



Town of Trochu

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# Northwest Area Structure Plan

Bylaw No. 2020-16

**TOWN OF TROCHU  
BYLAW NO. 2020-16**

**A BYLAW OF THE TOWN OF TROCHU, IN THE PROVINCE OF ALBERTA, TO ADOPT THE NORTHWEST AREA STRUCTURE PLAN**

**WHEREAS**, pursuant to the *Municipal Government Act*, Statutes of Alberta, RSA 2000, c M-26, as amended from time to time, provides that a Council may by Bylaw adopt an area structure plan,

**AND WHEREAS**, The Council of the Town of Trochu considers it necessary to adopt, in accordance with Section 633 and 636 of the *Municipal Government Act*, the Northwest Area Structure Plan, being Bylaw No. 2020-16, and amendment thereto, to specify policy and regulatory direction for the lands within the land on the northwest edge of the Town of Trochu, as shown on Figure 1 of the ASP document.

**AND WHEREAS**, The Northwest Area Structure Plan has been prepared in accordance with the requirements of Part 17 of the *Municipal Government Act*;

**AND WHEREAS**, notice of the proposed Bylaw and Public Hearing was given pursuant to Section 606(2) of the *Municipal Government Act*;

**AND WHEREAS**, a Public Hearing regarding the proposed Bylaw was scheduled for and held on \_\_\_\_\_, 2020 commencing at \_\_\_\_\_, at the \_\_\_\_\_;

**NOW THEREFORE, THE COUNCIL OF THE TOWN OF TROCHU, IN THE PROVINCE OF ALBERTA, DULY ASSEMBLED, AND PURSUANT TO THE AUTHORITY CONFERRED UPON IT BY THE MUNICIPAL GOVERNMENT ACT, RSA 2000, C M-26, AS AMENDED, ENACTS AS FOLLOWS:**

**THAT THE NORTHWEST AREA STRUCTURE PLAN (“SCHEDULE 1”), AS ATTACHED AND FORMING PART OF THIS BYLAW BE ADOPTED.**

**1. SHORT TITLE:**

This bylaw may be referred to as “The Northwest Area Structure Plan Bylaw”

**2. EFFECTIVE DATE:**

This bylaw comes into force on the date of its final passing;

READ A FIRST TIME THIS \_\_\_\_ DAY OF \_\_\_\_\_, 2020.

READ A SECOND TIME THIS \_\_\_\_ DAY OF \_\_\_\_\_, 2020.

READ A THIRD AND FINAL TIME THIS \_\_\_\_ DAY OF \_\_\_\_\_, 2020.

\_\_\_\_\_  
Barry Kletke – MAYOR

\_\_\_\_\_  
Carl Peterson - CAO

# Executive Summary

The Northwest Area Structure Plan (ASP) is a long-range planning document that provides a Land Use Concept and implementation strategy to guide future development of a +/- 31.9 hectare parcel of land located in the Town of Trochu (the Town). The purpose of an ASP is to provide details on the growth and future development of a particular area in the Town. The policies in an ASP focus on the function and use of land, infrastructure, residential density and Land Use Concept. The process for ASP approval includes the completion of background studies, information analysis, community consultation, background report and draft ASP, followed by a public hearing for Council approval.

The lands within N.W 17-33-22 W4M, Plan 861069707 (Plan Area) are currently owned by the Town, situated along the north and western boundary of the Town. This ASP is a statutory planning document adopted by a bylaw by the Town as policy pursuant to the *Municipal Government Act* (Section 633) to satisfy Town's Municipal Development Plan's vision for residential and commercial development in this location.

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### A Public Engagement





# PART 1

## INTRODUCTION

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## 1.1 PURPOSE OF THE AREA STRUCTURE PLAN

The Northwest Area Structure Plan (ASP) is a long-range statutory planning document that provides a roadmap for future development of a specific area of the Town of Trochu (the Town), specifically, the NW 17-33-22 W4M, 861069707 (the Plan Area).

The Northwest ASP bridges the high level policies of the Town of Trochu Municipal Development Plan (MDP) with future detailed planning processes and creates a policy framework to guide forthcoming redesignation, subdivision, and development applications. This process ensures policy alignment throughout the hierarchy of the Town's plans.

This ASP outlines the vision for the development in the Plan Area by presenting a Land Use Concept for Council to consider during decision making for future development. It discusses:

- Future land uses;
- Population densities;
- General location of transportation corridors and public utilities;
- Open space and pathways; and
- The sequence and phasing of development.

This ASP provides direction for the development of the Plan Area, providing for a variety of residential and commercial development, and accommodating future growth that will support the Town's tax base.

There are several commercial/industrial developments in the Town, which will create significant employment opportunities and are anticipated to create a demand for housing that exceeds the available supply. The policies in this ASP ensure that land is available for new housing, in order to support this demand. It is recognized that single-detached, large lot, residential homes are not an affordable option for all; therefore, the Northwest ASP allows for a variety of housing types that could support various income levels. These built forms could include single-detached dwellings, semi-detached and duplex dwellings, and attached housing (three or more attached units). The increased density outlined in this ASP has the ability to achieve approximately 196 to 263 housing units, not including the units dedicated to the seniors housing facility.

The ASP was initiated to support the Town's recently formed Trochu Housing Corporation, which identified the site for a new seniors housing project - the Trochu Seniors Supportive Living Facility. This facility will provide opportunities for independent and assisted living, with future potential to increase the number of units, as well as incorporate extended care and a medical clinic.

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## 1.2 PLAN INTERPRETATION

This ASP has aspirational goals, corresponding objectives, and guiding policies in Parts 2 and Part 3; therefore, the document should be considered in a holistic manner and each policy is expected to be interpreted in the context of one another. The overarching goals (Section 1.7) of the ASP are more likely to be achieved with a commitment to the complete set of policy directions.



For the purpose of this ASP, references are as follows:

- All reference in this document to the Town of Trochu may be referred to as Trochu or the Town;
- All reference in this document to the Northwest Area Structure Plan may be referred to as the Northwest ASP or ASP; and
- All reference in this document to the {legal description} may be referred to as the Plan Area.

This ASP contains the operative words ‘shall’, ‘must’, ‘should’, and ‘may’. The interpretation of these words is found below:

**Shall or Must** - indicates that actions are mandatory.

**Should** - indicates the direction to strive to achieve the outlined action but is not mandatory.

**May** - is discretionary, meaning the policy in question can be enforced if the municipalities chooses to do so. This is typically dependent on context and individual circumstances.

Neighbourhood commercial should be interpreted similarly to the Central Commercial District in the Town’s MDP. Though not located within the urban core, the Neighbourhood Commercial identified in the ASP will provide opportunities for retail, service, and employment and act as a buffer between Highway Commercial and residential land uses in the Plan Area.

Highway Commercial areas should be interpreted as described in the Town’s MDP, located adjacent to the Highway 21 corridor. The MDP’s Figure 9-Future Land Use Map identifies the area north of North Road along highway frontage as highway commercial.

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## 1.3 PLAN ORGANIZATION

The Northwest ASP is organized in the following three parts and one appendix:

### **Part 1: Introduction**

This part outlines the plan purpose, boundaries, policy alignment and interpretation. This part also describes the existing condition of the Plan Area and surrounding lands, as well as the ASP’s Vision and Mission, used to guide the policy framework in Part 2.

### **Part 2: Plan Policies**

Part 2 builds off of the goals outlined in Part 1. It contains objectives and policy direction for the Plan Area policies addressing land use, servicing, and infrastructure.

### **Part 3: Implementation and Monitoring**

This part outlines the implementation process and Plan phases, intermunicipal coordination, development applications, and the process for plan review and amendment.

## Appendices

The appendices do not form part of the Bylaw and are not Statutory.

### Appendix A

Appendix A provides the information on the public engagement process and discussing the outcomes from the open house held on May 28, 2019. This appendix also describes the key stakeholder issues and opportunities identified that informed this ASP.

## 1.4 POLICY DIRECTION

### Alignment with the *Municipal Government Act*

This ASP has been prepared under the legislative authority prescribed in Section 633 of the *Municipal Government Act*, which states:

(2) An area structure plan

(a) must describe

- (i) the sequence of development proposed for the area,
- (ii) the land uses proposed for the area, either generally or with respect to specific parts of the area,
- (iii) the density of population proposed for the area either generally or with respect to specific parts of the area, and
- (iv) the general location of major transportation routes and public utilities, and

(b) may contain any other matters, including matters relating to reserves, as the council considers necessary.

(3) An area structure plan must be consistent with

- (a) any Intermunicipal development plan in respect of land that is identified in both the area structure plan and the Intermunicipal development plan, and
- (b) any municipal development plan.

#### Town of Trochu MDP

*To accommodate the demand for conventional single-detached dwellings, raw land will need to be developed.*

*Future expansion would be best located to the north of North Road. This area is desirable for residential development as it is serviceable at a relatively low cost, contains existing sufficient access from a major road and is within the Town's boundaries.*

*The projected 25 year growth requirement of 92 lots could therefore be accommodated in the area north of North Road. (Pg. 21)*

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## Alignment with the Town of Trochu Municipal Development Plan

The Town's MDP, adopted by Bylaw No. 2015-08, was approved by Town Council on October 12, 2015. It serves as a general guide to facilitate the orderly development of land use, density of development, and location of major roads and facilities in the Town. The lands within the Northwest ASP are identified in the MDP for future commercial and residential development.

The MDP anticipates a slightly lower density than the Land Use Concept in the ASP; however, an MDP amendment was not required, as the general uses in this ASP are consistent with the MDP.

## Alignment with Kneehill County and Trochu Intermunicipal Development Plan

The Town of Trochu and Kneehill County have an adopted Intermunicipal Development Plan (IDP). The purpose of an IDP is to ensure development that occurs within the boundary area of two municipalities happens in a sustainable, environmentally responsible manner and takes place without any negative impacts to either municipality. The IDP identifies this land for commercial and residential development; therefore, the ASP conforms to the IDP.

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### 1.5 PLAN AREA

The ASP area is located on the northwest edge of the Town of Trochu, as shown on **Figure 1**. The Plan Area is legally described as the S ½ of the NW ¼ Section 17, Township 33, Range 23, West of the 4<sup>th</sup> Meridian. The approximate gross area within "Plan Area" is 31.9 hectares (ha; 78.8 acres).

The Plan Area has historically been used for agriculture, and is zoned C-1 Arterial Commercial District and R-1 Single-Detached Residential District. An amendment to the Land Use Bylaw is required to redesignate the residential parcels to allow for medium density residential development.






The Plan Area is bound by the following:

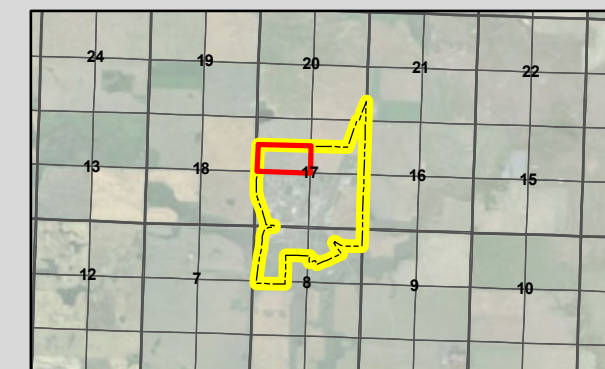
- Agricultural lands to the north and northeast;
- Trochu Arboretum to the east; and
- Residential, a cemetery and a water reservoir south of North Road.



**TOWN OF TROCHU**  
AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 1- CONTEXT MAP**

-  TOWN OF TROCHU BOUNDARY
-  NW ASP AREA
-  LEGAL QUARTER SECTION
-  EXISTING ROADWAY
-  RAILWAY

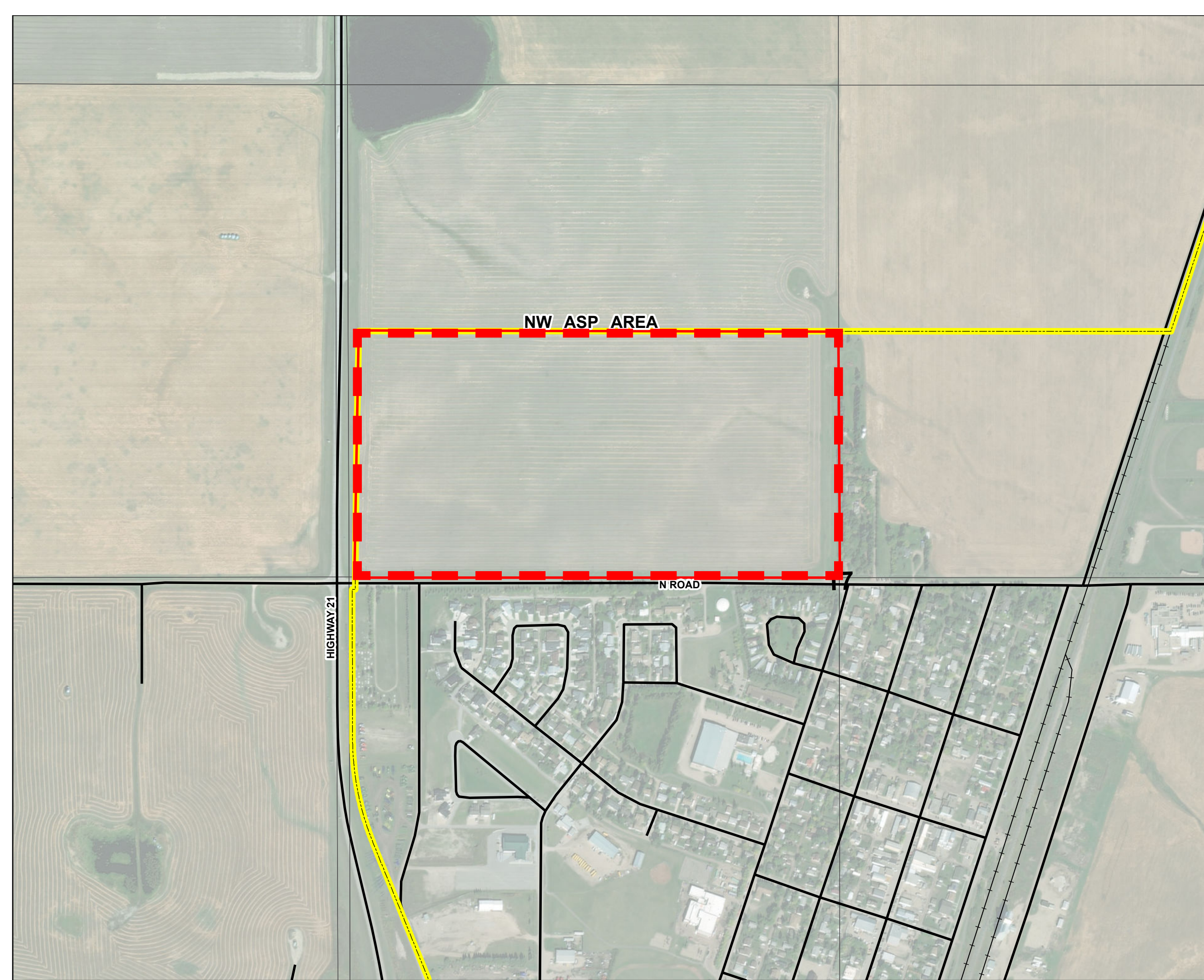


MAP DRAWING INFORMATION:  
DATA PROVIDED BY DILLON CONSULTING LIMITED, ALTALIS,  
ESRI, CANVEC, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS,  
CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN,  
AND THE GIS USER COMMUNITY

MAP CREATED BY: RBB  
MAP CHECKED BY: KH  
MAP PROJECTION: NAD 1983 UTM Zone 12N



PROJECT: 18-8912  
DATE: OCT 2020





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## 1.6 SITE CONSTRAINTS

During the preparation of this ASP, the following physical constraints and attributes were evaluated to guide opportunities for growth:

- Highway 21 is located adjacent to the western boundary of the Plan Area. The Town has recognized that the opportunity for residential growth across Highway 21 is limited due to undesirable highway crossing conditions, as well as the costs associated with servicing across the highway.
- No oil wells are located within the Plan Area; however, one oil and gas well is located outside of the Plan Area to the northeast.
- A 10 m right-of-way that accommodates a pipeline runs diagonally north/south through the Plan Area. The layout and design of the development has considered this pipeline and the alignment of the collector roads adjacent to the right-of-way. The 10 m pipeline right-of-way will be used as a public utility lot, providing a green strip to enhance the walkability and pedestrian enjoyment of the area.
- A private lease road runs along the eastern boundary of the Plan Area, servicing the wellhead off the property. When the well is decommissioned, this road, identified as Public Utility Lot in the Land Use Concept, may be retained by the Town to provide emergency response access to the ASP area.

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## 1.7 AREA STRUCTURE PLAN VISION AND MISSION

### Vision

The following statement envisions how the Northwest ASP could look in the future:

*The land within the Northwest Area Structure Plan will be a sustainable, comprehensive community with an integrated Land Use Concept and excellent linkages to the existing Town's development. Residential, seniors housing, and commercial land uses will be suitably located and designed to ensure residents live safely in a healthy, well-designed, pedestrian-friendly environment. The development will be phased in an efficient, fiscally responsible and orderly manner, in a way that optimizes proximity to commercial services, open space linkages, neighbourhood parks, and existing community amenities.*

### Mission Statement

The following mission statement addresses the overall intent of the ASP:

*To facilitate the development of a comprehensively designed community that is integrated and linked to surrounding neighbourhoods, provides a variety of housing types, and supports local commercial businesses.*

# PART 2

## PLAN POLICIES



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## 2.1 ASP GOALS

### Goals

There are seven goals that guide the development in this ASP. These goals are based on policy direction from the Town's MDP to efficiently manage growth, maintain existing physical characteristics of the Plan Area, and address key constraints and opportunities identified during the planning process. The goals are as follows:

1. To facilitate the development of the ASP lands as a comprehensive community that is integrated with surrounding neighbourhoods and supports local commercial development.
2. To create a well-designed, safe and interconnected transportation system that addresses the needs of motorists, pedestrians and cyclists, with connections to established residential areas and recreational facilities south of the Plan Area.
3. To provide sufficient developable and serviceable land to accommodate projected growth in the Town that will accommodate the short and long-term needs of the Town.
4. To provide Highway Commercial and Neighbourhood Commercial land with retail opportunities to serve new and existing residents, and the travelling public.
5. To provide additional housing supply that accommodates future growth projected for the Town.
6. To provide open spaces and pathway linkages throughout the Plan Area.
7. To provide potable water, wastewater, and stormwater systems in a safe and cost effective manner.

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## 2.2 LAND USE CONCEPT

### Purpose

The Land Use Concept envisioned for the Northwest ASP is illustrated in **Figure 2**. This concept details the general location and physical organization of land uses in the ASP area. The Plan Area consists of predominantly low and medium density residential land uses, with supportive neighbourhood and Highway Commercial uses. **Table 1** provides a breakdown of land use areas and statistics.

Table 1: Land Use Concept

Gross Area	78.7 (Ac)	31.8 (Ha)	Percentage of Gross (%)	Percentage of Net Area (%) (Total Gross Area minus right- of-way, easements, roads, Public Utility and MR)
Net Developable Area	52.4 (Ac)	21.2 (Ha)		
Right-of-ways, easements & roads	9.6	3.7	12.2	n/a
Public Utility (storm ponds)	10	41.31	12.7	n/a
Municipal Reserve (MR)(park)	6.9	2.8	8.76	n/a
Residential	20.5	8.3	26.04	39.1
Seniors Housing	12.3	5	15.63	23.8
Commercial	19.5	7.9	24.8	37.1
<b>Total</b>	<b>78.8</b>	<b>31.8</b>	<b>100%</b>	<b>100%</b>

## General

The Northwest ASP incorporates community centered design and walkability. A thriving neighbourhood begins with a safe residential environment balanced with accessibility to services, commercial goods and connectivity.

The main components of the Land Use Concept include:

1. Highway Commercial lands along Highway 21 visible to the travelling public. Developments are encouraged to develop to a high quality standard of design to act as entrance features to the Plan Area and the Town.
2. Neighbourhood Commercial uses to provide employment opportunities and local amenities.
3. Residential areas with opportunities for low to medium densities have the potential for a variety of housing types.
4. A seniors housing facility providing seniors housing and future opportunities for medical and support services in the community.

## Objectives

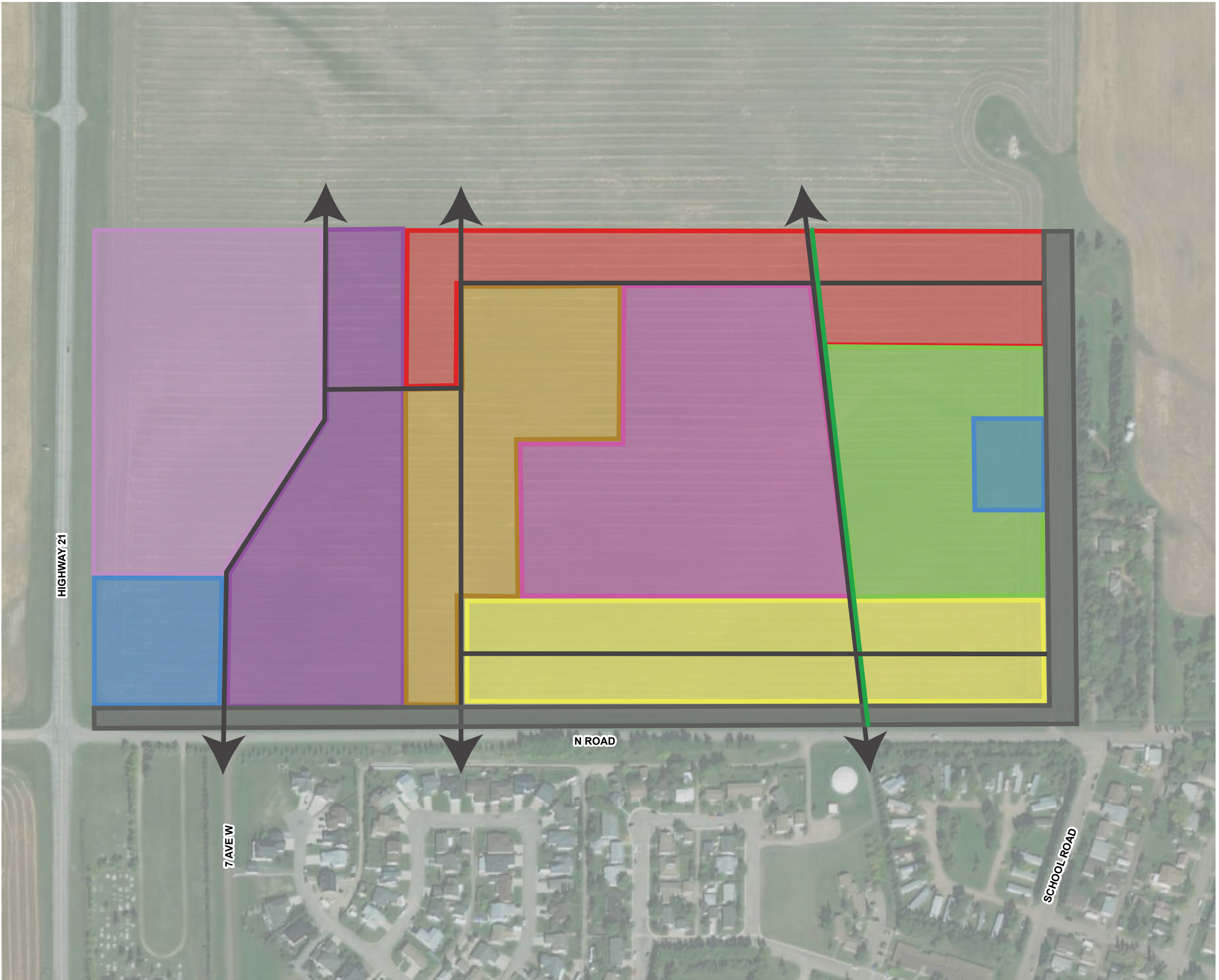
- To provide sufficient developable and serviceable land to accommodate projected growth to accommodate the short and long-term needs of the Town.
- Support the development of a comprehensively designed residential neighbourhood that provides a range of lot sizes and housing types to accommodate various age groups, income levels, and lifestyles.
- Provide adequate land to develop a seniors housing facility within the Plan Area.
- To develop a seniors housing facility in close proximity to retail amenities, medical services and recreation facilities, and central to the community.
- To develop a high quality Highway Commercial area that acts as an attractive and welcoming gateway into the community.

- To design Neighbourhood Commercial areas to be a physical and aesthetic buffer between lands dedicated to Highway Commercial and residential areas.
- To ensure commercial uses are compatible with existing and future residential land uses.
- To grow local employment opportunities that supports the existing and future population of the Town.
- To minimize the impact of commercial development on residential development to the east through setbacks, screening, landscaping and buffering.

2.2.1. Land uses shall generally conform to the Land Use Concept illustrated on **Figure 2**.

2.2.2. To achieve a complete community, the lands will be developed with a mix of land uses, including residential, employment and recreational uses.

2.2.3. Once adopted, the ASP will guide all future development and subdivision applications in the Plan Area.



**TOWN OF TROCHU**  
AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 2 - LAND USE CONCEPT**

- NW ASP AREA**
- LOW DENSITY RESIDENTIAL**
- LOW TO MEDIUM DENSITY RESIDENTIAL**
- MEDIUM DENSITY RESIDENTIAL**
- SENIORS HOUSING**
- HIGHWAY COMMERCIAL**
- NEIGHBOURHOOD COMMERCIAL**
- PARK (MR)**
- PUBLIC UTILITY LOT (STORM POND)**
- PUBLIC UTILITY LOT (EASEMENT)**
- PIPELINE ROW/WALKWAY**
- ROADWAY**



SCALE 1:3,000 (at 11x17)  
0 25 50 100 Meters

MAP DRAWING INFORMATION:  
DATA PROVIDED BY DILLON CONSULTING LIMITED, ALTALIS, ESRI, CANVEC, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY

MAP CREATED BY: RBB  
MAP CHECKED BY: PM  
MAP PROJECTION: NAD 1983 UTM Zone 12N

## Residential

The predominant housing type in the Plan Area is low density, single-detached and semi-detached dwellings, with opportunity for pockets of medium density semi-detached dwellings and attached (three units or more) housing. In addition, the seniors housing development will accommodate 80 units in the first phase, with a future possible expansion of 64 additional units.

Residential areas are placed strategically to be in close proximity to open space and community amenities to encourage walkability and reduced reliance on personal vehicles.

Residential lands are located in an area directed for residential growth, in accordance with the MDP. The Plan Area is deemed desirable for future development due to the low cost of service provision, existing access points, and the availability of land within Town boundaries.

Approximate housing and population projections are calculated based on two development options for residential. The high population projection is based on smaller lots sizes, larger numbers of semi-detached dwellings and attached housing (lot width a minimum of 15 m for single-detached and 7.6 m for semi-detached units). The low population projection is based on predominantly single-detached dwellings on larger lots and some semi-detached development (lot width a minimum of 12.2 m for single-detached and 7.6 m for semi-detached units). Population projections for the residential development are 2.4 persons per unit based on the 2016 Federal Census. Population projections for the seniors housing development is an approximation, calculated by the possible occupant number for each unit type (bachelor, one bedroom, two bedroom).

The low density scenario includes predominantly single-detached dwellings with a pockets of medium density, semi-detached and attached housing units. The high density scenario proposes an increased number of semi-detached and attached housing units with pockets of low density, single-detached homes. The Town's MDP calculated a population forecast for low and high growth rate scenarios, using an average growth rate of 1.0% for the low growth rate, and 2% for the high growth rate. The low growth rate projects an increase of 295 persons by 2036 for a population of 1,370. The high growth rate projects an increase of 645 persons for a population of 1,720 persons by 2036. The ASP Concept Plan slightly exceeds the residential capacity required to meet both the low and high populations projected in the MDP. However, the development is phased in a manner that ensures future sites are serviced efficiently and economically, in anticipation of the increased housing demand and required dwellings.

- 2.2.4. Residential development will conform to the Trochu Land Use Concept in **Figure 2**.
- 2.2.5. All residential development will tie into the municipal piped water and sewer systems.
- 2.2.6. Individual vehicular access to residential dwellings shall not be permitted from the North Road.
- 2.2.7. The primary form of residential development is low to medium density, single-detached and semi-detached dwellings, with some attached (three units or more) housing.



- 2.2.8. The phasing of residential developments shall be designed to be contiguous with existing developed areas to allow for cost-effective provision of services. The Phasing Plan is located in **Figure 9**.
- 2.2.9. All residential development that backs onto parks, trails or open space may only construct a 4 ft. high chain link fence of standard colour to enhance the public safety for the use of the trails and open space.
- 2.2.10. Residential development backing onto North Road may install standardized vinyl 6 ft. high privacy fence, and install landscaping to provide buffer and separation from the North Road noise. The fencing shall be standard in materials and colour, to the discretion of the Town.
- 2.2.11. Residential units west of the seniors’ site, regardless of the heights allowed in the Land Use Bylaw, shall be developed to a single storey to protect the views from the seniors’ site and the maximum building height shall not exceed 6 m.

**Table 2: ASP Population Projection**

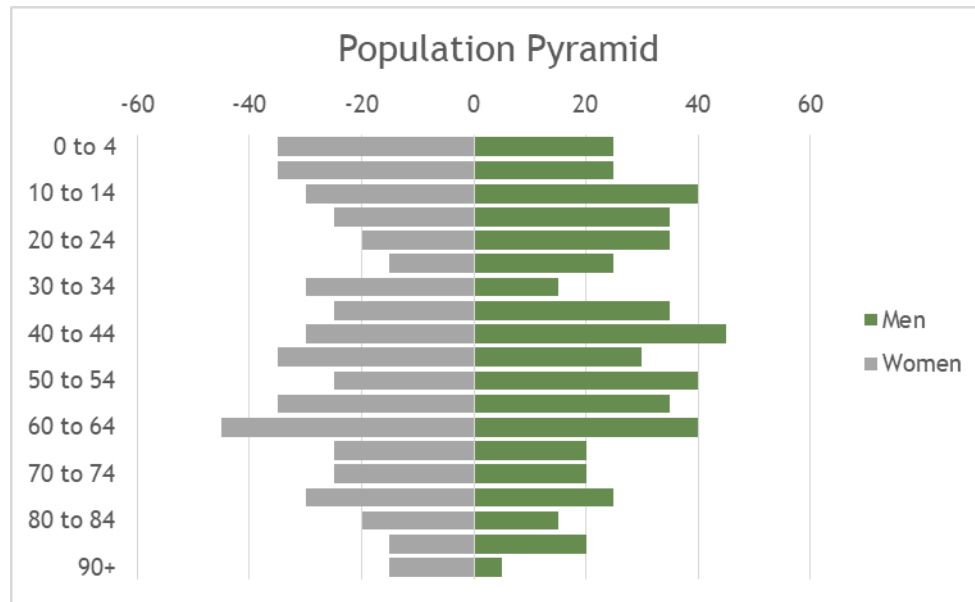
Residential Development	Area Acres (Ac)	Hectares (Ha)	Low Density Scenario	Low Population Projection	High Density Scenario	High Population Projection
Residential	20.5	8.3	196	470.4	263	631.2
Seniors Housing	12.3	5.0	80	116.0	144	204.0
<b>Total</b>	<b>32.8</b>	<b>13.3</b>	<b>276</b>	<b>586.4</b>	<b>407</b>	<b>835.2</b>

**Table 3: Population Density**

Total Dwellings	Persons/Dwelling	Population Density (Per Ac) Residential Only	Population Density (Per Ac) Total (Including Seniors Facility)
Low Population Projection: 578.4	2.4 (based on 2016 census data)	22.9	17.8
High Population Projection: 835.2	2.4 (based on 2016 census data)	30.7	25.5



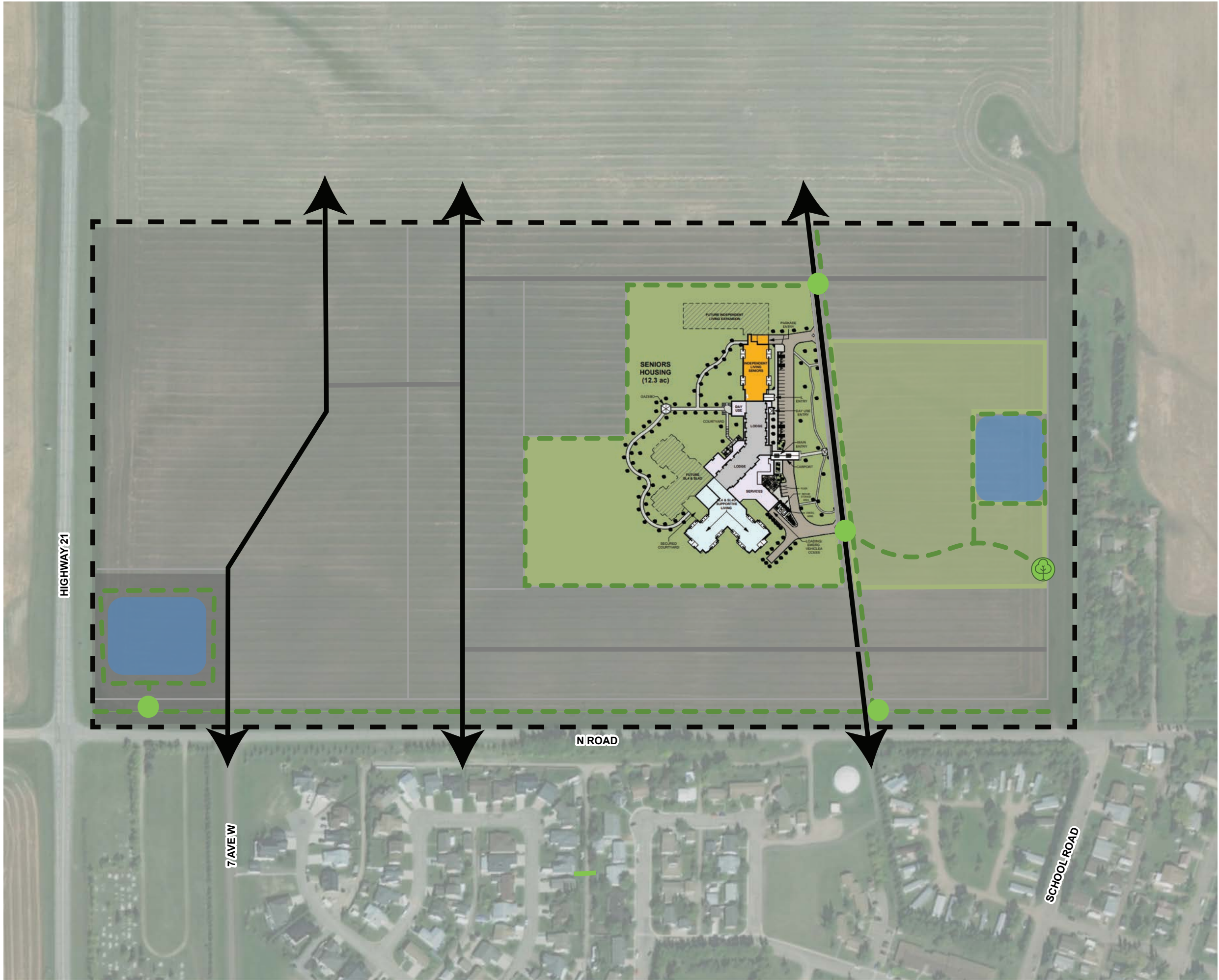
Graph 1: Town of Trochu Population Pyramid (2016 Census data)



## Seniors Housing








The MDP projects gradual growth in the Town's population and a significant increase in the seniors' population, with a large cohort of ages 64 and above. The provision of a seniors housing facility in the Plan Area supports an aging in place scenario for future senior residents by providing units designed for independent living and assisted living. This development has been allocated 12.3 acres of land. The development is centrally located in the Northwest ASP area, connected by paths and the local road network to the adjacent recreational uses and the Town's services. The first phase of development is anticipated to include approximately 80 studio, one and two bedroom units, with a future expansion of an additional 64 units. See [Figure 3](#) for the conceptual site plan of the seniors housing facility. The seniors housing facility is expected to be built as the first phase of development in the Plan Area.

- 2.2.12. The seniors housing facility will be designed as the focal point of the Plan Area to accommodate aging in place options for seniors' living.
- 2.2.13. The seniors housing facility shall have frontage onto a minimum of two roadways.
- 2.2.14. Safe pedestrian and scooter access shall be provided where the seniors facility connects to adjacent amenities, green space, and pathways.



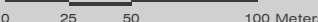

**TOWN OF TROCHU**  
 AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 3 - SENIORS HOUSING, OPEN SPACE AND PATHWAYS**

-  **NW ASP AREA**
-  **INTERNAL RESIDENTIAL ROADWAY**
-  **ACCESS TO ARBORETUM**
-  **PATHWAY CONNECTORS**
-  **STORMWATER POND**
-  **PATHWAY NETWORK**
-  **PARK**



SCALE 1:3,000  
 (at 11x17)

MAP DRAWING INFORMATION:  
 DATA PROVIDED BY DILLON CONSULTING LIMITED, ALTALIS, ESRI, CANVEC, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY

MAP CREATED BY: RBB  
 MAP CHECKED BY: PM  
 MAP PROJECTION: NAD 1983 UTM Zone 12N

## Commercial

Commercial areas in the Plan Area will support the development of economic and employment opportunities to promote fiscal sustainability by increasing the non-residential tax base in the Town.

### Highway Commercial

Highway Commercial uses are located on the western edge of the Plan Area fronting onto Highway 21. The Highway Commercial uses will not have direct access off Highway 21, but rather from access off of North Road. Attractive and high quality commercial development along Highway 21 will serve both the Town and the travelling public. Land uses may include but are not limited to service stations, car washes, hotels/motels and similar uses. Local roadway connections to the Highway Commercial area from the residential neighbourhood are minimized to reduce the propensity of shortcutting by non-residential traffic.

### Neighbourhood Commercial

A range of neighbourhood retail and commercial services will support the existing Town and future community with walkable access throughout the Plan Area by a network of pedestrian pathways. Land uses such as restaurants, convenience stores, professional offices, personal services and retail stores with minimal outdoor storage are envisioned for this area. All uses are encouraged to have minimal impact on the community, and will reduce noise and light pollution, as well as air emissions, where ever possible

- 2.2.15. Commercial areas shall be located generally as shown on **Figure 2**. The exact boundary and location of commercial areas may be refined further at the subdivision stage.
- 2.2.16. A variety of lot sizes should be encouraged to accommodate different types of commercial activity.
- 2.2.17. The parking, storage, garbage bins, loading, and delivery areas for commercial developments should be screened with fencing or natural landscape buffers, and oriented away from public streets.
- 2.2.18. Commercial development shall be developed to a high standard of design with quality building materials and finishes.
- 2.2.19. All commercial uses shall provide an attractive frontage with a landscaping plan and apply Dark Sky lighting principles.<sup>1</sup>

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<sup>1</sup> Dark Sky lighting principles are beneficial in that they: reduce the consumption of energy by promoting efficient outdoor lighting technologies; protect sensitive habitats; reduce light pollution (particularly important for seniors); support properly design lighting for motorists, bicyclists and pedestrians; and reduce crime by reducing lighting that creates shadows and focuses the lighting on the building. [www.darksky.org](http://www.darksky.org)

### Highway Commercial

The main access to Highway Commercial uses in the Northwest ASP area adjacent to Highway 21 will be via an internal road off North Road.

### Neighbourhood Commercial

Pedestrian routes that connect Neighbourhood Commercial areas to the adjacent residential areas and seniors housing facility will be identified at the subdivision stage. The stage of pedestrian route construction by the developer will be at the discretion of the Town.

All Neighbourhood Commercial uses that back onto residential uses shall provide buffering and screening along the rear property line to minimize the impact on adjacent residential uses.

## 2.3 PUBLIC SERVICES

### Open Space and the Natural Environment

The Northwest ASP will provide a large multi-functional open space that is accessible through an interconnected pathway and sidewalk network. This open space will be planned to allow for active and passive recreation opportunities, and will be located to allow connections to the adjacent Trochu Arboretum. The stormwater ponds will be constructed as an open space for the public that can provide passive recreation opportunities. The open space concept is illustrated in **Figure 3**.

#### Objectives

- To provide opportunities for active and passive recreation within the Plan Area.
  - To provide park linkages that are designed to accommodate all activity levels, as well as accommodate scooters and other mobility devices.
  - To preserve the ecological function and sustainability of wetlands and open spaces.
- 2.3.1. The open space system will generally be provided in accordance with **Figure 3**. The location, size and function of the individual areas shall be determined at the subdivision stage.
  - 2.3.2. The open space system shall provide areas that are multi-functional and allow for passive recreation.
  - 2.3.3. Open spaces provided shall be designed for four season use.
  - 2.3.4. Native species and natural landscaping should be maintained throughout natural areas.

## 2.4 PATHWAYS, TRAILS AND SIDEWALKS

Pathways, trails and sidewalks are designed to accommodate multi-modal transportation and connect to community amenities. The open space concept in **Figure 3** identifies how the



pathway system should be designed to connect residents and integrate pathway networks throughout the Plan Area.

### Objectives

- To provide an interconnected local network of pathway and trail connections.
  - To facilitate and encourage the use of active transportation for mobility through the Plan Area.
- 2.4.1. All pathway locations are conceptual and will be finalized at the time of subdivision. Construction may take place after subdivision and may be a part of the development permit approval (e.g., seniors facility).
  - 2.4.2. Paths, trails, and sidewalks shall be provided to allow for seamless pedestrian and scooter connection to open spaces, retail areas, and community amenities.
  - 2.4.3. Native species and natural landscaping should be encouraged throughout the parks and pathway system.
  - 2.4.4. Pathways, trails, and sidewalks shall be located and designed to prioritize pedestrian safety, where cross local roadways.
  - 2.4.5. Sidewalks are encouraged on minimum one side of the road throughout the Plan Area.
  - 2.4.6. Pathways shall be provided around both storm ponds identified in the Plan Area to provide maintenance and recreational access to these naturalized amenities.
  - 2.4.7. Surfaces for paths and trails should consider permeable surfaces, wherever possible.
  - 2.4.8. Walkways will be clearly visible and will include way-finding. Lighting will enhance pedestrian safety combining the principles of Dark Sky and Crime Prevention through Environmental Design principles.

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## 2.5 INFRASTRUCTURE POLICIES

### Transportation

The Plan Area is bound by Highway 21 to the west currently owned by Alberta Transportation. The internal road network within the Plan Area will provide direct access to the established community of Trochu in the south, as well as convenient access east/west through the Plan Area. The local road network should follow a general grid pattern and align intersections to create a safe environment for pedestrian and vehicle traffic.

A Traffic Impact Assessment has been completed for the Northwest ASP using two analysis periods: 2024 for Phase 1; and 2040 for the complete build out of the development and how the trip generation will affect the intersection of Highway 21 and North Road.

The Plan Area's connections to North Road are to be developed as per the intersection classification (i.e., residential collector, commercial collector). The components for each intersection will be determined at the time of preliminary design.

From the Traffic Study, there are no anticipated intersection improvements for existing roads connecting to North Road. The intersection of Highway 21 and North Road was reviewed in detail and following is a summary of the results:

- Current conditions and 2024 trip generation warrant a recommendation for Type III intersection, which is the current condition.
- The 2040 post-development scenario warrants a Type V intersection will be required. Because both left and right turn lanes are required, channelization shall be considered.
- Signalization is not warranted for the 2040 Post-Development Conditions.
- It is recommended that the intersection be illuminated for pedestrians and cross street traffic.

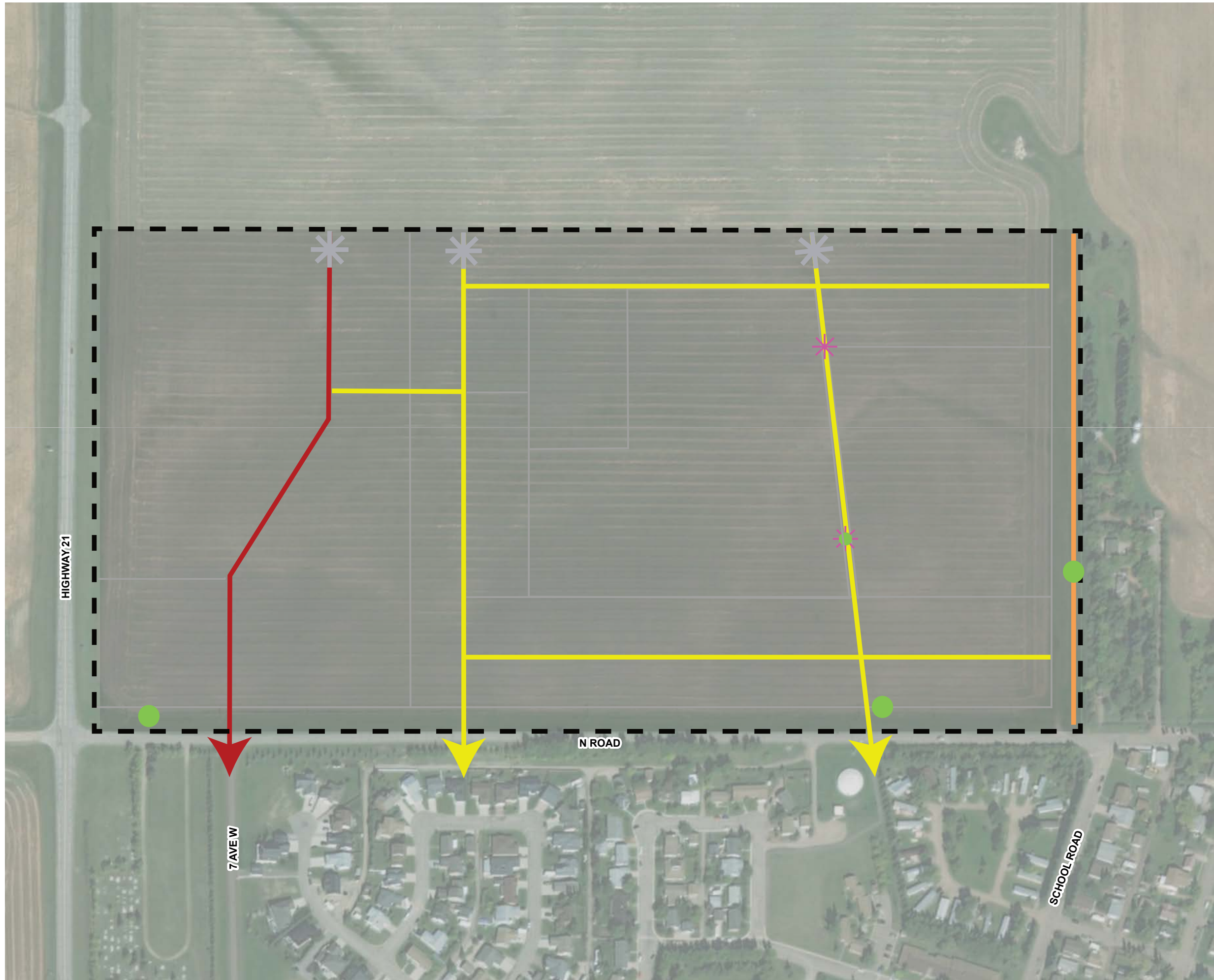
### Objective

- To ensure ease of access to regional and local road networks, through safe and appropriate roadway expansion and intersection design.

2.5.1. The number and general location of the intersections that provide site access from North Road are illustrated on **Figure 4**.









2.5.2. The general internal street network is shown on **Figure 4**. The exact layout of streets in the Plan Area shall be determined at the subdivision stage.

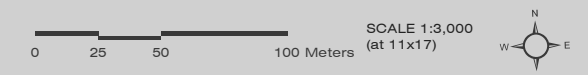




**TOWN OF TROCHU**  
AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 4 - ROAD NETWORK**

-  **NW ASP AREA**
-  **INTERNAL RESIDENTIAL ROADWAY**
-  **COMMERCIAL ROADWAY**
-  **PATHWAY CONNECTORS**
-  **SENIORS HOUSING ACCESS POINTS**
-  **PRIMARY ACCESS POINTS**
-  **FUTURE ACCESS POINTS**
-  **PROPOSED FUTURE LANE**



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## Utility Services

Utility servicing is a critical component of the development. **Figure 5** illustrates the alignment of the future potable water infrastructure and **Figure 6** illustrates the future sewage collection lines, lift station, and sanitary catchment areas. Servicing of the Plan Area is facilitated by the site topography and opportunities for servicing efficiencies. Refer to the NWASP Interim Servicing Review - MPE Engineering Ltd, March 19, 2019, for future demand requirements and impacts on the Town's existing infrastructure.

### Objectives

- To identify and utilize existing utility rights-of-way.
  - To ensure the provision of shallow private utility services.
- 2.5.3. Utility services shall be developed in an orderly way that follows a sequential pattern of development.
- 2.5.4. The location of utility rights-of-way shall be identified at the subdivision stage.
- 2.5.5. Costs associated with the extension and expansion of services to land use applications relying on the Town's utility services shall be the responsibility of the developer.

### Potable Water

The Town's Infrastructure Master Plan modelled the water distribution trunk mains for a 250 mm diameter pipe. It is intended to loop the 250 mm trunk main through the Northwest ASP property and provide connection points for the land to the north. Distribution mains will be sized accordingly to provide water services and fire protection.

For the purpose of the analysis, a residential demand of 350 litres per capita per day (lpcd) and 0.15 l/s/ha has been used. Based on land uses, the Plan Area's water demand is as follows in **Table 4**.

Table 4: Town of Trochu Water Demand

Land Use	Demand	Average Daily Demand		Annual
		(m <sup>3</sup> /day)	(l/s)	(m <sup>3</sup> )
Residential	719 people @ 350 lpcd	252	2.91	91,980
Commercial	7.85 ha @0.15 l/s/ha	102	1.18	37,230
Total Projected Water Demand		354	4.09	129,210

### Objectives

- To ensure piped water a connectivity, as well as the capacity for all new development and the installation of such services are provided at the cost of the developer.
- To provide potable water services in a phased manner with the ultimate provision of a looped system to the satisfaction of the Town.

2.5.3. The capacity, alignment and provision of water distribution systems shall comply with **Figure 5**.

2.5.4. All new development shall connect to the Town's potable water system.

2.5.5. A water use assessment shall be required to determine expected water demand and infrastructure required at the subdivision stage or development permit stage for the senior housing facility.

2.5.6. All water systems that serve the Plan Area shall be designed to provide sufficient fire flow for fire suppression.

### Pumping Capacities




The Town's current pumping capacities are capable of delivering a total of 124.9 liters per second by using the four available pumps. It is recommended that once the population exceeds 360 within the ASP area that the Town's pumping capacity is increased.

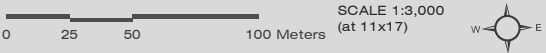




**TOWN OF TROCHU**  
 AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 5 - POTABLE WATER SERVICING**

-  **NW ASP AREA**
-  **POTABLE WATER DISTRIBUTION SYSTEM**
-  **CONNECTION POINT**



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## Sanitary Sewage

The Northwest ASP will be serviced by connecting to the Town's existing sanitary collection system. The site has a high point that splits the property into two separate collection systems. The east portion can gravity feed into the Town's existing system, while the west portion will require a lift station to pump the wastewater from the west to the east to enter the collection main.

Sanitary sewer collection systems are design to meet the peak flow demands, which include Inflow and Infiltration (I&I). The sanitary sewer demands for the development are shown in **Table 5**.

- Peak Dry Weather (Residential = 3.88, Commercial = 5.0).
- I&I allowance of 0.12 l/s/ha. Alberta Environment I&I guideline is 0.28 l/s/ha, which is representative of older collection systems but is considered overly conservative for new systems.

**Table 5: Town of Trochu Sanitary Sewer Demand**

Land Use	Demand	Q (Dry Weather)		Q ( Peak Dry Weather)		Q (Peak Wet Weather)
		(m <sup>3</sup> /day)	(l/s)	(m <sup>3</sup> /day)	(m <sup>3</sup> /day)	(l/s)
Residential	719 people @ 350 lpcd	250	2.49	834	9.7	9.7
Commercial	7.85 ha @0.15 l/s/ha	102	1.18	510	5.9	5.9
I&I	31.8 ha@ 0.12 l/s/ha	/	/	/	/	3.8
<b>Total Projected Water Demand</b>		<b>317</b>	<b>3.63</b>	<b>1344</b>	<b>15.6</b>	<b>19.4</b>

A lift station is required for the west side of the study area, most likely located near the future storm pond. With the majority of the contributing flows from the commercial development and an estimated third of the total resident demand being directed toward the lift station, the pumps and forcemain will be required to handle a demand of 6.8l/s at peak flow.

The forcemain is expected to be installed to an appropriate manhole within the eastside collection system.

The internal collection network will consist on a trunk main located within the major road collector. This trunk main will be sized from 300 mm to a minimum of 200 mm, depending on contributing flows and pipe sloping. Lateral mains that service the small population will be a minimum of 200 mm and slope at no less than 0.6%. This will allow for a total pipe capacity of 25.4 l/s.

The Town has the following two options to connect to the existing sanitary collection system:

1. Connect to the existing system on Railway Avenue; or
2. Connect directly to the 300 mm Outfall line, west of the Railway tracks on North Road.

Downstream pipe capacities along Railway Avenue trunk main between Highway 585 and Queen Street was reviewed in MPE Engineering Ltd.'s (MPE's) Railway Avenue Rehabilitation Project - Final Report, which identified the capacity of the existing main to be 27 L/s. The existing peak wet weather sewage flow contributing to the Railway Avenue trunk main is 6 l/s, leaving 21 L/s of available capacity, which is equal to the demand coming from the Northwest ASP area.

### Objectives

- To ensure piped sanitary sewer connectivity, as well as the capacity for all new development and the installation of such services are provided at the cost of the developer.
- To provide sanitary services in a phased manner with the ultimate provision of a looped system to the satisfaction of the Town.






2.5.7. The alignment and provision of sanitary sewer systems shall comply with **Figure 6.**

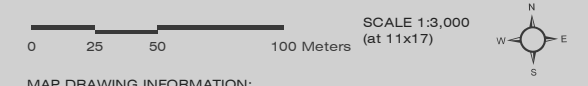




**TOWN OF TROCHU**  
AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 6 - WASTEWATER SERVICING**

-  **NW ASP AREA**
-  **WASTEWATER COLLECTION SYSTEM**
-  **FORCE MAIN**
-  **CONNECTION POINT**
-  **LIFT STATION**



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## Stormwater

The Town of Trochu Master Drainage Plan was prepared by MPE Engineering Ltd. in 2011. The Master Drainage Plan recommended an allowable unit release rate of 11 l/s/ha to ensure post-development runoff does not exceed pre-development rates. Refer to the Northwest ASP - Conceptual Stormwater Management, Design Brief, MPE Engineering Ltd. March, 2019 for area specific details.

Based on the topography of the plan area there are four catchments:

1. 0.6 ha draining northward;
2. 11.4 ha draining southwestward;
3. 2.0 ha draining southward; and
4. 18.0 ha draining eastward.

There is no drainage running into the Plan Area.

The minor system (see **Figure 7**) provides a basic level of service by conveying flows during minor storm events (up to the 1:5 year storm) and consists of underground pipe systems, roof leaders, gutters, lot drainage, etc. The major system (see **Figure 8**) conveys runoff from extreme events in excess of the minor system capacity (greater than the 1:5 year event) and consists of lot drainage, roads and gutters, storage facilities, etc. Storm facilities temporarily hold runoff, so as to settle out suspended sediments, capture soluble pollutants, and reduce peak flows rates downstream.

The west catchment has two potential routes for release to reach the nearest Ghostpine Creek tributary (locally known as Trochu Creek) to the south:

1. From the southwest corner of the west catchment, convey the releases westward through a new culvert across Highway 21, and continue westward about 100 m through the North Road ditch, then south through an existing 900 mm culvert across the North Road, and continue southward through the existing swale/ditch system to Trochu Creek.  
OR
2. From the southwest corner of the west catchment, convey the releases southward through a new culvert across North Road, and continue southward about 800 m along the existing Highway 21 ditch, then west through an existing 750 mm culvert across Highway 21, and south through an existing 900 mm culvert across the Highway 585, and continue southward through the existing swale/ditch system to Trochu Creek. This is the preferred route primarily because it eliminates runoff from entering the private cultivated land to the west of the west catchment and it appears that the existing infrastructure has sufficient capacity to convey the expected additional flows.

The east catchment has two potential routes for releases to reach the nearest Ghostpine Creek tributary to the southeast:

1. From the east side of the east catchment, allow the releases to be conveyed eastward through the natural swale across the arboretum and private cultivated land. This route may cause erosion and extended duration of flows over private land, and may require additional culvert capacity across the CN Railway line and other road crossings, as well as additional ditch capacity along the route until it reaches the nearest Ghostpine Creek tributary. This conveyance route may also require a registered easement across private lands to manage legal issues in the future.

OR

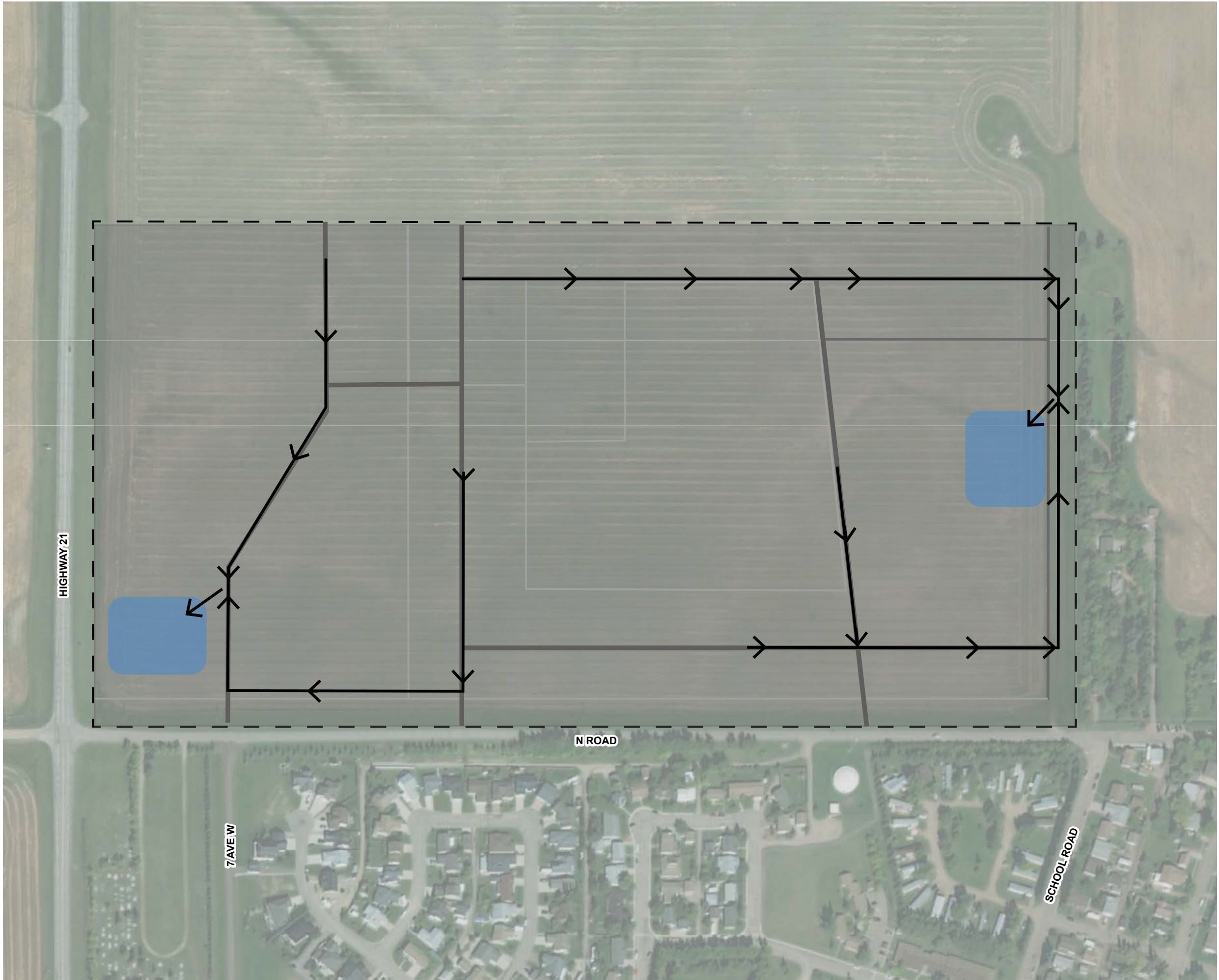
2. From the east side of the east catchment, divert the releases southward, either through pipe or open ditch, to the north side ditch of North Road, and continue eastward about 400 m, then cross the CN Railway line and North Road through new culverts, and then southwestward through open ditches until it reaches the nearest Ghostpine Creek tributary. This may be the preferred route primarily because it eliminates runoff from entering the private cultivated land to the east of the east catchment, but additional culverts will be needed and open ditches along the route will need to be reconstructed to ensure adequate conveyance capacity.

2.5.8. The plan area is to be developed such that there are a total of two stormwater catchments. The north, southwest and south catchments will be consolidated into a 14.0 ha 'west' catchment, which will drain into a stormwater facility in the southwest corner of the Plan Area. The remainder 18 ha 'east' catchment will drain into a stormwater facility along the east boundary of the Plan Area.

2.5.9. Each stormwater facility requires the capacity to contain:

- The volume of runoff generated from a 25 mm storm (in Trochu, this storm is equivalent to roughly a 1:25 year 1-hr storm or 1:2 year 12-hr storm) over the contributing area, with a detention time of 24 hours for water quality.
- The volume of runoff generated from 1:100, 24-hr storm, such that the peak discharge from the facility does not exceed the allowable release rate for water quantity.

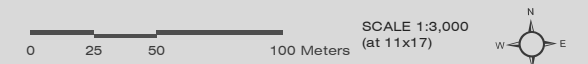




**TOWN OF TROCHU**  
AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 7 - STORMWATER SERVICING MINOR SYSTEM**

-  **NW ASP AREA**
-  **MINOR COLLECTION SYSTEM**

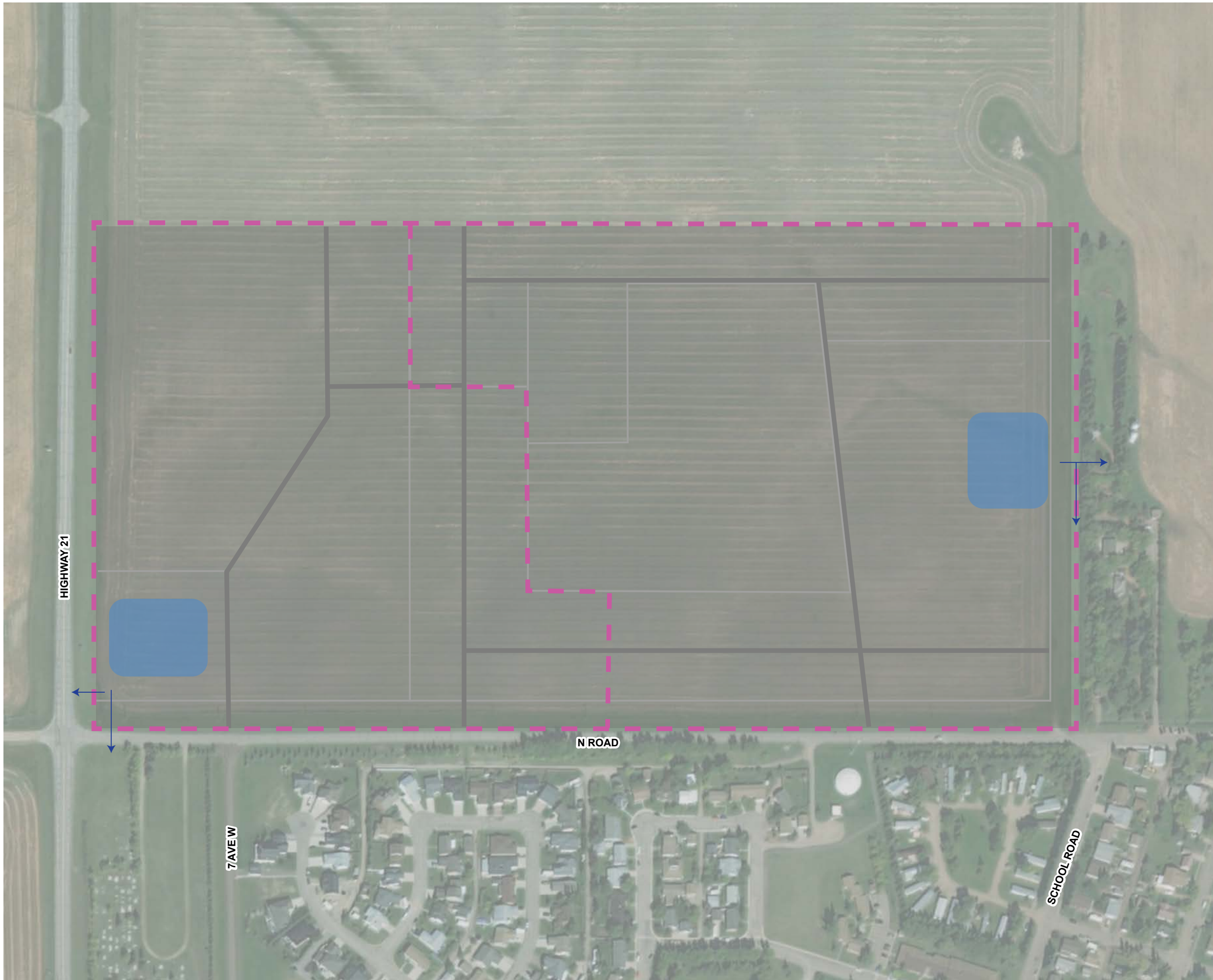


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PROJECT: 18-8912  
DATE: OCT 2020

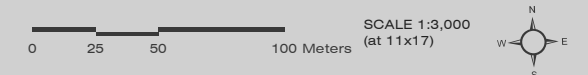




**TOWN OF TROCHU**  
AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 8 - STORMWATER SERVICING MAJOR SYSTEM**

- - - MAJOR CATCHMENT BOUNDARY
- OVERFLOW DISCHARGE DIRECTION



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## 2.6 ENVIRONMENTAL

Ghostpine Environmental Services Ltd. prepared a Biophysical Assessment dated October 8, 2019. A Biophysical Assessment is designed to identify the current environmental sensitivities within the subject property and to provide recommendations to ensure requirements of the federal *Species at Risk Act*, *Migratory Birds Convention Act*, *Alberta Weed Control Act*, *Water Act*, and the *Historical Resources Act* are met and to prepare regulatory documents such as *Water Act* applications, should these be required.

Ghostpine Environmental Services Ltd. prepared an Environmental Review dated January 9, 2019, for the Northwest ASP lands. The assessment was undertaken to conform with the requirements of Kneehill County Land Use Bylaw #1718. Based on the results of the Environmental Review, significant landscape features, rare wildlife, wildlife habitat, wildlife corridors, rare plants, heritage resources and environmentally significant areas are unlikely to be affected by development on this site.

An Environmental Review is high-level and identifies potential environmental issues, such as problem soils, significant landscape features, terrain, wetlands, watercourses, wildlife, vegetation, and habitat associated with a proposed development area. The data collected during the site visit (November 28, 2019) was general in nature and not sufficient to prepare regulatory documents.

- 2.6.1. A wildlife sweep shall be completed, prior to the commencement of construction activities between March and September.
- 2.6.2. Appropriate sediment, erosion and spill control measures shall be installed to prevent sediment/material movement off-site.
- 2.6.3. All construction equipment must arrive on-site in a clean condition to minimize the risk of the introduction of weeds or invasive species.

### Vegetation Communities

- 2.6.4. All machinery designated for use on-site must be cleaned before arrival onto the site to ensure that weed seeds and other propagules are not brought into the project area.
- 2.6.5. The developer will manage weeds as required during construction of the development to comply with *Alberta Weed Control Act* and *Weed Control Regulations* (Government of Alberta 2008 and 2010)<sup>2</sup>. Spot-control of noxious weed patches will be conducted prior to construction activities.
- 2.6.6. When possible, construction activities should be performed during dry and/or frozen conditions.
- 2.6.7. Landscaping shall be completed following construction.

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<sup>2</sup> GOA. 2008. *Weed Control Act* (2008, c. W-5.1). current as of December 15, 2017. Alberta Queen's Printer. Edmonton, Alberta. GOA 2010. *Weed Control Regulations* (AR 19/2010). With amendments up to and including Alberta Regulation 125/2016. Alberta Queen's Printer. Edmonton, Alberta.

### Wildlife and Wildlife Habitat

- 2.6.8. Construction activities are to occur outside of the main breeding season to minimize potential impact on local wildlife species. If construction is scheduled to occur within the main breeding season (between mid-April and late August), a pre-construction wildlife sweep should be completed, prior to the onset of any activities.
- 2.6.9. If nest or niche sites of listed species (migratory bird species protected under the federal *Migratory Birds Convention Act* [Government of Canada 1994]<sup>3</sup> or species protected under Alberta's *Wildlife Act* [Government of Alberta 2000]<sup>4</sup> are discovered, suspected or observed during construction/clean up, work should be postponed.
- 2.6.10. Wildlife shall not be harassed or fed.
- 2.6.11. The developer should limit the number of construction vehicles, if possible, and travel speed through the construction area to minimize wildlife mortality. The consultant should inform construction crews of appropriate procedures to follow in the case of a wildlife sightings.

### Hydrology & Topography

- 2.6.12. Site topography should be contoured to ensure that surface water runoff is not prevented from reaching the stormwater ponds.
- 2.6.13. An Erosion and Sediment Control Plan will be prepared and implemented by the developer at the construction stage.
- 2.6.14. A spill prevention and response plan will be prepared by the developer at the construction stage.

### Soils

The developer shall be responsible for the following during construction:

- 2.6.15. Identify areas where sites and soils in that area are susceptible to wind and/or water erosion. Postpone topsoil salvage on wind erodible soils closer to excavation in order to minimize the period that the topsoil will be exposed to the wind.
- 2.6.16. Stripped soils should be stockpiled and covered and used for landscaping upon completion. Maintain a minimum separation of 3 m between stockpiles of different materials.
- 2.6.17. Suspend stripping operations during rain or wet ground conditions.

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<sup>3</sup> GC 1994. Migratory Birds Conventions Act (S.C. 1994, c. 22). Current to Decemeber 12, 2018. Last amended on December 12, 2017. Department of Justice. Ottawa, Ontario. (Government of Canada)

<sup>4</sup> GOA. 2000c. Wildlife Act (RSA 2000, c. W-10). Current as of February 20, 2018. Alberta Queen's Printer. Edmonton, Alberta.

2.6.18. Equipment involved in topsoil handling at weed infested sites should be cleaned, prior to leaving the site.

2.6.19. Minimize risk of soil compaction by restricting vehicle traffic through areas where topsoil will not be stripped by assigning a designated site access point.

### Socio-Economic Factors

2.6.20. Anti-idling procedures for vehicles and equipment should be implemented by the contractor.

2.6.21. Loads shall be tarped or otherwise secured.

2.6.22. Construction work will be conducted in accordance with local noise by-laws or approval permits.

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## 2.7 GEOTECHNICAL

A geotechnical evaluation for the Northwest ASP Plan Area was completed by Mr. Reid Huculak, P.Eng. of MPE, and consisted of three components: a field program carried out on July 3, 2019; a laboratory testing program; and a final report prepared for the Town. A summary of the observations and recommendations from the geotechnical evaluation are provided in the Town of Trochu - Northwest Area Structure Plan Geotechnical Evaluation, MPE Engineering Ltd, September 30, 2019.

The Northwest ASP Plan Area consists of approximately 30 ha of undulating planted field. During the field investigation, eight boreholes were drilled, and clay till was encountered below the topsoil and extended to the termination depth at all the holes. The clay till was described as silty, sandy, trace to some gravel, moist, stiff to very stiff, medium to high plastic, and brown. The moisture content of the clay till samples ranged from 10% to 20%. Atterberg Limits testing of the clay samples indicated a Liquid Limit of 40%, and a Plastic Limit ranging between 12% and 13%, indicative of medium plasticity. Standard Penetration Testing blow counts ranged between 16 to 26 blows per 300 mm of penetration, indicative of stiff to very stiff consistency. The hydraulic conductivity of the clay till was estimated using correlations between plasticity and clay fraction, as well as local experience with clay till deposits, and is estimated to range between  $1.0 \times 10^{-10}$  m/s and  $1.0 \times 10^{-11}$  m/s.

### Fill Materials and Compaction

2.7.1. In all cases during construction, general engineered fill should be:

- a. Moisture conditioned such that the moisture content is between Optimum Moisture Content (OMC) to 2% above OMC;
- b. Compacted to 98% of the Standard Proctor Maximum Dry Density (SPMDD), as determined by a standard proctor test; and
- c. Placed in uniform lifts, not exceeding a loose lift thickness of 200 mm.

2.7.2. Where crushed granular material is to be used as structural fill, it should be:

- a. Moisture conditioned to the OMC;

- b. Compacted to 100% of SPMD; and
  - c. Placed in uniform lifts, not exceeding a loose lift thickness of 150 mm.
- 2.7.3. Ensure that compaction testing is completed, as part of construction monitoring, to prevent excessive settlement and failure of pavement and foundations.

### Excavations

- 2.7.4. Excavation side slopes should be cut back to no steeper than 1.0H:1.0V.
- 2.7.5. Care of water should be exercised such that water drains away from open excavations.
- 2.7.6. Any side slopes steeper than 1.0H:1.0V need to be supported during construction.
- 2.7.7. If possible, stage construction such that there is maximum time for consolidation at excavations.

### Subgrade Preparation

- 2.7.8. Subgrade preparation should be completed to a minimum of 300 mm deep.
- 2.7.9. The use of geo-synthetic reinforcement may be required where a depth of 300 mm subgrade preparation is deemed insufficient, or where the underlying soil is soft or wet.
- 2.7.10. Geo-synthetic reinforcement installation, if required, should conform to manufacturer specifications and recommendations.

### Pavement

- 2.7.11. A subsurface drainage system is recommended to prevent groundwater from impacting pavement performance.
- 2.7.12. The recommended pavement structure is located in **Table 6**.

**Table 6: Recommended Pavement Structure**

Road Structure Layer	Residential Collector	Industrial Local	Residential Local
Asphalt Concrete Surface (mm)	100	90	75
Granular Base Course (mm)	150	150	100
Granular Subbase (mm)	300	300	250

### Concrete

- 2.7.13. Concrete mix should have S-3 exposure classification, as defined by CSA A23.1-14 Table 3, for moderate sulphate exposure.

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## 2.8 OIL AND GAS

The Alberta Energy Regulator (AER) stipulates the setbacks and buffers around oil and gas installations. No oil and gas wells are located on-site. Prior to subdivision and development approval, the identification of required setbacks to any wells located off-site are required.

- 2.8.1. A 10 m wide right-of-way shall be maintained to the ATCO pipeline in the ASP Plan Area. Applications for the development of land in the vicinity of petroleum wells and the ATCO pipeline shall comply with the current AER setback, Provincial regulations, and the requirements of this ASP.
- 2.8.2. Land uses to occur on the pipeline right-of-way shall have regard for its safe, ongoing operation. Landscaping along the right-of-way must be minimal as to not interfere with the safe operation of the pipe. No permanent structures are permitted.
- 2.8.3. Crossing and access agreements shall be in place prior to subdivision plan approval for lands dissected by the pipeline right-of-way.



# PART 3

## ASP IMPLEMENTATION & MONITORING

## 3.1 PLAN ADOPTION AND IMPLEMENTATION

Upon adoption, the Northwest ASP shall become a statutory planning document of the Town, in accordance with Part 7 of the *Municipal Government Act*.

### Objective

- To ensure all development follows the land uses identified in the ASP Land Use Concept and policies of the Northwest ASP.
  - 3.1.1. No development shall occur until the appropriate land use district is applied and the parcels are subdivided.
  - 3.1.2. If the land is to be developed by a private developer, the Town shall require a Development Agreement to confirm the infrastructure upgrades and conditions of the development to be imposed.
  - 3.1.3. Subdivision applications shall conform to the Town's Municipal Development Plan, this Northwest ASP and the Town's Land Use Bylaw.
  - 3.1.4. The timing and funding requirements of off-site improvements related to hard and soft infrastructure shall be identified at time of subdivision application.
  - 3.1.5. This ASP shall be reviewed periodically, and at a minimum every five years, to ensure that the development is progressing in tandem with the goals and objectives of the Town.

## 3.2 PHASING

The general directional sequence of development phasing is illustrated in [Figure 9](#).

### Residential

The residential development in this ASP has been divided into four phases starting with the development of the senior's facility and single-detached dwellings. Phase 2 to 3 can be developed out of order, based on housing demand. Phase 4 should be the last phase developed as it requires the infrastructure that will be built in Phases 1 through 3. This phasing approach will service the Plan Area economically and efficiently.

- 3.2.1. The main residential intersection with North Road will be constructed to access the Plan Area. Internal roads will be constructed to service the Plan Area; temporary turnarounds will need to be built at the phase boundaries and removed when each subsequent phase begins.
- 3.2.2. The stormwater retention pond on the east side of the Plan Area can be partially constructed in Phase 1. Sizing should take into consideration both the post development runoff from Phase 1 and 2. The full pond capacity shall be constructed in Phase 3.
- 3.2.3. The east greenspace shall be graded and seeded with a majority of the landscaping features completed for Phase 1.

### Commercial

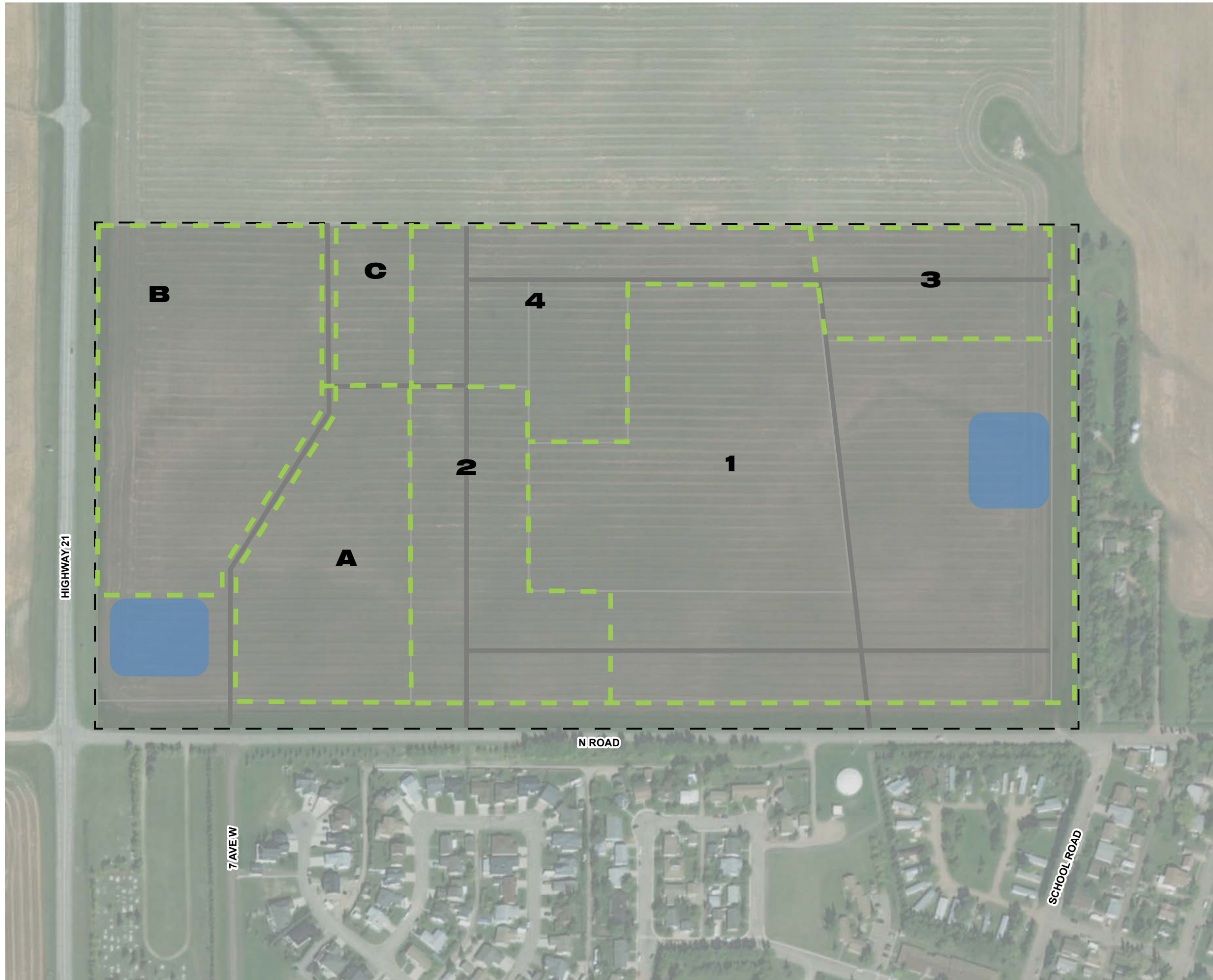
The commercial development will be phased as demand requires. It is anticipated that the lots adjacent to the residential area will be developed first. Based on site topography, any lot development will require the construction of the lift station with the forcemain connecting into the residential wastewater collection system. Potable water will require looping to the residential system in the northern portion of the commercial area.

- 3.2.4. The intersection with the North Road will be constructed within the first phase of the commercial development.
- 3.2.5. The 'west' stormwater retention pond and landscaping features will be required to be constructed with Phase 1.

### Objective

- To phase development in a logical, cost-effective way that conforms generally to the Northwest ASP phasing plan.
- 3.2.6. Development will be phased in a manner that is cost-effective and makes efficient use of infrastructure and services.
  - 3.2.7. Changes or modifications to development phases illustrated in [Figure 9](#) would not constitute an amendment to the Northwest ASP.

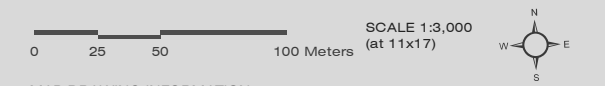
- 3.2.8. Residential development will be phased to be contiguous with existing urban form.
- 3.2.9. The development of the seniors lodge will be initiated with Phase 1, and may be completed with finalization of funding and availability of servicing. If the seniors lodge progresses prior to access via North Road being constructed, the Town and the Seniors Housing Society will construct the intersection and access road to municipal standards with an endeavour to recover agreement for any future development to contribute to the shared cost.
- 3.2.10. The timing and funding requirements of off-site improvements related to hard and soft infrastructure shall be identified at time subdivision stage.



**TOWN OF TROCHU**  
AREA STRUCTURE PLAN

**NORTHWEST AREA STRUCTURE PLAN**  
**FIGURE 9 - PHASING PLAN**

-  **NW ASP AREA**
-  **PHASING BOUNDARY**



MAP DRAWING INFORMATION:  
DATA PROVIDED BY DILLON CONSULTING LIMITED, ALTALIS,  
ESRI, CANVEC, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS,  
CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN,  
AND THE GIS USER COMMUNITY

MAP CREATED BY: RBB  
MAP CHECKED BY: PM  
MAP PROJECTION: NAD 1983 UTM Zone 12N

PROJECT: 18-8912  
DATE: OCT 2020



### 3.3 SUBDIVISION APPLICATIONS

The Town shall ensure that applications for subdivision shall be reviewed and approved according to the policies in this ASP.

#### Objective

- To ensure subdivision applications address and adhere to the requirements of this ASP and support its vision, mission, and policies.
  - 3.3.1. Subdivision applications shall include a rationale to address how the development proposal is consistent with the vision and policies of the Northwest ASP.
  - 3.3.2. Subdivision applications shall conform to the Town’s Municipal Development Plan, this Northwest ASP and the Town’s Land Use Bylaw.

### 3.4 INTERMUNICIPAL COORDINATION

The Plan Area is located along the Town’s municipal boundary with Kneehill County. Cooperation and communication between the two municipalities on future land use applications located along the municipal boundary, shall conform to the referral policies in the adopted Town of Trochu & Kneehill County IDP Bylaw No. 1797 (2019).

- 3.4.1. All subdivision applications shall be circulated to the Kneehill County for review to ensure development adjacent to the Trochu municipal boundary shall be coordinated between the County and the Town, as required by the County/Town IDP.

### 3.5 PLAN REVIEW AND AMENDMENT

Market demand will determine the rate of future development in the Northwest ASP; therefore, the Northwest ASP is written to be flexible to account for changes and amendments that may be required. The ASP should be monitored, and where required, undergo periodic review; however, an assessment should be initiated by the Town every five years. The periodic review and amendment of the ASP shall be initiated by the Town, as required.

The Northwest ASP shall undergo an assessment and possible review every five years in accordance with the *Municipal Government Act*.

# APPENDIX A

## PUBLIC ENGAGEMENT

## PUBLIC ENGAGEMENT PROCESS

In accordance with the *Municipal Government Act*, good planning principles and the Town's direction to support an inclusive community planning process, an interactive open house was held, in conjunction with an open house to present the seniors housing project. The comments from the public were incorporated into the process and provided guidance for modifications to the final plan.

### Open House May 28, 2019

The Town held a Public Open House on May 28, 2019, to present the draft ASP concept to the Town's administration and the public. Representatives from Dillon Consulting Limited and MPE were in attendance to discuss the ASP. In addition, the Architect for the senior's housing project from the IBI Group addressed the building and how the structure would be sited on the property. The Town communicated the notice of the ASP and the open house on their website and through newspaper advertisements. The Town, in conjunction with the Seniors Housing Society, advertised and held an open house at the Trochu Baptist Fellowship Centre. Approximately 50 residents attended the meeting.

Attendees were able to view the Land Use Concept, ASP goals, and housing types and were asked to indicate their priorities for ASP goals and housing types by placing coloured dots on the display boards.

