

- **BISON DEVELOPMENTS INC.**
- ***REVISED DRAFT BISON LANDS***  
**AREA STRUCTURE PLAN**
- **SEPTEMBER 8, 2009**

**Prepared By:**

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The information contained in this report has been prepared based on our review and discussions with you and should not be used or relied upon by any other person or organization without the written consent of McElhanney Consulting Services Ltd.

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## 1.0 INTRODUCTION

### 1.1 Study Area

The study area consists of two properties located in the southwest quadrant of the intersection of Highway 35 and Highway 58 (**Figure 1**), in the Town of High Level's southern area.

The 22.9 hectares (56.5 acres) site is ideally suited to industrial and commercial development due to excellent highway exposure and access, flat terrain and proximity to similar land uses and development.

The site is bounded to the north and east by Highway 58 and Highway 35, respectively, to the south by an ACTO power substation and a Town-owned property, and to the west by a Government Road Allowance, which is presently closed, and vacant lands.

The legal description of the subject properties are:

- Lot 1 Block 1 Plan 012 2400
- Lot 2 Block 3 Plan 062 6953

Both properties are located within SW 1/4 and NW 1/4 Sec 32, Twp. 109, Range 19, W5M.

### 1.2 Purpose of the ASP

This Area Structure Plan (ASP) is intended to provide a long-term vision and development framework for the subject area lands according to sound land use planning principles and within the guidelines of the Town of High Level Municipal Development Plan, Bylaw No. 798-03 (MDP).

### 1.3 Policy and Legislative Context

This ASP is based on the authority and requirements as outlined in the *Municipal Government Act*. Section 633(1) of the MGA states: "for the purpose of providing a framework for subsequent subdivision and development of an area of land, a council may, by bylaw, adopt an area structure plan."



## SITE LOCATION

Figure 1

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The Town of High Level MDP is a statutory plan that establishes the planning vision and direction for the future development of the Town. It was adopted by Council in 2004. The Bison Lands ASP must adhere to the policies within the MDP.

The Land Use Concept's land uses – Highway Commercial and General Industrial – and boundaries generally conform to those of the MDP as well as the Town's Land Use Bylaw No. 661-97. Amendments to the Land Use Bylaw are required to implement the Land Use Concept.

More specific legislation/requirements may be applied to ASP lands as they are considered for development, including the Town of High Level Land Use Bylaw, and Provincial Subdivision and Development Regulations and any other applicable policies/regulations.

## **2.0 SITE ANALYSIS**

### **2.1 Natural Features**

The majority of the generally flat site drains towards a large wetland area located approximately 1,000 metres to the southwest. A smaller portion of the site drains towards a "burrow pit" located in the northeast corner of the site that was initially created as a source of fill when Highway 35 was upgraded and has subsequently become a stormwater storage facility.

The site has been previously cleared and has been repopulated by predominantly deciduous trees and willows and the occasional coniferous tree. The site is potential habitat for local wildlife such as deer and birds.

### **2.2 Adjacent Land Uses**

To the north of the site, and beyond Highway 58, lands are used for residential (e.g., single family and mobile home park) and highway commercial purposes. To the east of the site and Highway 35, lands are used for "restrictive" (i.e., heavy) and "general" (i.e., light) industrial purposes. The siting of heavy industrial activities to the east of Highway 35 helps limit potentially noxious impacts on residential and public uses, such as hospitals and schools.

To the west and south of the site lands are generally vacant and designated for either General Industrial or Highway Commercial uses. To the south of the site is an ATCO power substation and a light industrial business operation. To the west of the site lies a decommissioned landfill and the Town's fire fighting training site.

## 2.3 Development Considerations

There are several site features and considerations that affect the development of the site. These are, in no particular order, described below.

1. Highways 35 and 58 are controlled access highways so that the number and location of access points are restricted and controlled by Alberta Transportation. Along Highway 35, an access is proposed approximately 525 metres south of the intersection with Highway 58. Along Highway 58 an access point is proposed approximately 375 metres west of the intersection with a second access proposed a further 800 metres to the west. These locations are consistent with Alberta Transportation plans.
2. Three transmission lines connecting to the ATCO power substation bisect the subject site. To maximize use of the site, the 25 kilovolt (kV) line located the furthest to the west should be relocated towards Highway 35. The existing 25kV and 144kV transmission lines aligned parallel to Highway 35 probably cannot be relocated. As a result the service road adjacent to the ATCO site cannot be extended to the north on to the subject site due to a conflict with these lines. ATCO is also proposing a new 144kV transmission line which will follow an alignment from the ATCO site west towards Highway 58; preliminary plans prepared by ATCO suggest that this transmission line may intersect the southwest corner of the site.
3. The "borrow pit" adjacent to Highway 35 acts as a stormwater detention facility even though it was not designed for this purpose. The borrow pit can be modified and/or relocated to serve as an integral component of the local stormwater management system. Alternatively, it can be redesigned as a permanent water feature at a high visibility intersection.
4. The location of the abandoned landfill to the south of the ATCO facility may conflict with the proposed alignment of a proposed road that runs from Highway 58 to Highway 35 and

which bisects the subject site. In the event that soil conditions do not support road construction in this location the proposed road network would have be altered.

5. The Government Road Allowance located along the west boundary of the site is presently closed. Although Alberta Transportation does not require a connection to Highway 58 at this location a portion of the road allowance is required to connect two parallel east/west roads and complete the road network.

### 3.0 LAND USE CONCEPT

The Land Use Concept primarily consists of industrial and highway commercial land uses (Figure 2). Lands located along the Highway 58 and 35 frontages are designated Highway Commercial to take advantage of the high visibility location. The remaining lands are designated General Industrial. The existing detention pond / water feature is proposed to be moved further to the north and closer to the highway intersection in order to improve its stormwater detention function and visual amenity value. The pond site is designated Municipal Reserve. The Land Use Concept established for the subject lands can be extrapolated onto neighbouring lands that are outside the scope of this study to ensure compatible and complementary development. The areas of the three land use designations are summarized in the following table.

**Table 1 Land Use Areas (subject to final subdivision design)**

Land Use	Area (ha)	Area (ac)	% of Total
Highway Commercial	12.7	31.3	55.5%
General Industrial	5.4	13.2	23.6%
Municipal Reserve	1.3	3.2	5.7%
Roads	3.5	8.8	15.2%
<b>TOTAL</b>	<b>22.9</b>	<b>56.5</b>	<b>100%</b>

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**LEGEND**

	<b>HIGHWAY COMMERCIAL</b> approx. 12.66 ha (31.27 ac)
	<b>GENERAL INDUSTRIAL</b> approx. 5.35 ha (13.23 ac)
	<b>MUNICIPAL RESERVE</b> approx. 1.31 ha (3.24 ac)
	<b>ROADS</b> approx. 3.55 ha (8.78 ac)

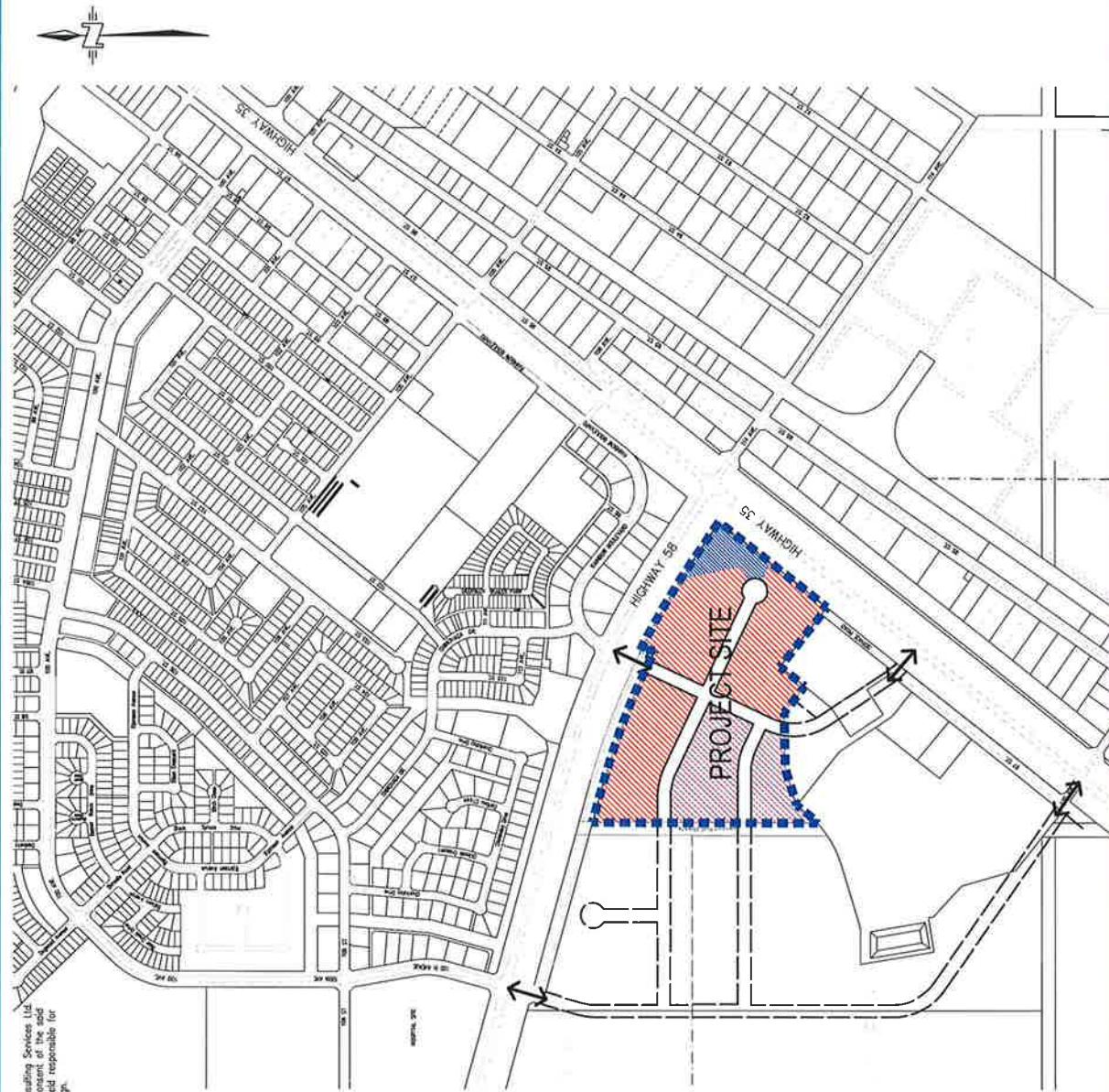
0 100 200 300 400 500

**LAND USE  
CONCEPT**

Figure 2

Scale: 1:10,000

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Job No.: 2131-0078-0



The Land Use Concept is generally consistent with the goals, objectives and policies of the Municipal Development Plan. In particular, it ensures:

1. Lands along Highway 58 west and Highway 35 south are designated for Highway Commercial Uses;.
2. Safe and efficient access is provided from the highway to commercial lands; and,
3. An adequate inventory of industrial sites is provided to meet the needs of business and industry.

The configuration of the local road network combined with the orientation of the Highway Commercial and General Industrial designations allows for a range of future subdivision options to accommodate various land uses and business needs. **Figure 3** represents one possible subdivision strategy for the subject lands. It can, however, be readily adjusted to meet the needs of future owners and users provided the underlying road network and land use concept is maintained. The proposed cul-de-sac that terminates at the detention pond site could be reduced in length to accommodate alternative subdivision patterns to either the north or south that require less road frontage; this is, however, subject to the provision of vehicular access to the pond site for maintenance purposes. This concept plan also shows an approximately 2,896 square metre (0.72 acre) area adjacent to the ATCO site which is required to facilitate its future expansion.

**Policies:**

1. Development and subdivision shall be in accordance with the Municipal Development Plan Bylaw No. 798-03 and Land Use Bylaw No. 661-97.
2. Allow only light industrial uses and activities on General Industrial-designated land to avoid negative impacts on neighbouring properties.
3. Highway Commercial buildings fronting Highway 58 shall be oriented towards the highway.
4. The westerly-most ATCO 25kV transmission line should be relocated towards Highway 35.
5. Detailed construction designs for the upgrading of the existing detention pond / water feature are to be submitted to the Town for approval prior to construction.

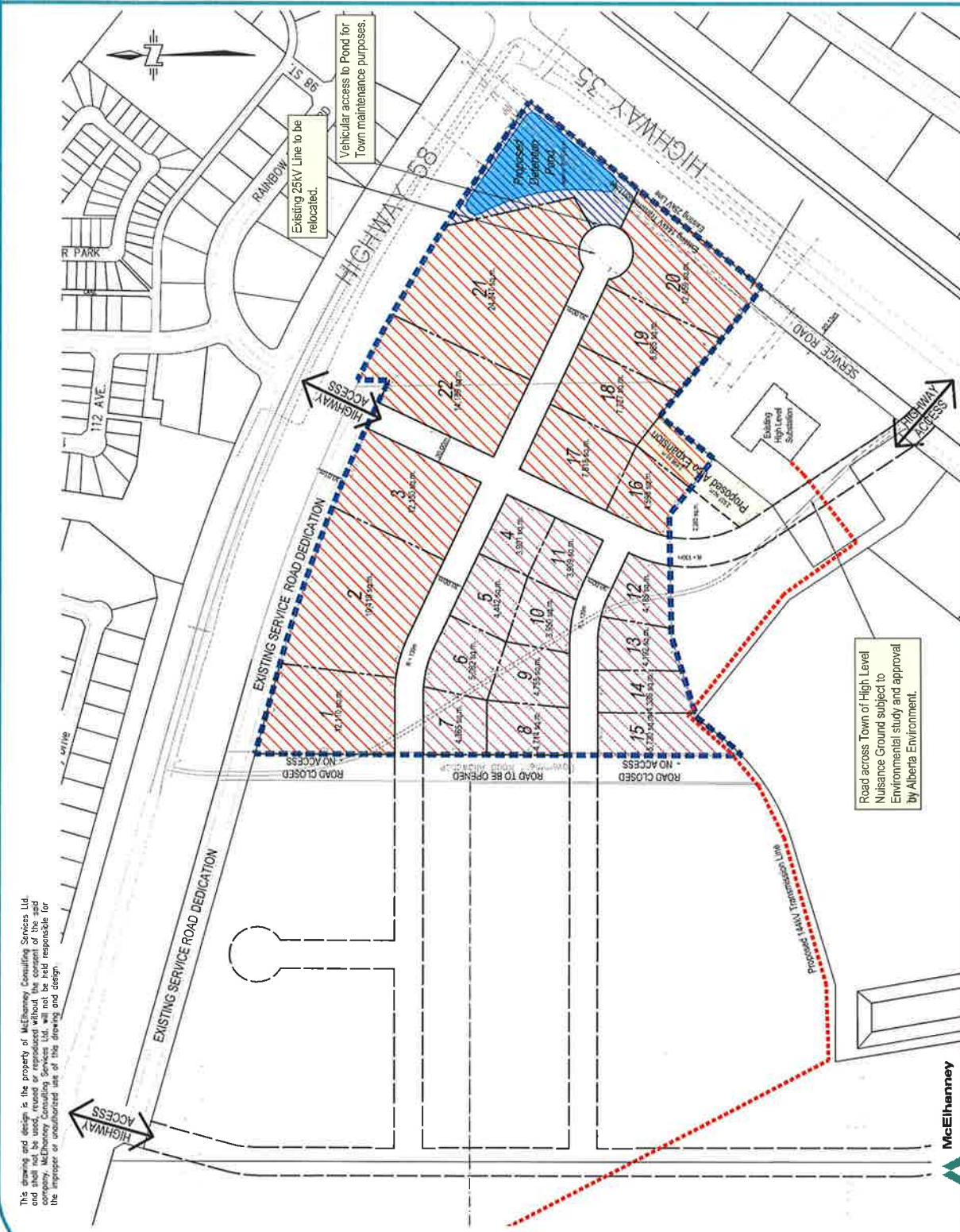
# CONCEPTUAL SUBDIVISION PLAN

Figure 3

Scale: 1:4000  
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0 50 100 200  
( ALL DIMENSIONS ARE IN METRES )

LEGEND  
 HIGHWAY COMMERCIAL  
 GENERAL INDUSTRIAL  
 minimum 950 sq.m.  
 25m wide 40m deep  
 MUNICIPAL RESERVE



6. A maintenance access from the cul-de-sac to the detention pond site is to be provided.

## 4.0 SERVICING AND TRANSPORTATION

### 4.1 Sanitary and Water

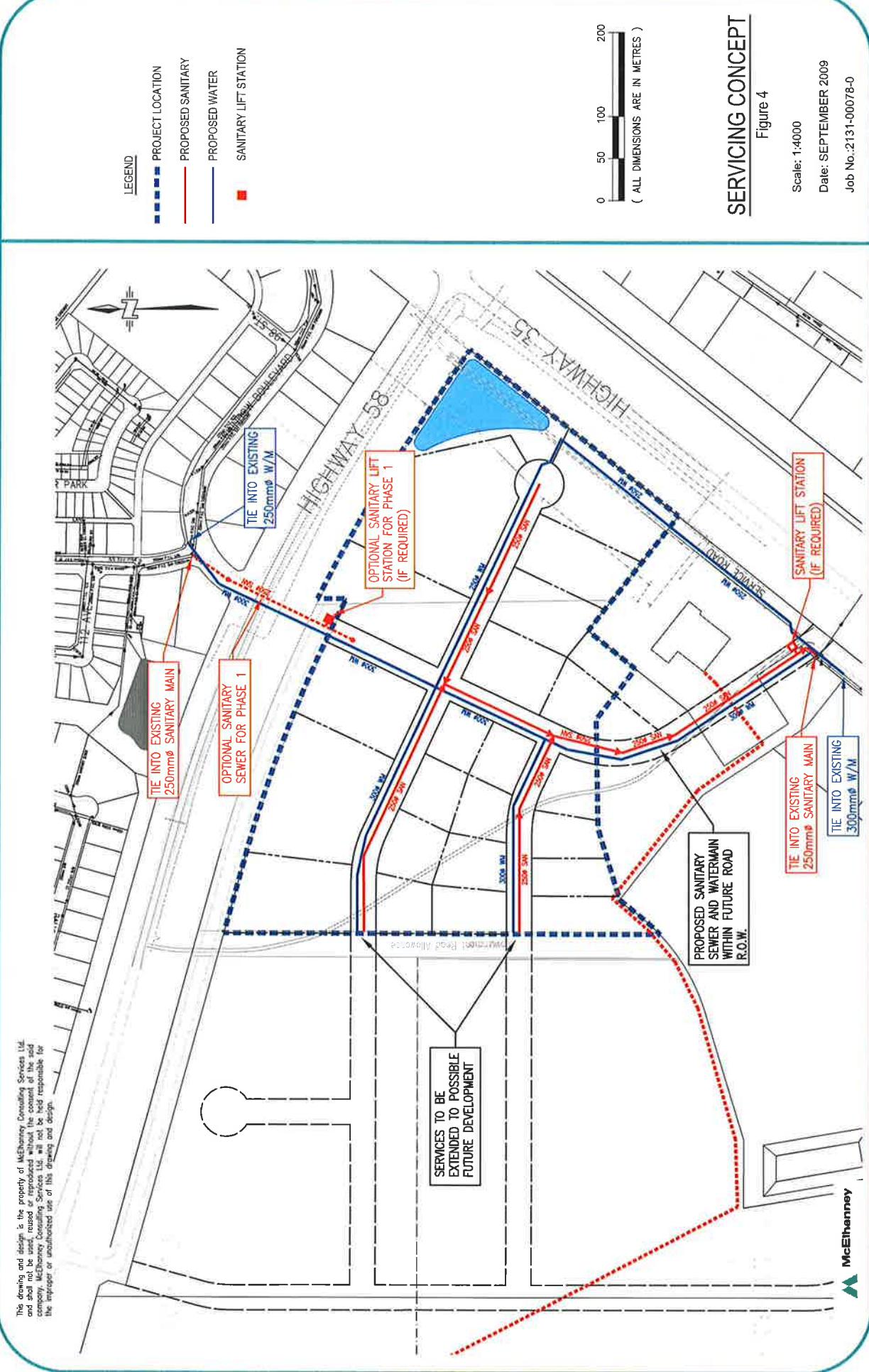
#### ***Sanitary Sewer***

The Town of High Level's Infrastructure Management Plan notes that the existing sanitary sewer system is comprised of gravity and force main sewers that collect and convey sanitary flows away from developed areas. In some areas of the Town the existing system is at, or near, full capacity. The subject lands, however, can be serviced by extending the existing system.

**Figure 4** shows the existing and proposed sanitary sewer system in the vicinity of the subject lands. A gravity sewer system would service the site and convey flows south towards the existing 250mm sanitary main south of the ATCO property. A sanitary lift station may be necessary to connect to the existing sanitary system. Any future developments to the west would connect to the proposed system. An optional sanitary sewer main and lift station may also be constructed, as shown, if the first phase of development is limited to highway commercial lands located along the Highway 58 frontage. This would be permanent infrastructure.

#### ***Water***

The Town of High Level water distribution systems is composed of a network of water supply mains pressurized by a booster pump station located at the north end of the town. The Town of High Level's Infrastructure Management Plan outlines the existing and future water distribution system. The proposed extension of the existing water distribution system to the subject lands is consistent with plan. **Figure 4** illustrates the existing and proposed water distribution system for the development area. A proposed 300mm diameter main would provide looping by connecting into the existing system north of Highway 58 and south of the ATCO property. Installation of the watermain across Highway 58 would follow Alberta Transportation servicing standards. The looped main would follow a future road right-of-way, as shown. The proposed system would for allow connection of future development located



further to the west. Watermain looping to the cul-de-sac may not be required should the cul-de-sac be reduced in length to meet Town of High Level design standards.

**Policies:**

1. The layout of municipal utilities will be subject to refinement at the subdivision stage in conjunction with a concept plan.
2. The Town may impose conditions of subdivision to ensure that any required rights-of-way and easements are provided.

## 4.2 Transportation

A road network has been developed to service the subject lands as well as other lands located within the southwest quadrant of the Highway 35 and Highway 58 intersection. Consisting of local roads and a collector road, the road network provides connectivity and opportunities for efficient movement (see **Figure 5**).

The road network includes two connections between Highway 35 and Highway 58. Each of the proposed highway access points are consistent with the Town's Municipal Development Plan and with Alberta Transportation requirements.

The road network ensures that the subject lands can be efficiently subdivided and that future lots have adequate access and road frontage. Alberta Transportation does not support constructing or otherwise upgrading the existing dedicated service road adjacent to Highway 58 due to concerns about possible impacts to highway operation. A frontage road is not proposed adjacent to Highway 35 due to conflicts with the location of the proposed on-site stormwater pond and the ATCO transmission lines. ATCO does not support the construction of a service road on the same alignment as their lines.

A section of the existing, but currently closed, Government Road Allowance should be opened and constructed to complete the road network and to ensure connectivity. This is not, however, needed as a result of the development of the subject lands but would be triggered by the development of neighbouring lands in the future.

**ROAD NETWORK  
CONCEPT**

Figure 5

Scale: 1:10,000  
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**LEGEND**

- HIGHWAY
- COLLECTOR ROAD
- LOCAL ROAD

0 100 200 300 400 500



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**McElhanney**

A Traffic Impact Assessment has been prepared for the site and it concludes that the road network is adequate in the short term to handle anticipated traffic levels but in the future as development occurs and traffic volumes correspondingly increase improvements will be required to the Highway 35 and Highway 58 intersection and highway access points. This report will be submitted under a separate cover.

**Policies:**

1. Direct access from private lands to Highway 35 or Highway 58 is not permitted.
2. All roads shall be constructed in conformity to municipal and provincial standards.
3. Road network improvements identified in the McElhanney Traffic Impact Assessment shall be implemented as required by the Town of High Level and Alberta Transportation.
4. Environmental assessments, to be approved by the Alberta Environment, of the proposed road alignments to the west of the subject site are required.

#### **4.3 Shallow Utilities**

The proposed development will be serviced by shallow utilities that include natural gas, power distribution, telephone/communications, and cable lines. These services will be extended to the proposed development from the existing utilities locations within the area. All shallow utilities will be provided by the corresponding appropriate public/private companies.

**Policies:**

1. All utilities will be designed and constructed to municipal standards.
2. Shallow utilities will be provided by the appropriate public or private utility companies.
3. The Town may impose conditions of subdivision to ensure that any required rights-of-way and easements are provided.

#### **4.4 Stormwater Management**

A detailed Stormwater Management analysis will be submitted under a separate cover.

# **STORMWATER MANAGEMENT CONCEPT**

#### **4.4 Stormwater Management** (this section of the ASP includes input from Focus Corporation)

The stormwater management strategy seeks to identify a drainage system that meets the needs of the proposed development while minimizing impact to the surrounding environment. As part of the preliminary engineering servicing assessment a conceptual stormwater management plan has been prepared to determine servicing requirements.

#### **Existing Conditions**

Currently the site and surrounding lands do not have a well defined drainage system. The area is characterized by very low grades, local depressions and wet pool areas. Generally the quadrant south of Highway 58 and west of Highway 35 drains in a southwest direction to an existing wetland drainage facility.

The site is divided by a local ridge resulting in the westerly half and easterly half draining to the southwest and northeast, respectively. The existing borrow pit located adjacent to Highway 35 is seasonally inundated with water. Overland surface drainage flows to the borrow pit with overflowing water conveyed to the highway ditch south of highway 58. The site's western portion drains southwest via overland flows directly into the existing wetland area.

The ditches along Highway 35 and Highway 58 adjacent to the site are poorly graded and characterized by local depressions and minimal, if not non-existent slopes. Runoff is generally conveyed west and south along the highway ditches, and is eventually conveyed south towards the existing wetland area via overland flow. No distinct conveyance channel exists between the south Highway 58 ditch and the wetland area. An existing culvert crosses Highway 58 just west of the Highway 35 intersection. This culvert is plugged on the north side of Highway 58 and is currently not operational.

#### **Proposed Drainage System**

The main objectives of a stormwater system are as follows:

- Provide an adequate minor and major drainage system that would service the proposed development site;
- Safely convey runoff from the proposed development to the wetland area; and
- Protect the existing wetland area by providing water quality control of runoff from the proposed development.

The proposed drainage system concept is generally similar to the existing site drainage pattern with the exception being the proposed utilization of the existing Highway 58 culvert crossing at the northeast corner of the site.

As shown in Figure 6, two storm ponds will be utilized in the stormwater management plan. All internal subdivision roadways will include curb and gutter in accordance with

Town of High Level standards. Internal grassed swales and external perimeter ditches will also be utilized to convey stormwater.

Surface drainage will be split approximately at the centre of the site with drainage from the east portion of the site being directed to the proposed northeast storm pond, while drainage from the remaining portion of the site will be directed to the southwest wetlands. Due to the fact that a water course of any defined depth is not available to this development, a storm sewer system is eliminated as a servicing option as required ground cover over the pipes would not be achievable. Surface drainage will be required utilizing curb and gutters, concrete swales, grassed swales and perimeter ditches. In this respect, splitting of the site into two separate drainage directions will reduce the impact of water volumes on roadways, swales and ditches.

### **Pond 1 ( northeast )**

This stormwater pond will receive approximately 6.8 hectares ( 30% ) of the development drainage. This pond will discharge at pre-development rates to the Highway 58 culvert crossing and eventually north along Highway 35 to an existing water course located near the north Town limits.. The MR housing this pond will be developed to Town of High Level, Alberta Environment and Alberta Transportation standards and approvals.

### **Pond 2 ( southwest )**

This pond will serve several purposes. Firstly, pond 2 will be used as a source of imported fill required for the proposed development. Secondly, pond 2 will be utilized as a water quality settling pond required to meet Alberta environment standards. Thirdly, this pond could be developed as a high quality recreational area for public use. Requirements for discharge from this pond will be evaluated at the detailed design stage and subject to Alberta Environment approval.

