



Silverhorn Conceptual Scheme



Bylaw C-6802-2009, Adopted July 28, 2009

**MUNICIPAL DISTRICT OF ROCKY VIEW NO. 44
Department of Planning and Community Services**

MUNICIPAL DISTRICT OF ROCKY VIEW NO. 44
BYLAW C-6802-2009

A Bylaw of the Municipal District of Rocky View No. 44 to amend Bylaw C-4841-97.

- WHEREAS** the Council deems it desirable to amend the said Bylaw, and
- WHEREAS** the Council of the Municipal District of Rocky View No. 44 has received an application to adopt a Conceptual Scheme in order to provide the policy framework to guide and evaluate future development of a comprehensive residential development within all of the SE and the W ½ of the NE 14-26-3-W5M, comprising approximately ± 239 acres (± 96 hectares), as shown on Schedule 'A', attached to and forming part of this Bylaw; and
- WHEREAS** a notice was published on Tuesday, June 16, 2009 and Tuesday, June 23, 2009 in the Rocky View Weekly, a newspaper circulating in the Municipal District of Rocky View No. 44, advising of the Public Hearing for Tuesday, July 28, 2009; and
- WHEREAS** Council held a Public Hearing and have given consideration to the representations made to it in accordance with Section 692 of the Municipal Government Act, being Chapter M-26 of the Revised Statutes of Alberta, 2000, and all amendments thereto.

NOW THEREFORE the Council enacts the following:

1. That the Conceptual Scheme be adopted to provide the policy framework to guide and evaluate future development of a comprehensive residential development within all of the SE and the W ½ of the NE 14-26-3-W5M, comprising approximately ± 96 hectares (± 239 acres), as shown on Schedule 'A', attached to and forming part of this Bylaw.
2. That all lands within the SE and the W ½ of the NE 14-26-3-W5M are hereby redesignated to as shown on Schedule 'A' attached to and forming part of this Bylaw.
3. The Bylaw comes into effect upon the date of its third reading.

Division: 8

File: 06714001/003/021-2008-RV-104

First reading passed in open Council, assembled in the City of Calgary, in the Province of Alberta, on Tuesday, June 09, 2009, on a motion by Deputy Reeve Loudon.

Second reading passed in open Council, assembled in the City of Calgary, in the Province of Alberta, on Tuesday, July 28, 2009, on a motion by Deputy Reeve Loudon.

Third reading passed in open Council, assembled in the City of Calgary, in the Province of Alberta, on Tuesday, July 28, 2009, on a motion by Councillor McLean.

REEVE OR DEPUTY REEVE

MUNICIPAL SECRETARY

SCHEDULE 'A'
FORMING PART OF BYLAW C-6802-2009

A Conceptual Scheme affecting the area within all of the SE and the W ½ of the NE 14-26-3-W5M consisting of approximately ± 96 hectares (± 239 acres), herein referred to as the "Silverhorn at Bearspaw Conceptual Scheme" area.

**ROCKY VIEW COUNTY
BYLAW C-6830-2009**

A Bylaw of Rocky View County to amend Section 10.0 of Bylaw C-4129-93 (the Bearspaw Area Structure Plan) by inserting the Silverhorn Conceptual Scheme (Bylaw C-6802-2009) as adopted on July 28, 2009.

WHEREAS the Council deems it desirable to amend the said Bylaw, and

WHEREAS the Council of Rocky View County has received an application to adopt a Conceptual Scheme to provide a comprehensive policy framework to guide and evaluate redesignation, subdivision and development proposals within all of the SE and the W ½ of the NE 14-26-3-W5M, as shown on the attached Schedule 'A'; and

WHEREAS a notice was published on Tuesday, August 18, 2009 and Tuesday, August 25, 2009 in the Rocky View Weekly, a newspaper circulating in Rocky View County, advising of the Public Hearing for Tuesday, September 22, 2009; and

WHEREAS Council held a Public Hearing and have given consideration to the representations made to it in accordance with Section 692 of the Municipal Government Act, being Chapter 24 of the Revised Statutes of Alberta, 2000, and all amendments thereto.

NOW THEREFORE the Council enacts the following:

1. That Section 10.0 of Bylaw C-4129-93 (the Bearspaw Area Structure Plan) be amended by inserting the Silverhorn Conceptual Scheme (Bylaw C-6802-2009) as adopted on July 28, 2009.
2. The Bylaw comes into effect upon the date of its third reading.

File: 06714001/003/021 – 2008-RV-104

First reading passed in open Council, assembled in the City of Calgary, in the Province of Alberta, on Tuesday, July 28, 2009, on a motion by Deputy Reeve Loudon.

Second reading passed in open Council, assembled in the City of Calgary, in the Province of Alberta, on Tuesday, September 22, 2009, on a motion by Deputy Reeve Loudon.

Third reading passed in open Council, assembled in the City of Calgary, in the Province of Alberta, on Tuesday, September 22, 2009, on a motion by Councillor Solberg.

REEVE OR DEPUTY REEVE

MUNICIPAL SECRETARY

SCHEDULE 'A'
FORMING PART OF BYLAW C-6830-2009

A Conceptual Scheme affecting the area within all of the SE and the W ½ of the NE 14-26-3-W5M consisting of approximately ±96 hectares (± 238 acres), herein referred to as the “Silverhorn Conceptual Scheme” area.

1269731 Alberta Ltd. (Bears paw Operator)

SILVERHORN CONCEPTUAL SCHEME

C2W/IBIGROUP REPORT

JUNE 4, 2009

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1. INTRODUCTION

1.1 Conceptual Scheme Purpose

A Conceptual Scheme is a comprehensive planning strategy focused on a defined area of the Municipality. It is used to ensure that all planning issues and considerations are identified and addressed prior to the area's subdivision and development. Once adopted by Bylaw, a Conceptual Scheme provides the Municipality, the Developer and adjacent landowners with assurances respecting future land use, the future form and function of subdivision and development and the requirements to facilitate future development.

In response to the identified planning issues, a Conceptual Scheme will establish:

- A future land use strategy for a defined Planning Area;
- A subdivision and development concept that will comprise a preferred subdivision and development pattern, development densities and an alignment for future road linkages;
- An attendant open space system and pedestrian circulation network;
- A utility servicing strategy that will include stormwater management, potable water and sewage collection and disposal.

1.2 Conceptual Scheme Objectives

The provisions of this Conceptual Scheme apply to the following lands (the Planning Area):

- The West ½ of NE ¼ Sec. 14-26-03-W5M;
- The SE ¼ Sec. 14-26-03-W5M; and
- Lot 1, Block 1, Plan 0714091.

At its meeting of March 04, 2008, the M.D. of Rocky View Council directed the Developer to enter into a process to prepare this Conceptual Scheme and provided direction to the Developer with the following detailed requirements:

1.2.1 EXISTING SITUATION

A base line description and evaluation of the following matters within and adjacent to the Conceptual Scheme Planning Area:

1. Existing land use, ownership and development;
2. Topography, soil, vegetation, geotechnical and hydro-geological conditions;
3. Archaeological and historical considerations;
4. Biophysical, ecological and environmental impact assessments;
5. Identification of any private utilities infrastructure and related facilities (including identification of any required development setbacks);

6. An analysis of the local and regional transportation network;
7. An analysis of topography and terrain within the Plan Area including an assessment of the local and regional stormwater movements in accordance with the Bearspaw Master Drainage Plan; and
8. Any other matter the Municipality requires to be investigated.

1.2.2 LOCAL DEVELOPMENT MATTERS

A description and evaluation of the following matters describing development within the Conceptual Scheme:

1. A future land use scenario that results in an innovative development and an efficient use of the land base illustrating a detailed lot design, parcel sizes and population densities at phased and full build out;
2. A rationale for the type of proposed use and timing within the context of existing approved and proposed development in the area;
3. Measures to ensure the integration of the proposed development with existing and adjacent development in a manner that ensures compatibility with adjacent land uses – as part of this work, consideration should be given to buffering existing residential development from proposed development;
4. a Recreational Plan that may or may not include a Voluntary Community Recreation Contribution;
5. A description of a proposed open space network including passive and active open areas, natural areas and pedestrian linkages to existing or potential developments within the surrounding area to be established through dedication of Municipal/School Reserves, Environmental Reserves and/or Public Utility Lots;
6. A Storm Water Management Plan demonstrating how low impact development techniques and Best Management Practices can be implemented within the Plan Area in conjunction with the provisions of the Bearspaw Master Drainage Plan;
7. A Utility Servicing Strategy that provides for a licensed surface water supply, sewage disposal and solid waste system necessary to support the range of residential uses and densities within the Plan Area – including innovative measures to provide for water conservation, recycling and re-use;
8. A Traffic Impact Analysis that assesses the location of existing and future transportation networks; anticipated traffic generation and its cumulative impacts on the road network and includes recommendations concerning methods of financing any upgrades to Hwy 766, Twp. Rd. 262, Bearspaw Road and Burma Road (Twp. Rd. 260);
9. An assessment of existing community service levels including but not limited to policing, fire protection and ambulance and the cumulative impact of such development on these existing Municipal capabilities;

10. An Implementation Plan that addresses development phasing and provides an expectation within that Construction Management Plans and Weed Management Plans will be implemented to mitigate inconvenience to existing developments and control, impede and remove weed growth control during the pre-build, build and post-build stages of development; thereby;
 11. Input from all directly and indirectly affected landowners within and adjacent to the conceptual scheme area through the preparation of the conceptual scheme, including a minimum of two (2) open house to gain feedback on the proposal; and
 12. Any other matter the Municipality deems necessary.
- B. That the Developer, within the Conceptual Scheme, address the broader benefits of the proposed project as well as its potential demand for full services at full development.

2. SILVERHORN VISION

2.1 Vision

Silverhorn is a unique, high quality residential community in Bearspaw. The community design envisions a harmonious relationship between the built and natural environment that evokes a sense of continuity, rural character and sense of place for its residents. This development is committed to preserving the natural environment (the rolling landscape, wetlands, native terrain and vegetation) and maintaining the ecological integrity of the site. The proposal recognizes the natural landscape and environment as the foundational asset of the development, and therefore, it is the vision of this community to minimize the development footprint of buildings and infrastructure, and dedicate a sizeable portion of the land to preserving the natural features of the site.

2.2 Development Rationale

The vision for the Silverhorn community is reflected in the care and attention taken in its design. Buildings are to relate to the land, step with the natural grades, harmonize with the character of the surrounding landscape and reflect the architectural styles of the surrounding community. A certain percentage of each parcel will be protected in order to maintain the rural character and ecological features such as surface and ground water quality, wetlands, steep slopes and wildlife habitat. Larger lot sizes limit the need for alteration of the existing terrain and will facilitate the retention of diverse ecology, topography and vegetation throughout the site. The policies of this Conceptual Scheme provide an implementation framework to realize the community vision that preserves the existing vegetation and landscape.

2.3 Development Goals and Objectives

The goal of the Conceptual Scheme is to **preserve**, **protect** and **enhance** Silverhorn's natural environment and to remain consistent with the policies outlined in the Bearspaw Area Structure Plan.

Building on a foundation of respect for its community context, development of the Silverhorn Conceptual Scheme has been based on a set of goals and objectives to ensure that the policies of

the Conceptual Scheme remain true to the vision for the community. Accordingly, Silverhorn will be a residential community that will:

- Identify areas of environmental significance within the site and ensure such areas will be preserved and integrated into the development;
- Ensure consistency in the quality and integrity of all development;
- Ensure high quality and uncompromising development standards;
- Incorporate innovative sustainable initiatives and standards to promote water conservation and energy efficiency;
- Ensure the highest quality of life for all residents by providing a balance between the public and private realms within the community that facilitates a safe and open community for its residents;
- Integrate existing natural stormwater drainage patterns into the site design and ensure the implementation of comprehensive stormwater management plan;
- Respect local resident interests;
- Be consistent with the provisions of the Bearspaw Area Structure Plan and offer a liveable and sustainable community design;
- Create a pedestrian friendly community through the design of a local road system and open space network that incorporates multi-use regional pathways and rustic trails and;
- Create a unique residential community that takes advantage of the natural features and topography of the site, respects the adjacent country residential development, and generally enhances the unique opportunities that the site has to offer.

3. SILVERHORN CONTEXT

3.1 Location

The Silverhorn Planning Area is located within the M.D. of Rocky View and the community of Bearspaw. The Planning Area is located adjacent and north of Township Road 262 and 0.5 miles east of Lochend Road (Highway 722).

The Silverhorn Planning Area is located in an area of the Municipality characterized as country residential. The north and west portions of the lands are bordered by agricultural lands, to the east by country residential development (Exhibit 1- Location).

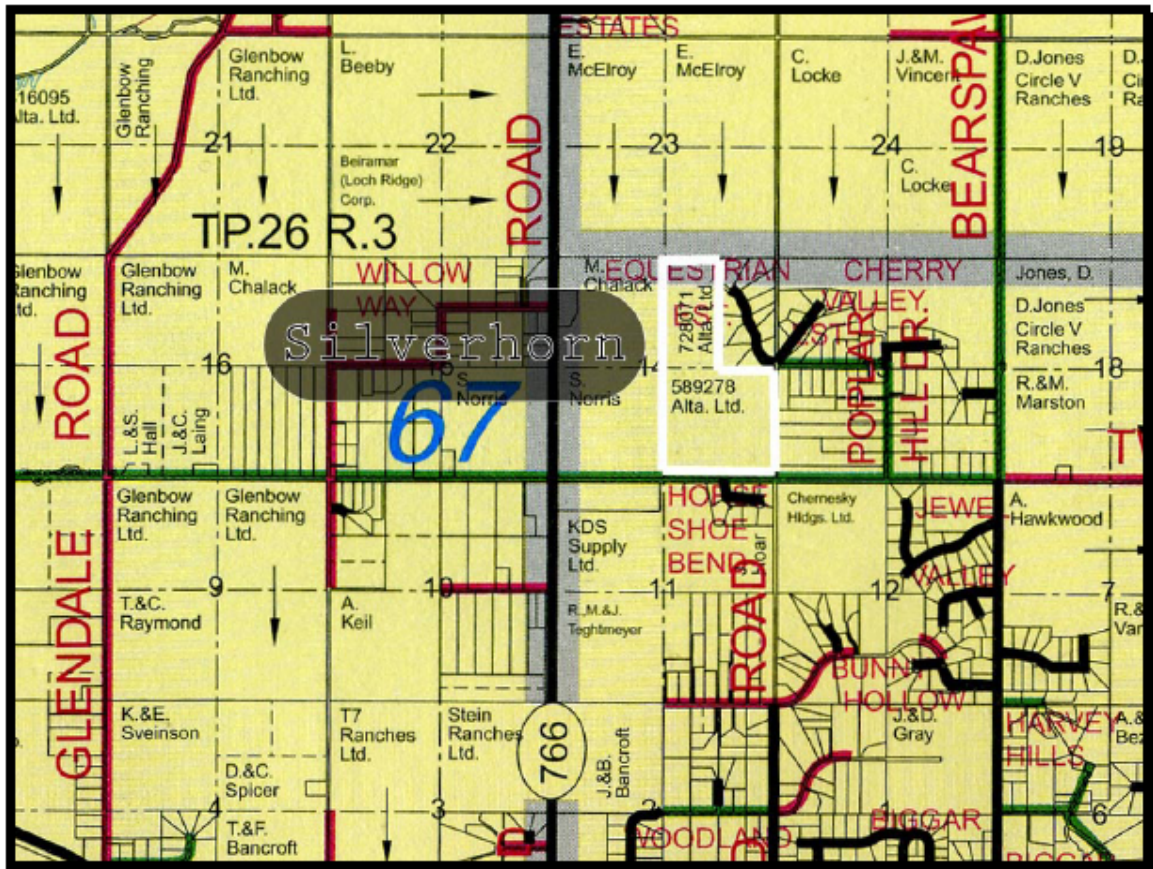


Exhibit 1 - Location

The Planning Area comprises 238.97 acres (96.68 hectares) of land covering all of the SE ¼ Sec. 14-26-03-W5M, the west ½ of NE ¼ Sec. 14-26-03-W5M and Lot 1, Block 1, Plan 0714091.

Policy 3.1.1 Policies contained in this Conceptual Scheme shall apply to lands identified in Exhibit 2 - Planning Area.

3.2 Land Ownership

The SE ¼ Sec. 14-26-03-W5M and the West ½ of the NE ¼ Sec. 14-26-03-W5M are contained under separate title and under single ownership to the Developer. These lands comprise 229.73 acres (92.97 Ha) and are identified as Development Cell 1. These lands proposed for immediate subdivision and development.

Lot 1, Block 1, Plan 0714091 (Development Cell 2) comprises 9.24 acres (3.74 Ha) and is contained under separate title and ownership. While proposed for immediate subdivision and development, timing of same may differ from that proposed for the balance of the Planning Area.

Exhibit 2 – Planning Area

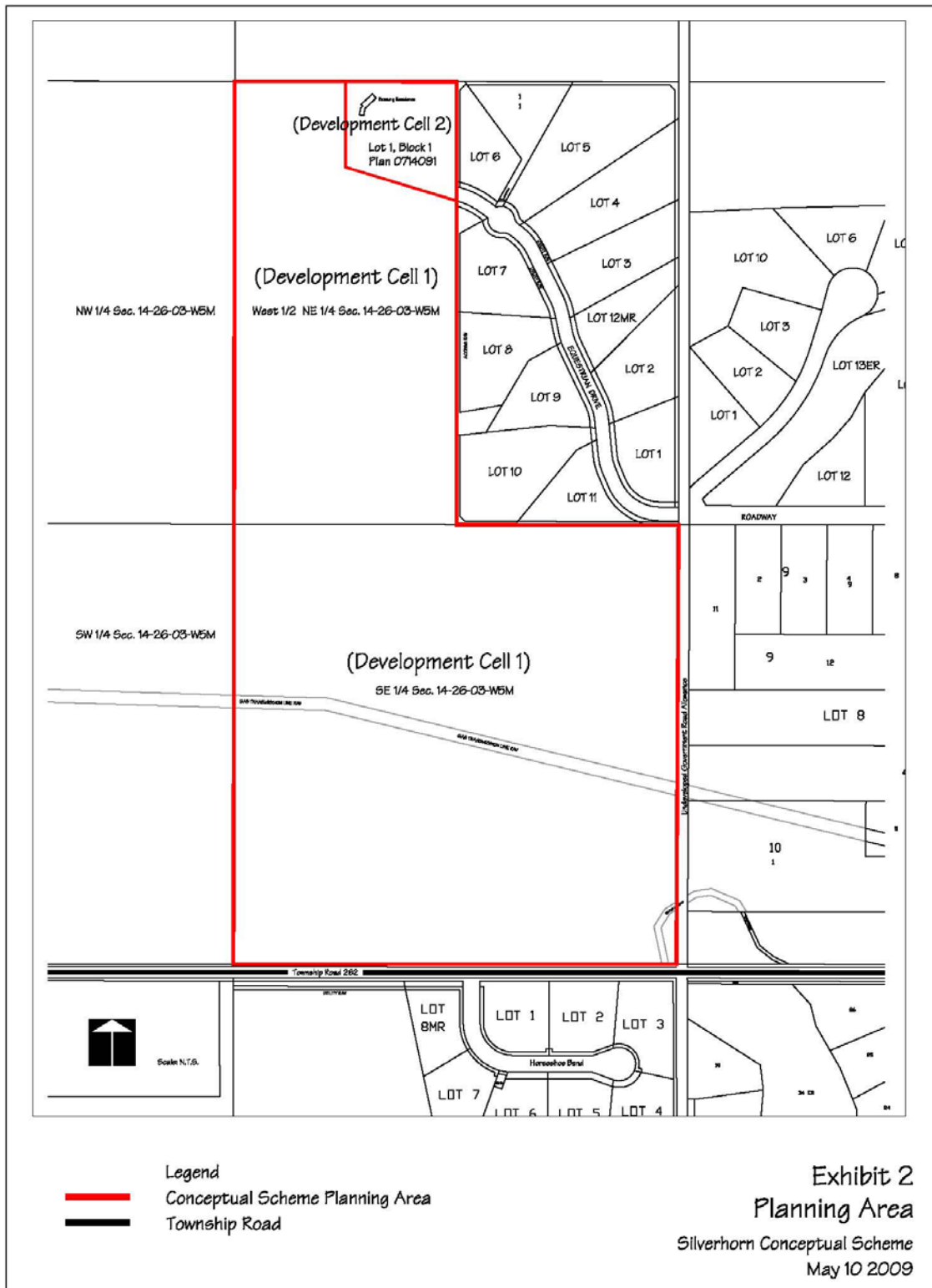


Table 1 - Titled Lands within the Silverhorn Conceptual Scheme Planning Area

Land Description	Title Number	Area (acres)	Area (hectares)
Development Cell 1			
West ½ of the NE ¼ Sec. 14-26-03-W5M	071 472 516	70.76	28.66
SE ¼ Sec. 14-26-03-W5M	071 262 832	158.97	64.28
Development Cell 2			
Lot 1, Block 1, Plan 0714091	081 454 287	9.24	3.74
Total		238.97	96.68

Table Notes:

1. Table Information as per June 2009 Title Searches.
2. Totals may not equal due to rounding and metric conversion.
3. All areas should be considered more or less.

3.3 Current Land Use

The Silverhorn Planning Area is designated Ranch and Farm District (RF), Ranch and Farm Two District (RF-2) and Residential Two District (R-2) by the M.D. of Rocky View Land Use Bylaw (Exhibit 3 – Current Land Use Bylaw Districts).

**Exhibit 3 – Current Land Use Bylaw Districts**

Exhibit 3 – Current Land Use Bylaw Districts (Silverhorn Conceptual Scheme Planning Area is shown in Red)

The land has been used for grazing purposes with crop production and further agricultural capability being impaired by existing vegetation, poor soil, terrain characteristics and the proximity of residential development. An existing residential use is found at the north east corner of the Planning Area and contained within Lot 1, Block 1, Plan 07114091. This parcel is designated Residential Two District (R-2).

3.4 Community Context and Surrounding Development

Residential land use is developed on adjacent lands east and south of the Planning Area. Parcel sizes are generally four acres with larger ten, twenty and forty acre parcels found adjacent and east of the Planning Area.

Land adjacent and west of the Planning Area is undeveloped and used for agricultural pursuits. There are no intensive livestock facilities in proximity to the Planning Area.

4. SILVERHORN PLANNING AREA ATTRIBUTES

4.1 Land Form & Natural Features

The Silverhorn Planning Area consists of rolling and hilly terrain comprised of glaciofluvial and surficial deposits that may include extensive areas of hummocky and ground moraine as well as more restricted areas of outwash and glaciolacustrine deposits along valleys. Exhibit 4 – Terrain illustrates the topography and overland drainage pattern of the Planning Area.

The Conceptual Scheme Planning Area contains five main vegetation community types:

- Grasslands (See Photo 1 – Typical grassland vegetation community);
- Shrublands (See Photo 2 - Typical shrublands vegetation community);
- Aspen Groves (See Photo 3 & 4 - Typical aspen grove vegetation community);
- Cultivation (See Photo 5 - Typical cultivation vegetation community); and
- Wetlands (See Photo 6 - Typical wetland vegetation community).

Exhibit 5 – Air Photo illustrates the diversity of vegetation within the Silverhorn Planning Area.

Policy 4.1.1 Alterations to the existing terrain and landscape of the Planning Area shall only proceed in accordance with:

- a. a storm water management plan;*
- b. an overall grading plan;*
- c. an erosion control plan;*
- d. a weed control plan;*

- e. *a wetlands conservation, alteration and compensation plan approved by Alberta Environment;*
- f. *the recommendations of a biophysical assessment; and*
- g. *the Site Development Guidelines Document*

all developed in accordance with the policies of this Conceptual Scheme and as approved by the M.D. of Rocky View No.44.

4.2 Existing Pipeline Right of Way

A gas transmission line is located within Plan 355JK and traverses the Planning Area within the SE ¼ Sec. 26-03-W5M. This right of way contains a buried pipeline protected by caveat against the title of the SE ¼ Sec. 26-03-W5M and in favor of the Alberta Gas Trunk Line Co. Ltd. The pipeline does not contain sour gas and no additional development setbacks are required outside the existing right of way. Nevertheless, the current owner of the pipeline, TransCanada Pipelines, has requested that a seven metre building setback be established from the pipeline right of way. TransCanada Pipelines also requested that the pipeline right of way be designated as a passive parkland or open green space in order to protect the integrity of the pipeline. The alignment of this pipeline right of way is shown on Exhibit 2 – Planning Area.

- Policy 4.2.1 The Developer will contact Alberta Gas Trunk Line Co. Ltd., or the appropriate pipeline company holding rights to this right of way, to ensure that the Tentative Plan submitted for subdivision meets all requirements respecting the protection of the integrity of the pipeline and its attendant right of way.*
- Policy 4.2.2 All buildings shall be setback a minimum of 7 metres from that gas transmission line right of way (Plan 355JK).*

Exhibit 4 - Terrain

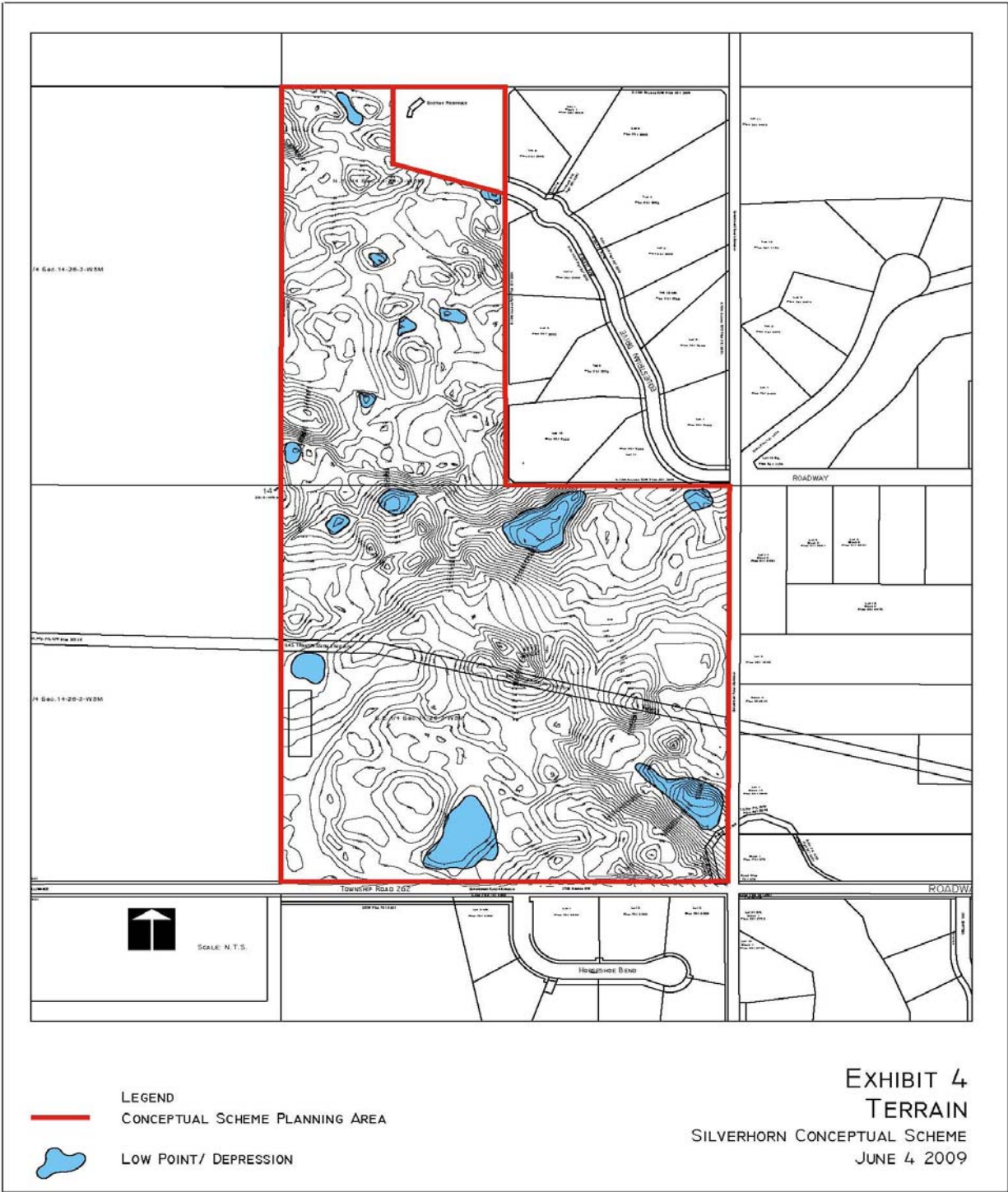


Exhibit 5 – Air Photo

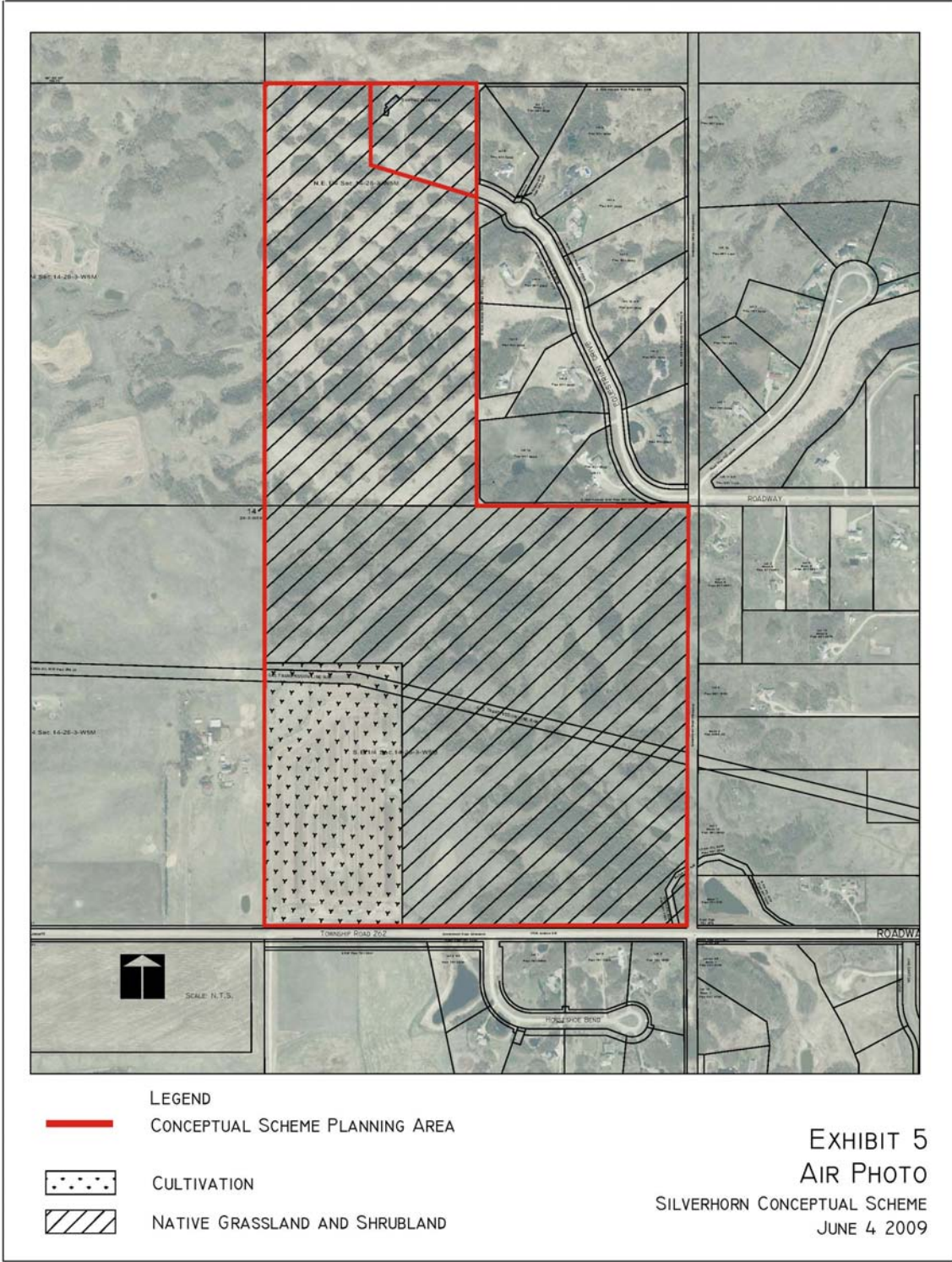




Photo 1 - Typical grassland vegetation community within the Planning Area



Photo 2 - Typical shrublands vegetation community within the Planning Area.



Photo 3 - Typical aspen grove vegetation community within the Planning Area.



Photo 4 - Typical aspen grove vegetation community within the Planning Area.



Photo 5 - Typical cultivation vegetation community within the Planning Area



Photo 6 - Typical wetland vegetation community within the Planning Area.

5. SILVERHORN COMMUNITY DESIGN

5.1 Community Design Elements

The Silverhorn community design is a response to the existing landform. A central subdivision spine road is designed to follow the existing contours of the land and extends vehicular access from the main and southerly intersection at Township Road 262 to the northern extents of the community. From the central subdivision road a network of smaller local residential roads access the balance of the developable lands within the community. Exhibit 6 – Subdivision and Development Concept illustrates the preferred subdivision design for the Planning Area.

Purposeful lot design and the careful selection of building sites will create residential enclaves that blend the rural character with the individual desire for privacy and tranquility. And so, to preserve the rural environment of the site perimeter fencing shall not be permitted on individual lots in Silverhorn. In order to be sensitive to the existing landscape and environment, Silverhorn encourages the use of landscaping and vegetation as a natural boundary marker for homeowners to obtain privacy and consistency throughout the community.

Open space has been strategically placed to allow the pedestrian to experience Silverhorn's unique landscape. The greenway system generally corresponds to the open grassland areas found in the Planning Area. Dedication of these grassland areas permits recreation use as well as preserves the open vistas and views.

The planned integration of the stormwater management system with the open space network will allow stormwater ponds to become water features and walking destinations within the community.

Exhibit 6 – Subdivision & Development Concept

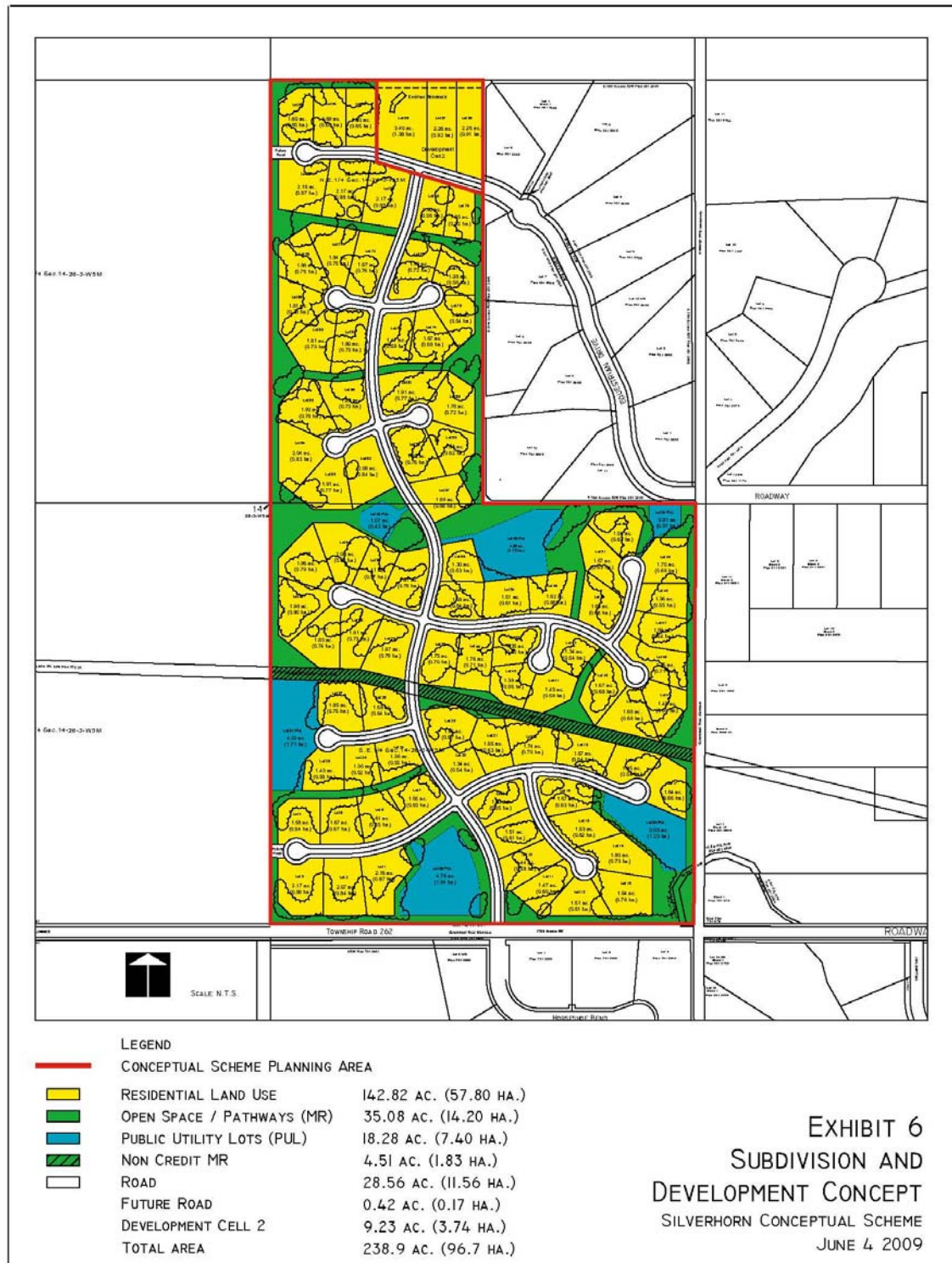


Table 2 - Subdivision and Development Concept - Land Use Statistics (Planning Area)

Land Use	Lots	Acres	Hectares	Percent
Development Cell 1: SE1/4 Sec. 14-26-03-W5M & West ½ Sec. 14-26-03-W5M				
Residential	85	142.82	57.80	62.2%
Municipal Reserve (MR)		35.08	14.20	15.3%
Non-Credit MR		4.51	1.83	2.0%
Public Utility Lot (PUL)		18.28	7.40	8.0%
Public Road		28.56	11.56	12.4%
Future Road Connection		0.42	0.17	0.2%
Total	85	229.67	92.95	100.0%
Development Cell 2: Lot 1, Block 1, Plan 0714091				
Residential	3	7.92	3.21	85.8%
Road		1.31	0.53	14.2%
Total	3	9.23	3.74	100.0%

Table Notes:

1. Table Information as per June 2009 Title Searches.
2. Areas are based upon Exhibit 6 – Subdivision and Development Concept and are considered conceptual.
3. Totals may not equal due to rounding and metric conversion.
4. All areas should be considered “more or less”.

Policy 5.1.1 Subdivision of land within the Planning Area shall be generally in accordance with Exhibit 6 - Subdivision and Development Concept. The final size, configuration and design of individual parcels proposed through subdivision shall be identified on the tentative plan for subdivision approval.

Policy 5.1.2 Residential lot sizes shall be a minimum of 1.25 acres and a maximum of 2.25 acres with a maximum of 88 residential lots within the Planning Area

Policy 5.1.3 Environmental Reserve may be required at the subdivision stage in accordance with Section 664 of the Municipal Government Act, at the discretion of the Municipality.

5.2 Silverhorn Site Development Guidelines

The Site Development Guidelines described in the policies of this Conceptual Scheme are intended to ensure that all homes built in Silverhorn are environmentally sensitive in their approach to site location and landscape. The guidelines will establish a maximum buildable area and identify areas to be retained in a naturalized state for each development parcel. This document will be used as the

foundation for the lot design and configuration on the tentative plan submitted for subdivision approval.

The Site Development Guidelines document primarily illustrates the **Natural Area**, the **Building Envelope** and the **Construction Envelope** for each lot.

The **Natural Area** is a portion of the lot that is located outside of the Construction Envelope and is *NOT* developable. These areas are protected areas that ensure the retention of the existing vegetation; they are no disturbance areas and are set aside to maintain the natural character of Silverhorn. The Natural Area is created and intended to support Silverhorn's vision of protection and preservation and therefore it is required that existing trees and native vegetation within these areas are retained and left untouched.

The **Building Envelope** is the portion of the lot that is intended for personal use. This portion will include the dwelling, outbuildings, gardens, manicured landscaping, the driveway, and servicing. The Building Envelope will be situated to take maximum advantage of the natural and man-made character of the lot. The building should be located with the natural grade, accounting for views and sun angles; each building should be designed to minimize overview and/or overshadowing of the adjacent developments; and each building should be designed to ensure suitable and safe access off the street. Driveway locations must consider safe road design and are required to be contained within the Building Envelope.

The **Construction Envelope** is the portion of each lot within which all improvements and construction activities of any kind must occur. It is based on the natural features of the lot, view, topography and setback requirements, and it is the maximum limit of disturbance allowed during construction. The Construction Envelope includes a 3.0 metre construction buffer established from the border of the Building Envelope that is intended for construction activity. This includes access for construction vehicles and the delivery of construction materials. In turn, the construction process is to be contained within the construction envelope in order not to alter or impact on the Natural Area. Additionally, vegetation that is approved for removal (based on size, quality, species and location) within the Construction Envelope may be carefully relocated within the Natural Area of the site, in order to naturally enhance the native material, for climatic buffers and to preserve as much of the native vegetation on site as possible.

Policy 5.2.1 Before any alteration, subdivision or development may occur on the subject lands a Site Development Guidelines document shall be submitted that identifies:

- a. the Natural Area to be protected on each lot which will include existing depressions for stormwater management, existing vegetation and other environmentally significant features to be protected pursuant to the policies of this document;*
- b. the Building Envelopes on each lot; and*
- c. the Construction Envelope on each lot.*

Policy 5.2.2 A Site Development Guidelines document shall be provided prior to subdivision approval to the satisfaction of the MD of Rocky View.

Policy 5.2.3 The Site Development Guidelines document shall be registered on title with the Architectural Design Guidelines prior to or concurrent with the final Plan of Survey.

5.3 Stormwater Management

Pre Development Drainage

The Planning Area is part of the West Nose Creek watershed. West Nose Creek is a main and permanent tributary to Nose Creek. Accordingly, stormwater originating within the Planning Area contributes stormwater flow to this watershed.

The pre-development Planning Area can be notionally divided into six pre-development catchment areas. The pre-development catchment areas are identified on Exhibit 7 – Stormwater Management and are described as follows:

- Stormwater originating within Pre-Development Catchment Area 1 generally migrates to the central north eastern portion of the Planning Area. Consultation with adjacent land owners during preparation of the Conceptual Scheme revealed that from time to time they have experienced drainage issues in this area. Accordingly, the post-development stormwater management strategy should include measures to address and mitigate drainage issues on adjacent lands.
- Stormwater originating within Pre-Development Catchment Area 2 generally migrates north and west where it collects in a small existing depression that extends from the Planning Area into adjacent lands.
- Stormwater originating within Pre-Development Catchment Area 3 generally migrates south east toward Township Road 262 where it collects in the lower elevations of the Planning Area.
- Stormwater originating within Pre-Development Catchment Area 4 generally migrates east where it ponds in a small coulee.
- Stormwater originating within Pre-Development Catchment Area 5 generally migrates north and west to the NW ¼ Sec. 14-26-03-W5M.
- Stormwater originating within Pre-Development Catchment Area 6 generally migrates east to Equestrian Drive.
- Throughout the Planning Area there are number of small depressions and trapped lows in the terrain that collect and hold stormwater.

Policy 5.3.1 Alterations in the existing pre-development stormwater drainage patterns within the Planning Area shall proceed in accordance with an approved stormwater management plan that comprises best management practices and the stormwater management principles of this Conceptual Scheme, the Bearspaw Master Drainage Plan and the Nose Creek Watershed Water Management Plan.

Policy 5.3.2 An approved stormwater management plan for the Planning Area should undertake an assessment of drainage patterns and provide appropriate mitigation measures to resolve any drainage issues within and adjacent to the Planning Area.

Policy 5.3.3 Alterations to the existing pre-development stormwater drainage patterns shall require all appropriate Provincial approvals regarding existing wetlands on the site.

Exhibit 7 – Stormwater Management

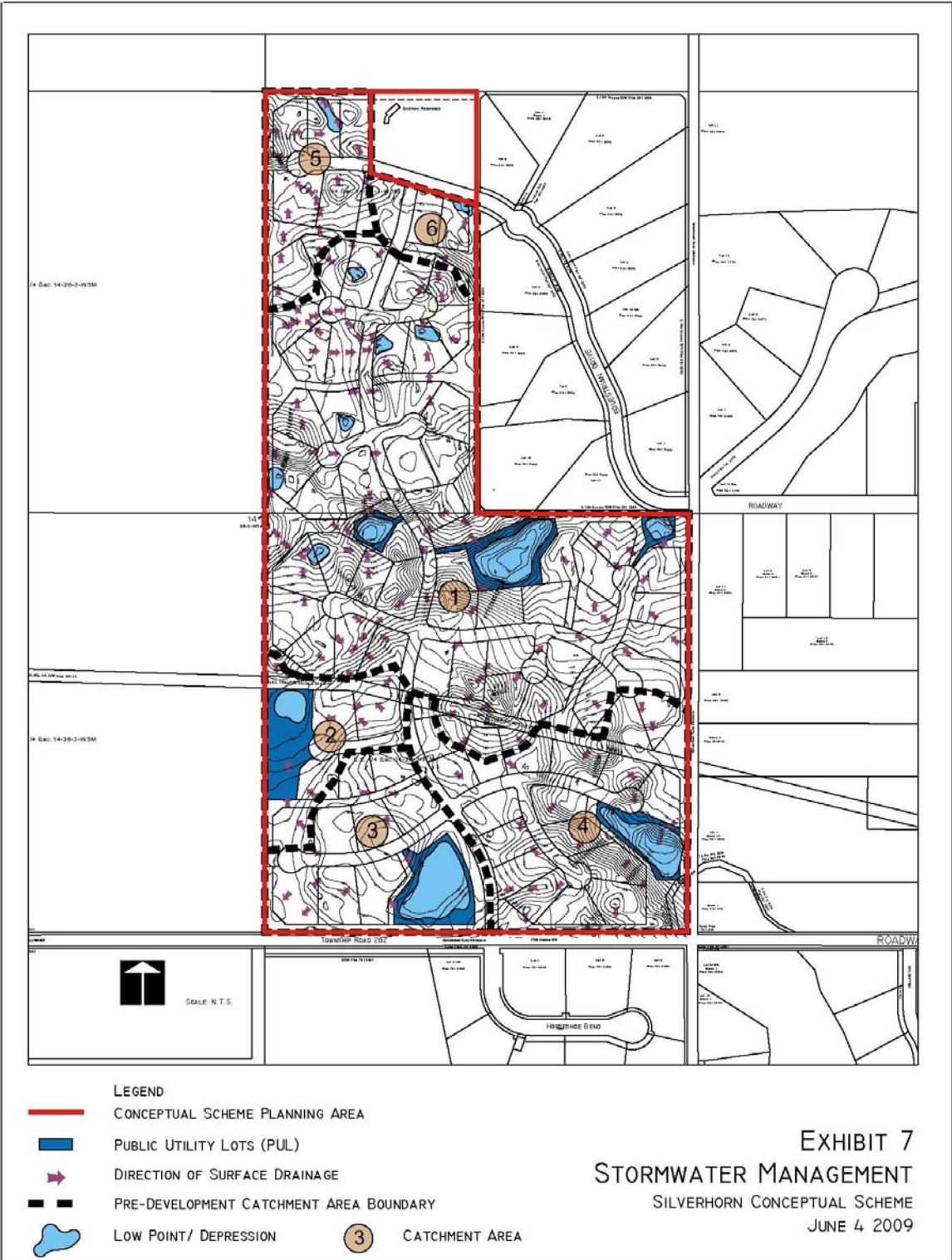




Photo 7 - Pre-Development Catchment Area 1 to be integrated into the Silverhorn Stormwater Management System.

Post-Development Stormwater Management and LID Technology

Stormwater management within the Silverhorn Planning Area will be designed as a hybrid system comprising Low Impact Development (LID) strategies and conventional stormwater management best management practices. Further, stormwater management within the Silverhorn Planning Area will be in accordance with the recommendations of the Bearspaw Master Drainage Plan and the Nose Creek Watershed Water Management Plan.

LID strategies are considered to be an effective and environmentally friendly means to control post-development peak flow rates and runoff volumes as it manages precipitation where it falls by promoting infiltration subsequently reducing or eliminating dependence upon a stormwater conveyance system.

In order for LID strategies to successfully manage stormwater flow and volume control, they must be an essential consideration in the overall subdivision and development concept for the Silverhorn Planning Area. Development within the Planning Area will:

- Preserve the existing landform in the subdivision and development concept and minimize extensive stripping and grading during the development of the Planning Area;
- Preserve and protect existing natural depressions in the landscape and utilize these natural depressions in the overall design of the stormwater management system;
- Maintain the existing vegetation cover throughout the Planning Area;
- Create bio-infiltration zones within the stormwater management system;
- Adopt a development strategy focused upon the reduction of impermeable areas through Planning Area; and
- Promote the use of rain barrels and cisterns to retain and recycle stormwater.

Silverhorn Stormwater Management System

The stormwater management system will utilise a conventional system in conjunction with LID technology as conceptually illustrated in Exhibit 7 – Stormwater Management. Conventional methods will be used within public right of ways in the form of an open channel system (ditches) and culverts. Runoff will be conveyed to one of the regional stormwater bioretention facilities where it will be detained and disposed of by infiltration and evaporation. Each stormwater bioretention facility proposed will be entirely contained within a Public Utility Lot (PUL). Cross-sections of typical bioretention facilities are shown in Appendix A – Bioretention Facility.

In respect to LID principles, stripping and grading of the residential lots will be kept to a minimum. In addition, the majority of the existing depression areas, and overland flow paths will be maintained and preserved by rights of way, easements and/or restrictive covenants registered against the titles of the lots containing the local depressions.

The dynamics of the stormwater management system are as follows:

1. Runoff from the residential lots will drain towards the existing depression areas.
2. The proposed ditch system will be designed to intercept the spill from the existing depressions as well as the direct runoff from the public roadway.
3. The ditch system will convey runoff to bioretention facilities where there will be disposed of through infiltration and evaporation.
4. The bioretention facilities will be designed to discharge runoff into the offsite drainage course during extreme rainfall events (greater than 1 in 100 year return period) when, or if the infiltration capacity of the facilities is exceeded. The peak discharge rate from each stormwater facility will be limited to 0.99 L/s/ha in accordance with the requirements of the Nose Creek Watershed Water Management Plan (NCWWMP).

It should be noted that drainage from Catchment Area 5 is part of a greater catchment area contained outside the Planning Area and within the NW ¼ Sec. 14-26-03-W5M. At such time as the NW ¼ Sec. 14-26-03-W5M is developed it will be appropriate to integrate stormwater flows from Catchment Area 5 into the stormwater management plan prepared for these lands. Prior to the development of the NW ¼ Sec. 14-26-03-W5M, stormwater from Catchment Area 5 will be contained within existing natural depressions. Drainage from Catchment Area 6 that flows east to Equestrian Drive will be contained within existing natural depressions.

Policy 5.3.4 A stormwater management system designed for the Silverhorn Planning Area shall meet or exceed Nose Creek Watershed Water Management Plan (NCWWMP) guidelines for peak and annual rates and volume of discharge of post-development stormwater.

Policy 5.3.5 A stormwater management system designed for the Silverhorn Planning Area shall adhere to the recommendations of the Bearspaw Master Drainage Plan.

Policy 5.3.6 A stormwater management system shall be prepared for the Silverhorn Planning Area prior to subdivision approval.

Policy 5.3.7 The stormwater management system should incorporate Low Impact Development (LID) strategies and technologies in its design that will consider ways to implement the following:

- a. Preserve the existing landform in the subdivision and development concept and minimize extensive stripping and grading during the development of the Planning Area;*
- b. Preserve and protect existing natural depressions in the landscape and utilize these natural depressions in the overall design of the stormwater management system;*
- c. Maintain the existing vegetation cover throughout the Planning Area;*
- d. Create bio-infiltration zones within the stormwater management system using existing natural depressions within individual lots that will be protected from disturbance by rights of way, easements and /or restrictive covenants registered against the titles of the affected lots;*
- e. Adopt a development strategy focused upon the reduction of impermeable areas through Planning Area; and*
- f. Promote the use of rain barrels and cisterns to retain and recycle stormwater.*

Policy 5.3.8 A stormwater management system designed for the Silverhorn Planning Area shall generally conform to the stormwater management system conceptually illustrated in Exhibit 7 – Stormwater Management.

Policy 5.3.9 At or prior to the endorsement of the each phase of subdivision a restrictive covenant shall be registered on title of all affected parcels to ensure that any development within the Planning Area maintain a minimum 1.65 foot (0.5 metre) freeboard from the spill elevation of local depressions that comprise a component of the approved stormwater management system for the Planning Area.

5.4 Silverhorn Natural and Open Space Elements

The open space elements within the Silverhorn community are areas for passive recreational activities. The design of the open space network is based on a number of key principles:

- Approximately 16.03 hectares (39.59 acres) will be set aside for an open space network.
- The open space network will include naturalized open space along with intimate personal spaces to provide passive recreational opportunities for both residents and visitors.
- The open space network will create amenity value for the Silverhorn Planning Area and the Bearspaw community and will be open to all residents of the community, as well as the greater public.
- Pathways within public spaces will be designed to be barrier-free.

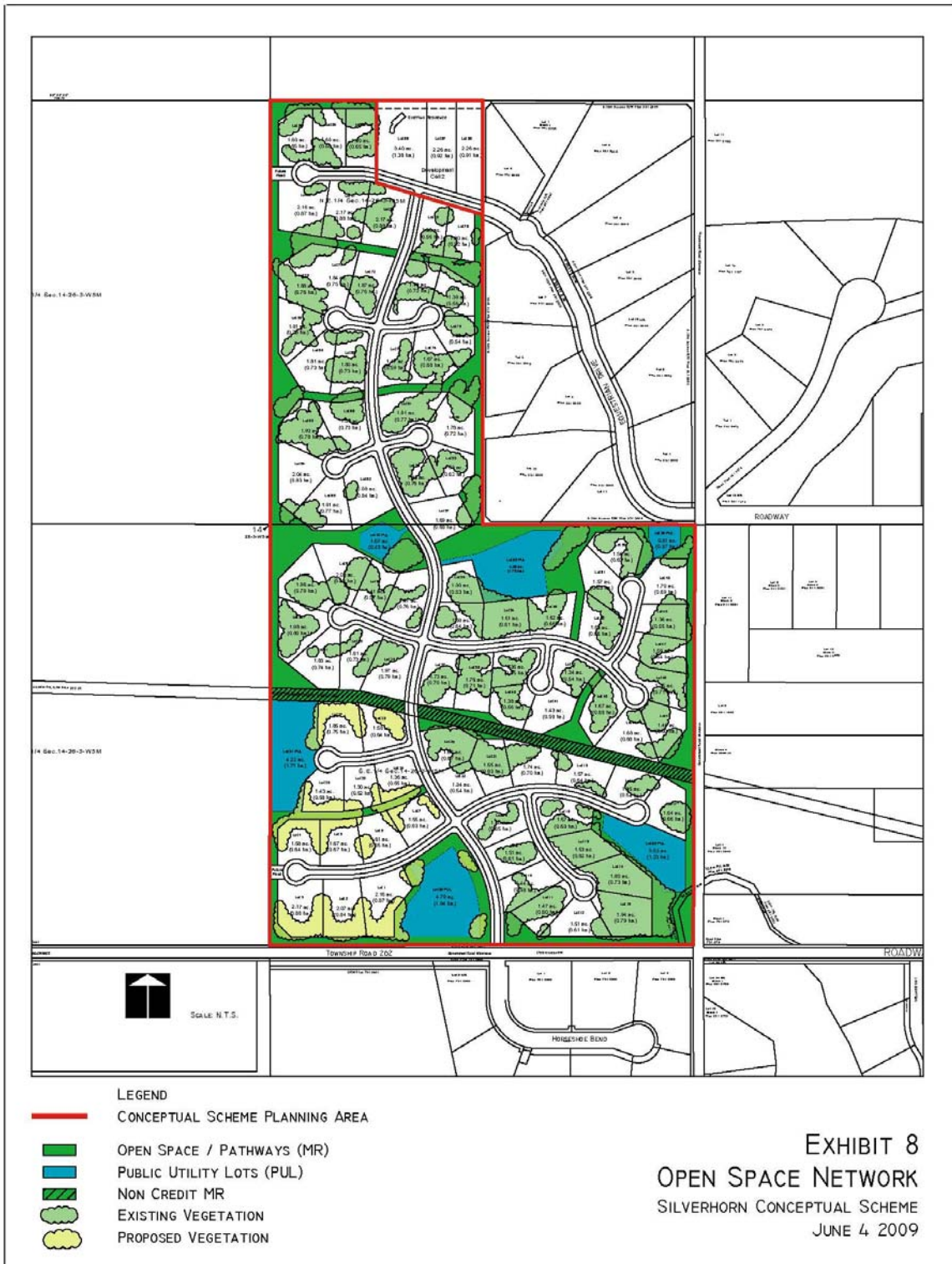
- Policy 5.4.1 A open space network within the Planning Area shall be constructed by the Developer to the satisfaction of the M.D. of Rocky View and be generally as shown in Exhibit 8 – Open Space Network.*
- Policy 5.4.2 The gas transmission line right-of-way shall be protected by incorporating it as part of the open space network. The pipeline right-of-way may be designated it has Municipal Reserve, but will not comprise any of the required 10% Municipal Reserve dedication required within the Silverhorn Planning Area.*
- Policy 5.4.3 The open space network will be maintained by the Municipality, by the Homeowner's Association under a operation / maintenance agreement with the Municipality, or by the Bearspaw Glendale Community Association.*
- Policy 5.4.4 Linear public open space shall be a minimum width of 10 metres.*

Landscaping

The Planning Area includes a varied and dynamic landscape with grasslands, shrublands, aspen groves, wetlands, and depressions. A Landscape Plan will be developed for public lands that facilitates the construction of passive recreational amenities and preserves as many of these landscape features as possible. LID principles will be incorporated into the Landscape Plan to assist in managing stormwater runoff.

- Policy 5.4.5 A Landscape Plan shall be submitted by the developer prior to approval for each phase of subdivision.*
- Policy 5.4.6 Implementation of the Landscape Plan shall be through the development agreement at the time of subdivision endorsement.*
- Policy 5.4.7 The Landscape Plan shall demonstrate the preservation of natural vegetation, existing topography, wetlands and depressions.*
- Policy 5.4.8 The Landscape Plan shall require the use of native plant species where the planting of vegetation is necessary.*
- Policy 5.4.9 The Landscape Plan shall incorporate LID principles in accordance with Policy 5.3.7*

Exhibit 8 – Open Space Network



5.5 Silverhorn Accessibility - Pedestrian

The Silverhorn open space network will provide a network of open spaces, regional pathways and local trails that connect to existing or future regional facilities, as well as facilitating access to focal points within the community.

Exhibit 9 – Pathway Network illustrates the preferred configuration of open space, pathways and trails.

The Silverhorn open space network provides open space connections to and from parks and neighborhoods, includes pathways and trails and accommodates wildlife movement. This system of linkages include a hierarchy of multi-use regional pathways and multi-use rustic trails to accommodate a variety of passive recreational activities including walking, cycling, hiking, wildlife observation, dog walking, local commuting and wildlife movement. Local trails may be constructed within Municipal Reserve lands and/or contained within right-of-ways on individual residential lots.

The multi-use regional pathways are intended to facilitate efficient connectivity to recreational facilities within Bearspaw. These pathways are intended to serve as high volume connectors under all conditions and will be located within wide linear Municipal Reserve dedications and will be located adjacent to Township Road 262 and to the eastern boundary to connect the open space lands to the northeast and the southeast on adjacent lands.

Multi-Use Rustic Trails are located within ER or MR or public lands and provide direct or indirect recreational access for the residents of Silverhorn. These trails shall be contoured into surrounding landscape and provide connections with the greenways and multi-use regional pathways within the planning area. The multi-use rustic trails will be constructed pathways used for walking, running, hiking, biking, snowshoeing and cross-county skiing.

The detailed alignment of the open space, multi-use regional pathways and multi-use rustic trails within Silverhorn will be determined prior to subdivision approval.

- Policy 5.5.1 The open space, multi-use regional pathways and multi-use rustic trails within the Silverhorn Planning Area shall be constructed by the Developer to the satisfaction of the M.D. of Rocky View and be generally as shown in Exhibit 9 – Pathway Network.*
- Policy 5.5.2 Pathways and trails will be constructed in accordance with the descriptions in the Open Space / Trail Classification System and the requirements of the Servicing Standards.*
- Policy 5.5.3 The gas transmission pipeline right-of-way may include a portion of the open space network.*

Exhibit 9 –Pathway Network



5.6 Community Recreation Needs

During the preparation of this Conceptual Scheme, the Developer communicated with the Bearspaw Glendale Recreation District Board whose purpose is to “foster, create, develop, maintain and operate parks, recreation and cultural program facilities and other recreation facilities in the recreation area”.

A key objective articulated by the Bearspaw Glendale Recreation District Board is the development of centralized community recreation facilities and wellness centre located in proximity to the current Bearspaw lifestyle centre located south of Highway #1A and east of Bearspaw Road. This is in contrast to a decentralized system of recreation facilities that would be incrementally developed through out the Bearspaw community by public and private interests.

Policy 5.6.1 The Developer of the Silverhorn Planning Area will provide a voluntary financial contribution in accordance with the provisions of this Conceptual Scheme to the Municipality for the development of community recreation facilities

Policy 5.6.2 A Homeowner's Association shall be established for the Silverhorn Planning Area and shall collect from each Homeowner within the Silverhorn Planning Area, a yearly membership fee to the Bearspaw Glendale Community Association.

5.7 Accessibility - Vehicular

Regional Road Network

The planned roadway system for the Silverhorn Conceptual Scheme Planning Area is illustrated in Exhibit 10 – Transportation Concept. Traffic to and from the Planning Area will access the Regional Road Network via an intersection with Township Road 262 directly opposite the intersection with Horseshoe Bend Road. A Traffic Impact Assessment prepared in support of this Conceptual Scheme concluded that an intersection at this location will operate at an acceptable level of service for all years and no intersection improvement would be necessary.

Internal Road Network

Three road linkages are proposed to adjacent lands:

1. Access to Equestrian Drive will be provided at the northeast of the Planning Area.
2. A future road dedication will be provided in the northwestern portion of the Planning Area that will facilitate public road connection to future development within the NW ¼ Sec. 14-26-03-W5M. The development of this connection will occur at such time as the NW ¼ Sec. 14-26-03-W5M is developed.
3. A future road dedication will be provided in the southwestern portion of the Planning Area that will facilitate public road connection to future development within the SW ¼ Sec. 14-26-03-W5M. The development of this connection will occur at such time as the SW ¼ Sec. 14-26-03-W5M is developed.

Road linkages to the Silverhorn Planning Area are shown in Exhibit 10 – Transportation Concept.

Road Standards

The planned roadway system within the Planning Area is based upon the M.D. of Rocky View standards. All roads within the Planning Area will be public roads. Roadways serving 10 or more lots will be constructed as Minor Residential Collectors with an 8.0 metre paved surface. Roadways serving less than 10 lots will be constructed as Internal Residential Roads with a 7.0 metre paved surface.

- Policy 5.7.1 Complete Road Systems within the Planning Area shall be constructed by the Developer to the satisfaction of the M.D. of Rocky View and be generally as shown in Exhibit 10 – Transportation Concept.*
- Policy 5.7.2 A secondary road linkage to the Planning Area shall be provided from Equestrian Drive to the satisfaction of the M.D. of Rocky View.*
- Policy 5.7.3 Road linkages from the Planning Area to adjacent lands will be provided as shown in Exhibit 10 – Transportation Concept.*
- Policy 5.7.4 All intersectional upgrades shall be constructed by the Developer to the satisfaction of the M.D. of Rocky View.*
- Policy 5.7.5 An updated Transportation Impact Assessment may be required at the subdivision approval stage.*

5.8 Community Servicing Strategies

The following sections provide details on the servicing for the Planning Area. Exhibit 11 – Servicing Concept identifies the conceptual location of water and waste water infrastructure.

5.8.1 PROVISION OF ESSENTIAL UTILITIES

The Silverhorn community will provide for a comprehensive network of supporting infrastructure to allow for the efficient and economical servicing of the Planning Area.

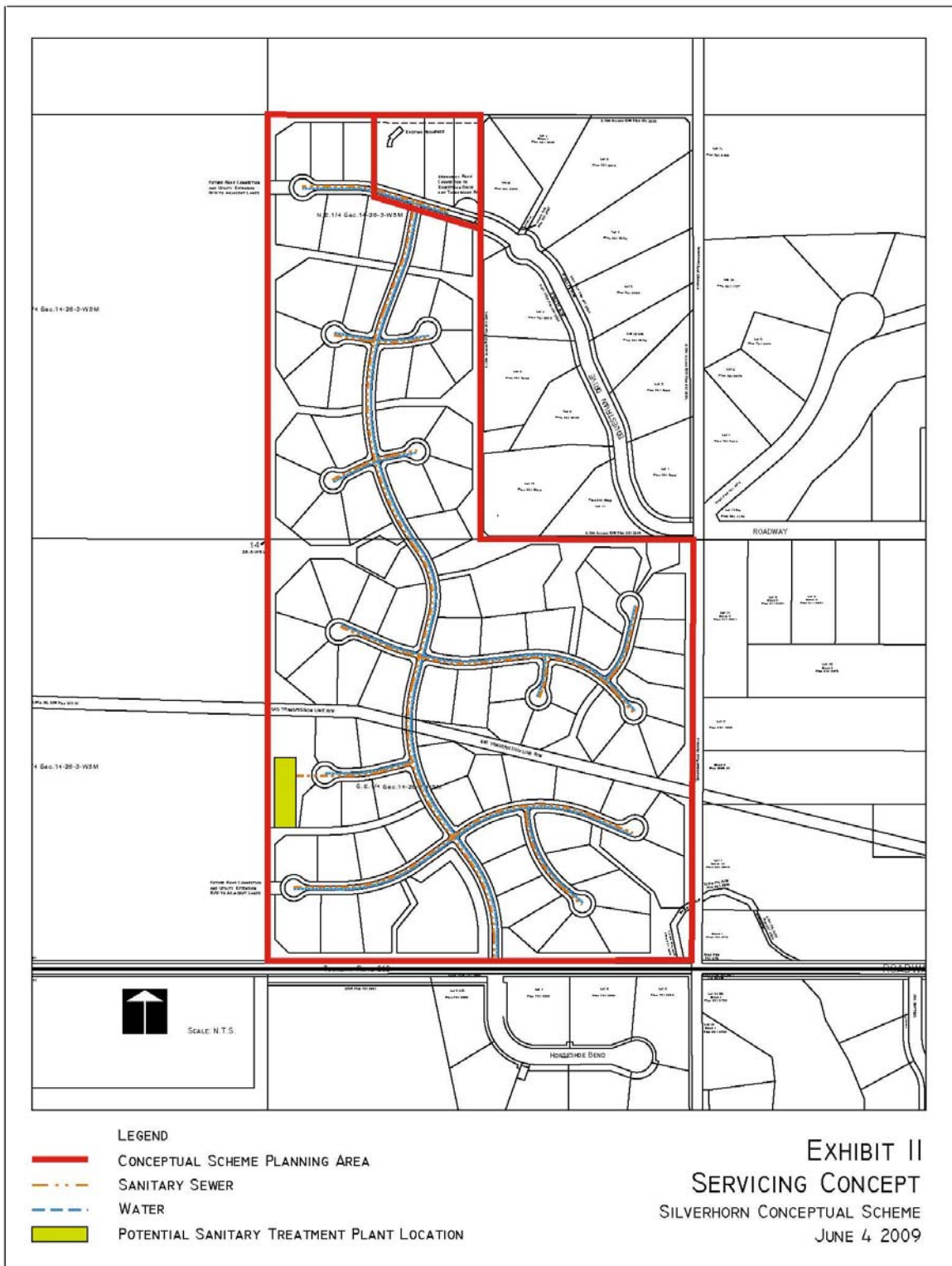
5.8.2 POTABLE WATER

Silverhorn will be provided with potable water via connection to the Rocky View Water Co-op regional water system. The Rocky View Water Co-op has verified in writing that it has available capacity to provide potable water service to Silverhorn. Accordingly, the Developer has entered into an agreement with the Rocky View Water Co-op to provide this essential service for the future subdivision and development of the Planning Area.

An engineered water distribution network will be installed within the Planning Area with connections to each residence within the Silverhorn community.

An important development strategy for Silverhorn is to reduce the amount of potable water consumed on a per capita basis through implementation of water demand reduction practices.

Exhibit 11 – Servicing Concept



Such practices will include requiring:

- Water meters for all development within Silverhorn;
- Requiring all development within Silverhorn to install low-flow water fixtures (taps, toilets, showers);
- Requiring all development within Silverhorn to implement a combination of low-flow irrigated and xeriscape landscape technology, as well as other possible measures such as rainwater collection systems.

Policy 5.8.1 The Planning Area shall be serviced by connection to a licensed piped-water service provider.

Policy 5.8.2 The on-site water system shall be designed to allow for the extension of water servicing to adjacent lands.

Policy 5.8.3 The Silverhorn community shall implement water conservation practices that reduce the amount of potable water needed to support the community. Such water conservation measures shall be contained within the Architectural Design Guidelines and shall include:

- a. Mandatory water meters;*
- b. A requirement for all buildings to install low-flow water fixtures (taps, toilets, showers);*
- c. A requirement that all development implements a combination of low-flow irrigated and xeriscape landscape technology and rainwater collection systems.*

5.8.3 SANITARY SEWAGE

Effluent generated by the development within the Planning Area will be collected and treated via a communal sanitary system. A variety of communal systems are available to treat effluent for a development of this size. The particular system envisioned for the Plan Area has been developed by Orenco Systems Incorporated or equivalent.

The Orenco system begins with effluent being piped into individual watertight septic tanks located on each lot. Each of the tanks will provide primary treatment before liquids are conveyed to a communal treatment plant. The treatment plant will include a recirculation tank and a sand filter bed. After several passes through the treatment plant, the treated wastewater will be ready to be discharged.

Reduced effluent volumes will be realized through the implementation of attendant water conservation strategies.

- Policy 5.8.4 Sanitary sewage service shall be provided by a communal sewage system that provides secondary wastewater treatment to the satisfaction of the Municipal District.*
- Policy 5.8.5 The type of communal sanitary system used within the Planning Area shall be determined prior to subdivision approval.*
- Policy 5.8.6 The location of the communal sanitary system shall be determined prior to subdivision approval.*
- Policy 5.8.7 The communal sanitary system shall be maintained under the development agreement by the developer until such a time as the Final Acceptance Certificate has been issued by the Municipal District. After the Final Acceptance Certificate has been issued, the Municipal District shall maintain the communal sanitary system.*
- Policy 5.8.8 The components of the communal sanitary system shall be located within individual residential lots, road Right-of-Ways and/or Public Utility Lots.*
- Policy 5.8.9 The communal sanitary system proposed for installation within the Planning Area shall meet or exceed engineering standards and specifications established by the Municipality and the Province.*

5.8.4 SOLID WASTE MANAGEMENT

- Policy 5.8.10 A solid waste and recycling management plan shall be provided for the entire Silverhorn Planning Area prior to endorsement of the first phase of subdivision approval. Implementation of the solid waste and recycling management plan shall be the responsibility of the Developer and/or the Silverhorn Homeowners' Association, at the discretion of the Municipality.*

5.8.5 SHALLOW UTILITIES

- Policy 5.8.11 Shallow utilities will be provided by the appropriate utility company providing service to the Planning Area at the sole expense of the Developer. The Developer of the lands will provide easements to any utility company requiring them to provide services to the Planning Area.*

5.8.6 COMMUNITY SERVICE LEVELS

Fire protection and ambulance services are provided to the Silverhorn Planning Area and the greater Bearspaw community by the Municipality either directly or through agreements with other municipalities or the Province.

Protective services are provided to the Silverhorn Planning Area and the greater Bearspaw community by the RCMP and the Municipality's Protective Services.

5.9 Silverhorn Built Form

Development at Silverhorn will comprise of single detached dwellings. Each dwelling developed within the Silverhorn community will be an individual expression of home design that reflects the highest standards of architectural and design excellence.

Architectural Design Guidelines

All development within Silverhorn shall be subject to Architectural Design Guidelines. Architectural Design Guidelines will be prepared at the subdivision approval stage and shall be attached by Restrictive Covenant to the titles of all lots within Silverhorn. The Developer will administer the Architectural Design Guidelines until full build-out of Silverhorn. Following full build-out, a Homeowner's Association shall administer the Architectural Design Guidelines.

The Architectural Design Guidelines shall establish architectural standards of excellence that permit a modern interpretation of traditional architectural themes that are appropriate to the development of a conservation subdivision. Further, these standards shall restrict development activity that is not respectful of the environmental design ethic established for the Silverhorn community.

- Policy 5.9.1 Architectural Design Guidelines proposed for development within the Planning Area shall be prepared at the subdivision approval stage and be registered by restrictive covenant against individual titles at the time of plan of subdivision registration.*
- Policy 5.9.2 Architectural Design Guidelines proposed for development within the Planning Area shall require that development maintain a minimum 1.65 foot (0.5 metre) freeboard from the spill elevation of local depressions that comprise a component of the approved stormwater management system for the Planning Area.*
- Policy 5.9.3 Architectural Design Guidelines proposed for development within the Planning Area shall include requirements restricting perimeter fencing and shall encourage the use of landscaping and vegetation to achieve privacy if desired.*
- Policy 5.9.4 Architectural Design Guidelines proposed for development within the Planning Area shall:*
- a. Encourage and recommend the use of permeable pavements and materials;*
 - b. Promote the use of rain barrels to retain and recycle stormwater;*
 - c. Encourage and recommend that builders adopt green technologies that may include solar heating, grey water recycling and the use of environmentally sustainable building materials; and*
 - d. Encourage and recommend builders to consider sun angle and orientation with regard to site and architectural design in order to maximize passive solar heating and cooling.*
- Policy 5.9.5 Enforcement of the Architectural Design Guidelines shall be the responsibility of the Developer and/or a Homeowners' Association established for this purpose.*

6. IMPLEMENTATION STRATEGY

6.1 Implementation

Preservation of the existing landscape, vegetation, topography and depressions for stormwater collection and infiltration is a priority of this Conceptual Scheme. Plans and documents required to implement protection of these elements will be completed prior to subdivision approval in order to effectively inform the development of the approved Tentative Plan. In addition, a Direct Control Bylaw will be established to implement the land use policies of the Conceptual Scheme.

Policy 6.1.1 Prior to subdivision approval, the following documents shall be submitted to the Municipality:

- *Stormwater Management Plan*
- *Site Development Guidelines Document.*
- *Biological Impact Assessment*

Policy 6.1.2 The Municipality may issue a permit for stripping and grading in accordance with the following reports approved by the Municipality and, where necessary, by Alberta Environment:

- *Site Development Guidelines Document;*
- *Stormwater Management Plan;*
- *a Biophysical Assessment;*
- *an Erosion and Sediment Control Plan;*
- *a Weed Control Plan; and*
- *a Construction Management Plan.*

6.2 Subdivision and Development Phasing

Subdivision and development Phasing for the Silverhorn Planning Area will proceed in four (4) phases as illustrated on Exhibit 12 – Phasing and represents a pattern of development that is a logical progression of servicing.

Exhibit 12 - Phasing

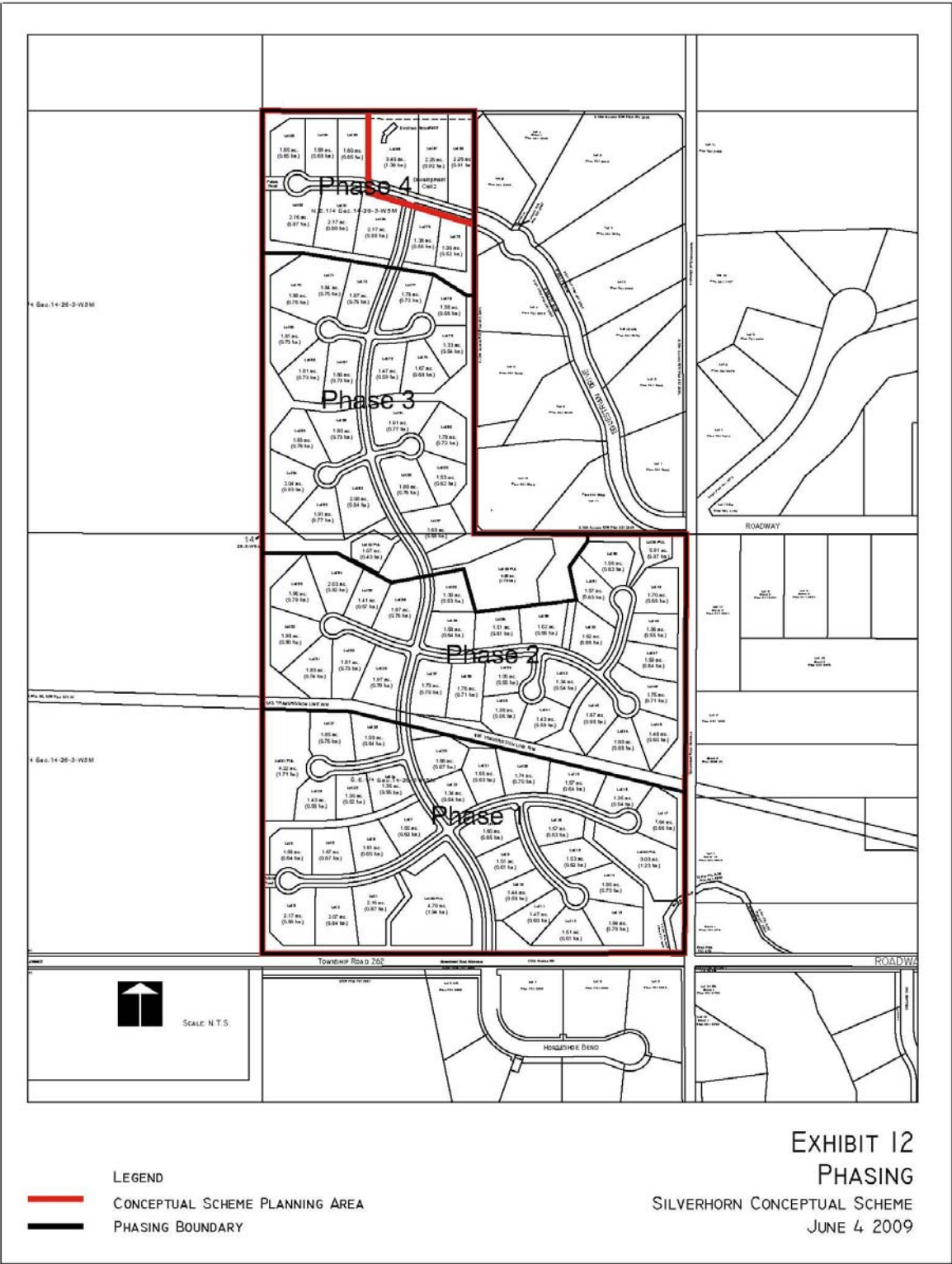


Table 3 - Silverhorn Planning Area Phasing

Phase	Area (Acres)	Area (Hectares)	Residential Lots	Population
Phase 1	79.42	32.13	11	36
Phase 2	66.53	26.91	20	66
Phase 3	63.52	25.71	28	92
Phase 4	29.50	11.93	29	96
Total	238.97	96.68	88	290

Table Notes:

1. Areas are based upon Exhibit 12 – Phasing and are considered conceptual.
2. Totals may not equal due to rounding and metric conversion.
3. All areas should be considered more or less.
4. Population is estimated on the basis of 3.3 people per residence.

Policy 6.2.1 The sequence of subdivision and development within the Planning Area shall generally proceed in accordance with the phasing illustrated on Exhibit 12 - Phasing and in accordance with this Conceptual Scheme's Subdivision and Development Concept.

Policy 6.2.2 While the phasing of subdivision and development within the Planning Area is matched to a logical progression of servicing and other factors, applications for subdivision approval and development may proceed outside the phasing pattern established in this Conceptual Scheme provided the required infrastructure is in place and/or available to sustain the planned subdivision and development. A change in phasing shall not require an amendment to this Conceptual Scheme.

Policy 6.2.3 The Developer may, as a condition of subdivision approval of any phase illustrated on Exhibit 12 – Phasing, be required to construct the major road connecting Equestrian Drive with Township Road 262.

7. TECHNICAL REPORT: CONTEXT OVERVIEW

In conjunction with the preparation of this Conceptual Scheme, a range of background studies and assessments were completed. The following is a summary of the background studies and assessments findings.

7.1 Biophysical Assessment Plan

A Biophysical Assessment was prepared for the Planning Area by Golder Associates Ltd. in October of 2007. Golder was retained by the Developer to describe the existing biophysical site conditions of the Planning Area; identify environmental sensitivities within the Planning Area and

provide recommendations for impact mitigation. In its assessment, Golder determined that the Planning Area comprises five (5) main vegetation community types: grasslands, shrublands, aspen groves, cultivation and wetlands. Golder summarized the main potential environmental impacts arising from development of the Planning Area as:

- potential effects to surface water from erosion;
- loss or alteration of wetlands; and
- loss of wildlife habitats (e.g. white-tailed deer, coyotes, bird species).

Accordingly, Golder recommended the following mitigation:

- A Master Drainage Plan should be developed to outline best management practices for storm water management.
- An Erosion Control Plan should be developed to outline best management practices for minimizing erosion from the site during construction. This should include the use of erosion control structures, topsoil stripping and storage, revegetation with native seed mixes and shrubs, bare slopes, and measures taken during construction with high wind or wet conditions.
- A Weed Control Plan should be developed to outline best management practices for minimizing the spread of invasive species during construction of the subdivision. Invasive species are currently present in some areas, and their spread into adjacent agricultural areas should be minimized.
- Wetlands conservation should be incorporated and retained on the landscape as much as feasible (Alberta Water Resources Commission 1993). Wetlands are important to maintain on the landscape as they provide important habitat for wildlife and contribute to groundwater recharge. As the wetlands are within proposed stormwater ponds in the concept plan, the design and ecological functionality of these ponds may dictate if wetlands compensation is required.
- Architectural Design Guidelines and site development standards should retain existing vegetation and landforms as much as possible, and encourage the use of native plant species for horticultural purposes.
- Consider design opportunities to preserve the treed area on the property for the native aspen and poplar.

7.2 Environmental Site Assessment Overview

Two environmental site assessments were prepared for the Planning Area:

- A Phase 1 Environmental Site Assessment was prepared by Soil and Enviro. Consultant Inc. in February of 2007 for the SE ¼ Sec. 14-26-03-W5M;
- A Phase 1 Environmental Site Assessment was prepared by Soil and Enviro. Consultant Inc. in February of 2007 for the NE ¼ Sec. 14-26-03-W5M (western 80 acres).

Based on the results of a historical records review, site reconnaissance and all other relevant information available at the time, it was found that no environmental impairment exists on the subject site and no further investigation of the site is required at this time.

7.3 Historical Resources Impact Assessment

A Historical Resources Impact Assessment was prepared for the Planning Area by Historical Resource Management Ltd. in May of 2007. One historic resource site was identified in the course of the assessment. Specifically, a stone cairn site was located on top of a hill. All shovel tests in the vicinity of the stone feature were negative for historical resources. The report noted that it was possible that the pile of stones was created by a tree throw or other natural event rather than by cultural activity. Because of the negative shovel test results, the appearance of the cairn and the relationship with the proposed development, no further work was recommended at the site. The author recommended that Historical Resource Act clearance be granted, and that the development be allowed to proceed as planned.

Policy 7.3.1 Prior to submission of the Tentative Plan for subdivision approval, the Historical Resources Impact Assessment shall be submitted to Alberta Community Development and appropriate mitigation or avoidance programs shall be determined for the identified potential historical site to their satisfaction.

7.4 Geotechnical Evaluation Overview

A geotechnical evaluation was performed in February 2007 by Soil & Enviro. Consultant Inc. for the SE ¼ Sec. 14-26-03-W5M. The evaluation concluded that the subject lands are suitable from a geotechnical point of view for the proposed development.

7.5 Traffic Impact Analysis

A Traffic Impact Assessment was prepared for the Planning Area by MMM Engineering in October of 2007.

The capacity of the road network within the study area was analyzed using Synchro Software for the 2009 Phase 1 conditions, 2012 (one year after full build out) conditions and 20 year horizon. The results of the capacity analysis revealed that all intersections within the study area would operate at acceptable level of service for all years and no intersection improvement would be required.

The access of the subdivision is proposed on the north side directly in line with the existing Horseshoe Bend Road at Township Road 262. Sight lines were analyzed as the access is proposed along a crest of a hill where limited visibility is available just east of the intersecting road. The sight distance was measured in the field with a passenger car assumed as the design vehicle. The measured sight distance of 220 metres was found to be adequate for a passenger vehicle turning from the proposed access onto Township Road 262 assuming MD of Rocky View Road Design Standards.

The access will have a minimum CR60 classification that according to the M.D. of Rocky View's Road Design Guidelines, is described as a *minor residential collector accessing more than 10 lots*. Minimum design standards include:

- A right of way width = 25 metres
- Design speed = 60 km/h
- Minimum pavement width = 8.0 metres

Equestrian Drive that is located in the east half of the NE ¼ Section 14, will be extended into the proposed subdivision and provides secondary access.

An illumination analysis was completed for the 2007, 2012 and 2027 conditions where forecasted AADT volumes within the study area were used as a basis for the analysis. Based on the warrant calculations, it was found that illumination is not warranted under the existing conditions or 20 year full build out conditions at Township Road 262/Lochend Road.

As traffic volumes reach 2027 development conditions at Bearspaw Road/Township Road 262, monitoring of traffic volumes and illumination warrants at this intersection is recommended as the forecasted future daily traffic volumes indicate delineation lighting in 2027.

7.6 Preliminary Stormwater Management Plan

A Preliminary Stormwater Management Plan was prepared for the Planning Area by MMM Engineering in April of 2008 and the stormwater management strategies identified in this Plan were integrated into this Conceptual Scheme's Subdivision and Development Concept. The report concluded that the proposed stormwater management system for the development area will provide flood protection while adhering to the NCWWMP guidelines. Over 95% of the proposed development area will retain all stormwater runoff without utilizing any direct discharge off-site.

8. SUMMARY OF PUBLIC CONSULTATION

8.1 Process

Silverhorn began with the understanding that good community relations are part of any successful development.

Prior to undertaking formal applications to the M.D. of Rocky View, the Developer held an Open House in the community on October 06, 2007 to introduce a subdivision and development concept. With the community input received at this initial Open House, the subdivision and development concept for Silverhorn was refined.

Following submission of formal planning approval applications to the Municipality and prior to the Public Hearing before Council for this Conceptual Scheme, the Developer held a second Open House in the community on March 19, 2009.

9. CONFORMITY OF CONCEPTUAL SCHEME WITH EXISTING MUNICIPAL POLICY

9.1 Municipal Development Plan

The Municipal Development Plan adopted July 06, 1998 established the Municipal vision for the M.D. of Rocky View.

The M.D. of Rocky View's MDP is based on the philosophy that its lands are a valuable resource that must be managed and protected through sound land use planning. As per the guidance from the *Municipal Government Act*, among others, the MDP is formed on the principles of:

- Achieving orderly, economical and beneficial development, use of land and patterns of human settlement; and
- To maintain and improve the quality of the physical environment within that patterns of human settlement occurs

9.2 Bearspaw Area Structure Plan

The Silverhorn Planning Area is within the boundaries of the Bearspaw Area Structure Plan (BASP) and the Municipal Development Plan (MDP). In this Plan:

- Country residential land uses are considered appropriate within the Plan Area provided such uses are considered in accordance with the provisions of the BASP;
- Figure 7: Future Land Use Scenario identifies the Silverhorn Planning Area as Country Residential;
- Figure 8: Phasing identifies the Silverhorn Planning Area as Development Priority Area 3. Accordingly, Figure 3: Concept Plans identifies the Silverhorn Planning Area as requiring the preparation of a Concept Plan;
- Section 8.1 Country Residential provides policy direction for the evaluation of lands identified as appropriate for country residential use and the preparation of Concept Plans;
- Policy 8.1.21 of the BASP allows the consideration of country residential parcels less than four (4) acres in size provided the design of these parcels are accommodated in an adopted Concept Plan.

The MDP, ASPs and the Silverhorn Conceptual Scheme are mechanisms for successfully implementing these guiding principles.

9.3 Intermunicipal Development Plan

Land holdings near the fringe of the City of Calgary may fall under the policies and guidelines contained within the MD of Rocky View/City of Calgary Intermunicipal Development Plan (IDP), that was adopted by both municipalities in October of 1998.

The IDP identifies an area of mutual inter-municipal interest and establishes policy direction and processes to address issues that may arise in the area. Although this site is near what the IDP refers to as Area B – Notification Area, the lands do not fall within the IDP designated notification area. Therefore, the IDP policy and guidelines are not applicable to the community of Silverhorn.

9.4 M.D. of Rocky View Economic Development Strategy

The 2002 Municipal Economic Development Strategy (MEDS) is a general reference document that is meant to guide and facilitate growth in the MD of Rocky View.

On Page 8 of the updated 2003 Strategic Plan regarding the MDP, the following reference is made:

“The M.D. of Rocky View is also a very desirable place to live, providing alternative lifestyles to those found in urban centers. Varied landscapes, mountain views, spectacular prairie landscapes, efficient transportation networks to nearby employment have resulted in certain areas of the Municipality emerging as the areas of choice for country residential living. Residential land use, in keeping with the rural character of the M.D., may continue to be supported in areas of the Municipality where residential development is already concentrated and the land base has already been fragmented. More “urban” types of residential development may also be directed to existing hamlets.”

10. DEFINITIONS

The following terms referenced in this document are defined as follows:

In this Conceptual Scheme, the following interpretations shall apply:

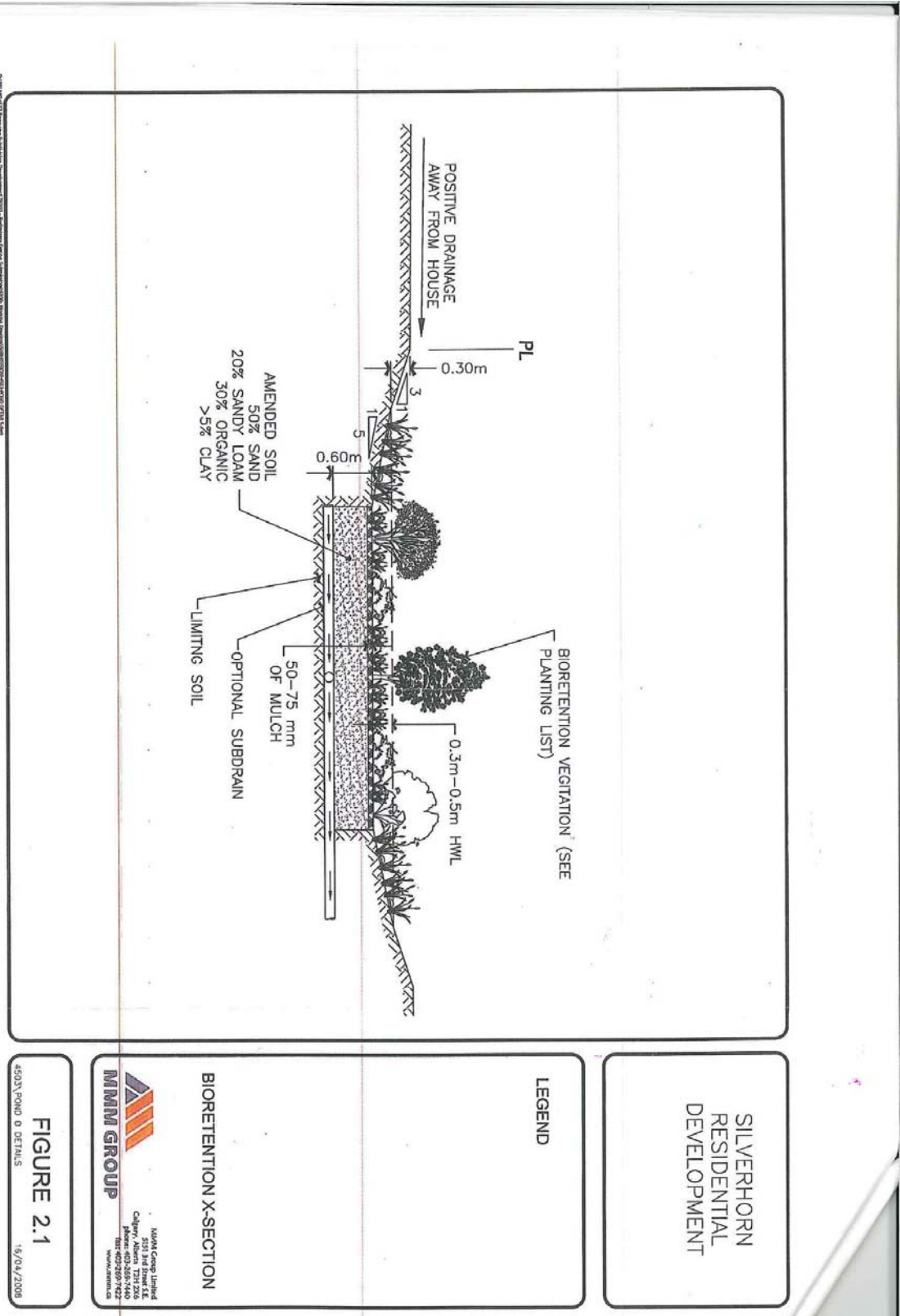
1. **Bearspaw Area Structure Plan or Bearspaw ASP** means the “Bearspaw Area Structure Plan” (Bylaw C-4129-93) adopted January 18, 1994 (as amended).
2. **Bearspaw Master Drainage Plan** means a document prepared by MPE Engineering, September 2007.
3. **Conceptual Scheme** means this document that is a product of a planning process designed to formulate a framework for the proposed development in terms of plans and policies contained herein. The Conceptual Scheme also establishes the guiding principles and the overall conceptual development plan. The Conceptual Scheme document will be adopted by Council as a bylaw.
4. **Council** means the Council of the M.D. of Rocky View No.44.
5. **Developer** means a registered Landowner or any future Landowner of lands within the Silverhorn Conceptual Scheme Planning Area.
6. **Development Agreement** is an agreement between the Developer and the Municipality.
7. **Land Use Redesignation, Tentative Plan, Subdivision Approval Stage** means that Municipal planning process, that follows Council approval of the Conceptual Scheme.

This is followed by a by a **Development Agreement** between the Developer and the Municipality.

8. **Municipality** means the M.D. of Rocky View No.44.
9. **Municipal Development Plan** means the M.D. of Rocky View No.44 No. 44 "Municipal Development Plan Bylaw" (C-4840-97).
10. **Nose Creek Watershed Water Management Plan** (NCWWMP) means the Water Management Plan intended to help protect riparian areas and improve water quality in the Nose Creek watershed.
11. **Open Space** means open space in its broadest sense includes all land and water areas, either publicly owned or offering public access, that are not covered by structures. Open space included current and potential future parks, pathways, roadway greens, land for parks and recreation facilities, golf courses, cemeteries and other types of alternative use open space.
12. **Pathways** means constructed linear paths typically with a surface constructed of asphalt or aggregate materials and may be located on developed open space or more naturalized areas.
13. **Planning Area** means the Silverhorn Conceptual Scheme Planning Area.
14. **Qualified Professional** means a professional engineer, geologist, geophysicist, or environmental consultant licensed to practice in the Province of Alberta.
15. **Silverhorn CS** means the Silverhorn Conceptual Scheme as adopted by the M.D. of Rocky View No.44.
16. **Tax Rate** means the tax per dollar of assessed value of property. The tax rate is expressed in "mills", where one mill is one-tenth of a cent (\$0.001).

APPENDIX A

BIORETENTION FACILITY



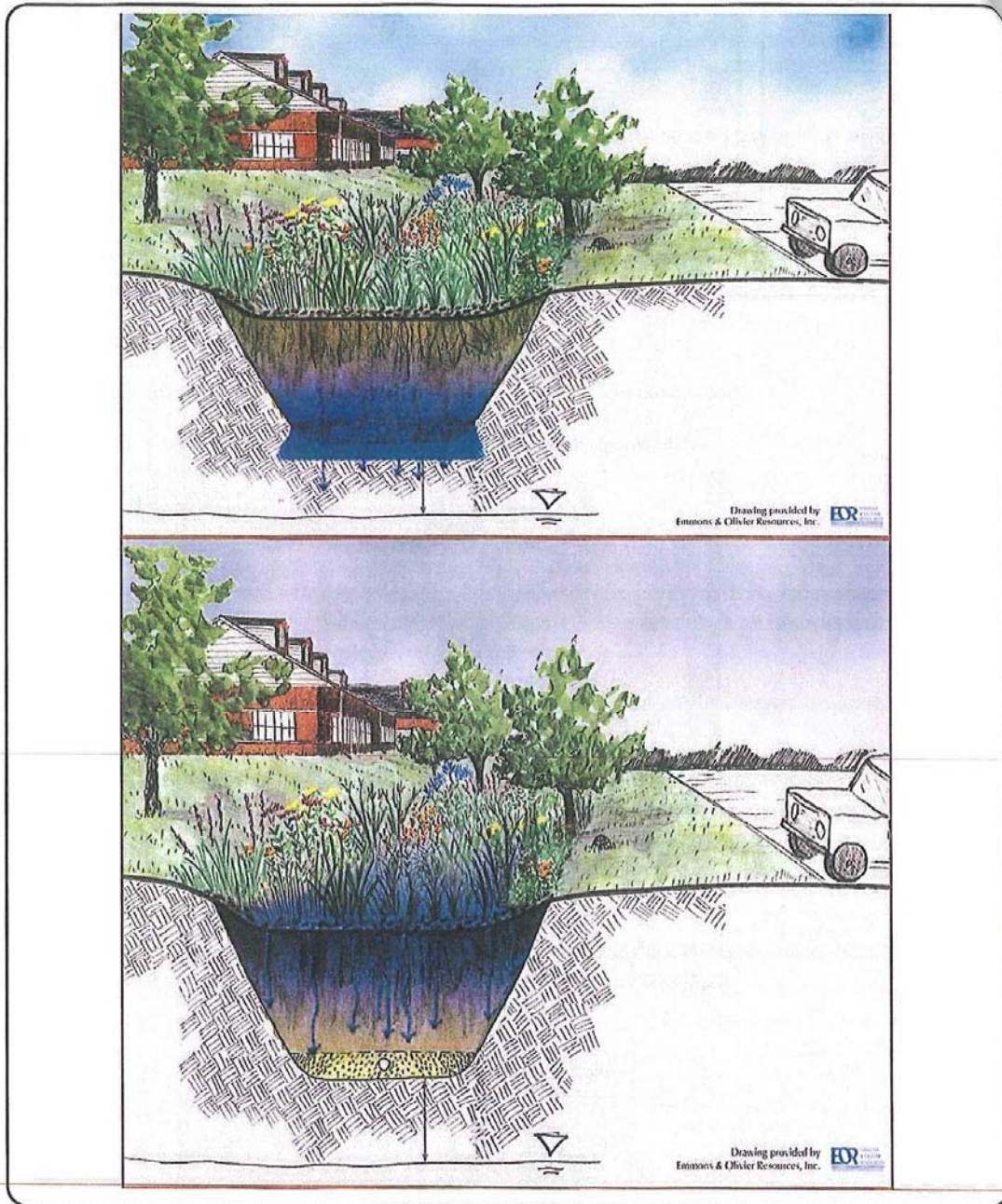


FIGURE 2.2
DYNAMICS OF BIORETENTION
SILVERHORN RESIDENTIAL DEVELOPMENT
BEARSPAW OPERATOR LTD.



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