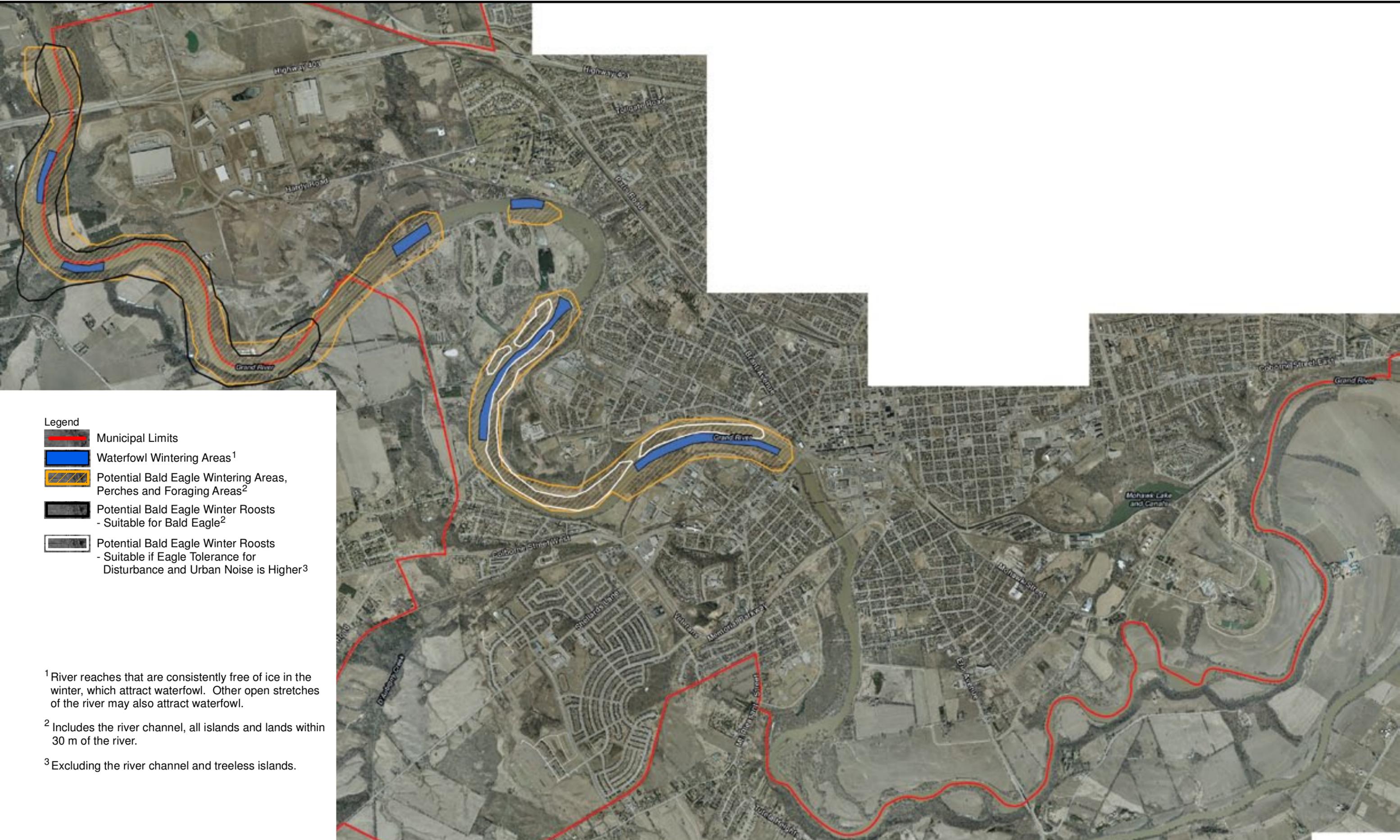


APPENDIX



- 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.

