



# COOPERTOWN

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## Neighbourhood 1B

### *Concept Plan*



# COOPERTOWN

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## Neighbourhood 1B *Concept Plan*

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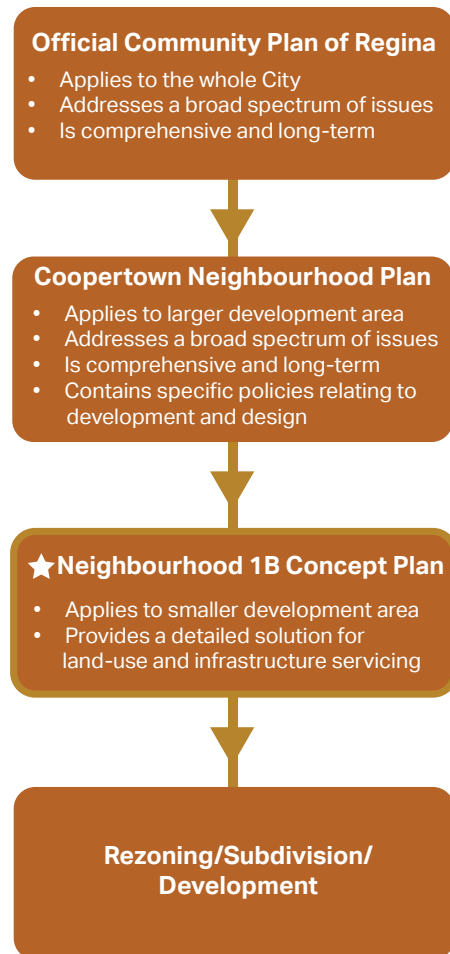
# Introduction

## 1.1 Background

The purpose of the Neighbourhood 1B Concept Plan is to further articulate and provide a development framework for one of the first neighbourhoods within the broader Coopertown Neighbourhood Plan area. The underlying principles of the plan align with the Coopertown Neighbourhood Plan and will facilitate future development in a manner that meets the City's goals regarding sustainability, community-orientation, and orderly growth.

This plan provides specific details for Neighbourhood 1B and includes land use designations, plan densities, an open space strategy, transportation network, and phasing plan to help achieve the vision and character for the neighbourhood.

For details regarding the vision, principles, objectives and policy for the broader Coopertown area please refer to the Neighbourhood Plan.





## 1.2 Site Context

Neighbourhood 1B is located west of Courtney Street and north of 9th Avenue North. It will serve as the gateway neighbourhood to the larger Coopertown area and is projected using 2016 Census data to be home to approximately 3,295 residents.



**Figure 1: Neighbourhood 1B Boundary**



## 1.3 Project Vision

The vision for Neighbourhood 1B is to create a vibrant urban neighbourhood which will function as a complete community, set within the broader Coopertown Neighbourhood Plan area. It will provide a variety of housing types to suit diverse age groups and lifestyles, and will offer schooling, shopping and recreation opportunities within an easy walk, bike or transit ride from all homes.

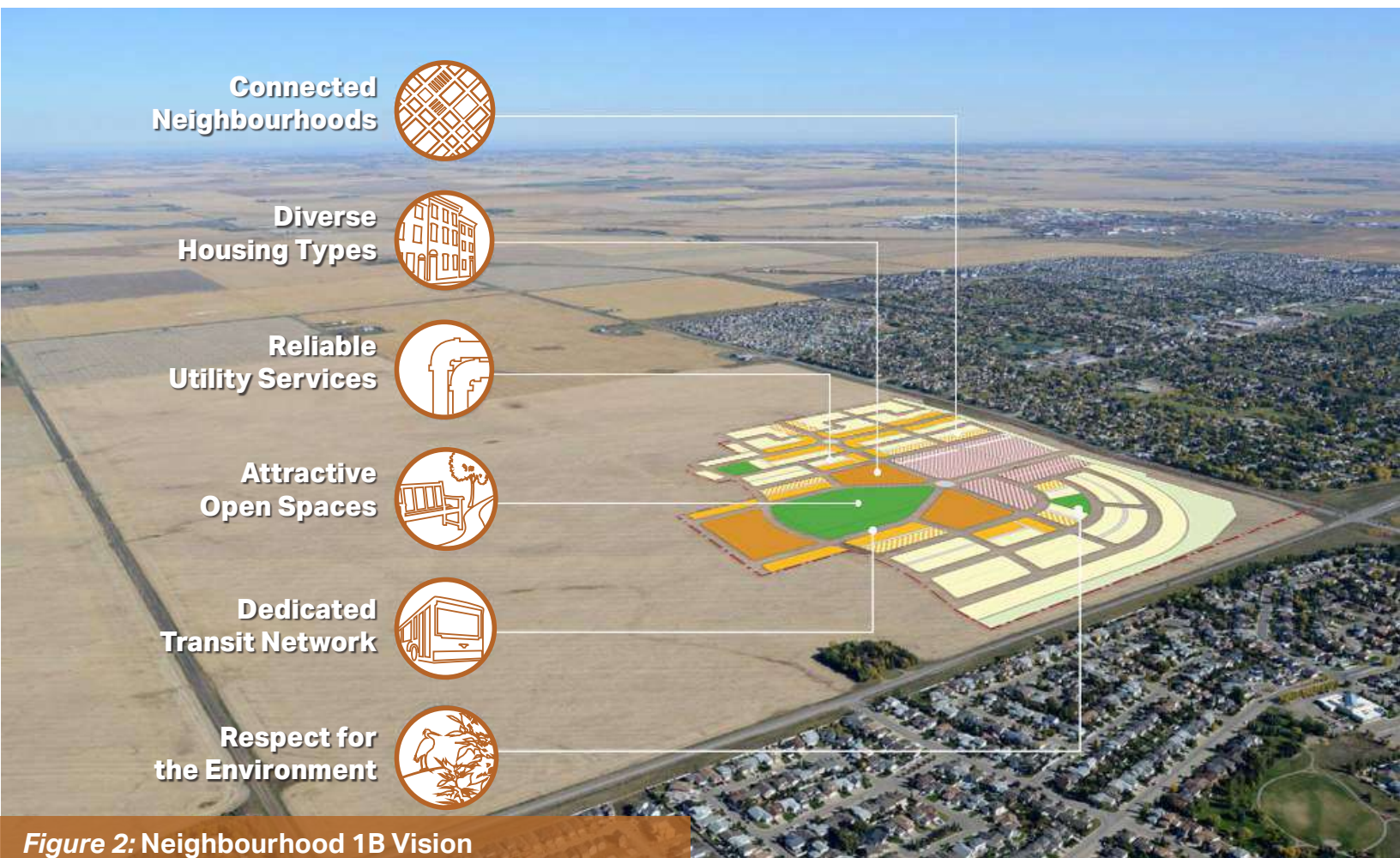


Figure 2: Neighbourhood 1B Vision



## 1.4 Goals and Objectives

The framework for the design process was based on a set of goals emphasizing Environment, Equity and Economy.



### Goal 1: Environment - Respect the Environment

#### Objectives:

- Develop a community design approach that responds to the local context as well as the built and natural heritage of the City of Regina
- Preserve, and where possible, enhance habitat and water resources and integrate them into the development to provide a sense of place and amenity to future residents
- Provide sustainable, cost and resource efficient infrastructure and buildings



### Goal 2: Equity – Create an accessible community

#### Objectives:

- Create a healthy, safe, liveable and complete community with services and amenities in close proximity to homes
- Provide an appropriate mix of housing types and tenures that appeal to a range of residents at various stages of their life cycle
- Design the community and its public spaces to support the lifestyle and activities of residents of varying ages and levels of mobility
- Support a range of transportation choices



### Goal 3: Economy – Support sustainable, economic development

#### Objectives:

- Identify cost-effective strategies for innovation that establish the community as a practical and replicable model of sustainable community development in the City of Regina
- Encourage opportunities for local employment and business generation for residents

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## 1.5 Design Regina & Official Community Plan Conformity

In 2013, the City introduced Design Regina, its new Official Community Plan to manage the city's growth to 300,000 residents and set the stage for its longer-term development. The underlying principles of the concept plan facilitates future development in a manner that meets the City's goals regarding sustainability, community-orientation, and orderly growth laid out in the Design Regina Official Community Plan Bylaw No. 2013-48 (OCP).

Neighbourhood 1B is located within the Northwest sector of Regina, an area identified for future growth in the City of Regina Official Community Plan.

The following Design Regina OCP community priorities have been incorporated into the goals and policies for Neighbourhood 1B:

- Develop Complete Neighbourhoods
- Embrace Built Heritage and Invest in Arts, Culture Sport and Recreation
- Support the Availability of Diverse Housing Options
- Create Better, More Active Ways of Getting Around
- Promote Conservation, Stewardship & Environmental Sustainability
- Achieve Long Term Financial Viability
- Foster Economic Prosperity
- Optimize Regional Cooperation

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The following planning principles have been incorporated as part of the development of the overall Coopertown Neighbourhood Plan, and are in harmony with the citywide policies provided in Section D of the City of Regina Official Community Plan.

- Promote a sustainable community and encourage development that contributes to maintenance or improvements to the quality of urban life
- Ensure that development occurs in a cost effective, environmentally responsible and socially equitable manner
- Achieve a mix of housing types and densities to suit different lifestyles, income levels and special needs in existing and future neighbourhoods
- Ensure that people have convenient access to and choice of transportation options
- Provide open space and recreation opportunities that serve both neighbourhood and city wide-needs
- Facilitate economic development (including commercial development) that will expand and diversify Regina's tax base
- Safeguard the natural environment and improve the quality of the man-made environment
- Increase the energy efficiency of the city through the land use planning process



# Site Inventory

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A Site Inventory for Neighbourhood 1B Concept Plan has been undertaken as part of the larger regulatory framework within the Coopertown Neighbourhood Plan. This includes development considerations based on site topography, natural features, built features, heritage resources, and existing shallow utilities. A series of Environmental Site Assessments (ESA) and geotechnical studies have been completed for the overall neighbourhood plan area and are included within the Neighbourhood Plan and study submissions.

For information regarding the site inventory, including topography, natural features, built features and heritage resources, please refer to the Coopertown Neighbourhood Plan and study submissions.

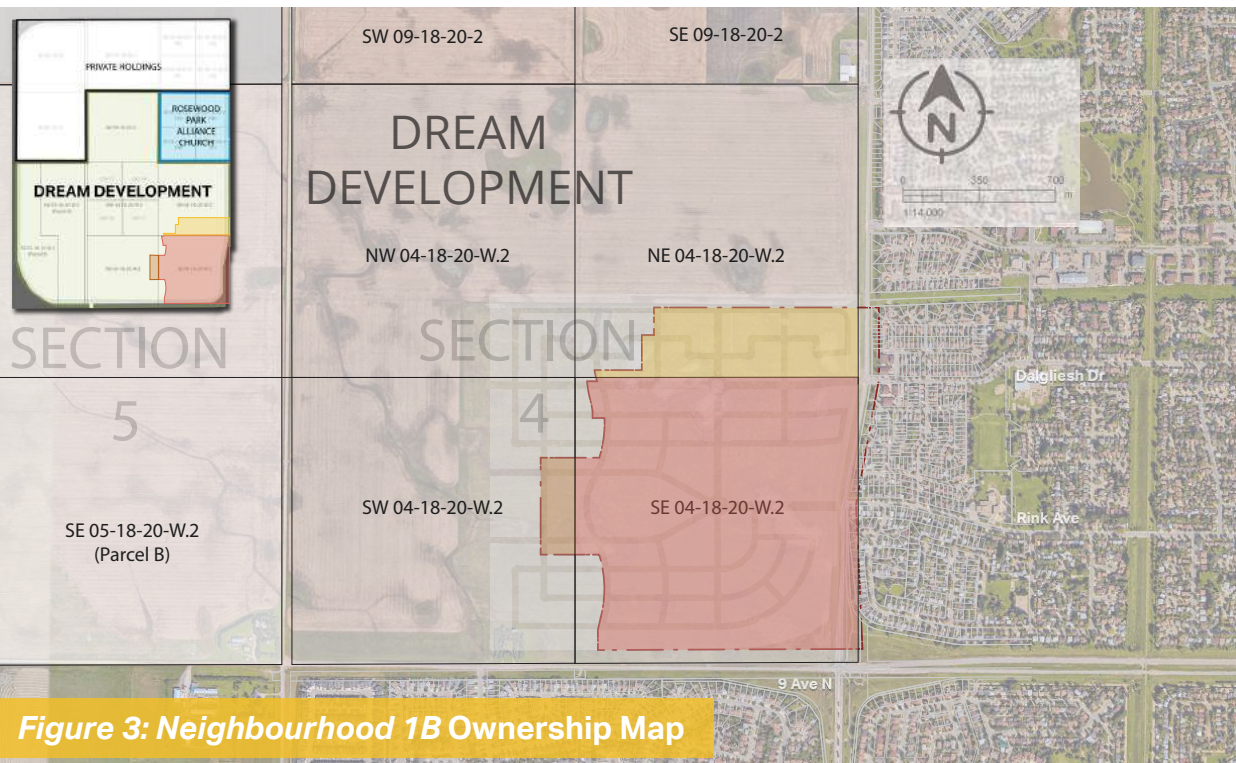
## 2.1 Site Overview

Currently made up of rural agricultural land, Neighbourhood 1B is approximately 71 hectares (175 acres) with the inclusion of the Courtney Street right-of-way. It is adjacent to the mature neighbourhoods which are characterized by primarily residential development at low to medium densities and Rochdale Boulevard which serves as a key commercial street in Regina's North West. Neighbourhood 1B will be well connected to the City's broader road network via arterials such as Courtney Street and 9th Avenue North, as well as collector roads that include Dalglish Drive and Rink Avenue.

The site is relatively flat with an elevation range of 575 to 578 metres above sea level. Water drains in a southwesterly direction into Wascana Creek via natural tributaries and an existing agricultural ditch.

**Table 1: Neighbourhood 1b - Land Ownership**

Land Owner	Legal Description	Hectares Owned
DREAM DEVELOPMENT	NE 04-18-20-2 SW 04-18-20-2 SE 04-18-20-2	71.28



**Figure 3: Neighbourhood 1B Ownership Map**

## 2.2 Adjacent Neighbourhood Multi-Modal Connections

Strong linkage opportunities are available between neighbouring communities through direct connections at Dalglish Drive and Rink Avenue. There are also opportunities for green linkages along the pipeline corridor, Rink Avenue and Courtney Street.

**Transit Connections** - A highly linked transportation network will allow residents from the surrounding and future Coopertown neighbourhoods to access local parks, a range of retail amenities and services, and support non-vehicular modes of transportation. Bus routes have been designed to connect the outlying areas of the community to the rest of Regina. Similarly, connections have been made with the City of Regina's comprehensive network of multi-use pathways and park systems.

**Cycling Connections** - The cycling network proposed for Neighbourhood 1B will provide a safe, well-connected system to suit both recreational and commuter cyclists. Routes illustrate good connectivity to the existing and proposed City of Regina cycling network, shown in the City of Regina Future Transportation Plan (Draft plan, October, 2013).

**Vehicle Connections** - In an effort to provide walkable and more human-scale development, the streetscape is tailored to deliver ample provision for pedestrians, and safety for cyclists, while meeting vehicular traffic demands. Existing city arterial and collector roadways are extended into the neighbourhood permitting movement to the broader Regina circulation network

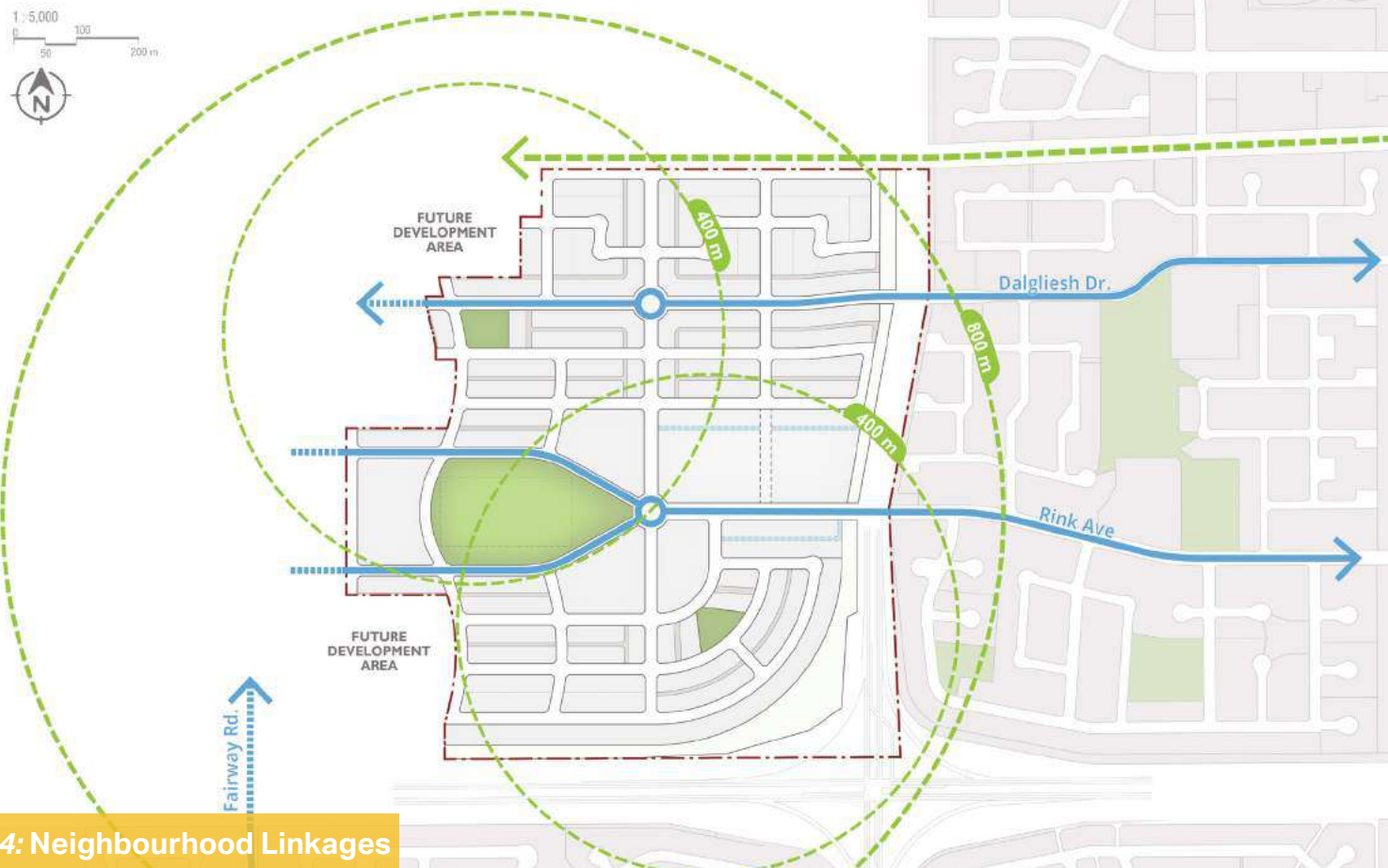


Figure 4: Neighbourhood Linkages



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## 2.3 Pipeline Easement and Residential Setback

An analysis of risks from the multi-pipeline corridor and the future West Regina Bypass (WRB) was undertaken by Bercha Group Limited in July, 2012. This assessed possible risks from pipelines and dangerous goods routes to any proposed subdivision developments. The report recommended restrictions for residential development located adjacent to the pipeline and proposed WRB, based on a '1 in 1 million' risk contour. The risk contour lines are shown in Figure 6 of the broader Coopertown Neighbourhood Plan and all reference should be made to this document.







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## 2.5 Environment

The site is located in the 'Low Sensitivity' zone for Aquifer protection as per the City of Regina Zoning Bylaw No. 9250, Chapter 10, Overlay Zone Regulations. There are some performance regulations which apply to developments within this zone, including a limitation on excavations to a maximum of six metres in depth.

According to a search on the Saskatchewan Conservation Database, there are no noted Species At Risk or concern within the boundaries of the Neighbourhood 1B.

There are no lands classified as Environmentally Sensitive Areas within the site. In 2013, a Phase One Environmental Site Assessment was conducted which included the Neighborhood 1B concept Plan area. No environmental or ecological concerns were identified.



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## 2.6 Heritage

There are no listed heritage buildings on the site. A heritage sensitivity was requested for the three quarter sections NE 04-18-20-W.2, SW 04-18-20-W.2, and SE 04-18-20-W.2. The Ministry of Tourism, Parks, Culture and Sport's Heritage Conservation Branch has indicated there are no known archaeological sites in direct conflict with the proposed development and they have no concerns with the development proceeding as planned. As such, there is no Heritage Resource Impact Assessment required for this area.

# Land Use Strategy

## 3.1 Land Use Strategy

Neighbourhood 1B includes diverse land uses, incorporating a range of residential densities and commercial uses, as well as a variety of parks and open space areas. Residential densities have been laid out in a deliberate pattern with low density blocks located on the edges of the neighbourhood and medium to high density development focused around the central neighbourhood park, and neighbourhood commercial services. Additional Medium Density development is also focused along key collector roadway corridors. Pocket parks are nestled within key neighbourhood blocks in Neighbourhood 1B, acting as a tool for placemaking and providing recreational and communal gathering centers for residents. These design strategies support the high level design guidelines provided for the broader Coopertown community given in the Coopertown Neighbourhood Plan.

In compliance with NP 4.2.2(h), Neighbourhood 1B will provide a range of commercial services at the neighbourhood and community levels such as grocery stores, convenience stores, and other variations.

Regina is growing and the existing supply of zoned and serviced land for new housing will not likely be sufficient to keep up with expected demand over the coming decades. The underlying principles of the plan facilitate future development in a manner that meets the City's goal regarding sustainability, community-orientation, and orderly growth.

-Coopertown Secondary Plan



### 3.1.1 Community Design Strategy

Successful neighbourhoods are much more than a series of buildings, physical infrastructure and open spaces. They embody a unique character that helps to form a sense of place for their residents and visitors.



#### Strategy 1: Central Focal Point

##### Objectives:

- Neighbourhood 1B is designed around a central, community focal point, provided in the form of a 4.24 ha Neighbourhood Park, which will also serve as a central recreation space and gathering place for local residents.



#### Strategy 2: A Diverse and Connected Neighbourhood

##### Objectives:

- Residential neighbourhoods are designed to accommodate future residential growth within an identified development area and in an orderly and cost-effective manner. Residential neighbourhoods will offer a mix of housing types and densities.



#### Strategy 3: Distinctive Design

##### Objectives:

- Neighbourhood 1B will be a community that is both unique and inviting by incorporating a variety of housing forms/types that satisfy the needs of all residents, family compositions and income levels.



#### Strategy 4: Community Gateway

##### Objectives:

- Neighbourhood 1B plays an important role as the key gateway and major entrance to the overall Coopertown Neighbourhood Plan area, and as such, will provide an introduction to the identity and character of the larger site.



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### 3.1.2 *Planning Principles*

The following policies have been established for residential land use within the Plan Area:

- Include a range of housing types and densities in each neighbourhood to suit different lifestyles, ages, abilities and income levels
- Conserve land and energy by designing a compact walkable neighbourhood which supports local services, businesses and community amenities within the neighbourhood
- Design Neighbourhood 1B for people in order to promote social interaction and neighbourliness
- Support compatibility between residential development and adjacent land uses
- Ensure buildings contribute to a high-quality public realm



**Table 2: Land Use Statistics**

Density	Total Hectares	% of Total Land Area	Number of Units	Persons per Unit (based on 2016 Census)	Total Population	Units per Hectare	People per Hectare
<b>HIGH</b>	4.75	7.8%	475	2.0	950	100	200
<b>MEDIUM</b>	5.63	9.3%	282	2.5	705	50	125
<b>LOW / MEDIUM</b>	2.48	4.1%	93	2.4	223	37.5	90
<b>LOW</b>	16.53	27.2%	413	2.6	1,074	25	65
<b>FLEXZONE 2</b>	2.24	3.7%	190	1.8	343	85	153
<b>TOTAL</b> Residential	<b>31.63</b>	<b>52%</b>	<b>1,452</b>	<b>-</b>	<b>3,295</b>		<b>-</b>
<b>FLEXZONE 1</b>	4.50	7.4%	-	-	-		-
<b>MUNICIPAL RESERVE</b>	4.99	8.2%	-	-	-		-
<b>ROADWAYS</b>	19.74	32.4%	-	-	-		-
<b>TOTAL</b> Overall	<b>60.86</b>	<b>100%</b>	<b>1,452</b>	<b>-</b>	<b>3,295</b>		<b>54</b>
<b>COURTNEY STREET ROW</b>	6.40	-	-	-	-		-
<b>MUNICIPAL BUFFER</b>	4.01		-	-	-		-
<b>TOTAL</b> Including Courtney St. ROW & Municipal Buffer	<b>71.27</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>		<b>-</b>

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## 3.2 Residential

The plan accommodates a range of residential densities to encourage housing choices while ensuring a strong unified residential character for Neighbourhood 1B. Residential densities have been laid out in a deliberate pattern with low density blocks located on the edges of the plan and higher density development around the central neighbourhood park. They have similarly been placed close to the commercial services adding support for amenities within the neighbourhood.

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The plan includes four residential land use designations:

1. Low Density
2. Low/Medium Density
3. Medium Density
4. High Density
5. Flex Zone 1
6. Flex Zone 2





### 3.2.1 Plan Densities

Density is the key to vitality and a pre-requisite for supporting local services within Neighbourhood 1B. As such, the residential categories within the neighbourhood have been designed to support basic transit service and a broader array of local amenities.

Neighbourhood 1B is envisioned as one of the denser neighbourhoods within the Coopertown Neighbourhood Plan area. This Concept Plan provides for a range of residential uses from single family units to low-rise apartment style units. The aim of this Concept Plan is to support the introduction of more diverse housing types not readily available currently within the Northwest Sector and to create a vibrant, urban neighbourhood.

The Neighbourhood 1B Concept Plan achieves an overall gross density of 54 persons per hectare. Calculated holistically, the area bound by Courtney Street, Pinkie Rd, 9th Ave N and the pipeline corridor will achieve the OCP target of 50 persons per hectare. The population densities and density assumptions included in the plan are shown in Table 2.

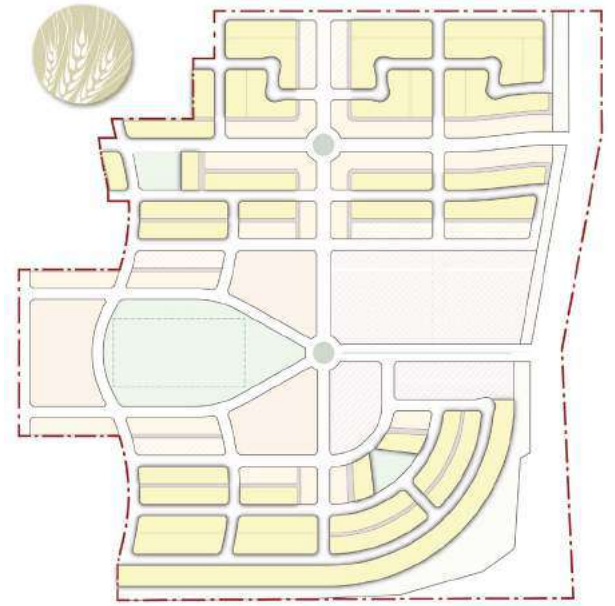
**Table 3: Neighbourhood 1B - Plan Area**

Total Land	71.27 hectares
Road Widening Area - Courtney St.	6.40 hectares
Municipal Buffer	4.01 hectares
Remaining Gross Developable Land	60.86 hectares
Estimated Total Population	3,295 people
Gross Population Density	54 ppl/ha

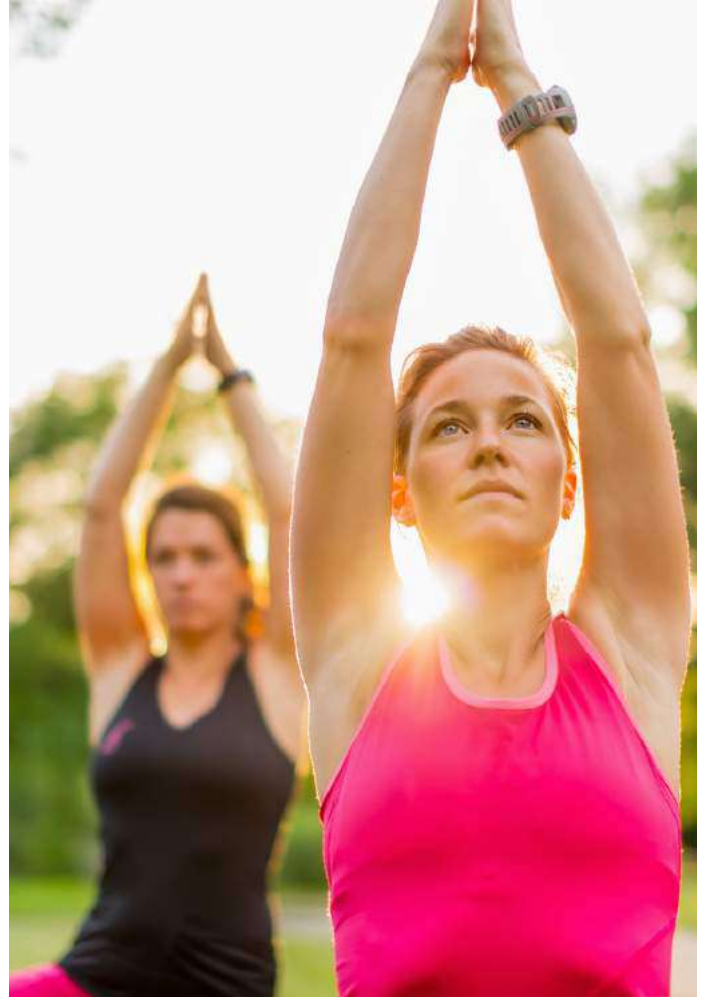




**Low Density -** Low Density land uses are located around the outer edge of the community along 9th Avenue North and along the pipeline corridor. The Low Density residential land use category will include a range of housing types that appeal to different demographics, income levels, and ages.

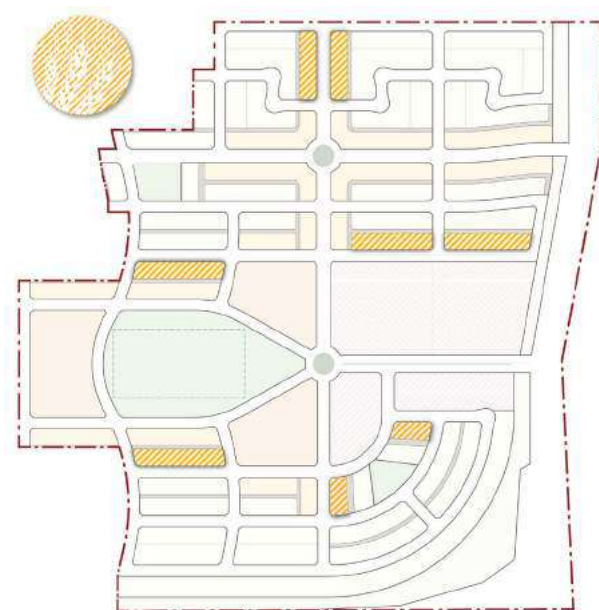








**Low/Medium Density -** These blocks emulate the characteristics of both the Medium and Low Density blocks within the broader Neighbourhood 1B Area. They facilitate flexibility in mixing product types on a block (i.e. Single family, duplex, and/or towns all on one block). Depending on the product mix found in these blocks they may result in either a low or medium density block designation.

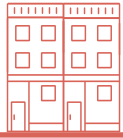




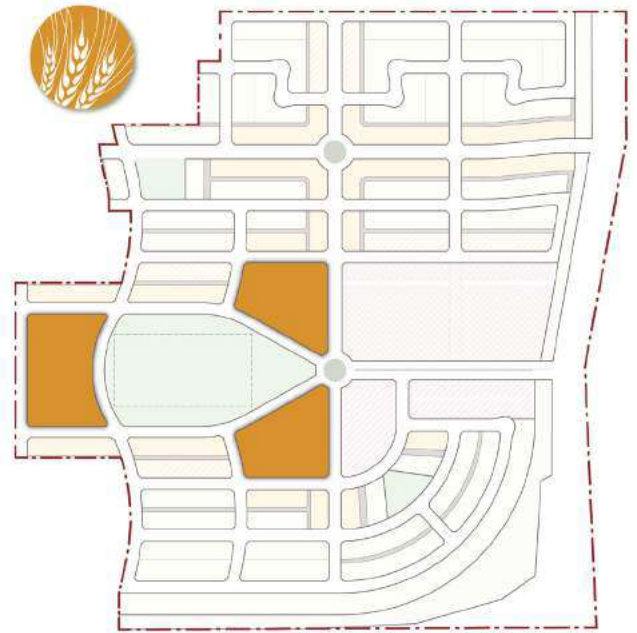


**Medium Density -** Medium density development functions as a gradual transition between Low Density residential development, the central neighbourhood park, dedicated commercial space and high density development. The Medium Density land use classification is designed for flexibility and diversity. Blocks with this designation will consist of row housing as well as semi-detached and duplex buildings.





**High Density** - This designation accommodates higher-density multi-family apartment homes on compact parcels. Apartments and condominiums are primarily located adjacent to open spaces and commercial developments within Neighbourhood 1B. Blocks with this designation will consist of a mix of apartment buildings, and multi-family residential buildings.

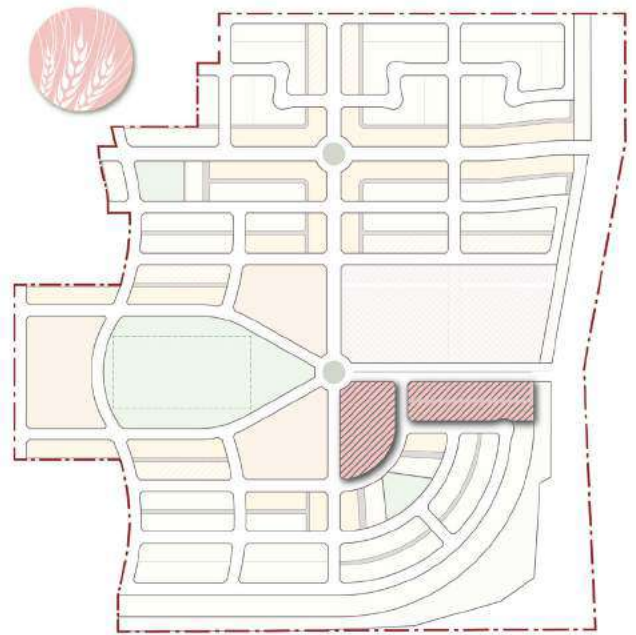




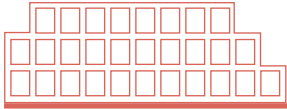


**Flex Zone 2** - The Design Regina Official Community Plan defines a flex zone area as a mixed-use area permitting residential, offices, retail and compatible light industrial uses, in combination or single uses. These parcels are envisioned to contain medium and high density residential, office space, and mixed use developments.

It is intended to create coherent yet diversified, vital and responsive areas, by maximizing use flexibility but maintaining cohesiveness through a clear and enforceable built form framework, as well as strong urban design.

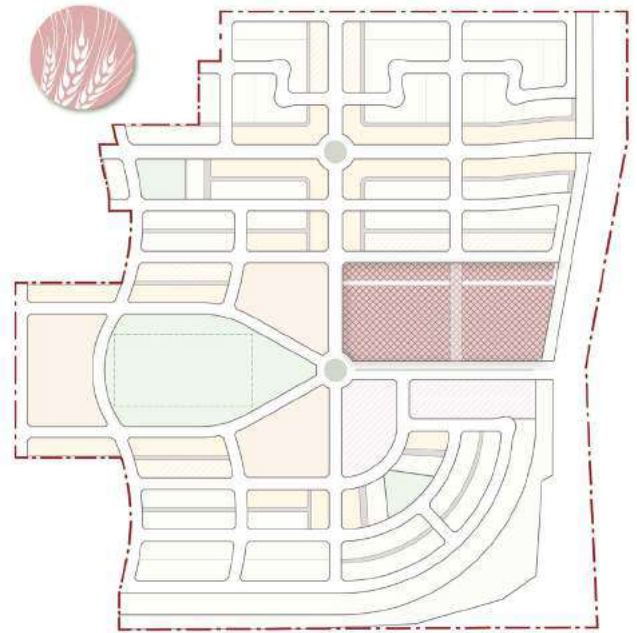






**FlexZone 1** - Neighbourhood 1B will include local serving neighbourhood commercial contained within an additional flex zone area, located in the east district of the neighbourhood, North of Rink Avenue and adjacent to Courtney Street. This parcel is envisioned to contain commercial, medium and high density residential, and office space.

Strategically positioned near High Density residential developments and adjacent residential flex use parcels, this is the commercial gateway to Neighbourhood 1B. It accommodates varied forms of shopping, such as grocery stores and pharmacies, to meet the essential needs of the community. As the commercial heart of Neighbourhood 1B, this flex use space is readily served by public transportation, with Bus routes having been designed to connect the outlying areas of the community to the commercial periphery.







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### 3.3 Open Space

The open space network in Neighbourhood 1B is made up of active and passive green spaces, organized across the plan to create a collection of interconnected, easily accessible and attractive outdoor spaces. Open spaces include neighbourhood parks, and pocket parks, shown in the figure below. Some parks will double in function to provide stormwater management to meet the 100-year Chicago storm event. The supply of open space meets the open space standards set out in the Regina Open Space Management Strategy.





The Open Space Concept for Neighbourhood 1B has been developed to satisfy the following goals.



### **Goal 1: Relate to Regina's Existing Context**

#### **Objectives:**

- The design of open spaces in Neighbourhood 1B will reference existing parks and open spaces from Regina that are well-loved by the city's residents. This would help to tie in the new community to existing neighbourhoods and establish a sense of continuity.



### **Goal 2: Create a Unique Identity**

#### **Objectives:**

- As one of the first neighbourhood to be built, Neighbourhood 1B would serve as a precedent for future stages of Coopertown's overall development.



### **Goal 3: Comply with City of Regina Policies**

#### **Objectives:**

- The Open Space concept will be based on the guidelines set by the Design Regina OCP, OSMS Open Space Management Strategy, and Recreational Facility Plan, and further the city's design vision for the site.



### **Goal 4: Environmental Stewardship**

#### **Objectives:**

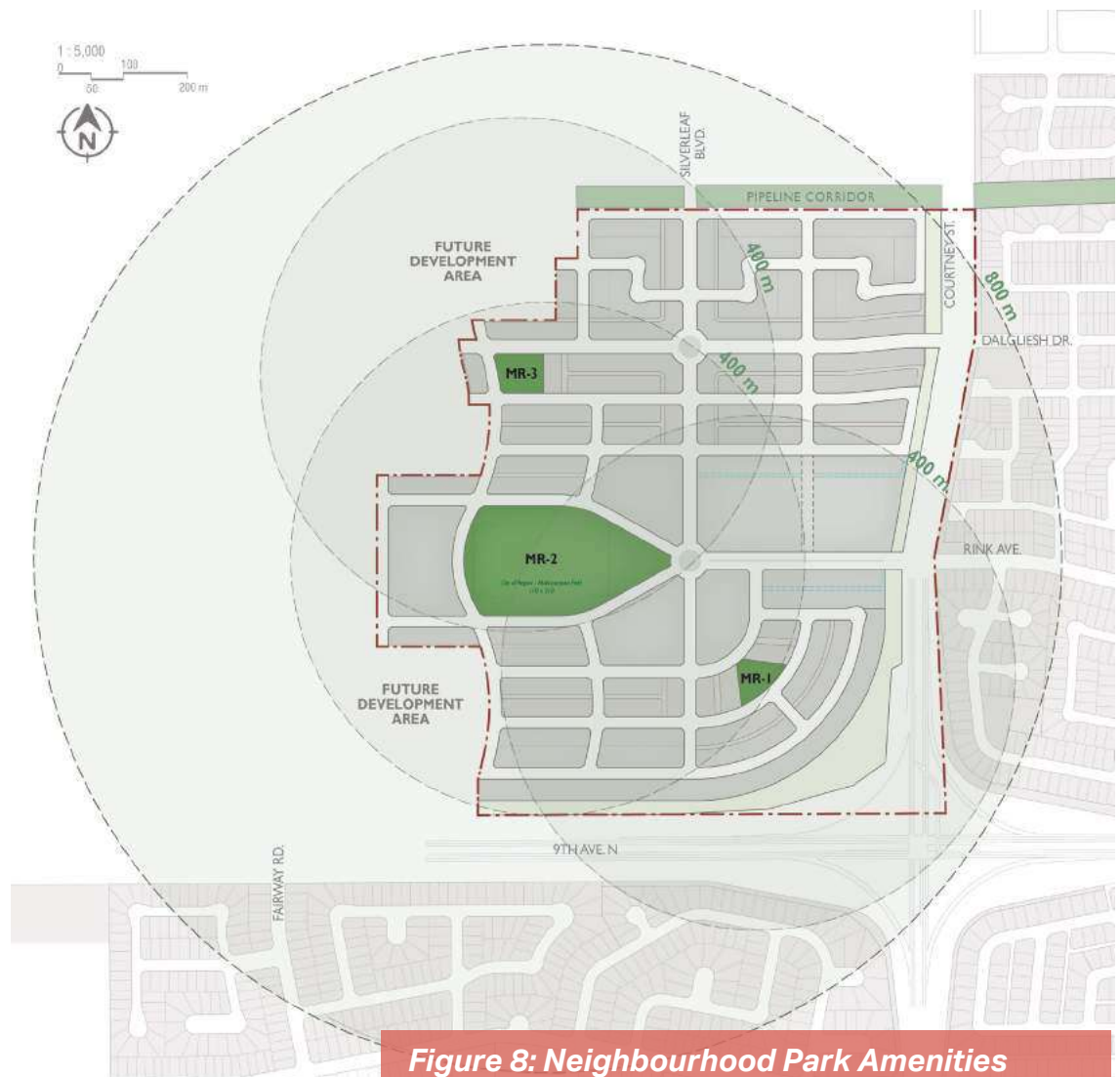
- The design of the open space system in Neighbourhood 1B will incorporate sustainability practices including stormwater management, active transportation systems and naturalization.

## Neighbourhood Parks

Neighbourhood parks will serve as the recreational and social focus of the community. They will provide access to residents up to 800m away in the surrounding neighbourhoods. These parks will allow people of all ages to participate in healthy outdoor activities. Athletic fields will be designed to accommodate organized sports, recreation and community gatherings.

## Pocket Parks

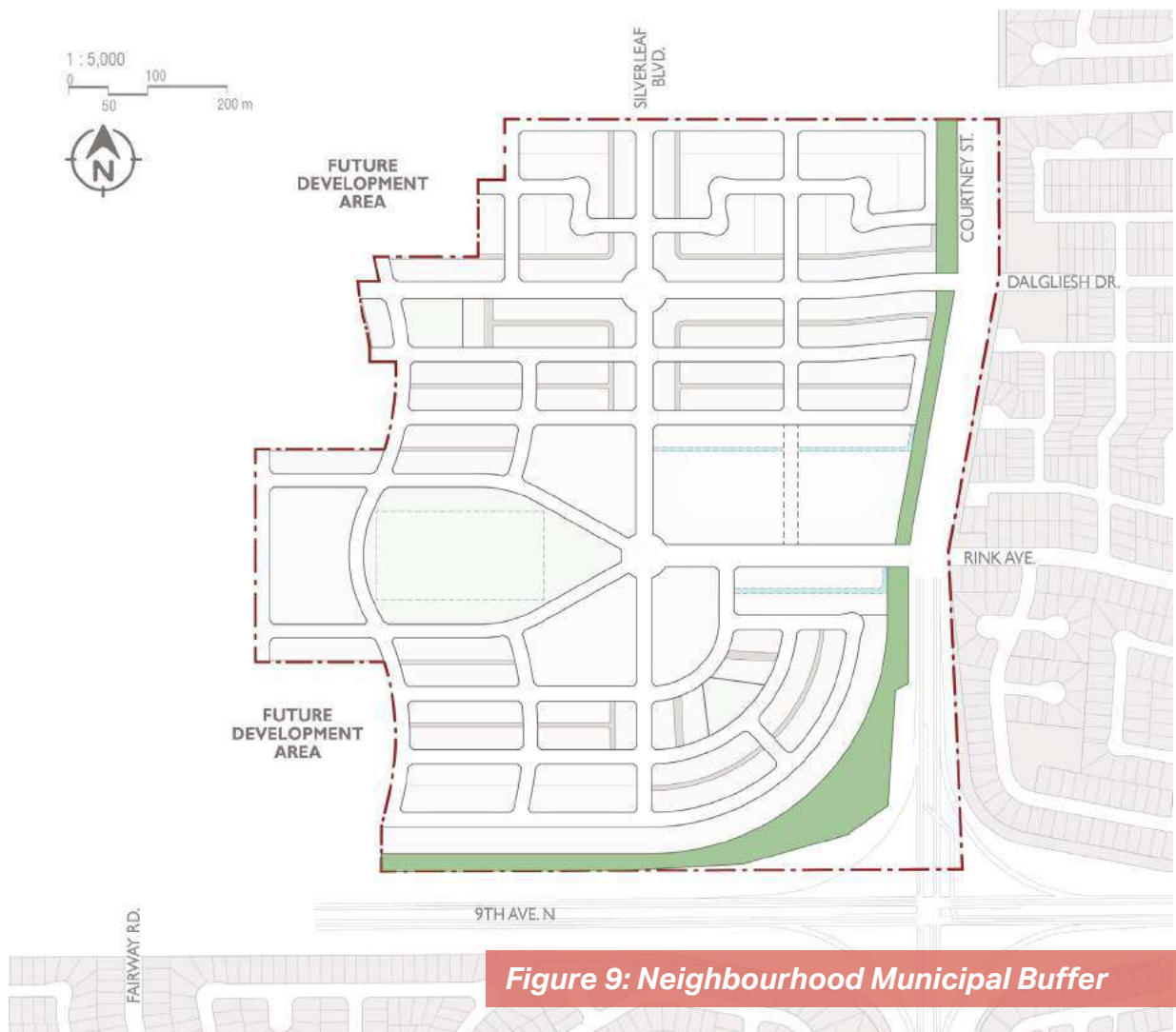
Pocket parks serve the immediately surrounding neighbourhood. Providing access within a radius of approximately 400m, these parks will be more intimate spaces for residents of all ages. The spaces will be designed for children, teenagers, adults, and senior citizens alike and can be considered a local and communal backyard with welcoming entries, passive recreational lawns, places to rest, and places to play.



**Figure 8: Neighbourhood Park Amenities**

## Municipal Buffer

The Municipal Buffer is comprised of the open space between Neighbourhood 1B and the 9th Avenue North and Courtney Street right of ways.



**Figure 9: Neighbourhood Municipal Buffer**



# ***Servicing Strategy***

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## **4.1 Transportation**

The concept plan supports an integrated transportation system with an overarching objective to facilitate use of alternate modes of transportation. Circulation policies aim to prioritize pedestrians, cyclists, and transit users over motorized vehicles. They are designed to encourage alternate modes of travel by implementing shared sidewalks and pathways. The transportation network is made up of four components. These include:

- Road-Network
- Pedestrian Network
- Cycling Network
- Public Transport

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### 4.1.1 Road Network

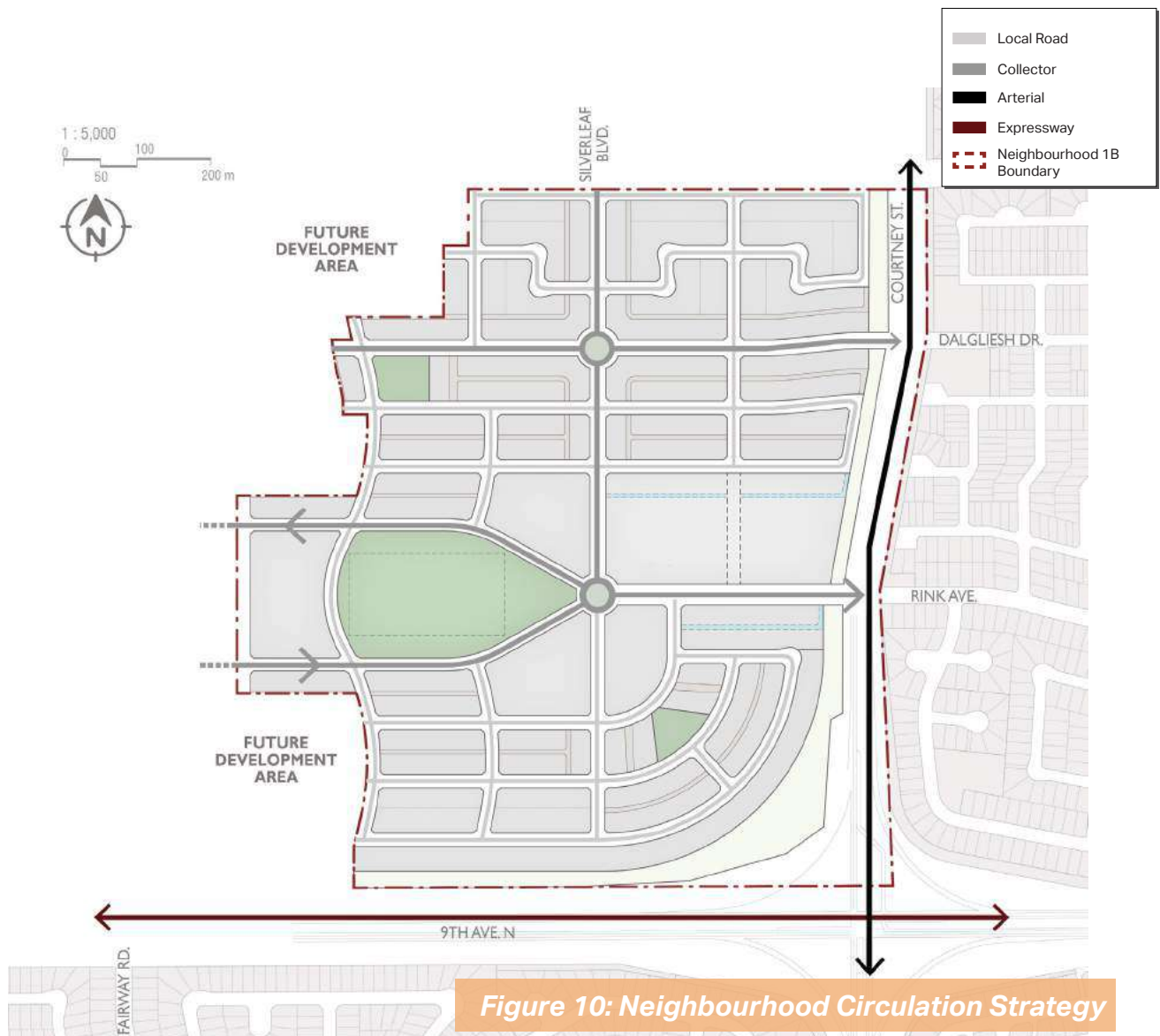
The conceptual street network proposed for Neighbourhood 1B are consistent with the City of Regina standard street hierarchy consisting of arterial, collector and local roads.



The circulation strategy for Neighbourhood 1B incorporates best practices for an efficient network that can accommodate cars, transit, bikes as well as pedestrians in a cohesive, integrated system. Key aspects of this vision are traffic calming techniques including a One-Way Couplet and Traffic Roundabouts. A more detailed analysis of the street network and its performance has been included as supplemental material as part of the Traffic Impact Analysis (TIA).

In an effort to provide walkable and more human-scale development, the streetscape is tailored to deliver ample provision for pedestrians, and safety for cyclists, while meeting vehicular traffic demands.

Existing city collector roadways are extended into the neighbourhood permitting movement to the broader Regina circulation network.

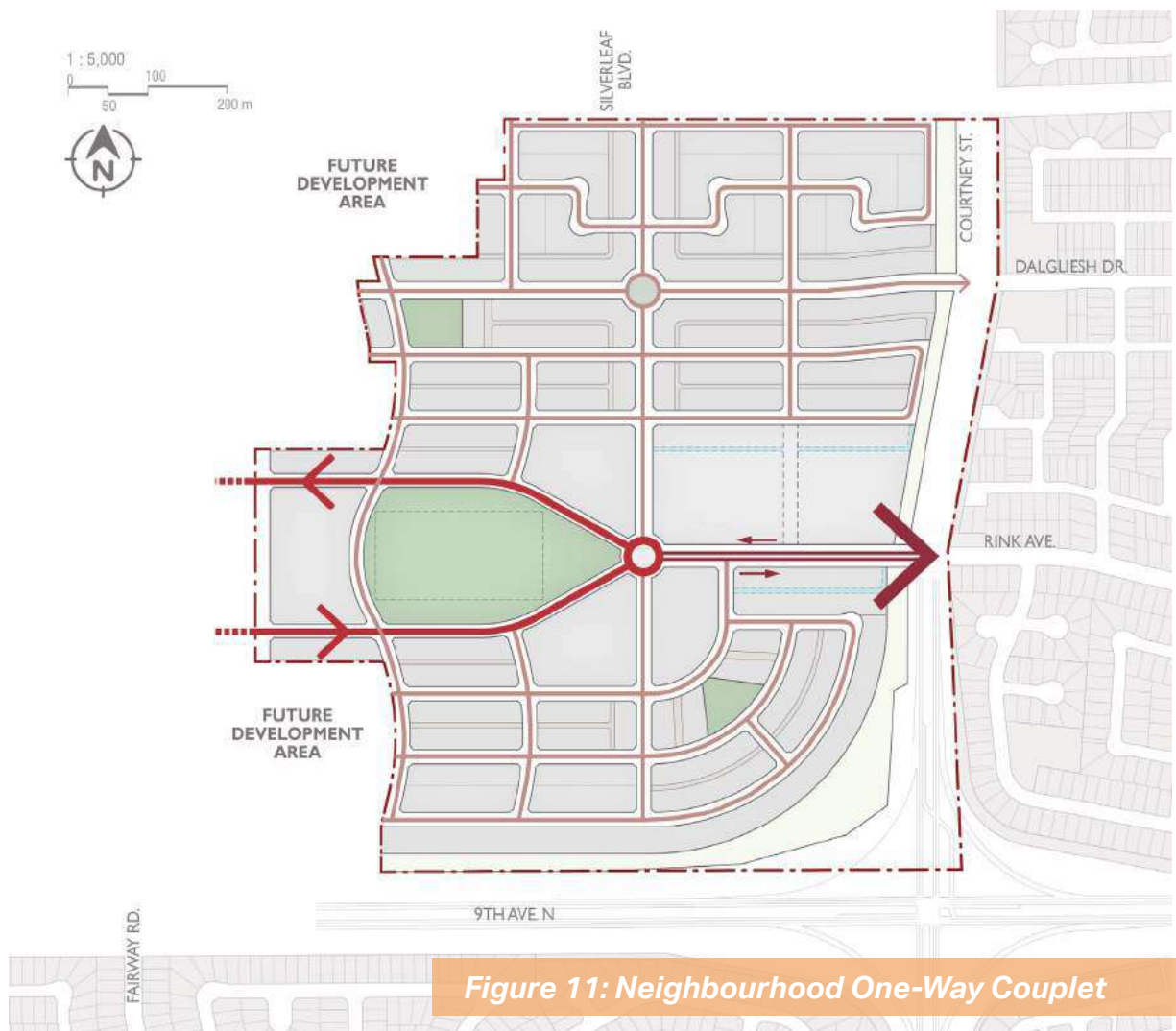


**Figure 10: Neighbourhood Circulation Strategy**



In Neighbourhood 1B, Rink Avenue will be converted into a Couplet, a pair of parallel one-way streets, beyond the roundabout. Rink Avenue will be one of the main east-west streets within Neighbourhood 1B, and is expected to filter much of the vehicular traffic into the site.

Within the neighbourhood, it connects to the flex zone node, as well as the main Neighbourhood Park. It also has higher density residential and flex-use blocks along it that will have high levels of pedestrian activity.



**Figure 11: Neighbourhood One-Way Couplet**

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### 4.1.2 *Pedestrian Network*

The concept plan incorporates an extensive network of pedestrian orientated spaces and connective elements including sidewalks, alleyways and multi-use pathways. This supports the plan objectives to create a more walkable and human-scale development.





### 4.1.3 Cycling Network

The cycling network proposed for Neighbourhood 1B will provide a safe, well-connected system to suit both recreational and commuter cyclists. Routes illustrate good connectivity to the existing and proposed City of Regina cycling network, shown in the City of Regina Future Transportation Plan (Draft plan, October, 2013). The network includes four classifications to accommodate different types of cyclists. Three of these cycling typologies were included in Neighbourhood 1B.



**Bike Lane**

Bike lanes are the most common type of on-street bikeway, where a separate painted lane is dedicated for cycling.

Painted buffers are used in some contexts where greater separation from other traffic is desirable.



**Informal Trail**

Informal Trails are off-street naturalized pathways for active modes and are found within the context of Neighbourhood 1B, along the pipeline corridor easement.



**Bike Boulevard**

Bike boulevards are low-volume, low-speed streets that provide features that prioritize cycling by making it safer and more attractive. An example pictured is a median that discourages cut-through vehicular traffic, but allows cyclists to proceed through.

Bike boulevards are identified on streets that provide connectivity or already have a higher volume of cycle use.



**Boulevard Trail/  
Shared-Use Sidewalk**

A Boulevard Trail (also referred to as a Shared-use Sidewalk), is a multi-use pathway which runs parallel to roadways. It will accommodate both cyclists and pedestrians.

Bike Path Descriptions taken from City of Regina, Transport Plan, 2014



## Primary Cycle Network

A boulevard trail/shared-use sidewalk will be provided on collector streets to accommodate commuter cyclists and provide good connections to other Coopertown neighbourhoods and the citywide cycling system. Cyclists will be allocated a off-street shared use pathway in each direction on Rink Avenue, with a boulevard to provide a buffer from parking and traffic.

## Neighbourhood Cycle Network

The neighbourhood cycle network complements the primary street network by providing a series of high-quality, multi-use pathways through parks and open space areas. This Neighbourhood network will accommodate recreational use and tie into the primary network at key development nodes.

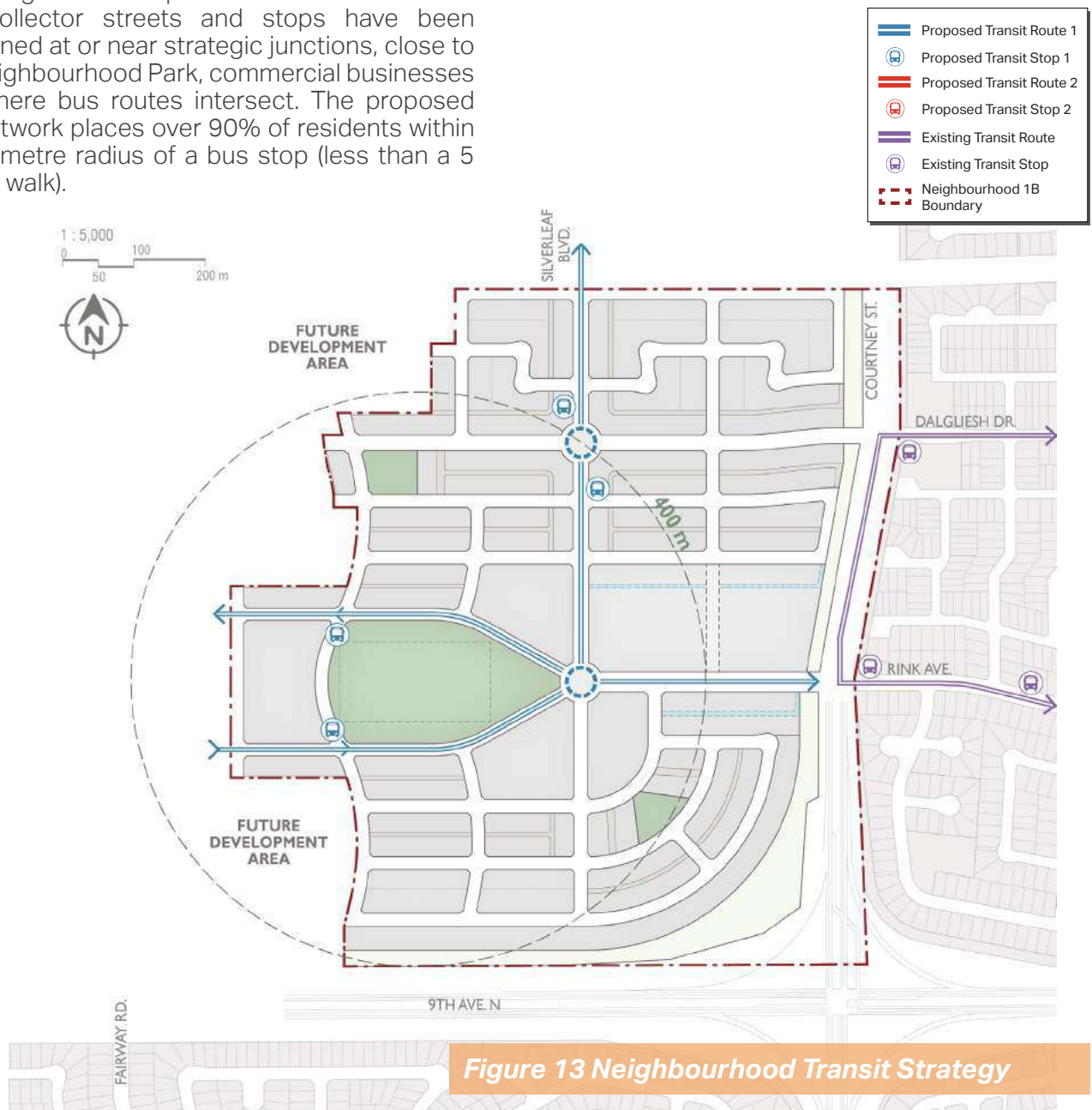


**Figure 12: Neighbourhood Cycling Network**

#### 4.1.4 Public Transportation

Proposed transit routes for Neighbourhood 1B have been integrated within the broader Coopertown Neighbourhood Plan and are designed to accommodate two bus routes (see Coopertown Neighbourhood Plan). These routes link to and extend the bus routes given in the 2013 Regina Transit plan. Routes follow arterial and collector streets and stops have been positioned at or near strategic junctions, close to the Neighbourhood Park, commercial businesses and where bus routes intersect. The proposed bus network places over 90% of residents within a 400 metre radius of a bus stop (less than a 5 minute walk).

Figure 13 illustrates the proposed extensions of transit to Neighbourhood 1B. City of Regina Transit will confirm and expand routes as needed.



**Figure 13 Neighbourhood Transit Strategy**

## 4.2 Water Servicing

The servicing strategy for Neighbourhood 1B is part of a larger servicing strategy for the area. The details of this servicing strategy are outlined within the overall Coopertown Neighbourhood Plan. The Neighbourhood 1B Concept Plan area will be serviced by the City's primary pressure zone. There are two connections proposed to feed this area. The first will be a 400mm connection to the existing 400mm diameter watermain at Courtney St. and Rink Ave running eastward to Fairway Rd.

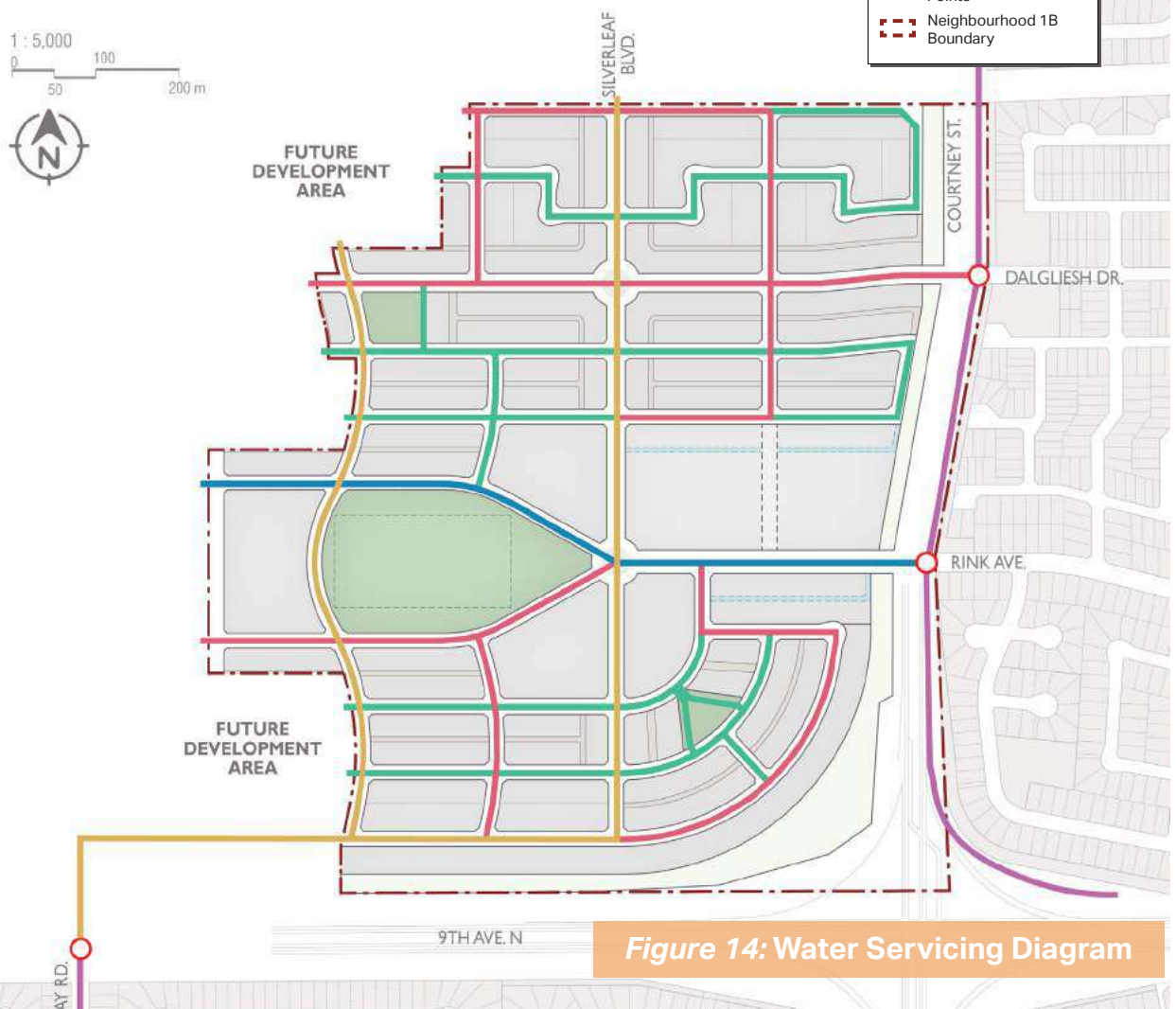


Figure 14: Water Servicing Diagram



## 4.3 Wastewater Servicing

Development of the plan area will require installation of new sanitary sewers, trunk sewer, and new wastewater lift station. Figure 15 provides an overview of the sanitary collection system for the plan area.

All of the wastewater flow generated within the plan area will be directed south via a 750mm to 1050mm diameter trunk sewer to a new sanitary lift station located south of 9th Avenue North.

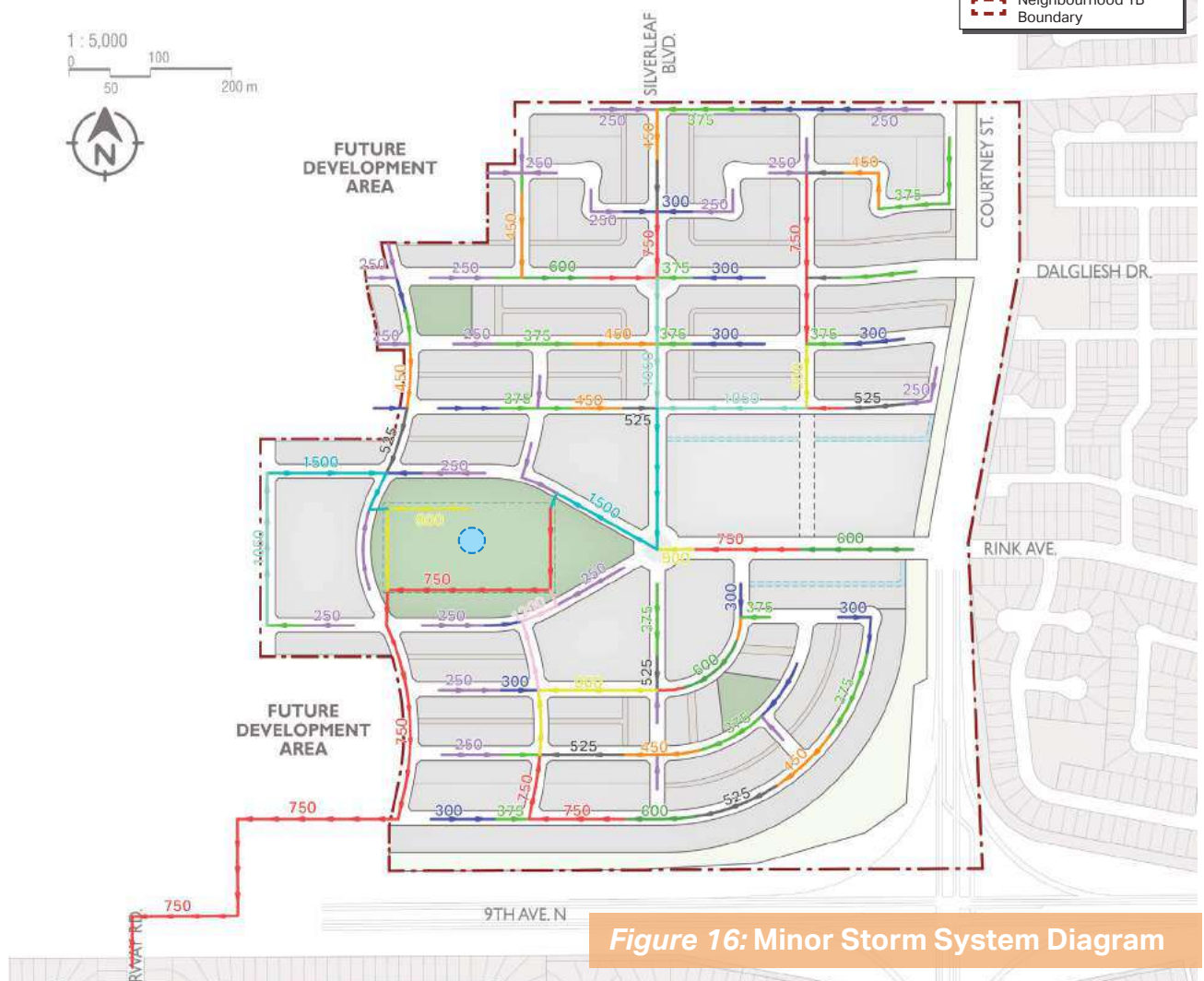


Figure 15: Wastewater Servicing Diagram

## 4.4 Stormwater

Neighbourhood 1B is located within the Wascana Creek drainage basin. The area currently consists of undeveloped agricultural land. The topography is undulating but generally slopes from north to south.

Once developed, stormwater will be directed south through the Westhill neighbourhood and will outlet to Wascana Creek. The Neighbourhood 1B Concept Plan will use dry bottom detention facilities for stormwater servicing.



Dry bottom detention facilities will be used to provide storage. Figure 16 provides an overview of the stormwater collection system for the plan area. Figure 17 provides an overview of the Major Overland Flow Paths within the plan area.

Both major overland flow and flow from the minor collection system will be directed to the detention site located within the plan area. Flows from the dry bottom detention facilities will then connect to the 1350mm diameter storm sewer provided in the Westhill neighborhood. The Detention facility will be utilized to control runoff from the plan area.

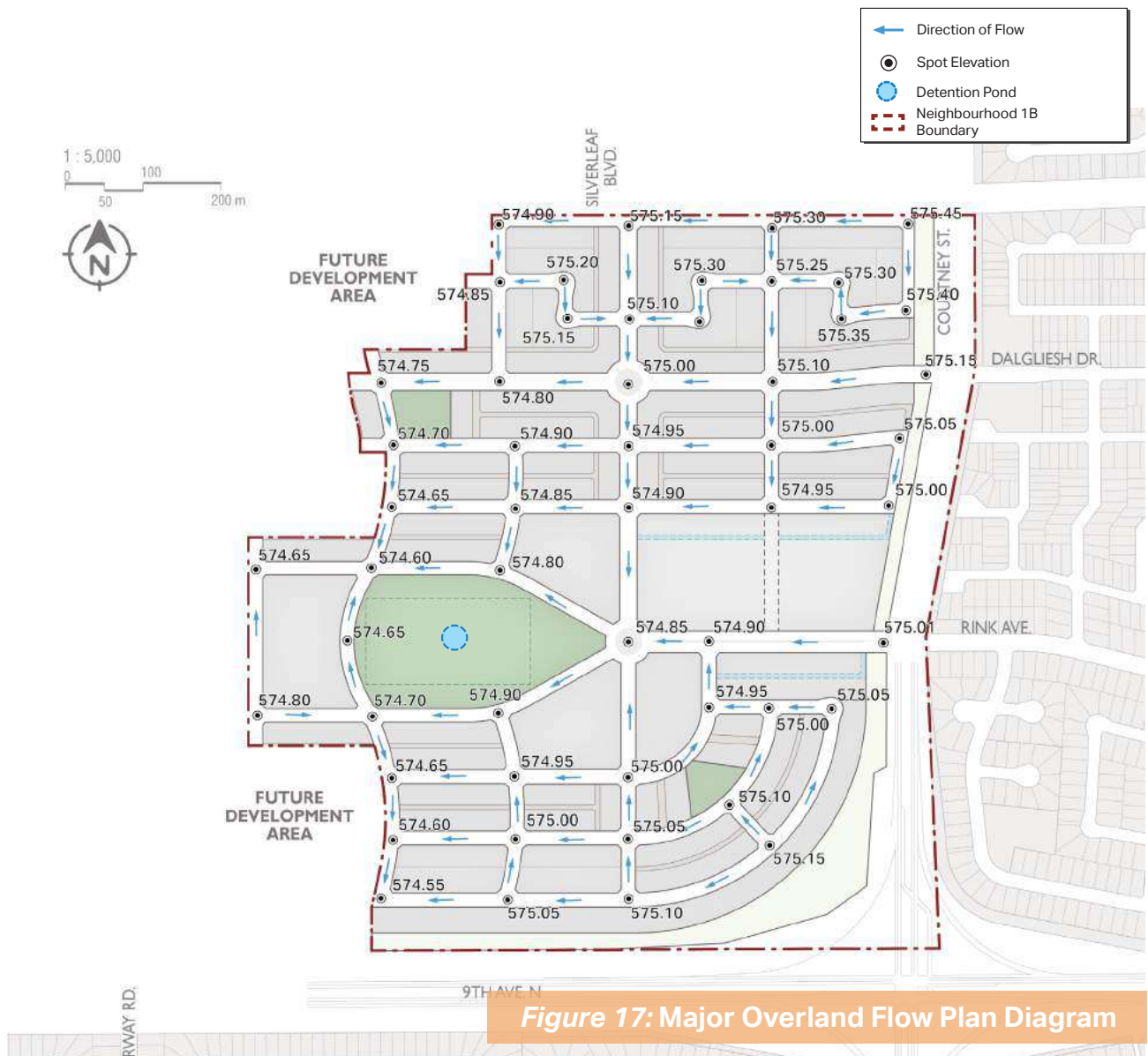


Figure 17: Major Overland Flow Plan Diagram



# Implementation

## 5.1 Phasing Plan

Development will commence in the south-east of the site and finish in the north. The eastern portion of the site will be the first area developed due to its proximity to the existing road network, existing servicing and adjacent amenities (such as schools, existing shops etc.).

Initial stormwater management facilities will be built and water and wastewater services established and connected into the existing system.

Two major intersections are proposed within Neighbourhood 1B, both along Courtney Street at the eastern edge of the site, providing a continuation of Rink Avenue and Dalgliesh Drive through the site.

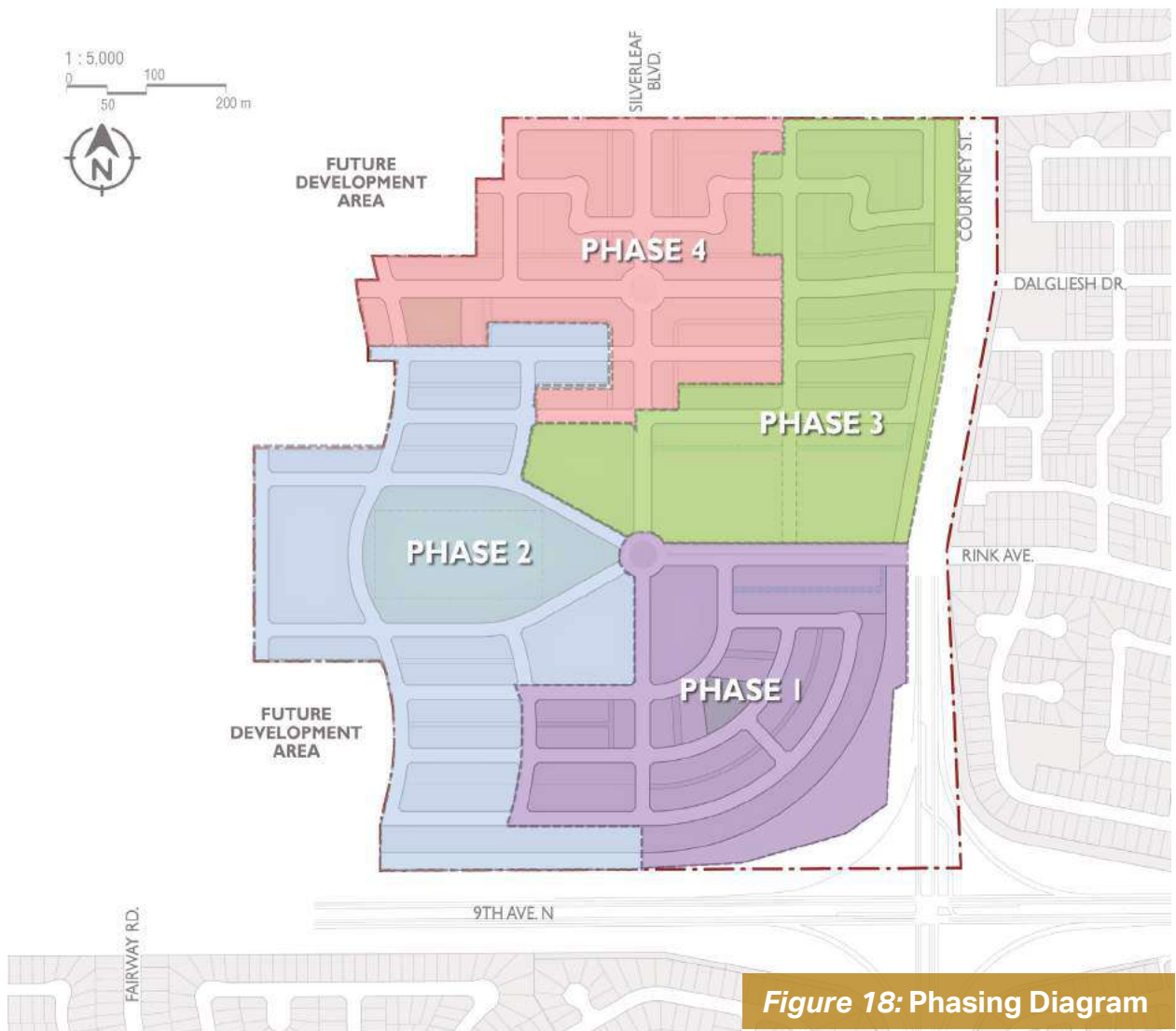


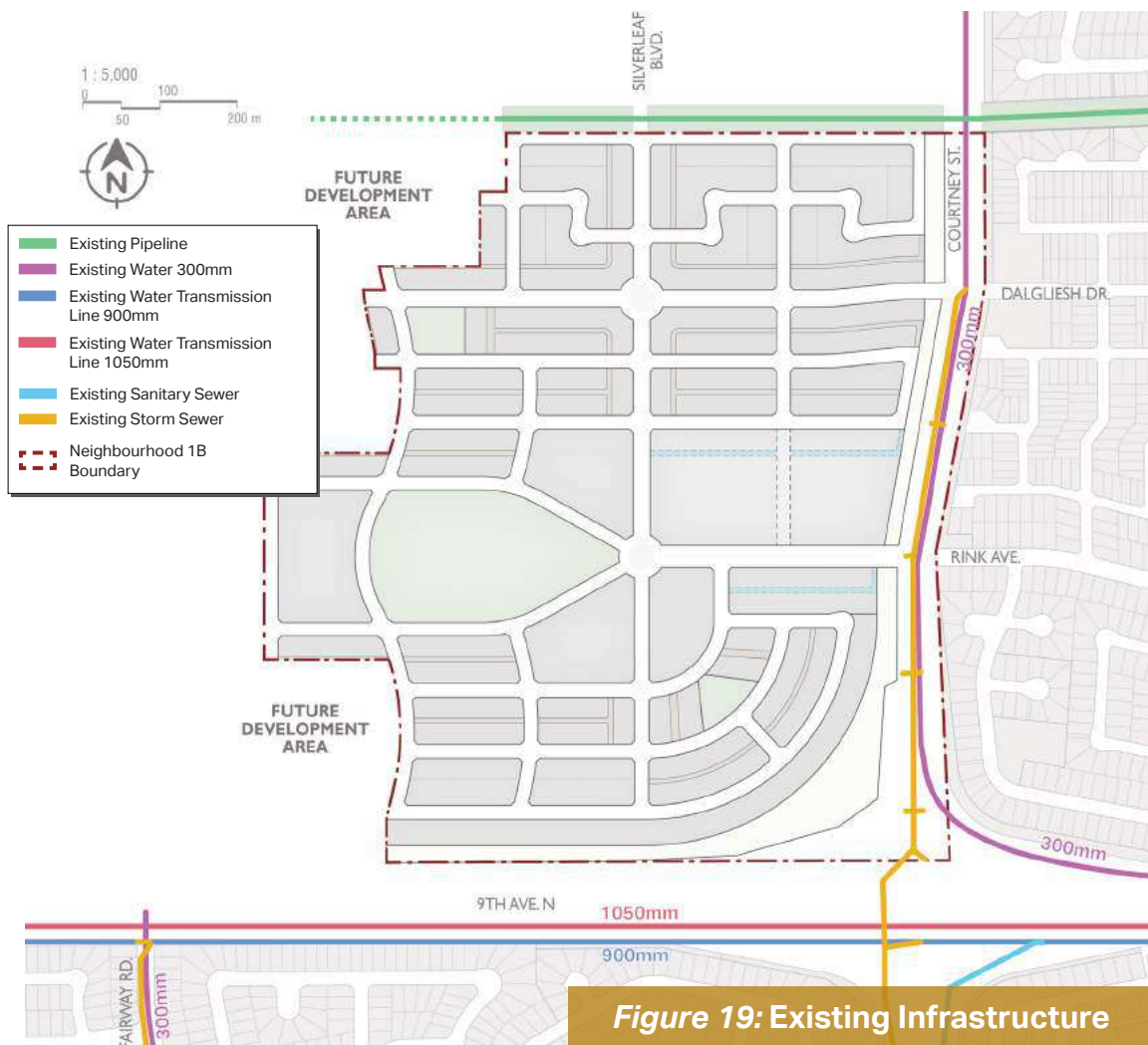
Figure 18: Phasing Diagram

## 5.2 Existing Infrastructure

Neighbourhood 1B is abutted by various existing infrastructure including two water transmission lines to the South, a pipeline and requisite easement to the North, and an existing water utility to the East.

**Table 4: Pipeline Dimensions**

Pipeline	Dimension
Plains	16"
Coop Propane	6"
Coop Butane	6"
Enbridge	20"
Enbridge	34"
Enbridge	24"
Enbridge	20"
Enbridge	48"



**Figure 19: Existing Infrastructure**



Concept Plan

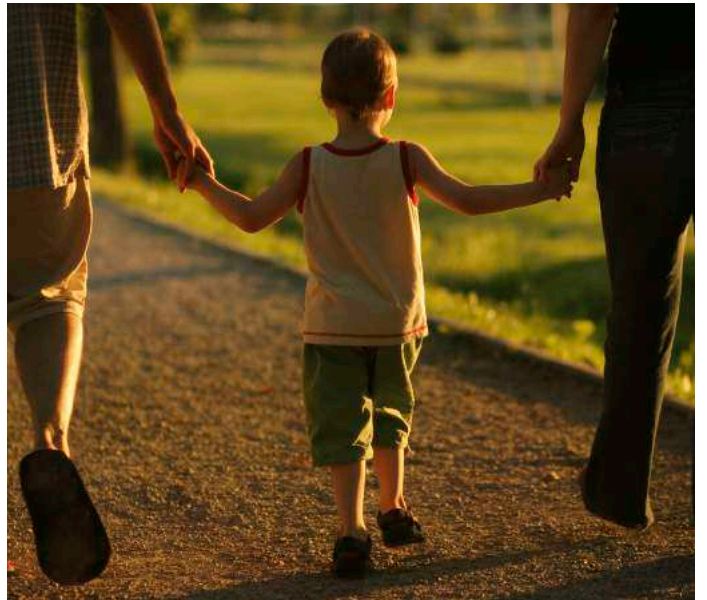
# ***Appendices***

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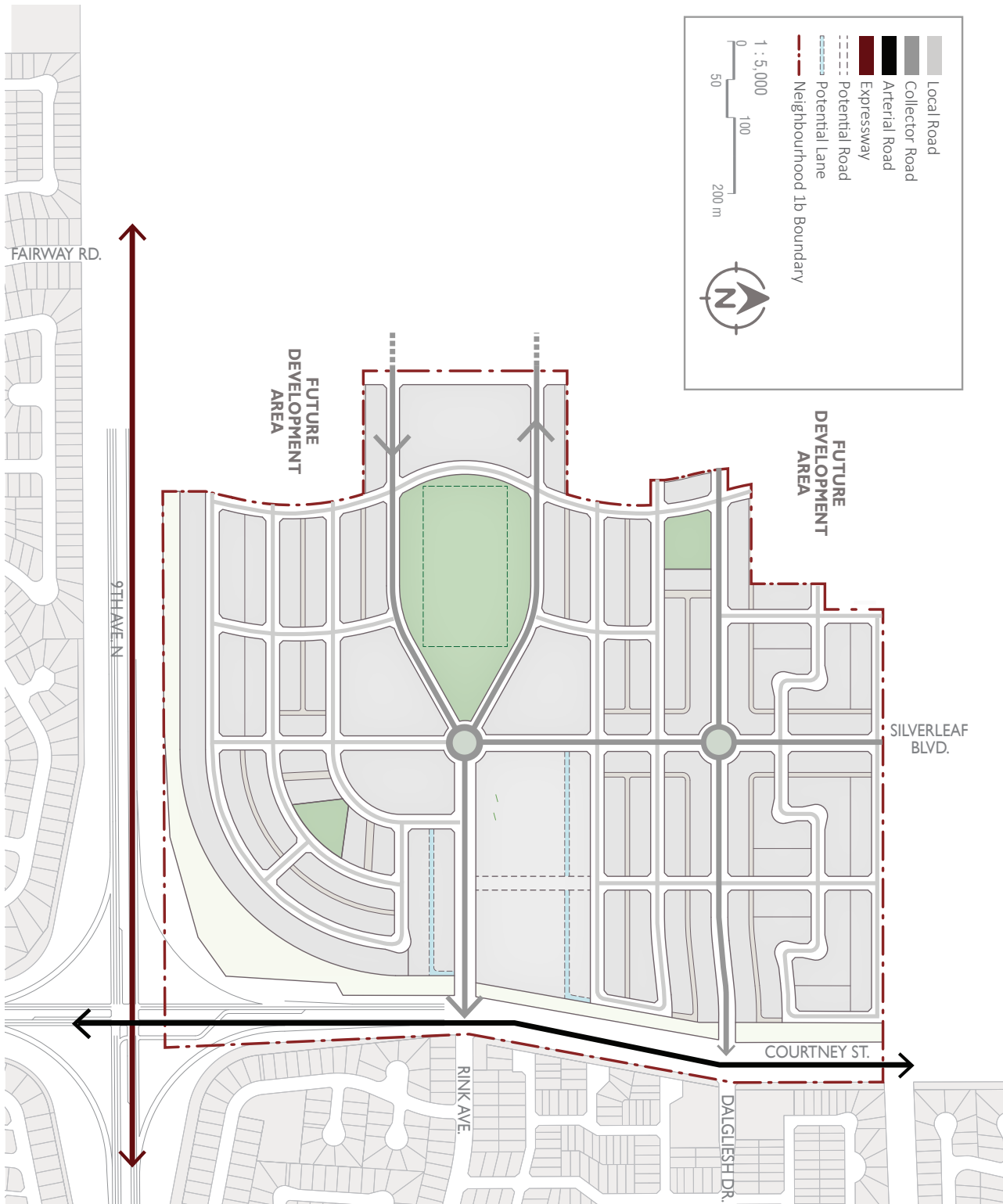
## 6.1 Servicing Studies



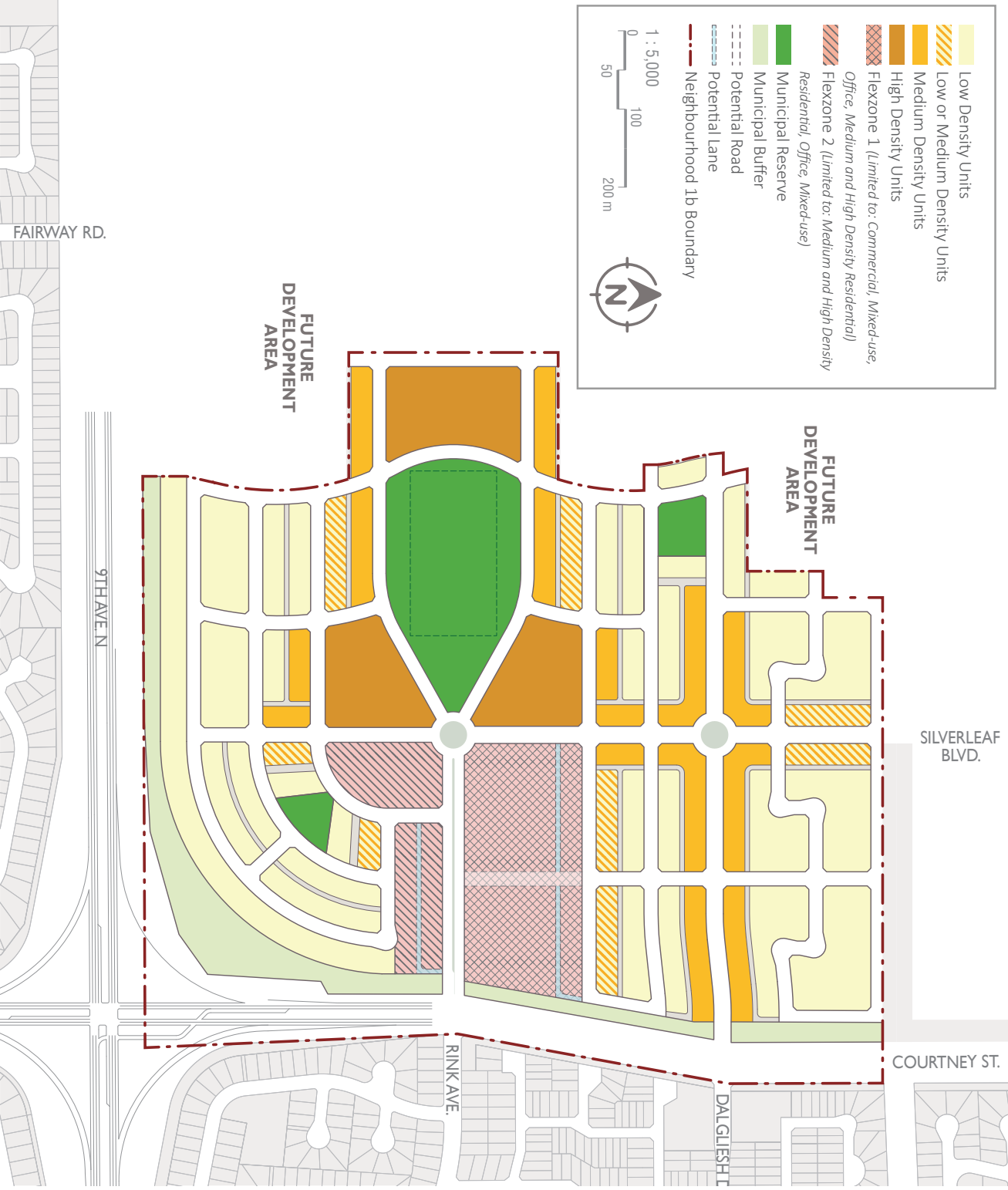




## 6.2 Circulation Diagram



### 6.3 Land Use Diagram





# COOPERTOWN

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