VICTORIA PARK VILLAGE
UPDATED IMPACT ASSESSMENT

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Prepared for:
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# Table of Contents

1.0 INTRODUCTION ................................................................................................................1.1
  1.1 BACKGROUND AND CONTEXT .......................................................................................1.1

2.0 NATURAL HERITAGE PLANNING CONSIDERATIONS..................................................2.1
  2.1 PROVINCIAL POLICY STATEMENT .................................................................................2.1
  2.2 CITY OF GUELPH OFFICIAL PLAN ................................................................................2.2
  2.3 CITY OF GUELPH NATURAL HERITAGE STRATEGY ....................................................2.2
  2.4 GRAND RIVER CONSERVATION AUTHORITY POLICIES AND REGULATION ..........2.2

3.0 METHODOLOGY ...............................................................................................................3.1
  3.1 BACKGROUND REVIEW ................................................................................................3.1
  3.2 FIELD STUDIES .................................................................................................................3.1
  3.3 ANALYSIS OF SIGNIFICANCE AND SENSITIVITY ..........................................................3.2

4.0 DESCRIPTION OF THE ENVIRONMENT ..........................................................................4.1
  4.1 TERRAIN SETTING .........................................................................................................4.1
  4.2 LANDSCAPE ECOLOGY ..................................................................................................4.1
  4.3 NATURAL HERITAGE SYSTEM COMPONENTS .............................................................4.2
  4.4 VEGETATION ASSOCIATIONS & VASCULAR PLANTS ..................................................4.2
    4.4.1 Vegetation Associations .....................................................................................4.2
    4.4.2 Vascular Plants ...............................................................................................4.3
  4.5 WILDLIFE & WILDLIFE HABITAT ...............................................................................4.3
  4.6 AQUATIC HABITAT .........................................................................................................4.5

5.0 NATURAL HERITAGE FEATURES AND FUNCTIONS ....................................................5.1
  5.1 SIGNIFICANT WETLANDS .............................................................................................5.1
  5.2 ENDANGERED AND THREATENED SPECIES ..............................................................5.1
  5.3 SIGNIFICANT COASTAL WETLANDS .............................................................................5.2
  5.4 FISH HABITAT .................................................................................................................5.2
  5.5 SIGNIFICANT WOODLANDS ..........................................................................................5.2
  5.6 SIGNIFICANT VALLEYLANDS ........................................................................................5.3
  5.7 AREAS OF NATURAL AND SCIENTIFIC INTEREST .....................................................5.3
  5.8 SIGNIFICANT WILDLIFE HABITAT ...............................................................................5.3
    5.8.1 Migration corridors .............................................................................................5.3
    5.8.2 Seasonal concentration areas ............................................................................5.3
    5.8.3 Rare or Specialized Habitat ..............................................................................5.4
    5.8.4 Species of conservation concern .....................................................................5.4
  5.9 ECOLOGICAL LINKAGES ...............................................................................................5.5

6.0 DESCRIPTION OF DEVELOPMENT PROPOSAL ...........................................................6.1
  6.1 STORMWATER MANAGEMENT PLAN .........................................................................6.1
  6.2 BUFFER RECOMMENDATIONS .....................................................................................6.2
    6.2.1 Segment 1 ...........................................................................................................6.3
Table of Contents

6.2.2 Segment 2............................................................................................................ 6.3
6.2.3 Segment 3............................................................................................................ 6.4
6.3 SUMMARY OF PROPOSED BUFFER WIDTHS AND ENHANCEMENTS .............. 6.4
    6.3.1 Comparison to Guelph Natural Heritage Strategy ........................................ 6.5
6.4 PROPOSED TRAIL CORRIDORS ............................................................................. 6.6

7.0 POTENTIAL IMPACTS OF DEVELOPMENT AND MITIGATION RECOMMENDATIONS .......................................................................................................................... 7.1
    7.1 SIGNIFICANT WETLANDS ................................................................................. 7.1
    7.2 FISH HABITAT ..................................................................................................... 7.1
    7.3 SIGNIFICANT WOODLANDS ............................................................................ 7.2
    7.4 SIGNIFICANT WILDLIFE HABITAT ................................................................. 7.3
        7.4.1 Area Sensitive Birds .............................................................................. 7.3
        7.4.2 Amphibian Breeding Habitat ................................................................. 7.3
        7.4.3 Potential Deer Yard .............................................................................. 7.4
        7.4.4 Locally Rare Plants .............................................................................. 7.4
    7.5 OTHER NATURAL HERITAGE FEATURES AND ECOLOGICAL LINKAGES .... 7.4
    7.6 CONSTRUCTION IMPACTS ............................................................................. 7.4
    7.7 INDIRECT HUMAN IMPACTS ......................................................................... 7.5

8.0 MONITORING ......................................................................................................... 8.1

9.0 CONCLUSIONS AND RECOMMENDATIONS ......................................................... 9.1
    9.1 NET IMPACTS .................................................................................................. 9.1
    9.2 POLICY COMPLIANCE .................................................................................... 9.1
    9.3 RECOMMENDATIONS ....................................................................................... 9.2

10.0 REFERENCES ....................................................................................................... 10.1
# Table of Contents

## List of Appendices

### Appendix A  Figures
- Figure 1  Location of Subject Lands
- Figure 2  Adjacent Lands and Buffer Segments
- Figure 3  ELC Vegetation Communities
- Figure 4  Amphibian Survey Stations
- Figure 5  Natural Heritage Features
- Figure 6  Stantec Buffer Segment Recommendations
- Figure 7  Proposed Development Plan

### Appendix B  Tables
- Table 1  2004 Ecological Field Work Program
- Table 2  ELC Vegetation Communities Recorded from the Subject Lands
- Table 3  Rare Species Identified through a Search of the NHIC Database.
- Table 4  Amphibian Call Count Survey Results 2004
- Table 5  Proposed Land Use by Area
- Table 6  Buffer Segment Guidelines Natural Heritage System Components

### Appendix C  Terms of Reference for an Impact Assessment for Victoria Park Golf Club West Community

### Appendix D  Vascular Plant List

### Appendix E  Wildlife List
Table of Contents

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1.0 Introduction

1.1 BACKGROUND AND CONTEXT

The subject lands discussed in this report are identified as Part of the Northeast Half of Lot 5, Concession 8 (formerly Geographic Township of Puslinch), City of Guelph. The property involves approximately 39.85 ha (98.5 acres) and are owned by Victoria Park West Golf Course (Figure 1, Appendix A).

Stantec prepared an Impact Assessment (IA) in 2005, which was submitted as part of a development application for the subject lands. After the initial submission, the City of Guelph requested that the low-density design plan be revised to comply with City and Provincial growth targets. Preliminary meetings with the City indicate that the revised design plan as prepared by Black, Shoemaker, Robinson and Donaldson (BSRD, October 2009) (Figure 7; Appendix A) is acceptable. This IA represents an update to the original IA, which addresses the potential environmental impacts of this revised design plan.

This study examines the potential environmental impacts of the proposed re-development of the Victoria Park West Golf Club lands according to the Impact Assessment Guidelines for the Torrance Creek Subwatershed Study (SWS) (ESG International, 1999). The proposed revised development includes 487 residential units, associated infrastructure, stormwater management, and open space. This report presents the existing biological conditions, assesses this proposed development in terms of potential effects on natural systems, and recommends mitigative actions or alternative methods of protecting the functions and values of the area affected.

The property is within the Torrance Creek subwatershed and is bounded to the north and south by lands currently under agricultural production. The Torrance Creek Provincially Significant Wetland Complex also bounds the property to the east and west. Victoria Road, which is also the City of Guelph boundary, is at the eastern limit of the subject lands.

The Torrance Creek Subwatershed Study (SWS) (Totten Sims Hubicki et al., 1999) serves as a comprehensive Impact Assessment (IA) for the subwatershed. In this area, the main issues to be addressed by a site-specific scoped IA have been identified in the SWS and in the Impact Assessment Guidelines for the Torrance Creek Subwatershed (ESG International, 1999).

The Terms of Reference (TOR) for this IA are included as Appendix C to this report. The Terms of Reference were approved by the City of Guelph Environmental Advisory Committee at a meeting on October 13, 2004 and by the GRCA via letter on November 4, 2004. This scoped IA provides the site-specific detail necessary to examine the potential impact of the proposed subdivision on the key functions of the Torrance Creek Subwatershed Natural Heritage System in the area.
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2.0 Natural Heritage Planning Considerations

An assessment of the natural heritage features and functions within the study area was undertaken to comply with the requirements of the following policy and guideline documents.

2.1 PROVINCIAL POLICY STATEMENT

The Provincial Policy Statement (PPS) (Government of Ontario, 2005) provides direction on matters of provincial interest related to land use planning and development. The PPS provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural environment. All decisions regarding proposed developments covered under the Planning Act must be consistent with the policies of the PPS. This report will deal specifically with Policy 2.1 of the PPS: Wise Use and Management of Resources – Natural Heritage.

Policy 2.1 of the Provincial Policy Statement describes each of the natural heritage features and areas identified therein. This policy states that development and site alteration shall not be permitted in:

- Significant wetlands in Ecoregions 5E, 6E and 7E
- Significant habitat of endangered and threatened species
- Significant coastal wetlands

Development and site alteration shall not be permitted in:

- Significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E
- Significant woodlands south and east of the Canadian Shield
- Significant valleylands south and east of the Canadian Shield
- Significant wildlife habitat
- Significant areas of natural and scientific interest

Unless it can be demonstrated that there will be no negative impacts on the natural features or their ecological functions.

Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements. Similarly, no development or site alteration is permitted in lands adjacent to the above features unless the ecological function of these lands has been evaluated, and it has been demonstrated that there will be no negative impacts to the natural features or their functions.
The Natural Heritage Reference Manual (MNR, 1999) and the Significant Wildlife Habitat Technical Guide (SWHTG) (MNR, 2000) provide further detail with respect to identifying significant natural features as described above.

2.2 CITY OF GUELPH OFFICIAL PLAN

In the City of Guelph Official Plan (City of Guelph, 2006), the subject lands are designated as Open Space, Core Greenlands and Non-Core Greenlands. An Official Plan Amendment will be required to change a portion of the Open Space lands to a General Residential designation.

2.3 CITY OF GUELPH NATURAL HERITAGE STRATEGY

A development application has already been submitted for this property, and, as such, is not subject to the NHS and any future related policies. Notwithstanding, the buffers proposed by this strategy versus those proposed as part of the design plan are discussed in Section 6.3 of this report.

2.4 GRAND RIVER CONSERVATION AUTHORITY POLICIES AND REGULATION

According to Ontario Regulation 150/06, any development in areas defined in the Regulation (i.e. floodplain, valleyland, hazardous land), interference with a wetland or alteration to a river, creek, stream or watercourse channels requires permission from the GRCA. A decision regarding the approval of an application for a Permit from the GRCA is guided by the Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (GRCA, November 30, 2007).

Generally, development, interference or alterations within a regulated area, including floodplain, wetland, watercourse or other hazardous area, is not permitted, except in accordance with various general and specific exceptions as outlined in the Policy document. Examples of such general exceptions include, but are not limited to, development where:

- grading is minimized and maintains stage-storage discharge relationships and floodplain flow regimes for a range of rainfall events, including the Regional Storm (Policy 7.1.2(d));
- there are no negative or adverse hydrologic impacts on wetlands (Policy 7.1.2(e));
- intrusions on significant natural features or hydrologic or ecological functions are avoided, and no adverse impacts to significant natural features or hydrologic or ecological functions will occur (Policy 7.1.2(g));
- groundwater recharge and discharge areas which support significant natural features or hydrologic or ecological functions on-site and adjacent to the site are avoided and will be maintained or enhanced (Policy 7.1.2(h and i)); and
- the control of flooding, erosion, dynamic beaches, pollution or the conservation of land is not adversely affected (Policy 7.1.2(k)).

Specific policies pertaining to restrictions on development within floodplains and the protection of wetland areas are included in this document.

In accordance with the GRCA Wetland Policy (GRCA, 2003), development is generally not permitted within a wetland. Any development within an area of interference less than or equal to 30 metres from a wetland may be permitted in accordance with the policies in Sections 7.1.2-7.1.3 of the Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation where an EIS demonstrates that:

- there are no negative or adverse hydrological or ecological impacts on the wetland,
- all development is located outside of the wetland and maintains as much setback as feasible, and
- development is located above the water table (Policy 8.4.7).

Development within an area of interference between 30 and 120 metres from a wetland, which in the opinion of the GRCA may result in hydrologic impact, may be permitted where an Environmental Impact Study demonstrates that policies in Sections 7.1.2-7.1.3 – General Policies are met.
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3.0 **Methodology**

Data collection for this report included both a review of available background materials and detailed biological inventories and assessments, as outlined in the TOR.

3.1 **BACKGROUND REVIEW**

Background data on the study area were obtained through review of existing documents. Primary background resources reviewed include:

- Torrance Creek Subwatershed Study (Totten Sims Hubicki et al., 1999)
- Impact Assessment Guidelines for the Torrance Creek Subwatershed (ESG International, 1999)
- City of Guelph Official Plan (2006)
- Natural Heritage Information Centre (NHIC) database (MNR, 2009)
- Ontario Breeding Bird Atlas (BSC, 2005)
- Black-and-white aerial photography (stereo 1:8,000:2002)

The Natural Heritage Information Centre (NHIC) database and Ontario Breeding Bird Atlas (OBBA) were accessed to search for records of provincially significant elements in the study area. Additional reports prepared for the proposed development were also reviewed (Braun Consulting Engineers Ltd., November 2009). A complete list of all references used in this document is appended.

3.2 **FIELD STUDIES**

Field studies and natural environment inventories were completed on, and adjacent to, the subject lands as indicated in Table 1 (Appendix B).

Vegetation communities and other natural heritage features were identified on and adjacent to the subject lands through interpretation of aerial photography (stereo 1:8,000 scale, 2002). Community characterizations were made based on the Ecological Land Classification system for Southern Ontario (Lee et al., 1998). Vegetation classification and botanical inventories were conducted on August 11, 2004. Three season botanical inventories were not deemed necessary given that the proposed development is confined to areas of existing golf course.

The site was systematically covered on foot to ensure a complete inventory of plant species and vegetation communities. Plant nomenclature used in this report follows Newmaster et al. (1999).
Breeding birds were surveyed on June 14, 2004 through coverage on foot of all natural vegetation communities. A conservative approach to assessing breeding status was used; any bird seen or heard in suitable habitat was assumed to be a potential breeding species on site. All wildlife species identified by sight, sound or distinctive signs were recorded.

Amphibian call-count surveys were conducted on April 4 (10°C), May 19 (12°C) and June 22 (18°C), 2004. The six stations chosen were on or immediately adjacent to the golf course. These stations included artificial ponds created for the purposes of the golf course. Station selection was conducted by reviewing the aerial photography for the site and identifying ponds or pooled water locations. This background research was augmented through on site station assessment.

The surveys followed the protocol for the Marsh Monitoring Program (BSC, 1994). Each survey was conducted within the recommended timing window; between a half hour after sunset and midnight. This protocol involved the surveyor standing at each selected station and listening for 3 minutes. Anurans (frogs and toads) are recorded as within the station if they are within 100 m. All other species are recorded as outside the station. All calling activity was ranked using one of the following three abundance code categories;

Call Level Codes:
1: Calls not simultaneous, number of individuals can be accurately counted;
2: Some calls simultaneous, number of individuals can be reliably estimated;
3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated.

On September 9, 2004 Stantec Consulting Ltd assessed the lands and the boundaries of the Torrance Creek Wetland Complex using methods recommended in the Ontario Wetland Evaluation System (1993). The wetland boundary was coincident with the boundary between the golf course and the forested areas. The forest boundaries were surveyed as part of the site plan development.

Additional field surveys were not undertaken as part of the EIS update because existing conditions on site have not changed since the authoring of the original EIS.

3.3 ANALYSIS OF SIGNIFICANCE AND SENSITIVITY

Natural Heritage information collected from background reports and the field investigations were analyzed to determine the significance and sensitivity of existing ecological functions. The provincial status of plants and wildlife was provided by the Natural Heritage Information Centre (NHIC, 2009). Status rankings for both plants and wildlife are primarily based on the number of occurrences in Ontario. The local significance of plants was based on status assessments (Riley, 1989) in adjacent regions. Regionally significant wildlife species are identified in the SWS and regional significance of bird species is based on Partners in Flight (2005).

Potential sensitivity of natural heritage features, ecosystem attributes and communities was evaluated through an assessment of vegetation communities (age, habitat quality, degree of disturbance, weediness) and sensitive species (plants with a high coefficient of conservatism value (CC), area sensitive and forest-interior bird species)
Identification of potentially sensitive plant species is based on the assignment of a CC to each native species in southern Ontario (Oldham et al. 1995). The value of CC, ranging from 0 (low) to 10 (high), is based on a species’ tolerance of disturbance and fidelity to natural habitats. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters and undisturbed environments.
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4.0 Description of the Environment

4.1 TERRAIN SETTING

The Torrance Creek subwatershed is located at the lower end of the Eramosa River – Blue Springs Creek watershed system. The topography across the subwatershed includes relatively hummocky “highlands” and flat or gently rolling areas. Surface drainage within the subwatershed is controlled to a large degree by the local topography.

The depositional history of the area is somewhat complex and involves repeated glacial advances and retreats with associated deposition and erosion of a wide variety of geologic materials, including clay, silt, sand and gravel. The study area is underlain by sandy silt till at the west end, with localized kames or eskers of sand and gravel. A pocket of organic muck supports a swamp over outwash gravel at the east end of the study area. The permeable gravel and sand areas are main groundwater recharge areas (Totten Sims Hubicki et al., 1999).

4.2 LANDSCAPE ECOLOGY

The study area is within Site District 6-7; the Huron-Ontario section of the Great Lakes Forest Region (Rowe, 1972). Natural upland forest cover in this region is generally dominated by sugar maple, American beech, basswood, white ash, white oak, bur oak, eastern hemlock and eastern white pine. Forests of silver maple, white elm, red elm, black ash and eastern white cedar generally develop in lowland areas.

The study area is included in the Torrance Creek subwatershed. Torrance Creek is a tributary of the Eramosa River and drains some 10.6 km² of land in the southern part of Guelph. The watershed is divided by a municipal boundary along Victoria Road, with the City of Guelph on the west side and Township of Puslinch on the east. Currently, land uses includes a mixture of agriculture, recreation (golf courses) and urban. There are significant environment features including Torrance Creek, substantial wetland areas and upland woodlots. Research has shown that terrestrial features play a strong role in setting the environmental conditions that exist in any watershed. A significant portion of this subwatershed (37%) is comprised of wooded areas, wetlands and creek corridors. The wetland areas buffer the stream from existing urban and rural land uses and augment base flows. The wetlands and woodlands provide significant wildlife habitat and an excellent area for nature viewing, environmental education and aesthetic features to the community. Torrance Creek provides a significant aquatic feature that is perennial along the main branch, although it has been reported to become dry for much of its length during years with low rainfall. Approximately 54% of the subwatershed is in active agricultural land uses.

The site includes portions of the Torrance Creek Provincially Significant Wetland (Figure 2, Appendix A). The wetland is a source area for Torrance Creek and its tributaries and functions in a water storage capacity. Consequently, it is likely sensitive to changes resulting from development, such as differences in water levels, differences in the magnitude and frequency of overland flows to the wetland, and impaired water quality of surface runoff (ESG International, 1999).
4.3 NATURAL HERITAGE SYSTEM COMPONENTS

Figure 2 (Appendix A) shows the subject lands relative to the Natural Heritage System and adjacent lands for the Torrance Creek subwatershed. According to the Torrance Creek SWS, there are Category 1 and Category 2 lands, and locally significant features within the subject lands. The Category 1 lands include the Torrance Creek Wetland Complex, Torrance Creek and regulated floodplains. Development is not permitted within the boundaries of the wetland complex or in the regulated floodplain area.

Category 2 features include significant woodlands, significant wildlife habitat, fish habitat, steep slopes and the registered fill line, as designated by the GRCA. While the general intent of a Category 2 designation is preservation of the feature, some forms of development may be permitted inside Category 2 areas or on adjacent lands if supported by an approved Impact Assessment.

Figure 2 (Appendix A) includes the adjacent lands for each component of the Natural Heritage System. Adjacent lands are areas surrounding components of the natural heritage system where an Impact Assessment must support any proposed development.

As stated in the Impact Assessment Guidelines, adjacent lands are not buffers. These areas are simple tools to decide when a proposed development must complete an Impact Assessment. Since the proposed concept plan includes development inside the adjacent lands, the Impact Assessment addresses the potential impact to the Natural Heritage Components within the subject lands. In accordance with the Impact Assessment Guidelines, specific buffer requirements will be determined as part of the Impact Assessment.

As shown on Figure 2 (Appendix A), the subject lands contain Natural Heritage System Components 4 and 5. The Key Features, Functions and Sensitivities of each component, according to the Torrance Creek SWS, are contained in Appendix C. This Impact Assessment addresses potential impacts to the identified key features, functions and sensitivities of each Natural Heritage System Component and makes recommendations for their mitigation.

4.4 VEGETATION ASSOCIATIONS & VASCULAR PLANTS

The majority of the study area consists of a golf course. Remnant natural cover is present in the form of mixed and deciduous treed wetlands along the east and west boundaries of the subject lands. In addition, numerous planted trees are scattered throughout the golf course. The natural vegetation communities present are described below.

4.4.1 Vegetation Associations

Field investigations for this study area identified three distinct vegetation communities on site. These vegetation communities based on the ELC system (Lee et al, 1998), are depicted in Figure 3 (Appendix A) and a summary of each unit is provided in Table 2 (Appendix B).

With the exception of the Provincially Significant Torrance Creek Wetland (PSW), there are no provincially significant vegetation communities in the subwatershed. The boundary of the PSW is coincident with the boundary between the golf course and the forested portions of the site.

An 18-hole golf course and associated buildings occur in the central portion of the subject lands. Natural vegetation patches are found at the western and eastern edges. These patches include deciduous and mixed swamp communities, composed of white cedar, white birch, aspen, poplar.
and silver maple. Floristic, structural and habitat features of the vegetation community types are summarized in Table 2 (Appendix B).

Hedgerows are also described within the Torrance Creek SWS. Hedgerow #20 is located along the northern border of the site, while Hedgerow #32 is located along the southern boundary of the site. Hedgerow #20 was described in the SWS as 50% basswood, 30% black cherry, 10% white elm and 10% hawthorn with 90% canopy closure and an average diameter at breast height (DBH) of 22 cm. The quality of this hedgerow is considered high. The SWS also states that this hedgerow provides an east/west linkage between two the wetland areas on site. Hedgerow #32 was described as 50% basswood, 20% black cherry, 20% white ash and 10% hawthorn with 80% crown closer and an average DBH of 12 cm. This hedgerow quality is considered moderate. The SWS also states that this hedgerow provides and east/west linkage between the wetland areas. Hedgerow #20 along the northern boundary of the subject lands is also considered locally significant (Figure 5.8.1 of the SWS – Natural Heritage System).

4.4.2 Vascular Plants

One-hundred-and-forty-five species were recorded on the subject lands during the vascular plant survey. A complete list of vascular plants observed in the study area is presented in Appendix D. Of the plant species recorded, 93 or 64% are native, and 52 or 36% are exotic. This percentage of exotic species is higher than is found at the provincial level, which is considered to be 30% (Newmaster et al., 1998). This is generally typical of sites that contain both natural and cultural vegetation associations. Natural areas with lower proportions of exotic species and higher floristic quality [highest proportion of native species, assemblages of species with high coefficient of conservatism (CC) values] are associated with forest and wetland areas that have had little or no disturbance, or are at an advanced successional stage. The areas of highest floristic quality are located within the Torrance Creek PSW.

None of the plants recorded are extremely sensitive or have high degree of fidelity to a specific habitat type (i.e. CC value = 9-10). The most conservative species are restricted to the swamp communities.

No nationally or provincially rare, threatened or endangered species were found. All the species are ranked as S5 (Secure). One species observed on site, meadow horsetail (Equisetum pratense), is considered locally rare (R2) in Wellington County (Riley, 1989). It was found scattered in the silver maple deciduous swamp (ELC code SWD6-2, Figure 3; Appendix A).

4.5 WILDLIFE & WILDLIFE HABITAT

Twenty species of birds, five species of amphibians and three mammals were recorded during the site visits to the subject lands. No nationally, provincially or regionally significant species of wildlife were observed during the field surveys. Most species detected are ranked S5 (Secure), or SE, exotic and not believed to be a native component of Ontario’s fauna. The two exceptions are Green Heron and bullfrog that are both ranked S4 (Apparently Secure). None of the bird species observed are considered area sensitive or forest interior species.

A search of the NHIC database resulted in the identification of three elemental occurrences of rare species in the vicinity of the subject lands. These species are listed in Table 3 (Appendix B) and include the Loggerhead Shrike, Yellow-breasted Chat, and painted skimmer.
None of these species were recorded during the site visits and the records are 29, 36 and 96 years old, respectively, and should be considered historical. Further, during field surveys performed as part of the Ontario Breeding Bird Atlas (1981-1985 and 2001-2005) neither Loggerhead Shrike nor Yellow-breasted Chat was observed in Wellington County. A complete list of wildlife observed on site is provided in Appendix E.

Ontario Partners in Flight (2005) has generated a list of priority avian species that are targeted for conservation efforts. Three of the bird species observed on the subject lands are listed by this source for Ontario Region 13 (containing the study area), and include: Northern Flicker, Eastern Kingbird, and Baltimore Oriole. The Northern Flicker prefers forested and edge habitats, while the Eastern Kingbird prefers open habitats (grassland, agriculture, shrubland). The Baltimore Oriole prefers more open habitats with scattered mature deciduous trees.

The Torrance Creek SWS also identified the wetland areas as potential deeryard (deer wintering area). Deeryard use could potentially occur in some of the dense conifer areas that have reduced snow cover and minimal human disturbance.

Table 4 (Appendix B) presents the species and number of anurans heard at each survey station. The survey station locations are shown on Figure 4 (Appendix A).

The majority of the amphibian breeding habitat for the subject lands was located within the swamps on the western and eastern portions of the subject lands.

Station 1

In the April visits the majority of calling was heard from the surrounding swamps, not from the pond feature found at this station. Scattered spring peepers were heard from the pond during the May visit and three green frogs were recorded during the June visit.

Station 2

No anurans were heard calling from this station during the first and second visits. Two green frogs and a bullfrog were recorded during the June visit.

Station 3

No calling was recorded at this station during the April and May surveys. Two green frogs were recorded during the June survey.

Station 4

No calling was noted during the first and second survey. Four green frogs were recorded during the June survey.

Station 5

No calls were recorded from this pond during any of the surveys.

Station 6

One spring peeper was recorded during the April survey. No other species were recorded at the pond during any of the other surveys. Other species were recorded greater than 100 m from the station, to the north of the subject lands.
The SWS states that an observation of a northern ring-necked snake was recorded in the large swamp on the western portion of the subject lands during the Hales Manor Subdivision EIS. This species is ranked S4 (Apparently Secure). It was not observed during field studies undertaken for this current IA.

### 4.6 AQUATIC HABITAT

Torrance Creek within the subject lands flows in a northerly direction. According to the SWS, Torrance Creek within the subject lands is coldwater and mixed water (Figure 4.9.1 of the SWS). The coldwater portion of the tributary occurs within the deciduous swamp as the creek flows into Pond A on the golf course. As a result of flowing through Pond A, then B and C, (as illustrated on Figure 3; Appendix A) the creek becomes a mixed water system. Coldwater habitats are always at temperatures low enough to support salmonid populations (i.e. trout). Warm water habitats are too warm to support salmonids for most of the summer. Mixed water habitats are occasionally cool enough to support salmonids, but there are times in the summer when temperatures are too warm and sensitive species would have to migrate to colder areas.

Another small drain (hereafter called the West Course tributary) flows from Victoria Road into Pond C and has not been categorized into a temperature or habitat regime in the SWS. The golf course owner created this tributary when the course was built in the 1970's in order to drain water from the fairways. A portion of this drainage feature was piped with approval from the GRCA in 2000. A 200 metre section is an open channel which outlets to Torrance Creek in the northeastern portion of the subject lands at Pond C.

Two permanent barriers to fish migration occur on the subject lands at the downstream ends of Pond A and Pond B. These ponds have been classified as mixed water fish habitat in the SWS. Created ponds slow the flow of water and result in the increase in water temperature for downstream areas. The effect of the on-line ponds is apparent downstream of the ponds, where the creek becomes mixed water as it flows towards Victoria Road. Aquatic habitats are illustrated on Figure 3 (Appendix A).
5.0 Natural Heritage features and functions

The Torrance Creek SWS identified several (see Appendix C) natural heritage functions associated with the subject lands (Figure 5, Appendix A). A Natural Heritage System (NHS) has also been recommended in the Torrance Creek SWS. The NHS for the subwatershed is part of a green space analysis and integrates government policies (according to the Provincial Policy Statement and associated training manual), the potential resources within the subwatershed and the needs of the City of Guelph and its residents.

The following analysis of Natural Heritage Features & Functions is based on the eight components recognized by the Natural Heritage Policy of the PPS:

- Significant wetlands
- Significant habitat of endangered and threatened species
- Significant coastal wetlands
- Fish habitat
- Significant woodlands
- Significant valleylands
- Significant wildlife habitat
- Significant areas of natural and scientific interest

Each of these components and their applicability to the subject lands is discussed in the following.

5.1 SIGNIFICANT WETLANDS

The Torrance Creek Wetland has been evaluated and has been designated provincially significant. The boundary of this wetland was surveyed in 2004. The boundary of the PSW is coincident with the boundary between the golf course and the forested portions of the site.

5.2 ENDANGERED AND THREATENED SPECIES

Field inventories, review of relevant background material and examination of the Natural Heritage Information Centre revealed one record of an Endangered species on the subject lands. This was a record from 1980 of a Loggerhead Shrike (*Lanius ludovicianus*). This record should be considered historic since this species was not recorded in Wellington County during either the first or second Ontario Breeding Bird Atlas (BSC, 2005). Further, the subject lands are not suitable habitat for this species as this bird requires grazed pastures and marginal farmland with scattered hawthorn shrubs, fence posts, wires and an associated low-lying wetland for breeding. These habitats provide the open, short-grass habitat needed for the location and capture of insects and small vertebrate prey (Cadman et al., 1987).
A recent EIS prepared by Aboud and Associates (2007) identified western chorus frog within the Torrance Creek wetland, outside the study area. This species is considered by COSEWIC to have two distinct populations in Ontario, with the Great Lakes – St. Lawrence population considered Threatened. COSSARO undertook their own analysis and determined that "Apparently healthy populations still occur in many areas of southern Ontario and evidence for more than one genetically distinct population is incomplete. Therefore Western Chorus Frog is treated as a single population in Ontario and classified as Not at Risk" (COSSARO, 2009). This species was not identified during field studies on the subject lands.

The Yellow Breasted Chat (Special Concern) and the painted skimmer are discussed below in the section on Significant Wildlife Habitat.

5.3 SIGNIFICANT COASTAL WETLANDS

No coastal wetlands are present on or adjacent to the study area.

5.4 FISH HABITAT

The main tributary of Torrance Creek on the subject lands provides fish habitat. Within the golf course (at Pond A and Pond B), structures exist that limit fish movement to downstream areas north of the golf course. The ponds that are created by the dam resulted in warmer water temperatures that limit the establishment of cool or coldwater habitat conditions within the subject lands.

Another small drain (West Course tributary) flows from Victoria Road into Pond C and has not been categorized into a temperature or habitat regime in the SWS. The golf course owner created this tributary when the course was built in the 1970’s in order to drain water from the fairways. A portion of this drainage feature was piped with approval from the Grand River Conservation Authority in 2000. A 200 metre section is an open channel which outlets to Torrance Creek in the northeastern portion of the subject lands. The removal of the online ponds is mentioned throughout the SWS as a recommendation for improving fish passage and water quality.

Fish habitat is protected under the Federal Fisheries Act. When dealing with fish habitat, proponents must demonstrate that there will be no net loss of fish production as a result of development or site alteration.

5.5 SIGNIFICANT WOODLANDS

Criteria suggested by the Natural Heritage Reference Manual (MNR, 1999) for designating significant woodlands include woodland size, shape, proximity to other woodlands or natural features, linkages, species diversity, uncommon characteristics, and economic and social values. In the case of woodland size, the suggested criteria change depending on the amount of forest cover in the planning area. For instance, where there is less than 5% forest cover, it is suggested that woodlands 2 ha in area or larger should be evaluated for significance compared to 4 ha in areas with 5 to 15% forest cover, and 40 ha for areas with 15 to 30% forest cover.

The subject lands contain two large wooded blocks; one on either side of the property. The site was evaluated as part of the Torrance Creek SWS and the large western wooded block was considered a ‘woodlot with significant wildlife habitat’. For the purposes of this report, Stantec has considered both the eastern and western wooded blocks (swamps) as significant woodlands.
and subject to the policy requirements of the PPS; i.e. development must not result in negative impacts on the features and functions for which the site was designated. The boundary of the wooded areas on site are distinct given the maintenance activities of the golf course. These wooded blocks are outside the proposed development envelope.

5.6 SIGNIFICANT VALLEYLANDS

Recommended criteria for designating significant valleylands include prominence as a distinctive landform, degree of naturalness, importance of its ecological functions, restoration potential, and historical and cultural values. There are no significant valleylands on the property. The proposed creek realignment will alter the current regional floodline. Development will occur outside of this new regional floodline.

5.7 AREAS OF NATURAL AND SCIENTIFIC INTEREST

There are no Areas of Natural and Scientific Interest (ANSIs) in or on lands adjacent to the subject lands. Adjacent lands for ANSIs are defined as the lands within 50 m (MNR, 1999).

5.8 SIGNIFICANT WILDLIFE HABITAT

Significant wildlife habitat is one of the more complicated natural heritage features to identify and evaluate. There are four general types of significant wildlife habitat: migration corridors, seasonal concentration areas, rare or specialized habitat, and habitat for species of conservation concern. These are discussed in more detail below.

5.8.1 Migration corridors

Migration corridors are areas that are traditionally used by wildlife to move to one habitat from another. This is usually in response to different seasonal habitat requirements. Some examples are trails used by deer to move to wintering areas, and areas used by amphibians between breeding and summering habitat.

No significant migration corridors were noted on the subject lands. The SWS notes that there are no highly used wildlife corridors within the Torrance Creek subwatershed.

5.8.2 Seasonal concentration areas

Seasonal concentration areas are those sites where large numbers of a species gather together at one time of the year, or where several species congregate. The following is a partial list of numerous potential examples: deer yards, amphibian breeding ponds, snake and bat hibernacula, waterfowl staging and moulting areas, raptor roosts, bird nesting colonies, shorebird staging areas, and passerine migration concentrations. Only the best examples of these concentration areas are usually designated as significant wildlife habitat. Areas that support a species at risk, or if a large proportion of the population may be lost if the habitat is destroyed, are examples of seasonal concentration areas which should be designated as significant.

A local low quality deer wintering area was identified within the southwestern woodlot/wetland by the SWS.
Our field surveys also identified amphibian breeding areas on the subject lands within the on site ponds and wetlands. The on site ponds, having very low species diversity and abundance, are not considered significant wildlife habitat for the purposes of this report.

5.8.3 Rare or Specialized Habitat

Rare or specialized habitats are two separate components. Rare habitats are those with vegetation communities that are considered rare in the province. It is assumed that these habitats are at risk and that they are also likely to support additional wildlife species that are considered significant. Specialized habitats are microhabitats that are critical to some wildlife species. Potential examples include moose aquatic feeding areas, salt licks for ungulates, and groundwater seeps for Wild Turkeys.

No rare or specialized habitats were identified on or adjacent to the subject lands.

5.8.4 Species of conservation concern

The biggest group is habitat for species of conservation concern. This includes four types of species: those that are rare, those whose populations are significantly declining, those that have been identified as being at risk to certain common activities, and those with relatively large populations in Ontario compared to the remainder of the globe.

Rare species are considered at five levels: globally rare, nationally rare (with designations by the Committee on the Status of Endangered Wildlife in Canada [COSEWIC]), provincially rare (with designations by the Committee of the Status of Species at Risk in Ontario [COSSARO]), regionally rare (at the Site Region level); and locally rare (in the municipality or Site District). This is also the order of priority that should be attached to the importance of maintaining species.

Species that are demonstrating a statistically significant decline over an extended period of time may be considered significant wildlife.

A search of the NHIS database identified the occurrence of a Yellow-breasted Chat (Special Concern) and a painted skimmer (S2 - Imperiled) on or adjacent to the subject lands. These records are old and should be considered historical for the purposes of this report. Further, the Yellow-breasted Chat was not observed in Wellington County during either the first or second Ontario Breeding Bird Atlas (BSC, 2005).

Three of the species observed on site are considered regionally rare by Partners in Flight, including the Northern Flicker, Eastern Kingbird and Baltimore Oriole. Habitat for each of these species will remain on site post development in the form of open un-maintained areas, forest, and scattered mature trees.

One plant species observed on site is considered locally rare (Riley, 1989): meadow horsetail (Equisetum pratense). It is ranked “R2” in Wellington County (i.e. with two known stations). It was found scattered in the silver maple deciduous swamp (ELC code SWD6-2), which is outside the proposed development envelope.

Some species have been identified as being susceptible to certain practices, and their presence may result in an area being designated significant wildlife habitat. Examples include species vulnerable to forest fragmentation and species such as woodland raptors that may be vulnerable to forest management or human disturbance. The final group of species of conservation concern includes species that have a high proportion of their global population in Ontario. Although they may be common in Ontario, they are found in low numbers in other jurisdictions.
The southwestern woodlot/wetland has been identified in the SWS as providing habitat for area sensitive and forest interior species.

5.9 ECOLOGICAL LINKAGES

The Torrance Creek SWS undertook an extensive analysis of wildlife corridors within the subwatershed (see Sections 4.10.6 and 6.3.3 of that study). The SWS did not identify any highly used wildlife corridors. In addition, the SWS notes that the existing hedgerows are generally of low quality from a wildlife perspective. They are mostly narrow, with limited tree cover and dominated by non-native shrubs.

As described earlier there are two hedgerows that form the northern and southern boundaries of the property. Both were considered by the SWS to provide east/west linkage between two natural areas. Hedgerow #20 along the northern boundary of the subject lands is also considered locally significant (Figure 5.8.1 of the SWS – Natural Heritage System).
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6.0 Description of Development Proposal

The proposed development includes a mix of housing types including detached and semi-detached units, townhouses and apartment dwellings, stormwater management, open space and buffers, and associated services. The proposed Draft Plan of Subdivision for the study area has been prepared by Black, Shoemaker, Robinson and Donaldson Ltd (October 2009) and is provided in Figure 7 (Appendix A) of this report. Table 5 displays the land use by area proposed in the draft plan. The plan includes approximately 20.7 hectares of the subject lands that will be maintained as Open Space in natural areas and buffers.

This draft plan of subdivision also includes the implementation of a key recommendation of the Torrance Creek SWS; taking Pond A off-line from Torrance Creek. The proposed plan also includes the removal of Pond B and the narrowing of Pond C. The process involves the realignment of Torrence Creek (stream channel by-pass) as a natural channel as illustrated on Figure 6 (Appendix A). Pond C will be narrowed during realignment of Torrance Creek in order to reduce its area and related thermal impacts on Torrance Creek.

A corridor has been set-aside in the draft plan to permit the design of the natural channel for Torrance Creek. This corridor will be approximately 62 m wide at its narrowest distance between two points of development. The corridor is slightly narrower where stormwater management is proposed, however, the SWM facility will be a naturalized feature and will offer a corridor function for wildlife. The by-pass channel will be designed to ensure fish habitat is created and that flows will move more effectively through the subject lands. The detailed design of the channel and habitat features of the creek re-alignment and pond removal will occur as part of the permitting phase of the development. Fisheries Act approval will be required to ensure no net loss of aquatic habitat and enhancement of the aquatic functions of Torrance Creek.

6.1 STORMWATER MANAGEMENT PLAN

The stormwater management (SWM) plan (Braun Consulting Engineers Ltd., November 2009) was designed to meet criteria set out by the GRCA, City of Guelph, the MNR and the MOE, as well as to follow the recommendations of the Torrance Creek SWS. The proposed SWM design is summarized below.

Run-off from rooftops will generally be directed toward pervious areas, using enhanced swales to provide opportunity for increased infiltration. The majority of drainage from backyards facing Open Space areas will be directed toward these areas via diffuse overland flow.

Four stormwater management facilities are proposed to capture runoff from impervious surfaces (roads and driveways) in each of the major catchment areas of the subject lands. Three facilities are located south of Torrance Creek, and the fourth is located in the northwestern portion of the site. Two of the facilities will be traditional multi-cell detention facilities, and two will be wetland facilities. All stormwater facilities will incorporate an MOE Enhanced degree of treatment and the outlets will draw water from the bottom of the pond so that cooler water will be discharged to the watercourse. Wherever feasible, rooftop run-off will be directed to swales and at-source infiltration galleries. Details of the configuration and design of the stormwater management facilities are included in the Preliminary Servicing and Stormwater Management Report for the
Victoria Park Village Residential Subdivision, City of Guelph (Braun Consulting Engineers Ltd., November 2009).

Braun Consulting Engineers Ltd. conducted a pre- and post-development water balance analysis. The results are discussed in the Preliminary Servicing and Stormwater Management Report. The volume of water being infiltrated within the subject lands is enhanced in the post-development condition across the site. Much of the site will remain pervious in the post-development condition.

The proposed development has incorporated several Low-impact Development design elements. These design elements are intended to reduce the overall impact of the development on the natural environment. Some examples employed in this development proposal include:

- Infiltration of rainwater through vegetated trenches and basins with some infiltration devices;
- Landscaping methods that include native vegetation;
- Stormwater conveyance through vegetated channels, and directing runoff from impervious areas to vegetated areas.

Additional measures may be implemented during the detailed design phase, which will be outlined in the Environmental Implementation Report (EIR).

### 6.2 Buffer Recommendations

The need to protect and enhance the natural heritage features within the subject lands was addressed in the development of the proposed draft plan of subdivision. The SWS presents site specific recommendations regarding the type and nature of buffers that should be considered when preparing IA’s. The Impact Assessment Guidelines identify buffer segments and buffer considerations for each. The subject lands contain buffer segments 5A and 4D (Figure 2, Appendix A). The subject buffer considerations for these are contained in Table 6 (Appendix B). All buffers proposed on site will be planted with native vegetation to promote naturalization of these areas, which are currently manicured.

The SWS states that the actual width and construction details of buffers to protect the established sensitivities of the Natural Heritage components should be recommended in the IA based on these guidelines.

Stantec has assessed the buffer requirements for the subject lands in relation to the field work completed and through a review of the SWS. Figure 6 (Appendix A) presents Stantec’s buffer recommendations by segment, which in sections are larger than those recommended in the SWS. The following presents the feature characteristics of each segment in relation to the fieldwork conducted and the recommendations of the SWS.
6.2.1 Segment 1

This segment includes the West Course tributary and the southern portion of the eastern wetland and woodlot. This segment is similar to segment 5A from the SWS.

Consideration was given to the creation of a natural channel through this section of the wetland and woodlot to replace the existing West Course tributary. Preliminary investigations determined that wetland vegetation communities occupy a majority of this woodlot. The addition of a drainage feature in the woodlot/wetland had the potential to drain water from the wetland thereby impeding the existing water storage function of the wetland. It was determined that the most appropriate course of action was to leave the tributary in place and provide a buffer to enhance the fish habitat function. The West Course tributary has not been categorized by the SWS into a temperature or habitat regime. For the purposes of this report the West Course tributary has been considered a warm water feature based on existing site conditions. The SWS has recommended a 15 m buffer around this feature. The proposed design plan includes a 15 m buffer on the west side of the tributary, with the east buffer of the tributary connecting with the wetland buffer (i.e. >120 m buffer).

The SWS has indicated that no buffer is required adjacent to the eastern woodlot. During the course of field studies for this property it was observed that the wetland was coincident with the woodlot boundary. As a result Stantec has recommended a 30 m buffer to the majority of the wetland edges here, and a 20 m buffer along the south edge of the eastern wetland where the development access road will be located. This buffer is reasonable given that property encroachment is not a concern at this location and this buffer is equal to or greater than other buffers found along City roadways.

6.2.2 Segment 2

This segment is located along the proposed stream corridor and includes Ponds A, B and C. One of the key recommendations in the SWS (Table 6.5.1 – Aquatic Resources Management, pg. 155) was to take Pond A off-line and enhance natural cover around Pond B to reduce thermal impacts to the creek. Figure 6.5.1 of the SWS also indicates that riparian cover should be enhanced around Pond C. This segment corresponds with a portion of buffer segment 4D in the SWS.

The current draft proposal includes taking Pond A off-line through creation of a realigned channel, filling in Pond B, narrowing Pond C, and realigning the creek. Pond A will be separated from rear yards by a naturalized strip 10 m wide at its narrowest point. Pond B will be filled in. Pond C will be narrowed to reduce impacts of the pond on the thermal regime of the realigned creek, and protected within the wetland buffer, West Course tributary and stream corridor/linkage area. The narrowed Pond C will be at least 25 m from development. The riparian areas of both Ponds A and C will be enhanced with native trees and shrub species to provide additional shading.

A corridor has been provided in the proposed development for a channel re-alignment and natural channel design. This corridor will be approximately 125 m at its widest point, and approximately 62 m wide at its narrowest point between two points of development. Comments
received from the GRCA (letter dated August 23, 2007) indicated that they did not have issue with the width of the proposed corridor, which at that time was proposed to be 45 m wide along its entire length. Fisheries Act approval will be required for the channel realignment work to ensure no net loss of aquatic habitat and enhancement of the aquatic functions of Torrance Creek.

6.2.3 Segment 3

This segment is located along the wetland area on the southwest side of the property. The swamp itself was considered the most sensitive feature in this area. The SWS recommends a minimum 10 m buffer between the wetland and the proposed development. Through our fieldwork and literature review, Stantec agrees that 10 m is sufficient to negate negative impacts from residential development, but has recommended a minimum 30 m buffer along the wetland edge to provide for additional protection which encompasses the east edge of the naturalized SWM area. An explanation of these recommendations has been provided in the following paragraphs.

A white cedar hardwood organic swamp dominated the woodlot. The vegetation communities in the vicinity of this segment are well established. White cedars have a shallow root zone, but trees along the edge are already well adapted to open conditions. There should be little susceptibility to windthrow and the rooting characteristics of the trees should be well established in relation to the current golf course activities. No new edge will be created, thus negating any impacts from edge changes. A small pocket of silver maple organic swamp occurs on along the edge of the wetland community. This tree species also has a shallow root system. It should be similarly adapted as the eastern white cedar to disturbance.

Adding a buffer of minimum 30 m along the woodlot/wetland edge will be more than sufficient to negate the impacts of human use on the wetland once the development has been completed. A buffer will also influence water quality controls on site, helping to filter any drainage before it reaches the wetland. In some locations, the buffer to this wetland edge is 100 m in width. The SWM facilities are located within portions of this buffer, but in all cases they are located outside at least the first 10 m. The 10 metre zone immediately adjacent to the wetland is designated as a “no touch zone” protected from any disturbance.

6.3 SUMMARY OF PROPOSED BUFFER WIDTHS AND ENHANCEMENTS

Variable buffer segments have been recommended for this site. Proposed wetland buffers are between 20 and 100 m in width with a 10 m no-touch zone. The proposed stream corridor / linkage is between 62 and 125 m in width. And finally, the West C course tributary buffer is between 15 and > 120 m in width. These buffers will help to protect the water quality of the tributaries, the natural heritage features of the wetlands, the temperature regime of the tributaries, and the area sensitive bird habitat within the western woodlot/wetland.

Currently, proposed buffer areas are under active management as part of the golf course activities. Species composition is almost exclusively manicured grass with scattered mature trees. Enhancement details for the proposed buffers will be finalized during the detailed design stage and presented in an EIR. In general, buffers will be planted with a variety of native woody and herbaceous species taken from local stock and suited to local buffer conditions (i.e. upland,
transition, riparian, etc.). A monitoring program will be followed to ensure successful establishment of plantings, the details of which will be presented in the EIR.

Chain link fencing will be placed along rear yards that back onto the proposed stream corridor / linkage to eliminate potential for encroachment by residents. This fencing will also be placed along rear lots which back onto SWM facilities along the western limit of the development. Living fences will be placed along portions of the eastern limit of development. The final configuration of fencing (both chain link and living) will be determined during the detailed design phase and presented in the EIR.

6.3.1 Comparison to Guelph Natural Heritage Strategy

Although the policies associated with the NHS are not applicable to this site due to the fact that this application was in process prior to the initiation of the NHS, below is a brief comparison of the buffers proposed in that strategy and those proposed as part of this design plan.

<table>
<thead>
<tr>
<th>Feature</th>
<th>NHS Proposed Buffer</th>
<th>Stantec Proposed Buffer</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torrance Creek PSW</td>
<td>30 m</td>
<td>30 – 100 m</td>
<td>10 m no-touch zone. Only SWM facilities and trails within the buffer.</td>
</tr>
<tr>
<td>Other Wetlands</td>
<td>15 m</td>
<td>At least 20 m</td>
<td>Stantec has treated all wetlands on site equally, regardless of provincial status. 10 m no-touch zone.</td>
</tr>
<tr>
<td>Pond A</td>
<td>30 m for coldwater habitat</td>
<td>At least 10 m</td>
<td>Pond A is a large, open online pond and is considered mixed water habitat in the SWS.</td>
</tr>
<tr>
<td>Torrance Creek east of Pond A</td>
<td>15 m for undetermined fish habitat</td>
<td>At least 62 m wide corridor (narrowest width between two points of development)</td>
<td>Minimum setbacks from the creek will depend upon final channel orientation within the corridor.</td>
</tr>
<tr>
<td>West Course tributary</td>
<td>15 m for undetermined fish habitat</td>
<td>At least 15 m</td>
<td>Buffer width on the west bank of the tributary is at least 15 m, and greater than 120 m on the east side.</td>
</tr>
<tr>
<td>Significant Woodlands including north hedgerow</td>
<td>10 m</td>
<td>20 – 100 m*</td>
<td>Significant woodland boundary coincident with wetland boundary. *North hedgerow to be removed.</td>
</tr>
</tbody>
</table>

In addition to these buffer recommendations, the NHS identifies a linkage that matches the proposed re-aligned Torrance Creek channel as outlined in this report. The NHS recommends linkages be 50-100 m wide. The proposed corridor, as shown on the design plan, will range from 62 -125 m. A second linkage running north south along Victoria Road (perpendicular to the existing golf course entrance) is identified in the NHS. The reasoning for this linkage is unknown, and not supported by the findings of this IA. Stantec disagrees with the inclusion of the north hedgerow within the significant woodlands designation, as it is extremely narrow and of little value to wildlife as discussed in various sections of this report. Any potential corridor linkage offered by the hedgerow is more than compensated for by the establishment of the
parallel 62m wide riparian corridor found a short distance to the south that would effectively link the two large wood forest blocks found on the subject lands.

Deer wintering areas and habitat for Locally Significant Species, as mapped by the NHS, will be protected as part of the proposed development. Areas identified in the NHS as Regulatory Floodplain and Other Valleylands, generally associated with Torrance Creek and Pond A, will be incorporated into the new creek corridor and buffer areas.

6.4 PROPOSED TRAIL CORRIDORS

Based on input from the City of Guelph (City of Guelph, March 2008), a trail system has been proposed for the subject lands, as illustrated on Figure 7 (Appendix A). The proposed trails will include two footbridge crossings of Torrance Creek. These footbridges are existing, but they will need to be removed during channel construction for the realigned Torrance Creek, and replaced with new structures.
7.0 Potential Impacts of Development and Mitigation Recommendations

The following discussion deals with the ecological processes and features of the subject lands in relation to the proposed development. Mitigation measures for each of the potential ecological impacts of the proposal described above are discussed, followed by a summary of the net impacts following the implementation of the mitigation. Some of these measures are also described in detail in the Preliminary Servicing and Stormwater Management Report (Braun Consulting Engineers Ltd., November 2009).

The primary strategy for maintaining natural heritage features and functions has been the avoidance of the most significant and sensitive areas through design of the proposed development. The proposed development will not intrude into any of the key natural heritage areas identified from the subject lands during this study and in the Torrance Creek SWS, with the exception of construction required to allow the creation of the realigned creek and associated pond works. Buffer recommendations have been incorporated into the proposed development plan to protect and enhance the functions of the significant and sensitive areas within the subject lands, and in most cases are wider than those recommended in the SWS. The matrix between these areas will change from a golf course dominated landscape to a residential area with various housing types and supporting land uses.

The following discusses the specific potential impacts on the key natural heritage areas and secondary sites in terms of both direct and indirect impacts.

7.1 SIGNIFICANT WETLANDS

The boundaries of the provincially significant wetland have been identified in the field and no development will occur in this feature. All of the wetland edges have been examined and appropriate buffers have been included to protect wetland features and functions (minimum 20 m with a 10 m no-touch zone).

The pre-development catchment boundaries of the two wetland/woodlot areas on the subject lands are more or less contiguous with the boundaries of the features themselves. The volume of water in these areas will not be significantly altered in the post-development condition. Therefore, the hydrologic dynamics of the wetlands will be protected in the post-development situation.

The proposed SWM facilities will ensure that the pre- and post-development water contributions from the site to these wetlands remains, and that all water entering these features from the SWM system through direct inputs or through groundwater will meet MOE Enhanced standards.

7.2 FISH HABITAT

Fish habitat will be significantly enhanced on the subject lands and as a result, throughout the watershed. One of the key recommendations in the SWS (Table 6.5.1 – Aquatic Resources Management, pg 155) was to take Pond A off-line and enhance cover at Pond B. As part of the proposed design plan, Pond A will be taken off-line, Pond B will be removed entirely, and Pond C will be narrowed, which will accomplish the intent of the SWS recommendation.
The Impact Assessment Guidelines for the Torrance Creek Subwatershed state that while development proponents are not necessarily required to actually implement these recommended management practices, they must, as a minimum, demonstrate how the proposed development will not prevent or reduce the possible success of management recommendations. This proposal goes well beyond the minimum, with the developers proposing to implement the Torrance Creek by-pass channel as part of the development plan.

The SWS recommends that Pond A be taken off-line and that Ponds B and C be enhanced with plantings to limit the thermal degradation of Torrance Creek. The current draft proposal includes taking Pond A off-line, removing Pond B, narrowing Pond C, and re-aligning the creek north of Pond A. A minimum 62 m wide corridor has been provided in the proposed development for a channel re-alignment and natural channel design. Preliminary design of the new channel is described in Braun (November 2009). The detailed design of the channel and habitat features of the creek re-alignment and pond removal will occur as part of the permitting phase of the development. Fisheries Act approval will be required to ensure no net loss of aquatic habitat and enhancement of the aquatic functions of Torrance Creek.

The fish habitat function of the West Course tributary will also be improved through the application of a 15 m setback to the west side of the watercourse and more than 120 m setback to the east side, permitting the succession of vegetation in this buffer area. The continued succession of the riparian zone will increase the shading of the watercourse, providing cooler water temperatures and improved fish habitat conditions. Two existing footbridges over Torrance Creek will be replaced and/or slightly relocated, and their construction will require approval from regulatory agencies to ensure no net loss of fish habitat. The design of the footbridges will occur at the detailed design phase, and issues related to fish habitat protection will be addressed through the permit requirements.

The proposed SWM facilities will ensure that all water entering the creek from the SWM system through direct inputs or through groundwater will meet MOE Enhanced standards. In addition, outlets will draw from the bottom of the SWM facilities to ensure cooler water temperatures entering the creek.

Overall, the proposed watercourse improvements represent a very significant enhancement to the fish habitat function of the subject lands.

### 7.3 Significant Woodlands

Boundaries of forested areas that might qualify as significant woodlands will be maintained in the post development condition. Buffers have also been incorporated along all woodland edges, often along edges that are currently maintained by the golf course. The water infiltrated via the stormwater management facility in this area will be treated to MOE Enhanced standards, which will protect the quality of the water recharging to the groundwater table and ultimately discharging to the wetland communities in the western and eastern portion of the study area.
7.4 SIGNIFICANT WILDLIFE HABITAT

Areas of the subject lands have been identified as significant wildlife habitat for supporting the following features:

- area sensitive birds
- amphibian breeding habitat (wooded wetlands on site)
- potential deer yard
- locally rare plants

These areas of significant wildlife habitat are also nested within the boundaries of features designated as significant woodland and wetlands.

7.4.1 Area Sensitive Birds

The woodlot on the southwestern portion of the subject lands has been identified in the SWS as habitat for area sensitive bird species. This feature will remain intact, no development will occur within it and a 30 m buffer will be added to the outermost edge. No direct impacts to this feature will occur.

Indirect impacts on area sensitive species may arise from the presence of new human residences in proximity to the wildlife habitat. Potential impacts include increased human presence inside the habitat area, predation and disturbance by domestic pets, noise, light and visual intrusions related to the human activities and the possible introduction of aggressive plant species which might change vegetation dynamics and alter habitat characteristics. Since the habitat blocks currently abut on other residential areas and a golf course, each of these potential impacts is already present to some degree. The existing vegetation and wildlife within the habitat blocks already reflect the existence of adjacent human uses.

The proposed development will not introduce new impacts but may increase the degree of impact. However, the large size of the retained habitat blocks provides adequate space for wildlife to find suitable habitat and adapt to the increased disturbance levels. Therefore all habitat niches will be preserved. There should be no reduction in the number and range of species that could utilize the large habitat blocks. Access controls may be necessary to mitigate the potential impacts of increased human access to the retained natural areas after construction. Random access to the woodland and wetland areas can be discouraged, as necessary, through structural fences, living fences, signage and public education.

7.4.2 Amphibian Breeding Habitat

The highest concentration of anurans was observed in the wetland/woodlot in the southwest portion of the subject lands. The proposed development plan maintains the entire wetland habitat in both the west and east sides of the property. Mitigation measures are proposed that will ensure there are no indirect impacts to the features and functions of the wetland. Specifically, stormwater management has been designed to ensure there will be no reduction in water volume entering the wetland, and Enhanced water quality control will ensure there are no adverse effects on water quality.
The ponds on site mainly contained green frog habitat. The results of the amphibian call-count surveys indicate that the majority of the pond habitat on site is of low quality. The overall diversity of species was low as was the over all number of individuals. Green frogs were the single largest users of the ponds. This species requires permanent bodies of water for breeding and over-wintering. Permanent water bodies on site will remain at Pond A. This pond will be protected and enhanced with plantings of native woody species.

7.4.3 Potential Deer Yard

Potential deer yard habitat identified from the subject lands will be maintained and buffered in the wetland boundary. Local movements of deer across the landscape will be maintained through the creation of a naturalized corridor containing the re-aligned Torrance Creek. This corridor will be 62 m at its narrowest distance between two points of development, and will connect the natural areas at the east and west edges of the subject lands.

7.4.4 Locally Rare Plants

The locally rare meadow horsetail (*Equisetum pratense*) will be maintained in protected habitat post-development.

7.5 OTHER NATURAL HERITAGE FEATURES AND ECOLOGICAL LINKAGES

The hedgerow bordering the northern boundary of the subject lands is considered locally significant, but is very narrow (only one tree canopy in width) along most of its length. This hedgerow will be removed as part of the proposed development.

The new Torrance Creek corridor will pass through the proposed development, linking the east and west natural areas on the subject lands. This corridor will be 62 m at its narrowest point between two points of development, and will contain a variety of habitats (e.g. creek, riparian, treed upland, naturalized pond, etc.). This new corridor will more than compensate for the removal of the northern hedgerow in terms of wildlife linkage utility.

7.6 CONSTRUCTION IMPACTS

Construction impacts have the potential to negatively affect the significant natural features on the subject lands. Activities related to development such as grading, cut-and-fill, and presence of heavy machinery can cause soil erosion and compaction, while machinery can destroy over-hanging vegetation. Encroachment into the natural areas can also occur by machinery, foot traffic, and discarding or storage of construction materials outside the construction envelope. Standard construction practices should be employed to ensure no sedimentation and/or damage is incurred to the wetlands or woodlands present on site, or their identified buffer areas.

Generally, noise generated by construction activities represents a short-term disturbance to wildlife using the subject lands. It is expected that with the completion of construction, wildlife will quickly return to their normal use patterns within the natural areas adjacent to the development.

Braun Consulting Engineers Ltd. (November 2009) recommend that an erosion and sediment control report be prepared to protect the woodlands, wetlands and watercourses during construction of the proposed subdivision. It is recommended that this report would be a
condition of Draft Plan approval and that the details and recommendations of the report will be incorporated into an EIR.

7.7 INDIRECT HUMAN IMPACTS

As per City of Guelph recommendations, the proposed development plan recommends a network of trails that connects the open space areas within the subject lands to the residential areas on site and to the north and south. Trail and recreational uses have been directed outside of the core portions of natural areas. This includes trails along the edges of the wetland and stream corridors.

Many of the chronic impacts that can occur in urban natural areas are not a result of degradation of the edge, but a dramatic increase in human use through the entire system.

The development of the subject lands as residential area provides an ideal opportunity to promote the stewardship of the significant natural features within and surrounding the housing. A stewardship guide for homeowners should be prepared as part of an EIR.

The residential development will result in a marginal increase in potential disturbance to wildlife from lighting.

Light pollution can disrupt natural diurnal rhythms of wildlife, and is particularly harmful to nocturnal and migratory animals and animals in flight. The potential effects due to artificial light pollution can be mitigated through the following:

- Direct glare should not be visible beyond the property boundaries and can be avoided by installing low intensity and downward pointing lights;
- Outdoor lighting should be turned off when not in use, except where used for security and safety. This can be accommodated with the installation of full cut-off lights; and,
- Motion sensors should be used on all safety and security lighting.

Details of the lighting plan design should be addressed in the EIR for the development.

As described earlier, a combination of chain link and living fences will be used on site to manage access to natural areas, and reduce the potential for encroachment at the edge. The final configuration of the fencing will be outlined in the EIR.
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8.0 Monitoring

Section 6.6 of the Torrance Creek SWS discusses monitoring recommendations for the Torrance Creek subwatershed. The Impact Assessment Guidelines for the Torrance Creek Subwatershed recommends compliance and performance monitoring be undertaken in association with proposed development.

Compliance monitoring is recommended during the construction phase to ensure the following:

- construction activities remain outside of the wetland buffer limits
- protection of the creek and associated corridor during residential construction
- erosion and sediment controls are installed and maintained at the buffer limits
- tree roots and branches of the hedgerow trees being maintained are protected from damage due to construction
- construction and planting of the stormwater management facilities are undertaken according to the recommended design

This will be accomplished through regular on-site inspection throughout the construction phase. The City of Guelph currently has a standard inspection program that ensures compliance for sediment and erosion control features, stormwater management facilities and property demarcation. It is anticipated that the above recommendations will be inspected as part of this program.

Performance monitoring of the stormwater management facilities is recommended in the Preliminary Servicing and Stormwater Management Report (Braun Consulting Engineers Ltd., November 2009). It has been recommended that inspections of the facilities be performed regularly after significant storm events for the first two years of operation and following that, the City perform a regular operation and maintenance program on stormwater management facilities.

The SWS recognizes that it is very difficult to identify cause-and-effect relationships in an uncontrolled natural environment. Therefore, the SWS recommends that monitoring focus on the implementation and effectiveness of the site-specific development mitigation measures, rather than pre-and post development biological inventory data collection. The major mitigation measure implemented in the proposed development is the avoidance of significant areas and the use of buffers to limit indirect impacts to these areas. Therefore, it has been recommended that the establishment of buffers be monitored during construction through the use of on-site inspectors. It is further recommended that for two years after construction is complete, annual inspections of the buffer areas be undertaken to ensure that the buffers areas remain and are not being negatively impacted by human activities. This long-term monitoring will be outlined in greater detail as part of the EIR document.
This page left blank intentionally.
9.0 Conclusions and Recommendations

9.1 NET IMPACTS

No wetland or woodland vegetation communities will be removed by the proposed development. The surface water storage function of the subject lands will be maintained due to the retention of the wetland vegetation communities. The water quality in the wetlands and in Torrance Creek will be protected by the implementation of the stormwater management design, which will treat all stormwater flows to MOE Enhanced standards prior to discharge to the West Course tributary or Torrance Creek.

The water balance of the site will not be significantly altered in the post development situation. The predicted increase in infiltration volumes will enhance groundwater recharge and seepage in the wetlands and in Torrance Creek. Wetland and woodland buffers have been proposed to protect the integrity of wetlands, Torrance Creek and the West Course tributary.

The maintenance and protection of wetlands and woodlands within the subject lands will maintain the species diversity and area sensitive bird habitat, protect the habitat of locally rare and conservative plant species, protect important amphibian breeding areas and maintain deer yard habitat. Enhancement of the natural environment will occur through the implementation of naturalized buffers throughout the site, the creation of a wildlife linkage through the study area, and improvement of fish habitat.

Fish habitat within the subject lands will be significantly enhanced through the creation of a bypass channel for Torrance Creek that will take Pond A off-line, remove Pond B, narrow Pond C, improve the thermal regime and remove barriers to fish movement. Water quality will be protected through the implementation of MOE Enhanced standards for stormwater treatment prior to discharge to the creek and West Course tributary. Outlets will draw from the bottom of SWM facilities to ensure cooler water temperatures discharging to the creek.

The fish habitat of the West Course tributary will be improved by the implementation of a setback of at least 15 m from the creek that will be enhanced with native plantings. Two footbridge crossings of Torrance Creek are proposed at existing footbridge locations, and their modification will require regulatory agency approval to ensure no net loss of fish habitat. The design of the footbridges will occur at the detailed design phase, and issues related to fish habitat protection will be addressed through the permit process requirements.

The local and regional ecological linkages that the subject lands provide will not be negatively impacted by the proposed development, and may be enhanced through the naturalization of the proposed creek corridor.

9.2 POLICY COMPLIANCE

The proposed development will not remove any portion of the Provincially Significant Torrance Creek Wetland Complex. The entire wetland as well as the hydrological, biological and linkage functions will not be negatively impacted by the proposed development. The proposed development will not conflict with any management activities recommended in the Torrance Creek SWS. Ponds A and B are identified aquatic resources management priorities in the
Torrance Creek SWS. Pond A will be taken off-line, Pond B will be removed, and Pond C will be narrowed as part of this development. Ponds A and C will be enhanced with native plantings.

The proposed development complies with the Natural Heritage policies of the Provincial Policy Statement. Significant portions of significant woodlands, valleylands, and significant wildlife habitat as defined by the Natural Heritage Reference Manual (MNR, 1999) will not be removed or negatively impacted by the proposed development. The proposed re-alignment of the Torrance Creek, by-pass of Pond A, removal of Pond B, and narrowing of Pond C will result in an improvement in fish habitat within the subject lands. Green frog habitat will remain on site through the maintenance of Pond A. This IA demonstrates that there will be no negative impacts on the natural features or on the ecological functions of the provincially significant Torrance Creek Wetland Complex.

This IA follows the recommended EIS guidelines as outlined by the GRCA. Portions of the proposed development lie within the area regulated by the GRCA, and as such are subject to the Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. The proposed residential development has taken these policies into account, and is in compliance with them through careful planning and design measures and an iterative consultation process with regulatory agencies. The proposed SWM facilities will protect the existing hydrologic relationships on site. No adverse impacts to significant natural features, hydrologic or ecological functions are expected to occur as a result of the proposed development.

The proposed development will not result in a loss of wetland function; result in an increase in demand for future development; conflict with existing or future wetland management practices; or result in the loss of contiguous wetland area. Therefore, the development proposal complies with the Policy 6.4.3 of the City of Guelph Official Plan.

This IA includes all the components required in Section 6.3.1 of the City of Guelph Official Plan and the Impact Assessment Guidelines for the Torrance Creek Subwatershed. Based on the description and recommendation of the “actions necessary to prevent, change, mitigate or remedy and expected impacts upon natural features” and the resulting net impacts summarized above, the development proposal complies with Section 6.3.1 of the City of Guelph Official Plan.

Recently, the City of Guelph released their updated Natural Heritage Strategy (NHS) (Dougan and Associates, 2009). Within the subject lands, the NHS identifies a number of areas as being within the proposed Natural Heritage Strategy, as discussed in Section 6.3.1 of this report.

### 9.3 RECOMMENDATIONS

The conclusions of this report are based upon the following recommendations being implemented:

- the development envelope and wetland and woodland buffers shown in the draft plan of subdivision (Black, Shoemaker, Robinson and Donaldson, October 2009) be maintained;
- the principles and general approach discussed in the stormwater management design recommended in the Preliminary Stormwater Management Report (Braun Consulting Engineers, November 2009) be adhered to;
- the correct construction and maintenance of all stormwater management facilities;
• the completion of an Environmental Implementation Report which includes a Homeowner Manual, an Erosion and Sediment Control Plan, Tree Conservation Plan, and a Monitoring Plan; and,

• the use of conditions for site plan control to ensure mitigation measures discussed in this report are implemented.
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10.0 References


Appendix A

Figures
LOCATION OF SUBJECT LANDS

FIGURE NO. 1.0

PROJECT NAME:
VICTORIA PARK VILLAGE
RESIDENTIAL SUBDIVISION
CLIENT NAME:
VICTORIA PARK GOLF CLUB WEST
DATE:
APRIL 2009

LOCATION OF SUBJECT LANDS
Notes: *As defined and depicted on Figures 4.9.2, 4.10.5 and 6.3.1, Torrence Creek Subwatershed Study (1998)
2. Base data © Her Majesty the Queen's Printer, 2009.

Legend
- Subject Land
- Tree Line Boundary
- Proposed Stream By-Pass Channel
- Existing Tributary
- Segment
- 15m Buffer
- 20m Buffer
- 30m Buffer or more
- 62m or more Stream
- Corridor/Linkage

Notes

Client/Project
VICTORIA PARK WEST GOLF CLUB
VICTORIA PARK VILLAGE RESIDENTIAL SUBDIVISION

Figure No.
6

Title
BUFFER SEGMENT RECOMMENDATIONS
Multiple Residential
168 Units - 86.5 Units/Ha. Area = 1.94 Ha

Multiple Residential
158 Units - 86.5 Units/Ha. Area = 1.83 Ha

Park Area = 0.90 Ha

Cluster Townhouse Residential
43 Units
35 Units/Ha. Area = 1.24 Ha

SWM Area = 0.50 Ha

SWM Area = 1.21 Ha

Wetland & Undeveloped Woodland Area = 21.19 Ha

Balance of Applicant's Land Area = 0.55 Ha

SWM Area = 0.60 Ha

Existing Pond 'A' Stream Bypass SWM Area = 1.19 Ha

Wetland & Undeveloped Woodland Area = 21.19 Ha

Coordinate System: UTM NAD 83 - Zone 17 (N).

Base data © Her Majesty the Queen’s Printer, 2009.


Client/Project
VICTORIA PARK WEST GOLF CLUB
VICTORIA PARK VILLAGE RESIDENTIAL SUBDIVISION

Figure No. 7

Title
PROPOSED DEVELOPMENT PLAN
Appendix B

Tables
Table 1  2004 Ecological Field Work Program

<table>
<thead>
<tr>
<th>Date of Field Work</th>
<th>Purpose of Field Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 4, 2004</td>
<td>Spring frog call survey</td>
</tr>
<tr>
<td>May 19, 2004</td>
<td>Early summer frog call survey</td>
</tr>
<tr>
<td>June 14, 2004</td>
<td>Breeding bird survey</td>
</tr>
<tr>
<td>June 22, 2004</td>
<td>Late summer frog call survey</td>
</tr>
<tr>
<td>August 11, 2004</td>
<td>Botanical survey and ELC community classification</td>
</tr>
<tr>
<td>September 9, 2004</td>
<td>Wetland boundary assessment</td>
</tr>
</tbody>
</table>

*Note searches and observations of wildlife were included in all field investigations

Table 2  ELC Vegetation Communities Recorded from the Subject Lands

<table>
<thead>
<tr>
<th>ELC Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIXED SWAMP (SWM)</td>
<td></td>
</tr>
<tr>
<td>SWM4-1 White Cedar-Hardwood Organic Mixed Swamp</td>
<td>White cedar was the dominant tree of the continuous canopy, with the deciduous component represented by white birch, trembling aspen and green ash. In the well-developed shrub layer grow elderberry, green ash saplings and common buckthorn. The herb layer was well developed, with enchanter’s nightshade, herb Robert, smaller enchanter’s nightshade, oak fern, crested wood fern and dwarf raspberry.</td>
</tr>
<tr>
<td>DECIDUOUS SWAMP (SWD)</td>
<td></td>
</tr>
<tr>
<td>SWD6-2 Silver Maple Organic Deciduous Swamp</td>
<td>This patch occurs as a deciduous inclusion within the mixed swamp matrix. The community was dominated by silver maple, with a mixture of red maple and some trembling aspen. The shrub layer was composed of two buckthorn species (glossy and common) and sparsely occurring saplings of balsam poplar. The herb layer was rich, with such species as enchanter’s nightshade, marsh fern, sensitive fern, spotted enchanter’s nightshade, dwarf raspberry, marsh marigold, wild sarsaparilla, meadow horsetail, and tall buttercup.</td>
</tr>
<tr>
<td>SWD7-1 White Birch-Poplar Organic Deciduous Swamp</td>
<td>This was a diverse, open-canopy forest dominated by white birch, trembling Aspen, balsam poplar, with a sub-canopy composed of white cedar and balsam fir. In the well-developed tall shrub layer grew glossy buckthorn, common buckthorn, some elderberry and white cedar saplings. The herb layer consisted of spotted touch-me-not, dwarf raspberry, oak fern, enchanter’s nightshade, smaller enchanter’s nightshade and sensitive fern. The community has been disturbed in several places and wind throws are present throughout the site along with large amounts of decomposing wood either standing or on the ground. The eastern half of the patch located along Victoria Street is characterized by yet sparser canopy due to elm dieback and an even, dense cover of glossy buckthorn.</td>
</tr>
</tbody>
</table>
### Table 3  Rare Species Identified through a Search of the NHIC Database.

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
<th>SRANK</th>
<th>MNR</th>
<th>COSEWIC</th>
<th>Date observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow-breasted Chat (bird)</td>
<td><em>Icteria virens</em></td>
<td>S2S3B, SZN</td>
<td>SC</td>
<td>SC</td>
<td>1973-06-13</td>
</tr>
<tr>
<td>Painted Skimmer (odonate)</td>
<td><em>Libellula semifasciata</em></td>
<td>S2</td>
<td>-</td>
<td>-</td>
<td>1913-05-26</td>
</tr>
</tbody>
</table>

### Table 4  Amphibian Call Count Survey Results 2004

<table>
<thead>
<tr>
<th>Abundance Codes and Species Numbers</th>
<th>Spring Peeper</th>
<th>Wood Frog</th>
<th>Chorus Frog</th>
<th>Bull Frog</th>
<th>Gray Tree Frog</th>
<th>Green Frog</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site</td>
<td>Apr 04</td>
<td>May 19</td>
<td>Jun 22</td>
<td>Apr 04</td>
<td>May 19</td>
<td>Jun 22</td>
</tr>
<tr>
<td>1</td>
<td><em>2-35</em></td>
<td>1-6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td><em>1-4</em></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1-1</td>
</tr>
<tr>
<td>3</td>
<td><em>1-3</em></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td><em>3-40</em></td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td><em>2-40</em></td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td><em>1-1</em></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td><em>2-40</em></td>
</tr>
</tbody>
</table>

# - # = call level code-number of individuals calling.
*call was heard outside of 100 m station.

### Table 5  Proposed Land Use by Area

<table>
<thead>
<tr>
<th>Land use</th>
<th>Number of Units</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Detached</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Semi-Detached</td>
<td>32</td>
<td>10.39</td>
</tr>
<tr>
<td>Townhouses – On-Street and Cluster</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Multi-Family</td>
<td>326</td>
<td></td>
</tr>
<tr>
<td>Municipal Stormwater Management</td>
<td>n/a</td>
<td>3.50</td>
</tr>
<tr>
<td>Public Streets</td>
<td>n/a</td>
<td>3.32</td>
</tr>
<tr>
<td>Park</td>
<td>n/a</td>
<td>0.90</td>
</tr>
<tr>
<td>Wetland and Undeveloped Woodland</td>
<td>n/a</td>
<td>21.19</td>
</tr>
<tr>
<td>Component and Buffer Segment (see Figure 2)</td>
<td>Sensitivities Requiring Buffering</td>
<td>Buffer Guidelines</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>4D Wetland and creek at edge of Golf Course, pond included in floodline</td>
<td>Category 1: wetland minimum 10 m buffer from wetland and 30 m buffer from stream include water quality and quantity protection measures. Pond to be treated as stream if area is proposed for re-development</td>
<td></td>
</tr>
<tr>
<td>5A (West of Victoria Road) Cedar on flat land with well established edge tributary to Torrance Creek</td>
<td>Category 1: mixed mineral wetland buffered by mixed forest (No buffer required for mixed stands) Category 2: supporting area and tributary Minimum 15 m water quality buffer from tributary</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

Terms of Reference for an Impact Assessment for Victoria Park Golf Club
West Community
July 29, 2004
File: 162603858

Department of Planning and Business Development
City of Guelph
59 Carden Street
Guelph ON N1H 3A1

Attention: Mr. Alan Hearne

Dear Mr. Hearne:

Reference: Terms of Reference for an Impact Assessment for Victoria Park Golf Club West Community

This letter outlines Terms of Reference for a Scoped Site Impact Assessment for a proposed development within the South Gordon Community Plan Area. We would very much appreciate having these Terms of Reference considered at the September 2004 meeting of the Environmental Advisory Committee.

The subject lands, identified as Part of the Northeast Half of Lot 5, Concession 8 (formerly Geographic Township of Puslinch), City of Guelph, involve approximately 40.47 ha (100 acres) and are owned by Victoria Park West Golf Course (see Figure 1).

A concept plan for the subject lands (please see attached) has been prepared. Currently, the subject lands are designated wetland/open space and golf course. In the Official Plan, the subject lands are designated as Open Space, Core Greenlands and Non-Core Greenlands. An Official Plan Amendment will be required to change a portion of the Open Space to General Residential.

The property is within the Torrance Creek Subwatershed and is bounded to the north and south by lands currently under agricultural production. The Torrance Creek Provincially Significant Wetland Complex also bounds the property to the east and west. Victoria Road, which is also the City of Guelph boundary, is at the eastern limit of the subject lands.
Policy Context

The Natural Heritage Reference Manual for the Provincial Policy Statement (OMNR, 1999) recommends that adjacent lands are those lands within 120 metres of significant wetlands, because it is estimated that developments within 120 metres of wetlands have a reasonable probability of affecting the ecological functions of wetlands that they surround. Development and site alteration may be permitted in adjacent lands provided the proponent conducts an Environmental Impact Study (EIS), currently referred to as an Impact Assessment (IA), demonstrating that there will be no negative impacts on the natural features or on the ecological functions for which the area has been identified (OMNR, 1999). Section 6.3 of the City of Guelph's Official Plan (2001) outlines the requirements for an EIS for development proposed within lands adjacent to provincially significant wetlands.

Torrance Creek Subwatershed Impact Assessment Guidelines and Applicability to the Subject Lands

The Torrance Creek Watershed Plan (Totten Sims Hubicki et. al., 1999) serves as a comprehensive Impact Assessment (IA) for the subwatershed. In this area, the main issues to be addressed by a site-specific scoped IA have been identified in the Subwatershed Plan and in the Impact Assessment Guidelines for the Torrance Creek Subwatershed (ESG International, 1999).

A site-specific scoped IA will be conducted for the subject lands. A scoped IA will provide the site-specific detail necessary to examine the potential impact of the proposed subdivision on the key functions of the Torrance Creek Subwatershed Natural Heritage System in the area.

Natural Heritage System Components

Figure 2 shows the Natural Heritage System and adjacent lands for the Torrance Creek Subwatershed. There are Category 1 and Category 2 lands, and locally significant features within the subject lands. The Category 1 lands include the Torrance Creek Wetland Complex and regulated floodplains. Development is not permitted within the boundaries of the wetland complex or in the regulated floodplain area.

Category 2 features include significant woodlands, significant wildlife habitat, fish habitat, steep slopes and the registered fill line, as designated by the GRCA. While the general intent of a Category 2 designation is preservation of the feature, some forms of development may be permitted inside Category 2 areas or on adjacent lands if supported by an approved IA.

Figure 2 includes the adjacent lands for each component of the NHS. Adjacent lands are areas surrounding components of the natural heritage system where any proposed development must be supported by an Impact Assessment.
Reference: Terms of Reference for an Impact Assessment for Victoria Park Golf Club West Community

As stated in the Impact Assessment Guidelines, adjacent lands are not buffers. These areas are simple tools to decide when a proposed development must complete an Impact Assessment. Since the proposed concept plan includes development inside the adjacent lands, the Impact Assessment will address the potential impact to the Natural Heritage Components within the subject lands. In accordance with the Impact Assessment Guidelines, specific buffer requirements will be determined as part of the Impact Assessment.

As shown on Figure 2, the subject lands contain Natural Heritage System Components 4 and 5. The Key Features, Functions and Sensitivities of each component, according to the Torrance Creek Subwatershed Study, are attached to this letter. The Impact Assessment will address potential impacts to the identified key features, functions and sensitivities of each Natural Heritage System Component and make recommendations for their mitigation.

The proponent is proposing the realignment of the Torrance Creek tributary that now exists within the manicured golf course area to within the edge existing mature mixed wood forest (Category 2 lands) of Natural Heritage System Component 5.

Buffer Guidelines

The subwatershed study presents site-specific recommendations regarding the type and nature of buffers that should be considered when preparing IA’s. The Impact Assessment Guidelines identify buffer segments and buffer considerations for each. The subject lands contain buffer segments 4D and 5A. The buffer considerations for these segments are contained in Table 1.

<table>
<thead>
<tr>
<th>Component and Buffer Segment (see Figure 2)</th>
<th>Sensitivities Requiring Buffering</th>
<th>Buffer Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>4D</td>
<td>Wetland and creek at edge of Golf Course, pond included in floodline</td>
<td>Category 1: wetland minimum 10 m buffer from wetland and 30 m from stream include water quality and quantity protection measures. Pond to be treated as stream if area is proposed for re-development</td>
</tr>
<tr>
<td>West of Victoria Road 5A</td>
<td>Cedar on flat land with well established edge tributary to Torrance Creek</td>
<td>Category 1: mixed mineral wetland buffered by mixed forest Category 2: supporting area and tributary No buffer required for mixed stands Minimum of 15 m water quality buffer from tributary</td>
</tr>
</tbody>
</table>

The actual width and construction details of buffers to protect the established sensitivities of the Natural Heritage Components will be recommended in the Impact Assessment based on these guidelines.
Management

A number of management practices have been recommended in the subwatershed strategy. The Impact Assessment Guidelines state that during the IA process proponents of development must consider these management opportunities.

Within the subject lands, there is a recommendation to by-pass the on-line pond (Pond A in the Subwatershed Study). In addition, there is a recommendation to enhance the riparian cover (both instream and banks) of the Torrance Creek within the subject lands as well as the golf course tributary. The goal is to increase shading and reduce water temperatures.

The Impact Assessment Guidelines state that while development proponents are not necessarily required to actually implement the management practices, they must, as a minimum, demonstrate how the proposed development will not prevent or reduce the possible success of management recommendations. These management issues will be considered in the Impact Assessment, and it will be ensured that the proposed subdivision plan will not prevent the implementation of these management practices.

Monitoring

The Impact Assessment Guidelines state that an IA must include a section on monitoring and that the type and extent of monitoring will depend on the features affected by the proposed development and the mitigation measures proposed. As a minimum the IA must include compliance and performance monitoring to ensure that any proposed mitigation measures are incorporated into the development as approved and maintained for an appropriate length of time. The City of Guelph currently has a standard inspection program to ensure this type of compliance for sediment and erosion control features, storm water management facilities and properly demarcation. A similar approach will be recommended for all mitigation measures proposed in the IA for this development.

Recreational Trails

The Torrance Creek Subwatershed Study recommends a trail system. The Impact Assessment Guidelines states that ideally, trails will be laid out through a master trail plan process prior to development. In this case the IA should simply demonstrate how the proposed development complies with the established trail locations and design guidelines. In cases where the trail planning is being conducted at the same time as development planning, proposed trails should be addressed during the preparation of IA’s. A Master Trail Plan for the City of Guelph, including the Torrance Creek Subwatershed, is currently underway. Therefore, the proposed development design will make allowances for the recommended trail corridors outlined in the Master Trail Plan if applicable. The potential impact of the trail corridor to the Natural Heritage System Components will be addressed in the Impact Assessment, and potential mitigation measures will be suggested.
Impact Assessment Contents

The following is a proposed Table of Contents for the Impact Assessment:

1. Introduction
2. Description of the Environment
3. Natural Heritage Functions
4. Description of Development Proposal
5. Potential Impacts and Mitigation
6. Conclusions and Recommendations

The Impact Assessment report will contain the following:

i. A description of and statement of the rationale for the proposal and alternatives to the proposal;

ii. A description of adjacent land use and the existing regulations affecting the proposal and adjacent lands;

iii. A detailed description of the environment potentially affected, directly or indirectly, by the proposal, including a statement of the significance of the Natural Heritage Feature;

iv. A technical assessment of the effects of the proposal on the environment, including stormwater and drainage; and

v. A description of the actions necessary to remedy or mitigate the effects on the environment created by the proposal and the alternative methods of protecting the functions and values of the area affected.

Biological inventories are on-going within the subject lands. The focus of these inventories is the collection of information to support buffer recommendations to protect the Natural Heritage System Components that will be maintained in the plan of subdivision. These inventories will include information on plants, amphibians, birds and mammals.

A map will be produced on an air photo base depicting the vegetation communities within and adjacent to the subject lands. The communities will be identified according to Ecological Land Classification methodology. The conceptual site plan and stormwater management design will be overlaid on the base map.
Reference: Terms of Reference for an Impact Assessment for Victoria Park Golf Club West Community

We would appreciate a review of these proposed Terms of Reference by the appropriate City representatives prior to our proceeding with the IA.

Please call if you require further information. We look forward to your reply.

Sincerely yours,

STANTEC CONSULTING LTD.

Barbara Dowsey, Ph. D.
Associate, Environmental Management
Tel: (519) 836-6050
Fax: (519) 836-2493
bdowsey@stantec.com

Attachment: Natural Heritage System Components Within The Subject Lands
Figures
   Location of Subject Lands
   Adjacent Lands and Buffer Segments
   Land-use Development Plan

c. Mr. Ted De Corso, Victoria Park Golf Club West
Ms. Nancy Shoemaker, Black, Shoemaker, Robinson and Donaldson
Mr. Stephen Braun, Braun Consulting Engineers
Mr. Scott Covell, Covell Design
NATURAL HERITAGE SYSTEM COMPONENTS WITHIN THE SUBJECT LANDS

Natural Heritage System Component 4. North of Arkell Road

This is a large patch of natural habitat which is mostly an organic white cedar swamp. However, it also has areas of meadow marshes and thicket swamps as well as upland habitats such as sugar maple and white cedar forests. Surrounding habitat includes residential areas (especially to the north and west), agricultural land, and a golf course. There are linkages to kettle wetlands south of Arkell Road, and to the Hanlon Creek watershed across Gordon Street to the west. The golf course and Torrance Creek provide a reasonable linkage to natural areas to the east while, agricultural land, and hedgerows provide supporting habitat.

Some of the functions of this habitat patch have been impaired to various degrees. Gordon Street carries a high volume of traffic, and this has weakened the linkage to the Hanlon Creek watershed. Although large mammals still cross the road, probably very few small mammals and herpetofauna make it across the busy road. Linkages to the Hanlon watershed have further been reduced by the development along Gordon Street north of Arkell Road.

Portions of the wetland appear to be drying out, particularly in the vicinity of Arkell Road. Large areas have been invaded by glossy buckthorn. This is a shade-tolerant shrub that grows in a wide range of moisture regimes. It also forms a dense lower canopy that gradually replaces regeneration of native forest plant species.

Both residential development and golf course uses have encroached into the wetland, resulting in possible alterations to drainage patterns, vegetation dynamics and incidental impacts such as litter, contaminated runoff and trampling. A number of informal trails exist through the wetland that result in more diffuse vegetation damage, trampling and litter. These impacts are currently minor but could increase with future development.

Key Features

part of the significant Torrance Creek Wetland Complex
Torrance Creek includes Type 1 and Type 2 fish habitat
habitat for area-sensitive and forest-interior species
small concentrations of wintering deer
movement corridor for deer between this habitat patch and Hanlon Creek watershed, and to a lesser extent to the kettle wetlands to the south
headwaters of Torrance Creek
amphibian breeding habitat
small but highly diverse woodlot in northeast corner

Key Functions
groundwater discharge which forms the headwaters of Torrance Creek
groundwater recharge
water storage
Sensitivities
adjacent development could reduce groundwater recharge and lower the water table, which could result in drying of the wetland, changes in vegetation communities, and increased invasion by buckthorn

if groundwater recharge rates are affected, there may be less groundwater discharge which could affect baseflow in Torrance Creek

there is the potential for groundwater contamination which could affect water quality in Torrance Creek

intrusion and forest fragmentation could affect habitat for forest-interior and area-sensitive species

alteration of vegetation communities, changes in moisture regime, and changes in forest structure could affect the suitability of the area for wintering deer

increased human usage and domestic dog activity could disturb wintering deer

increased traffic along Arkell Road and particularly Gordon Street could reduce the linkage functions between this patch, the kettles to the south, and the Hanlon Creek watershed to the west

widening of Gordon Street would further reduce linkages to the Hanlon watershed

increased traffic and road widenings may increase the incidence of wildlife roadkills

Natural Heritage System Component 5. West of Victoria Road

This predominantly forested area contains a variety of habitat types including; meadow marshes, willow thicket swamps, and cedar swamp. The wetness of this area is variable, with extensive areas of deep organic soils in some locations and drier areas with shallow organics or mineral soils. Surrounding habitat includes a golf course, agricultural land, single residences, and Victoria Road.

Key Features
the area supports Type 2 fish habitat
part of the significant Torrance Creek Wetland Complex
part of the Torrance Creek corridor
moderately steep slopes and moderately well defined valley lands

Key Functions
significant groundwater discharge occurs in this area, contributing a high percentage of the baseflow to Torrance Creek. Some of the discharge appears to be a result of tile drains outletting into the stream channel.

portions of the woodland and adjacent lands contribute to groundwater recharge
water storage

Sensitivities
this area is most susceptible to factors which reduce the amount of local groundwater recharge and particularly the amount of groundwater discharge. Reducing groundwater recharge or
discharge potential in this reach could have significant impacts on baseflows and water temperatures in Torrance Creek.

development or activities that lower the water table could have adverse effects on baseflows in the creek and on wetland communities

there is the potential to contaminate or enrich groundwater. In addition to the direct impacts on groundwater, this could affect water quality in Torrance Creek
VICTORIA PARK GOLF CLUB WEST

Guelph, Ontario

LAND-USE DEVELOPMENT PLAN

JULY 6, 2004.
ENVIROMENTAL ADVISORY COMMITTEE
WEDNESDAY, OCTOBER 13TH, 2004 AT 7:00 P.M.
COUNCIL CHAMBERS
MINUTES

Present: J. Ford (Chair) S. Duff
R. Nadolny J. MacKinnon
J. Ambrose J. DeBruyn
P. Smith S. Braun

Regrets:

Staff: A. Hearne, V. Laur,

External Groups: Barb Dowsley from Stantec Consulting Ltd.
Nancy Shoemaker from Black, Shoemaker, Robinson and Donaldson
Steve Braun from Braun Consulting Engineers

S. Braun declared a conflict of interest on the below Agenda item.

A. Hearne introduced Jim Riddell, the Director of Planning and Building Services to the Environmental Advisory Committee.

1. Terms of Reference for an Environmental Impact Study for Victoria West Golf Course Property (UP-0404)

Al Hearne, Senior Development Planner with the City of Guelph introduced the Terms of Reference for the Environmental Impact Study for Victoria West Golf Course Property and provided a brief overview on the application and site location.

Barb Dowsley from Stantec Consulting Ltd., provided a brief outline on the content of the Term of Reference for the Impact Assessment for Victoria Park Golf Club West Community and responded to questions of the Environmental Advisory Committee.

General discussion took place and the following concerns were raised by the Environmental Advisory Committee:

- that development not intrude into the buffers
- concern on water consumption and water balance issues
- the need for the “bigger picture” outlining impacts
- explore concept of moving creek into the wetland to protect it
- impact of golf activity on Torrence Creek
November 4, 2004

Stantec Consulting Ltd
361 Southgate Drive
Guelph, Ontario
N1G 3M5

Attention: Barb Dowley

Re: Terms of Reference for Impact Assessment for Victoria Park Golf Club West Community

We have reviewed the Terms of Reference provided and have no major concerns. We offer the following advisory comments for your consideration.

- Any typing of fish habitat is no longer required. “Fish habitat is fish habitat”. It doesn’t change the importance of the requirements.
- The buffer widths should be determined for the wetland immediately west of Victoria Road (segment 5 A) as these have not been established by the Torrance Creek Subwatershed study.

Yours truly,

Liz Yerex
Resource Planner
Grand River Conservation Authority

Cc: Al Hearne, City of Guelph, Fax (519) 837-5640
Appendix D

Vascular Plant List
## List of the Vascular Plants Recorded from the Victoria West Golf Course; October 2004

<table>
<thead>
<tr>
<th>LATIN NAME</th>
<th>COLLOQUIAL NAME</th>
<th>COEFFICIENT OF CONSERVATION</th>
<th>WETNESS INDEX</th>
<th>WEEDINESS INDEX</th>
<th>PROVINCIAL STATUS</th>
<th>GLOBAL STATUS</th>
<th>LOCAL STATUS</th>
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Christopher Zoladeski; Stantec  
4 of 13
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Christopher Zoladeski; Stantec
# List of the Vascular Plants Recorded from the Victoria West Golf Course; October 2004

<table>
<thead>
<tr>
<th>LATIN NAME</th>
<th>COLLOQUIAL NAME</th>
<th>WETNESS INDEX</th>
<th>WEEDINESS INDEX</th>
<th>PROVINCIAL STATUS</th>
<th>GLOBAL STATUS</th>
<th>LOCAL STATUS WELL/ DUFF</th>
<th>SOURCE</th>
<th>LAST UPDATE/ INITIALS</th>
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<td>Panicum capillare</td>
<td>Witch Grass</td>
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<td>G5 X</td>
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<td>S5</td>
<td>G5 X</td>
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**Typhaceae**

<table>
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<th>syn.</th>
<th>Cattail Family</th>
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<tr>
<td>Typha angustifolia</td>
<td>Narrow-leaved Cattail</td>
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## FLORISTIC SUMMARY & ASSESSMENT

### Species Diversity

- **Total Species:** 145
- **Native Species:** 93 (64%)
- **Exotic Species:** 52 (36%)
- **Regionally Significant Species:** enter manually
  - S1-S3 Species: 0 (0%)
  - S4 Species: 0 (0%)
  - S5 Species: 91 (100%)

### Co-efficient of Conservatism and Floristic Quality Index

#### Co-efficient of Conservatism (CC) (average)
- 3.6
  - CC 0 to 3: lowest sensitivity 43 (48%)
  - CC 4 to 6: moderate sensitivity 40 (45%)
  - CC 7 to 8: high sensitivity 6 (7%)
  - CC 9 to 10: highest sensitivity 0 (0%)

#### Floristic Quality Index (FQI)
- 34

### Presence of Weedy & Invasive Species

- **mean weediness:** -1.6
  - weediness = -1: low potential invasiveness 26 (52%)
  - weediness = -2: moderate potential invasiveness 16 (32%)
  - weediness = -3: high potential invasiveness 8 (16%)
### List of the Vascular Plants Recorded from the Victoria West Golf Course; October 2004

<table>
<thead>
<tr>
<th>LATIN NAME</th>
<th>COLLOQUIAL NAME</th>
<th>COEFFICIENT OF CONSERVATION</th>
<th>WETNESS INDEX</th>
<th>WEEDINESS INDEX</th>
<th>PROVINCIAL STATUS</th>
<th>GLOBAL STATUS</th>
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### Presence of Wetland Species

<table>
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<tr>
<th>Type</th>
<th>Average Wetness Value</th>
<th>Upland</th>
<th>Facultative Upland</th>
<th>Facultative</th>
<th>Facultative Wetland</th>
<th>Obligate Wetland</th>
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<tbody>
<tr>
<td>average wetness value</td>
<td>0.2</td>
<td>18%</td>
<td>23%</td>
<td>21%</td>
<td>26%</td>
<td>13%</td>
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</table>

Christopher Zoladeski; Stantec
**EXPLANATION OF TERMINOLOGY** *(See the following pages for additional detailed information on terms.)*

**Botanical and Common Name:** From Newmaster et. al, 1998. Species requiring confirmation noted (cf).

**Co-efficient of Conservatism:** This value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific habitat integrity.

**Wetness Index:** This value, ranging from -5 (obligate wetland) to 5 (upland) provides the probability of a species occurring in wetland or upland habitats.

**Weediness Index:** This value, ranging from -1 (low) to -3 (high) quantifies the potential invasiveness of non-native plants. In combination with the percentage of non-native plants, it can be used as an indicator of disturbance.

**Provincial Status:** Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These ranks are not legal designations. S4 and S5 species are generally uncommon to common in the province. Species ranked S1-S3 are considered to be rare in Ontario.

**Local Status:**
- X: native species present (collection-based) and all exotic species
- R: native species locally rare (number of sites): Hamilton-Wentworth (<6 sites), Durham (<10 sites), GTA (<40 sites), Site District 6E7 (<20 sites), Oak Ridges Moraine (20 or fewer sites).
- U: native species locally uncommon Hamilton-Wentworth (6-10 sites), Durham (11-20 sites), GTA (41-80 sites), Site District 6E7 (21-40 sites)
- H: historic record

**Record Type**
- SR - sight record
- SRP - sight record with photograph

**Annotations:** Provides comments on general distribution and abundance on the subject lands. Definitions of terminology and abbreviations used as follows.

**Abundance**
- **Dominant:** A plant with the greatest cover and/or biomass within a plant community and represented throughout the community by large numbers of individuals. Visually more abundant than other species in the same stratum and forming >10% ground cover, and >35% of the vegetation cover in any one stratum.
- **Abundant:** Referring to a plant which is represented throughout the polygon or community by large numbers of individuals or clumps. Likely to be encountered anywhere in the polygon. Usually forming >10% ground cover.
- **Occasional:** Referring to plants which are present as scattered individuals throughout a community, or represented by one or more large clumps of many individuals. Most species will fall into this category.
- **Rare:** Cover or abundance of a plant species that is represented in the area of interest by only one to a few individuals.
DETAILED EXPLANATION OF TERMS

Floral Quality Index and Coefficient of Conservatism Values
Vegetation species and community sensitivity was assessed through the application of coefficient of conservatism values (CC), assigned to each native species in southern Ontario (Oldham, et. al, 1995). The value of CC, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to specific habitat integrity. The occurrence of species with a CC of 9 or 10 can be good indicators of undisturbed conditions such as mature forests, fens or bogs.

General habitat values associated with the CC values are:
0-3: species found in a wide variety of communities, including disturbed sites
4-6: species associated with a specific community, but tolerate moderate disturbance
7-8: species associated with a community in an advanced successional stage, tolerant of minor disturbances
9-10: species with a high degree of fidelity to a narrow range of synecological parameters

The floristic quality of an area is reflected in the mean value of CC. For example, an old field or grazed woodlot would tend have a low mean CC; these habitats are dominated by opportunistic species that occur in a wide range of site conditions and are tolerant of disturbance. A bog, prairie or intact forest would have a higher value, reflecting the specific habitat requirements of many of the species and a generally undisturbed condition. The following provides an example of interpretation of CC values:

mean CC value / % spp CC >8 / Condition of the Landscape
5 / 27 / intact
3.5 / 19 / slightly degraded
1.3 / 2 / severely degraded

The FQI accounts for the species diversity of the area by equating the number of native species with the mean CC value. The FQI is generally used for comparing natural areas. The CC value and FQI of the study area were calculated for the entire study area.

Weediness Index
The sensitivity of natural areas can be assessed through application of the Weediness Index. The Weediness Index quantifies the potential invasiveness of non-native plants, and, in combination with the percentage of non-native plants can be used as an indicator of disturbance. Values (ranging from 1- to -3) have been assigned to most non-native species based on the potential impact each species can have in natural areas:

-1: little or no impact on natural areas (most non-native plants are in this category)
-2: occasional impacts on natural areas, generally infrequent or localized
-3: major potential impacts on natural areas
Wetness Index

All plants in southern Ontario have been assigned a wetland category, based on the designations developed for use by the United States Fish & Wildlife Service. Plants are designated into the following categories:

OBL (Obligate Wetland): occurs almost always in wetlands under natural conditions (estimated >99% probability)

FACW (Facultative Wetland): usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability)

FAC (Facultative): equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability)

FACU (Facultative Upland): occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33% probability)

UPL (Upland): occurs almost never in wetlands under natural conditions (estimated <1% probability)

Further refinement of the Facultative categories are denoted by a "+" or "-" to express exaggerated tendencies for those species. The "+" denotes a greater estimated probability occurring in wetlands than species in the general indicator category, but a lesser probability than species occurring in the next higher category. The "-" denotes a lesser estimated probability of occurring in wetlands than species in the general indicator category, but a greater probability than species occurring in the next lower general category.

Each wetland category has been assigned a numerical value to facilitate the quantification of the wetness index. The wetland categories and their corresponding values are as follows:

OBL: -5
FACW+: -4
FACW: -3
FACW-: -2
FAC+: -1
FAC: 0
FAC-: 1
FACU+: 2
FACU: 3
FACU-: 4
UPL: 5

Provincial Status

Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These rankings are based on the total number of extant Ontario populations and the degree to which they are potentially or actively threatened with destruction. The ranks are:

S1: Extremely rare in Ontario; usually fewer than 5 occurrences or very few remaining individuals; often especially vulnerable to extirpation.

S2: Very rare in Ontario; usually between 5-20 occurrences or with many individuals in fewer occurrences; often susceptible to extirpation.

S3: Rare to uncommon in Ontario; usually between 20-100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large scale disturbances.

S4: Uncommon to locally common in Ontario and apparently secure; usually more than 100 occurrences.

S5: Very common in Ontario and demonstrably secure.

SH: Historically known to occur in Ontario, but not verified recently (typically not recorded for the last 20 years); suitable habitat is still present and there is a reasonable expectation that it may be rediscovered.

SR: Reported in Ontario, but without persuasive documentation.

SX: Apparently extirpated from Ontario, with little likelihood of rediscovery; typically not seen in the province for many decades despite searches at known historic sites.

SE: Exotic; not believed to be a native component of Ontario's flora. Numerical rankings after SE follow designations described above for native species.

SU: Unranked; these species are possibly rare in Ontario, however, there is insufficient information available at this time to assign a more accurate rank.

Rank ranges, e.g. S2S3, indicate that the rank is either S2 or S3, but that current information is insufficient to differentiate. "?" following a rank indicates uncertainty about the assigned rank.
REFERENCES

Nomenclature based on:

Co-efficient of Conservatism, Wetness & Weediness

Provincial (Ontario) Status:

Local Status:


Appendix E

Wildlife List
### Wildlife Recorded from the Victoria West Golf Course

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<th>AREA</th>
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<td>S5</td>
<td>G5</td>
<td></td>
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</tr>
<tr>
<td>European Starling</td>
<td><em>Sturnus vulgaris</em></td>
<td>SE</td>
<td>G5</td>
<td></td>
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<tr>
<td>Cedar Waxwing</td>
<td><em>Bombycilla cedrorum</em></td>
<td>S5</td>
<td>G5</td>
<td></td>
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<tr>
<td>Chipping Sparrow</td>
<td><em>Spizella passerina</em></td>
<td>S5</td>
<td>G5</td>
<td></td>
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<tr>
<td>Song Sparrow</td>
<td><em>Melospiza melodia</em></td>
<td>S5</td>
<td>G5</td>
<td></td>
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<tr>
<td>Red-winged Blackbird</td>
<td><em>Agelaius phoeniceus</em></td>
<td>S5</td>
<td>G5</td>
<td></td>
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</tr>
<tr>
<td>Common Grackle</td>
<td><em>Quiscalus quiscula</em></td>
<td>S5</td>
<td>G5</td>
<td></td>
<td></td>
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<tr>
<td>Baltimore Oriole</td>
<td><em>Icterus galbula</em></td>
<td>S5</td>
<td>G5</td>
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<tr>
<td>American Goldfinch</td>
<td><em>Carduelis tristis</em></td>
<td>S5</td>
<td>G5</td>
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<tr>
<td><strong>MAMMALS</strong></td>
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<tr>
<td>Little Brown Bat</td>
<td><em>Myotis lucifugus</em></td>
<td>S5</td>
<td>G5</td>
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<tr>
<td>Eastern Cottontail</td>
<td><em>Sylvilagus floridanus</em></td>
<td>S5</td>
<td>G5</td>
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<tr>
<td>Raccoon</td>
<td><em>Procyon lotor</em></td>
<td>S5</td>
<td>G5</td>
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</table>

**SUMMARY**
## Wildlife Recorded from the Victoria West Golf Course

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>ONTARIO STATUS</th>
<th>GLOBAL STATUS</th>
<th>COSSARO</th>
<th>COSEWIC</th>
<th>REGION</th>
<th>AREA</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Butterflies</td>
<td>0</td>
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<tr>
<td>Total Amphibians</td>
<td>5</td>
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<tr>
<td>Total Reptiles</td>
<td>0</td>
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<tr>
<td>Total Birds</td>
<td>20</td>
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<tr>
<td>Total Breeding Birds</td>
<td>20</td>
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<tr>
<td>Total Mammals</td>
<td>3</td>
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</tbody>
</table>

### SIGNIFICANT SPECIES

- **Global:** 0
- **National:** 0
- **Provincial:** 0
- **Regional:** 0
- **Local:** 0

### Explanation of Status and Acronymns

- **COSSARO:** Committee on the Status of Species at Risk in Ontario
- **COSEWIC:** Committee on the Status of Endangered Species in Canada
- **REGION:** Rare in a Site Region
  - **S1:** Extremely rare in Ontario; usually fewer than 5 occurrences
  - **S1S2:** Extremely rare to very rare in Ontario
  - **S2:** Very rare in Ontario; usually between 5-20 occurrences
  - **S2S3:** Very rare to uncommon in Ontario
  - **S3:** Rare to uncommon in Ontario; usually between 20-100 occurrences
  - **S3S4:** Rare to common in Ontario
  - **S4:** Common in Ontario: apparently secure, usually more than 100 occurrences
  - **S4S5:** Common to very common in Ontario
  - **S5:** Very common in Ontario, demonstrably secure
  - **SE:** Exotic; not believed to be a native component of Ontario’s fauna
  - **SH:** Hypothetical; not positively confirmed in Ontario
  - **SHB:** Hypothetical breeder; not positively confirmed breeding in Ontario
  - **SZ:** Not of practical conservation concern as there are no clearly definable occurrences
  - **SZB:** No clearly definable occurrences of breeding
  - **SZN:** No clearly definable occurrences of a non-breeding species
# Wildlife Recorded from the Victoria West Golf Course

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>ONTARIO STATUS</th>
<th>GLOBAL STATUS</th>
<th>COSSARO</th>
<th>COSEWIC</th>
<th>REGION</th>
<th>AREA</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>?: Not yet ranked; or, following a ranking, rank inexact or uncertain</td>
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<tr>
<td>G1: Extremely rare globally; usually fewer than 5 occurrences in the overall range</td>
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<td>G1G2: Extremely rare to very rare globally</td>
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<td>G2: Very rare globally; usually between 5-10 occurrences in the overall range</td>
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<td>G2G3: Very rare to uncommon globally</td>
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<td>G3: Rare to uncommon globally; usually between 20-100 occurrences</td>
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<td>G3G4: Rare to common globally</td>
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<td>G4: Common globally; usually more than 100 occurrences in the overall range</td>
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<td>G4G5: Common to very common globally</td>
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<tr>
<td>G5: Very common globally; demonstrably secure</td>
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<tr>
<td>T: Denotes that the rank applies to a subspecies or variety</td>
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<td>END: Endangered</td>
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<td>THR: Threatened</td>
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<td>VUL: Vulnerable</td>
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<td>SC: Special Concern</td>
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<td>NAR: Not At Risk</td>
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<tr>
<td>NIAC: Not In Any Category of risk</td>
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<tr>
<td>IND: Indeterminant, insufficient information to assign status</td>
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<tr>
<td>DD: Data Deficient</td>
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<td>6: Rare in Site Region 6</td>
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<tr>
<td>7: Rare in Site Region 7</td>
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</tbody>
</table>

Area: Minimum patch size for area-sensitive species (ha)