# **University Heights Sector Plan**





# University Heights Sector Plan

# 2013 Amendment

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Prepared by:

Future Growth Section Planning and Development Branch City of Saskatoon

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# Amendments

- University Heights Concept Plan Approved by City Council on May 25, 1987
- University Heights Suburban Development Area Concept Plan: Plan No. 2A12-44G Approved by City Council on May 10, 1993
- University Heights Sector Plan Amendment Approved by City Council on December 3, 2007

Amendn	nents	5	i
Attachm	ents	(files provided on attached CD)	vii
1 Intro	oduc	tion	.1
1.1	Pur	pose of this Plan	.1
1.2	Plar	n Amendments and Timeframe	.1
2 Sec	ctor V	/ision	.1
3 Bac	ckgro	und	.1
3.1	Loc	ation	.1
3.1.	.1	Boundary Alteration	.2
3.2	Exis	sting Policy	.2
3.2.	.1	Official Community Plan Bylaw No. 8769	.2
4 Exis	sting	Features	.2
4.1	Lan	d Uses, Natural Features and Heritage Sites	.2
4.2	Owi	nership	.3
4.3	Agr	iculture Research Lands (Agriculture and Agri-Food Canada)	.3
4.4	Sas	katoon Forestry Farm Park and Zoo	.3
4.5	Mee	ewasin Valley Authority	.4
4.5.	.1	Background	.4
4.5.	.2	Jurisdiction (Conservation Zone)	.4
4.6	Civi	c Material Handling Yards	.5
4.7	For	mer Rubble Dump	.5
4.8	Firir	ng Range Facilities	.5
4.9	Pre	ston Crossing	.5
4.10	Urb	an Reserve	.5
4.11	Utili	ties	.6
5 Phy	/sical	Characteristics	.6
5.1	Тор	ography	.6
5.2	Soil		.7
5.3	Nat	ural Areas Screening	.7
5.3.	.1	Vegetation and Wildlife	.7
5.3.	.2	Northeast Swale	.8
5.3.	.3	Small Swale	.9
5.3.	.4	The greater Swale	10

	5.3	.5	Peturrson's Ravine	10
	5.3	.6	Sutherland Beach	10
	5.3	.7	Sections 24 and 25 of 37-5-W3M	10
	5.3	.8	Crocus Prairie	11
	5.3	.9	Saskatoon Natural Grasslands	11
	5.3	.10	Peggy McKercher Conservation Area	11
	5.3	.11	St. Joseph High School Conservation Easement	11
	5.4	Hist	orical Resources	12
	5.4	.1	Moose Woods, Batoche, River Heritage Trail	12
	5.4	.2	Limestone Quarry Pits	13
	5.4	.3	Limestone Kilns	13
	5.4	.4	Homesteads	13
	5.4	.5	Riddell Paleontological Site	14
	5.4	.6	Duh Paleontological Site	14
	5.5	Univ	versity of Saskatchewan Lands	14
	5.5	.1	University of Saskatchewan Vision 2057	14
	5.5	.2	Kernen Crop Research Farm	14
	5.5	.3	Regional Psychiatric Centre	15
	5.5	.4	University Containment Facility	15
	5.6	Site	Contamination	15
	5.7	Dev	elopment Buffers	15
	5.8	Gro	und Water	16
	5.9	Nois	se and Vibration	16
6	Gei	neral	Land Use and Population	17
	6.1	Lan	d Use Plan	17
	6.2	Рор	ulation Density, Dwelling Units and Employment	17
7	Prir	nciple	es of the Integrated Growth Plan	19
	7.1	Safe	e Growth	19
	7.2	Nei	ghbourhood Development	19
	7.2	.1	Residential	20
	7.2	.2	Affordable Housing	20
	7.2	.3	Residential Care Homes	20
	7.2	.4	Mixed-Use and Institutional	20

7.2.5 Intermediate and Strategic Infill Areas	21
8 District Village Commercial	21
8.1 Main Street	22
9 Employment Area	22
9.1 Employment Area Vision	23
9.2 Employment Area Development Standards	23
9.3 Business Park	23
9.4 Light Industrial Park	24
10 Natural Area Interface	24
10.1 Northeast Swale	24
11 Schools and Community Services	27
12 Urban Holding	27
13 Transportation	28
13.1 Complete Streets	28
13.2 Pedestrian Walkability	
13.2.1 Barrier-free	
13.3 Bicycling	
13.4 Transit	
13.5 Automobile Transportation	31
13.6 Roads	31
13.7 Northeast Swale Road Crossings	31
13.7.1 Range Road 3045 Decommissioning	
13.8 Transportation Improvement Recommendations	
13.8.1 Short-Term Recommendations	
13.8.2 Medium-Term Recommendations	
13.8.3 Long-Term Recommendations	
13.9 Interchanges and Intersections	
13.10 North Commuter Parkway	34
13.11 Highways	34
13.12 Provincial Perimeter Highway	34
13.13 Truck Route	34
13.14 Rail Line	35
13.14.1 Rail Line Setbacks	35

13.15	5 Multi-use Trails	35
14 F	Reserve Dedications	36
14.1	Environmental Reserve	36
14.2	Municipal Reserve Analysis	36
14.	.2.1 Employment Area Municipal Reserve	37
14.	.2.2 Existing Municipal Reserve (NW12-37-5-W3M)	37
15 S	Servicing	39
15.1	Water Mains	39
15.2	Water Reservoir	39
15.3	Sanitary Sewer	39
15.4	Storm Sewer	39
15.	.4.1 Natural and Engineered Water Bodies	40
15.5	Permanent Civic Service Facility	41
15.6	Recycling and Composting Facilities	41
15.7	Shallow-Buried Utilities	41
15.8	Proposed Antenna Towers	42
16 F	Phasing	42
16.1	Development Sequence	42
17 F	Funding	42
17.1	Funded Infrastructure	43
17.2	Un-funded Infrastructure	43

# Tables

Table 1:	Area, Density, Population and Employment	18
Table 2:	Municipal Reserve Analysis	38

# Figures

Figure 1	Study Area
Figure 2	Existing Features
Figure 3	Land Use Plan
Figure 4	Walking, Cycling and Transit Plan
Figure 5	Roadways Plan

- Figure 6 Figure 7 Servicing Plan Phasing Plan

# Attachments (files provided on attached CD)

- 1. University Heights Sector Plan, October 2007
- 2. Vision 2057: University Land Use Planning, October 2009
- 3. Northeast Swale Development Guidelines, 2012
- 4. The Small Swale Resource Overview, 2003
- 5. NW 12-37-5-W3M Environmental Screening, 1999
- 6. RAC/FCM Proximity Guidelines and Best Practices, 2007

# **1** Introduction

# 1.1 Purpose of this Plan

The University Heights Sector Plan (Sector Plan) has three main purposes:

- a) This plan implements the City of Saskatoon's (City) vision in the Official Community Plan Bylaw No. 8769 (Official Community Plan) to develop a Suburban Development Area (SDA);
- b) This plan establishes a layout for the preparation of future and more detailed Neighbourhood Concept Plans (NCP) to ensure growth proceeds in a balanced, compact, contiguous manner; and
- c) This plan identifies key land uses, transportation and servicing components that will need to be addressed in detail during the NCP process.

#### **1.2 Plan Amendments and Timeframe**

The Sector Plan is a large-scale plan which provides a framework for urban development over several decades. Given its scale and long-range timeframe, the Sector Plan is anticipated to undergo periodic amendments to address issues that may have been unforeseen at the time the plan was created and to accommodate changing development patterns. For this reason, the Sector Plan should be considered a "living document". Provision is made in this document for amendments to be listed ahead of the Table of Contents.

# 2 Sector Vision

The vision for the University Heights Sector (Sector) is in line with the City's <u>Strategic Plan</u> <u>2012-2022</u> (Strategic Plan). This report supports the strategic goals of Sustainable Growth, Moving Around, and Environmental Leadership. The Sector will develop interconnected, human-scale neighbourhoods featuring a variety of housing forms and a mixture of land uses, along with a high-quality employment area and vibrant mixed-use Suburban Centre. The Sector will promote transportation options including walking, bicycling, and transit, while still accommodating the private automobile. New neighbourhoods in the Sector will be linked to adjacent amenities such as the South Saskatchewan River (River), while illustrating a conservation theme of preserving and integrating existing natural features along the way. This will be done while keeping in mind the City's broader responsibility of providing opportunities for growth in an efficient and sustainable manner.

# 3 Background

#### 3.1 Location

The University Heights SDA is made up of Saskatoon's north east neighbourhoods, the University of Saskatchewan (University) lands, Agriculture and Agri-food Canada research lands, and future urban development lands. The University Heights SDA is bounded by

14<sup>th</sup> Street and College Drive on the south, the River on the west, City limits on the north, and the University's Kernen Crop Research Farm on the east.

The Sector is approximately 16 square kilometres (4,000 acres) of the University Heights SDA that is unserviced land awaiting future development. The Sector is bounded by the Silverspring and Evergreen neighbourhoods on the south, the River on the west, and City limits on the north and east.

The University Heights SDA and Sector boundaries are illustrated in Figure 1.

#### 3.1.1 Boundary Alteration

As part of the City's June 2000 Future Growth of Saskatoon Study, the Sector was identified as a desirable location for residential growth. On August 1, 2010, the City boundary was altered to include the remainder of the Sector and the future Provincial Perimeter Highway (Perimeter Highway) alignment in the north-east quadrant. A total of 997 hectares (2,464 acres) or 15.5 quarter sections in the north-east were brought into the City's boundary.

# 3.2 Existing Policy

#### 3.2.1 Official Community Plan Bylaw No. 8769

Sector Plans are required by the Official Community Plan. Clause 3.2.2f states:

"Long range planning for neighbourhoods and related community facilities shall be organized within the context of Suburban Development Areas. Suburban Development Areas contain approximately 8 to 10 neighbourhoods and the housing and community facilities necessary to accommodate 50,000 to 80,000 people as well as significant employment..."

# 4 Existing Features

# 4.1 Land Uses, Natural Features and Heritage Sites

The University Heights SDA includes the following land uses:

- a) The University;
- b) Six Residential Neighbourhoods and One Developing Neighbourhood (Evergreen);
- c) One Industrial Area (Sutherland Industrial);
- d) One Suburban Centre Mixed-use Commercial Area (Erindale Shopping Centre and University Heights Square);
- e) One Regional Retail Commercial Area (Preston Crossing);
- f) One Arterial Commercial Strip (Central Avenue);
- g) Saskatoon Forestry Farm Park and Zoo;
- h) Agricultural Research Lands (Agriculture and Agri-Food Canada);
- i) University Containment Facility;
- j) Regional Psychiatric Centre;
- k) Muskeg Lake Cree Nation Urban Reserve;
- I) Civic Material Handling Yards;

- m) Former Rubble Dump; and
- n) Police Training Facility.

The University Heights SDA contains the following natural features:

- a) East Bank of the River;
- b) Northeast Swale;
- c) Peturrson's Ravine;
- d) Peggy McKercher Conservation Area;
- e) Saskatoon Natural Grasslands;
- f) Crocus Prairie;
- g) Riddell Paleontological Site;
- h) Sutherland Beach; and
- i) St. Joseph High School Conservation Easement.

The following Heritage Sites are found in the University Heights SDA:

- j) Moose Woods, Batoche, River Heritage Trail;
- k) Former Limestone Quarry Pits and Kilns Heritage Sites; and
- I) Heritage Homesteads.

#### 4.2 Ownership

Ownership in the University Heights SDA comprises public (City), institutional (the University), federal (Agriculture and Agri-Food Canada), and private land holdings. To date, of the remaining 16 square kilometres (4,000 acres) of unserviced land in the Sector, 75 percent of the land holdings are owned by groups with land development interests.

#### 4.3 Agriculture Research Lands (Agriculture and Agri-Food Canada)

Based on the time frame of the research plots, it is expected that the 185 hectares (458 acres) of land located north of the University Heights Suburban Centre and Willowgrove neighbourhood will continue to operate as agriculture research lands for the foreseeable future. If a servicing strategy was developed and these lands became suitable for future residential infill growth, a NCP would be required before any development occurs.

#### 4.4 Saskatoon Forestry Farm Park and Zoo

The park was originally established as the Dominion Forest Nursery Station and later as the Sutherland Forest Nursery Station. Between 1913 and 1966 the park was used to grow over 147 million trees that were shipped across western Canada to be used for shelterbelts. In 1924 the Sutherland Migratory Bird Sanctuary was established in the park. In 1974 the Golden Gate Animal Farm ran into financial difficulties and the City agreed to acquire the animals and equipment to relocate the zoo to the park. In 1990 the park was designated as a National Historic Site of Canada.

# 4.5 Meewasin Valley Authority

#### 4.5.1 Background

The Meewasin Valley Authority (Meewasin), was formed in 1979 to act as an agent of the City, the University, and the Province of Saskatchewan to ensure a healthy and vibrant river valley, with a balance between human use and conservation. *The Meewasin Valley Authority Act* (*MVA Act*) establishes the mandate of the Authority, its powers and its jurisdiction, the Conservation Zone. Meewasin's mandate can be summarized into three mandate areas: conservation, development, and education. As shown on Figure 2, a substantial amount of land in the University Heights SDA is in the Conservation Zone.

#### 4.5.2 Jurisdiction (Conservation Zone)

The Conservation Zone is based, in part, on lands owned by the three participating parties when Meewasin was created. In the University Heights SDA this includes University-owned, City-owned and private land that was located within Saskatoon's 1979 corporate limits. It consists of the Riverbank and adjacent uplands as well as other significant natural and cultural heritage sites such as Sutherland Beach, the Saskatoon Natural Grasslands, the Northeast Swale, and Peturrson's Ravine. In the Conservation Zone, all improvements (for example, new construction) must be approved by Meewasin, through its Development Review process, unless specifically exempted by the *MVA Act* or by a Meewasin Bylaw.

Meewasin has also adopted a Northeast Policy, as part of its Development Plan, to guide its approach to development in the Sector. The Northeast Policy is in the process of being updated and will align with the principles discussed in this section.

The City's corporate limits have expanded since 1979, and further boundary alterations will occur as Saskatoon grows. These boundary alterations have included land that may be of direct interest to Meewasin in meeting its mandate, such as land adjacent or connected to the River, and land that could have natural or cultural heritage features. The City will continue to work closely with Meewasin to review the Conservation Zone with the goal of adding land that is of direct interest to Meewasin in meeting its mandate, and removing land that is not of direct interest to Meewasin.

Conceptually, this Sector Plan has identified the following lands as currently having direct interest to Meewasin, and has avoided them in planning future development areas:

- a) the area within 150 metres of the River shoreline (which represents an increase from the current 92 metre Riverbank Area set out in the Official Community Plan);
- b) Peturrson's Ravine;
- c) Sutherland Beach;
- d) the Northeast Swale and Greenway, as per the boundaries established in the "Northeast Swale Development Guidelines, 2012" report (see Attachment 3);

- e) University Lands as per the Meewasin Bylaw No. 003 Amendment The Development Review Exemption;
- f) Peggy McKercher Conservation Area;
- g) Saskatoon Natural Grasslands; and
- h) Riddell Paleontological Site.

# 4.6 Civic Material Handling Yards

Currently, the City has material handling and stock piling yards along Central Avenue. The facilities are used for snow handling, street sweepings storage, and rock and construction aggregate storage. As development extends into the area, these facilities will be required to be relocated to a permanent Civic Services Facility.

#### 4.7 Former Rubble Dump

In the early 1990s, SW 24-37-5-W3M was used by the City and the general public as a rubble dump for materials including trees, rocks, concrete and dirt. The rubble dump was decommissioned in the late 1990s and the site was leveled out to fill in the adjacent ground depressions. Groundwater levels and quality were monitored for a number of years after the decommissioning. Since 2000, no development has occurred on the site and it has been left to re-vegetate. This area is not recommended for future residential development, but may be suitable for a permanent Civic Services Facility as part of the proposed Light Industrial Park.

#### 4.8 Firing Range Facilities

Located in SE 24-37-5-W3M, the Saskatoon Police Service and the Saskatoon Wildlife Federation have an outdoor earth berm firing range. A portion of this facility is used for emergency training purposes while the two eastern ranges are used for recreation. Currently, this facility is isolated from urban development; however, when the North Commuter Parkway is constructed immediately north, and when residential development extends into this area from the south, this facility will be considered for relocation.

#### 4.9 Preston Crossing

Located at the junction of Attridge Drive and Circle Drive, Preston Crossing is a regional commercial area located on 23 hectares (56 acres) of land owned by the University. This area started developing in 2004 and continues to develop as the demand for retail increases.

#### 4.10 Urban Reserve

The Muskeg Lake Cree Nation Urban Reserve was the first urban reserve to be created in Saskatoon. The Muskeg Lake Cree Nation Urban Reserve is located on 14 hectares (35 acres) of land, most of which been developed for commercial, institutional, and light industrial uses. The remainder of the land is expected to be developed in the near future.

# 4.11 Utilities

Throughout the University Heights SDA, there are major and minor utilities servicing the area (see Figure 2). Both Saskatoon Light and Power and SaskPower supply power to the University Heights SDA (see Figure 6); however, the majority of the Sector is served by SaskPower.

SaskPower presently has their 138kv QE18 overhead transmission line running parallel to road rights-of-way in the Sector, as follows:

- a) North/South along Range Road 3050; and
- b) East/West along Township Road 374 from Range Road 3050 to the River.

Prior to a NCP for Neighbourhood UH3, negotiations between the developer and SaskPower should occur to determine if there are options for relocating the QE18 overhead transmission line. If the QE18 overhead transmission line north of Fedoruk Drive remains in its current location, provisions should be made at the NCP stage to incorporate this utility into future road rights-of-way, municipal buffer, or open space corridors.

SaskPower has two existing substations on the east which will be able to service the Sector. A proposed substation located at the crossing of Township Road 374 and Range Road 3050 may be required as development progresses past Perimeter Highway (see Figure 6).

Nine cell towers, and overhead and buried SaskTel facilities, are located in the University Heights SDA (see Figure 2). The height and location of the 60 metre tall cell tower located along Central Avenue, north of the Northeast Swale should be reviewed between the developer and the service provider approximately two years before urban development begins to extend into this area. If relocating this facility is considered, options for relocation should be provided within the proposed Light Industrial Park, and the tower height should be reduced to enhance the viewshed along the River.

TransGas has an existing 168.3mm high pressure pipeline along the east edge of the University Heights SDA. As per Section 20 of *The Pipeline Act*, any ground disturbance within 30 metres of the TransGas pipeline requires written notification to TransGas at least two days prior to the commencement of the work.

# **5** Physical Characteristics

# 5.1 Topography

Surface elevations gradually increase from northwest to southwest in the Sector. The highest elevation point in the Sector is approximately at the location where Agra Road (Township Road 372) and Blackley Road (Range Road 3044) intersect.

Lands within the Sector have surface elevations ranging around 488 metres above sea level close to the River and gradually increasing to 508 metres above sea level next to Blackley Road (Range Road 3044). The overall variation in surface elevation is approximately 20 metres.

Throughout the Sector there are two prominent surface water drainage scars. This Sector Plan refers to them as the "Northeast Swale" and the "Small Swale." These swales are low lying depressions in the terrain that act as natural drainage courses for surface water to flow into the River.

# 5.2 Soil

According to the Canada Land Inventory, the most desirable soil classes for crop production are Class 1 and Class 2. The majority of the soil in the Sector is classified as Class 3 and Class 4 (see Figure 2). Class 3 soil has moderately severe limitations that restricts the range of crops or requires special conservation practices. Class 4 soil has severe limitations that restricts the range of crops or requires special conservation practices or both.

Approximately half of Aspen Ridge has Class 2 soil. These soils are an extension of the majority of Class 2 soils located on the University's Kernen Crop Research Farm. The "Future Growth Study, 1999" considered all soil classifications and concluded that the Sector was desirable for future urban growth.

# 5.3 Natural Areas Screening

Section 9.0 of the Official Community Plan requires wide range natural area screenings to be completed, as part of the sector planning process, to identify environmentally significant and historical areas of interest within a sector. As part of a NCP, further site-specific natural area screening may be required to identify and protect these resources. A reduction of the gross developable area may be required based on the findings of the natural areas screening process. As part of development, if deemed appropriate, developers are required to retain significant natural areas and incorporate it seamlessly into the neighbourhood.

Upon request from City Administration, the developer must arrange for a qualified consultant to determine the importance of the natural areas. If the natural area is deemed important, the developer must arrange for a legal survey to be completed during the growing season to determine the boundary of the area and the buffer around it. Prior to development, the developer should temporarily fence the buffer perimeter while construction occurs in the area.

#### 5.3.1 Vegetation and Wildlife

Portions of the University Heights SDA have been the subject of a number of studies over the past 25 years (BBT 1985, Weichel's 1992, Bizecki-Robson and Dynes 1998, Delanoy 2001, Jensen 2009, Stantec 2012). From these studies the following main areas of interest have evolved: Sutherland Beach, Peturrson's Ravine, Northeast Swale, Small Swale, Peggy McKercher Conservation Area, Saskatoon Natural Grasslands, Crocus Prairie, Riddell Paleontological Site, and the Riverbank Area. As further urban growth occurs next to these natural areas, development standards will be required to maintain its natural quality, while incorporating these areas into an urban setting.

The remainder of the undeveloped land in the Sector has been cultivated in the past, developed as residential, or used for aggregate extraction; therefore, the chances of native species being found on these lands are limited.

#### 5.3.2 Northeast Swale

The Northeast Swale referenced in this report is the portion of the Northeast Swale that is within City limits, totaling 290 hectares (718 acres) or five kilometres in length. The greater Swale consists of a 25 kilometre drainage channel.

The Northeast Swale has long been regarded as a significant environmental feature having unique ecological, hydrological, and hydrogeological characteristics. Although there are pockets of disturbance, the Northeast Swale contains remnants of native prairie, has numerous ecologically important wetlands, and has a diverse habitat that supports a number of species.

The "Northeast Background Study" (The UMA Group, 1985) described the Swale as a channel scar with sloughs. It stated:

"The current scar and sloughs of this area are remnants of glacial times. The channel formerly carried meltwater and once flowed as a broad sheet of water to the north. The area is considerably above the present river. The scar has been incised within the former glacial lake bottom that we know today as the prairie tableland. As the scar has been scoured below the general level of the prairie, it has remained an integral part of the prairie surface drainage system since being abandoned by the river. Over time it has accumulated some rich soils but the continued erosion by surface drainage has carried most of them off. None the less, this area supports rich plant and animal life communities. Two examples are the fescue grassland and natural prairie that serve as a habitat for grassland birds. The scar is a wildlife corridor for mammals and a habitat for numerous bird varieties.

Due to the undulating topography and boulder cover, the agricultural capability is low and the area has never been farmed. Examples of natural prairie still exist. As few examples are left in North America they are worthy of preservation..."

Based on the flora/fauna and wildlife findings from all the studies completed on the Northeast Swale, a number of important findings are listed below:

- a) The Northeast Swale provides a good variety of upland and wetland habitats that are important to a wide variety of bird species (more than 186 bird species have been identified, with 61 species known to nest in the Northeast Swale).
- b) The Swale provides habitat for common nighthawk, loggerhead shrike, barn swallow, sprague's pipit and horned grebe (all federally listed species at risk). These species have all been observed within the Northeast Swale, although no nests are known to exist currently.
- c) The wetlands are important for a wide variety of waterfowl and shore-land birds.
- d) The uplands, while disturbed in some areas by over grazing in the past, contain significant amounts of native prairie, including some provincially ranked rare species, such as Lilium philidelphicum, Viola pedatifida, and Alisma gramineum. The assemblage of native species is one of the Swale's most important attributes, and provides habitat for the wide range of birds. The plant communities in the Northeast Swale are dominated by western porcupine grass and northern wheatgrass. This association of mixed grass prairie tends to transition into the fescue prairie. Fescue prairie once extended over a large portion of Canada but less than 5 percent of its original expanse now remains in Saskatchewan.

e) The wetlands in the Northeast Swale have been classified using the Stewart and Kantrud system and it was determined that the majority are Class 4, or semi-permanent (Stantec 2012). A functional assessment has noted that the Class 4 wetlands are important ecologically as they provide important water storage, waterfowl habitat, amphibian habitat, and native plant habitat.

Recently, a qualified team of consultants studied the Northeast Swale in detail with an end result of a defined Northeast Swale boundary and three roadway crossings as part of the "Northeast Swale Development Guidelines, 2012" report (see Attachment 3). The "Northeast Swale Development Guidelines" report provides the framework for integrating natural areas into urban development areas. It recommends measures to minimize disturbance to the Northeast Swale, while also meeting transportation, utility, stormwater management, and other community needs as the Sector develops.

The "Northeast Swale Development Guidelines, 2012" report identified the need for an amphibian and reptile species composition and abundance survey. This survey should be completed prior to designing the road crossings for the Northeast Swale. An experienced herpetologist should determine if the amphibian and reptile populations warrant special road design mitigation. If required, it is recommended that the road include amphibian and reptile crossing structures using the guidelines in the "Wildlife Crossing Structure Handbook: Design and Evaluation in North America" (FHWA 2011).

#### 5.3.3 Small Swale

The Small Swale referenced in this report is the portion of the Small Swale within City limits. totaling approximately 61 hectares (150 acres) based on air-photo analysis. The Small Swale is part of the greater Small Swale, which is a 4 kilometre drainage channel that extends north of Perimeter Highway. The 2007 Sector Plan viewed the Small Swale as an area of residential development due to the area being disturbed by human activity such as the visual evidence of historical gravel extraction in and around the area. However, the low lying area and high ground water table in the Small Swale, along with the boulder-cover hills throughout the area make it challenging to service and develop and could be better preserved as a drainage channel and/or natural area that buffers the Employment Area from the adjacent commercial and residential developments. For the northwest corner of the Sector, the Small Swale is an important element for the surface water drainage pattern and has the potential to be used for stormwater management. Native species can be reintroduced to the area re-establishing the historically disturbed lands. The Small Swale has been illustrated as "under review"; therefore, prior to any development happening in the area of the Small Swale, a qualified consultant should visit the site and determine the ecological significance of the Small Swale similar to the field methods used in defining the 2012 Northeast Swale boundary. This ecological review of the Small Swale would then be able to refine the total area and determine the future use of the Small Swale as part of the NCP.

Outside the University Heights SDA, adjacent to the River, the Small Swale has an area of natural habitat. This area can be found within NW30-37-4-W4M and should be further reviewed. This will be addressed in the subsequent plan for the North East SDA.

#### 5.3.4 The greater Swale

The greater Swale is a combination of swales linked together to form a 25 kilometre drainage channel scar left behind since the glaciers receded. In this report the greater Swale is from City limits to  $W_{2}^{\prime}$  17-39-3-W3M where it connects back to the River.

#### 5.3.5 Peturrson's Ravine

Peturrson's Ravine is a well defined post-glacial erosional feature resulting from the piping of intertill sand and gravel layers along the banks of the River. It is possible that surface runoff once passed through the ravine as storm runoff from the swale areas to the northeast. This runoff would have accelerated ravine erosion and would account for the advanced size of Peturrson's Ravine.

The surficial geology at the Peturrson's Ravine site consists of successive layers of glacial tills belonging to the Battleford, Floral and Sutherland groups and known collectively as "glacial drift." The thickness of the drift materials is expected to be in the order of 75 metres or more in the area.

According to a number of studies completed by Meewasin, there is an estimated 325 plant species identified in the Peturrson's Ravine area. One of the most unique ecosystems within Peturrson's Ravine is the marl bog area. Due to its properties of soil and moisture, it supports a unique floral community, including the "threatened" Scirpus pumulis (dwarf bulrush), and "vulnerable" Scirpus rufus (red bulrush) and Lomatogonium rotatum (marsh felwort), as listed in *The Species at Risk Act*.

The ravine acts as a natural, protective travel corridor for wildlife, with the typical route lying between the protective cover of the shrubs and trees along the River, up into the grasslands and agricultural habitats in the uplands. Wildlife noted in the area include white-tailed deer, snowshoe hare, mice, voles, beaver, mink, garter snake, pocket gopher, flickers, mourning dove, mallards, rails, snip, great blue heron, robin, Canada geese, double crested cormorant, magpies, sandhill crane, crows, pelicans, and Cooper's Hawk.

The Peturrson's Ravine Resource Management Plan completed for Meewasin (1995) provides recommendations for developments adjacent to the ravine.

#### 5.3.6 Sutherland Beach

Sutherland Beach is located south and west of the River, north of Circle Drive and west of the Preston Avenue road allowance. A portion of this area is owned by the City and is currently being used as an off-leash recreation area (formally called Sutherland Beach Off-leash Recreation Area), while 5 hectares (13 acres) along the northern part of this area is privately owned. Sutherland Beach has been identified by Meewasin as having ecological significance since the lands have been preserved in their natural state. According to Meewasin, the area would be suitable for interpretive purposes and a network of interpretive trails could provide opportunities to view and learn about the Riverbank ecology and the evolution of the River.

#### 5.3.7 Sections 24 and 25 of 37-5-W3M

According to the "Small Swale Resource Overview" study in 2003 (see Attachment 4), previous vegetation and wildlife studies found two rare plant species around NE 24 and SE 25-37-5-

W3M, approximately 250 metres north of the undeveloped road allowance between the two quarter sections and along the east bank of the saline meadow. The two plant species are Carex crawei and Scirpus rufus. These plants are ranked by the Saskatchewan Conservation Data Centre (CDC) as S1 and S2 respectively. S1 is defined as extremely rare; five or fewer occurrences in Saskatchewan, or very few remaining individuals. S2 is defined as rare; 6 to 20 occurrences in Saskatchewan, or few remaining individuals. Western Red Lilies, a protected species, also grows in the area.

Prior to development around NE 24 and SE 25-37-5-W3M, a qualified consultant should visit the site to determine if there is any remaining evidence of the two plant species.

#### 5.3.8 Crocus Prairie

Located north and west of the Regional Psychiatric Centre on University lands, the Crocus Prairie, informally named for the beautiful native crocuses found there, has been studied and is identified by Meewasin as an ecologically sensitive site worth preserving, but has not been formally designated as a natural area by the University.

#### 5.3.9 Saskatoon Natural Grasslands

The Saskatoon Natural Grasslands is a 14 hectare (34 acre) parcel of native Saskatchewan grassland lying within the Silverspring neighbourhood. In 1993, the area was dedicated as Municipal Reserve as part of the Silverspring neighbourhood subdivision plan, because of its complex association of natural fescue grasses, flowering and non-flowering plants, fungi, lichen, animals, insects, and other organisms representing 10,000 years of natural history since the glaciers receded. The Saskatoon Natural Grasslands is a unique ecosystem that shelters nearly 200 plant species, 117 species of birds and more than 25 kinds of butterflies. The Saskatoon Natural Grasslands provides not only important habitat, but it allows undisturbed fescue prairie, which is being depleted in Saskatchewan, to be preserved. Following 1993, the City sold the Saskatoon Natural Grasslands parcel to Meewasin for \$1. Meewasin is the steward of the site, conserving it in a natural state and using it for interpretation, public education, and research.

#### 5.3.10 Peggy McKercher Conservation Area

The Peggy McKercher Conservation Area is located east of the River along Central Avenue. The site is located in NE 14-37-5-W3M and consists of 13 hectares (32 acres). In 1916, the William Hutchins family received patent and held the property until 1945. The Hutchins homestead is located at the end of the south trail near the turnaround. In 1963, the Episcopal Corporation of Saskatoon became the owners, converting the site to a summer residence for Catholic nuns of the Saskatoon Diocese. At that time the site was known as Maryville. Remnants of the former site remain in the form of planted trees (spruce and mountain ash), an old basketball court, and even a small shrine to the Virgin Mary located atop a hill. Meewasin purchased the site in 2007 and officially dedicated it as the Peggy McKercher Conservation Area in September 2009.

#### 5.3.11 St. Joseph High School Conservation Easement

On June 14, 1995, Meewasin and the Greater Saskatoon Catholic Schools Board of Education formed a partnership to "naturalize" a portion of the St. Joseph High School grounds. The goal was to recreate a natural prairie landscape at the school where students could take part in

preparing soil, starting seedlings, planting in the field, planting and staking trees and shrubs, and mulching plant beds. In 2000, students, teachers, and volunteers planted over 1,400 indigenous trees, shrubs, and seedlings in the conservation area creating an outdoor laboratory. On November 15, 2001, Meewasin signed one of its first conservation easements with the Greater Saskatoon Catholic Schools that protects 1.93 hectares (4.76 acres) of the school ground along Attridge Drive.

# 5.4 Historical Resources

The majority of the lands in the Sector have been cultivated for many years; therefore, there may be few additional historical findings. However, there are parcels of land along the River, within the Northeast Swale and located in the northern part of the Sector, that have not been cultivated and there may be a higher chance of finding historical artifacts. As shown on Figure 2, the Heritage Sensitive areas were provided by the Ministry of Tourism, Parks, Culture, and Sport as areas having the potential for heritage resources. Prior to development on the Heritage Sensitive lands, the Ministry of Tourism, Parks, Culture, and Sport must provide a written letter of clearance or a Historical Resources Impact Assessment (HRIA) must be carried out by a qualified consultant, at the developer's expense, under an approved investigation permit issued by the Ministry of Tourism, Parks, Culture, and Sport.

As the University Heights SDA develops, special consideration should be given to the heritage elements identified below; however, if further historical materials are identified they must be reported to the Ministry of Tourism, Parks, Culture, and Sport.

#### 5.4.1 Moose Woods, Batoche, River Heritage Trail

One of the most important heritage resources in this area is the trail referred to as the "Moose Woods, Batoche, River Heritage Trail" (Batoche Trail). The approximate trail alignment is shown on Figure 2, based off of the Dominion Lands Survey dated May 5, 1884.

The Batoche Trail is significant because of its continued use through the 1800s and its role in the selection of a colony site that became Saskatoon. The trail is said to have been established by Chief Whitecap and his band at Moose Woods (now the Whitecap Dakota First Nation) who were travelling to the settlements at Batoche and Duck Lake. John Lake, of the Temperance Colonization Society, appears to have used the trail in July and August, 1882 on his two trips south from Clark's Crossing to consult with Chief Whitecap about a suitable colony site. It was then that the Saskatoon site was decided upon.

According to the "NW 12-37-5-W3M Environmental Screening" study completed in 1999 (see Attachment 5), two intact portions of the Batoche Trail were recorded. The first portion of Batoche Trail was located in SE 4-38-4-W3M (located 2.5 miles northeast of Saskatoon along the edge of the River). The second portion of the Batoche Trail was located in NW 12-37-5-W3M, located directly north of the Silverspring neighbourhood. The "NW 12-37-5-W3M Environmental Screening" study provides a clear illustration of cart tracks within the westerly portion of the Northeast Swale.

Prior to any further development in this area, a qualified consultant should revisit the geographical coordinates of 52N-10'-8" latitude and -106W-35'32" longitude in NW 12-37-5-

W3M (within the Northeast Swale) to determine if the cart tracks found in 1999 are still intact. If so, the length of the tracks within NW 12-37-5-W3M should be temporarily fenced off from potential disturbance from roadway and residential construction until the Northeast Swale trail network is defined and this historical area can be incorporated into the design. This portion of the Northeast Swale should have interpretive signage similar to the historical Moose Jaw Trail in Mark Thompson Park in the Stonebridge neighbourhood.

Prior to development on W½ 13 and SE 24-37-5-W3M, a qualified consultant should visit the site to determine if there is any remaining evidence of the Batoche Trail. If so, these cart track markings should be protected and incorporated into the design of the surrounding development, providing an opportunity for future generations to walk along approximately the same route as John Lake and Chief Whitecap.

#### 5.4.2 Limestone Quarry Pits

According to the "NW 12-37-5-W3M Environmental Screening" study completed in 1999 (see Attachment 5), limestone quarrying activities where prevalent in the area and were essential to Saskatoon's early history in the late 1800s. In the North-east region of Saskatoon, limestone was being extracted and used for building materials, mortar, and fertilizer. Some of the stone material was used to build buildings on the University campus. Within the Northeast Swale are boulders with splitting pins still intact as well as boulders with drill holes, as evidence of failed limestone quarrying. In NW 12-37-5-W3M and in other parts of the Northeast Swale, there are numerous pits where boulders were successfully removed.

#### 5.4.3 Limestone Kilns

Located along the edge of the River, north of Peturrson's Ravine, two limestone kilns have been found, likely built in the late 1880s, and were used by early builders to produce lime for mortar. These sites should be protected or preserved and incorporated as part of the Riverbank Area.

#### 5.4.4 Homesteads

As shown on Figure 2, there are four areas that have the potential of having historical homestead remnants. These areas are explained in more detail below.

A review of historical aerial photographs revealed that there were buildings located near the north edge of NE 24-37-5-W3M and along the south edge of SE 25-37-5-W3M. There is a high probability that these buildings were an old homestead site.

As noted in Section 5.3.10 of this report, remnants of the Hutchins homestead are located on NE 14-37-5-W3M, within the Peggy McKercher Conservation Area.

According to the Saskatchewan Archives Board, in 1904 James D. Powe applied for a homestead at SW 12-37-5-W3M. It is assumed that Powe did not build a house on this parcel of land, but used the site to collect building materials. In 1910 to 1912, Powe constructed a large house on SE 2-37-5-W3M. Today the home is a heritage home located on the northwest corner of 115<sup>th</sup> Street and Central Avenue.

#### 5.4.5 Riddell Paleontological Site

An approximate 3 hectare (7 acre) site located north of the Northeast Swale was identified in 1980 by T. Skwara Woolf in the research paper titled "Biostratigraphy and Paleoecology of Pleistocene Deposits, Saskatoon, Canada" as an important paleontological site. The paleontological site was named after a former owner of the land. At this location, vertebrate fossils, ocherous wood, and shells were found. In addition, 19 taxa of large mammals, of late Rancholabrean time, were found.

Auger hole data from 1980 shows that the ground formation at this location is made up of 8 metres of Riddell Member. Riddell Member is stratified and cross-bedded sand, which is heavily stained with iron and manganese oxides. As mentioned above, the sand contains abundant fossilized bone, shells, and wood.

#### 5.4.6 Duh Paleontological Site

Shown on Figure 2, outside of the Sector boundary, a second significant paleontological site, formerly referred to as the Sutherland Pit, was identified by T. Skwara Woolf in the research paper noted above. In general, a number of vertebrate fossils have been reported on SE 25-37-5-W3M, but their exact stratigraphical position is uncertain.

# 5.5 University of Saskatchewan Lands

Under the terms of a long-standing agreement between the City and the University, the City will not pass bylaws that restrict the University's education, research, or related activities on its lands. Accordingly, careful planning is done with the University as part of the Sector Plan and NCP processes, and City Administration and University Administration have regular discussions about University activities, land holdings, and future plans.

#### 5.5.1 University of Saskatchewan Vision 2057

After the 2007 Sector Plan, the University produced its long-range plan titled "Vision 2057: University Land Use Planning" (see Attachment 2). Vision 2057 identifies the eventual role various University-owned lands will play in the future for the University and also for Saskatoon. Within City limits, the University has land holdings totalling 755 hectares (1,865 acres). Of that, the University has designated 401 hectares (991 acres) of land as "endowment lands" (see Figure 3). The endowment lands designation means the University will explore alternative uses of these lands within a formalized process. Many lands in the endowment category will likely continue to be used for their current purpose for many years, but would be available for consideration for other uses as opportunities arise and replacement lands are made available. Other potential future uses for endowment lands may include University-related uses (student residences, offices, continuing learning), mixed-use neighbourhoods, research park, business park, institutional uses, commercial uses, and community uses (recreation, open space).

#### 5.5.2 Kernen Crop Research Farm

The Kernen Crop Research Farm lies outside the Sector boundary; however, it shares a boundary edge.

The Kernen Crop Research Farm was acquired by the University's Plant Sciences Department in 1977 from former graduate Fred W. Kernen. The farm on Sections 5 and 8-37-4-W3M totals 518 hectares (1,280 acres), of which 130 hectares (320 acres) on the east half of Section 8 remains as uncultivated native prairie and is referred to as the "Kernen Prairie."

The Kernen Prairie is unique compared to other sections because it has not been cultivated or heavily grazed by domestic animals. According to the Saskatchewan CDC database, there is a number of rare plant species located on the Kernen Prairie parcel such as Smooth Wild Rose, Crowfoot and Blunt-leave Yellow-cress.

#### 5.5.3 Regional Psychiatric Centre

In 1978 the Federal Government of Canada – Correctional Service Canada obtained a long-term lease with the University to develop 26 hectares (65 acres) west of Central Avenue for a Prairie Region Psychiatric Penitentiary and Mental Health Facility. The Regional Psychiatric Centre (RPC), as it is now called, houses male and female inmates and employs more than 300 people. The Silverspring neighbourhood has been developed east of the RPC.

#### 5.5.4 University Containment Facility

The 10 hectare (24 acre) University Containment Facility is located east of Central Avenue and south of Fedoruk Drive. The site has been remediated, and the Saskatchewan Ministry of Environment has confirmed that no further work is required if the surrounding land is used for non-contact recreational use (meaning a natural area with trails). This parcel of land is part of the University's endowment lands and if conditions at the site change and the Containment Facility and buffering lands in this area can be permitted for development, this Sector Plan would be reviewed.

# 5.6 Site Contamination

As part of the NCP process, developers must engage a qualified consultant to complete an Environmental Site Assessment (Phase I and/or II). The Environmental Site Assessment should determine potential and existing environmental contamination liabilities in the NCP study area; more specifically, around existing farmsteads, former dumping sites, municipal facilities, shooting ranges, and industrial lands. If contamination is present, the landowner is responsible for remediating the site and preparing the land for its future use.

# 5.7 Development Buffers

The Sector is constrained by six buffers around existing land uses: Wanuskewin Heritage Park (WHP), the City's H.W. Weir Wastewater Treatment Plant (Wastewater Treatment Plant), the University's Containment Facility and Kernen Prairie, and two chemical plants west of the River. These buffers are illustrated on Figure 3 and are explained below.

a) The previous University Heights Sector Plan amendments, which were adopted in 2007 (2007 Sector Plan) (see Attachment 1) set a 1.8 kilometre radial buffer around WHP to create a visual separation between future urban development and the park. The buffer was intended to address concerns that further urban development would be inconsistent with the natural and historic qualities of the WHP. Further discussions will be held with WHP Administration to clarify the types of development that may be appropriate within the buffer, and any development standards, such as berms and landscaping, that might

enable development in the vicinity of WHP while conserving the unique character of the park.

- b) The 2007 Sector Plan set an 800 metre buffer around the Wastewater Treatment Plant based on an offset from the property lines. This buffer exceeded any Provincial guidelines, but was deemed prudent to prevent odour management issues in the Sector. The City recently completed a "Wastewater Treatment Plan Odour Source and Mitigation Study" and will be implementing its odour mitigation recommendations. As a result, the eastern buffer around the Wastewater Treatment Plant can be reduced to 300 metres to the east and 620 metres in the south east direction to accommodate odours being carried by prevailing winds.
- c) As noted in Section 5.5.4 University Containment Facility, a 300 metre radial buffer surrounds the buried containment facility on site. No lands within this 300 metre buffer should be used for residential development, but the Province cleared the buffer area for "non-contact recreational use," meaning a natural area with trails and walkways. If conditions around this area change, the buffer will be reviewed.
- d) Based on discussions in 2006 between City Administration and University Administration, a property line buffer of at least equivalent to the existing Highway 41 right-of-way (60 metres) should be maintained around the Kernen Crop Research Farm in sections 5 and 8-37-4W3M. This buffer is to minimize the urban impacts of growth on the Kernen Crop Research Farm and allow the University to continue their agricultural studies. As future residential development borders this site to the north and east, this buffer will be refined based on the land uses proposed in the NCP.
- e) A 1 kilometre radial buffer, measured from the centre point of the properties, surrounds the Akzo Nobel and Erco Worldwide chemical plants on the west side of the River. The buffer is consistent with the Provincial *Regulations Respecting Anhydrous Ammonia*, which regulates the location of anhydrous ammonia storage tanks relative to adjacent land uses.

#### 5.8 Ground Water

As part of the NCP process, the developer must engage a qualified consultant to complete a Hydro-geotechnical Analysis for the NCP study area. The Hydro-geotechnical Analysis should provide an analysis of soil and groundwater conditions and identify aquifers, high water tables, and site drainage issues.

# 5.9 Noise and Vibration

For any future residential neighbourhood abutting Circle Drive, the Canadian Pacific Railway (CPR) line, or Perimeter Highway, the developer must engage a qualified consultant to complete a Noise and Vibration report as part of the NCP process. This report will determine if an appropriate setback or berm could reduce impacts on adjacent land uses from these corridors. For residential developments adjacent to existing and proposed roadways, exterior noise levels should not normally exceed a decibel level of 65 dBA Ldn.

# 6 General Land Use and Population

# 6.1 Land Use Plan

The Land Use Plan for the Sector is shown in Figure 3. This Plan is the broad framework over which the vision will be achieved. It identifies:

- a) two future neighbourhoods (Aspen Ridge and Neighbourhood UH3);
- b) two District Village Commercial areas;
- c) a Mixed-use Core centered on a walkable "main street";
- d) a Business Park;
- e) a Light Industrial Park;
- f) "complete streets" that connect adjacent development areas and offer transportation options;
- g) a 150 metre Riverbank natural area with multi-use trails; and
- h) existing natural features (see Section 4.1 of this report).

It is important to note that the Land Use Plan is meant to be interpreted flexibly, rather than rigidly requiring the strict separation of uses. For example, it is the objective of this Sector Plan that arterial roadways serve as "complete streets" that knit bordering areas together rather than serving as a boundary between areas. Similarly, the perimeters of land use areas should allow for a gradual transition from one type of use to another.

# 6.2 Population Density, Dwelling Units and Employment

Table 1 below shows the projected population, density, and employment numbers for the Sector. The table is divided into existing development and proposed development.

At full build-out of the Sector, the total estimated number of additional dwelling units is 12,308, the estimated additional population is 28,131 people, and the total estimated employment is 8,256 jobs. At full build-out of the Sector, not including significant infill development that the University's Vision 2057 projects, the University Heights SDA will house 75,593 people.

Suburban neighbourhoods over the past number of years have had densities of 15 to 20 dwelling units per hectare (6 to 8 dwelling units per acre) for residential neighbourhoods, which equates to a population density of approximately 50 residents per hectare (20 residents per acre). Given the vision of developing neighbourhoods that include a mixture of uses, the density targets for the Sector were set using a combined measure of residents plus jobs per hectare. An estimate of 50 residents plus jobs per hectare was used for primarily residential neighbourhoods, and an estimate of 65 residents plus jobs per hectare was used for the Mixed-use Core will provide the population needed to support an efficient transit node. It was estimated that the Business Park and the Light Industrial Park would accommodate 25 jobs per hectare.

Dwelling unit densities are also of interest, and were calculated based on Saskatoon household size data for existing neighbourhoods. On this basis, the Sector is projected to have neighbourhoods with an average gross density of approximately 18.5 units per hectare (7.5 units per acre), while the Mixed-use Core is expected to have a net density of 30 units per hectare (12 units per acre).

#### Table 1. Area, Density, Population and Employment

			Residents/	Deeple		Unite nor he	Unite nor co	Deputation	Employment
	Acres	Hectares	jobs per	People	Units	(approx.)	Units per ac	Population	estimate)
Existing Development	Acres	neetures	iiu.	por unit	onna	(upprox.)	(upprox.)	(counter)	(connucc)
Sutherland	480	194			2544			5348	
Forest Grove	390	158			2181			5907	
Erindale	385	156			1413			4338	
Arbor Creek	350	142			1626			4635	
Silverspring	400	162			1614			5277	
Willowgrove	505	204			3410			7500	
Evergreen	655	265			5712			12622	
University Heights Suburban Centre	226	91			680			1835	
Sutherland Industrial	300	121							
University of Saskatchewan <sup>1</sup>	2130	862							
Agriculture and Agri-Food Canada Lands	458	185							
Muskeg Lake Cree Nation Urban Reserve	35	14							
Saskatoon Forestry Farm Park and Zoo	142	57							
Sutherland Beach Backshore Lands <sup>3</sup>	40	16							
Proposed Development									
Aspen Ridge	565	229	50	2.43	4238	18.5	7.5	10297	1143
Neighbourhood 3 (UH3)	780	316	50	2.43	5850	18.5	7.5	14216	1578
Mixed-use Core	85	34	65	1.63	1020	30.0	12.0	1663	559
District Millions, Occurrence is LANE, of Excernes on	25			4.02	505		45.0	0.5.0	000
District Village Commercial (NE of Evergreen)	35	14	65	1.63	525		15.0	856	230
District Village Commercial (next to Mixed-use Core)	45	18	65	1.63	6/5		15.0	1100	296
Employment Area									
Business Park	190	77	25						1922
Light Industrial Park	250	101	25						2529
Natural Areas									
Northeast Swale	718	290							
Peturrson's Ravine	42	17							
Small Swale <sup>4</sup>	150	61							
Remnant Parcel South of Peturrson's Ravine	6	2							
150m Riverbank Zone	343	139							
Wastewater Treatment Plant Buffer	30	12							
University Containment Facility Buffer	24	10							
Linhan Holding Lands north of Perimeter Highway	605	291							
Perimeter Highway and Interchanges	205	201							
Fermeter righway and interchanges	220	91	I	1	1				
University Heights Sector Plan Area	4011	1623			12308			28131	8256

Notes:

2 - Residents/jobs per hectare is a target value, tempered by actual data from similar neighbourhoods/suburban centres in Saskatoon.

4321

10679

3 - The Sutherland Beach area, is currently being used as an Off-Leash Recreation Area. If the University were to develop their lands east of this area, as part of their Vision 2057, this area should be reviewed to determine if any backshore areas are suitable for development.

4 - The Small Swale is "under review" and requires further Natural Area Screening

University Heights Suburban Development Area

31488

75593

<sup>1 -</sup> The University of Saskatchewan Lands for this report includes all the lands identified under their ownership in the Vision 2057: University Land Use Planning study and adjacent roadways.

# 7 Principles of the Integrated Growth Plan

Smart Growth is an approach to planning that advocates the concentration of growth in compact, walkable urban centres that have a mix of land uses and support a range of transportation modes including transit and cycling. Smart Growth development is intended to achieve economic, social, and environmental sustainability objectives over the long term, ensuring that development remains viable for the foreseeable future.

Developers in the Sector will be encouraged to incorporate Smart Growth principles as part of the NCP process. Smart growth principles are embedded in the Official Community Plan and the Integrated Growth Plan. The City's "Bridging Document to the Integrated Growth Plan," and its "Sustainable Development Workbook," provide references that can assist in incorporating sustainable design in new neighbourhoods including:

- a) Provide housing for a wide range of family types, income levels, individual values, and lifestyles;
- b) Support transportation options including walking, biking, and transit;
- c) Ensure easy access to schools, recreation, shopping, and adjacent neighbourhoods;
- Provide transit-ready development (for example, design higher density developments along major roadways and at major nodes, which allows an efficient transit system and increases transit riders);
- e) Promote green energy and energy conservation options (for example, building orientation, photovoltaic [solar] panels, and passive solar heating);
- Reduce commuter trips by providing employment areas within easy access of residential areas;
- g) Help educate home builders on the importance of reducing greenhouse gases;
- h) Help educate home builders and home owners on native prairie ecosystems, water conservation, xeriscaping, urban agriculture, and the reduction of sod; and
- i) Promote certified sustainable building structures.

# 7.1 Safe Growth

Section 3.1 of the Official Community Plan requires NCP to comply with the principles of Crime Prevention Through Environmental Design (CPTED), to ensure a safe environment and high quality of life. When NCP are prepared for development areas in the Sector, care must be taken to ensure natural surveillance and the appropriate use of buffer strips, connectivity between neighbourhoods and with the rest of the city, and clear way-finding within the area.

# 7.2 Neighbourhood Development

As shown on Figure 3, the Sector accommodates two future residential neighbourhoods, compared to the three future residential neighbourhoods shown in the 2007 Sector Plan. Neighbourhoods should be developed to feature numerous, significant focal points, such as commercial/mixed-use nodes or corridors, neighbourhood parks, and community centres and/or

school sites, further enhancing walkability and the distribution of amenities. This is particularly important if a proposed neighbourhood area exceeds 160 hectares (400 acres), which may be necessary to secure a large enough population to support two elementary schools.

#### 7.2.1 Residential

A broad range of housing choices is required throughout the Sector. This range of housing will encourage a mix of densities, income levels, and forms providing a "lifelong" sector where residents can age in place within each neighbourhood.

The two future residential neighbourhoods that make up the Sector will accommodate housing forms of predominantly low- to medium-density. Housing types could include single-unit detached, duplex, semi-detached, street and group townhousing, and apartments. Multi-unit residential developments, places of worship, and residential care homes in the residential neighbourhoods should be situated next to arterial roads, along neighbourhood collector roads, around neighbourhood centres, or near the neighbourhood core park.

#### 7.2.2 Affordable Housing

Developers in the Sector will be asked to provide a range of housing choices including affordable housing within each neighbourhood. As identified in the Housing Business Plan, the City's current target is 500 affordable housing units per year, distributed throughout the city.

#### 7.2.3 Residential Care Homes

As set out in Section 5.3 of the Official Community Plan, supportive housing forms, including residential care homes, are to be facilitated in all areas of the city; therefore, developers in the Sector will be asked during the NCP process to identify care home sites within each neighbourhood. These sites should be distributed geographically throughout a development area and provision should be made for such uses within each phase of a developing neighbourhood.

#### 7.2.4 Mixed-Use and Institutional

Mixed-use development will be located along all arterial roadways where feasible. Mixed-use development will also occur at nodes within neighbourhoods to provide amenities within walking distance of a large proportion of neighbourhood residences. A Mixed-use Core area node has been provided at the intersection of Central Avenue and the North Commuter Parkway. Mixed-use development is intended to accommodate a mix of residential and non-residential land uses to serve the personal and commercial needs of those living and visiting the area. It provides variety, vitality and character to the street edge and entry points into the neighbourhoods. It also promotes unique "main street" spaces, supports transit, and animates sidewalks with a variety of uses, making streets active for more seasons and hours of the day. Mixed-use, street-oriented development provides a streetscape that is human-scale and pedestrian friendly.

The Mixed-use Core area could include a combination of banks, multi-unit residential developments, medical clinics, offices, convenience stores, restaurants, retail shops, studios, pubs and institutional uses.

#### 7.2.5 Intermediate and Strategic Infill Areas

City Council endorsed the Integrated Growth Plan (IGP) in 2012. The IGP elaborates on how the City will achieve the goals of 'Sustainable Growth' and 'Moving Around' cited in the Strategic Plan. The IGP is a new way of growing the city and it involves a re-orientation of community planning and building processes. The IGP supports balancing outward growth with strong infill development in locations that support higher densities and access to transit. City Administration is currently exploring a number of intermediate infill options along arterial roadways and also strategic infill opportunities, such as the University's endowment lands.

The University's endowment lands present a significant new infill opportunity; the first of these lands to be developed is the College Quarter property. The College Quarter is a 59 hectare (146 acre) parcel of land located south of the main campus area. It is bounded on the north by College Drive, the west by Cumberland Avenue, the south by 14<sup>th</sup> Street East, and the east by Preston Avenue. On its west and south sides, it is framed by the established residential neighbourhoods of Varsity View and Grosvenor Park. The vision for the College Quarter is to create an academic and mixed-use village that will share many characteristics of the main campus, such as its design prioritizes pedestrian use and comfort, ensure human-scaled buildings that use high-quality materials, and demonstrate architectural excellence and environmental sustainability.

According to Vision 2057, if all of the University's endowment lands were built out, these lands could accommodate between 40,000 and 60,000 units of low-, medium- ,and high-density housing, as well as significant commercial, recreational and institutional uses.

# 8 District Village Commercial

The vision for the District Village Commercial areas is for vibrant street-oriented retail shopping destinations at grade level that feature appropriate services and amenities to support the needs of the developing Sector. Medium- to high-density residential development could be built above the grade-level retail. District Village Commercial areas are intended to provide a level of service and a range of commercial uses above that found at the neighbourhood level, but less than that found in the Suburban Centre Commercial area. Possible uses include retail stores, restaurants, service stations, small shopping centres, medical clinics, and related health services.

The two District Village Commercial areas shown on Figure 3 are sized based on the 2007 Sector Plan. The District Village Commercial area northeast of Evergreen is 14 hectares (35 acres) and the District Village Commercial area next to the Mixed-use Core is 18 hectares (45 acres). A commercial market review should be completed as part of the NCP for each development area, to ensure an appropriate amount of commercial development is based on market demand.

The District Village Commercial areas are encouraged to have architectural controls to ensure it is compatible with the character and theme of the surrounding neighbourhoods.

Single-use commercial development is appropriate in the District Village Commercial areas and would be discretionary in mixed-use locations, such as along the "main street". It is important that the District Village Commercial transitions seamlessly into the surrounding residential neighbourhood and mixed-use core areas in terms of scale, form, and character. When designing the District Village Commercial areas, best practices outlined in Section 15 of the "Commercial and Industrial Development Study – Development Trends and Best Practices" should be pursued.

#### 8.1 Main Street

The "main street" concept is shown on Figure 5 along the northern part of Central Avenue through the Mixed-use Core area but could also be designed into the District Commercial along McOrmond Drive. The "main street" design should have collector roads that parallel the arterial roadway. For an approximately four block length, the grid roadway design will allow for adequate access to street-oriented commercial and mixed-use developments. This will support a modern interpretation of the "main street" design found in core neighbourhoods, like Nutana and Riversdale. This area will offer the opportunity for residents to satisfy their daily needs within walking distance of their home.

# 9 Employment Area

To assist in achieving the objectives of the Strategic Plan and the IGP, one of the objectives of the Sector is to provide more opportunities for those that live east of the River to work closer to home. In Saskatoon, the majority of the employment areas are located west of the River. This has created a significant demand on local infrastructure, such as arterial roads and bridges, moving people to and from work each day. To alleviate some of this pressure and to reduce commute times for those living east of the River, the Employment Area made up of a Business Park and Light Industrial Park has been relocated north of the Small Swale. The 2007 Sector Plan proposed a 67 hectare (165 acres) Employment Area west of the Northeast Swale and adjacent to Perimeter Highway. The Employment Area shown on Figure 3 has a combined Business Park and Light Industrial Park area of 178 hectares (440 acres). At an employment intensity of 25 jobs per hectare, the projected employment for this area is approximately 4,451.

The repositioning of the Employment Area is a more suitable option for the lands in the northwest corner of the Sector, rather than the "experimental" residential neighbourhood that was proposed for this area in the 2007 Sector Plan. The potential of higher traffic volumes in this area, along with the wider road right-of-way west of the Central Avenue and North Commuter Parkway intersection, would not make this area ideal for a residential neighbourhood. In addition, the area has other challenging development constraints such as: sloping topography of the land, the stony character, the high water table, the former rubble dump, and the proximity to the buffers around the Wastewater Treatment Plant and the chemical plants.

# 9.1 Employment Area Vision

The vision for the Employment Area consists of:

- a) a Business Park comprising offices for business services, medical facilities, and research and development offset from the River with downstream views;
- b) a Light Industrial Park buffered between the Business Park and the Small Swale, away from the River;
- c) a Civic Services Facility within the Light Industrial Park; and
- d) District Park Space.

The preference should be toward retaining the entire Employment Area as non-residential in order to ensure the success of the area as a significant employment generator, unless it can be clearly demonstrated that the market for it is insufficient.

To build on this vision, a separate Concept Plan will be required prior to development of the Employment Area. Similar to the District Village Commercial, architectural controls are encouraged especially for areas along the periphery of the Employment Area and along the North Commuter Parkway.

# 9.2 Employment Area Development Standards

Architectural Controls, Building Restriction Caveats, or similar measures should be used in the Employment Area to ensure a high-quality urban environment, and to ensure that the area integrates well with the adjacent River and residential neighbourhoods. These measures should be determined by the City and the developer at the Concept Plan stage. Examples of development standards could include:

- a) Pedestrian walkability and streetscape landscaping should be a priority.
- b) In areas where blank walls along streets cannot be avoided, the developer should provide facade design or vegetation options, such as "green walls" or vines, to make the wall more aesthetically pleasing at ground level.
- c) Buildings should be street-oriented along the North Commuter Parkway. The surface parking should be located to the rear of the buildings or internal to the site due to controlled access along the North Commuter Parkway.
- d) If fencing is required to flank the North Commuter Parkway, all fencing should be opaque.
- e) Lighting from buildings and signage should be restricted during late evening hours and should not project onto the River, nor into adjacent residential neighbourhoods.

In the transition areas between the Employment Area and Neighbourhood UH3, areas of mixed use, including high- to medium-density housing, should provide the step-down transition into low-intensity uses, such as single-unit housing.

# 9.3 Business Park

The Business Park is intended to provide a space for small-scale businesses that are, or would be, located in suburban employment areas and that would not diminish the viewshed along the River. The location of the Business Park on the east side of the River supports easy commutes

for residents, while maintaining easy access via the North Commuter Parkway to the business and industrial areas on the west side of the River. It is not intended to compete with the highintensity office employment in the Downtown. The Business Park is envisioned to have similar characteristics to Innovation Place, which is located next to the River.

Approximately 27.5 hectares (68 acres) of the Business Park is within the buffer zone around the chemical plants. The City's Fire and Protective Services Department currently has an emergency evacuation notification plan for those businesses located west of the River; this plan will have to be expanded to address the relevant portion of the Business Park on the east side of the River. The Fire and Protective Services Department must be involved in the design stage of the Concept Plan for the Business Park.

# 9.4 Light Industrial Park

As development builds out northwest of the Small Swale, light industrial uses and a Civic Services Facility should be integrated into the design of the Light Industrial Park. Light industrial uses include clean industrial facilities, such as warehouses, manufacturing, garages and workshops, and industrial sales. Section 15.5 of this report describes the proposed Civic Services Facility component of the Light Industrial Park in more detail; however, this would include a City-operated snow handling facility, material handling, and storage yards.

# **10 Natural Area Interface**

Protection of Riverbank lands and other significant natural areas (such as the Northeast Swale) is important to ensure that current residents and future generations can benefit from the presence of these significant natural features within the city. Where development is proposed adjacent to significant natural areas in the Sector, an appropriate interface between them is critical. Development adjacent to and within natural features should, where possible:

- a) provide an aesthetically pleasing user experience;
- b) permit appropriate public access;
- c) facilitate user accessibility and circulation;
- d) ensure compatible land use, building scale and design;
- e) respect the ecological value and integrity of the resource; and
- f) feature ecological protection that in some cases may include the use of a buffer area that provides a transition between the natural area and the built environment.

An example of interface management is the Northeast Swale Greenway (Greenway) explained below.

# **10.1 Northeast Swale**

In 2002 the Northeast Swale was studied and development guidelines were prepared that identified the Northeast Swale boundary and roadway crossing locations. The City and Meewasin determined a need to update the 2002 Northeast Swale Development Guidelines for the Northeast Swale area to better prepare the City for adjacent neighbourhood developments and roadway design in and around this unique landscape. The Northeast Swale Development

Guidelines, 2012 report reviewed the 2002 boundary of the Northeast Swale and based on field studies in the area, proposed revisions to the boundary and crossing locations, along with revised guidelines related to buffering the transition area between urban development and the natural area. This review factored in recent information that had been obtained about the wetlands within the Northeast Swale and a better understanding of the importance of the associated upland ecosystems that make-up the Northeast Swale area. As shown on Figure 3, the Northeast Swale consists of 290 hectares (718 acres). The results of the "Northeast Swale Development Guidelines, 2012" report confirmed that this natural area should remain connected to the River and be left as a native prairie with wetlands, for the enjoyment of present and future generations.

The majority of the Northeast Swale lands within City limits are within Meewasin's Conservation Zone. The proposed changes to the Conservation Zone will include the remaining Northeast Swale lands within City limits (see Section 4.5).

Meewasin has prepared a Resource Management Plan for the Northeast Swale and is interested in managing the Northeast Swale within the framework of an updated Northeast Policy. The Resource Management Plan identifies a vision for the Northeast Swale that determines areas for preservation, areas for education and research, interpretation signage, and passive recreation.

To protect the landscape within the Northeast Swale from urban development and encroachment of exotic plant species, the "Northeast Swale Development Guidelines, 2012" report recommends a riparian area buffer between the Northeast Swale boundary and adjacent developments. The riparian area buffer for the Northeast Swale is referred to as the Greenway. The Greenway is recommended to be made up of three zones: Ecological Buffer Zone, Trail Zone, and Transition Zone; these are described in more detail below, and are illustrated in Image 1.

- a) An Ecological Buffer Zone having a 15 metre width outward from the Northeast Swale should be developed to act as a filter to minimize impacts from adjacent land use and to protect the ecological functions within the Northeast Swale. The Ecological Buffer should be widened to 20 metres where slopes are at or greater than 5 percent towards the Northeast Swale. All vegetation within this buffer should be species native to the Northeast Swale. Efforts will be required to control exotic species and reintroduce native species. These efforts can include weed management, burning, seeding, and/or allowing natural regeneration to proceed.
- b) A Trail Zone located adjacent to the Ecological Buffer. This zone would contain a multi-use trail, which should be 3 metres wide (approximate) and developed as a pedestrian/cycling pathway suitable for commuting use. A trail meandering from the Trail Zone into the Ecological Buffer is acceptable on flat slopes (less than 5 percent) and where natural vegetation is well established.
- c) A Transition Zone located adjacent to the Trail Zone. This zone, which would be at least 3 metres wide, should be seeded to low growing native species and will act as the outer edge of the Greenway, adjacent to other land uses (residential, roads, commercial, etc.)

Acceptable uses within the Transition Zone could be a meandering trail that crosses over from the Trail Zone and/or low impact stormwater management tools, such as a grassy swale, rain gardens and bioswales.

#### Image 1: Northeast Swale Greenway

The Swale	Ecological Buffer	Trail Zone	Transition Zone	<b>Adjacent Land Use</b> (residential, roadway, commercial, etc.)
The Swale should be seperated from the Greenway by a page wire fence and/or delineated using signage. The Swale will be managed in accordance with the NE Swale Resource Management Plan. It is important that the Swale boundary be recognized by the public.	<ul> <li>The Ecological Buffer Zone:</li> <li>Use species native to the Swale</li> <li>Some native areas currently exist, while others may need seeding with native species and/or allowing natural regeneration to accomplish the task. The long-term goal is to have this zone as native as possible.</li> <li>Vegetation management should be complementary with the Swale management.</li> <li>A 15 m minimum width is recommended, although this should be widened to 20 m if the slope toward the Swale is 5% or greater.</li> <li>Meandering from the Trail Zone into the Buffer is acceptable on flat slopes (&lt;5%) and where natural vegetation is well established.</li> </ul>	3 - 4 m wide, pedestrian and cycling pathway. Asphalt or crusher dust. Meandering into adjacent zones is acceptable (see comment in Ecological Buffer).	<ul> <li>The Transition Zone:</li> <li>5 m minimum width adjacent to residential lots or if used for stormwater management: the width can be greater.</li> <li>3 m minimum width adjacent to roads and other land uses.</li> <li>Fencing should be installed along residential back lot lines.</li> <li>Seed with native species that can be moved.</li> <li>Use for stormwater management, grassy swale, bioswales, rain gardens, linear retention ponds.</li> </ul>	The City should consider developing an information package for neighbourhood residents outlining the importance of the Swale. Suggestions for stormwater management (e.g. rain barrels) and the need for back yard fencing and weed management could be addressed.

The Greenway locations are shown on Figure 4. Due to the width of the Transition Zone fluctuating based on design and adjacent land uses, the final width of the Northeast Swale Greenway will be determined at the NCP stage.

The Greenway between the Northeast Swale boundary and future residential development should be dedicated as Municipal Buffer, Municipal Utility Parcel and/or Environmental Reserve, depending on its characteristics and not Municipal Reserve. These dedicated lands will become the responsibility of the City after the developer completes the development. As per the "Northeast Swale Development Guidelines, 2012" report, portions of these lands should be planted as a naturalized landscape and should allow for multi-use trail networks and resting points along the length of the Greenway.

The Ecological Buffer Zone and Trail Zone of the Greenway should be re-established into a naturalized ecosystem as described in the "Northeast Swale Development Guidelines, 2012" report. The Transition Zone should act as the transition area from exotic to native plant species.

If it is part of the adjacent neighbourhood stormwater management system, it should be designed and landscaped accordingly.

For simplicity of Table 2 on page 38, it has been assumed that the Greenway would be dedicated as Municipal Buffer and is incorporated in the total area of the adjacent neighbourhoods.

The proposed revisions to the Northeast Swale roadway crossings shown in the "Northeast Swale Development Guidelines, 2012" report are explained in Section 13.7 of this report.

# **11 Schools and Community Services**

As part of the NCP process, the developer must meet with Saskatoon Public Schools and Greater Saskatoon Catholic Schools to determine the need for elementary schools. The size and configuration of the school parcel(s) and the appropriate location(s) based on the size and layout of the neighbourhood are determined at the NCP stage. Saskatoon Public Schools and the City are committed to joint-use elementary schools and community centres that can benefit the educational and community needs of the residents.

Current population projections suggest that the two existing high schools within the University Heights SDA (that is, Centennial Collegiate and St. Joseph High School) may be able to accommodate the additional high school students from the remaining two future neighbourhoods. However, these projections must be reviewed again at the time the NCP for the Mixed-use Core is being prepared. If analysis shows that new high schools are warranted, these facilities should be located within or adjacent to the Mixed-use Core shown on Figure 3.

Currently, the Forest Park Integrated Facility and the Alice Turner Library, located in the University Heights Suburban Centre, service the University Heights SDA. It is anticipated that they would continue to serve the residents of the remainder of the Sector.

Other additional community services and facilities such as fire halls, recycle depots, and transit terminals, must be located next to arterial roads and the mixed-use residential and commercial areas, where possible. The locations of these services and facilities will be finalized during the process of preparing the NCP.

# **12 Urban Holding**

The Official Community Plan allows lands to be classified as Urban Holding where the future land use or the timing of development is uncertain due to servicing issues, or a NCP has not been completed.

As shown on Figure 3, four areas have been identified as Urban Holding areas:

1) The lands north of the Perimeter Highway, which will be addressed as part of the plans for a future North East SDA. At that time, land use, servicing and transportation access will be determined so that development of these lands can occur.

- 2) The Agriculture and Agri-Food Canada research lands, which could be considered for infill growth if research activities cease and a servicing strategy is designed.
- 3) A 12 hectare (29 acre) parcel of land north of Peturrson's Ravine and along the River has the potential for development, but is segregated from Neighbourhood UH3 by Central Avenue. When a NCP is being prepared for Neighbourhood UH3, this parcel of land should be studied to determine servicing and transportation options.
- 4) The Sutherland Beach area, which as noted is being used currently as an Off-Leash Recreation Area. If the University were to develop the lands east of this area, as part of their Vision 2057 plan, this area should be reviewed to determine if any backshore areas are suitable for development.

# **13 Transportation**

# **13.1 Complete Streets**

"Complete streets" refers to streets that cater to the needs of all users, including pedestrians, bicyclists, transit riders and motorists, regardless of age or ability. These are streets that are safe, comfortable and convenient. Complete streets should be viewed as an outcome, not a standard or set of standards. Implementing a complete streets approach in the Sector means that streets within the Sector will be focused on making it safe, practical, and appealing for everyone regardless of the mode of transportation, to travel along and across all types of roadways.

There is no single solution to create complete streets; however, there are a number of considerations that are relevant to the creation of complete streets in the Sector. It is important that land uses adjacent to arterial and collector roadways are street-oriented, creating an inviting environment for pedestrians and other users. The land uses should be of sufficient variety and density to help ensure the viability of transit service along these roadways, and to provide interest and variety for all users. Sidewalks should have accessibility ramps and clearly marked crosswalks. Where appropriate, dedicated cycling facilities should be provided to facilitate safe cycling and to improve the relationship between cyclists and motorists.

Image 2 provides examples of possible suitable arterial road cross sections (illustrative only) that achieve complete streets objectives. The final arterial road cross section(s) will be determined at the NCP stage.





# **13.2 Pedestrian Walkability**

How people move around by foot will be a high priority in the design of all developments in the Sector.

As part of each NCP, a Pedestrian Plan should be provided with the required Traffic Impact Study (TIS) to illustrate where sidewalks will be located and proposed movements of people within and between development areas. The Pedestrian Plan must identify direct routes people will use to move around the Sector, getting to and from work, retail locations, recreation areas, and schools by foot. The goal of the design should be a walking timeframe of five to ten minutes (or 450 metres to 900 metres) to significant neighbourhood amenities.

Sidewalks along Mixed-use Core areas should replicate the Downtown or Broadway Avenue sidewalk widths to provide a pleasant walking experience, while still allowing for street amenities such as transit stops, benches, bike racks, and patios.

#### 13.2.1 Barrier-free

The Sector is intended to be barrier-free, and the neighbourhood designs and infrastructure will provide accessibility to all persons of all physical abilities. Examples of barrier-free infrastructure and amenities include asphalt trails, sidewalk ramps, and accessible playgrounds.

#### **13.3 Bicycling**

All roadways in the Sector will be useable by bicycle. A bikeway will be provided off-street on all arterial streets in the Sector.

As shown on Figure 4, the Meewasin multi-use trail network and the arterial multi-use trail/bikeway network will be extended into the Sector to provide an alternative mode of travel to River destinations or the employment area west of the River. These trail extensions will extend the east trail network and cross the River at the North Commuter Parkway bridge. The trail crossing at the North Commuter Parkway bridge will connect the east and west Meewasin trails, and connect the Marquis Drive and North Commuter Parkway arterial multi-use trail/bikeway. It will also connect to the Meewasin/Trans Canada Trail along Wanuskewin Road, and provide an opportunity to connect the WHP into the trail network in the future.

#### 13.4 Transit

The design of the Sector, including the location and design of arterial roadways and the location, type and density of development, is intended to support frequent, high-quality transit service, which in turn encourages the use of transit ridership and supports the development of a new Rapid Transit (RT) system.

As part of the NCP process, existing transit services and routes may need to be re-routed or new routes may need to be created to service the Sector. As shown on Figure 4, these routes should use the arterial and collector road networks to access transit stop locations in neighbourhoods. Transit stops should meet the walking distances set out in the Official Community Plan. As the Sector develops, provision must be made in neighbourhood design and infrastructure design to allow for "transit-ready development." Transit-ready development is compact development that is street-oriented and provides transit opportunities that could later be developed as rapid transit corridors.

Currently, RT is being investigated in detail as part of the IGP. RT will focus on the ability to move more people rather than move more cars. The City is committed to planning and developing fixed rapid transit routes across the city, connecting neighbourhoods and intensified corridors to employment and education destinations in the Downtown, University campus, and other main destinations. While these routes have not yet been defined and are currently being studied, desirable RT corridors within the University Heights SDA would be along the arterial roadways that go though the neighbourhoods, allowing street-oriented development.

# **13.5 Automobile Transportation**

The primary access points to the Sector are provided by Attridge Drive, Central Avenue and McOrmond Drive.

Further detailed traffic analysis will be required to identify and address all city-wide traffic impacts generated by the remaining growth of the Sector. Concurrently to this study, transportation projects at McOrmond Drive and College Drive, and Central Avenue and Attridge Drive are being studied based on increased growth in the area.

When a NCP is being prepared, a TIS is also required. TIS's address traffic at a neighbourhood level or development level of detail, including the multi-modal (that is, pedestrian, bicycle, and vehicular) impacts new development will have on the existing infrastructure. This improves safety within neighbourhoods.

# 13.6 Roads

As shown on Figure 5, five main roads lead into, or will lead into, the Sector: McOrmond Drive, Central Avenue, Fedoruk Drive, Marquis Drive, and Blackley Road (Range Road 3044). These roads will be classified as arterial roadways. The Sector Plan calls for:

- a) extending McOrmond Drive north to connect with Marquis Drive via the North Commuter Parkway;
- b) extending Central Avenue north to Perimeter Highway;
- c) constructing Blackley Road (Range Road 3044) from College Drive to Perimeter Highway, if warranted; and
- d) constructing Fedoruk Drive from Central Avenue to McOrmond Drive.

# **13.7 Northeast Swale Road Crossings**

Prior to design and construction tendering of roadway work within the Northeast Swale, a detailed review of the "Northeast Swale Development Guidelines, 2012" report and the Meewasin Resource Management Plans for the Northeast Swale and Peturrson's Ravine is required.

Three roadway crossings were identified in the 2002 Northeast Swale Development Guidelines; however, in light of the recent information that was obtained about the wetlands within the Northeast Swale and a better understanding of the importance of the associated upland ecosystems, the 2002 roadway crossing corridors were narrowed and repositioned to minimize adverse environmental effects in the area. As per the "Northeast Swale Development Guidelines, 2012" report, the three revised crossing locations are explained below and illustrated on Figure 5.

- a) Crossing No. 1 North Commuter Parkway to Marquis Drive should be constructed as a Class C, four-lane, undivided arterial road with a maximum right-of-way width of 32 metres. Posted maximum speed should be 50 kilometres per hour (kph) to reduce wildlife interactions.
- b) Crossing No. 2 Central Avenue extension should be constructed as a Class B arterial road with a maximum right-of-way width of 32 metres. The design of this roadway will have to take into consideration the slope stability next to Peturrson's Ravine and ongoing environmental monitoring occurring around the University Containment Facility. Posted maximum speed should be 50 kph to reduce wildlife interactions. Interpretive signage recognizing the Batoche Trail should be provided symbolizing that the Crossing No. 2 and the Central Avenue extension roadway alignment replicates the general location of the historical path Chief Whitecap took en route to the settlements at Batoche and Duck Lake.
- c) Crossing No. 3 The former Lowe Road (Range Road 3050) road allowance should be re-constructed to either a Class A, two-lane, undivided collector road with parking on both sides, or a Class B, two-lane, undivided collector road having parking on one side and a maximum right-of-way of 27 metres. Posted maximum speed should be 50 kph to reduce wildlife interactions.

The above roadway crossing corridors of the Northeast Swale must also be shared with utilities to reduce the duration of construction disturbance. No construction clearing activities should be scheduled between May 1 and July 31 to avoid disturbance of nesting birds.

#### 13.7.1 Range Road 3045 Decommissioning

Upon the construction of Aspen Ridge, Range Road 3045 will be closed to through traffic, and the City and Meewasin will need to determine the timing for removing the portion of this road allowance that crosses the Northeast Swale. Detailed decommissioning guidelines are addressed in the "Northeast Swale Development Guidelines, 2012" report. Removal of the entirety of the road allowance may not be required as a portion could provide access to interpretive sites into the adjacent wetland. City Administration will consult with Meewasin prior to removing Range Road 3045 through the Northeast Swale.

#### **13.8 Transportation Improvement Recommendations**

In order to achieve the recommended transportation network shown on Figure 5, and to address cumulative traffic impacts, a number of road improvements will require further analysis as the Sector develops. These road improvements are described below, and are grouped according to short-, medium- and long-term recommendations. These recommendations will be re-evaluated

regularly (for example, during the NCP process when TIS's are reviewed); additional recommendations may be determined upon further study and growth of the Sector.

#### 13.8.1 Short-Term Recommendations

Short-term recommendations include changes to the existing transportation network and construction of new infrastructure to better accommodate traffic of all modes in the Sector.

The following are necessary improvements needed as growth occurs in Phase 1:

- a) construct Fedoruk Drive from Central Avenue to McOrmond Drive;
- b) construct the North Commuter Parkway bridge;
- c) construct the North Commuter Parkway (McOrmond Drive extension);
- d) construct the Central Avenue extension;
- e) upgrade the intersection at Central Avenue and Attridge Drive; and
- f) construct a multi-use trail along the south side of the Northeast Swale.

#### 13.8.2 Medium-Term Recommendations

Medium-term recommendations include changes to the transportation network that will be needed in order to develop Phase 2 of the Sector. The timing for the construction of these improvements is tied to the growth of the Sector.

- a) remove Range Road 3045 within the Northeast Swale, if warranted;
- b) re-construct the former Lowe Road (Range Road 3050) road allowance to an urban collector road standard;
- c) construct a multi-use trail along the north side of the Northeast Swale; and
- d) construct a multi-use trail along the east side of the River.

#### 13.8.3 Long-Term Recommendations

The following will require monitoring and evaluation for possible improvements during the growth of the Sector:

- a) the need for a McKercher Drive to Berini Drive grade-separated overpass;
- b) the need for a Central Avenue and CPR crossing and a Preston Avenue and CPR crossing (overpass or underpass) to allow for future RT on Central Avenue and Preston Avenue, outcome will be further reviewed as part of the IGP;
- c) review the performance of the intersection at College Drive and Central Avenue;
- d) the need for a grade-separated overpass at Preston Avenue and Circle Drive, depending on the development proposal of the University endowment lands; and
- e) review the performance of the intersection at Preston Avenue and College Drive.

#### **13.9 Interchanges and Intersections**

There are two interchanges proposed in the University Heights SDA; one is needed to connect the University Heights SDA with the Holmwood SDA at the crossing of McOrmond Drive and College Drive, and the other would only be required if the University were to further develop the endowment lands at Preston Avenue and Circle Drive.

As shown on Figure 5, there are six major intersections that should be reviewed for upgrades or construction. Depending on the outcome of the IGP regarding the RT system, three possible grade separations should be reviewed to allow for unrestricted transit movements. The timing for construction of the interchange, major intersections, and possible grade separations will be determined based on the new transit strategy, Sector growth and demand.

In addition to the interchange within the University Heights SDA, two interchanges will be required as part of the development of Perimeter Highway. Interchanges will be required where Perimeter Highway intersects the Central Avenue extension and also Blackley Road (Range Road 3044). The need and timing for these interchanges is not connected to the development of the Sector; rather, it is dependent on the timeline for the development of Perimeter Highway.

# **13.10 North Commuter Parkway**

As development proceeds in the University Heights SDA, automobile traffic crossing the Circle Drive Bridge during morning and evening commute times will continue to increase. As a result, an additional river crossing is warranted connecting the employment area west of the River with the University Heights SDA. As shown on Figure 5, the location for the North Commuter Parkway bridge is illustrated directly east of Marquis Drive. This linkage will provide a secondary river crossing further connecting the employment area west of the River with residential growth east of the River. It is anticipated that a North Commuter Parkway could alleviate 14,600 to 21,700 ADT (average daily traffic volumes) on the Circle Drive Bridge.

As mentioned above in Section 13.3 of this report, multi-use trails/bikeways will be provided along both sides of the arterial roads (Central Avenue extension and North Commuter Parkway) providing alternative transportation modes to travel from the north east to the north west.

# 13.11 Highways

Highway 5 provides the south boundary for the University Heights SDA. The portion of Highway 5 west of Perimeter Highway was brought into City limits in 2010. This will become College Drive, and Highway 5 will continue east of Perimeter Highway.

# **13.12 Provincial Perimeter Highway**

Perimeter Highway, which is provincial infrastructure, will be a high-speed corridor to move provincial highway traffic around Saskatoon. The current Perimeter Highway alignment, including a river crossing north of the North Commuter Parkway bridge is shown on Figure 5.

# 13.13 Truck Route

Currently, there are two primary truck routes that are located in the University Heights SDA: Circle Drive and College Drive East. Upon completion of the North Commuter Parkway, the arterial roadway should be designed to accommodate infrequent large trucks for delivery services, but will not be a designated truck route to enter the employment area west of the River because it bisects residential neighbourhoods. On the other hand, the portion of Central Avenue from the Light Industrial Park to Attridge Drive should be designed to accommodate infrequent large trucks and studied to determine if this roadway would be suitable as a Secondary Truck Route. Secondary Truck Routes only allow trucks that are less than 46,500 kilograms to use this route and would allow for the City's Civic Service Facility to remain near Central Avenue.

#### 13.14 Rail Line

The CPR line travels through the University Heights SDA as shown on Figure 5. This rail line is a part of the CPR main line that runs from Winnipeg to Edmonton. CPR has advised that there are approximately eight trains per day using this line to access the CPR Sutherland rail yard and switching station. In the future, capacity on this line could increase to 12 trains per day. At this time, CPR has made no indication that it intends to relocate its Sutherland rail yard operation. As the University Heights SDA builds out and if CPR were to relocate its operations, a study should be conducted to determine the potential future use of the rail line and rail yards.

#### 13.14.1 Rail Line Setbacks

For all new residential developments abutting the CPR right-of-way, the RAC/FCM Proximity Guidelines and Best Practices and CPR Proximity Guidelines (see Attachment 6) should be complied with unless a Noise and Vibration report determines a greater setback distance. The Proximity Guidelines and Best Practices report recommends a 2.5 metre berm with a 3 metre sound attenuation fence along the top of the berm. The City may also allow an engineered earth berm at a predetermined height.

#### 13.15 Multi-use Trails

The existing multi-use trail network should be extended though the Sector as each development builds out, linking neighbourhood amenities, schools, parks, employment areas, and natural areas to the River, creating a non-motorized network for residents to use for recreation or travel. The locations and design of the multi-use trail network within the Sector will be determined during the NCP process. For multi-use trails along natural areas, Meewasin must be consulted as part of the trail design process so that interpretation and educational elements are incorporated.

Currently, there are no multi-use trail network connections beyond the existing neighbourhoods in the University Heights SDA; however, as shown on Figure 4, there are opportunities to connect the multi-use trail network to future neighbourhoods, areas of native prairie, and the Trans Canada Trail. The proposed multi-use trails shown on Figure 4 that cross the University's lands will require approval from the University.

The proposed multi-use trail along McOrmond Drive would require a shared-use pathway when constructing the interchange at McOrmond Drive and College Drive. This shared-use pathway would provide non-motorized travel from the University Heights SDA to the amenities in the Holmwood SDA.

To connect the University Heights SDA with adjacent neighbourhoods, such as College Park East and the Holmwood SDA, a multi-use trail under the College Drive overpass at the CPR tracks would be required. Currently, the nearest non-motorized north/south crossing of College Drive is the pedestrian overpass at Central Avenue.

# **14 Reserve Dedications**

# 14.1 Environmental Reserve

As noted in Section 5.3 of this report, the Official Community Plan protects important ecosystems and natural areas within City limits. In addition, *The Planning and Development Act, 2007* provides the City with the ability to acquire natural areas as Environmental Reserve, subject to a proposed subdivision. Upon the City acquiring natural areas, the City will retain the title to these parcels of land allowing them to be managed by City Administration for the enjoyment of present and future generations. When land is dedicated as Environmental Reserve, it becomes the responsibility of the City and it is subtracted from the gross developable area of the subdivision, without compensation.

As development proceeds in the Sector, developers are required to protect natural features and enhance these features by incorporating them into the layout of the neighbourhood open space.

When calculating the Municipal Reserve dedication for this Sector Plan in Table 2 page 38, the natural areas that have been identified by Meewasin, the University and the Natural Area Screening research as having historical or ecological significance were exempt from Table 2 to provide a practical representation of the amount of Municipal Reserve, which is typically used for park space, that could be allocated in the Sector. Further environmental studies may be required prior to NCP or subdivision approval for lands bordering the natural areas, to determine an ecological boundary and riparian area buffer.

# **14.2 Municipal Reserve Analysis**

When land is subdivided, *The Planning and Development Act, 2007* requires part of it to be set aside for public recreation or similar purposes, or for money to be paid in lieu of land. The Municipal Reserve dedication requirement is 10 percent of gross developable land area for residential land and 5 percent of gross developable land area for non-residential land. The City may accept money in lieu of land in areas where the dedication of land is not desirable.

The Park Development Guidelines Policy No. A10-017 (Park Development Guidelines) requires the Municipal Reserve dedication to be allocated as follows into three types of parks: neighbourhood park (61 percent), district park (36 percent), and multi-district park (3 percent).

Neighbourhood parks must be allocated within individual neighbourhoods. Neighbourhood parks can be in the form of core parks, pocket parks, linear parks and village squares. The locations of these parks should be consistent with the Park Development Guidelines and be depicted in the NCP.

District parks are intended to serve active and passive recreational needs of residents of four to five neighbourhoods. These parks accommodate inter-neighbourhood sports leagues for youth and adults.

Multi-district parks are intended to serve active and passive recreational needs during all seasons of the year that may not otherwise be served by neighbourhood and district parks, (e.g. cultural facilities, multi-purpose leisure centre). These activities could be associated with a suburban recreation complex.

Unlike the 2007 Sector Plan where park space allocations were conceptually shown on the land use figure, this Sector Plan allocates park space on Table 2 and should be divided as per the development sequence shown on Figure 7. The breakdown on Table 2 allows the land developer and City Administration the ability to discuss the appropriate park size, shape and location for the multi-district and district parks as part of each NCP submission. With the minimal amount of multi-district park remaining to be allocated, combining multi-district park into district park for a total of 48 hectares (119 acres) of future park dedication is being proposed.

#### 14.2.1 Employment Area Municipal Reserve

The Municipal Reserve dedication from the Employment Area should have a dual function to accommodate both passive and active recreation activities, consistent with the Park Development Guidelines. The Municipal Reserve dedication should be classified as Industrial Park and serve the intended use as a city-wide resource. Parks in industrial areas allow elements that are not suitable next to residential neighbourhoods (for example, sports fields with floodlighting), while also addressing the needs of employees working in the area (for example, picnic benches).

#### 14.2.2 Existing Municipal Reserve (NW12-37-5-W3M)

As part of the Silverspring neighbourhood subdivision, a 0.56 hectare (1.39 acre) parcel of land on the corner of Central Avenue and Agra Road (Township Road 372) was dedicated as Municipal Reserve (see Image 3 below). The 0.56 hectare parcel was not included in the 61 percent neighbourhood park Municipal Reserve dedicated within the Silverspring neighbourhood. This dedication was part of the remaining Municipal Reserve dedication for the Silverspring neighbourhood. This Municipal Reserve parcel is currently within the Northeast Swale boundary; therefore, it is not suitable for active recreation and lands for that purpose can be dedicated elsewhere in the Sector, as shown on Table 2.

Image 3: Existing Municipal Reserve



Table 2 provides a breakdown on the total amount of Municipal Reserve allocated and required in the University Heights SDA. All calculations are estimates and will be reviewed and refined when Concept Plans are being prepared for the proposed developments.

Existing Development	Acres	Hectares	Municipal Reserve (MR) Dedication	MR (acres)	Neighbo- urhood 61%	District 36%	Multi- District 3%	Industria MR
Sutherland	480	194	10%	48.00	29.28	17.28	1.44	
Forest Grove	390	158	10%	39.00	23.79	14.04	1.17	
Erindale	385	156	10%	38.50	23.49	13.86	1.16	
Arbor Creek	350	142	10%	35.00	21.35	12.60	1.05	
Silverspring	400	162	10%	40.00	24.40	14.40	1.20	
Willowgrove	505	204	10%	50.50	30.81	18.18	1.52	
Evergreen	655	265	10%	65.27	39.81	23.50	1.96	
UH Suburban Centre	226	91	5%	11.30	0 TBD			
Sutherland Industrial	300	121	5%			TE	3D	
Muskeg Lake Cree Nation Urban Reserve	35	14	Federal Exemption					
Existing District and Multi-District Parks								
Forest Park						-35.75		
Hilliard Gardner						-1.03		
Father Basil Markle						-3.89		
Evergreen District Park						-12.00		
Forest Park Integrated Facility							-25.80	
Existing Suburban Development Area	3726	1508		327.57	192.92	61.19	-16.31	

#### Table 2. Municipal Reserve Analysis

Combined Multi-District with District MR						119.33		
	10079	4521		490.07	214.91	110.11	1.22	12.30
Total University Heights Suburban Development Area	10670	1221		406 57	274.07	110 11	1 22	12.50
Perimeter Highway and Interchanges	225	91	TBD					
Urban Holding Lands north of Perimeter Highway	695	281	TBD					
Wastewater Treatment Plant Buffer	30	12	Municipal Exemption					
150m Riverbank Area <sup>1</sup>	343	139	Municipal Exemption					
University Containment Facility Buffer	24	10	Municipal Exemption					
Remnant Parcel South of Peturrson's Ravine	6	2	Municipal Exemption					
Saskatoon Forestry Farm Park and Zoo	142	57	Municipal Exemption					
Small Swale	150	61	Municipal Exemption					
Peturrson's Ravine	42	17	Municipal Exemption					
Northeast Swale	718	290	Municipal Exemption					
Natural Areas								
	40	10	100					
Agriculture Canada Lands Sutherland Beach Backshere Lands	400	100	TBD					
Agriculture Canada Landa	2130	102						
University of Contrateness	0120	000	TPD					
University Heights Sector Plan Development Area	1950	/89		169.00	82.05	56.92	17.54	12.50
District Village Commercial (next to Mixed-use Core)	45	18	5%	2.25			2.25	
District Village Commercial (NE of Evergreen)	35	14	5%	1.75			1.75	
Light Industrial Park	250	101	5%	12.50				12.50
Business Park	190	77	5%	9.50			9.50	
Mixed-use Core	85	34	10%	8.50		8.50		
Neighbourhood 3 (UH3)	780	316	10%	78.00	47.58	28.08	2.34	
Aspen Ridge	565	229	10%	56.50	34.47	20.34	1.70	
Proposed Developments in University Heights Sector Plan								

Note:

TBD - Municipal Reserve dedication to be determined between the City and developer.

1 - The 150m Riverbank Area includes the Peggy McKercher Conservation Area and Riddell Paleontological Site.

# **15 Servicing**

# **15.1 Water Mains**

The Sector is serviced by a primary water main extended from Central Avenue. A second water main will be extended from the proposed Water Reservoir south of the Evergreen neighbourhood. As shown on Figure 6, the water main alignment will loop around Fedoruk Drive connecting the two water main systems.

# **15.2 Water Reservoir**

A future 3 hectare (7.5 acre) water reservoir site has been designated south of the Evergreen neighbourhood (see Figure 6). This water reservoir will be required to supply the increased demand for potable water from all the future neighbourhoods in the Sector and future neighbourhoods of the North East Sector. The reservoir will be supplied by a 1,050 mm fill main from Central Avenue. The timing for the reservoir will depend on growth of the Sector but must be built in conjunction with Aspen Ridge.

# 15.3 Sanitary Sewer

The strategy in the 2007 Sector Plan to service the three neighbourhoods after the Evergreen neighbourhood was via a new sanitary trunk river crossing adjacent to the Waste Water Treatment Plant. This servicing strategy is still relevant; however, a new trunk river crossing can be deferred until Neighbourhood UH3 and the Employment Area are developed.

To service the Aspen Ridge neighbourhood, there is remaining capacity in the Central Avenue sanitary trunk river crossing until it is required by the development in the Holmwood SDA. Aspen Ridge will require a lift station and force main along Fedoruk Drive to the Central Avenue trunk connection.

As mentioned above, Neighbourhood UH3 and the Employment Area will be serviced by a new trunk river crossing. The exact location and timing to construct this trunk crossing will be determined as growth demands; however, a conceptual river crossing location is shown on Figure 6.

If sanitary capacity remains in the Central Avenue sanitary trunk crossing after Aspen Ridge is fully built out, a lift station and force main could be built north of the Northeast Swale, providing sanitary capacity to start the next neighbourhood (Neighbourhood UH3) by pumping back into the Central Avenue sanitary trunk. When the new trunk river crossing is complete, this temporary lift station in Neighbourhood UH3 would be reconfigured and Neighbourhood UH3, the Employment Area, and Aspen Ridge would be re-routed to connect to this new sanitary trunk river crossing system.

#### 15.4 Storm Sewer

All neighbourhoods in the Sector will have a conventional underground storm sewer design, as well as stormwater ponds, including the use of the wetlands in the Northeast Swale and Small

Swale where appropriate. The "Northeast Swale Development Guidelines, 2012" report recommends that all stormwater ponds be located outside of the Northeast Swale except for the two locations shown on Figure 6. Stormwater ponds will be used to trap nutrients and sediments prior to entering the swales, while keeping the value of the swales and protecting the organisms that live in this area by maintaining a fluctuating water level replicating a normal wetland cycle post-development. Regular monitoring of the water quality of the stormwater ponds and wetlands should be conducted.

Stormwater best management practices should be followed when developing stormwater models for Concept Plan designs. Developers are encouraged to review and implement the use of low impact development strategies in the design of their neighbourhoods and within the Transition Zone of the Greenway, if the groundwater table in the area allows for this type of absorption. Examples of this include:

- a) rainwater harvesting in parks;
- b) paving stone walkways;
- c) engineered stormwater swales in medians;
- d) bioswales;
- e) vegetated filter strips;
- f) stormwater corner curb bumping (see Image 5); and
- g) stormwater irrigation for parks.

These techniques use "natural" drainage systems, allowing stormwater to replenish the soil and underground aquifer instead of being removed from the system through pipes.

#### Image 4: Natural Stormwater Pond Example



Image 5: Stormwater Curb Bumping Example



#### 15.4.1 Natural and Engineered Water Bodies

Best practices in stormwater management are incorporating the use of natural wetlands, constructed wetlands, and stormwater ponds to manage storm water runoff. This practice has begun to be implemented in Saskatoon and will become more prevalent throughout the development of the Sector. As part of the NCP process, the developer will be required to have a qualified environmental specialist work with a stormwater engineer to develop a stormwater model identifying how constructed wetlands and natural areas can coincide.

Aspen Ridge should use the existing water course channel that runs through the proposed neighbourhood to filter stormwater runoff prior to it entering the proposed stormwater pond next to Range Road 3045. Saskatchewan Water Security Agency (formerly the Saskatchewan

Watershed Authority) is collaboratively working with City Administration as part of the stormwater pond design for Aspen Ridge due to the natural drainage of the Northeast Swale at this location, draining northward placing runoff water into the greater Swale outside City limits. In addition, stormwater will need to enter the Northeast Swale from Neighbourhood UH3. This stormwater runoff should be directed into the existing stormwater pond built in NE 12-37-5-W3M and another stormwater pond should be constructed outside the Greenway, adjacent to the North Commuter Parkway (see Figure 6).

# **15.5 Permanent Civic Service Facility**

Development of the Sector will require the relocation of the City's snow handling site, street sweeping site and rock pile on Central Avenue. A permanent Civic Services Facility, which includes a snow handling facility, material handling and storage yards, would allow the City to provide a permanent location in the north east to store snow from priority roads in the winter and stockpile roadway materials in the summer without having to commute to civic facilities west of the River. On Figure 6, the permanent Civic Services Facility is shown conceptually in the Light Industrial Park on the former rubble dump site. This site was chosen because of its previous use, and because it is buffered from residential development by the Small Swale.

A location for a snow handling facility, material handling and storage yards requires:

- a) 35.5 hectares (88 acres);
- b) Suitable road access;
- c) Access to the existing stormwater management system;
- d) Adequate separation from significant wetlands; and
- e) Adequate separation from residential development.

The permanent snow handling facility will require a stormwater discharge to the stormwater trunk system.

The City, Meewasin and regulatory agencies will work together to ensure any environmental impacts from the Civic Services Facility are managed on the surrounding natural areas and River.

# **15.6 Recycling and Composting Facilities**

A full service recycling depot is located in the University Heights Suburban Centre along Attridge Drive. The City has distributed individual roll-out recycling bins to single-unit dwellings, and is in the process of determining a program for multi-unit dwellings.

The nearest composting facility, on McOrmond Drive in the Holmwood SDA, will be decommissioned in the future as that area develops. The City is currently working to identify a new permanent composting facility to service the east side of the River.

# **15.7 Shallow-Buried Utilities**

As part of the NCP process, the developer must arrange for the respective service providers to provide shallow buried services, such as electricity, natural gas, street lighting, telephone, and cable television to the development area.

# **15.8 Proposed Antenna Towers**

The City is not the approving authority for antenna systems within Saskatoon. Industry Canada, through the Federal Minister of Industry, is the approving authority for such communications infrastructure across Canada, as set out in *The Radiocommunication Act*.

As per the City's Antenna Systems Policy No. C09-037, antenna providers must follow the procedures outlined in the policy.

As urban development continues in the Sector, the demand for cellular antennas and coverage will increase and additional cell tower locations will be required. As shown on Figure 6, an additional four proposed cell towers could be located in the University Heights SDA and additional towers could be added based on demand. As part of the NCP process, developers must consult with cellular antenna providers and identify proposed locations were antennas could be located.

# **16 Phasing**

# **16.1 Development Sequence**

Taking into account all the changes in the Sector, the development sequence has changed since 2007. The 2007 Sector Plan proposed a new sanitary trunk crossing the River adjacent to the Waste Water Treatment Plant. Since the neighbourhood north of the Northeast Swale was the closest to this new sanitary trunk river crossing, it would be the next neighbourhood developed after the Evergreen neighbourhood. As the servicing extended north and east, the other two proposed residential neighbourhoods would be developed to complete the Sector.

The revised development sequence for the Sector is shown on the Phasing Plan (Figure 7) and is proposed to be consistent with the revised servicing scheme described in Section 1615 of this report:

- a) Phase 1 will comprise Aspen Ridge and District Village;
- b) Phase 2 will comprise Neighbourhood UH3, Mixed-use Core, District Village; and
- c) Phase 2A will comprise the Business Park and the Light Industrial Park.

The Business Park and the Light Industrial Park are intended to be phased concurrently with the construction of the Neighbourhood UH3 and the new sanitary trunk river crossing.

# **17 Funding**

The role of this Sector Plan is to provide a framework within which development of the Sector can take place, and plan for development to reflect the Official Community Plan and principles in the IGP. Sector Plans enable the City to begin more detailed infrastructure analysis, and to address this infrastructure in operating budgets, capital budgets, and capital plans. It is important to acknowledge that the costs for development of new growth sectors are funded in a fiscally sustainable manner, ensuring that growth is paid for by those who benefit most from it.

It is possible to provide very general estimates of upfront costs. The Sector requires significant upfront investment in infrastructure to continue development. While much of this infrastructure has a funding source (prepaid service rates for direct and off-site services), some costs are funded from other sources. When infrastructure is partially funded or unfunded, the City works to identify and secure funding sources. Funding sources typically include changes to prepaid service rates, special assessments, developer contributions, public-private partnerships, and senior government funding. In principle, infrastructure that has a direct benefit to a sector rather than a more general city-wide benefit, is to be paid for by the growth of the Sector.

# 17.1 Funded Infrastructure

Key funded infrastructure that is necessary to begin the development in the Sector includes:

- a) primary water mains;
- b) sanitary and storm trunk sewers, and a storm sewer pond; and
- c) arterial roadways (to a four lane standard with an option for six lanes in certain locations).

# **17.2 Un-funded Infrastructure**

In addition to the funded infrastructure projects, a portion of the infrastructure projects are unfunded (that is, no funding source). The unfunded infrastructure projects in the Sector include:

- a) North Commuter Parkway (partial);
- b) North Commuter Parkway bridge;
- c) Central Avenue and Attridge Drive intersection upgrade;
- d) Development of the Northeast Swale multi-use trails and Riverbank trails; and
- e) Fire Halls.

The recommended additional short-, medium- and long-term transportation improvements listed in Section 13.8 and the new sanitary trunk river crossing listed in Section 15.3 of this report are, or will be, part of the City's capital budget or five year capital plan submissions. Also the City is continuing to refine all cost estimates for this work and determine innovative funding solutions.

Sector Plans do not typically address the cost of maintaining municipal infrastructure and facilities, like paths and parks, as this is addressed in annual operating budgets. It should be noted though, that this Sector does have a significant number of natural areas. These areas will have to be appropriately managed, and this is outside the scope of typical municipal infrastructure and facility management. The City will be developing cost estimates for this work, and determining partnership opportunities and funding options.



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