an avid interest in horticulture and landscaping.

Today, the main house serves as a gallery, office and exhibition space. The coach house is used for workshops and a variety of arts and craft classes. The Gardener’s Cottage is also used as exhibition space by the Gallery. The upper gardens continue to be maintained as a horticultural park. For many years the City maintained the lower gardens for annual trial beds used in the parks throughout Brantford. Today the lower gardens offer access to the trail that runs parallel to the Grand River.

Due to the history of landscaping on this site, it would be appropriate to establish a small arboretum. Ravine gardens would provide an opportunity to integrate landscape treatment with the natural features that surround the site. There is also some interest in expanding the building for the art gallery, that has become a very popular destination. A master plan/feasibility study should be undertaken for Glenhyrst Gardens.



Long term rehabilitation & reuse of the landfill

Over the long term there is an opportunity to rehabilitate the landfill within the context of an after use plan for recreation. Ideally, rehabilitation could occur incrementally as phases of the landfilling are complete. As a riverside location, already in public ownership, the site could become a key node for recreation. In the interim, the slope facing Mohawk Street should be landscaped to provide a more appropriate interface with Mohawk Lake and Canal.



New riverside public parks in the Northwest & Southeast

e¹ Alfred Watts Hydro Generation Plant

The City owns lands at the site of the ruins of the Alfred Watts Hydro Generation Plant. The ruins offer an opportunity for conservation and interpretation of their cultural significance, and extend the heritage and cultural significance of Mohawk Park. Brant Waterways Foundation have been interested in this site for 20 years as a tourist attraction and an operating hydro generating facility. Through special studies they commissioned, it was determined that the Generating Station may have been Ontario’s earliest hydro generating plant. Over the years, much of the structure has crumbled, however the massive remaining walls, deep foundations and a seven foot diameter iron pipe remain. A new park, incorporating the remnants of the Alfred Watts plant should be developed based on a park master plan.

e² John Wright Soccer Complex

The John Wright Soccer Complex is located east of Erie Avenue and north of Birkett Lane on lands owned by the Grand River Conservation Authority. It is an important component of the City’s base of sports facilities. A recommendation of the Parks component of the Waterfront Master Plan is to extend the park east or west to accommodate additional sports fields, and to possibly relocate those in D’Aubigny Park. The Park as well as the adjacent lands are owned by the GRCA requiring an agreement for use. This area south of Birkett Lane was used for the disposal of foundry sand and may require remediation if used as a park.

e³ Northwest Brantford

The City owns three parcels of land at the River edge in Northwest Brantford. These parcels are the location of some of the most significant environmental lands in the study area. It is recommended that the City consider developing the two northerly parcels as park space and locations to provide interpretation of the natural heritage. Lands currently designated for development should be protected in public open space to ensure the long term sustainability of the natural features north and south of Hardy Road, west of the golf course. This location is ideal to provide nature interpretation and education on the significant natural features and legacy of 11,000 years of settlement on the Grand River.

e⁴ Southwest Brantford

The West of Conklin Secondary Plan sets the framework for new parks in this evolving neighbourhood. Several parks are located along D’Aubigny Creek or the tributary, and together with the areas designated for Environmental Protection, provide a connected system of open space. The new trail provides an important link to the Grand River and its park system.





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ACCESS

The City of Brantford and its partners, most notably Brant Waterways Foundation and Grand Valley Trails, have built an extensive network of trails along the Grand River and tributaries and provided opportunities for boat access to the River at several locations. Brant Waterways Foundation spearheaded the development of the Trans Canada Trail through Brantford, a project that was completed in three years. The Waterfront Master Plan reflects the Grand River as the spine for a primary multi use trail and a riverside footpath with connections to the multi use trail on the abandoned rail line to connect Southwest Brantford. A strategy for signage, information and enhanced amenities will complete the trail system. Carefully designed access locations for boats will ensure minimal impact on natural features.

Brantford's trail system is part of the Grand Valley Trail system, a 250 kilometre footpath stretching from Alton in the north to Lake Erie in the south. The City's trail system is named after the late Gordon Graves, a prominent community volunteer. The trail system is an amalgam of the SC Johnson Rail Trail, Grand Valley Trail, Trans Canada Trail and rail-to-trail segments in south west Brantford.

The vision for the Access component of the Waterfront Master Plan builds on the projects and initiatives that are already in place.

The vision has seven components:

- a primary waterfront trail;
- a riverside footpath;
- locations for boat access;
- a strategy for information and signage;
- parking and connections to transit;
- key connecting streets to link the City's neighbourhoods to the trail system; and,
- monitoring of trail use.

A number of studies have been reviewed and provide the context for the recommendations in this chapter:

Heritage in Water Signage Program
Brantford Trails: 2000-2001
Multi-Use Trail/Bikeway
Implementation 2000
Transportation Master Plan Update
2007
An Overview of the Brant County
Trails 2007
Official Plan
Summary of Brant Waterways
Foundation Assisted Projects to
December 2008

What We Heard

Private owners and government have tried to address rampant use of ATVs and off-road vehicles. They run in and out of the River and destroy spawning areas. They run up and down clay banks. It's almost impossible to manage this activity.

Efforts should be made to improve weak links in the trail system where the trails are narrow or trails are in a state of disrepair.

Conspicuous and frequent wayfinding signage would enhance the experience of trail users. Need to enhance trail facilities such as lighting, washrooms, access for parking.

Need to inform trail users regarding why certain locations are off limits.

Mileage markers should be placed more frequently along the trail.

New development should not limit access to trails or the river.

Principles

Provide a continuous trail system along the Grand River.

Provide a variety of recreational experiences on trails through a variety of environments.

Provide trails for a variety of year-round non motorized uses including hiking, cycling, cross country skiing and snow shoeing.

Design and market the trail system to have clearly identifiable segments, each with an obvious beginning and end.

Integrate the trail system with links to connect the City's neighbourhoods to waterfront.

Provide a wayfinding system including signs to identify for example, direction to primary access points, distance markers and trail segment names.

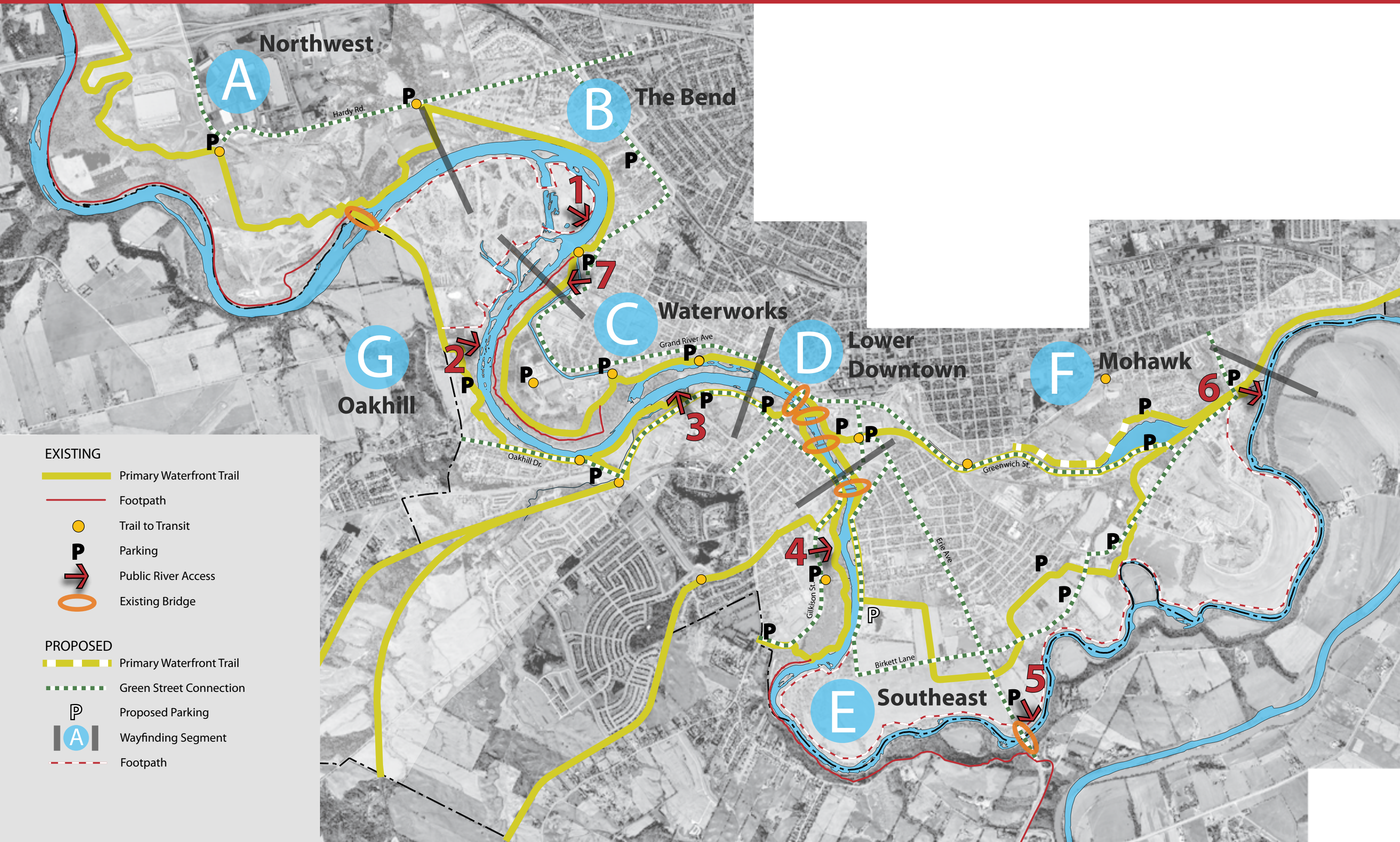
Provide pedestrian amenities including shelters, maps of the trail system, parking, seating, waste receptacles.

Provide interpretive information to identify the significance of key natural features and habitats along each segment of the trail system.

Provide a series of River access sites that are well marked and are compatible with the natural features of their context.



Access Framework



Northwest

A

The Bend

B

Waterworks

C

Lower Downtown

D

Mohawk

F

Southeast

E

Oakhill

G

Hardy Rd.

Grand River Ave

Oakhill Dr.

Greenwich St.

Erie Ave

Birkett Lane

Gilkison St.

- EXISTING**
- Primary Waterfront Trail
 - Footpath
 - Trail to Transit
 - Parking
 - Public River Access
 - Existing Bridge
- PROPOSED**
- Primary Waterfront Trail
 - Green Street Connection
 - Proposed Parking
 - Wayfinding Segment
 - Footpath



The following is a description of the key initiatives of the Access component of the Waterfront Master Plan. The Access map illustrates the location of the existing Primary Waterfront Trail, Footpath, connections to transit, parking, bridges and locations for access to the river with canoes and kayaks. It also indicates the locations for extensions to the Primary Waterfront Trail, Footpath, new locations for parking, important street connections and segments for trail identity/wayfinding.



A Primary Waterfront Trail

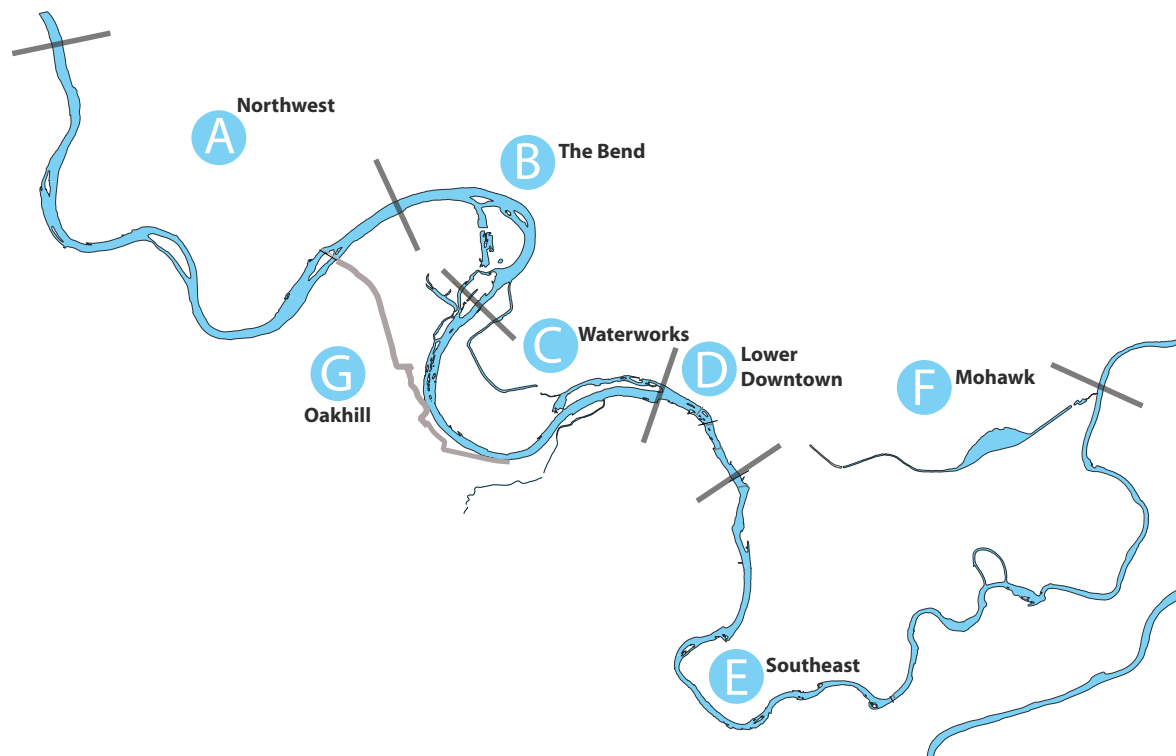
The Primary Waterfront Trail is a multi use trail that is a combination of granular and asphalt, off road and on road segments. It is used for hiking, jogging, cycling, cross country skiing and snowshoeing. Most of this trail is in place, on both sides of the River and Mohawk Lake and Canal due to the efforts of the City and its partners over the past few decades.

The Primary Waterfront Trail is about 30 km in length and traverses a range of natural features and neighbourhoods. On the north side of the River, it is predominantly on the top of the dyke where it passes through the woodlands of Waterworks Park, abutting residential neighbourhoods, the Civic Centre and then into the Southeast part of the study area, connecting with Mohawk Lake. On the south side of the River, the Primary Waterfront Trail follows roads, or green space of the Oakhill Cemetery and parks.

The City's Multi use Trail/Bikeway Implementation and Design Plan was approved by City Council in 2000. The Plan recommended that a detailed review be done in 2005, which was not completed. This Plan should be reviewed in the near future so that the Plan reflects current conditions and future development opportunities.

The Master Plan completed for Lorne Park identified a separate bicycle path at the toe of the slope to avoid conflicts with cyclists on the Primary Waterfront Trail. The other missing link in the Primary Waterfront Trail is a segment on the north side of the Canal as illustrated on the Access Map.

It is recommended that the Primary Waterfront Trail be divided into seven segments:



A Northwest

Existing multi use trail on the north side of the River 3.5 km, beginning at the parking lot at Power Line Road to the west edge of Brantford Golf and Country Club.

B The Bend

Existing multi use trail 2.5 km from the Golf and Country Club to Wilkes Dam

C Waterworks

Existing multi use trail 4 km from Wilkes Dam to Colborne Street

D Lower Downtown

North side existing multi use trail 1 km from Colborne Street to Eagle Avenue; 1 km south side from Lorne Park to Veterans Memorial Parkway

E Southeast

Existing multi use trail 7 km along the dyke from Eagle Avenue to Mohawk Lake: west side through Gilkison Park

F Mohawk

New 3 km trail on the north side of the lake and Canal from the Park to Clarence Street 3km; south road side trail along Greenwich Street (development of the trail in this section will require cooperation with Six Nations)

G Oakhill

Existing multi use and road side trail 5 km from pedestrian bridge in Northwest to Lorne Park

b



A Riverside Footpath

The footpath exists in the Northwest, south side of the River in the Southeast and in Waterworks Park as part of the Grand Valley Trail. It traverses some of the most significant natural features along the River. The Waterfront Master Plan recommends the extension of the riverside footpath close to the water's edge in the Brant Conservation Area and along the north side of the River in the Southeast. The exact location of the footpath would occur in the field to ensure that, for example, steep grades, unstable banks and swampy areas are avoided. Most of the area from south of Birkett Lane to Erie Street is privately owned. The City should explore opportunities for partnerships to formalize an easement to enable public access along the water's edge. Most of the remaining River edge land is already owned by a public agency either the City of Brantford or the Grand River Conservation Authority.

Currently, the Brant Conservation Area is operated with admission for use of the facilities from May to October. From October to April, access to the site is not controlled and the trails are available for public use. Conceptually the Conservation Area should provide for public access along the water's edge along a riverside footpath. The riverside path can be designed to be compatible with the water's edge camp sites. The Grand River Conservation Authority should update its 1990 Master Plan with an 'environment first' plan that applies the principles of this Waterfront Master Plan, in particular a River edge buffer and continuous public access at the water's edge.

c



Rail Trail

The City's Multi-Use Trail and Bikeway Implementation and Design Plan proposed a 4 km long multi use trail on two abandoned railways that extended from Cockshutt Park south west close to D'Aubigny Creek. These trails were recently completed through Brant Waterways Foundation and City funding, and are registered as part of the Trans Canada Trail. The trail is asphalt with the northerly spur being stone dust. This will be an important link to connect the neighbourhoods in southwest Brantford to the River. In the regional context, this trail is extending to Port Dover.

d



Bridges

Trail use is predominantly on one side of the River or the other as bridges are not regularly spaced along the River. There are 5 bridges (not including Cockshutt Bridge to Brant County). Four of the bridges are Downtown and include the Lorne Bridge, two pedestrian bridges and the bridge at Veterans Memorial Parkway. The bridge at Veterans Memorial Parkway is not particularly pedestrian or cyclist friendly. A trail loop on both sides of the River is easy to achieve Downtown, however, may be less appealing elsewhere because of the long distances to the bridge crossings. Therefore, the trail segments are typically identified on one side of the river.



Locations for Boat Access

The City currently has no specific guidelines on how to select, maintain or monitor River access sites. The Waterfront Master Plan recommends 7 sites to provide canoe and kayak access to the Grand River. Motorized pleasure craft should be discouraged, as this is inconsistent with the goal of the Exceptional Waters designation of the Grand River, which extends to Cockshutt Bridge. It is recommended that the design of the access points deter vehicles from accessing the river, as a road and ramp will cause problems in certain reaches and during low flow periods in the summer. Critical habitat for fish species at risk occurs in some of the problem areas. Canoes, kayaks and rafts can be carried along paths to eliminate the need for a ramp. The following are suggested guidelines for the boat access locations:

- Minimize the removal of existing vegetation to accommodate the access and related infrastructure.
- Use boardwalks in sensitive areas
- Use planting of native shrubs and selective placement of logs/slash to deter creation of informal access trails to the river.
- Maintain a vegetated buffer/filter strip between the River and the parking areas. The buffer strip should be a minimum of 10 m to filter runoff from parking areas and should be comprised of native ground covers and shrubs.
- Parking areas should be reversed graded so that runoff is directed away from the river. Runoff should be directed to a bio-swale for filtering/polishing prior to discharging to the river.
- Each boat access location should have a map of the Grand River indicating all other boat access points, washrooms and key destinations. Information on stewardship to encourage protection of natural features should also be displayed.
- Armour stone should be strategically placed at the interface of the parking lot with the River to deter 4X4 and ATV vehicles from accessing the River channel.

The following is a summary of each of the boat access locations identified on the Access Map:

1. Brant Conservation Area

Access to this launch is controlled by paid access to the Conservation Area. River access is limited by the 300 m portage from the parking area to the River. This launch is monitored and operated by the Conservation Authority.

2. South of Wilkes Dam in the Brant Conservation Area

This site was developed by Exceptional Waters in the Brant Conservation Area. The parking lot and launch road are in good condition and the launch ramp is surfaced with honeycomb pavers. The Conservation Authority is currently implementing plans to relocate their gate house. Use of the boat ramp will not be subject to a fee, however currently there is no access from October to April when the Conservation Area is closed. According to the Conservation Authority, this was understood when the launch was constructed. This launch is used by the City's emergency personal and it is recommended that access be accommodated year round.

3. D'Aubigny Creek

This site has become an informal boat launch with a large gravel parking area and access to the River edge. The site is just east of the Creek, separated by a narrow vegetated buffer. This site should be designed to provide a boat launch according to the guidelines described above, including reduction in the size of the parking lot. A riparian buffer is required to protect D'Aubigny Creek. Access to the trails by 4X4 and ATV vehicles should be limited by the strategic placement of boulders.

4. South of the Veterans Memorial Parkway

This site is used however, there is challenging access to the River. Parking occurs along Gilkison Street and boats are carried through the woodland. The embankment of the bridge has been used in the past, however the embankment is steep. Boat launching in this location should be relocated and formalized. It is recommended that boat launching and parking occur further south in Gilkison Flats, close to the information kiosk. This location offers a safer site for parking and access to the water. A trail should be formalized through the woodland and clearly signed for boat access.

5. East of Erie Avenue/Cockshutt Bridge

This access includes a large paved parking area and a gravel access ramp to the water. It is in relatively good condition. A vegetated/riparian buffer is required along the River.

6. Beach Road

This location is on land owned by the Grand River Conservation Authority. It is one of the few places on the River where there is sufficient depth for motor boats. The access road is not well maintained, however, it still provides direct access to the water's edge. It is recommended that the access road and parking area be graded and paved and that improvements be integrated with recommendations for a park in this location.



7. South of Wilkes Dam, North Side

With parking provided at Wilkes Dam, some people carry their canoes down a steep embankment to access the River downstream of the dam. As parking is already available at this site, it is recommended that a path be cleared and signed to identify a safe location for access with canoes and kayaks. A boardwalk and stairs would help to confine the disturbance.

8. New Locations for Boat Access

In terms of new boat launches, it is suggested that a boat launch be provided in the Northwest on one of the sites identified as a new park. In addition, in the long term, a plan for rehabilitation of the landfill should include a boat launch.





Connecting to City Neighbourhoods

The waterfront is an amenity to be shared and enjoyed by all residents. Key streets have been identified for enhanced streetscape and signage to mark primary urban connections to the waterfront trail. These are identified as “green streets” and are envisioned to provide both visual clues for access to the trails, and sidewalks and cycling connections to link to the river’s trail system. Streets of this nature are also referred to as “complete streets” as they are designed as safe routes for pedestrians, cyclists and cars. The following are green street connections:

A Northwest

Oak Park Road
Hardy Road

B The Bend

Paris Road

C Waterworks

Brant Avenue
Grand River Avenue
Parkside Drive

D Lower Downtown

Icomm Drive
Market Street
Clarence Street
Colborne Street
Gilkison Street

E Southeast

Eagle Avenue
Birkett Lane
Gilkison Street
Mohawk Street

F Mohawk

Greenwich Street
Glenwood Drive
Park Road South

G Oakhill

Oakhill Drive
Jennings Road

The City has identified potential transportation corridors for widening. These include the Veterans Memorial Parkway from Mt. Pleasant to Market Street and the extension of the Parkway from Market Street to Wayne Gretzky Parkway. In the long term, there is also the potential for Colborne Street to connect with Oak Park Road on a new bridge.

All of the trail segments are accessible by transit. Only the trail on the north side of the River in the Southeast does not have transit stops close to the dyke trail.



A Strategy for Information & Signage

A new information and signage strategy is required for trails and boat access. The current eleven trail loops are confusing and more signage and information on the trails are required, as expressed by many participants in the workshops. The strategy for information and signage has 3 components:

Amenities to Support Each Trail Segment

Each trail segment should have a kiosk with a trail map to mark the beginning and end. There are about 16 kiosks that already exist along the trail. Some could be relocated in association with the trail heads to be defined for each one of the seven segments. The trails heads should accommodate parking, even if it is provided on the roadside. Parking is already provided in each of the trail segments, with only a few areas requiring additional parking:

A Northwest

At Power Line Road, mid point at Oak Park Road and at the end on Hardy Road

B The Bend

Hardy Road, mid point at Glenhyrst Gardens, and at Wilkes Dam

C Waterworks

At Wilkes Dam and in two locations in Waterworks Park. Another site for parking should be identified on one of the street ends off of Grand River Avenue.

D Lower Downtown

In the Brantford and District Civic Centre , parking is required on the west side of the River - the parking as anticipated in the Lorne Park Master Plan would be ideal.

E Southeast

Parking in Steve Brown Sports Complex and in Lion's Arena close to Gilkison Flats. On the north side, parking is clustered to the east at the John Wright Park, and along Mohawk Street. Ideally additional parking provided on River Road, possibly on lands owned by the Conservation Authority.

F Mohawk

Parking is provided in Mohawk Park and the south side of Mohawk Lake.

G Oakhill

Parking is provided in Oakhill Cemetery and at the D'Aubigny boat launch.





Distance Markers/Wayfinding on the Trail
Markers that define the distance on the trail should be located every kilometer. These should identify the trail lengths for the City of Brantford only. In addition, enhanced wayfinding and directional signs are required. A comprehensive signage plan should be developed.

Trail Guide

A trail guide should include a map and a summary description of each one of the seven segments including:

- trail segment name
- permitted uses
- length
- location of amenities (washrooms and destinations)
- description of the trail and the landscape



Trail Map for Cape Cod

Boat Access

Locations for boat access should be clearly signed from the adjacent road. A kiosk and map at each boat access location should identify all access points, amenities and nearby destinations.

Interpretive Information

Brant Waterways Foundation, the City of Brantford and Trillium Foundation provided funding for the design and installation of historic and interpretive signs – *Heritage in Water Signage Program* - along the trail to highlight various points of interest and to enhance the knowledge and awareness of Brantford's rich natural and cultural history. Signage should be expanded to focus on sharing information on sensitive and significant habitats.

Using Electronic Media to Promote Trails Use

Another area in which the City can promote the use of trails is through electronic and social media. Beyond maintaining a web site where trails information can be obtained, there are several more avenues that should be considered in this regard. While these are particularly effective in reaching a younger generation, they are increasingly being embraced by those in the middle and seniors age brackets. These avenues include:

- **E-mail blasts** – This is almost 'old technology' now, but one avenue that should be considered is to assemble an email list of trail users, organization representatives, and generally interested persons to whom occasional email blasts are sent. These email notifications would relate to new trail activities and developments, soliciting input on on-going trails development (using on-line survey tools such as Survey Monkey), upcoming events, soliciting volunteers, fundraising, advocacy initiatives, etc. This is a way to build a dedicated constituency of trails users who have a particular interest in, and feel a vested ownership of, the trails network.
- **Electronic interpretation** – Another avenue to be explored is that of using electronic media as a method of interpretation, where, for example, podcasts containing an interpretive trail tour could be downloaded before an outing, or interpretive posts could have a phone number where trail users could call (using their cell phones) to access interpretive messages. The Art Gallery of Ontario is using a similar system for interpretation.
- **Using Twitter** – Several trails organizations (e.g. Washington Trails Council: http://twitter.com/wta_hikers; Oregon Trails Council: <http://twitter.com/otcbsa>) are using Twitter and sending 'tweets' to those on the network to inform them instantaneously of activities and events, new developments on the trails, emergency situations, etc.

- **Social media** – Yet another avenue to consider is to use a social media site to create a common marketplace of ideas where trails users can connect, learn about activities and events, etc. An example would be the BC Trails' recent development of a Facebook site: <http://www.facebook.com/TrailsBC>. Another would be the Continental Divide Trail Alliance: <http://sk-sk.facebook.com/>



Monitoring Trail Use

The City currently monitors all of its trails. There is detailed mapping broken into 20 trail areas resulting in a detailed record of, for example, surface conditions, bridges, access points, parking, signs, gates, bollards and kiosks. They have also conducted an annual summer survey of trail users. The survey includes questions on, for example, frequency of use, origin of entry to the trail, favourite sections, how trail users found out about the trail, problems with the trail, bike use, trail closure and age of trail user. The survey was conducted by a Trail Steward, a summer employee. However, this year, the City is not hiring a Trail Steward, due to budget constraints.

It is imperative to continue to monitor trail use to:

- determine whether usage is increasing, stable or decreasing, which can be useful in determining whether capacity constraints are being exceeded (which may have implications for species-at-risk, environmentally sensitive areas, etc.); and,
- justify on-going or additional capital and/or operating expenditures.

The continuation of trail monitoring should be considered through a partnership with GRCA, Grand Valley Trail, other volunteer groups or consideration to expand the City's seasonal or full time staff to enable the Parks and Recreation Department to continue to compile this information.

The City's survey already has questions to obtain information on the characteristics of trail users. This is important to:

- determine the behaviour patterns and preferences of existing trails users, which is useful in planning future facilities and

activities on existing trails, as well as new trails themselves;

- determine the extent to which trails are being used by residents as opposed to visitors to the community.

These questions could be expanded to understand more precise information on where the neighbourhoods Brantford residents are from. Questions should also be expanded to help calculate the economic impact and benefit of trails to the community. This is important to help establish the extent to which trails attract visitors to the community, who then create economic benefit through purchases they may make in the local economy. Questions relating to length of stay or time on the trail, other attractions visited, dollars spent, whether they are staying overnight, whether they are visiting friends or relatives, whether there is another purpose for their visit, could be considered to expand the data on the characteristics of the users.

There are a number of methods to measure trails use. To obtain absolute count estimates, methods include:

- observation counting (currently done by the City)– where an individual or team of individuals watch at specific locations and at specific times, counting the number of individual users – these sample numbers are then weighted up to the entire trails system for the entire year to arrive at an estimate of the total count – clearly the more representative the sample is (representing multiple locations on the system of trails; times of day; days of the week; and seasons of the year) the better the final estimate
- aerial photographs – similar to the sample method of observation counting is the approach of taking aerial photographs at certain peak times, counting the number of

individuals observed, and then using this as the sample estimate and weighting up to yield an estimate of total use (in the same manner as the observation counting approach).

- self reporting – another approach is to have a kiosk or recording book at the trail entrance and ask all users to sign in – assuming all trail users start at, or pass by, a common point, this method can work well to generate an estimate, however, there are challenges with the reliability of the data
- sensors: infrared sensors (electronic eyes) placed unobtrusively at strategic points along trails are another means of obtaining sample usage data at key points in a trails system – the downside of this approach relates to the costs involved with malfunctioning or damage (sometimes vandalized) equipment

Methods of obtaining basic user characteristics are much like any other survey situation. They include:

- interviewer – an interviewer intercepts trail users on the trail and asks them a variety of questions relating to use, preferences, etc. This approach is currently used by the City.
- self-enumeration questionnaires – in this method, copies of surveys are made available at strategic points along the trail, and users are invited to complete them
- on-line surveys – here users are invited to use their blackberries or computers (at home) to link to an on-line survey
- telephone surveys – in this approach, standard telephone surveys of the population are undertaken – this approach will capture both trails users and non-users, and tends to be a relatively inefficient means of obtaining data on trails users

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HERITAGE & CULTURE



Heritage & Culture

The City of Brantford's Waterfront Master Plan presents a unique opportunity to understand the diverse array of cultural heritage resources that are associated with the Grand River. With a cultural history dating back 11,000 years, archaeological and cultural heritage resources play an important part in communicating and interpreting the importance of the Grand River. As such, the continued identification, understanding, protection and enhancement of the Grand River's archaeological and cultural heritage resources represent an essential component of the Waterfront Master Plan's vision and implementation.

Brantford's cultural history is profoundly associated with the Grand River. Aboriginal land use and settlement patterns in the area are evidenced by more than 170 registered archaeological sites in the City and over one hundred additional sites that are known to avocational archaeologists. A handful of these archaeological sites are highlighted in this Master Plan; ones which provide a rich understanding of pre-contact cultural history and the role of the Grand River corridor in this history. Preparation and implementation of interpretation plans for these sites, in collaboration with and based on consultation with First Nations, is an integral component of an effective conservation and protection framework.

The Double Take and Snowhill archaeological sites in the Northwest yielded over 50,000 artifacts, some dating to as early as ca. 8,000 BC. These sites are particularly significant given that they illustrate the continuous occupation of the Grand River corridor for several thousand years. Similarly, the D'Aubigny Park site artifact assemblage suggests a temporal span of approximately 4,500 years beginning ca. 3,000 BC. This site provides testimony to the rich, but at times, buried archaeological record along the Grand corridor.

The Colborne Street and Holmedale sites yielded a number of surprising discoveries. At Colborne Street, two cache pits containing over 160 lanceolate shaped bifaces of Onondaga

chert were found, which are considered to be extremely rare finds in Ontario. At Holmedale, a sizable sample of eel bones were recovered, which is considered to be an unusual find for the Lake Erie watershed. Its presence indicates that eels had been caught and transported from the west end of Burlington Bay to the Grand River area.

Six distinct house structures were identified at the Porteous site, exhibiting two phases of occupation. A single row fence or palisade surrounded the site. Both Porteous and Holmedale are notable in that they are the earliest villages in southern Ontario and evidence of the beginnings of an agricultural way of life.

Towards the end of the War of 1812, in the fall of 1814, Brantford was location to a skirmish between the Americans and the Mohawk and Cayuga warriors. The Americans made a final attempt to infiltrate southwestern and central Ontario by travelling from Detroit through the Thames Valley and on to Burlington but were confronted by a group of Mohawk and Cayuga warriors. Local accounts of the skirmish place the Americans on a high river-bank, overlooking the Brantford water-works flats, close to where Highway 53 crosses the Grand, with the Iroquois warriors hidden in a gully washed out across the flats. A landmark adjacent to the foot of Farringdon Hill in Brantford was said to mark the resting place of seven Iroquois warriors killed in this skirmish. The Americans retreated

to Detroit, destroying a number of mills in their wake.

Brantford's more recent history of European settlement is expressed through the retention of a diverse collection of historical buildings, heritage sites and cultural landscapes. These cultural heritage resources communicate the importance of the Grand River to the City of Brantford and its cultural history.

Over twenty cultural heritage resources are located immediately adjacent to, or in proximity to, the Grand River. Opportunities to integrate these resources into the City's existing network of cultural heritage attractions should be investigated. The Holmedale Area and Mohawk Park, Lake and Canal area are recognized as a potential cultural heritage landscape, with a cultural history communicated by the archaeological sites, artifacts and oral history that were left behind.

What We Heard

There is a threat to the resources when the locations of archaeological sites are revealed to the general public.

The proposed developments in the Northwest sector will have an impact on the cultural heritage resources.

Priority should be given to heritage conservation initiatives for funding and implementation.

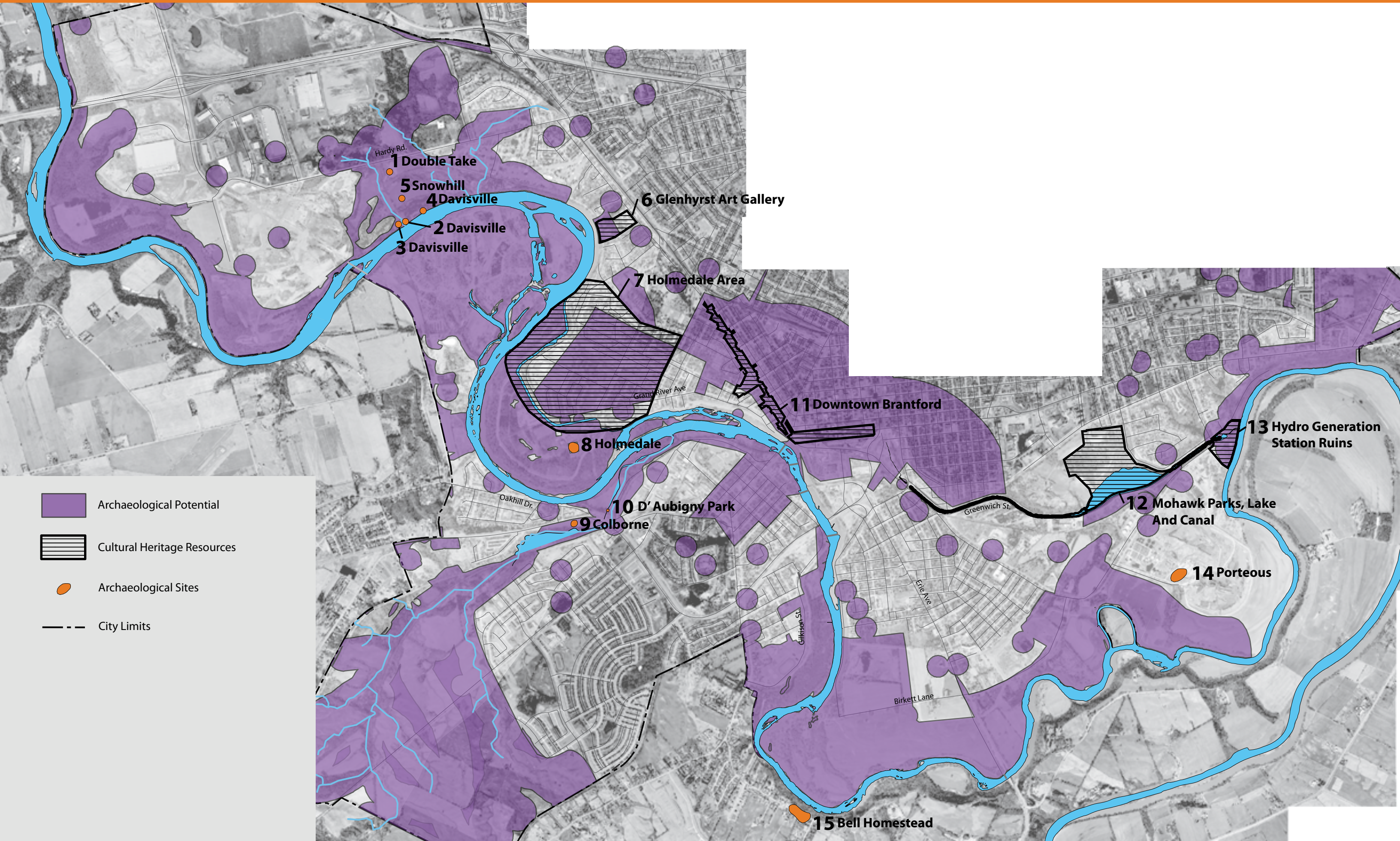
Principles

Protect and interpret the pre-contact history and role of the Grand River corridor.

Enhance connections between the Grand River and areas of cultural heritage significance in Brantford.

Conserve and interpret areas of cultural heritage significance.

Heritage & Culture Framework



Heritage & Culture Initiatives

The Heritage and Culture component of the Waterfront Master Plan includes the following initiatives on only a handful of sites that exist within the vast areas identified as having archaeological potential.

1

Double Take

The Double Take site, discovered within the proposed residential development, yielded Late Paleoindian projectile points ca. 8,000 BC. as well as Middle Woodland projectile points and pottery. The excavation of Snowhill and the Double Take sites yielded over 50,000 artifacts. The presence of these sites illustrates the continuous occupation of the Grand River corridor for several thousand years. Subject to consultation with the First Nations, interpretation plans should be prepared and implemented.

2-4

Davisville 2, Davisville 3, Davisville

While many Mohawks resided in the vicinity of Mohawk Chapel in the 19th century, a second noteworthy location was Davisville. This settlement was nestled along the north shore of the Grand River across from Brant Conservation Area. Both the Mohawks (Iroquoian-speaking) and the Mississauga (Algonquian-speaking) lived in the settlement. While the Mohawk Chapel was facilitated by the support of the Church of England, Davisville evolved, in part, as a Methodist mission to provide support and education to the Mississaugas of New Credit. Between 2002 and 2004, archaeological investigations at Davisville revealed numerous deposits of burned bone. One bone concentration, named the Davisville 3 site, consisted of a four cm thick layer of bone which contained tens of thousands of pieces of bone from 24 one metre units. Over 90% of the bone fragments were identified to be mammalian, including deer, muskrat and beaver. In addition to the bone, a small number of artifacts like lead shot, glass beads, shell wampum beads, gunflints and metal scrap were recovered. Both Six Nations of the Grand River and the Mississaugas of the New Credit First Nation have identified this site as a crucial piece of their regional history. Subject to consultation with the First Nations, interpretation plans should be prepared and implemented.

5

Snowhill

The Snowhill site was discovered within the proposed residential development lands. This site yielded Late Paleoindian projectile points dating the earliest occupation of this location to ca. 8,000 BC. Excavations at the site revealed a buried paleosol, a black organic soil resulting from deposition of soils during the intermittent flooding of the Grand River. The buried paleosol contained the earliest cultural material from the site. Subject to consultation with the First Nations, interpretation plans should be prepared and implemented.

6

Glenhyrst Art Gallery

Glenhyrst Art Gallery is located within a large park on the banks of the Grand River. The former residence of prominent Brantford industrialist Edmund Cockshutt, the property was bequeathed to the City of Brantford with the intent that it serve the cultural and artistic needs of the community. The property consists of the main house, coach house, the cottage and the grounds. Glenhyrst is designated under Part IV of the Ontario Heritage Act. Strong visual and physical

7

Holmedale Area

The Holmedale Area is rich in pre-contact history given its location along the Grand River and the complex physiographic history. This history can be found in the archaeological sites, artifacts and oral history that were left behind. By the mid-nineteenth century, George Wilkes constructed a dam across the Grand River and a canal to supply power to his proposed mills. The dam and canal remain, although they have been improved and modernized since the 1850s. A number of industries were established in the area in the late nineteenth and early twentieth centuries. Workers' cottages were built near the industries in the late 1800s, in the vicinity of Grand River Avenue. In the 1910s, Landsdowne Park was built in the northern part of the Holmedale Area as a planned community to house and serve industry workers and their families. Additionally, a war time housing development was established in the area in the mid twentieth century. A Feasibility Study to designate the Holmedale Area as a cultural heritage landscape under the Ontario Heritage Act should be prepared. It would include a review of background, inventory, evaluation, identification of the area's heritage value and delineation of the district boundaries and rationale.

8

Holmedale

The Holmedale site, a transitional Woodland period settlement, encompassed an area of one-half hectare. It was located on a low terrace of an oxbow of the Grand River near the Holmedale Water Treatment Facility. Two radiocarbon dates have been obtained for the site including a charred corn fragment and a charred walnut shell. The corn yielded a calibrated date of A.D. 1020 while the walnut shell yielded a date of A.D. 984. One of the more surprising recoveries from the site included a sizable sample of eel bones, an unusual find for the Lake Erie watershed. Its presence indicates that eels had been caught and transported from the west end of Burlington Bay to the Grand River area. Subject to consultation with the First Nations, interpretation plans should be prepared and implemented.

9

Colborne Street

Salvage excavations were conducted at the Colborne Street site, a Middle Woodland component situated directly adjacent to D'Aubigny Creek in an open grassed field. A unique cluster of post moulds identified during the excavation suggested the presence of a temporary structure. Furthermore, between the post mould cluster and the creek, two cache pits were documented containing over 160 lanceolate shaped bifaces of Onondaga chert. These biface caches are extremely rare finds in Ontario and are usually associated with Early and Middle Woodland contexts dating to ca. 400 BC to 800 A.D. Subject to consultation with the First Nations, interpretation plans should be prepared and implemented.



10

D'Aubigny Park

The D'Aubigny Park site was discovered during the Stage 2 archaeological assessment of a proposed watermain within a soccer pitch located in D'Aubigny Park. Further Stage 4 archaeological excavations completed by block excavation were conducted within the proposed impact area of the watermain, where four discrete soil layers were identified. Within one of the lower strata, a feature was identified containing several flakes, a single fragmentary ceramic sherd and numerous carbonized maize kernels. The maize was subject to AMS (Accelerator Mass Spectrometry) dating and the carbon sample dated to ca. 300 A.D. within the Middle Woodland period. Overall the site artifact assemblage included projectile points dating to the Middle Archaic (Brewerton Side-notched), Late Archaic (Lamoka and Adder Orchard) and Early Woodland (Meadowood) periods. The ceramics date to the Transitional Woodland, early Late Woodland and middle Late Woodland periods. As a group the artifact assemblage suggests a temporal span of approximately 4,500 years for the D'Aubigny Park site, while the soil sediments suggest that the site was occupied after the Nipissing high water levels had retreated from the Grand River Valley ca. 3,000 BC. The site provides testimony to the rich, but at times buried, archaeological record along the Grand corridor. Subject to consultation with the First Nations, interpretation plans should be prepared and implemented.

11

Downtown Brantford

Brant Avenue and Colborne Street are important historic thoroughfares that were established in the early nineteenth century as part of the Hamilton to London Road. As transportation corridors, these roads are significant to the development of Brantford and their particular alignments are of interest given that they are oriented towards the Lorne Bridge, a historic and prominent bridging point in Brantford. Colborne Street marks the southern boundary of the historic downtown core of Brantford that serves the commercial, financial, institutional and public service needs of the community. Brant Avenue is the site of large residences built for prominent nineteenth century Brantford citizens. The success of both is linked to the role of the Grand River in the flourishing manufacturing industries of the nineteenth century. Brant Avenue is a heritage conservation district, designated under Part V of the Ontario Heritage Act. Strong visual and physical links should be developed between areas of cultural interest and the Grand River through integrated pedestrian linkage, signage, landscaping, street furniture and street lighting.

12

Mohawk Park, Lake and Canal

This area was deeded to John Lovejoy in 1836. At the time, the landscape was mostly oak savannah and wetlands. In 1848, the Grand River Navigation Company finished constructing the canal through this area, thus causing water levels in the wetland to rise and form a turning basin. The canal ceased to function as a navigable waterway by 1875. The turning basin became a recreational lake known as Mohawk Lake and by 1894, the Lovejoy estate located north of the lake was leased by the Brantford Street Railway for an amusement park. It opened in 1895 and featured a merry-go-round, a razzle-dazzle and ferris wheel, a pavilion, and a bandstand. Open spaces were used for sporting activities such as football and

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Hydro Generation Station Ruins

In 1832, the Grand River Navigation Company was incorporated with the intent of enhancing the navigation of the Grand River. The Brantford Cut of the canal was constructed from below the Lorne Bridge downstream to the site of the hydro generation station ruins. This canal operated from 1848 until 1875 at which point it ceased to function as a navigable waterway. It was then leased to Alfred Watts. By 1885, Watts installed a small dynamo at the locks and hydro poles were built to downtown Brantford. In 1890, the Brantford Electric Company was formed by Alfred Watts and his two sons. The plant shut down by 1911, replaced by a much larger and more efficient power generator located at Decew Falls at St. Davids Road in St. Catherines. The ruins of this endeavor remain. Funding opportunities for the restoration of the Alfred Watts Hydro Generating Station may be available through a Millennium Grant, Ontario Trillium Foundation Grant or the Cultural Spaces Fund. Funding might also be possible through a public-private partnership.

14

Porteous

The Porteous village, dating to the tenth century, was the first academic excavation of a First Nations site along the Grand River watershed in Brantford. In 1969, William C. Noble of McMaster University along with a crew of 48 McMaster students, salvage excavated the small 1.5 acre village prior to the destruction of the site by the City of Brantford. The site located within the City of Brantford's landfill facility was once owned by the dairyman, Mr. R. Porteous. Six distinct house structures were identified at the site, with two phases of occupation. A single row fence or palisade surrounded the site. This site is the earliest village in southern Ontario indicating evidence of an agricultural way of life. Subject to consultation with the First Nations, interpretation plans should be prepared and implemented.

15

Bell Homestead

The Bell Homestead is a National Historic Site operated by the Parks and Recreation Department of the City of Brantford. In the nineteenth century, this house was known to the Bell family as the "Melville House", and is the site that Alexander Graham Bell invented the telephone. Located on a large parcel of land on the banks of the Grand River, this property has served as a museum commemorating the Bell family and telephone history since 1910. Strong visual and physical links should be developed between areas of cultural interest and the Grand River through pedestrian links, signage, landscaping, street furniture and pedestrian lighting.

5

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DESTINATIONS

Cultural Corridor Framework



The Brantford Waterfront presents an unparalleled opportunity to attract residents and visitors to the water. Building on the significant ecological, cultural and archaeological features of the area, the Grand River and its tributaries should become recognized as the City's Waterfront Cultural Corridor, a destination for interpretation and celebration of the rich natural and cultural history. This will complement the Downtown cultural district explored in the City's Cultural Plan.

The Grand River was recognized as a Canadian Heritage River in 1994 based on its outstanding river-related human heritage and recreational opportunities of national significance. The Grand River system is noted as being one of the "first highly-settled rivers in Canada" to become a Heritage River. Given the long settlement history, many outstanding 'human heritage features' have been identified along the Grand reflecting various themes associated with Aboriginal peoples, early European settlement, industrial heritage, and the general human adaptation to the river.

A wide variety of nineteenth and early twentieth century heritage remains along the Grand River in Brantford. Commercial and residential buildings maintain their early architectural styles and building forms in the historic centre of Brantford and the early subdivisions that developed around the core. Remnants of Brantford's industrial heritage extend along the length of the Grand River, including the old Grand River Canal and associated locks and mills, as well as evidence of various forms of flood control in the form of dams (Wilkes Dam), dykes and breakwaters.

Diverse needs can be well met along the River, but this requires careful planning. Creating destinations and places of distinct character involves developing existing and new areas for gathering and celebration, entertainment,

commemorative sites, education centres and unique recreation opportunities. Building on the historic and cultural assets that already border the River and its tributaries can bring this vision to life. The Waterfront Master Plan capitalizes on the natural and cultural heritage resources and identifies opportunities to strengthen the recognition as the Waterfront Cultural Corridor.

The notion of a cultural, ecological and recreational corridor frames the Destinations component of the Waterfront Master Plan. The Waterfront Cultural Corridor map illustrates the key defining character areas, major destinations for natural, cultural heritage interpretation and recreation, major destinations for cultural heritage activity and interpretation, focus areas for natural and/or cultural heritage interpretation and key connections to and along the Waterfront Cultural Corridor. The roads that are defined as the key connections offer an opportunity to package and theme driving and cycling tours to expose visitors, and residents, to the incredible array of destinations along the waterfront.

A number of studies have been reviewed and provide the context for the recommendations in this chapter:

Municipal Cultural Plan, 2005
Towards a Stronger future - A Master Plan for Downtown Brantford 2008
Museums Sustainability Plan 2007
Parks and Recreation Master Plan 2003
Transportation Master Plan Update 2007
Shaping Our Future - Community Strategic Plan 2006
Tourism Brantford 2009 Annual Report
Brantford Public Art Policy

What We Heard

We need more direct access points to the water, having: convenient parking, lighting at night, ramped access to water

Need to tell the story of Brantford's history and natural features on the trails

The river should be a stronger identifying element in the City's image

The City's economic development strategy should include the business opportunities related to the river such as the outfitters, cultural attractions and a destination for cycling and hiking.

Principles

Create a network of natural, heritage and recreation destinations.

Establish a strong visual identity for the entire waterfront and its tributaries.

Promote and enhance activity and public life on the waterfront.

Connect the landscape of the waterfront to its enormous power to tell stories of Aboriginal heritage, settlement, industrial development, ecology, and recreation.

Character Areas of the Waterfront Cultural Corridor

The Waterfront Cultural Corridor is framed by the distinct character areas that make up the Grand River, its tributaries and the Canal described as follows.



NORTHWEST

The Northwest Sector of the study area supports some of the Provinces' most unique and sensitive natural heritage features and is the largest intact natural area remaining in the City. The presence of the perched prairie fens, the marl deposits associated with the Tufa Mounds Area of Natural and Scientific Interest, and other wetland features associated with the slopes, terraces and cut off meanders in this area are directly related to the highly sensitive groundwater regime that occurs in this area. The ecological significance of the area is underscored by the irrefutably significant archaeological features that have been subject to investigation. The terraces associated with the former River channels were occupied at a time when the population of Ontario likely numbered in the hundreds. Tools that have been recovered have been dated to approximately 11,000 years ago. In fact, that site is one of the richest for the period on archaeological record of the Great Lakes region. The features in this area provide an unparalleled opportunity to tell their story of settlement, nestled along the north shore of the Grand River. The unique natural features that exist today were the reason this location settled thousands of years ago. The Cultural Corridor map illustrates the potential to focus natural and cultural heritage interpretation in this area.



THE BEND

The Brant Conservation Area, owned by the Grand River Conservation Area, is a popular destination for camping and is well used by hikers, cyclists and anglers. The pool, splash pad and day camp make this popular for day use visitors. This area is an incredible asset and could be the focus for a major natural, cultural heritage and recreation destination.

The Glenhyrst Art Gallery of Brant and Gardens are a popular destination. There is an opportunity to possibly expand the Gallery and enhance the landscape to provide an arboretum and a transition to the adjacent natural features. The Cultural Corridor map defines this as a major cultural heritage interpretation destination.



WATERWORKS

Waterworks Park provides significant habitat in its woodland and cultural meadows. The Holmedale area, is an area rich in pre-contact history given its location on the Grand River and the fact that an early agricultural settlement was found there that dates to AD 984. As well, the area is the location of the Wilkes Dam originally constructed to supply power to mills, industries, workers cottages. Landsdowne Park is another feature of the area, built as a planned community to house and serve industry workers and their families. This area has the potential to be recognized as a cultural heritage landscape and to tell the story of centuries of settlement in this area. The Cultural Corridor map identifies the area as a focus for natural heritage interpretation and cultural heritage interpretation.



LOWER DOWNTOWN

Through long term redevelopment of the Brantford and District Civic Centre area, there is an opportunity to create a major destination in this location. The urban mixed use development envisioned in the demonstration plan (described in the next section) would ideally include a central education/interpretive/cultural facility to tell Brantford's story. The Cultural Corridor map defines this as a destination with a major cultural heritage area of activity and interpretation.

A multi-purpose facility could bring together culture, arts, heritage, interpretation and recreation in Brant's Crossing, providing a logical connecting link to Downtown, Eagle Place and to the West Brant neighbourhood. The focus on Lorne Bridge works well as the link between the River and the Downtown Core, and the heritage conservation district and underscore Brant Avenue and Colborne Street as important historic thoroughfares established in the early nineteenth century.

A recent archaeological assessment in the D'Aubigny Creek area revealed features that suggest the site was occupied 4,500 years ago, providing testimony to the rich, but buried archaeological record along the Grand River and its tributaries. This may provide a basis for a new destination attraction as identified on the Cultural Corridor map. Care would have to be taken to ensure that the archaeological resource itself was not disturbed, so this might become more of an interpretive feature in the general vicinity of the archaeological resource.

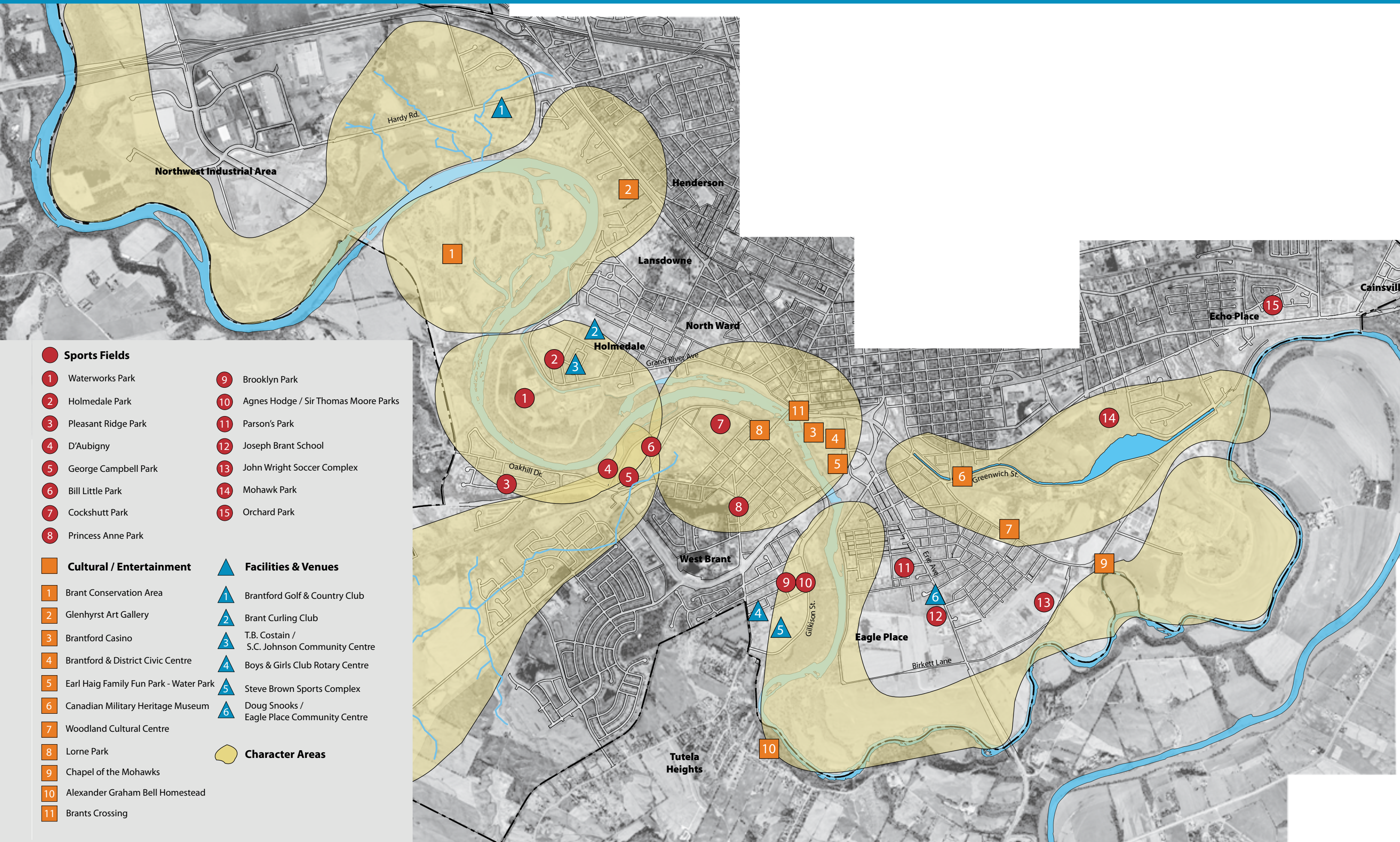
SOUTHEAST

The Porteous village, dating to the tenth century was excavated revealing a 1.5 acre village. It was the site of the earliest village in southern Ontario indicating evidence of an agricultural way of life. The site has since been destroyed, however, there is still an opportunity for interpretation. With the long term rehabilitation of the landfill, it could become a new destination for recreation. The woodlands of Gilkison Flats, sites for boat launching and adjacent sports fields provide a destination for recreation in this area.

MOHAWK

Mohawk Lake, Canal and Park are rich in both natural and cultural heritage resources. Originally constructed by the Grand River Navigation Company, the canal and lake have been, and continue to provide, the context for recreation in the Park. The Park is the obvious choice as a major natural/cultural heritage interpretation and recreation destination. With the possibility of a new park that could incorporate the ruins of the hydro generating station, the entire area could become a key cultural heritage attraction.

Destinations Framework



- **Sports Fields**
- 1 Waterworks Park
- 2 Holmedale Park
- 3 Pleasant Ridge Park
- 4 D'Aubigny
- 5 George Campbell Park
- 6 Bill Little Park
- 7 Cockshutt Park
- 8 Princess Anne Park
- 9 Brooklyn Park
- 10 Agnes Hodge / Sir Thomas Moore Parks
- 11 Parson's Park
- 12 Joseph Brant School
- 13 John Wright Soccer Complex
- 14 Mohawk Park
- 15 Orchard Park
- **Cultural / Entertainment**
- 1 Brant Conservation Area
- 2 Glenhyrst Art Gallery
- 3 Brantford Casino
- 4 Brantford & District Civic Centre
- 5 Earl Haig Family Fun Park - Water Park
- 6 Canadian Military Heritage Museum
- 7 Woodland Cultural Centre
- 8 Lorne Park
- 9 Chapel of the Mohawks
- 10 Alexander Graham Bell Homestead
- 11 Brants Crossing
- ▲ **Facilities & Venues**
- 1 Brantford Golf & Country Club
- 2 Brant Curling Club
- 3 T.B. Costain / S.C. Johnson Community Centre
- 4 Boys & Girls Club Rotary Centre
- 5 Steve Brown Sports Complex
- 6 Doug Snooks / Eagle Place Community Centre
- **Character Areas**

Destination locations along the waterfront are important for at least two reasons. First, they provide opportunities for local residents to enjoy the scenic beauty and recreational / entertainment advantages of the River or of a waterfront setting and to understand the significance of the area. This physical and psychological access to the water is a key component of the quality of life that Brantford offers to its citizens, and so a focus on recognizing and enhancing waterfront destinations should be an important civic priority. Secondly, understanding and enhancing waterfront destinations is important because this can be part of an economic development strategy. Certainly, waterfront destinations that are tourism attractors drawing in visitors to the community who end up spending time and money in Brantford, are an important element. To the extent that more tourists and visitors can be attracted into the community through these tourism destinations, then there will be additional economic benefit to the community.

The Primary Waterfront Trail and the Footpath will connect the destinations together. With the growing interest in ecotourism, the entire trail network should be more effectively promoted as a destination. The trail system itself, as well as its various interpretive aspects, has significant potential as a destination in and of itself.

The Destinations map identifies the existing destinations comprised of sports fields, facilities/venues and cultural/entertainment facilities including:

The Northwest

Brantford Golf and Country Club
Brant Conservation Area
Glenhyrst Gardens and Art Gallery of Brant

Waterworks

Waterworks Park
Holmedale Park
TB Costain/SC Johnson Community Centre
D'Aubigny Park

Lower Downtown

Cockshutt Park
Lorne Park
Fordview Park
Brantford Casino
Brantford + District Civic Centre

Southeast

Steve Brown Sports Complex
Boys and Girls Rotary Centre
Doug Snooks/Eagle Place Community Centre
John Wright Soccer Complex
Alexander Graham Bell NHS (national historic site)

Mohawk

Mohawk Park
Woodland Cultural Centre
Mohawk Chapel
Canadian Military Heritage Museum

Waterfront as a Cultural Corridor

This stringing together of these destinations can be promoted as the Waterfront Cultural Corridor, which collectively provides a diverse array of natural, historical, cultural, recreational and entertainment-related experiences to groups of all ages, for both residents and visitors. This entity could be branded and promoted as the Waterfront Cultural Corridor and used actively as a tourism destination in the overall promotion of the area.

It will be important for the operators of all waterfront destinations to understand the Waterfront Master Plan and their critical role as a component of the Cultural Corridor. Access to the River should be optimized at each of the destinations, to ensure that the users have physical and psychological access to the waterfront. Where physical access is not possible, other ways and means of linkage should be considered, such as signage, clearing views, etc.

Waterfront destinations should be used in promotion and marketing efforts. This would be done in partnership with destination marketing activities in the region, as well as in terms of the City's economic development promotion.



Economic Development & Tourism

Linkages to Brantford's Economic Development Strategy

The City of Brantford is in the process of finalizing an Economic Development Strategy that will guide the City's investment in a number of areas relating to the overall health, growth and development of the economy. This Waterfront Master Plan has clear links to this City's Economic Development Strategy in several respects:

- it enhances the overall image and identity of the City as a place to live and invest in;
- it presents specific opportunities to the tourism industry (and note that tourism, and arts & culture were identified in the Economic Development Strategy as sectors for investment by the City); and,
- the various enhancement proposals presented in the Waterfront Master Plan represent project opportunities for local designers, architects, construction companies.

Thus, while the Waterfront Master Plan is not an economic development strategy by itself, it does represent a strong link to and support of that Strategy.

Specific Economic Development Opportunities

The first set of economic opportunities to be considered are private sector businesses that directly make use of the River resource: boat tours, canoe and kayak guiding, fishing, hiking, etc. There are well established and successful businesses that include Heritage River Canoe and Kayak Company, Grand River Canoe and Kayak Outfitters, and Grand Experiences. Improvements to the boat launches will enhance the operation of those businesses.

A second set of opportunities would be those that make use of the River and the valley as a scenic backdrop for their main line of business: a restaurant overlooking the River, a B&B that can advertise that it is within easy walking distance of river-based trails, etc. Accommodation, such as B&B, would be ideal in any of the neighbourhoods that are adjacent to the River, such as Holmedale.

A third consideration would be simply the unstructured public activities such as hiking.

A fourth consideration is the River as an element of the higher quality of life that Brantford has to offer residents and visitors. This is especially important in an economic development context as it is quality of life and place that is so attractive to the 'creative class' – that group of individuals who deal with ideas and who are highly mobile. Finally, a fifth element is the use of the River itself in development of the image and identity of the community – through visual imagery and colour, the slogan, etc. As with overall quality of life, the image and identity of the community can be associated with the River.

Ecotourism

The first set of economic opportunities can be broadly thought of as 'ecotourism'. A theme in the development and promotion of this Cultural Corridor could be ecotourism, reflecting the natural and outdoors element of much of the Cultural Corridor. The City is currently working in partnership with the Grand River Country Marketing Alliance who are marketing *Grand River Country* for outdoor activities. The *Trails and Waterways* video, created to promote the trails is a useful tool to help build ecotourism.

Ecotourism is both a product (in the sense of the types of opportunities and experiences that can be developed and offered) as well as a market (in the sense of people and organizations interested in taking advantage of these types of experiences). The ecotourism market is growing quite significantly, in some areas at double-digit rates per year. Much of this growth is fueled by aging baby boomers, who tend to develop more of an interest in connections with the environment in which they live as they get older. Coupled with the proximity of the large GTA market on the doorstep of Brantford, as well as current economic trends that favour shorter tourism trips closer to home, this poses a tremendous market opportunity for the City. In a product sense, the Cultural Corridor offers a wide range of unique ecotourism opportunities, as earlier mentioned, and there is additional potential to build on the types of experiences available through both the public and private sectors. Reflecting the market potential, the City should continue to target and invest in individuals and tour operators interested in catering to this growing market interest.

Historical/Cultural Tourism

Another tourism segment posing significant opportunity relates to the historical and cultural tourism potential of the City. Historical and cultural tourism is a segment with great market growth potential (again, related to the aging baby boomer phenomenon). The centuries-old human history of the area that is specifically related to the waterfront, poses significant opportunities for interpretation and program development. Partnerships with the aboriginal community to develop programs and attractions around this resource may be possible. Again, this relates strongly to some key thrusts in the City's Economic Development Strategy.

Brantford already has a strong base of cultural attractions that make it a significant cultural destination. The Sanderson Centre, the Woodlands Cultural Centre, the Bell Homestead National Historic Site and various other attractions provide a foundation for a cultural tourism strategy that could be developed for the community. The Brantford Cultural Network has already been established to respond to this market and has been responsible for organizing workshops, speaker series, promotions and events (such as the Museum Mania Passport Program), drafting a Public Art Policy, newsletters and successfully obtaining funding for various organizations. A coordinated cultural tourism marketing strategy, focused specifically upon this growing market segment, should be developed. Further development of waterfront-related attractions, the Waterfront Cultural Corridor and new attractions that might be built around the archaeological theme would only enhance this Brantford's product appeal in this area.

Educational Partnerships

Elementary and Secondary Level Partnerships

Another aspect of the Destinations component lies in the development of educational partnerships with the City, using the River as a theme. There are many points of connection between the River, waterfront and the Ontario school educational curriculum, including:

- social studies (Grades 1 through 8) – the river as history and geography (Grades 7 and 8);
- science and technology (all grades); and,
- health and physical education (all grades).

The City should explore with both the public and the private sector school boards the possibilities in this regard. Another opportunity in terms of connecting the waterfront with the elementary and secondary education sector would be in the development of various volunteer activities where the students could become involved in specific projects having to do with the waterfront (e.g. cleanup projects). At the secondary level, time spent on these initiatives could go towards the 40-hour volunteer time requirement on the part of all students.

Post Secondary Level Partnerships

Beyond the elementary and secondary level, there are a variety of partnerships that could be developed, focused around the River as the resource. These range from research into various aspects of ecology and history (e.g. monitoring species, archaeological research into aspects of human history, etc.) to specific internships and partnerships relating to individual projects. One possibility, for example, would be for the City to create an internship position with one of the community colleges that would be focused on assisting the City with the various tourism and economic development aspects of this Waterfront Master Plan (e.g. creating partnerships, undertaking further research, etc.) This Waterfront Tourism Development position is just one of a number of possibilities that could be explored in this regard.



p 81	What We Heard, Principles
p 83	Waterfront Neighbourhood & District Land Uses
p 84	Neighbourhoods & Districts Framework
p 85	Neighbourhood & District Initiatives
p 87	Neighbourhood & District Design Guidelines
p 88	Area Specific Design Guidelines



NEIGHBOURHOODS & DISTRICTS

The intent of the Waterfront Master Plan is to set a new standard for development so that it not only minimizes adverse impacts on natural heritage system, but also so that it contributes to making the natural features even healthier and more sustainable. Given their prominent location and potential to shape the image of the City, new development along the Waterfront must exhibit a civic contribution to the City by creating beautiful new extensions to the urban fabric. The Waterfront Master Plan also sets guidelines for improving the interface between existing development and the Waterfront corridor. A tremendous amount of public land has been secured, and miles of trails have been built to create a public resource for all to share. Activities and uses of private development adjacent to the Waterfront must not encroach into this vital public domain. Furthermore, it is imperative for the health of the natural heritage system that the landscape of these abutting properties be planted to provide a transition to the buffers along the River.

Downtown Brantford and its adjacent neighbourhoods are organized on a near perfect grid of streets, creating urban blocks of 100m by 100m. This highly interconnected pattern of tree-lined streets are walkable and provide for a high level of connectivity and access. Some of the blocks are urban squares, such as Victoria Park, that provide a special focus for civic buildings in the area. These urban design conditions are the envy of many other urban areas, and have become hallmark principles that are foundation of present-day new community design. They provide the frame of reference for the design guidelines.

Similar to many other waterfront communities, much of Brantford's urban area has turned its back on the River, exacerbated by the topography and flooding at certain times of the year. For Brantford this issue has persisted for some time. The 1914 report to the Parks Commission on Future Development and Improvement for Brantford recommended that the River be flanked with a parkway "to provide pleasant walks or drives". The authors stated that "Only at one point in the city is anything in the nature of a view of the Grand River to be obtained: viz, at Lorne Bridge. Apart from this, one might spend a considerable time in the city without discovering that Brantford possesses so noble a stream".

Today, the dykes further limit direct visual access to the River. However, they provide the context for a continuous trail and linear park, clearly defining the limit of private development and the beginning of the Waterfront corridor. The Neighbourhoods and Districts component of the Waterfront Master Plan focuses on direction for the newly developing areas or potential development areas, near or adjacent to the Grand River, its tributaries and the canals. Some of these areas are in various stages of planning, while others hold possibilities for long-term redevelopment.

The notion of a Waterfront Cultural Corridor presents an unparalleled context for development - one that demands the very highest standard of sustainable and high quality development. The older parts of the City are a living and exceptional case study for the very best in urban design. The layout of streets, blocks and urban squares, character of institutional buildings, and residences have been recognized in areas such as Brant Avenue, a Heritage Conservation District, designated under Ontario Heritage Act.

What We Heard

Keep the waterfront public. This Study should determine setbacks and buffers from the water's edge and dyke.

City should consider swapping land for waterfront property.

City needs to set urban design guidelines for development adjacent to the River.

Need to set aside land for public use, don't allow developers to pay cash-in-lieu.

Should not let private development back onto the River. People "take over" the River edge at private property and place sheds, dump garden waste, and privatize the waterfront.

Development should not be allowed in the Northwest.

The houses along Grand River Avenue should never have been allowed. The City should have offered to swap land to create public space in this location.

Principles

Protect & integrate natural and heritage features & resources.

Protect & enhance existing established neighbourhoods.

Enhance visual & physical connectivity to the waterfront.

Integrate new developments within a comprehensively considered plan.

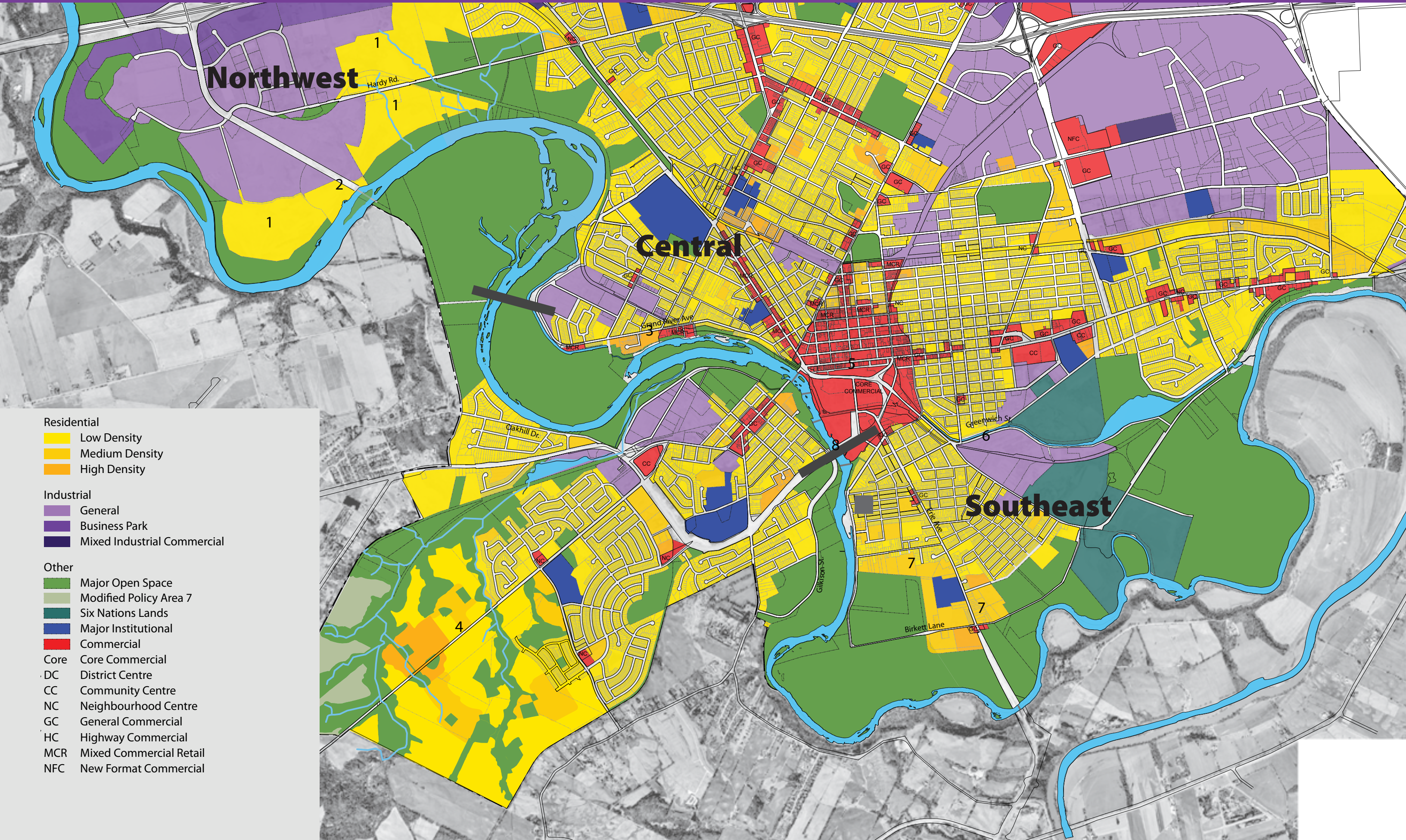
Build on the exceptional strengths of local city-building traditions.

Maximize safety & accessibility along the waterfront for as many residents as possible.

Strive for 'life-long', 'complete', and walkable communities that are sustainable.

New developments should contribute positively to the waterfront and the City's image by showcasing the highest standards & best practices in sustainable development, urban design & architecture.

Land Use



Residential

- Low Density
- Medium Density
- High Density

Industrial

- General
- Business Park
- Mixed Industrial Commercial

Other

- Major Open Space
- Modified Policy Area 7
- Six Nations Lands
- Major Institutional
- Commercial
- Core Commercial
- DC District Centre
- CC Community Centre
- NC Neighbourhood Centre
- GC General Commercial
- HC Highway Commercial
- MCR Mixed Commercial Retail
- NFC New Format Commercial

The direction suggested in the Waterfront Master Plan will require amendments to the Official Plan. The foundation of this direction is the ambition to first establish a healthy, functioning and sustainable natural heritage system. In doing so, it reveals some inconsistencies with the current land use designations in the Official Plan. The following is a summary of the current planning context for the study area:

Northwest Sector

- employment uses, significant natural features, Brantford Golf and Country Club and residential uses
- the Official Plan designates the area as industrial and residential with major open space along the River and on the golf course. There are current development applications in this area at various stages in the planning approval process (1)
- the Official Plan recommends widening Oak Park Road to four lanes and extending it as a new four lane arterial road to connect with Colborne Street West. (2)

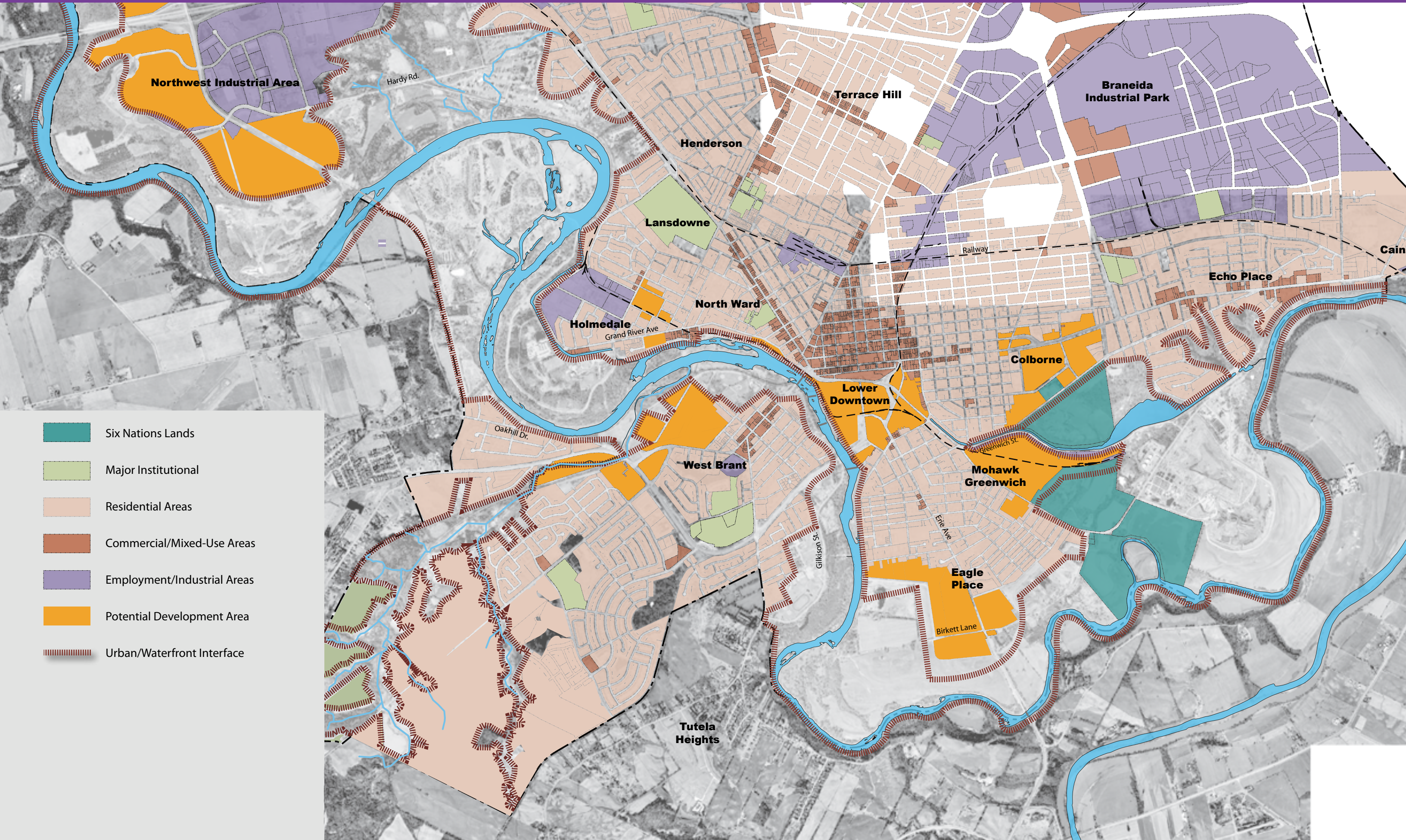
Central Sector

- largely built out with some industrial sites suitable for long term redevelopment.
- this segment includes the Holmedale neighbourhood, North Ward, downtown Brantford and residential neighbourhoods on the west side of the River near Oakhill Cemetery and in West Brant
- the Holmedale neighbourhood has been identified as a area of cultural heritage significance. It includes Landsdowne Park built in the 1900's as a planned community. War time housing was established in the area in the mid 20th century
- there is a current development application for residential uses on the south side of Grand River Avenue (3)
- South west Brantford has a recently completed Secondary Plan that will guide neighbourhood planning. (4)
- A Master Plan has recently been completed for Downtown Brantford providing a vision and design guidelines. (5)

Southeast Sector

- residential and employment uses with major open space along the River.
- brownfield site along Greenwich Street south of Mohawk Canal is in the planning process for redevelopment for housing (6)
- the Eagle Place neighbourhood has undeveloped land that has been designated for residential uses in the Official Plan
- there are current development applications for residential use at various stages in the planning approval process (7)
- the Official Plan also recommends widening the Veteran's Memorial Parkway bridge to 4 lanes and extending it as a new 4 lanes arterial road (8)

Neighbourhoods & Districts Framework



-  Six Nations Lands
-  Major Institutional
-  Residential Areas
-  Commercial/Mixed-Use Areas
-  Employment/Industrial Areas
-  Potential Development Area
-  Urban/Waterfront Interface

The vision for the Neighbourhoods and Districts component includes initiatives to:

- create waterfront gateways;
- create an exciting urban waterfront attraction for Downtown;
- protect and enhance positive urban interfaces
- address existing urban interfaces in need of improvement;
- harmonize current development proposal with this Master Plan;
- adopt Design Guidelines for Neighbourhoods and Districts; and,
- amend the Official Plan and Zoning to be consistent with this Master Plan.

The Neighbourhoods and Districts plan identifies Potential Development Areas (described at the end of this section) and the Urban/Waterfront Interface. The Urban/Waterfront Interface is recommended as the limit of the Natural Heritage system as described in the Environment Component of this document.

Create Waterfront Gateways



Given the vast scale of the corridor and the topographical characteristics of the landscape, the River itself is often not immediately visible if at all. The interface between the City and the waterfront and key points of entry should be a clearly identifiable to residents and visitors so that all will know when they have arrived. A coordinated strategy for a series of waterfront gateways along the urban/waterfront interface can include:

- a consistent special streetscape treatment for all streets that frame the waterfront;
- a consistent special streetscape treatment for key streets that lead to the waterfront;
- gateway treatments where key streets, bridges, trails and paths intersect with the waterfront, including pavilions, signage, public art and landscaping;
- reinforcing view corridors to the waterfront with visual installations at the end of views such as public art, monuments and other architectural elements;
- a consistent and coordinated wayfinding strategy to direct people to and along the waterfront; and,
- ensuring that new developments create and/or reinforce key gateways to the Waterfront through coordinated building, street and landscape designs.

Create an Exciting Urban Waterfront Attraction for Downtown



Although the Downtown is not immediately adjacent to the Waterfront, it has a discernible interface and relationship with it. However, the Lower Downtown that includes the Brantford Casino, Civic Centre, Earl Haig Park and commercial uses such as Price Chopper, sit at a lower elevation closer to the Grand River and have a continuous underutilized frontage with the Waterfront. If the decommissioning of the rail spur that currently serves one business in the Holmedale area can be negotiated, this would enable the creation of a new and exciting urban waterfront attraction. This initiative provides Brantford with a place where residents and visitors can experience the waterfront in a Downtown setting, strolling along a promenade or by sipping a coffee at an outdoor café. This is described in further detail in the Area Specific Guidelines.

Protect & Enhance Positive Urban Interfaces



A number of existing urban interfaces, particularly in the older areas of the Central Sector, have a positive relationship with the Waterfront. Specifically, there is a continuous public frontage such as a street and uses that face and address the Waterfront. Many of these interfaces are scenic routes and provide for continuous access to the Waterfront. These areas are vital and treasured interfaces that should be protected and enhanced. Recommendations include:

- streetscape improvements to streets that edge the Waterfront, including special paving treatments, pedestrian lighting, furnishing and continuous sidewalks and street trees on both sides;
- properties that front these interfaces should be held to the highest standards in design and upkeep;
- fencing on private or public property should be removed and replaced with landscaping elements such as hedges;
- clearly marked and articulated crosswalks, including the possibility of raised pavements to calm traffic and enhance pedestrian safety; and,
- a consistent continuous specially paved walkway along the Waterfront side of streets that includes places to sit and overlook the open spaces where possible.

Address Existing Urban Interfaces in Need of Improvement



There are a number of areas where the interface with the Waterfront is poorly defined and/or barriers exist. Of particular concern is the back-lotting that has occurred. This occurrence has resulted in unsightly exposed backyards and the rear of buildings as well as privacy issues for these residents. Furthermore, this has in effect privatized these segments of the Waterfront making it less visible, accessible and safe for other users. Recommendations include:

- removal or mitigation of unsightly privacy fencing by introducing new rules that limits the height of fencing and favours landscaping treatments (such as hedges) in place of, or to conceal, existing fences;
- introduce façade improvement programs along the waterfront to address poor architectural treatments of the exposed rears of buildings;
- introduce CPTED principles in isolated segments due to back-lotting, including the removal of undergrowth, ensuring clear sight lines between paths and the windows in the upper levels of adjacent buildings, enhanced pedestrian lighting, and highlighting access and egress points;
- explore opportunities for new linkages to the Waterfront where barriers extend for more than 150 metres. This can be accomplished by acquiring properties as they become available or negotiating for easements on existing properties; and
- encourage amendments consistent with these recommendations to approved plans yet to be constructed and where back-lotting is proposed.

Harmonize Current Development Proposals with this Master Plan



Where proposals or applications are being considered for development along the Waterfront, they should be planned and designed to be consistent with this Waterfront Master Plan. All developments along the Waterfront include precious frontages that have a broader civic obligation to all citizens of Brantford. Accordingly, these areas should be carefully considered to ensure they meet the spirit and intent of this Plan and are of the best possible quality. It is recommended that all current proposals outside of the Urban/Waterfront Interface be subject to a peer review by an urban design professional to provide recommendations on the necessary changes to plans to bring them into conformance with the Waterfront Master Plan.

Where development is proposed in areas deemed inappropriate for development by this Plan, the City should negotiate to acquire these lands through purchase or land exchange.

Adopt Design Guidelines for New Neighbourhoods & Districts



The City should adopt the General and Area-Specific Design Guidelines to help guide decision-making with respect to existing and potential development areas along the Waterfront. As further assistance to both developers and review agencies, the City should consider supplementing these guidelines with manuals that include best practices in urban design and environmentally sustainable development to better demonstrate intentions and expectations.

Amend the Official Plan & Zoning to be Consistent with this Master Plan



The Brantford Official Plan should be amended as necessary to implement the Waterfront Master Plan. In particular, amendments should be adopted to redesignate lands no longer deemed appropriate for development. For the balance of lands identified in this Plan for development, they should be subject to a distinct category that identifies their importance in relation to the Waterfront, including the requirement for the preparation of comprehensive urban design plans that demonstrate consistency with this Waterfront Master Plan. Subsequent guiding frameworks and guidelines prepared by the City for specific areas would also be adopted as amendments to the Official Plan. The Zoning By-Law should be brought into conformance with these amendments.

General Design Guidelines for all Development Adjacent to the Waterfront

Protect Natural Features

Existing natural features within a development area, such as woodlots must be protected and maintained. Not only do these features have potential ecological merit, they also form an important part of the cultural landscape and provide developments with an already in-place green amenity for new residents. Where possible, these features could be incorporated into the open space network and link back to the waterfront

Protect Heritage Resources

Heritage resources must be protected, conserved and enhanced. Brantford has a proud and rich heritage that, in combination with the waterfront, is inextricably linked to the core image of this community and its distinction. Heritage resources should also serve as key features of the surrounding developments, providing the neighbourhood with a unique identity and 'sense of place'.

Plan within the Neighbourhood Context

New development proposals should be planned and designed within the context of existing adjacent neighbourhoods. Access and connections to the waterfront will benefit from developments that are well integrated with their built surroundings, contributing to and building on the best qualities that these areas offer. In locations where there are multiple development interests, a coordinated plan should be prepared to avoid development enclaves that are disconnected and unrelated with respect to land uses, streets, open spaces and design quality.

Provide Transitional Buffers

Development should provide adequate setbacks from the waterfront to enable a transitional interface between the more passive natural areas and the developed areas. By doing so, natural systems can be protected, and enhanced with buffer planting.

Extend or Create a Street & Block Grid

Downtown Brantford has a highly walkable network of streets and blocks generally characterized by a fine-grained, interconnected grid network. The resultant smaller blocks encourage walking by providing for multiple and convenient routes to get about. This is especially important at the waterfront, so as to enhance its access. New development should be planned with a grid of streets and small blocks.

'Windows' & Gateways to the Waterfront

By designing streets to terminate at the waterfront, visual and physical accessibility is enhanced, even for residents living further away. A rhythm of 'window' views also serves as a constant reminder of the proximity and relationship that Brantford has to its river. To reinforce their gateway function and to strengthen visual connections, elements of visual interest should be located at the ends of these streets, such as public art, belvederes or pavilions.

Face the Waterfront

As a shared public resource, all buildings should front or flank the waterfront by being placed directly on a single-loaded road that defines

the waterfront edge. In addition to being more visually appealing, this configuration enhances the sense of public ownership and access, which cultivates a culture of shared stewardship over the care and maintenance of the waterfront. Furthermore, fronting the waterfront facilitates a natural surveillance through 'eyes on the space', which enhances the sense of safety and security. Reverse-lot frontage should be avoided, especially with privacy fencing adjacent to the waterfront.

Views of the City

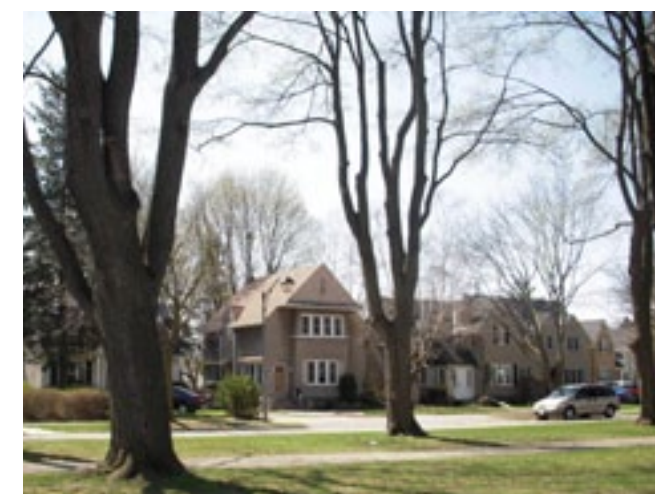
The view back to the city is as important as the view to the waterfront. Accordingly, developments fronting the waterfront have an elevated civic responsibility given their tremendous visibility. Building design in these locations should be held to the highest possible standard striving for excellence in architectural design and material quality. Blank, unarticulated facades or the use of poor quality and unnatural materials should be avoided.

Open Space Connections to the Waterfront

To enhance visual and physical accessibility to the waterfront, opportunities for open spaces and/or trail connections from the neighbourhood to the waterfront should be provided. This can be achieved through linear parks or squares that link to the waterfront. Key streets leading to the waterfront should provide inviting and appealing green promenades or boulevards.



Single loaded road adjacent to natural features and parkland
Ajax



Houses face central park in the Holmedale Neighbourhood
Brantford

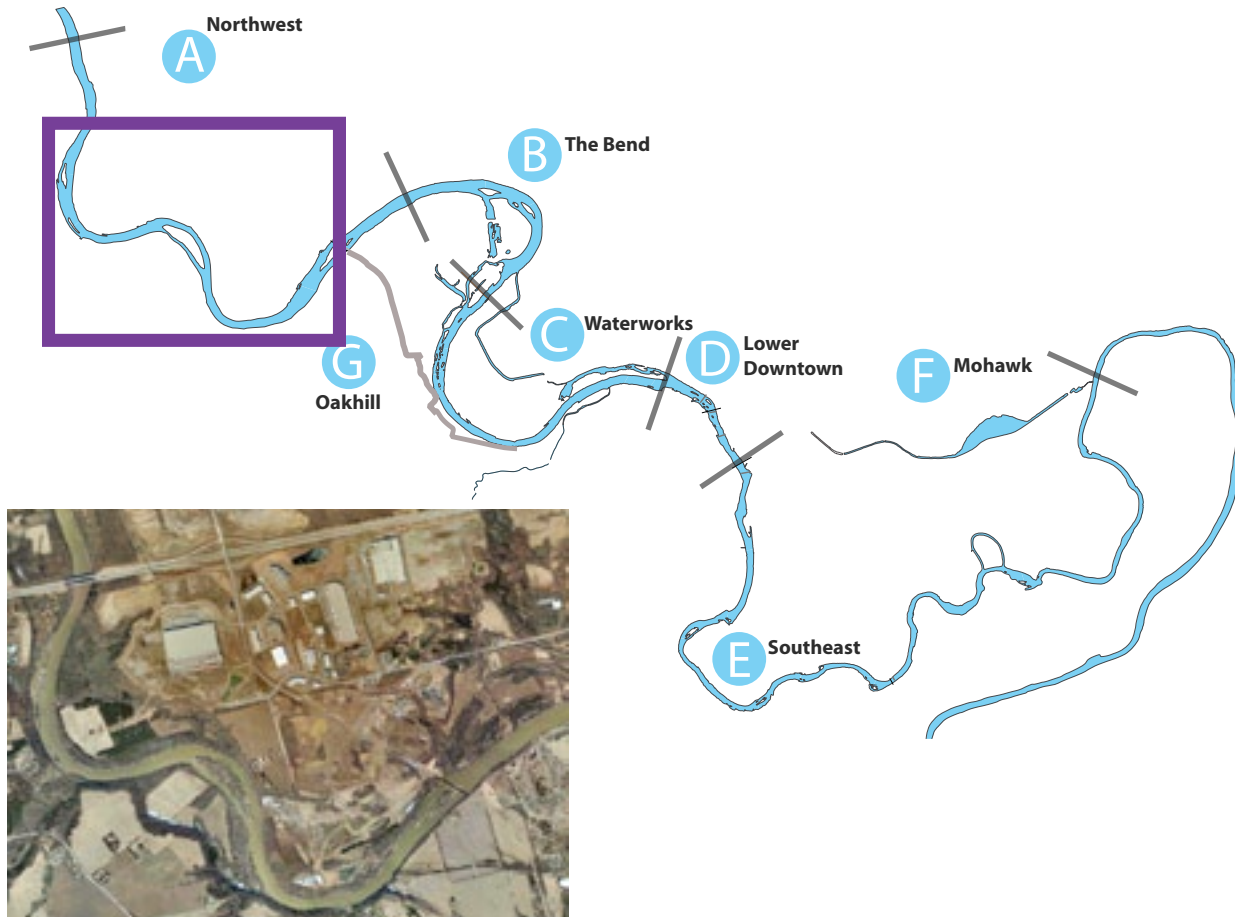


View from Dover Ave to the dyke, Eagle Place Neighbourhood
Brantford

Area Specific Design Guidelines for Development Adjacent to the Waterfront

In addition to the general design guidelines, specific guidelines have been provided that are tailored to a number of key development areas. These areas include:

- Northwest Industrial Area
- Lower Downtown
- Eagle Place Neighbourhood
- Holmedale/Northward Neighbourhood
- West Brant Industrial Area
- Greenwich-Mohawk
- Colborne Street East



Northwest Industrial Area

The Northwest Sector of the study area supports some of the Province's most unique and sensitive natural heritage features. The Perched Fens Provincially Significant Wetland is one of only two known locations of this type of plant community in the Province. Together with woodlands and other wetlands in the area along the Grand River and its tributaries, this is the largest intact natural area that remains in the City. The presence of the perched prairie fens, the marl deposits associated with the Tufa

Mounds Area of Natural and Scientific Interest, and other wetland features associated with the slopes, terraces and cut off meanders in this area is directly related to the highly sensitive groundwater regime that occurs in this area. The groundwater regime in the Northwest is important for sustaining the quality of Brantford's drinking water, supporting the fish community in the Grand River and the tributaries originating the wetlands.



Demonstration Plan - Northwest Industrial Area

The ecological significance of the lands currently designated for residential development west of the Brantford Golf and Country Club is underscored by the presence of undeniably significant archaeological features that were subject to scientific investigation. The terraces associated with the former River channels were occupied at a time when the population of Ontario likely numbered in the hundreds and the tools that have been recovered dates that occupation to approximately 11,000 years ago. In fact, the occupation of that site is one of the richest known for that period in the archaeological record of the Great Lakes region.

It is within this rich natural and cultural heritage framework that the Waterfront Master Plan recommends that only lands outside of the Urban/Waterfront Interface, (identified on Neighbourhoods & Districts Plan) be considered for development. As a result, the balance of the potential development lands in the Northwest that remain are designated for industrial uses.

There is an opportunity to develop the employment lands in a way that sets the very best practices in sustainable and high quality development, urban design, architecture and natural and cultural heritage preservation. Sustainable design is landscape design, architecture and engineering that establishes the conservation of natural resources and systems as a primary consideration in the planning, design and construction process. The City should urge LEED-certified (Leadership in Energy and Environmental Design) levels of sustainable design and encourage the private sector to meet that challenge.

Recommendations & Design Guidelines include:

1. Protect for the extension of Oak Park Road. As a new road that may cross the Grand River, it should set a new environmental and design standard for road and bridge design.
2. Establish Waterfront edge streets to define the limit of private development, to provide a transition to the natural features and to enhance public accessibility to the Grand River.
3. Align connecting roads to reinforce views to natural features and the Waterfront.
4. Provide street trees, sidewalks and accommodate cycling on all streets.
5. Establish a landscape framework as a fundamental organizing plan for the area to minimize disturbance to the landscape, establish connecting links to the natural features, incorporate storm water management, bio-swales, roads, trails, parks and open spaces. Through this framework, development blocks should be determined, building sites identified and landscape standards for individual properties established.
6. Prepare a comprehensive storm water management plan to reduce pollution and hydrologic instability from storm water, reduce flooding, promote aquifer recharge and improve water quality by emulating natural hydrologic conditions. Retain storm water on-site, through infiltration, evapo transpiration, and/or reuse of storm water.
7. Prepare a built form framework plan to locate buildings in relation to each other and to locate buildings in a way that integrates landscape, topography, special features, area and building specific access.
8. Locate buildings to frame open spaces.
9. Locate buildings close to the street edge with parking and service areas to the side or behind.
10. Articulate facades and clearly define the primary building entrance, including a pedestrian connection to the street.
11. Design buildings to meet the LEED rating system. Encourage the design and construction of buildings that use green building practices and adopt energy and water use efficient practices



Husky Injection Moldings is a Canadian supplier of injection molding systems to the global plastics industry. Robert Schad, President and CEO, has aspired to be a leader in sustainability and a role model for other companies in all aspects of business – economically, socially and environmentally. Their award winning 70 acre site in Bolton's urban area is recognized for its naturalized landscape eliminating the need for fertilizers and enabling natural infiltration of storm water and their storm water management that accommodates water in shallow swales, ponds and wetlands.

Lower Downtown

The Master Plan for Downtown Brantford includes design parameters for lands south of Icomm Drive. These lands include the Brantford Casino, Brant Brantford + District Civic Centre, a commercial plaza and pad retail, Earl Haig Park and expansive areas of surface parking. The Downtown Master Plan recommends a street, block and open space structure that could guide the revitalization of this area to provide a logical extension of Downtown. The City has begun to create positive aspects of this vision with Brant's Crossing, the skateboard park and the new pedestrian bridge on the abandoned rail bridge.

The Waterfront Master Plan builds on this direction and identifies the area as an opportunity to create a diverse, vibrant, dynamic Downtown neighbourhood at the water's edge, comparable to great urban waterfronts being created across North America. Given the proximity to the River and Downtown, this is the logical location to create a special and exciting setting for a concentration of higher density residential, retail, office, arts, cultural and recreation uses. This neighbourhood will serve as a complement to the Downtown, accommodating large-scale functions not suitable for the historic areas while providing for a critical mass of people living near by. At the same time, the Lower Downtown will add to the attraction of the Downtown area. Lower Downtown can also provide a better connection between Downtown Brantford and Eagle Place.

A demonstration plan has been prepared to illustrate the application of key design principles. This is not a development proposal and it does not force the relocation or elimination of existing uses. It is simply one demonstration of many possible ways the Lower

Downtown could evolve over the very long term when landowners are prepared to redevelop.

Key features of the demonstration plan include:

- the introduction of a fine-grained and walkable street and block network;
- the introduction of a Promenade and waterside street fronted by a mix of use including restaurants and cafes;
- the realignment of Icomm Drive further to the south to enable a veneer of uses along the south side of the parking structures;
- an improved pedestrian linkage to the Downtown at Market Street;
- the integration of the Brantford Casino with a veneer of uses that give positive frontage to the streets;
- the redevelopment of the Brantford + District Civic Centre into a more urban configuration; and,
- the historic rail station is incorporated into an east-west linear park that connects with Mohawk Canal, Lake and Park, and which may include a new enhanced location for the Farmer's Market.

It is recommended that the City prepare a detailed plan for the Lower Downtown to put in place a guiding framework to ensure the orderly transformation of this area, align efforts, set infrastructural priorities and to put in place a phasing plan. Most importantly, this plan will ensure that short-term development decisions do not set up barrier to achieving the Lower Downtown's full future potential.



Demonstration Plan - Lower Downtown



Recommendations & Design Guidelines include:

Streets & Open Spaces

1. Establish an interconnected walkable street and block pattern that is similar to that of the historic Downtown.
2. Provide for continuous public access along the waterfront with a specially designed destination street or 'Promenade' that can also provide an address to new uses including retail.
3. Ensure the highest possible streetscaping on all streets to support a pedestrian culture, including reduced roadway widths, wide sidewalks, continue street trees, on-street parking, articulated crosswalks at all intersections and at-grade uses on all frontages.
4. Create a variety of open spaces including squares, plazas, and courtyards.
5. Where possible, open spaces should link to the adjacent open space network.
6. Mid-block pedestrian connections are encouraged to enhance the porosity of the area for convenient pedestrian movement.

Uses & Built Form

7. Locate buildings close to the street edge as in a "main street condition" with clearly defined entrances that directly access the sidewalk.
8. Set back buildings along the 'Promenade' street to create a wide sidewalk that will enable spill out activity such as sidewalk cafes.
9. Retail uses should be directed to the 'Promenade' and main streets such as Market Street. Where non-retail is proposed at-grade, ensure high levels of transparency or at-grade access units for residential to animate the streetscape.

10. Large-format retail or cultural venues and parking structures should be directed to second levels or should provide for a veneer of smaller format uses to animate the street.
11. Above-grade parking structures should be concealed from view with façade treatments.
12. Provide all parking in structures designed as integral to the developments and in partnership with the private sector. Access should be located off secondary streets with less pedestrian traffic.
13. Consistent with the height strategy in the Downtown Master Plan, heights are to be generally not taller than 6-storeys with an allowance for taller buildings at strategic locations, such as the corner of Icomm and Colborne.
14. The first three-storeys of all buildings should be clearly defined and positively contribute to the quality of the pedestrian environment in the level of animation, transparency, articulation and material quality.
15. The upper storey or roof feature should be designed to contribute to the visual quality of the streetscape. Rooftop mechanical systems should be design integrated.
16. To enhance the distinction and landmark quality of corner buildings or visual terminus sites, exceptions to step backs and height are appropriate for massing and designs that accentuate the visual prominence of the site
17. Align design features of buildings on terminus sites to the view axis, which, in addition to tall architectural elements, can include aligned entries or portico openings.



Ground floor retail with sidewalk cafes



Grade level retail and special streetscape



New 5 storey mixed use building



Compatible infill development in Downtown Brantford



Special treatment at corners



Above grade parking with ground floor uses

Eagle Place Neighbourhood

Undeveloped lands north of Birkett Lane on both sides of Erie Avenue are in various stages of planning for residential development. This area provides an opportunity to extend the built form pattern of Eagle Place into these undeveloped lands, while providing for a positive interface with the Waterfront. This area is comprised of many landowners and therefore a comprehensive plan is imperative to ensure a coordinated neighbourhood plan.

A demonstration plan was prepared to illustrate the application of key design principles that should apply to this area. Key features of the demonstration plan include:

- a continuous open space along the dyke that integrates and links natural features, community facilities, storm water management facilities, and new parks;
- a highly interconnected network of streets that link to the adjacent network, are of a walkable scale and oriented to provide for visual and physical connectivity to the waterfront;



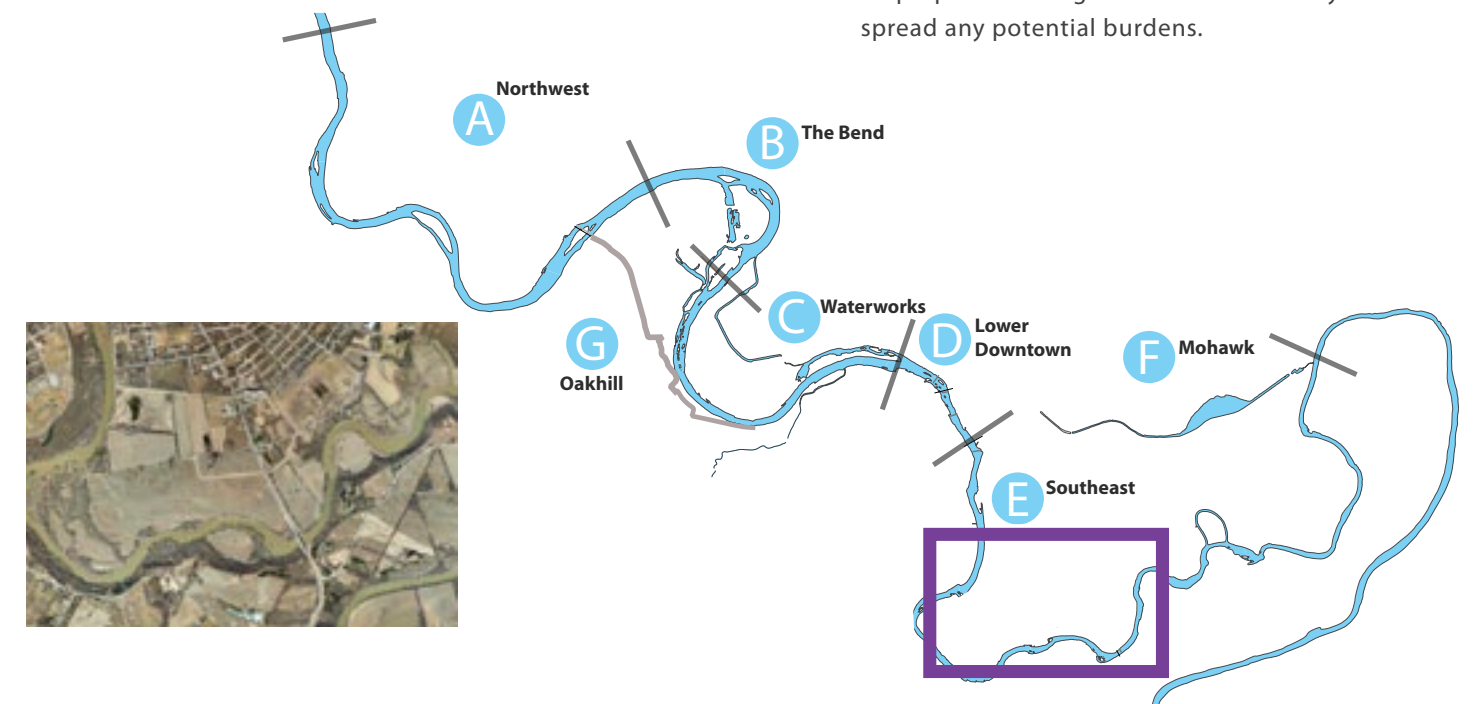
Demonstration Plan - New residential development in Eagle Place Neighbourhood

- a neighbourhood focal area is provided at the intersection of Erie Avenue and Birkett Lane that may include convenience retail uses to serve the neighbourhood; and,
- distribution of densities to provide for a variety of housing throughout the neighbourhood with higher densities directed to key amenities and open spaces.

Recommendations & Design Guidelines include:

1. Establish a Waterfront edge road to define the limit of private development, to provide a transition to the natural features and to enhance public accessibility to the Grand River.
2. Frame open spaces by a street on at least two sides.
3. Use a grid-inspired network of streets to structure the neighbourhood and to offer views to open spaces and the dyke.
4. Provide street trees, sidewalks on all streets and accommodate cycling in key linkages to the Waterfront.

5. Streetscape treatment should create a distinct character for the neighbourhood and help to distinguish the hierarchy of streets.
6. Define blocks to create a highly permeable neighbourhood that facilitates walking.
7. Provide for a variety of house types throughout the area. Townhouses should be mixed with other housing types to add variation to the neighbourhood.
8. Buildings should be located close to the front property line, at a consistent setback.
9. The front door or porch of a house, not the garage, should be the defining element of the front façade and the streetscape.
10. Rear lanes may need to be considered where narrower lots are contemplated.
11. Stormwater management facilities should be considered as an open space feature, designed to maintain environmental and ecological integrity and to provide a net benefit to the environment, especially in this location adjacent to the dyke and the Grand River.
12. To encourage a coordinated and logical street and open space pattern, an agreement should be prepared among landowners to evenly spread any potential burdens.





Stormwater management pond as a neighbourhood feature



Houses face central neighbourhood park



Houses located close to the front property line at a consistent setback, rearlanes provide access to garages

Locations with industrial or commercial uses adjacent to the Urban/Waterfront Interface are identified. These present particular opportunities for redevelopment and intensification over the short to very long terms. Where plans are not already underway, the City should prepare comprehensive plans and designs for these areas.

Other Brownfield & Greyfield Areas: Holmedale Neighbourhood, West Brant Industrial Area, Greenwich-Mohawk & Colborne Street East

In **Holmedale Potential Development Area**, is adjacent to SC Johnson and Hartman, both well-established employment uses. It includes the Penmans Site, the subject of a number of proposals over the past 20 years, and other underused sites. It will be important in this area to provide a transition from residential areas to employment lands.

The **West Brant Potential Development Area** is in transition. While there remain robust employment uses, some sites fronting onto Colborne Street West have already redeveloped into retirement and affordable housing. The recently completed multi use rail trail now traverses this area and provides a link to the Waterfront.

The **Greenwich Mohawk** brownfield site is a 50 acre site on the south side of Mohawk Lake. Actions on the site are guided by the Greenwich Mohawk Streets Brownfields Site Remediation Study approved by Council in 2004. Following property acquisition, the City carried out further environmental and structural investigations to prepare the site for redevelopment. The City issued a Request for Proposal in 2009 to seek qualified developers to work with the City to redevelop the site. Terrasan Corporation are finalizing their remediation strategy for the site. Official Plan Amendment 125 anticipated a range of residential, commercial, heritage and recreation uses on the site with a 15 m setback from the railway spur line.

The **Colborne Street East Potential Development Area** is identified as an Intensification Area in Official Plan Amendment 125. It includes vacant and underused commercial and employment lands on Colborne Street East. The area has drive-through restaurants, gas stations, strip plazas and a vacant large format retail plaza. The high school

is in the centre of this Area that abuts the open space of Mohawk Park. This is an important location that functions as a gateway to both the Downtown and Waterfront.

Official Plan 125 recognizes the importance of setting urban design standards for intensification. The new policies provide a good framework by directing that new development will:

- support and promote the use of transit;
- contribute to the creation of a range of housing;
- contribute to an attractive, safe and comfortable pedestrian environment that encourages walking;
- provide a gradual transition of scale and density from higher buildings to nearby lower scale neighbourhoods;
- mass new buildings to frame adjacent streets and open spaces;
- conserve heritage properties;
- provide a connected open space system that links natural features; and,
- create views to important natural and built features.

Recommendations & Design Guidelines include:

1. Extend the street and block pattern in the immediate context into the site in order to integrate the redeveloped lands into the built form fabric of the adjacent neighbourhood.
2. These sites should not be developed as separate enclaves, but should appear as a logical extension of existing built conditions. For example, townhouses planned for the Penmans Site should front, face, feature and have access from Jamieson Court.
3. Provide street trees, sidewalks and accommodate cycling on all key streets.
4. All these areas already have a street that follows

the edge of the Waterfront or Canal. This condition clearly defines the limit of private development, provides a transition to natural features and enhances public accessibility to the Grand River and the Canal. Redevelopment plans should maintain and enhance this condition.

5. Align connecting roads to offer views through to the Waterfront or Canal, and the associated natural features.
6. Provide for mid block pedestrian connections to the Waterfront or Canal where blocks are over 150m in length.
7. Define mid block pedestrian connections to be clearly legible as publicly accessible.
8. Incorporate open spaces that offer significant pedestrian access and use. The landscape treatment should provide a transition to adjacent natural features of the Waterfront or Canal.
9. Open spaces should be used to organize and focus development, and should always be fronted by buildings and active uses.
10. Incorporate a variety of uses, in particular a mix of residential uses.
11. Locate surface parking internal to the blocks so as to not be visible from streets or adjacent open space, in particular the Waterfront or the Canal
12. A variety of housing types should be provided for. Townhouses should be mixed with other housing types to add variation to the neighbourhood.
13. Buildings should be located close to the property line, at a consistent setback, to define streets or open spaces
14. The front door or porch of a house, not the garage, should be the defining element of the front façade and the streetscape.
15. Rear lanes may need to be considered where narrower lots are contemplated.

IMPLEMENTATION



This chapter includes recommendations for managing the implementation of the initiatives described in each of the components of the Waterfront Master Plan. It includes a summary of projects with the lead and associated partners and an estimate of the order of magnitude capital cost for budget setting purposes. This chapter also includes recommendations for a planning policy framework.

Management

Implementation of projects on the waterfront have largely been the responsibility of Parks and Recreation Department, however because of the complexity of conditions, the decisions of many departments (Economic Development and Tourism, Engineering, Planning, Public Works and Building) have an influence on the waterfront. In addition, there are many special Committees of Council that participate in shaping the direction for key projects and initiatives including:

- Parks and Recreation and Waterfront Advisory Committee;
- Environmental Policy Advisory Committee;
- Tourism Advisory Board;
- Heritage Advisory Committee;
- Brownfields Advisory Committee;
- Economic Development Advisory Committee; and,
- Multi-Use Trail and Bikeway Advisory Committee.

The City has worked diligently to develop partnerships with a variety of groups to implement projects along the waterfront. There are very committed volunteers who have donated thousands of hours to, for example, help build trails, plant trees, naturalize areas, clean up garbage and protect habitats. The City has recently implemented many initiatives to celebrate the 40th anniversary of Earth Day.

A volunteer committee organized community wide events including:

- garbage clean up days;
- school yard clean up;

- tree planting;
- a speaker series; and,
- downtown clean up.

Clearly, the waterfront comprises a complexity of conditions and projects with implications to virtually all City departments, other provincial government agencies, First Nations, adjacent neighbourhoods, businesses, interest groups and residents at large.

There are several models for managing large tracts of waterfront lands including:

- separate and quasi-independent agencies or commissions, such as the Niagara Parks Commission;
- extensions of a municipal or other government department, such as Stanley Park or Downsview Park;
- special multi level government corporation such as Waterfront Toronto;
- special task force such as Task Force to Bring Back the Don where members of the Task Force are appointed for a three year term in parallel with the current term of council. The Task Force has the support of dedicated City staff. The Task Force has three sub-committees Habitat Restoration; Policy & Planning; and Communications, Outreach, and Marketing; and,
- the responsibility of one city department to coordinate all waterfront related activities through the appointment of a staff person dedicated to the project .

In Brantford's situation, the waterfront is within one jurisdiction. This exercise has pointed

to the urgency for the federal government to address the outstanding land claims of the Six Nations. In similar projects in other municipalities, successful implementation has resulted when the municipal role in a complex undertaking is to 'convene a conversation' with the various stakeholders who might be involved in the various tasks and activities recommended. The municipal responsibility is to bring the parties together to discuss ways and means of achieving effective implementation of the Waterfront Master Plan. Often, the municipality will continue its commitment to the overall effort by hiring, on a short-term basis, a coordinator or facilitator who will work with the various stakeholders until a momentum is established and the roles and responsibilities of the various parties are clear and established. It is recommended that:

- the City hire, on a short-term and possibly part-time contract, a Waterfront Master Plan Coordinator, reporting to the Planning or Parks and Recreation departments;
- the City conduct a working session to launch the Waterfront Master Plan, and discuss ways and means of its implementation – the long list of stakeholders, including the GRCA, Ministry of Natural Resources, interest groups, and organizations that have participated in this process would all be invited to participate;
- the agenda at this working session be set to discuss on-going implementation and coordination of the various initiatives in the plan
- the various participating stakeholder groups and municipal departments commit to being part of a Waterfront Master Plan Implementation Advisory Committee ;

- after the working session, and on a regular basis, the Waterfront Master Plan Coordinator would arrange gatherings of the Waterfront Master Plan Implementation Advisory Committee to discuss various projects relating to the plan;
- following the working session, staff would identify the associated partner(s) for the implementation of various projects; and
- at the end of a defined period of time (say 6 months) the Advisory Committee would meet to review progress and determine whether and how to continue with the Advisory Committee structure – at that point the City would presumably need to determine whether or not to continue the Waterfront Master Plan Coordinator position.

The advantage of this model is its flexibility, and relatively low cost to initiate. As well, the final organization and coordinating structure to emerge will be 'organic' in nature, reflecting the interests and energies of those organizations having the most to gain from successful implementation of the plan.

Summary of Projects & Initiatives

The following tables summarize the component projects in the Waterfront Master Plan. They itemize specific projects, the lead partners, associated partners and order of magnitude costs for budget setting purposes. The projects are a combination of special studies, detailed design and capital projects.

There are a number of funding sources that may be available to assist with the capital costs:

TD Friends of the Environment
 Shell Environmental Fund
 Brant Resource Stewardship Network
 Wetland Habitat Fund
 Carolinian Canada
 Lower Grand River Land Trust
 OMNR Species at Risk Stewardship Fund
 OMNR Community Wildlife Improvement Program
 Tallgrass Ontario
 Ducks Unlimited Canada
 Nature Conservancy of Canada
 Ontario Trillium Foundation
 Ontario Heritage Foundation
 Brant Field Naturalists
 County of Brant
 Ontario Nature Trust Alliance
 GRCA
 Environment Canada EcoAction Community Funding Program
 Parks Canada (i.e. urban national park initiative)
 Federation of Ontario Naturalists
 Brant Waterways Foundation
 Local Businesses (e.g. SC Johnson)
 Donations and Bequeaths
 Grand Valley Trail Association
 Municipal Tax Levy for the Acquisition and Management of Natural Heritage System
 Eco-Action
 Great Lakes Renewal Foundation
 Canada Trust Clean Environment Foundation
 Schad Foundation

Initiatives for tree planting projects and buffer planting:

Private Land Tree Planting Program (GRCA)
 Brant Rural Water Quality Program
 Ontario Power Generation Forest Corridor Project
 Ontario Forestry Association – Ontario Managed Forest Tax Incentive Program

Environment

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Management			
30 m buffer from ESA, PSW, ANSI, rare plant communities, valleys, watercourses, woodlands and other wetlands through: municipal land use controls stewardship agreements conservation easements	City	GRCA, OMNR	\$30,000 per year (staff and volunteer time) *
Prepare management plans for prairie, savannah and oak woodland habitats	City	GRCA, OMNR	\$100,000 *
Prepare a program for rare species recovery program	City	GRCA, OMNR	\$50,000
Prepare a tree/woodlot by-law	City	GRCA, OMNR	\$50,000
Develop a reforestation program for urban neighbourhoods			\$100,000
Prepare forest management plans for parks: 1. D'Aubigny Creek Park 2. Fordview Park 3. Gilkison Flats 4. Rivergreen Park 5. Mohawk Park	City	GRCA, OMNR	\$40,000 each
Prepare a Forest Management Plan for the City	City	GRCA, OMNR	\$100,000
Prepare tree planting guidelines and landscape requirements for new developments	City	GRCA, OMNR	\$50,000

* All other order of magnitude costs do not include staff time.

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Planting			
Plant the buffer with native species	City	OMNR, GRCA, private landowner	\$40,000 per 100m
Remove invasive plants from natural areas. Priority areas are: Mohawk Park Gilkison Flats Waterworks Park Rail trail prairies Brant Conservation Area	City	OMNR, GRCA	\$50,000 per year
Naturalize potential restoration areas as identified on the Natural Heritage Map. Priority areas are: 1. the connection between the Davisville Swamp PSW and the Grand River Forest ESA 2. Brant Conservation Area 3. the Telephone City Aggregates Site 4. the landfill (long term) 5. open fields and agricultural lands in the South East segment adjacent to the River (Birkett Lane) 6. D'Aubigny Creek	City	OMNR, GRCA, property owners	\$50,000 per year
Enhance the riparian buffer in the Central Sector by planting native tree and shrub thickets	City	OMNR, GRCA, private landowner	\$100,000
Enhance the dyke by establishing a meadow and prairie community	City	GRCA	\$200,000

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Water Quality			
Implement Low Impact Development stormwater management measures in existing neighbourhoods and future developments	City	GRCA	\$100,000
Create first flush floodplain wetlands in the Southeast	City	GRCA	\$500,000
Implement the recommendations from previous studies to enhance the water quality and aquatic habitat of Mohawk Lake and Canal	City	GRCA, OMNR, DFO	To be determined in consultation with staff based on review and update of the original studies
Wildlife			
Implement wildlife crossing (signage, traffic calming measures and dry culverts) 1. D'Aubigny Creek 2. Birkett Lane 3. Mohawk Canal 4. Northwest	City	GRCA, OMNR	\$300,000
Implement the recommendations of the Bald Eagle Habitat Management Guidelines and guidelines for other endangered, threatened and rare species (see appendix)	City	City, OMNR, private landowners	To be determined in consultation with staff based on review and update of the original studies

Summary of Projects & Initiatives

Parks

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost*
Secure a continuous linear greenway along the Grand River in the Northwest and Southeast through acquisition, stewardship or conservation easements	City		To be determined based on consultation with staff and land owners
Prepare detailed design for streetscape improvements on Greenwich Street and Forest Road	City		\$60,000
Upgrade the facilities in Mohawk Park (with the exception of the splash pad)	City		\$2 million
Remove the fence around the perimeter of Mohawk Park	City		\$100,000
Implement the high priority projects in Phase 1 of the implementation of improvements to Lorne Park as per the Lorne Park Master Plan	City		\$300,000 (not adjusted to inflation)
Pursue incorporating a dog off leash area in the open fields of Waterworks Park	City		\$50,000 for study
Pursue incorporating other recreation uses such as disc golf in Waterworks Park	City		\$50,000 for study

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Remove the perimeter fencing in Waterworks Park	City		\$50,000
Install a sign for Waterworks Park at the entrance off Grand River Avenue	City		\$10,000
Pursue incorporating disc golf in the open fields in Gilkison Flats	City		\$20,000
Prepare a master plan/feasibility study for Glenhyrst Gardens	City		\$50,000
Prepare a park plan for a new park on the site of the Alfred Watts Hydro Generation Plant	City		\$40,000
Pursue agreement with GRCA related to all its lands within the City of Brantford.	City	GRCA	\$250,000
Prepare a park plan for three new parks in the Northwest	City	GRCA	\$90,000
Prepare an after use plan for the landfill to guide the incremental rehabilitation of the site	City		\$50,000

*** Notes:**

- Detailed design work required.
- Estimate includes construction and soft costs (soft costs approximately 20% of value of construction).
- Efficiencies in cost (design and construction) would be realized by combining projects.
- Budget is in 2010 dollars. Escalation needs to be considered for actual date for which project proceeds.

Access

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Pursue extending the Primary Waterfront Trail on the north side of the Canal	City	Six Nations	\$500,000
Extend a year round accessible Riverside Footpath through Brant Conservation Area	GRCA	City, Grand Valley Trail, BWF	\$500,000
Extend the Riverside Footpath through the Southeast Sector	City	private landowner, Grand Valley Trail, BWF	\$250,000
Develop the D'Aubigny Creek boat launch	City	GRCA	\$500,000
Relocate the boat launch in Gilkison Flats, including formalizing the trail	City	GRCA	\$500,000
Grade and pave the road and parking at the Beach Road boat launch	City	GRCA	\$100,000
Construct stairs and a boardwalk at the boat launch at Wilkes Dam	City	GRCA	\$200,000
Assess existing streetscape and determine enhancement to streetscape on the special "green street" connections	City		\$25,000 for study
Prepare a information, wayfinding signage strategy for the trails	City	Brant Waterways Foundation	\$25,000 for study

Heritage

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Prepare interpretation plans for archaeological sites in the Northwest, Holmedale, Colborne Street, D'Aubigny Park, and Porteus	City		\$50,000
Complete a Feasibility Study to designate the Holmedale Areas as a cultural heritage landscape under the Ontario Heritage Act	City		\$25,000
Complete a Feasibility Study to designate Mohawk Park, Lake, Canal and Hydro Generating Plant ruins as a cultural heritage landscape under the Ontario Heritage Act	City	Six Nations, Grand River, Mississaugas of the New Credit First Nation	\$10,000

Funding Programs for Heritage and Culture initiatives:

- Millennium Grant
- Ontario Trillium Foundation Grant
- Cultural Spaces Fund

Summary of Projects & Initiatives

Destinations

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Develop an image/brand/identity for the Waterfront Cultural Corridor	City	Possibly GRCA	\$50,000 for study
Conduct an information session with the operators of the destinations to present this plan and discuss their contribution to the Waterfront Cultural Corridor	City	Invite all destinations in waterfront corridor, plus operators using river (e.g. Heritage River Canoe and Kayak Company)	\$10,000
Ensure that Economic Development Strategy being developed incorporates economic development components of this waterfront development strategy; particularly: ecotourism and heritage/cultural opportunities; use of waterfront in image and brand of community (in marketing/promotion aspect of strategy); use of waterfront corridor in tourism promotion	City	Steering Committee for economic development strategy study	\$10,000
Prepare a Cultural tourism marketing strategy	City	First Nations GRCA Operators of cultural destinations in City	\$50,000

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Establish partnerships with Laurier Brantford and the community colleges – convene meeting to discuss research opportunities, internship possibilities (connected with the implementation of this plan, etc.)	City	Laurier Nipissing Mohawk	\$20,000
Develop a guide for school boards showing ways in which the river / waterfront can inform the K-12 curriculum	City – possibly through internship project with post-secondary student		
Meet with private and public school boards to discuss partnerships to discuss curriculum guide, potential opportunities, and school boards needs	City	Brant Haldimand Norfolk Catholic District School Board Grant Erie District School Board	

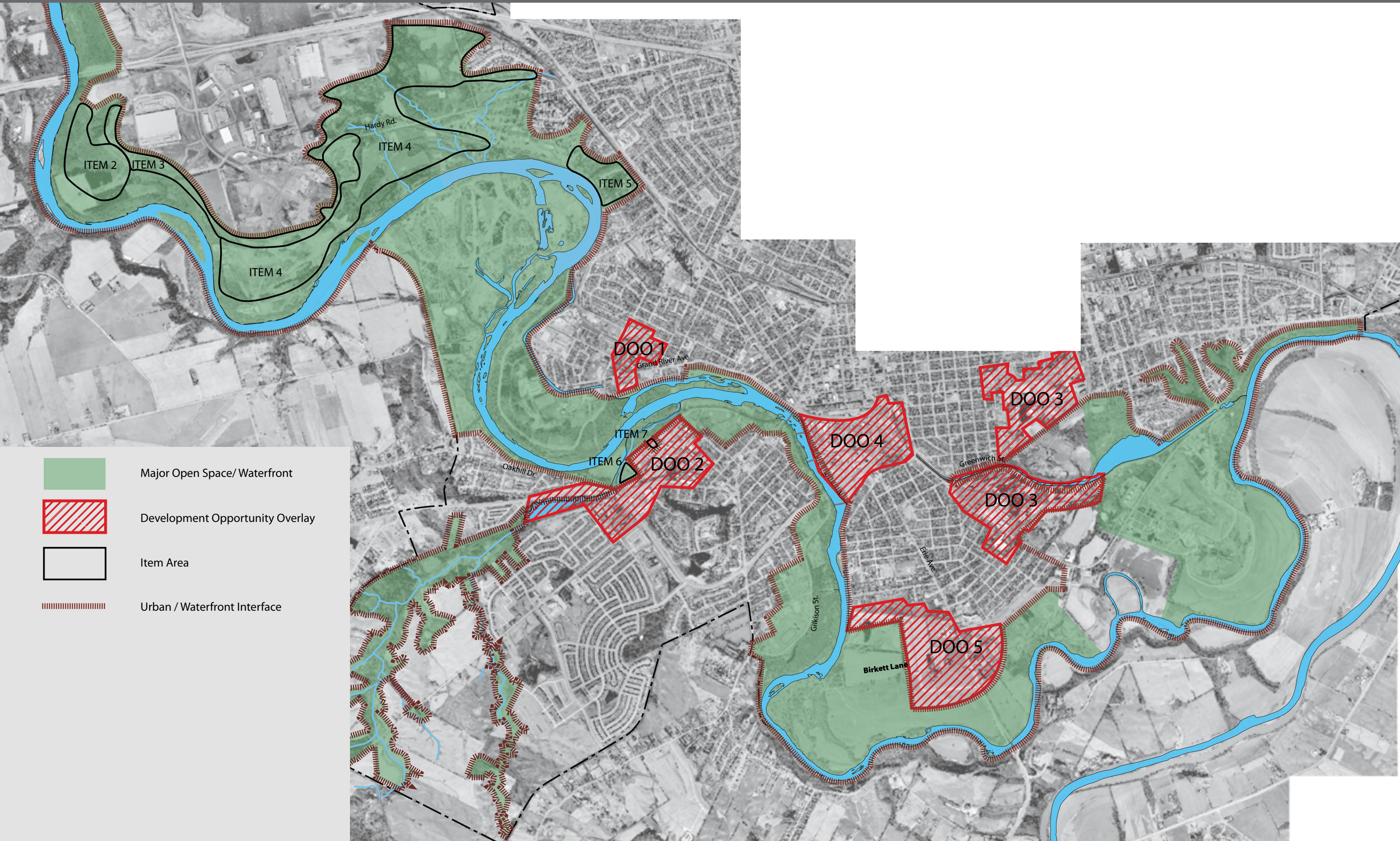
There are a number of funding sources that may be available to assist with the capital costs:





Service Canada
 Canada-Ontario Infrastructure Funding
 Ontario Trillium Foundation
 Ontario Rural Economic Development Program
 Local Health Information Network (LHIN) - some are interested in funding trails (or promotion of trails) as routes to encourage healthy physical activity
 TD Environmental Trust
 Mountain Equipment Co-Op
 Tim Horton's Children's Foundation
 David Suzuki Foundation

Neighbourhoods & Districts

Initiative/Project	Lead Partner	Associated Partner	Order of Magnitude Cost
Prepare policy recommendations to protect and enhance existing positive urban interfaces	City		\$20,000
Prepare policy recommendations to address existing urban interfaces in need of improvement	City		\$20,000
Prepare urban design guidelines	City		\$100,000
Prepare an Official Plan Amendment to establish the Major Open Space –Waterfront designation and policies	City		\$50,000
Prepare a Development Master Plan for Lower Downtown	City		\$100,000
Prepare Development Master Plans for the brownfield sites	City		\$100,000

Policy Framework



-  Major Open Space/ Waterfront
-  Development Opportunity Overlay
-  Item Area
-  Urban / Waterfront Interface

It is not the intent to stop intensification outside of the Waterfront lands. The ambition is to ensure that development of individual sites occurs within the context of an district plan to ensure compatible development within these built up areas. The City should take responsibility in brownfield sites and lead the way by preparing Development Master Plans that set the framework for development. In order to facilitate a change in use in Employment lands, a city wide review will be required. The brownfields sites should be included in the City's Intensification Strategy to be completed in the near future.

Establish the Major Open Space – Waterfront Designation on Schedule 1

The Urban/Waterfront Interface line, which appears on several of the maps, is a logical boundary of the “waterfront lands”, separating those lands from the rest of the urban area. These lands should all be designated Major Open Space – Waterfront. To achieve this, an Amendment to the various schedules of the Official Plan is required. With respect to Schedule 1, there are 7 locations where an Amendment is required, as specified on the map on the facing page:

Item 1

In the legend of Schedule 1, establish a new designation entitled “Major Open Space – Waterfront”, and redesignate all the lands identified in green from “Major Open Space” to “Major Open Space – Waterfront”;

Item 2

Lands to be redesignated from “Business Park” to “Major Open Space – Waterfront”;

Item 3

Lands to be redesignated from “General Industrial” to “Major Open Space – Waterfront”;

Item 4

Lands to be redesignated from “Low Density Residential Area” to “Major Open Space – Waterfront”;

Item 5

Lands to be redesignated from “Low Density Residential Area” to “Major Open Space – Waterfront”;

Item 6

Lands to be redesignated from “General Industrial” to “Major Open Space – Waterfront”;

and,

Item 7

Lands to be redesignated from “General Industrial” to “Major Open Space – Waterfront”.

Where a conversion from a development facilitating designation to the “Major Open Space – Waterfront” designation is proposed the issues are far more complex. It is understood that, based on the environmental work carried out during the course of the Waterfront Master Plan Project, substantial areas of land designated for development may, in fact, meet the definitions for significant natural and/or cultural heritage features and /or landscapes that are worthy of significant conservation efforts. In some instances, this change in designation is simply part of an evolving legislative and policy regime, in other cases there may be other issues that require resolution before a redesignation can occur.

Notwithstanding those issues, the approach taken in this implementation strategy is to respect the environmental work, and to facilitate a redesignation of all lands considered as significant natural and/or cultural heritage features and /or landscapes. The long-term securement of these lands will be subject to discussions, negotiation, and in some instances, resolution through an Ontario Municipal Board hearing.

Futhermore, it is recommended that the City take a comprehensive city-wide approach to better define permitted uses within these areas.

Create the Policies that Apply to the Major Open Space – Waterfront Designation

An Official Plan Amendment should be prepared and approved by the City that indicates that all of the lands identified as Major Open Space – Waterfront on Schedule 1 Land Use Plan be subject to the policies of Section 7.6 and Section 9.8 of The Official Plan of the City of Brantford, in addition to the new policies of Section 7.6.10, which shall:

i. Identify key principles that complement the policies of Section 7.6, but are specific to the objectives of the Waterfront Master Plan Project. The key principles are to be organized around the topic areas identified in the Waterfront Master Plan Project, including principles related to:

- the environment;
- the public parks system;
- access;
- heritage and culture; and,
- destinations.

ii. Include area specific polices that:

- identify all lands within the area designated Major Open Space – Waterfront, over time, be secured in public ownership. This policy would also include new land securement policies specific to the lands designated Major Open Space – Waterfront;
- minimize the introduction of new major infrastructure + utilities within the Major Open Space-Waterfront designation;
- make reference to guidelines such as those in the City’s Multi Use Trail Bikeway Implementation and Design Plan, and the Bald Eagle Management Plan, that are intended to guide the development of the entire area as a publicly accessible, environmental and, where appropriate, recreational resource for the entire community. The guidelines would include direction on all aspects of the public realm, including conservation of significant environmental features, the park and trails systems and roads and other public uses;
- refer to the Waterfront Master Plan Project as a document intended to guide decision making within the area designated Major Open Space – Waterfront, and throughout the rest of the City; and,
- identify all of the lands designated as Major Open Space – Waterfront as a Community Improvement Project Area. The purpose of the CIP is to provide flexibility and tools to promote appropriate development and redevelopment of these important sites.

Identify & Establish the Development Opportunity Area Overlay Designation

A further Official Plan Amendment should be prepared and approved by the City that establishes a Development Overlay Opportunity Designation Area. The identified Development Overlay Opportunity Designation Areas should be subject to the following new policies to be inserted in the Official Plan as a new Section 7.9:

Section 7.9 Development Overlay Opportunities Designation

i. Intent: It is the intent of the Development Overlay Opportunity Designation to both recognize existing land use designations in the Official Plan, but to require that comprehensive planning be undertaken that ensures:

- natural and cultural heritage conservation;
- compatibility with adjacent development;
- connectivity and accessibility to the rest of the City and to the Major Open Space – Waterfront area;
- the availability of necessary infrastructure and utilities; and,
- conformity with the policies of the Official Plan and urban design guidelines included in the Waterfront Master Plan.

ii. To facilitate development within any area identified as Development Overlay Opportunity Designation, a Development Master Plan shall be required, subject to the satisfaction of the City and any other agency

having jurisdiction. The Development Master Plan shall encompass the entire contiguous area designated.

iii. Prior to the preparation of a Development Master Plan, the City shall confirm with the proponent their detailed requirements. Generally, a Development Master Plan shall include the following:

- a Land Use Plan illustrating:
 - the extent of development in the context of all natural and cultural features and proposed linkages. The establishment of the extent of development shall be based on appropriate studies carried out by qualified professionals;
 - the size, shape, location and proposed uses for any non-residential blocks;
 - the location of proposed residential uses, if permitted, by type and density;
 - all collector and local roads;
 - the size, shape and location of all park blocks;
 - the accessibility strategy to connect the subject development with the lands designated Major Open Space – Waterfront; and,
 - the size, shape and location of all storm water management facilities.
- a Land Use Summary Table indicating:
 - the area and percentage of land specified to each land use type;
 - the area and percentage of land to be dedicated to the municipality;
 - the number of dwelling units proposed by type; and,
 - the anticipated population and employment generation targets and their related gross density.

- an Urban Design Report and area specific Architectural Design Guidelines in addition to, and consistent with any applicable Urban Design Guidelines;
- a Landscape and Open Space Plan detailing open space features and linkages to the lands designated Major Open Space - Waterfront;
- an Environmental Impact Statement, and, if the subject site includes a woodlot, hedgerow or trees, the Environmental Impact Statement shall be accompanied by a Tree Preservation Plan;
- a Cultural Heritage/Archaeological Impact Statement;
- a Traffic Impact Study including trip generation and site access including the number and spacing of connections to the boundary road network, the number of trips generated by the Development Opportunity Area, their impact on the adjacent road network and any remedial work necessary to accommodate the anticipated traffic shall be completed by the proponent. The study should also address the right-of-way and lane requirements required to accommodate the generated traffic on the arterial and collector road system, and required geometric upgrades to intersections; and,
- a Functional Servicing Plan identifying sanitary and storm sewer requirements, municipal water supply and distribution needs, storm water management plans, road patterns, general grading requirements and delineation of the boundaries of the Major Open Space – Waterfront designation. The Functional Servicing Plan must include lands beyond the boundary of the Redevelopment Opportunity Area and may need to be completed on a watershed or sub watershed basis.

iv.

All development within any area identified as Development Overlay Opportunity Designation shall be subject to Site Plan Control. The City may utilize the provisions of Site Plan Control to the maximum extent permitted by the Planning Act, including, without limitation, the control of building materials, colour and architectural detail.

v.

All development within any area identified as Development Overlay Opportunity Designation shall conform with the following area specific policies:

- Development Overlay Opportunity Area 1 – Holmedale Industrial Area:
 - the Holmedale Industrial Area is an older industrial area that has the potential to redevelop as a brownfield site;
 - new development would be subject to the policies of the General Industrial designation, as well as the requirements of this Section of the Official Plan; and,
 - conversion of these lands to other land uses may be considered by the City subject to the satisfactory completion of required studies, and is required within the City's Official Plan as well as in conformity with requirements of provincial planning policies.
- Development Overlay Opportunity Area 2 – West Brant Industrial Area:
 - the West Brant Industrial Area is an older industrial area that has the potential to redevelop as a brownfield site;
 - new development would be subject to the policies of the General Industrial designation, as well as the requirements of this Section of the Official Plan; and,
 - conversion of these lands to other land uses may be considered by the City subject to

the satisfactory completion of a Municipal Comprehensive Review, as well as the requirements of this Section of the Official Plan.

- Development Overlay Opportunity Area 3 – Colborne Street Industrial Area:
 - the Colborne Street Industrial Area is an older industrial area that has the potential to redevelop as a brownfield site;
 - new development would be subject to the policies of the General Industrial designation, as well as the requirements of this Section of the Official Plan; and,
 - conversion of these lands to other land uses may be considered by the City subject to the satisfactory completion of a Municipal Comprehensive Review, as well as the requirements of this Section of the Official Plan.
- Development Overlay Opportunity Area 4 – Lower Downtwon Mixed Use Area:
 - the Lower Downtown Mixed Use Area is an underutilized, logical extension of the primary urban centre of Brantford; and,
 - new development would be subject to the policies of the Core Commercial designation, as well as the requirements of this Section of the Official Plan.
- Development Overlay Opportunity Area 5 – Eagle Place Residential Neighbourhood:
 - the Eagle Place Residential Neighbourhood is a mixed density residential neighbourhood that has not yet developed. underutilized, logical extension of the primary urban centre of Brantford; and,
 - new development would be subject to the policies of the various land use designations identified on Schedule 1, as well as the requirements of this Section of the Official Plan.

vi.

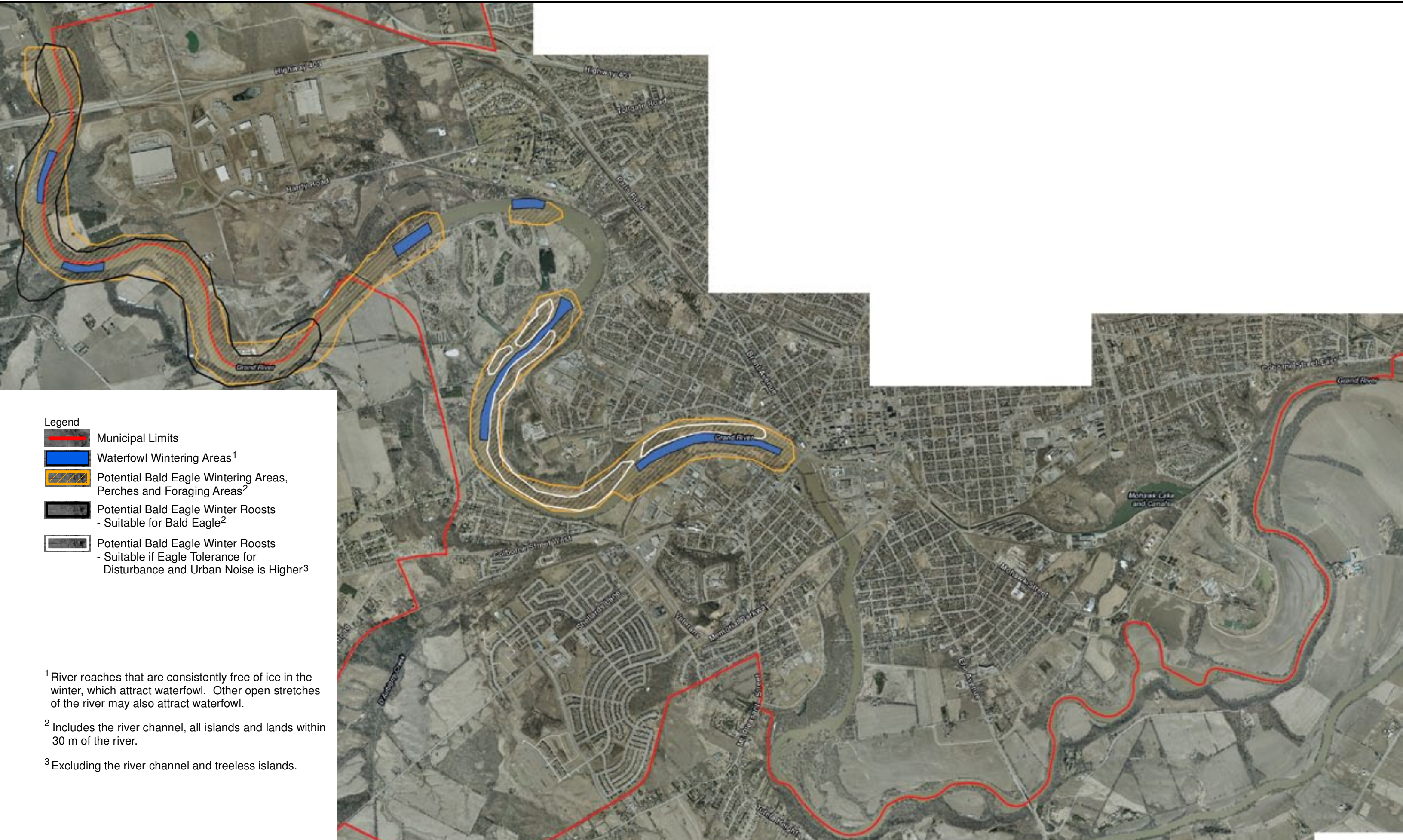
All development within any area identified as Development Overlay Opportunity Designation Area shall be designated as a Community Improvement Project Area.






vii.

Within any area identified as Development Overlay Opportunity Designation Area, the City may consider increases in height and/or density in exchange for defined community benefits in conformity with the provisions of Section 37 of the Planning Act. In addition to other community benefits that may be identified by the City from time to time, funds for the improvement to public lands within the Major Open Space – Waterfront shall be considered an appropriate community benefit.

See Neighbourhoods & Districts for Design Guidelines.

APPENDIX



- Legend**
-  Municipal Limits
 -  Waterfowl Wintering Areas¹
 -  Potential Bald Eagle Wintering Areas, Perches and Foraging Areas²
 -  Potential Bald Eagle Winter Roosts - Suitable for Bald Eagle²
 -  Potential Bald Eagle Winter Roosts - Suitable if Eagle Tolerance for Disturbance and Urban Noise is Higher³

¹ River reaches that are consistently free of ice in the winter, which attract waterfowl. Other open stretches of the river may also attract waterfowl.

² Includes the river channel, all islands and lands within 30 m of the river.

³ Excluding the river channel and treeless islands.

Bald Eagle Management Plan

The following report was prepared in response to direction from City of Brantford Council to advance the Waterfront Master Plan team's work on preparing recommendations for addressing species of concern, specifically the bald eagle. This is one component of the environmental management plan being prepared as part of the Brantford Waterfront Master Plan.

Background & Approach

In December 2008, a pair of bald eagles (*Haliaeetus leucocephalus*) attempted to nest in a large Cottonwood tree, adjacent to the Grand River in the Brant Conservation Area, City of Brantford, Ontario. An old red-tailed hawk nest (*Buteo jamaicensis*) was taken over by a pair of eagles (T. Zammit GRCA, A. Timmerman, pers. comm.). This nesting attempt was well documented by several observers within the City of Brantford. To reduce disturbance to the nesting birds, the City of Brantford closed a section of hiking trail along the opposite bank of the Grand River, approximately 100 m from the nest. This nesting attempt failed for unknown reasons. In 2009, there were 5 active bald eagle nests in the Grand River watershed (i.e. Dunnville Marshes, Caledonia, Brantford and Luther Marsh). With proper protection of suitable nesting, roosting and wintering habitats, another nesting attempt within the City of Brantford is highly probable. Bald eagles have consistently wintered in the area since at least 2005/2006. Known and probable wintering habitats (foraging, perching and roosting areas) need protection to allow for the continued existence of Bald Eagles within Brantford. As the Southern Ontario population increases, the numbers of eagles utilizing the river for nesting and winter will probably increase.

Since the winter of 1999/2000, MNR has been compiling data from various sources (including a large volunteer network) to develop an understanding of the abundance, distribution, behavior patterns, and habitat requirements of wintering Bald Eagles along a large length of the Grand River corridor between the Belwood Reservoir and Brantford.

The status of bald eagle in Southern Ontario was recently changed from endangered to special concern. Species listed as threatened, endangered and extirpated on the Ontario Species at Risk List are protected under the Endangered Species Act (ESA) 2007. Although species listed as special concern are not afforded any specific protection under the ESA and related habitat regulations, their habitat may be considered as "significant" wildlife habitat under the Natural Heritage policies of the Provincial Policy Statement (2005).

Bald eagle is protected under the Fish and Wildlife Conservation Act (FWCA). The FWCA prohibits the hunting, trapping and collecting of birds without the proper license or scientific permit. Importantly, the use of poison to kill birds is strictly prohibited. Furthermore, the Act prohibits the taking or possession of eggs and nests of those species protected by the Act without a permit from MNR.

Enforcement of the FWCA is done mainly by conservation Officers employed by the MNR. The general penalty is a fine of not more than \$25,000, to imprisonment for a term of not more than one year, or both.

The information contained in this report is based on our understanding of the study area, field reconnaissance, our discussions with local residents, bald eagle project volunteers, and GRCA/MNR/City staff, plus a review of the following key references:

- National Bald Eagle Management Guidelines (U.S. Fish and Wildlife Service 2007);

- Bald Eagle Habitat Management Guidelines (Ontario Ministry of Natural Resources 1987);
- Habitat Management Guidelines for Ontario's Forest Nesting Accipiters, Buteos and Eagles (Ontario Ministry of Natural Resources - James, R. D. 1984);
- Best Management Practices for Raptor Conservation During Urban and Rural Land Development in British Columbia (LGL Limited 2005);
- Forest Management Guide for Conserving Bio-Diversity at the Stand and Site Specific Scales (Ontario Ministry of Natural Resources Draft 2009);
- New York City Parks and Recreation Department Bald Eagle Release Program – Inwood Park, Manhattan Island (NYCPRD 2002);
- Factors Affecting the Distribution of Bald Eagles and Effects of Human Activity on Bald Eagles Wintering Along the Boise River (M.Sc. Thesis, Spahr, R. 1990); and,
- Addendum – Protection of Wintering Bald Eagles in the Grand River Valley: Response to Proposals for New Transportation Corridors in the City of Cambridge (Ontario Ministry of Natural Resources 2002).

The management guidelines put forth at the end of this report are a hybrid of the recommendations contained in the above documents, as it relates to bald eagles in urban environments, and have been tailored to fit the City of Brantford setting.

The report has been prepared based on:

- consultation with staff from the Ontario Ministry of Natural Resources, the Grand River Conservation Authority and City staff responsible for environmental management in order to set the parameters of the scope of work;
- extensive review of scientific literature from across the continent dealing with bald eagles;
- peer review by Dr. Ross James, retired assistant-curator (Ornithology Department) of the Royal Ontario Museum (ROM);
- review of the draft report by City staff;
- review of the draft report by staff from the Ontario Ministry of Natural Resources (Guelph District); and,
- review of the draft report at a working session with 20 residents selected based on their interest in the natural environment and bald eagles.

The primary authors of this report, Brad Bricker and Tyler Hoar, have extensive qualifications and over 20 years experience in preparing environmental management plans for wildlife, including raptors.

The report considers both the scientific literature, the results of surveys conducted by local volunteers, and the anecdotal evidence of residents. There is agreement on the recommendations outlined below by staff at the Ontario Ministry of Natural Resources and the City of Brantford. The report has been reviewed by Dr. Ross James who also concurs with the recommendations.

Source:

US Fish and Wildlife Service National Bald Eagle Management Guidelines (2007)

Eagle Sensitivity

Breeding

The sensitivity of nesting bald eagles can vary greatly between each pair. Some pairs nest within urban environments close to significant human activities, while others will abandon their nest with very little human interactions. Until there have been a few years of successful nesting within the City of Brantford, it would be prudent to view these nest(s) as quite sensitive to most activities. Once a pair of bald eagles successfully breed, they have an increased site fidelity and may accommodate more passive occasional traffic (i.e. hikers, birdwatchers, canoeists, anglers) passing near (i.e. <100m) of their nest. Each situation should be reviewed on a case by case basis to determine the most appropriate action.

The U.S. Fish and Wildlife Service guidelines for bald eagles indicate that the minimum buffer/setback to a particular human activity should be based on documented examples within the study area setting. The Guidelines also PLAN B Natural Heritage acknowledge that when birds choose a nesting site within an existing urban area that it is not always possible to provide large setbacks, shut down an activity or close off an area.

Bald eagle has a moderate-high tolerance to human activities and urban areas and will develop site fidelity over time. The key to maximizing bald eagle presence in urban areas is to protect existing habitat, enhance/restore habitat where feasible, manage for long-term sustainability of feeding, nesting and roosting areas, and encourage public stewardship and education. The New York City Parks and Recreation Department initiated a bald eagle release program in 2002 within Inwood Park (Manhattan Island) along the Hudson River and Harlem Ship Canal. The eagles have been

released into an urban waterfront environment similar to Brantford but on a much larger scale in terms of the potential interaction with humans and urban land use activities (refer to park map in the Appendix).

Existing roads, homes, and other routinely used facilities, such as trails, which predate the bald eagle nesting attempts are quite unlikely to disturb nesting at their current level of use. Irregular and occasional uses (e.g. disruptive and noisy activities such as land development, infrastructure projects, outdoor concerts and fireworks displays) that occur after the start of nest building may disturb bald eagles enough to impact the success of the nest.

Bald Eagle Nesting Chronology for Southern Ontario

The following is a breakdown of the nesting chronology and sensitivity to disturbance for bald eagles.

Courtship & Nest building: December to March

This the most sensitive period: a time when birds tend to respond negatively to human disturbance. Nest abandonment is common during this period, especially for pairs with newly established nests/territories.

Egg Laying & Incubation: February to May

Also a critical sensitive period, human disturbance can lead to the disturbed birds being away from the nest too long and the death of the egg(s) and nest abandonment.

Hatching & Raising Young: March to July

Abandonment is less likely by adults however disturbances that cause adults to leave the nest could lead to cooling/death of the eggs or loss of young during early nestling period. After 4-8 weeks, the potential of abandonment decreases significantly as the young within the nest become visible to the observer. Too much disturbance could discourage the adults from returning to the nest with food and therefore miss feeding the young.

Fledging Young: May to August

Can be a very sensitive time as disturbance may cause the young to leave the nest prematurely and die.

Wintering Eagles

With open water (*waterfowl habitat) during the winter, mature riparian forests, suitable perching trees adjacent to open water areas, robust fish populations, islands, secluded valleys, and an active nearby landfill site, the Grand River within the City of Brantford is quite attractive for bald eagles to spend the winter. Wintering bald eagles prefer secluded areas with mature trees and protection from inclement weather for their winter roosts. Within Brantford, the northwest area along the Grand River and adjacent forest blocks may have some significance for roosting eagles during the winter to early spring. Only one winter roost has been confirmed and it is located inside the study area. Areas of mature riparian forests in Waterworks Park west of the dyke and nearby islands, may also provide a roosting location during the winter if human disturbance is low and the eagles present have a higher tolerance of urban areas.

The attached figures depict areas of consistent open water and winter roosting sites along the Grand River. Potential wintering areas, daily roosts, perches, and foraging areas within the study area are based on an evaluation of habitat suitability and actual sightings of bald eagles using these areas. The mapping is based on the best available information and may be refined through the completion of site-specific habitat assessments and the collection of additional information on bald eagle sightings. It should be noted that the extent and duration of ice free conditions will be dependent on local weather conditions and long-term climate patterns, and over the long-term is expected to be highly variable both seasonally and annually.

Management Recommendations

The following section provides a series of environmental management recommendations to provide guidance and direction to the City of Brantford with respect to future development applications and infrastructure projects, and the maintenance and use of existing municipal infrastructure and the extensive parks/trail system. These recommendations should also be provided to private landowners who own land in areas that support suitable habitat for bald eagles (as depicted in the map on p 110).

Nesting Sites

- If a nesting attempt is occurring on land owned by the City, close access to the area, if feasible, and provide signage/fencing at trail access points to prevent/discourage human entry to within 100m of the nest. Only during critical periods of nest building/incubation does trail closure need to be considered (i.e. December to May). If trail closure is not feasible, then appropriate signage encouraging pedestrians not to use the trail during inclement and cold weather should at a minimum be installed (Rationale: to avoid flushing birds from the nest during the incubation period). In future years, after a successful nesting, these bald eagles will have increased site fidelity and their tolerance of passive activities should increase.

Note: In the current nesting situation, the Grand River (a Navigable Waterway) is located between the nest tree and the existing trail, and acts as a physical buffer. In this scenario, a trail closure or re-route is not recommended.

Rationale: Recreational use of the river, including the shoreline interface, cannot be restricted.

- Any outdoor events (such as picnics, charity walks or sporting events) planned within 200m (out of line of sight) of the nest or 300m (within line of sight of the nest) should be moved to avoid possible nest abandonment. Events such as Canada Day fireworks should preferably be moved further than 300 m, as noise from exploding fireworks can cause significant stress on birds and animals.
- Trail construction or maintenance within 200 m (out of line of sight of nest) or 300m (within line of sight of nest) should not be permitted until after the nesting attempt is complete. Only emergency trail maintenance should be conducted before the nesting attempt is complete and if possible on good weather days (non-inclement, warm days).
- In cooperation with OMNR/GRCA, fully map suitable nesting habitat. Areas mapped meeting the criteria should be considered for protection within the Waterfront Master Plan, if not already included.

- Provide signage at canoe in/out points advising people to stay on the opposite of the river channel from an active nest tree. Inform local outfitters of potential eagle activity along the Grand River and appropriate protocol around nest trees and at portages.
- Any larger scale maintenance or construction projects (e.g. road/bridge construction, housing developments) within site of the nest or less than 400m should be undertaken post-fledging (August 1st to December 1st).

Wintering Areas

- Trail construction or trail maintenance within 200 m (out of line of sight of nest) or 300m (within line of sight of nest) from wintering areas should not be permitted between December 1 and March 31. Only emergency trail maintenance should be completed within this time period and if possible during good weather days.
- In cooperation with OMNR/GRCA, continue to survey the Grand River within the City of Brantford to locate suitable wintering habitats (roosts, perches, open water, feeding areas) using consistent routes with trained volunteers, 1-2 times per month (December through March).
- In cooperation with OMNR/GRCA, fully map suitable wintering roosts. Areas mapped meeting the criteria should be considered for protection within the Waterfront Master Plan, if not already included.
- Any larger scale maintenance or construction projects (e.g. road/bridge construction, housing developments) within site of wintering habitats (i.e. roosts, feeding areas and perches) or less than 400m should be undertaken outside of the December 1 to March 31 wintering period.

General

- Locate and map eagle foraging areas (done by qualified observers and records from volunteers),

- and provide OMNR/GRCA with the data.
- Educate the Public: Use interpretative materials such as signs and brochures to make the public aware of the need to protect bald eagle habitat and to prevent disturbances to nesting and wintering areas. Promote the ownership and pride in having the eagles chose the City of Brantford.
- Plant and enhance riparian areas (bald eagle habitat) along the Grand River in Brant Conservation Area, Waterworks Park and the area south of Birkett Lane. Native species similar to those found in the riparian area of Waterworks Park should be planted (e.g. cottonwood, willow, bur oak, and silver maple). In time these native trees will provide additional nesting and winter roosting locations.
- Provide a central location from which the public can readily see wintering and nesting eagles from a distance to avoid disturbing the birds, while providing an enjoyable experience. This location can then be promoted and could increase visitation of non residents to the City. Establishing a central viewing location can be undertaken once a clearer picture of the locations of wintering areas and nest(s) are known.
- Forest management plans for City owned natural areas should be reviewed by a qualified ecologist/ornithologist to ensure that bald eagle habitat protection and enhancement are accounted for in the implementation of the plan. The City should endeavor to maintain regular recruitment of mature trees in the forest canopy, particularly in floodplain areas along the Grand River. In particular, efforts should be made to retain and protect large trees within 30m of the river.
- If existing nest or roost trees succumb to natural disturbance (flood, ice storm, wind pruning), and where other candidate trees are not present, consideration should be given to erecting a nest platform or roosting structure in proximity to the previously existing tree.

- Since the eagles within the City of Brantford are part of a larger population, habitat management and volunteer activities should be coordinated with the other stakeholders along the Grand River (i.e. OMNR, GRCA and Bird Studies Canada).
- Consider the habitat requirements of bald eagles during the planning and development of new trails within the City.
- Encourage private landowners to adopt and implement the management guidelines through outreach programs and incentives.
- Circulate the management guidelines to the Grand River Trail Association and other groups who periodically undertake trail maintenance/construction and/or habitat management within the study area.
- Encourage Brant County and private landowners who own land along the Grand River corridor (i.e. outside the study area) to implement the management recommendations adopted by the City of Brantford.
- Establish a City Tree/Woodlot By-law that restricts landowners from cutting trees without a permit. The intent of the by-law is to ensure that forest management plans and tree cutting on public and private land is reviewed by the City Arborist, in consultation with OMNR/GRCA Foresters and Ecology staff, prior to issuing a permit. As noted above, bald eagle habitat protection and enhancement should be accounted for (where necessary) in the issuance of permits and implementation of forest management plans. Tree-cutting and forest management plans should be monitored by an environmental site inspector.

