

The Slopes

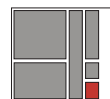
The Slopes Concept Plan

Sylvan Lake, Lacombe County

SE 17-39-1 W5M

CIRCULATION DRAFT

15 April 2011



LONGVIEW
Planning + Design





Prepared for

Lacombe County

Adopted by Council

Bylaw (number)

Approval Date

(date)

Prepared by

Belterra Land Company

Consultant Group

Longview Planning + Design

MPE Engineering Ltd.

AMEC Earth & Technology

Bunt & Associates

Hydrogeological Consultants Ltd. (HCL)

MSES Inc.

Parkland Geotechnical Consulting Ltd.



TABLE OF CONTENTS

1.0 INTRODUCTION	4
1.1 Purpose.....	4
1.2 Vision	4
1.3 Goals	4
1.4 Conformity with Approved Policies.....	5
1.4.1 Lacombe County Municipal Development Plan (MDP).....	5
1.4.2 Lacombe County Land Use Bylaw (LUB)	6
1.4.3 Sylvan Lake Area Structure Plan (ASP)	6
1.4.4 Sylvan Lake Management Plan: 2000 Update	7
1.4.5 Sylvan Lake Public Access Study	7
1.4.6 Sylvan Lake Water Quality Assessment and Watershed Management Considerations.....	7
2.0 THE CONCEPT PLAN AREA.....	8
2.1 Location	8
2.2 Legal Description and Land Ownership.....	8
2.3 Site Context	8
2.3.1 Site Assessments.....	9
3.0 LAND USE STRATEGY.....	12
3.1 Overview	12
3.2 Residential Land Use	13
3.2.1 Single-Family Detached Dwelling Lots.....	13
3.2.2 Semi-Detached Dwelling Lots.....	13
3.3 Development Standards	15
3.4 Open Space and Reserves.....	16
3.4.1 Municipal Reserve (MR)	16
3.5 Public Utility Lot.....	17
3.6 Tree Retention and Removal.....	18
3.7 Fire Safety.....	18
4.0 TRANSPORTATION.....	19



4.1 Regional and Internal Road Network.....	19
5.0 UTILITIES AND SERVICING.....	22
5.1 Potable Water Supply.....	22
5.2 Sanitary Wastewater.....	23
5.3 Stormwater Management.....	24
5.4 Shallow Utilities.....	25
5.5 Solid Waste.....	26
5.6 Protective Services.....	26
6.0 PUBLIC CONSULTATION.....	26
7.0 IMPLEMENTATION, REVIEW AND AMENDMENT.....	26

APPENDIX A

The Slopes Concept Plan Public Open House Summary Report

LIST OF FIGURES

Figure 1	General Location
Figure 2	Existing Policy Context
Figure 3	Existing Land Use
Figure 4	Air Photo & Topography
Figure 5	Visual Impact Assessment
Figure 6	Land Use Strategy
Figure 7	Illustrated Site Plan
Figure 8	Public Amenity Detailed Plan Areas
Figure 9	Site Plan Air Photo Overlay
Figure 10	Transportation & Access Strategy
Figure 11	Potable Water Servicing Strategy
Figure 12	Wastewater Servicing Strategy
Figure 13	Stormwater Servicing Strategy

LIST OF TABLES

Table 1	Plan Area Landownership
Table 2	Land Use Statistics
Table 3	Water Demand Calculation



1.0 INTRODUCTION

1.1 Purpose

The purpose of The Slopes Concept Plan (CP) is to establish a comprehensive planning framework for future development of lands legally described as a portion of SE 17-39-1 W5M (refer to **Figure 1 – General Location**) within Lacombe County. Direction to formally prepare a Concept Plan for this site was provided by Lacombe County Council on (date). This Plan outlines the redesignation of +/- 48.51 acres (+/- 19.63 hectares) of land in order to develop a clustered and sustainable rural residential neighbourhood consistent with the direction of the Sylvan Lake Area Structure Plan (ASP).

1.2 Vision

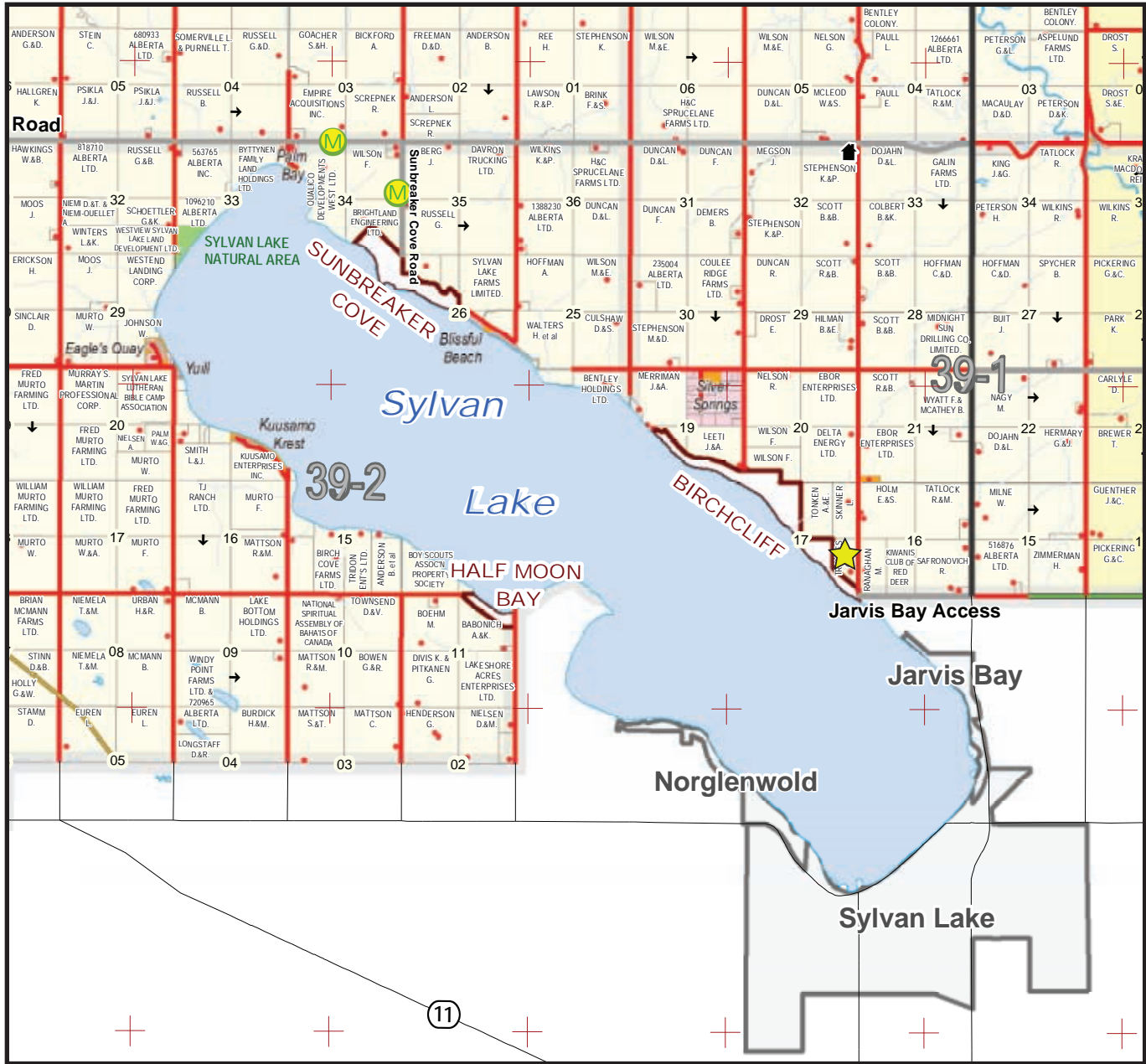
The Slopes at Sylvan Lake is a residential neighbourhood that recognizes and respects its proximity to Sylvan Lake and the Summer Village of Birchcliff. The residents of The Slopes enjoy a diversity of housing choices; extensive public open space; and, public amenity areas connected by regional trails and local pathways. The Slopes neighbourhood establishes a sustainable development footprint through Conservation-by-Design techniques and communal servicing infrastructure, providing benefits both locally and regionally.

1.3 Goals

The Slopes Concept Plan outlines a comprehensive residential neighbourhood development strategy with a foundation in sustainable rural residential development practices based on *Conservation-by-Design* principles. *Conservation-by-Design* establishes small-lot clustered residential development utilizing efficient communal servicing infrastructure, which together, maximizes the preservation of natural areas and minimizes environmental impacts. The Concept Plan reflects consistency with applicable municipal guiding policy documents such as the Municipal Development Plan, Sylvan Lake Area Structure Plan, and Land Use Bylaw.

The goals of The Slopes Concept Plan include:

- a) Provide a comprehensive land use, subdivision, and development framework for the Concept Plan area in accordance with Lacombe County policy;
- b) Recognize and respect the site's proximity to Sylvan Lake and the Summer Village of Birchcliff through site and infrastructure design;
- c) Provide a diversity of residential lot sizes and housing types;
- d) Establish an effective transportation network and efficient communal servicing infrastructure;
- e) Encourage low-water use best practices within the development;
- f) Maximize the preservation of natural areas and existing tree stands; and,
- g) Create new community amenities and regional trail network connections.



★ - Subject Property Location

General Location

Figure 1



1.4 Conformity with Approved Policies

The Concept Plan Area is subject to the land use policies contained within Lacombe County's Municipal Development Plan, Sylvan Lake Area Structure Plan, and Land Use Bylaw. The Concept Plan reflects the County's multi-lot residential development policies which seek to encourage comprehensive and high-quality neighbourhood design (refer to **Figure 2 – Existing Policy Context**).

1.4.1 Lacombe County Municipal Development Plan (MDP)

The Slopes Concept Plan was prepared in conformance with Lacombe County's Municipal Development Plan (MDP) and establishes a cluster design for residential development that promotes increased open space and regional and/or communal servicing solutions. The Slopes is identified in the MDP as having higher-density lakeshore residential development potential. This is supported by the Plan's Growth Management Strategy that states:

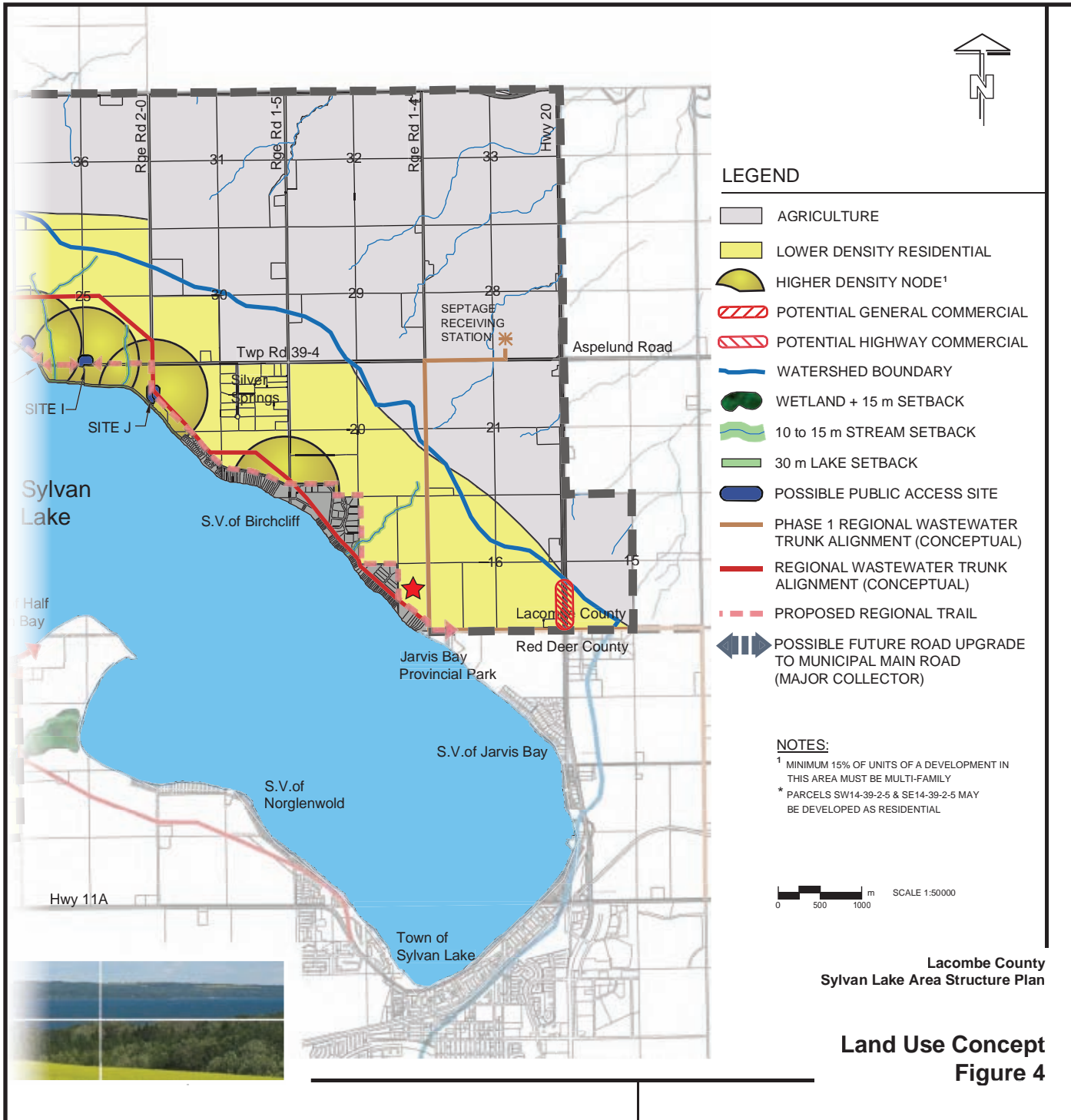
"...higher density development will be encouraged to create more efficient land use patterns that will be easier to service. Opportunities for greater housing diversity, including multi-unit development, will provide housing solutions for a broader mix of the population, including seniors, first-time buyers and those seeking recreational properties" (pg. 6).

The Slopes has been designed to retain viewsheds (both inward and outward) while providing high-quality residential housing within an expansive open space and connected with a regional trail and pathway network. This strategy is also supported by the MDP, which states:

"parks and trails not only provide important buffers for environmentally sensitive areas but they will also contribute to the value and experience of a place, promote healthy living and provide economic benefits" (pg. 35).

The MDP outlines the expectation of a County-wide regional trail system and encourages these connections be established as area development occurs over time.

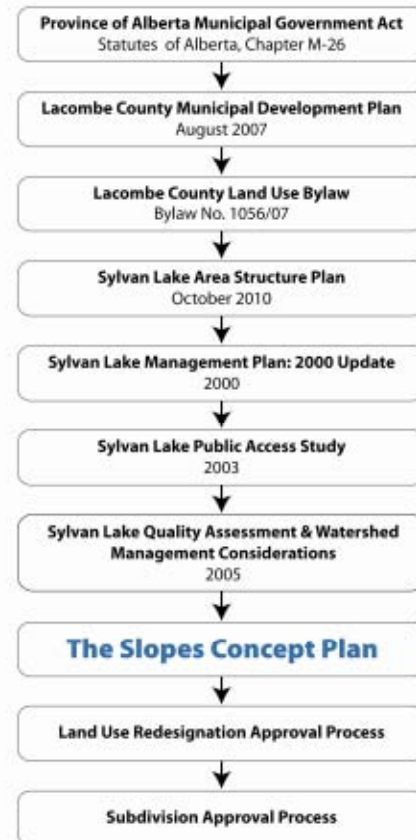
Like many municipalities, Lacombe County is facing growth pressures and has established an effective strategy to manage growth. The Slopes Concept Plan is located within a recognized growth area for multi-lot residential subdivision. This Concept Plan is in compliance with the MDP and Appendix B: Multi-Lot Residential Development Proposals (Feb, 2008).



★ - Subject Property Location

1.4.2 Lacombe County Land Use Bylaw (LUB)

The Lacombe County Land Use Bylaw (LUB) (Bylaw #1056-07) regulates land uses within the municipality. The Slopes Plan Area is currently designated Agriculture (A) District under the Bylaw and as such requires land use redesignation to the various land use districts that permit residential development and preservation of open space (refer to **Figure 3 – Existing Land Use**).

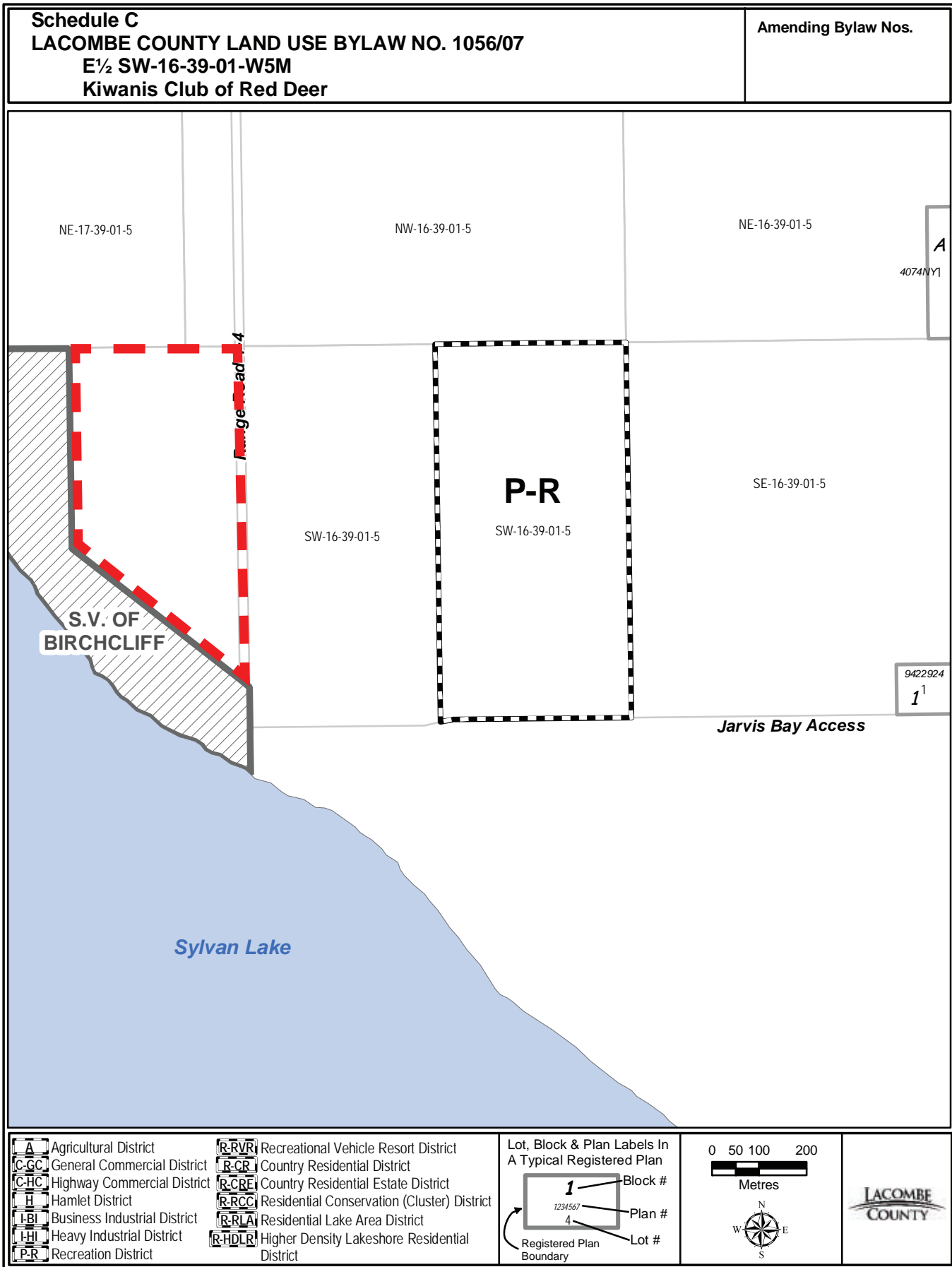


1.4.3 Sylvan Lake Area Structure Plan (ASP)

The Sylvan Lake Area Structure Plan (ASP) (Bylaw 1127/10) was developed to provide a “...policy framework to direct future development in a manner that protects the lake water quality, ensures public access to the lake and a high quality experience for residents and visitors”. The Slopes Concept Plan is consistent with and supportive of the Sylvan Lake ASP. The Slopes Plan Area is identified within Lake Development Area 1 (LDA); the same area is identified as “appropriate for residential development” in the Sylvan Lake Management Plan (2000).

The following are highlights of the ASP’s key goals and principles, which The Slopes Concept Plan conforms to or achieves in design:

- Lake Development Area 1 is to be developed first – The Slopes Plan Area is within this boundary;
- Conservation Cluster Development – The housing form is clustered and meets the average lot size objective of 0.4 acres (0.16 hectares) and incorporates public amenity areas and regional trail connections;



■ - Subject Property Location

Figure 3



- Open space dedication to be a minimum 50% - The Slopes achieves 47.5% municipal reserve dedication and an overall 50% open space retention when overland drainage public utility lots are accounted for;
- Smart Growth – design based on compact residential development form and communal servicing infrastructure, with tie-in to regional wastewater line. Additional servicing infrastructure (roads, water, stormwater) to be designed and constructed to Lacombe County and Alberta Environment requirements;
- Density – design achieves one unit per gross acre; and,
- Connectivity – design establishes effective transportation network and access, as well as a comprehensive pedestrian network of regional trails and local pathways.

1.4.4 Sylvan Lake Management Plan: 2000 Update

The Sylvan Lake Management Plan: 2000 Update was adopted by Lacombe County and its neighbouring municipalities to establish a baseline expectation for development in proximity to Sylvan Lake. The Slopes Plan Area is identified as Lake Development Area which seeks to ensure thoughtfully designed residential development. The Slopes Concept Plan is supportive of the policies in the Management Plan. In order to mitigate and manage impacts of development on the environment both a Biophysical Impact Assessment and Phase 1 Environmental Site Assessment were prepared (*refer to Section 2.3.1 for specifics on the assessments*).

1.4.5 Sylvan Lake Public Access Study

In 2003, the Sylvan Lake Public Access Study was prepared to assist with the management of public access to Sylvan Lake. The Slopes Concept Plan is not identified as an area to provide lake access to residents and visitors. Section 3.4 of this Concept Plan outlines the active and passive recreation amenities to be developed as part of The Slopes development, and for the benefit of residents and the community at-large.

1.4.6 Sylvan Lake Water Quality Assessment and Watershed Management Considerations

The Sylvan Lake Water Quality Assessment and Watershed Management Considerations Report was authored in July of 2005. The document contains a number of recommendations regarding residential development in proximity to the Lake and these have been considered and implemented (i.e., regional wastewater pipeline connection, landscaping restrictions to native vegetation, and best practices for stormwater management) in conjunction with recommendations of the Sylvan Lake ASP.



2.0 THE CONCEPT PLAN AREA

2.1 Location

The Concept Plan Area is located in the western portion of Lacombe County, adjacent to The Summer Village of Birchcliff. It is bound on the south by Birchcliff Road and Range Road 1-4 to the east. To the west is an existing subdivision of eight (8) lots and two (2) linear municipal reserve parcels. To the north is the proposed Highland Park Concept Plan residential development. Efforts have been made with the Highland Park developer to jointly coordinate infrastructure services at the appropriate time. Lands and roadways to the immediate west and south are within the jurisdiction of The Summer Village of Birchcliff. The subject lands are contained within the Sylvan Lake Area Structure Plan Area (ASP) and, in particular, are identified as multi-lot residential subdivision development potential (refer to **Figure 4 – Air Photo & Topography** and **Figure 2 – Existing Policy Context**).

2.2 Legal Description and Land Ownership

The Slopes Concept Plan Area includes +/- 48.51 acres (+/- 19.63 hectares) of land within a portion of the SE 17-39-1 W5M. The following table describes the landownership within the Concept Plan Area.

Table 1 – Plan Area Landownership

Legal Description	Acres	Hectares	Landowner
Ptn SE 17-39-1 W5M	+/-48.51	+/-19.63	Belterra Land Company et al.

2.3 Site Context

The Concept Plan Area is designated as Agricultural (A) District (refer to **Figure 3 – Existing Land Use**). The Lacombe County Land Use Bylaw states:

"The purpose of the Agricultural District is to provide a land base to support a variety of agricultural operations. Other uses would be considered in this District based upon their compatibility with surrounding agricultural operations." (pg. 74).

The land is mainly pasture and natural grass from agriculture use - primarily grazing. There are several existing tree-stand clusters (mix of deciduous and coniferous) within the property, with the majority of the trees in the southern half of the site. The topography of the site is undulating, sloping from the northeast corner to the southwest corner of the site (refer to **Figure 4 – Air Photo & Topography**). The soil is characterized as Class 5 which has "...severe limitations that restrict their capability in producing perennial forage crops..." (Lacombe County: Canada Land Inventory Soil Compatibility Map).

There is an existing residence with outbuildings located in the southeast corner of Plan Area. This residence and outbuildings will be removed as part of The Slopes

Air Photo & Topography



- Subject Property Location

Figure 4



development strategy. In addition, the access to the existing residence from Birchcliff Road will be closed.

2.3.1 Site Assessments

A number of individual site assessments have been completed to inform this Concept Plan. Below is a summary of the assessments and findings.

2.3.1.1 Geotechnical

A Geotechnical Investigation Report was completed by Parkland Geotechnical Consulting Ltd. in August 2010 for the Plan Area. The findings within the report are relevant to the site grading, infrastructure and building sites.

Ten boreholes were drilled at the site to determine the subsurface conditions. The general soil profile was, in descending order: topsoil; glacial till; and, sand and silt and bedrock. Based on available contour information, the surface grades are generally less than 15 percent.

The observed groundwater level is considered to be near the seasonal average. The groundwater table varied with topography between 2 m and 6 m below grade and the groundwater elevations ranged from 962 m to 947 m flowing towards Sylvan Lake to the southwest. Local groundwater is dependent on infiltration of surface water for their recharge, groundwater conditions are expected to be most adverse after snow-melt and periods of heavy or prolonged precipitation.

The findings from the report provide context for positive conditions for development with respect to workability and compatibility. The subsurface conditions at this site are considered to be suitable for the proposed residential development. Construction considerations are expected to be similar to those common in Lacombe County. The full report has been provided to the County under separate cover.

2.3.1.2 Biophysical Impact Assessment (BIA)

A Biophysical Impact Assessment (BIA) of the Plan Area was completed by Management and Solutions in Environmental Science Inc (MSES) June 2010. The Assessment concluded that no significant or sensitive environmental features were identified in the Plan Area.

Wildlife

A single species of management concern was identified during the field program - the Least Flycatcher is provincially listed as Sensitive (ASRD 2005). To reduce potential impacts to this species, minor treed areas to



be cleared should be searched for active nests prior to vegetation clearing or clearing should be scheduled to avoid bird nesting season (mid February through August 31).

Vegetation

A search of the Alberta Conservation Information Management System indicated that three rare plants were previously reported within Lacombe County and Red Deer County, but none were recorded within the Plan Area.

Overall, based on the biophysical features found within the Concept Plan, no lands are recommended to be designated as Environmental Reserve or Municipal Reserve. All conclusions within the BIA shall be adhered to and a copy of the full assessment has been provided to the County under a separate cover.

Policy 2.3.1.2.1 The recommendations provided by the Professional Biologist within the BIA prepared by MSES shall be adhered to by the Developer.

Policy 2.3.1.2.2 The Slopes has been designed to minimize removal of existing trees, and for any existing tree removal as part of the development, the Developer shall search treed areas for active nests prior to the tree clearing or may choose to clear trees at a time that avoids bird nesting season (mid February through August 31).

2.3.1.3 Historical Resources Impact Assessment (HRIA)

Historic Resource Act Clearance was issued from the Historic Resources Management Branch of Community and Culture of the Government of Alberta. A copy of this communication has been provided to the County under a separate cover.

2.3.1.4 Environmental Site Assessment (ESA)

A Phase 1 Environmental Site Assessment (ESA) of the Plan Area was completed in April 2008 by AMEC Earth & Technology. The Assessment did not identify any potential or actual environmental contamination based on current day and historic activity. A copy of the full ESA has been provided to the County under a separate cover.



2.3.1.5 Hydrology Assessment

A Hydrology Assessment was completed by Hydrogeological Consultants Ltd. (HCL) in January 2010. The Assessment noted that The Slopes will require a total water supply of 22,356 m³/year, which is 61.25 m³/day. The water test hole aquifer assessment indicated that the required amount of groundwater to service The Slopes development was available and its use would not adversely affect any existing area groundwater user. In addition, the water test concluded the groundwater quality is within the required parameters for drinking water. The recommended on-going monitoring and measurements of the groundwater well will be established as per the recommendations of the Alberta Environment. A copy of the full Hydrology Assessment has been provided to the County under a separate cover.

2.3.1.6 Visual Impact Assessment

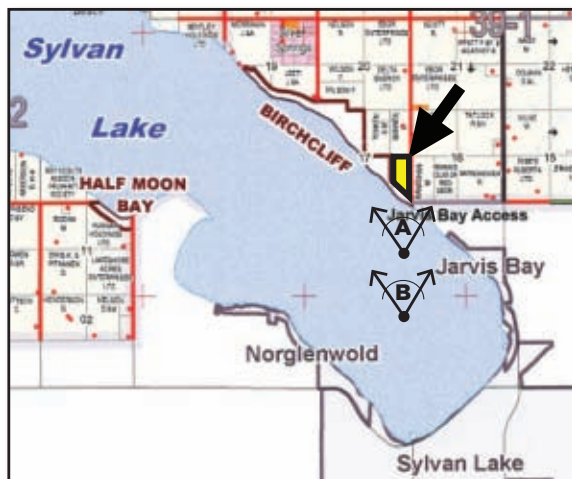
A Visual Impact Assessment (VIA) was completed by Longview Planning + Design with computer-aided design (CAD) support from an architectural design firm, Ellergodt Design. The VIA is a planning application requirement directed by the Sylvan Lake ASP; however, the ASP policies provide no specific guidelines on how the VIA is to be prepared. The ASP does outline the following general requirements, in terms of what the VIA shall address:

- a) *How the natural features of the site will be preserved so as to contribute to the visual quality of the development.*
- b) *The visual impact of the proposed development from important viewpoints on and off the Lake.*
- c) *In areas where development is not visible from important viewpoints, higher densities might be considered more appropriate than in areas of high visibility.*

In order to accurately understand any viewshed impacts the proposed development could have, a CAD model was prepared using both detailed topographic data for the subject property and general topographic data for the surrounding Sylvan Lake area. Further, key aspects of the design concept were modeled, including: approximated existing tree cover, full-build out of residential structures, roadway network alignments, and other relevant design concept details.

Figure 5 – Visual Impact Assessment provides CAD-based images of the design concept and its relationship to the viewshed from Sylvan Lake. The primary objective was to understand the scope of impact this development might have on the quality of the public viewshed from Sylvan Lake. Two measurements were taken: 500 metres and 1500 metres (or mid-point) from the shoreline of the Lake.

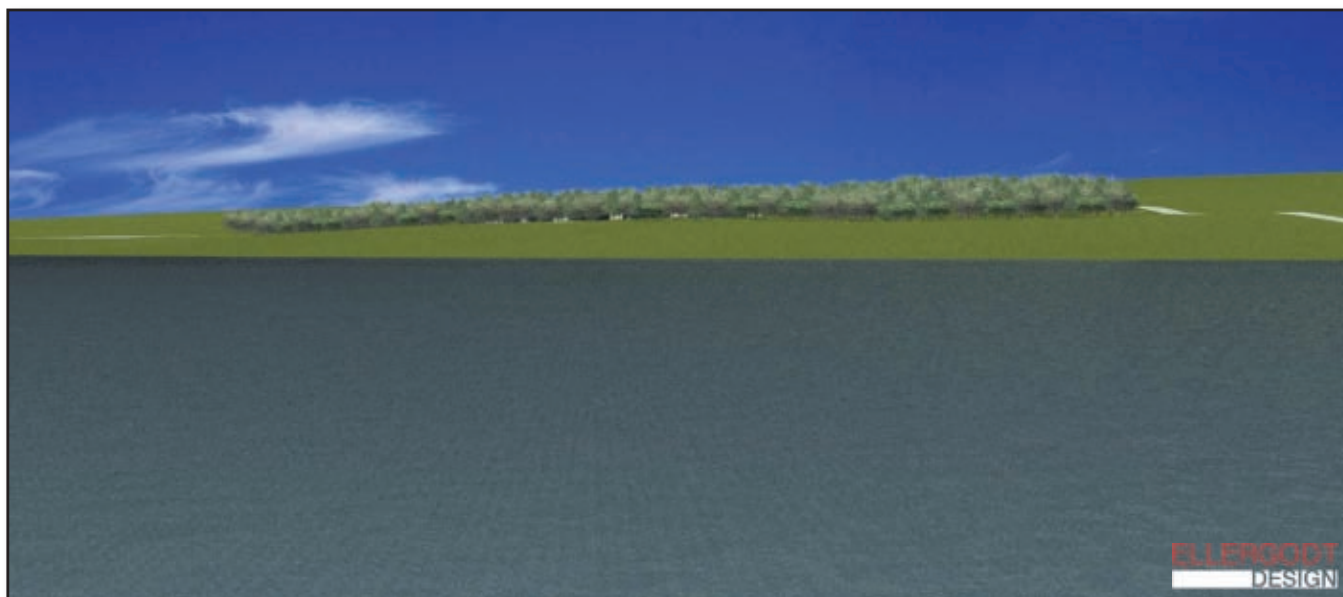
KEY MAP



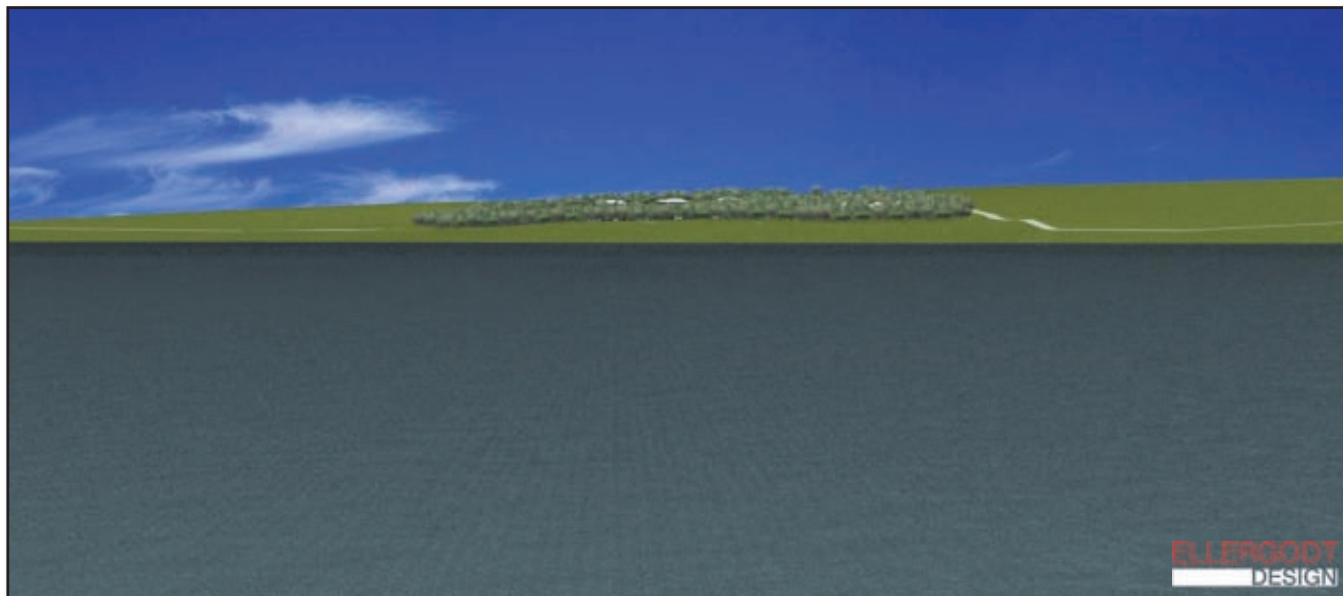
Perspective CAD Model Illustration



'A' Viewshed - CAD Model (500 metres from shoreline of Sylvan Lake)



'B' Viewshed - CAD Model (1500 metres or mid-point from shoreline of Sylvan Lake)





The primary finding is that the proposed development would result in little to no impact on the quality of the public viewshed from Sylvan Lake. In fact, given the high degree of retention of mature tree cover within the subject property and proposed low-rise residential built-form, only a modest portion of building rooflines are visible and only from the mid-point of the Lake.

3.0 LAND USE STRATEGY

3.1 Overview







The Slopes land use strategy consists of a *Conservation-by-Design* development, where by the residential lots are smaller than traditional country residential acreages, lots are compactly grouped to efficiently utilize communal servicing infrastructure, and where approximately fifty (50) percent of the gross developable area is dedicated and protected as open space. The strategy is founded on the detailed policies of the Sylvan Lake Area Structure Plan (ASP).

The Slopes land use strategy consists of a total of forty-nine (49) residential dwelling units, which equates to the maximum allowable area density of one dwelling unit per gross acre (refer to **Figure 6 – Land Use Strategy** and **Figure 7 – Illustrated Site Plan**). The residential land use strategy primarily supports single-family detached dwellings, at thirty-three (33) single-family detached lots (ranging from 0.35 to 0.75 acres in size). The residential land use strategy also includes sixteen (16) semi-detached villa dwelling lots. This lot mix provides for a diversity of dwelling types and an average lot size of no greater than 0.40 acres. This concept is consistent with the detailed policies of the ASP, which states:

“It is expected that the highest demand for housing in the Plan Area will continue to be for detached dwellings. The Plan also allows for the incorporation of semi-detached dwellings.” (Section 2.5.2.a).

Land Use Strategy

LEGEND

-  Residential Single-Family Detached Lots (0.75 and 0.35 acres)
Proposed as Residential Conservation (Cluster) District (R-CR)
-  Residential Semi-Detached Lots (0.15 acres)
Proposed as Higher Density Lakeshore Residential District (R-HDLR)
-  Public Trails & Amenity Areas / Constructed Wetlands Complex / Remnant Open Space
Proposed as Municipal Reserve
-  Stormwater Management Facilities and Communal Servicing Utilities
Proposed as Public Utility Lot
-  Roadway
Proposed as 20.0 / 8.0 meter wide right-of-way
-  Roadway Widening Dedication

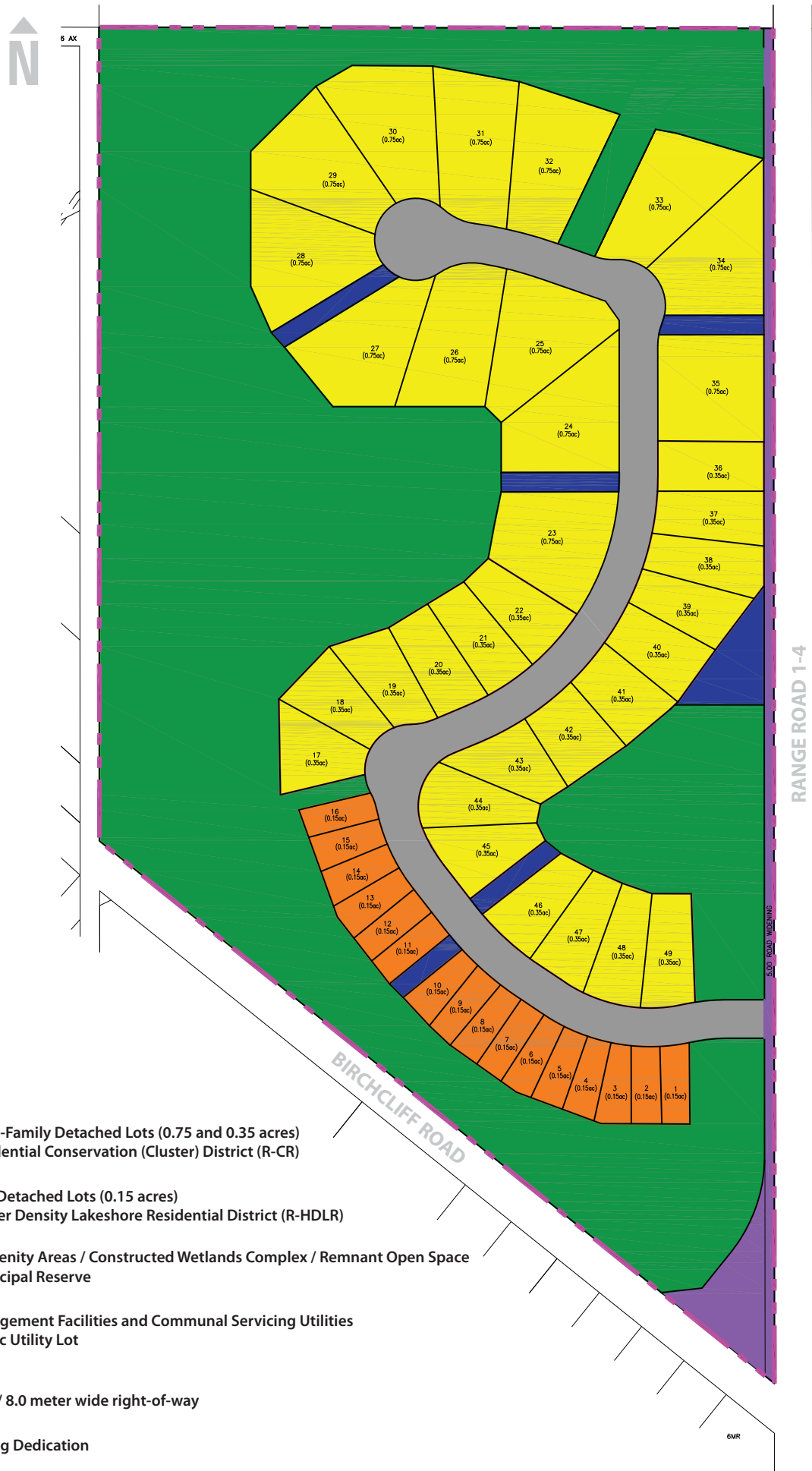


Figure 6

LEGEND



- Single-Family Detached Estate Homes
- Single-Family Detached Homes
- Semi-Detached Villa Homes
- Public Day-Use/Recreational Amenity Area
- Regional Trail / Local Pathway
- Stormwater Wet Pond / Constructed Wetland Complex
- Existing Tree Stands
- Conceptual New Landscaping
- Residential Roadway
- Emergency Egress Roadway
- Public Utility Building



Illustrated Site Plan

Figure 7



Table 2 - Land Use Statistics

	Acres (+/-)	Hectares (+/-)	Percentage (%)	Dwelling Units
Gross Plan Area	48.52	19.635	100.00	n/a
Residential				
Single-Family Detached Lot (0.75 /0.35 acre)	16.83	6.810	34.69	33
Semi-Detached Lot (0.15 acre)	2.41	0.975	4.97	16
Total	19.24	7.786	39.66	49
Average Lot Size	0.39	0.158	n/a	n/a
Reserves & Public Utility				
Municipal Reserve	23.06	9.333	47.53	n/a
Public Utility Lots	1.01	0.409	2.08	n/a
Roadways				
Internal Roadways	3.86	1.562	7.96	n/a
External Road Widening	1.35	0.546	2.77	n/a
Gross Plan Area	48.52	19.635	100.00	49

Note: Areas referenced in table are approximate and are to be verified at the subdivision stage by an Alberta Land Surveyor.

3.2 Residential Land Use

3.2.1 Single-Family Detached Dwelling Lots

The residential land use strategy supports the development of thirty-three (33) single-family detached dwelling lots either 0.35 or 0.75 acres in size. The lot sizes are intended to accommodate a mix of lot and dwelling sizes, providing choice to the market. Larger country residential estate-type homes can be constructed on lots of 0.75 acres in size, where a more generous building envelope is provided. In addition, the 0.75 acre lots are located on the northerly portion of the site, where the highest elevations and most prominent lake viewsheds exist. More typical single-family detached homes can be accommodated for on 0.35 acre lots, where less generous building envelopes are required. The single-family detached dwelling lot sizes are supported by the ASP policy, as per Section 2.5.2(a). The proposed Land Use District for this residential land use area, according to the County Land Use Bylaw, would be Residential Conservation (Cluster) District (R-RCC). R-RCC allows single-family detached lot sizes that range between 0.25 and 1.5 acres, and specifically describes the purpose of the district as:

"The purpose of the Residential Conservation (Cluster) District is to allow clustering of smaller lots to encourage a developer to preserve ecologically sensitive areas, historic sites, agricultural land or other unique characteristics of the land being subdivided." (pg. 106)

3.2.2 Semi-Detached Dwelling Lots

The residential land use strategy also supports the development of sixteen (16) semi-detached villa dwellings lots. This dwelling type further increases the mix



of dwelling type and size within the overall development, where it offers a more manageable and modest dwelling type to the market. The lots shall be no smaller than 0.15 acres per unit (0.30 acres per two semi-detached dwellings constructed on adjoining lots of 0.15 acre each). This lot sizes conform to the ASP, as per Section 2.5.2(a), which states, "*semi-detached dwellings will have a minimum lot size of 0.125 acres per unit*". The proposed Land Use District for this residential land use area, according to the County Land Use Bylaw, would be Higher Density Lakeshore Residential District (R-HDLR). R-HDLR allows attached dwelling types, and specifically describes the purpose of the district as:

"The purpose of the High Density Lakeshore Residential District is to allow for higher density, multiunit housing with associated commercial uses, in return for the dedication of publicly accessible open space with lakeshore access." (pg. 120)

- Policy 3.2.2.1** The development of the Concept Plan Area shall be consistent with the land use strategy (refer to **Figure 6 – Land Use Strategy**) recognizing that the Concept Plan is intended to show the general nature of the land use strategy, which may be subject to minor change at the land use redesignation and subdivision stage.
- Policy 3.2.2.2** Residential areas shall include a range of single-family detached and multi-family dwelling types.
- Policy 3.2.2.3** Single-family detached housing shall be the predominate form of residential units.
- Policy 3.2.2.4** The Concept Plan shall achieve an overall average density of one (1) lot for every gross acre in title.
- Policy 3.2.2.5** The Developer shall develop a set of Architectural Guidelines that, at minimum, be comprised of unifying elements in order to create a comprehensive and cohesive neighbourhood.
- Policy 3.2.2.6** The Concept Plan Area is proposed to be developed in a single phase. Should economic conditions not be favourable, phasing at the subdivision stage may occur without amendment to this Plan.



3.3 Development Standards

Development standards and Architectural Guidelines shall be utilized to ensure that all new site development will have a unified and comprehensive appearance. These guidelines will also be registered on individual title as restrictive covenants.

The Architectural Guidelines do not replace the Land Use Bylaw (LUB) and thus all development applications must meet the criteria as per the LUB and its associated land use districts.

The following Fire Smart Principles shall be adopted through the Architectural Controls on each lot. These measures will ensure that the Home and Site Hazard Assessment never exceeds the low risk rating for a wildfire:

Vegetation Management

- Priority Zone 1: No flammable trees/ shrubs or fuel storage will be permitted within 10 meters of any residence.
- Priority Zone 2: Within 10-30 meters of any residence, trees shall be pruned such that the crowns are 3-6 meters apart and branches shall be removed to 2 meters above ground level. Any deadfall or debris shall be removed.

Building Construction

- Each development lot shall be addressed and signed prior to residential home construction.
- No residential home construction shall proceed until the dry hydrant and water supply are operational.
- Once construction has begun, the lot shall have a fire extinguisher onsite at all times.
- All construction waste to be stored in metal bins.
- Building Construction shall conform to Group C, Part 9 including fire protection of the Alberta Building Code. It is assumed that the fire response time is greater than 10 minutes.
- Roofs shall be constructed from metal, clay tile or asphalt shingles. Untreated wooden shakes and shingles shall not be permitted.
- Exteriors to be constructed from stucco, metal, brick, concrete, and/or fire-resistant composite. Logs and heavy timbers, wood and vinyl siding shall not be permitted.
- Roof eaves to be closed and all vents and soffits to be equipped with 3 mm mesh screen openings.
- Tempered or double pane glass windows are recommended. Single pane glass in windows shall not be permitted.
- All fireplaces and chimneys shall have spark arrestors. Fire-pits to be located at least 3 meters from any building and burning barrels are not permitted.



Additional Architectural Guidelines (include, but not be limited to)

- Exterior of the semi-attached housing product, house plans, and elevations may only be repeated at least every four (4) dwellings, to ensure variety in the aesthetic of the streetscape;
- Preferred primary roof slope is 6:12 and should not be less than 5:12;
- Coordinated exterior colours, specifically earth-tone materials and finishes of all buildings, to achieve a reasonable continuity of appearance;
- Emphasis on water conservation through the use of low-flow fixtures and water reuse;
- No exterior potable water irrigation for landscaping is permitted, and the use of cisterns capturing rainwater for this purpose shall be encouraged;
- No materials, whatsoever, shall be permitted to be stored within the road right-of-way.
- Required management of outdoor storage of Recreational Vehicles.

Policy 3.3.1 The Architectural Guidelines will be prepared by the Developer and registered by Restrictive Covenant on title for each parcel. The Architectural Guidelines shall be reviewed at the discretion of the County.

3.4 Open Space and Reserves

In keeping with the principles of *Conservation-by-Design*, the open space and reserve strategy creates a large municipal reserve (MR). The MR is comprised of: a comprehensive trail and pathway network; a major public day-use/recreational amenity area; minor public rest/viewing area; and, a stormwater management and constructed wetland complex.

3.4.1 Municipal Reserve (MR)

The MR dedication is +/- 23.06 acres or 47.53 percent of the gross developable area, which satisfies and significantly exceeds the MGA requirement that ten (10) percent of gross developable area be dedicated to the municipality in physical land. The MR represents the entire balance of the land outside of the development area. The MR contains the regional trail along the south and west property boundary and the regional trail is interconnected with both a minor and major public amenity node, to serve both The Slopes residents and greater community (refer to **Figure 8 – Public Amenity Detailed Plan Areas**). The regional trail and local pathway network, providing excellent site and area connectivity, will conform to proposed regional alignments within the Sylvan Lake ASP and will be built to County standards.

The major public amenity node is envisioned as a day-use and recreational area, which conceptually includes: twelve (12) vehicle parking stalls, four (4)

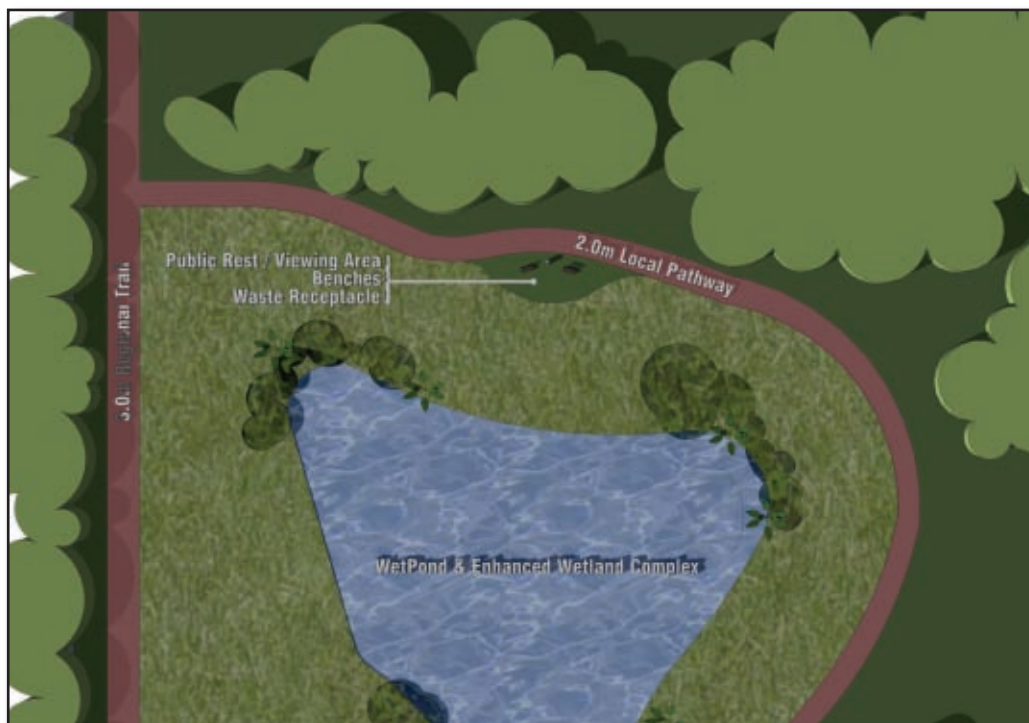
Ⓐ Public Day-Use Area and Multi-Purpose Sport Court Facility

KEY MAP



Ⓑ Public Rest/Viewing Area (Constructed Wetland Complex along Trail System)

KEY MAP





picnic-style seating units, waste/recycling receptacles, two (2) benches, public washroom facility and a commercial grade, outdoor, multi-purpose sport court. The court will be flexible for use for sport activities, such as: tennis, basketball, volleyball, ball hockey and/or badminton court. The court can also be flooded in the winter to serve as an ice-skating rink.

The minor public amenity node is envisioned as a rest-viewing area provided along the regional trail and local pathway network, and shall conceptually include: two (2) benches, and one (1) waste/recycling receptacle.

- | | |
|-----------------------|---|
| <i>Policy 3.4.1.1</i> | The Developer shall be responsible for the construction of all facilities and amenities within the Municipal Reserve, including: the regional trail and local pathway network, stormwater management and constructed wetland complex, programmed public amenity nodes, and emergency egress access roadway. |
| <i>Policy 3.4.1.2</i> | All facilities and amenities within the Municipal Reserve shall be maintained and operated by Lacombe County at the time of issuance of a Final Acceptance Certificate. |
| <i>Policy 3.4.1.3</i> | The trails, pathways, public amenity facilities, and emergency egress access roadway shall be constructed in accordance with the County Standards Manual and, where there are no applicable standards, to a commercial grade. |
| <i>Policy 3.4.1.4</i> | Dedication of the regional trail adjacent to Birchcliff Road and Road Plan 4486 AX shall be provided to the satisfaction of the County. |
| <i>Policy 3.4.1.5</i> | A detailed regional trail and local pathway plan shall be provided by the Developer to the satisfaction of the County. |
| <i>Policy 3.4.1.6</i> | Municipal Reserve dedication is to be provided to Lacombe County in accordance with Section 666 of the Municipal Government Act. |

3.5 Public Utility Lot

Multiple Public Utility Lot (PUL) parcels are also indentified on the plan. There are six (6) PUL areas within the development concept, comprising a total of +/- 1.01 acres.



The linear PUL's are in place to convey overland drainage to the constructed wetland / stormwater management facility. These facilities, and the overall stormwater management strategy, are discussed in detail in Section 5.4 of this Plan. The larger, PUL area adjacent to Range Road 1-4, +/- 0.39 acres in size, is to be the location of a small utility building to house the water treatment plant. This PUL will also be accessible, for maintenance and fire fighting purposes, via an approach from Range Road 1-4.

3.6 Tree Retention and Removal

Figure 9 – Site Plan Air Photo Overlay, is an air photo with the site plan overlay. It identifies where some existing trees are to be removed due to internal road alignment and development of the stormwater management facility and constructed wetland complex. The *Conservation-by-Design* techniques utilized in the site plan preparation avoided and largely protected existing trees by placing them in MR or within residential lots for protection and to serve as an amenity. The largest and most prominent tree stand is contained within the MR parcel immediately south of the PUL containing the water treatment plant and will be largely preserved. **Figure 7 – Illustrated Site Plan** identifies a conceptual new tree landscaping strategy, which is intended to replace trees removed through site development and increase the overall number of trees on site post-development. The Developer shall provide at least one tree for every new lot, which shall be located within the front yard of each lot. It is anticipated that the regional trail alignment will be primarily outside of the linear tree buffer on the west side of the property and will be strategically aligned on the south side to avoid tree loss.

Policy 3.6.1 Tree removal will be carefully considered on the site and shall be undertaken in accordance with the Biophysical Inventory undertaken on this site, which precludes tree removal during nesting periods.

Policy 3.6.2 The Developer shall replace lost trees by providing one tree in the front yard of every new lot. The tree shall be natural, not ornamental, and consistent with existing area species.

3.7 Fire Safety

In addition to Architectural Guidelines that include FireSmart Building materials, additional considerations have been provided with regard to fire protection and suppression.



- Subject Property Location

Site Plan Air Photo Overlay

Figure 9



Water Supply

An underground water supply and a dry hydrant shall be provided near the development entrance (in the amenity area) as a reliable source of water in case of a fire. In accordance to NFPA 1142 and the County's "Rural Fire Protection Policy for Multi-lot Subdivisions", a dry hydrant with 115 cubic meters of underground storage capable of 3800 litres per minute of draft is proposed. The water needed to fill and maintain the underground storage tanks shall be provided by a connection from the existing water distribution system. The level in the tanks will be automatically maintained and an alarm will be provided for when the storage levels fall to below the required minimum.

Additionally, a fire fill station will be provided at the location of the water treatment plant and its reservoir, which will be accessible via Range Road 1-4, and can be use for supplemental fire fighting purposes to the benefit of the region as a whole.

Site Access

Alternative emergency access shall be provided to the development such that if the primary access becomes un-passable the alternate access is available. The alternative access shall be built to the County's access road standard with a gravel surface. Yearly maintenance and inspection of the road is recommended. This road will require winter maintenance as well.

4.0 TRANSPORTATION

4.1 Regional and Internal Road Network

The Slopes will be accessed via Range Road 1-4 at one location approximately 200 meters north of the existing intersection of Birchcliff Road and Range Road 1-4. An emergency access shall be provided at the north end of the development to Range Road 1-4 . The proposed access location's sight distance has been verified to be in excess of 200 meters.

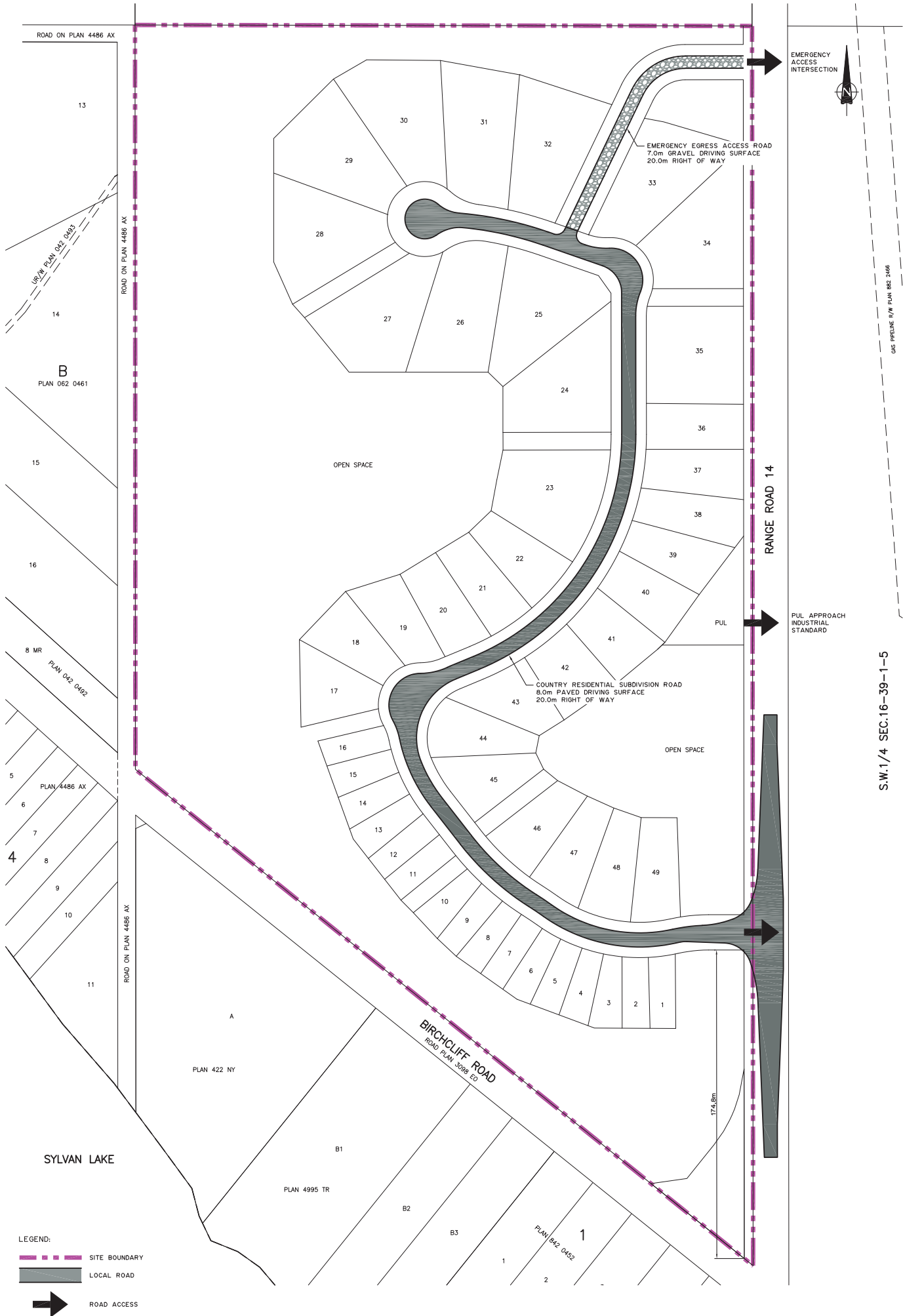
A Transportation Impact Assessment (TIA) report was prepared in support of The Slopes Concept Plan (refer to **Figure 10 – Transportation & Access Strategy**). A copy of the full TIA report was provided to the County under separate cover.

A traffic impact assessment has indicated that the site access will require a Type II intersection treatment as a result of the development. In addition, the report also recommends that a paved surface is warranted from the site access to the intersection of Range Road 1-4 and Birchcliff Road. Additional comments relating to other improvements are also contained in the report.

The following summarizes the TIA conclusions:

Transportation & Access Strategy

Figure 10





- It is recommended that the current intersection of Birchcliff Road and Range Road 1-4 be enhanced through signage. These signs include Reverse Curve Warning Signs (WA-5), Checkerboard Signs (WA-8), Concealed Road Signs (WA-13L and WA-13R), and Stop Ahead Sign (WB-1). These signs would replace the existing regulatory 20km/h sign for the eastbound traffic, yet still highlight the important curve and intersection to the oncoming motorists.
- The intersection of Birchcliff Road and Range Road 1-4 is expected to operate within the acceptable capacity parameters in both background horizons.
- Range Road 1-4 is estimated to carry between 420-440 vpd in the background horizons and, as such, requires dust control surface treatment. The current surface treatment of Birchcliff Road, paved, is adequate for the background horizons.
- There is no significant collision trend at the intersection of Birchcliff Road and Range Road 1-4. As such, no improvements are required to address safety concerns due to background traffic growth.
- The illumination warrant completed at the intersection of Birchcliff Road and Range Road 1-4 scored 73 points. Since a minimum of 120 points is required for the warrant to be met, illumination is not currently warranted at this location due to background traffic growth.

Post-Development Intersection Conditions

- All intersections are expected to continue to operate within acceptable capacity parameters in the Opening Day and 20-year Post-Development horizons.
- The intersection of Range Road 1-4 and Site Access will require a Type II intersection at the Opening Day horizon as a result of site generated traffic.
- Based on the Opening Day and 20-year Post-Development traffic volumes, the section of Range Road 1-4 between the Site Access and Birchcliff Road warrants a paved surface treatment as a result of site generated traffic. All other road links analyzed have adequate surface treatments.
- The illumination warrant completed at the intersection of Birchcliff Road and Range Road 1-4 scored 73 points and Range Road 1-4 and Site Access scored 28 points, for both horizons. Since a minimum of 120 points is required for the warrant to be met, illumination is not warranted at these locations due to site generated traffic.
- All roadways within the development will be classified as local roads based on their function and the expected daily traffic volumes.

As per the Lacombe County's Policy, a 5.18 meter road widening dedication will be provided along the entire development adjacent to Range Road 1-4 for future road reconstruction. In addition, a road dedication is provided to accommodate the future potential re-alignment and upgrading of the Birchcliff/Range Road 1-4 intersection.



All internal roads within “The Slopes” shall be a 20 meter wide rural cross section, complete with an eight meter wide asphalt driving surface and roadside ditches. The emergency access will be constructed in conformance with the County’s Access Road Standard with gravel surfacing. The Water Plant Access to Range Road 1-4 will be constructed to an industrial approach standard. This will ensure that fire trucks and maintenance equipment have safe access to the Water treatment Plant. All road work will be in accordance with the Lacombe County Road and Infrastructure Standards Manual.

- Policy 4.1.1* Access to the Plan Area shall be generally in accordance with **Figure 10–Transportation & Access Strategy**.
- Policy 4.1.2* A Traffic Impact Assessment (TIA) was prepared in support of The Slopes development. The TIA outlines specific triggers for road improvement based on development impact over time. Improvements to the external road system shall be undertaken by the Developer at the discretion of the County and in accordance with the TIA.
- Policy 4.1.3* The Plan Area both during and after development will provide and maintain appropriate emergency vehicle access, to the satisfaction of the County.
- Policy 4.1.4* Road widening of 5.18 metres (17 feet) shall be provided along the entire eastern boundary of the Plan Area.
- Policy 4.1.5* A road dedication shall be provided within the SE corner of the Plan Area to allow for the future upgrade and potential re-alignment of the intersection at Birchcliff Road and Range Road 1-4. The Summer Village of Birchcliff must approve any road realignment involving Birchcliff Road as it is under their sole jurisdiction.
- Policy 4.1.6* Complete road systems shall be constructed by the Developer, to the satisfaction of the County.
- Policy 4.1.7* Cost sharing and/or Endeavors-to-Assist will be considered where oversized infrastructure is provided beyond what is required for the development, at the sole discretion of Council.



5.0 UTILITIES AND SERVICING

5.1 Potable Water Supply

The water demand for the development is estimated to be approximately 56 m³/day or 20,440 m³/year. This is based on the following:

Table 3 – Water Demand Calculation

Land Use	Demand	Average Daily Demand	
		(m ³ /day)	(l/s)
Residential	49 residences @ 2.5 people/residence @ 454 litre/per capita/day (lpcd)	56	0.65
Total Projected Water Demand		56	0.65

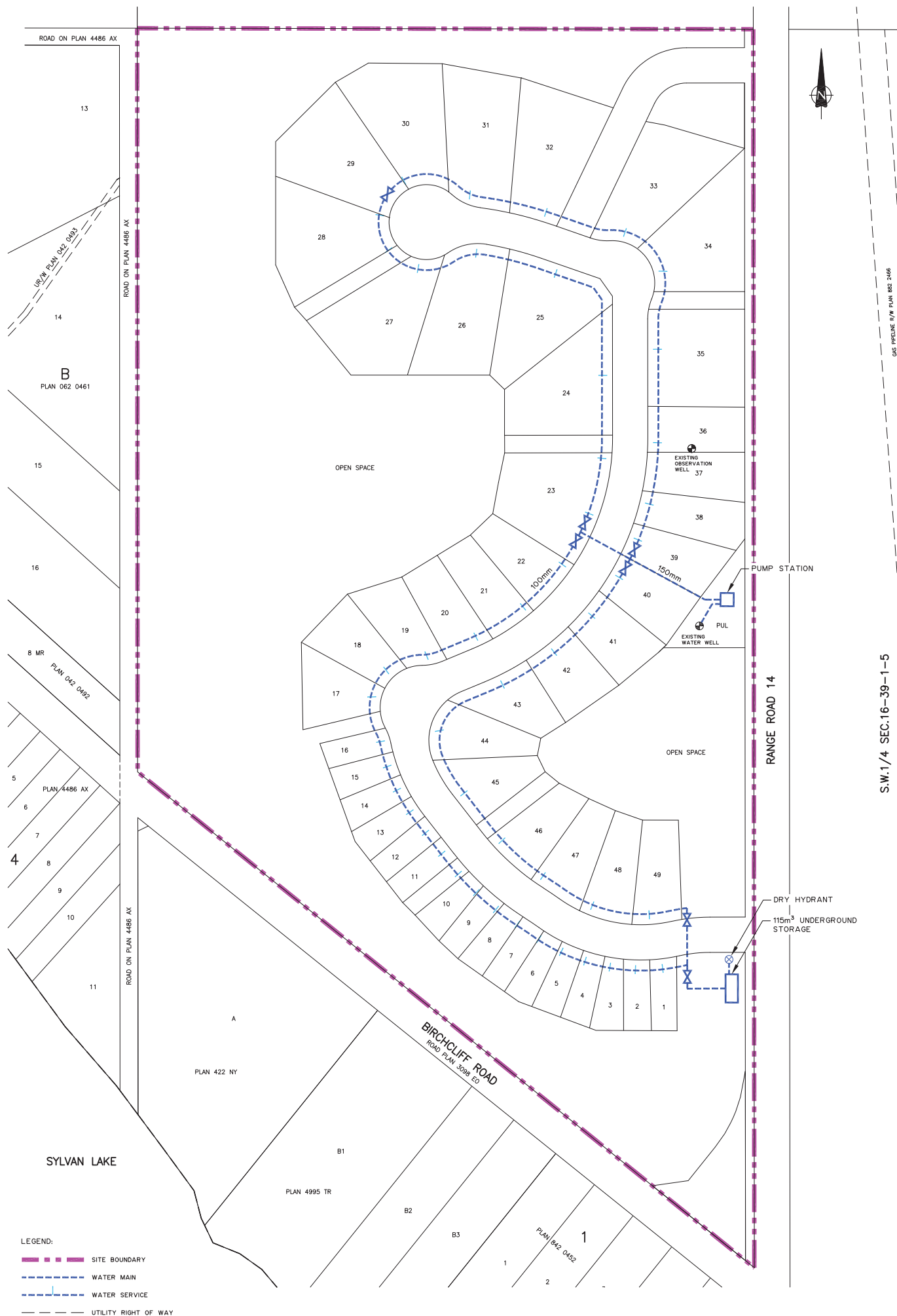
A communal water treatment plant and distribution system will be located in the Public Utility Lot (PUL) adjacent to Range Road 1-4. A new communal well, located within the PUL will provide the water supply. An observation well located within a utility right-of-way plan area on lot 36 will aid in monitoring aquifer performance.

The production well and observation well were drilled in October 2009 and extensive aquifer testing was completed at the same time. The aquifer testing was conducted by Hydrological Consultants Ltd. (HCL). The results of the testing indicate that the production well WTH 1-09 has sufficient capacity to supply the proposed 49 lots without negatively impacting existing water well users within the area. It is proposed that the water well be licensed for a diversion of 61.25 m³/day (22,356 m³/yr) in order to meet the needs expected for 49 lots.

Communal systems are required to be designed, constructed and operated to meet Alberta Environmental Standards. This would involve the construction of a 60 cubic meter potable water reservoir, a distribution pumping system and disinfection. The potable reservoir will be also sized to be compatible with a future connection to a regional water supply should one become available. The distribution system would contain two 3.75 kW pumps. The operation of the plant will also be provided with a 20 kW back-up generator in case of a power outage.

The proposed distribution system will consist of a 100 mm main feeder line from the potable water reservoir west across an easement to a 12 meter wide utility right-of-way adjacent to the road. The utility right-of-way will contain looped water mains with only two road crossings. This system will be capable of supplying each residence with a restricted pressurized water supply. Individual cisterns and re-pumping systems will not be required by the lot owners (see **Figure 11 - Potable Water Servicing Strategy**). Each residence will be equipped with a water meter complete with a remote readout for billing purposes.

Potable Water Servicing Strategy





The facility will be operated and maintained by the developer until final acceptance at which time ownership shall be transferred to the County.

Policy 5.1.1 No potable water shall be used for landscape irrigation.

Policy 5.1.2 Water shall be supplied by a communal water system to the satisfaction of Lacombe County and in accordance with the Province of Alberta's Water Act.

Policy 5.1.3 The Developer shall obtain all necessary Municipal and Provincial approvals for potable water supply for residential purposes.

Policy 5.1.4 Water supply infrastructure shall be maintained and operated by the County at the time of issuance of a Final Acceptance Certificate.

5.2 Sanitary Wastewater

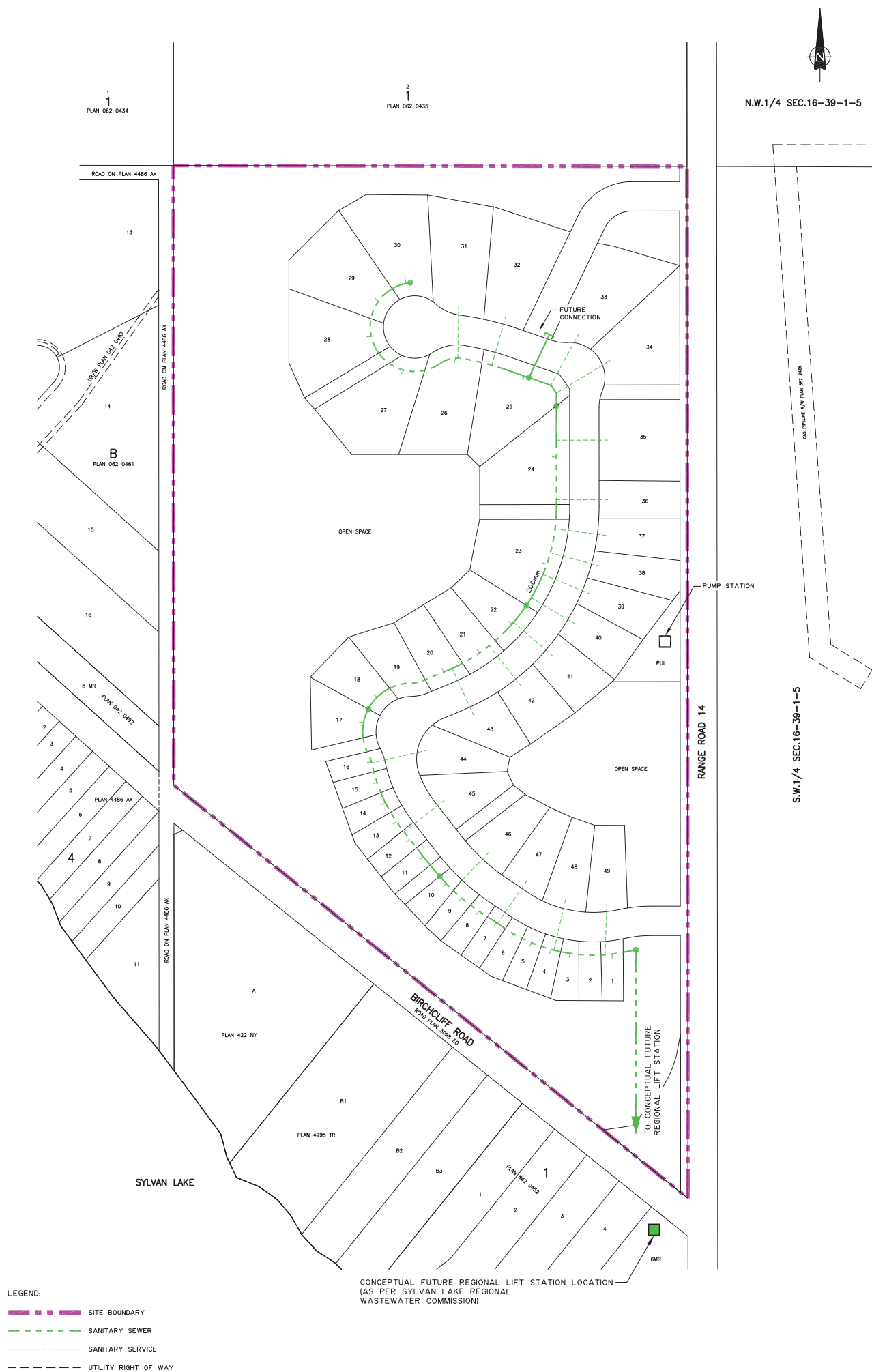
The proposed development will be serviced by a sanitary collection system located within a 12 meter easement adjacent to the road right-of-way with individual gravity services. Wastewater from each lot will be collected and conveyed by gravity to a future regional lift station which may be sited at the southwest corner of Birchcliff Road and Range Road 1-4. The emergency egress right-of-way on the north end of the development may be utilized as a sanitary connection point for future developments, if required.

It is understood that the regional collection system has been constructed, which provides an interim link to the Sylvan Lake Wastewater Treatment Plant. The eventual long-term plan is to pump all regional wastewater to the Red Deer Wastewater Plant, including the wastewater from the Town of Sylvan Lake. The regional lift station that would provide service for this development is currently being designed. The regional commission (Sylvan Lake Regional Wastewater Commission) will construct and operate the lift station with the understanding that member municipalities will collect the fees necessary to pay for the facility (see **Figure 12 – Wastewater Servicing Strategy**).

It is proposed that the operation and maintenance of the gravity sanitary collection system within the development boundaries will be operated and maintained by the developer until final acceptance at which time ownership shall be transferred to the County.

Policy 5.2.1 Sanitary Wastewater systems shall be designed in accordance with the applicable municipal, provincial, and federal standards and shall be provided to the satisfaction of Lacombe County.

Wastewater Servicing Strategy





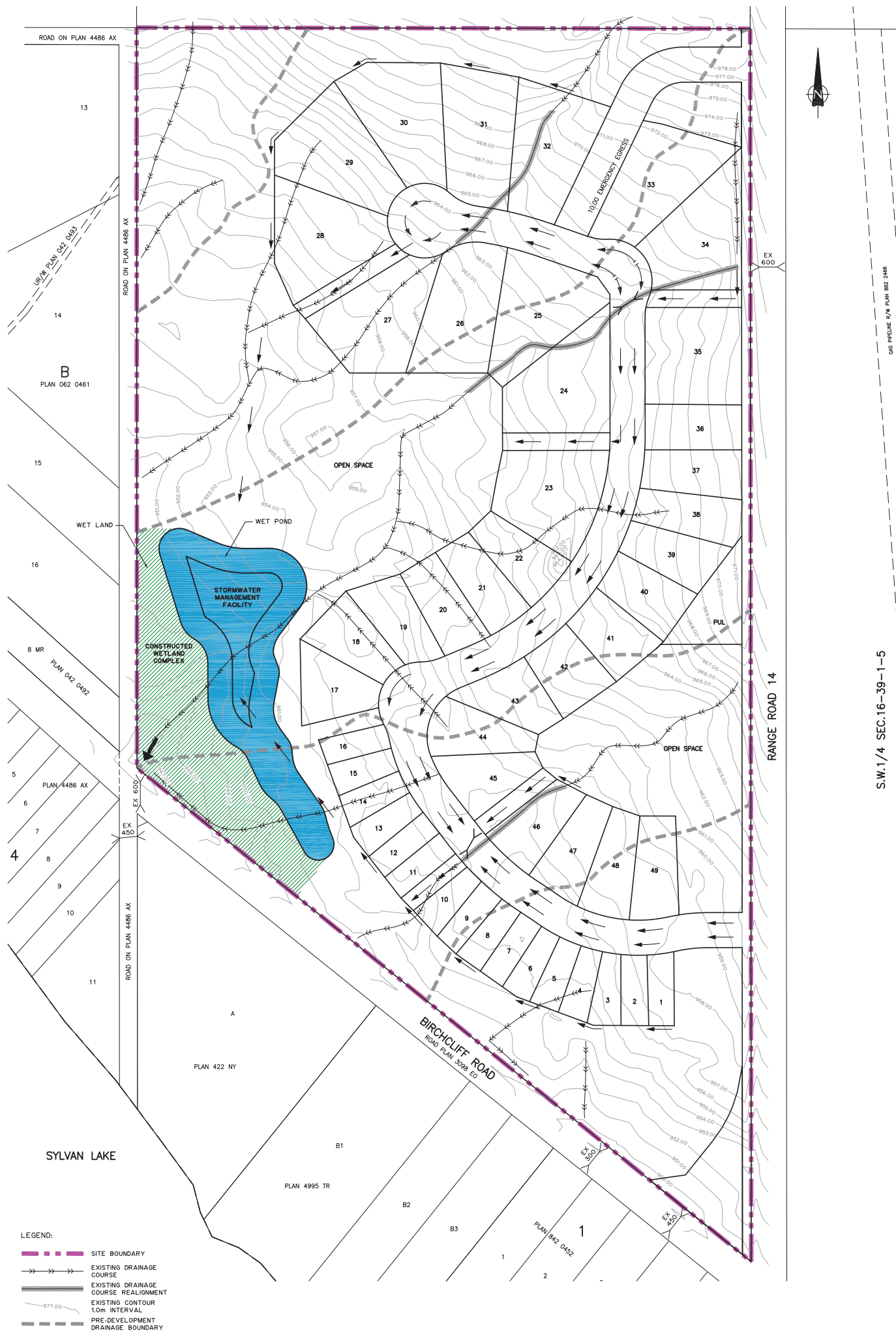
- Policy 5.2.2* The Concept Plan Area shall be designed to allow future connection to a regional wastewater system should one be established in the future.
- Policy 5.2.3* As a component of any subdivision or development application, the applicant will provide information regarding the opportunity to recycle their wastewater for irrigation to the satisfaction of the County.
- Policy 5.2.4* Sanitary wastewater infrastructure shall be owned and operated by the County upon issuance of a Final Acceptance Certificate.

5.3 Stormwater Management

The existing drainage within the site is characterized by natural drainage courses, the road ditch along Range Road 1-4, and drainage crossing culverts across private driveways, Range Road 1-4, and Birchcliff Road. Two offsite catchments, one from portions of the NE 17-39-1-W5M and another from portions of the W 16-39-1-W5M lands, drain through the site. The existing land use is mostly dominated by pasture/grass land. Drainage from the site and offsite catchments ultimately discharge into the Sylvan Lake via natural drainage path/overland flow, three culverts across Birchcliff Road and then via existing conveyance pathways towards the southwest. The existing main drainage conveyance path at the southwest corner of Birchcliff Road and the site property boundary includes a 600 mm Corrugated Steel Pipe (CSP) at Birchcliff Road followed by a 450 mm CSP driveway culvert, immediately downstream. This drainage conveyance route has been identified to be the stormwater discharge route from the proposed stormwater management facility (SWMF) servicing the Birchcliff Subdivision.

Stormwater collected from the road right-of-way and front of the lots will be conveyed by driveway culverts, road crossing culverts, road-ditches and swales to the proposed SWMF located at the southwest corner of the property (**Figure 13 – Stormwater Servicing Strategy**). Other than drainage across the Municipal Reserve, all drainage routes shall be protected via an overland drainage right-of-way. Although the majority of the stormwater generated from the developable area (lots and streets) will be conveyed to the SWMF, due to the existing natural topography, some drainage from rear portions of northwest and southeast lots will be discharged overland to the Municipal Reserve (MR) area. Runoff collected from W 16-39-1-W5M lands will be conveyed to the proposed SWMF via existing 600 mm CSP across Range Road 1-4. The SWMF will be designed to meet Alberta Environment's (AENV) water quality and quantity objectives with an allowable release rate dictated by the downstream culvert capacity and existing flow regime of the natural drainage path. The SWMF will be designed and constructed to manage the quantity and quality of runoff released from the site. As recommended in the Sylvan Lake Area Structure Plan, the proposed SWMF

Stormwater Servicing Strategy





will be a wet pond/constructed wetland complex to provide enhanced water quality objectives. All drainage paths through proposed lots will be protected by an overland drainage easement.

A stormwater management concept plan will be required as part of the detailed design that will address the existing and proposed drainage, stormwater quantity and quality requirements, and the appropriate offsite release rate. The stormwater management concept plan will be submitted to Lacombe County and Alberta Environment for review and approval.

Policy 5.3.1 All stormwater management facilities shall be constructed by the Developer in accordance with Alberta Environment's Best Management Practices and Lacombe County's Servicing Standards for Subdivision and Road Construction.

Policy 5.3.2 A Stormwater Management Plan will be required in support of the development to the satisfaction of the Municipality.

Policy 5.3.3 Stormwater infrastructure shall be maintained and operated by Lacombe County upon issuance of a Final Acceptance Certificate.

5.4 Shallow Utilities

Individual lots within the development will be provided with underground telephone, gas, power, and cable services. These services shall be located on a separate easement registered on the individual lots.

A search was conducted of the parcel for utilities and oil/gas facilities. Several gas lines were identified belonging to the Gull Lake Deer Creek Gas Co-op Ltd. crossing the site. These lines will need to be relocated as part of the development.

Shallow utility services including electric power, natural gas, and telephone services will be provided by the following companies:

- Gas services by G.L.D.C Gas Co-op Inc.;
- Power provided by Fortis Alberta; and,
- Telephone services by Telus.

Policy 5.4.1 Shallow utilities shall be provided within the Concept Plan Area at the sole expense of the Developer and shall be located within appropriate utility right-of-way established at the subdivision stage.



5.5 Solid Waste

Solid waste management will be the responsibility of the Lot Owner's Association. The majority of lot owners will utilize a commercial solid waste disposal service, which will likely be contracted through the Lot Owner's Association.

Policy 5.5.1 Solid waste disposal shall be maintained and operated by the Lot Owner's Association in accordance with required legislation.

5.6 Protective Services

Police Service to the Concept Plan Area is provided by the Royal Canadian Mounted Police and Lacombe County Community Peace Officers.

Fire protection will be provided by the County. The Concept Plan Area will be serviced by 911 emergency services with an emergency locator system set up for each individual property.

An underground water supply and a dry hydrant shall be provided near the development entrance (in the amenity area) as a reliable source of water in case of a fire. An alternate emergency fill station will be provided in conjunction with the water treatment plan reservoir located on a PUL adjacent to Range Road 1-4 to permit a water tanker to fill itself as a source of water for firefighting regionally and locally.

Policy 5.6.1 New subdivisions shall meet the criteria and requirements for on-site fire fighting measures as determined by Lacombe County.

Policy 5.6.2 An Emergency Management Plan shall be submitted with each development permit application to the satisfaction of Lacombe County.

Policy 5.6.3 In conjunction with the provision of a dry hydrant, FireSmart principles in the Architectural Guidelines, and connection points for vehicles at the water treatment plant site, a detailed Emergency Response Plan shall be provided to the County at the subdivision stage.

6.0 PUBLIC CONSULTATION

A public meeting to review The Slopes Concept Plan was held on (date). A summary of the public meeting, advertising, and community feedback can be found in **Appendix A - The Slopes Concept Plan Public Open House Summary Report**.

7.0 IMPLEMENTATION, REVIEW AND AMENDMENT

The Slopes Concept Plan falls within a hierarchy of applicable plans. The Lacombe County Municipal Development Plan (MDP) is the guiding document for all development within the municipality. The Land Use Bylaw (LUB) establishes the land



use rules and regulations. The Sylvan Lake ASP presents a greater level of planning detail within the specific Plan Area and is required to be consistent with both the MDP and LUB. Development in the Concept Plan Area should be acceptable to community and consistent with policy contained within the Sylvan Lake ASP and this document. The Slopes Concept Plan does not supersede, repeal, replace or otherwise diminish any other statutory plan in effect in the Plan Area.

Policy 7.0.1 The policies contained within this document shall be reviewed and implemented by Lacombe County at their discretion.

Policy 7.0.2 As The Slopes Concept Plan is adopted by bylaw of the Municipality, a formal process as outlined in the Municipal Government Act is required to amend the Plan.



Appendix A - The Slopes Concept Plan Public Open House Summary Report

(Note: To be completed post draft circulation of the Concept Plan)