



Willows Natural Area Screening

November 9, 2018

Prepared for:

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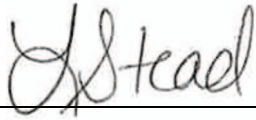
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Sign-off Sheet

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Abbreviations

AAFC	Agriculture and Agri-Food Canada
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
ESRI	Environmental Systems Research Institute
GIS	Geographic Information System
HCB	Heritage Conservation Branch
HRIA	Heritage Resource Impact Assessment
ISC	Information Services Corporation of Saskatchewan
MVA	Meewasin Valley Authority
SARA	<i>Species at Risk Act</i>
SARR	Saskatchewan Archaeological Resource Record
SGIC	Saskatchewan Geospatial Imagery Collaborative
SKCDC	Saskatchewan Conservation Data Centre
SKMOE	Saskatchewan Ministry of Environment
SOMC	Species of Management Concern

Glossary

ArcGIS	Environmental Systems Research Institute's (ESRI's) geographic information system (GIS) is a computerized system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.
Heritage resource	Archaeological and palaeontological sites, features, and objects.
Invasive	For the purpose of this study, invasive is plant species that are not native to the region being studied.
Natural area	Areas such as wetlands, native grasslands, woodlands, and areas that have not been disturbed, or have had limited disturbance by development.
Small Swale	A historical South Saskatchewan River channel scar that extends from the riverbank in a northeast direction; located in NE 14-37-5-W3M and north east to NW 30-37-4-W3M, on the north side of the city of Saskatoon.
Species of Management Concern (SOMC)	Species that are listed provincially under <i>The Saskatchewan Wildlife Act</i> , the federal <i>Species at Risk Act</i> (SARA) and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as well as any species that are ranked S1, S2, or S3 by the Saskatchewan Conservation Data Centre (SKCDC).
Project Area	The Project Area was provided by the City of Saskatoon and is outlined in Section 2.0 and on Figure 1.
Wetland complex	For the purpose of this study wetland complex consists of individual wetlands that are directly connected or in close proximity that they share some function or attribute.

1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Dream Development (Dream) to complete a natural area screening of The Willows Golf and Country Club. The City of Saskatoon (the City) requires the completion of a natural area screening in advance of proposed modifications to the existing golf course layout and wetland modifications (the Project). The Project consists of redevelopment of an existing golf course, including earthmoving, the modification to several wetlands, and development of infrastructure for future residential development. The Project Area includes the Willows Golf and Country Club (Figure 1) and has been subdivided into five development phases.

To meet Project timelines, Stantec completed an interim report focused on the Phase 3 development area (The Willows - Natural Area Screening – Interim Report on Phase 3 of Proposed Golf Course Redevelopment, September 27, 2018). The interim report was submitted for review by the City on September 28, 2018, prior to construction startup for initial grading activities. This natural area screening report reviews the background information from desktop sources, as well as the field reconnaissance data, for all five development phases.

1.1 PROJECT SCOPE

The scope of work for the Project, includes a desktop review to:

- Assess, inventory, and classify the ecological condition and habitat value of the natural areas for the Project Area
- Classify wetlands according to the Stewart and Kantrud Wetland Classification System (1971)
- Identify vegetation communities, wildlife presence, and wildlife habitat
- Review the Saskatchewan Homestead Index database and identify any lands referenced
- Conduct a heritage sensitivity screening using the Developers' Online Screening Tool maintained by the Heritage Conservation Branch (HCB), Ministry of Parks, Culture and Sport
- Contact the HCB regarding the provincial inventory of archaeological records and review records for sites within the Project Area
- Complete a heritage referral to be submitted to the HCB for review

In addition to desktop review, Stantec also completed a field reconnaissance survey to:

- Identify natural areas and potential suitable habitat for plants and wildlife
- Validate desktop wetland mapping
- Conduct a fall visual amphibian survey
- Record incidental observations of plant or wildlife species of management concern

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2.0 PROJECT AREA AND ENVIRONMENTAL SETTING

The Project Area encompasses The Willows Golf and Country Club and is bounded by Lorne Avenue to the west, Clarence Avenue to the east, Cartwright Street to the north, and the southern boundary of 09-36-05 W3M (Figure 1). The Willows Golf and Country Club was originally constructed in 1994 and primarily consists of altered topography, artificial wetlands, and non-native vegetation. The Project Area is in the Moist Mixed Grassland Ecoregion of Saskatchewan. Dark Brown Chernozems are the dominant soil throughout this largely hummocky and undulating glaciolacustrine and glacial till landscape (Acton et al. 1998). The major land use within the ecoregion is agriculture, with approximately 80% of the land being cultivated (Acton et al. 1998). The native vegetation that exists within the ecoregion includes salt-tolerant grasses in low-lying saline areas, mixed grasses, shrubs, and aspen in more elevated, non-saline areas, and shrubs and aspen along the South Saskatchewan river valley (Acton et al. 1998).

Since landscape connectivity and surrounding land cover are important factors when determining potentially sensitive areas, an additional study area has been assessed as part of the natural area screening. Specifically, a 1 km buffer has been applied to the Project Area and is defined as the Regional Context Area.

3.0 METHODS

3.1 SOILS

The following resources were reviewed to determine existing soils classification, texture, and limitations within the Project Area:

- Soil Survey Reports for Saskatchewan (Government of Canada 1978)
- Ecoregions of Saskatchewan (Acton et al. 1998)

3.2 WETLANDS

A wetland is defined as “land that is saturated with water long enough to promote wetland or aquatic processes as is indicated by poorly defined soils, hydrophytic vegetation and various kinds of biological activity which are adapted to the wet environment” (Mitsch and Gosselink 2007).

The wetlands were classified in accordance with the Stewart and Kantrud Wetland Classification System, *Classification of Natural Ponds and Lakes in the Glaciated Prairie Region* (Table 3-1) (Stewart and Kantrud 1971). During the desktop review, wetland boundaries and classes were reviewed and interpreted at a scale of 1:3,000, using satellite imagery from 2008-2011 and 2014. Wetland boundaries and classes were verified during the field reconnaissance.

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Table 3-1 Stewart and Kantrud (1971) Wetland Classification

Wetland Class	Central Zone	Description
Class I – ephemeral ponds	Wetland low prairie zone	Ephemeral ponds occur in small swales and contain species such as Kentucky bluegrass (<i>Poa pratensis</i>).
Class II –temporary ponds	Wet meadow zone	In freshwater temporary ponds, the central wet meadow zone is the deepest part of the wetland area and is usually dominated by western wheatgrass (<i>Pascopyrum smithii</i>) and foxtail barley (<i>Hordeum jubatum</i>).
Class III – seasonal ponds	Shallow marsh zone	Seasonal ponds are wetlands with a shallow marsh zone dominating the deepest part of the wetland area. These ponds are frequently surrounded by a ring of willows (<i>Salix</i> spp.) with a wet centre containing sedges (<i>Carex</i> spp.).
Class IV – semi-permanent ponds	Deep marsh zone	In semi-permanent ponds and lakes, the deep marsh zone dominates the deepest part of the wetland area. Common cattail (<i>Typha latifolia</i>) and bulrushes (<i>Scirpus</i> spp.) are typical emergent species.
Class V – permanent ponds	Permanent open water zone	The permanent open water zone dominates the deepest part of the wetland area and is devoid of emergent vegetation.
Dugout – artificial ponds ¹	n/a	Artificial pond created by humans. May contain emergent and submerged vegetation.
Drainage ¹	n/a	Channel where water can flow between two wetland/waterbodies. May be artificial or natural. May be ephemeral or permanent.
Note: ¹ Dugout and Drainage are not recognized wetland Classes under Stewart and Kantrud.		

3.3 VEGETATION AND LAND COVER

The following resources were reviewed to identify land cover, past and present land use, and designated land (i.e., Crown lands) and to desktop map the land cover using the ArcGIS platform:

- Agriculture and Agri-Food Canada (AAFC) land cover data (AAFC 2017)
- Ecoregions of Saskatchewan (Acton et al. 1998)
- Google Earth Pro™ (2018)
- Saskatchewan Geospatial Imagery Collaborative (SGIC) Flysask 2008-2011 (SGIC 2011)
- Environmental Systems Research Institute (ESRI) World Imagery (ESRI 2014)
- HABISask (Government of Saskatchewan 2018a)
- Species at Risk Public Registry (Government of Canada 2018)

Land cover was mapped using satellite imagery from 2014 during desktop review (Figure 2). The AAFC land cover data (AAFC 2017) classified the golf course as developed and did not separate trees, shrubs, or wetlands from developed lands. To better understand potential habitat within the Project Area, land cover types were further delineated to include these land uses. The AAFC land cover data and satellite imagery was used to review habitat within the Regional Context Area.

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For the purposes of this report, plant species of management concern (SOMC) are identified as:

- Species listed under Schedule 1 of the *Species at Risk Act* (SARA) (Government of Canada 2018)
- Species ranked as S1 to S3 by the Saskatchewan Conservation Data Centre (SKCDC) (SKCDC 2018a) (see Appendix B)

Stantec reviewed existing data sources to determine historical occurrences of plant SOMC and available habitat within the Regional Context Area.

3.4 WILDLIFE

The desktop screening process for potential wildlife SOMC was similar to plant SOMC and used the same information sources as listed in Section 3.3. Desktop sources including HABISask were searched to determine if any wildlife SOMC had been documented within the regional context area. Additionally, land cover data was used to assess habitat suitability for potential wildlife SOMC. Areas with extensive native vegetation (e.g., broadleaf forest, native grassland) were considered potentially high-quality habitat for wildlife SOMCs.

For the purposes of this report, wildlife SOMC are identified as (see Appendix B):

- Species listed provincially as a Wild Species at Risk under *The Wild Species at Risk Regulations* (Government of Saskatchewan 1999)
- Species designated by Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as *endangered, threatened, or of special concern* (Government of Canada 2018)
- Species ranked as S1 to S2 by the Saskatchewan Conservation Data Centre (SKCDC) (SKCDC 2018b, 2018c)
- Species listed in the Saskatchewan Activity Restriction Guidelines for Sensitive Species (SKMOE 2017)

Stantec reviewed existing data sources to determine historical occurrences of plant SOMC and available habitat within the Regional Context Area.

3.5 HERITAGE RESOURCES

Following an initial screening to identify heritage sensitive quarter sections, a heritage resource referral was prepared and submitted to the HCB on September 14, 2018 to review heritage sensitive areas prior to proposed redevelopment. An inventory was requested from HCB to identify the number and type of previously recorded heritage resources present within the Project Area. The inventory data, updated using Saskatchewan Archaeological Resource Records (SARR) as heritage resources are discovered and recorded, is provided according to National Topographic System (NTS) mapsheets. The Project Area is located on NTS mapsheet 73B02.

The Saskatchewan Homestead Index is a locator database to the homestead files, the originals of which are housed at the Saskatchewan Archives Board in Saskatoon (Saskatchewan Homestead Index n.d.). The homestead files are a collection of documents that record the settlement of western Canada by European settlers at the beginning of the 20th century. A search of the database identified homestead records associated with quarter sections within the

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Project Area. The existence of a homestead record within the Project Area does not impact future development unless physical artefacts of the homestead are recorded during a Heritage Resource Impact Assessment (HRIA). An HRIA would only be conducted on quarter sections within homestead records that are also heritage sensitive and required by the HCB.

4.0 RESULTS

4.1 SOILS

Prior to the development of the golf course in 1994, the development areas Phase 3, Phase 6, Phase 7, and northern portions of Phase 5 and Phase 4, consisted of very gently sloping (0.5-2%) glacial fluvial and lacustrine deposits. Based on Soil Survey Reports for Saskatchewan, these areas are mapped as having dark brown chernozem soils, with a sandy loamy texture (Government of Canada 1978). The southern portions of Phase 5 and Phase 4 development areas consisted of gently sloping (2-5%) aeolian or wind-worked deposits prior to the development of the golf course. Based on Soil Survey Reports for Saskatchewan, these areas are mapped as having regosol soils, with a loamy-sand texture (Government of Canada 1978). Some soils within the Project Area may consist of carbonated or saline soils, especially in low-laying areas (Government of Canada 1978).

The natural topography of the Project Area was manipulated for the initial development of the golf course; sand dunes and hills have been constructed on the golf course. It is unlikely that the soils within any of the five development phases are representative of what was historically mapped. It is presumed that the modified landscape is constructed from sandy or loamy soils; however, these soils are not representative of the dark brown chernozems or regosols expected in the area.

4.2 WETLANDS

The majority of wetlands within the Project Area are artificial (i.e., engineered and constructed), and include drainages, retaining walls, and no riparian vegetation. A total of 21 wetlands of Class II or higher were identified and classified according to the Stewart and Kantrud Wetland Classification System within the Project Area. Of the 21 wetlands recorded, there were 13 dugouts, 5 drainages, and 3 temporary wetlands (see Table 4-1). Details on data collected, including wetland classification and a characterization of the physical settings of the wetland can be found in Figure 2.

Wetlands in heavily disturbed land cover (i.e., developed and urban, cultivated) provide low quality habitat for plant SOMC due to a lack of native vegetation and/or a lack of a vegetative buffer. There are no wetlands within the Project Area that have native vegetation cover in the surrounding upland habitat. Native vegetation cover provides a vegetative buffer that may increase the overall habitat quality of the wetland through higher water quality and reduced invasive species. All wetlands within the Project Area were heavily disturbed and provided limited to no potential habitat for plant SOMC.

4.3 VEGETATION AND LAND COVER

4.3.1 Land Cover

The Project Area is located in the Moist Mixed Grassland Ecoregion of Saskatchewan within the Saskatoon Plain and the Moose Wood Sand Hills landscape area. Vegetation within the Moist Mixed Grassland is characterized by grasses in the drier uplands and shrubs and trees in the wetter lowlands (Acton et al. 1998).

The habitat in the Project Area is comprised of landscaped land use and vegetation cover types including seeded and mowed grass, planted trees and shrubs, and engineered and constructed wetlands. The wetlands within the Project Area have all been disturbed and include multiple drainages and dugouts with retaining walls and no riparian vegetation. Grass in the Project Area is considered highly disturbed due to constant maintenance through the application of herbicides, pesticides, fertilizers, watering, and mowing. Most trees and shrubs were planted, and the wetlands were human-made resulting in limited potential for plant SOMC. The regional context area is also highly disturbed through residential and commercial development and agriculture. Disturbed areas provide little to no potential habitat for plant SOMC as the native vegetation community has been altered/replaced through human activity (e.g., converted to housing developments or crops). Land cover types within the Project Area and Regional Context Area are presented in Table 4-1.

Table 4-1 Land Cover and Wetlands within the Project Area and a 1 km Buffer

Land Cover Type	Project Area		Regional Context Area ¹	
	Area (ha)	Percent (%)	Area (ha)	Percent (%)
Cultivated	0.00	0.00	191.21	5.27
Trees and Shrubs	10.97	9.29	96.04	10.73
Native Grassland	0.00	0.00	13.61	1.52
Hayland	5.75	4.87	5.75	0.64
Pasture and Forage ²	0.00	0.00	84.60	9.45
Exposed Land and Barren	0.00	0.00	39.00	4.36
Urban and Developed ³	94.29	79.81	436.15	48.71
Class II – temporary ponds	1.49	1.26	1.49	0.71
Dugout – artificial ponds	5.28	4.47	5.28	0.59
Drainage	0.37	0.31	0.37	0.04
Wetland ⁴	0.00	0.00	20.77	2.32
Water ⁴	0.00	0.00	1.05	0.12
Total	118.15	100.00	895.32	100.00

NOTE:

¹ Regional Context Area includes the Project Area

² Pasture and Forage land cover in AAFC data includes both hayland and tame pasture. Hayland land cover data was mapped using data collected during the field reconnaissance.

³ Urban and developed land cover type includes golf greens.

⁴ Wetland classes were confirmed during the field reconnaissance.

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4.3.2 Historical Occurrences of Plant SOMC

A search of the HABISask Application (Government of Saskatchewan 2018a) identified 11 historical records of plant SOMC (see Table 4-2). The dates of the records primarily ranged from 1915 through 1972, with one record from 1992. The Willows Golf Course began construction in 1994, all the historical plant SOMC observations pre-date construction. All native land cover types within the Project Area have been altered and disturbed through previous development (e.g., earth moving, wetland construction, golf course maintenance) resulting in limited to no potential habitat for plant SOMC.

Table 4-2 Plant SOMC Historical SKCDC Records within 1 km of the Project Area

Common Name	Scientific Name	SKCDC Rank
American bugseed	<i>Corispermum americanum</i> var. <i>americanum</i>	S3
Blue wild rye	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	S3
Bristly gooseberry	<i>Ribes oxycanthoides</i> ssp. <i>setosum</i>	S2
Columbia needlegrass	<i>Achnatherum nelsonii</i> ssp. <i>dorei</i>	S3
Hairy bugseed	<i>Corispermum villosum</i>	S2
Hooker's bugseed	<i>Corispermum hookeri</i> var. <i>hookeri</i>	S2
Indian milk-vetch	<i>Astragalus australis</i>	S3
Mucronate blue-eyed-grass	<i>Sisyrinchium mucronatum</i>	S3
Red-stemmed cinquefoil	<i>Potentilla rubricaulis</i>	S3
Smooth hawk's-beard	<i>Crepis runcinata</i> ssp. <i>hispidulosa</i>	S1
Soft wild bergamot	<i>Monarda fistulosa</i> var. <i>mollis</i>	S3

4.4 WILDLIFE

4.4.1 Habitat Suitability

The Project Area is located within the Moist Mixed Grassland Ecoregion which has the potential to support 51 mammal species, 13 reptile and amphibian species, and over 200 bird species (Acton et al. 1998). Results of landcover mapping (Table 4-1) and the field reconnaissance conducted on September 19, 2018 indicate that the Project Area has been modified and therefore, has limited potential for wildlife SOMC. Although potential habitat for wildlife SOMC is limited, bobolink (*Dolichonyx oryzivorus*), listed as Threatened under SARA, has the potential to breed in the hayland north of Phase 3. Additionally, barn swallows (*Hirundo rustica*), listed as Threatened under SARA could nest on the side of buildings or other human-made structures.

Wetlands within the Project Area are artificial and most were found to have retaining walls, steep slopes, and little or no riparian vegetation. As such, there is limited to no potential for wildlife SOMC or habitat for wildlife SOMC to occur in the Project Area. Use of wetlands is likely limited to waterbirds temporarily and intermittently using the wetlands to forage.

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4.4.2 Historical Occurrences of Wildlife SOMC

A search of the HABISask Application (Government of Saskatchewan 2018a) found no historical records of wildlife SOMC within the Regional Context Area.

4.5 HERITAGE RESOURCES

Based on the HCB's Online Developers' Screening Tool, one of the three quarter sections within the Project area was identified as heritage sensitive (Figure 3). The heritage sensitive quarter section is NW 09-36-05-W3M. Heritage sensitivity is determined based on the presence of previously recorded heritage resources, the potential for heritage resources to exist (including proximity to waterbodies or watercourses and landscape), and previous land disturbance. The inventory of previously recorded archaeological sites contains one previously recorded heritage resource within the Project area: FaNp-30.

4.5.1 Previously Recorded Heritage Resources

FaNp-30: The Willows Site

The Willows Site is a precontact artefact scatter of lithics and bone fragment recorded during a 1989 HRIA completed prior to the original golf course development (HCB 1989; Millenium Heritage Resource Consultants Limited 1989). During the field reconnaissance of the 1989 HRIA, archaeologists observed 21 bone fragments, 13 fire cracked rocks, 5 quartzite flakes, and 2 quartz cores (Millenium Heritage Resource Consultants Limited 1989). Subsurface testing at the site revealed no buried site component. Archaeologists concluded that the collection of artefacts recovered from the site indicate that the site was likely a multiple activity site (e.g., campsite) (Millenium Heritage Resource Consultants Limited 1989).

4.5.2 Homestead Records

A search of the Saskatchewan Homestead Index revealed that the section on which the golf course was developed was registered as a homestead to Mr. Peter Latham between 1872 and 1930 under the terms of the *Dominion Lands Act* (Saskatchewan Homestead Index n.d.).

4.5.3 Areas of No Further Concern

Two quarter sections within the Project Area are not heritage sensitive and require no further investigation in terms of heritage resources (Figure 3). These quarter sections have been previously disturbed by golf course development and do not contain previously recorded archaeological sites.

The results of the Heritage Resource Review were received on September 27, 2018 (Appendix B). The results indicate that given a previous HRIA was completed, and the previous disturbance by cultivation and golf course development within the Project area, the HCB has no concerns with the development proceeding as planned.

5.0 SUMMARY AND RECOMMENDATIONS

5.1.1 Summary

Stantec was retained by Dream to conduct a natural area screening of The Willows Golf and Country Club. This is a requirement to be completed in advance of proposed modifications to the existing golf course layout and wetland modifications as required by the City. The Project consists of redevelopment of an existing golf course, including earthmoving, the alteration to several wetlands, and development of infrastructure for future residential development.

A desktop review of the Project Area was conducted and then followed up with a one-day field visit on September 19, 2018. The five development phases of the Project area are all located within The Willows Golf and Country Club, which was originally constructed in 1994 and predominantly consists of altered topography, artificial wetlands, and non-native vegetation.

The majority of wetlands within the Project Area are artificial (i.e., engineered and constructed), and include drainage, retaining walls, and no riparian vegetation. Within the Project Area, a total of 21 wetlands of Class II or higher were identified and classified according to the Stewart and Kantrud Wetland Classification System. Of the 21 wetlands recorded, there were 13 dugouts, 5 drainages, and 3 temporary wetlands. In Phase 5 there are four dugouts that do not have a retaining wall, have less steep bank slopes, and limited riparian vegetation (i.e., common cattail [*Typha latifolia*]). These wetlands provide low quality habitat for wildlife and provide limited to no potential habitat for wildlife SOMC.

No plant or wildlife SOMC, or noxious weeds were observed during the one-day field visit conducted on September 19, 2018. All historical plant and wildlife SOMC observations pre-date the original 1994 construction. The habitat in the Project Area is comprised of landscaped land use and vegetation cover types including seeded and mowed grass, planted trees and shrubs, and engineered and constructed wetlands. Grass in the Project Area is considered highly disturbed due to constant maintenance through the application of herbicides, pesticides, fertilizers, watering, and mowing. Most trees and shrubs were planted, and the wetlands were human-made resulting in limited potential for plant or wildlife SOMC. There is limited potential habitat for wildlife SOMC, bobolink (*Dolichonyx oryzivorus*) listed as Threatened under SARA, has the potential to breed in the hayland at the north end of Phase 3. Additionally, barn swallows (*Hirundo rustica*) listed as Threatened under SARA could nest on the side of buildings or other human-made structures. It is recommended that a nest search is conducted for any tree or shrub removal that occurs within the general nesting period for migratory birds (April 26 through August 15) (Environment and Climate Change Canada 2017).

Based on the HCB's Online Developers' Screening Tool, one of the three quarter sections within the Project Area was identified as heritage sensitive. The heritage sensitive quarter section is NW 09-36-05-W3M. The results of the Heritage Resource Review were received on September 27, 2018 and indicate that given previous heritage resource impact assessment completed and the previous disturbance by cultivation and golf course development within the Project area, the HCB has no concerns with the development proceeding as planned.

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WILLOWS NATURAL AREA SCREENING

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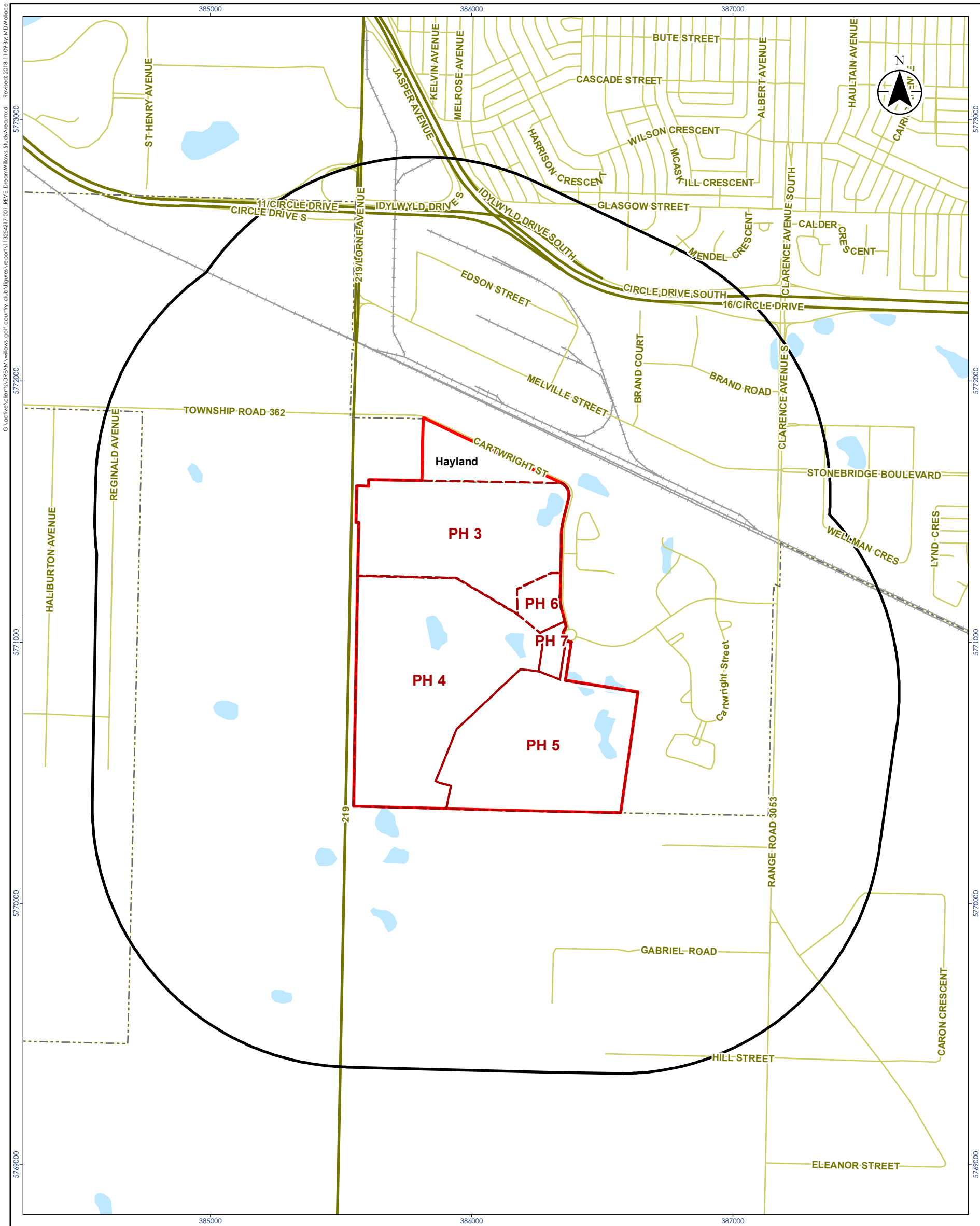
November 9, 2018

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APPENDICES

Appendix A FIGURES



- Legend**
- Regional Context Area
 - Project Area
 - Phase Boundaries
 - Town/City
 - Major Road
 - Minor Road
 - Railway
 - Township
 - Waterbody

0 250 500
Metres
1:15,000 (At Original document size of 11x17)



Project Location
Saskatoon,
Saskatchewan

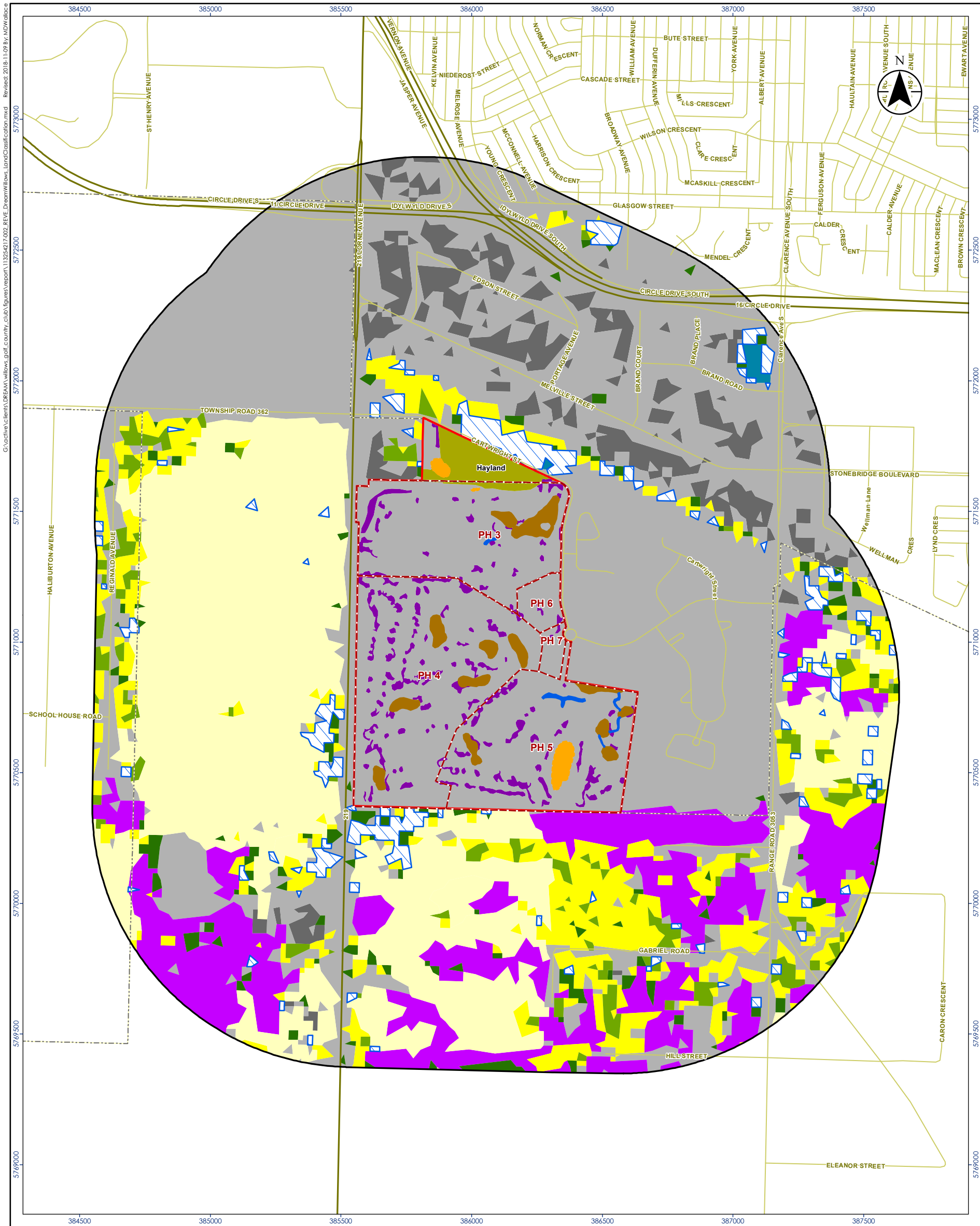
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Prepared by MDWallace on 2018-11-09
Technical Review by JH on 2018-11-09
Independent Review by NCory on 2018-08-09

Client/Project
DREAM DEVELOPMENT
WILLOWS NATURAL AREA SCREENING

Figure No.
1
Title
Project Area and Regional Context Area

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 13N
 2. Base features produced under license with the Government of Saskatchewan and Government of Canada.
 3. Basemap: Canada Base Map - Transportation, Nrcan 2018.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Notes

1. Coordinate System: NAD 1983 UTM Zone 13N
2. Base features produced under license with the Government of Saskatchewan and Government of Canada.
3. Landcover a combination of information obtained from Agriculture & Agri-food Canada (2017) and digitized orthophotos (Stantec, 2018)

Legend

- Regional Context Area
- Project Area
- Phase Boundaries
- Town/City
- Major Road
- Minor Road

Landcover within the Regional Context Area

- Temporary Wetland
- Drainage
- Dugout

- Cultivated
- Broadleaf
- Hayland
- Exposed Land and Barren
- Grassland
- Mixedwood
- Shrubland
- Pasture and Forages
- Urban and Developed
- Water
- Wetland

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1:15,000 (At Original document size of 11x17)



Project Location
Saskatoon,
Saskatchewan

113254217-002 REVE
Prepared by MDWallace on 2018-11-09
Technical Review by JH on 2018-11-09
Independent Review by NCory on 2018-11-09

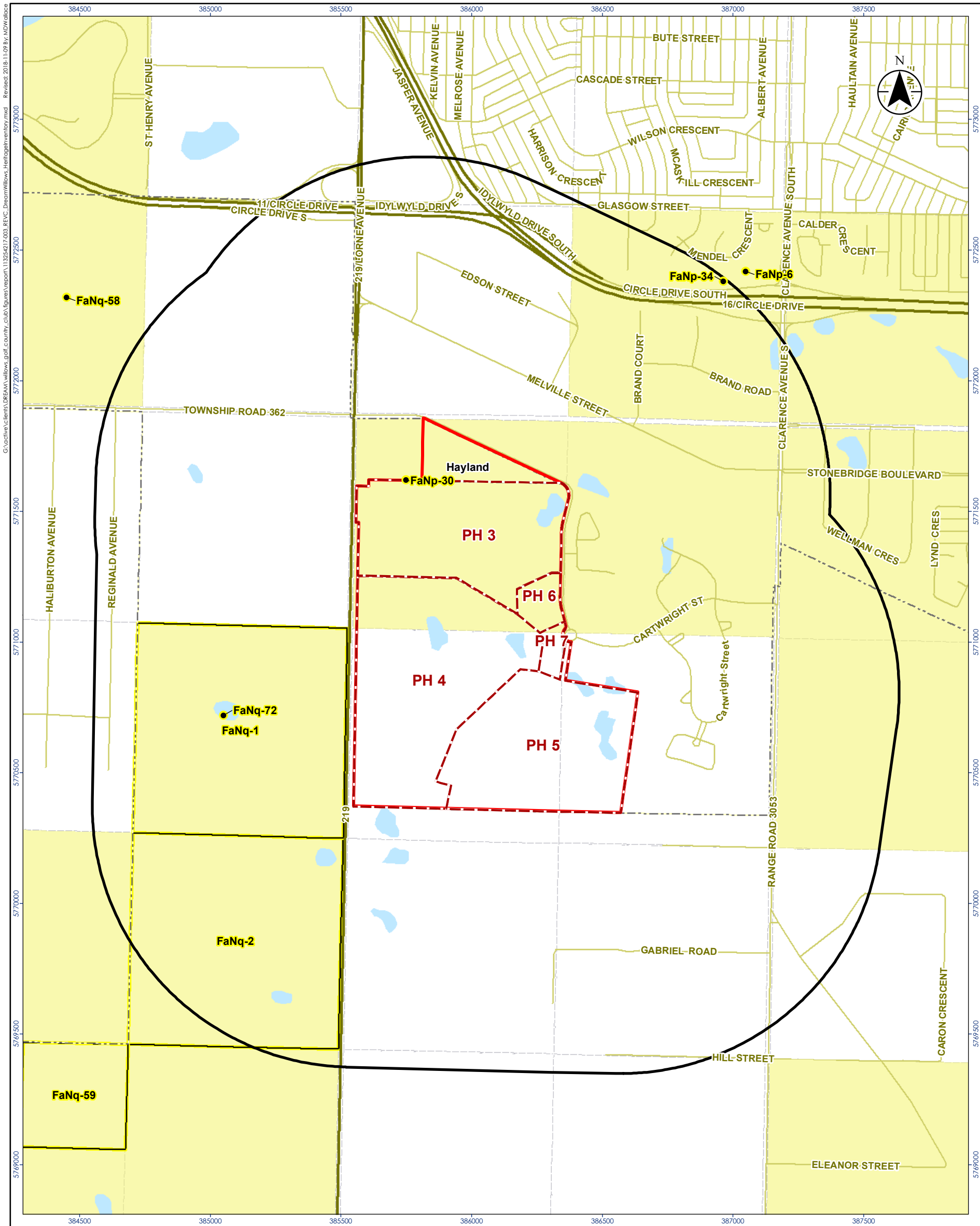
Client/Project
DREAM DEVELOPMENT
WILLOWS NATURAL AREA SCREENING

Figure No.

2

Title

Landcover



Notes

1. Coordinate System: NAD 1983 UTM Zone 13N
2. Base features produced under license with the Government of Saskatchewan and Government of Canada.
3. Heritage Inventory provided by Heritage Conservation Branch, Saskatchewan Parks, Culture and Sport

- Legend**
- Regional Context Area
 - Project Area
 - Phase Boundaries
 - Quarter Section
 - Town/City
 - Major Road
 - Minor Road
 - Waterbody

- Heritage Inventory**
- Archaeology Site
 - Potential Heritage Sensitivity

0 250 500 Metres
1:15,000 (At Original document size of 11x17)



Project Location
Saskatoon,
Saskatchewan

113254217-003 REV C
Prepared by MDWallace on 2018-11-09
Technical Review by JH on 2018-11-09
Independent Review by NCory on 2018-11-09

Client/Project
DREAM DEVELOPMENT
WILLOWS NATURAL AREA SCREENING

Figure No.
3

Title
Heritage Inventory

Appendix B RANKING DEFINITIONS FOR SPECIES OF MANAGEMENT CONCERN

WILLOWS NATURAL AREA SCREENING

Appendix B Ranking Definitions for Species of Management Concern
November 9, 2018

RANKING DEFINITIONS FOR SPECIES OF MANAGEMENT CONCERN

Category	Definition
SKCDC¹	
S1	Critically Imperiled/Extremely Rare – at very high risk of extinction or extirpation due to extreme rarity, very steep declines, high threat level, or other factors
S2	Imperiled/Very Rare – at high risk of extinction or extirpation due to a very restricted range, very few populations, steep declines, threats or other factors.
S3	Vulnerable/Rare to Uncommon – at moderate risk of extinction or extirpation due to a restricted range, relatively few populations, recent and widespread declines, threats, or other factors.
S4	Apparently Secure – uncommon, but not rare; some cause for long-term concern due to declines or other factors.
S5	Secure/Common – demonstrably secure under present conditions; widespread and abundant; low threat level.
Modifiers for SKCDC Ranks	
A	Accidental or casual in the province, including species recorded infrequently that are far outside their range (birds or butterflies).
B	For migratory species, rank applies to the breeding population in the province.
N	For migratory species, rank applies to the non-breeding population in the province.
M	For migratory species, rank applies to the transient (migrant) population.
H	Historical occurrence but without recent verification (e.g., within 20 years).
U	Status uncertain and species unrankable due to lack of information.
X	A species that is believed to be extinct or extirpated.
NA	Conservation status is not applicable to this species (e.g., exotic species).
NR	Species is not yet ranked.
?	Can be added to any rank to denote an inexact numeric rank (e.g., S1? = believed to be 5 or fewer occurrences, but some doubt exists concerning status).
SK Wildlife Act²	
Extirpated	A species that no longer exists in the wild in Saskatchewan but exists in the wild outside the province.
Endangered	A species facing imminent extirpation or extinction.
Threatened	A species likely to become endangered if limiting factors are not reversed.
Vulnerable	A species of special concern because of low or declining numbers due to human activities or natural events but that is not endangered or threatened.
SARA³	
Extinct	A wildlife species that no longer exists.
Extirpated	A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
Endangered	A wildlife species that is facing imminent extirpation or extinction.
Threatened	A wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.
Special Concern	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
COSEWIC⁴	
Extinct	A wildlife species that no longer exists.

WILLOWS NATURAL AREA SCREENING

Appendix B Ranking Definitions for Species of Management Concern
November 9, 2018

Category	Definition
Extirpated	A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
Endangered	A wildlife species facing imminent extirpation or extinction.
Threatened	A wildlife species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
Special Concern	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
Data Deficient	A wildlife species for which there is insufficient information to resolve a species' suitability for assessment or to permit an assessment of the species' risk of extinction.
Not At Risk	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
<p>SOURCES:</p> <p>¹ SKCDC 2018d.</p> <p>² Government of Saskatchewan 1998.</p> <p>³ Government of Canada 2002.</p> <p>⁴ Government of Canada 2016.</p>	

WILLOWS NATURAL AREA SCREENING

Appendix C Heritage Clearance Letter
November 9, 2018

Appendix C HERITAGE CLEARANCE LETTER



Government
— of —
Saskatchewan

Heritage Conservation Branch
2nd Floor, 3211 Albert Street
Regina, Canada S4S 5W6

Phone: 306-787-2848
kim.cloutier@gov.sk.ca

Our file: 18-1763

September 27, 2018

Ms. Lauren Stead
Stantec Consulting Ltd.
Agent for: Dream Development
100 – 75 24th Street East
SASKATOON SK S7K 0K3
Email: lauren.stead@stantec.com

Dear Ms. Stead:

**RE: Dream Development – Willows Golf and Country Club Redevelopment:
NW, SW and SE-9-36-5-W3M;
HERITAGE RESOURCE REVIEW**

Thank you for referring this development proposal to our office for heritage resource review.

In determining the need for, and scope of, Heritage Resource Impact Assessment (HRIA) pursuant to s.63 of *The Heritage Property Act*, the following factors were considered: the presence of previously recorded heritage sites, the area's overall heritage resource potential, the extent of previous land disturbance, and the scope of new proposed land development.

One known archaeological site (FaNp-30) is in close proximity to the proposed development. FaNp-30 is a precontact artifact scatter found on the surface with no intact buried components and therefore, is determined to have low significance. The development will impact land that has been disturbed by cultivation and an existing golf course. The golf course area was previously surveyed (permits 87-012 and 89-028). The likelihood that significant intact archaeological sites exist in this area is low. Therefore, our office has no concerns with this development proceeding as planned.

If you have any questions regarding this project please do not hesitate to contact me.

Sincerely,

Kim Cloutier
Archaeologist