

Richard Estates Area Structure Plan

Lac La Biche County

August 2014

File # 1123-01

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SUPPLEMENTARY REPORTS

(Submitted under separate cover)

1. Biophysical Assessment (prepared by EBA)
2. Historical Resources Impact Assessment of Richard Estates, Lac La Biche River Lot 45 (prepared by Western Heritage)
3. Geotechnical Assessment - Shallow Water Table Testing and Roadway Recommendations (prepared by Hagstrom Geotechnical Services Ltd.)

1 INTRODUCTION

Lac La Biche County experiences strong economic growth. Dominant activities within the County include agriculture, forestry and oil and gas. The County also has affordable land for industrial, commercial and residential development.

According to the Lac La Biche County Municipal Census 2013, the population of the County is 12,220. Significant growth in country residential and resort subdivision has taken place near the County's many lakes and environmental features, specifically within the vicinity of the hamlets of Lac La Biche, Plamondon and Beaver Lake. The County however experiences a shortage of municipal serviced housing which is a growing demand within the County.

1.1 Purpose

The intent of this Area Structure Plan (ASP) is to guide the future development of the subject lands known as Richard Estates. The proposed development is an estate style residential community comprised of approximately 70 single-family residential lots, ranging 1.0 acre to 3.0 acres in size.

In accordance with the Municipal Government Act, developers are required to prepare an Area Structure Plan prior to the approval of a subdivision exceeding 3 lots. This ASP will provide an overview of the land use patterns, transportation and servicing concept. It also demonstrates how the open space features will be incorporated, and describes enhancements of the natural features that currently exist on the site. This ASP will be used to support future applications for land use bylaw amendments and subdivisions in the plan area.

2 SITE CONTEXT

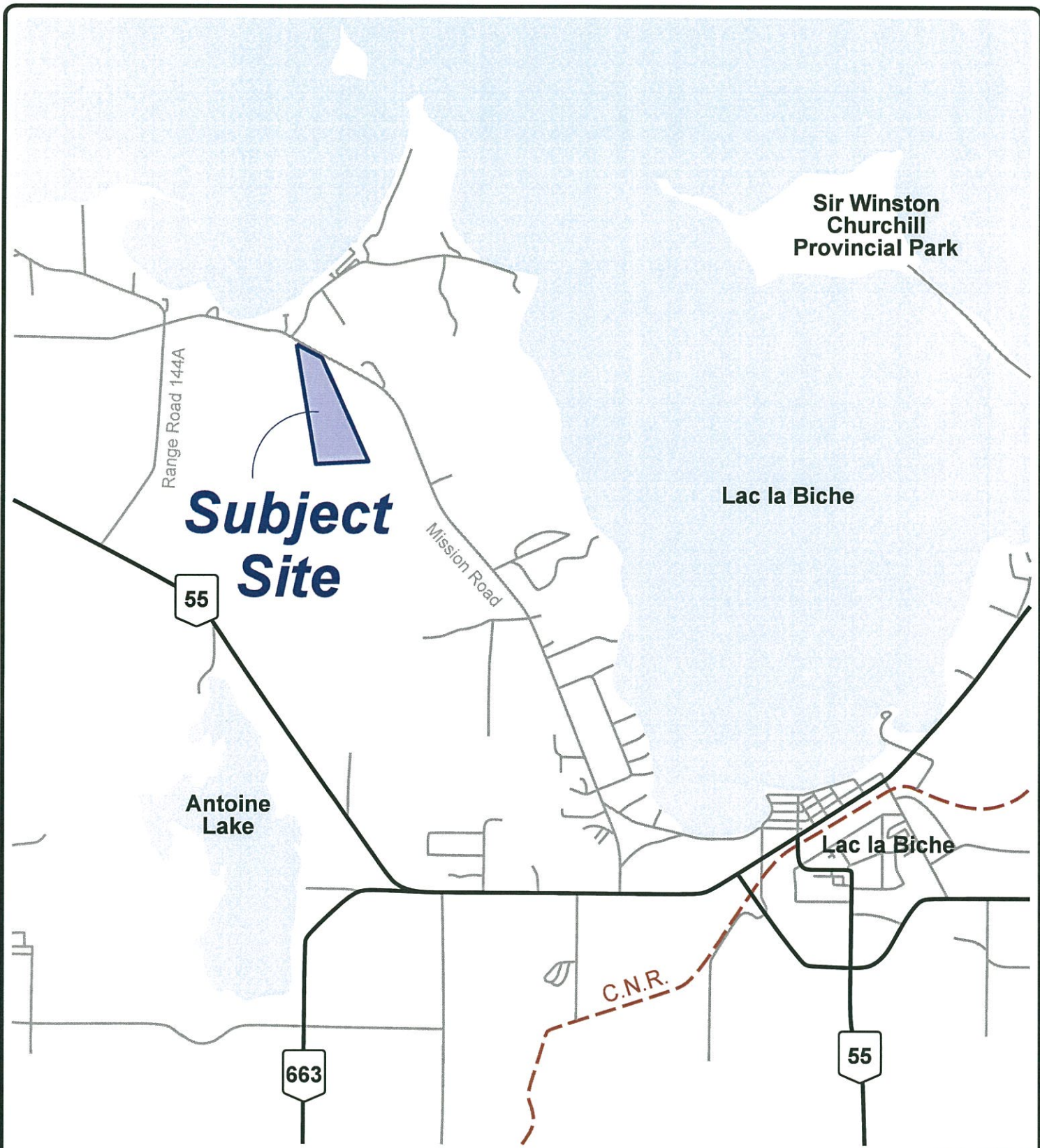
2.1 Plan Area

Richard Estates is located along Mission Road, approximately 5 kilometres northwest of the Town of Lac La Biche, and approximately 0.5 km south of the Lac La Biche Lake (see Figure 1 Location Plan). The legal description of the property is Lot 45, RL 45-67-14-W4M.

The subject land is approximately 58.6 hectares. The landscapes vary from flat to gently rolling with several low rises and depressions. Currently there is a residential property in the northern portion of the property. The majority of the land includes cultivated areas within the central and southern portion of the property. There is also a large amount of land that is undisturbed vegetation, tree stands and wetlands.

2.2 Surrounding Land Uses

Richard Estates is adjacent to two River Lots of similar size to the west and east of the property. These lots are primarily undeveloped with one residential property located in the west lot and two residential properties located in the lot to the east. Directly northwest of the property along Mission



**FIGURE 1
LOCATION PLAN**

**RICHARD ESTATES
AREA STRUCTURE PLAN**

LAC LA BICHE COUNTY



Road is a subdivision of 15 residential lots, less than 1 acre in size. Approximately 800m east of the property along Mission Road is a second subdivision of 22 residential lots between 1 and 2 acres in size.

2.3 Historical Resources Impact Assessment

Richard Estates is located within landforms adjacent to Lake Lac La Biche and smaller lakes/ponds in the vicinity which has exhibited high historical potential, and in close proximity to previously recorded archaeological sites. Therefore, Alberta Culture required that a Historical Resource Impact Assessment (HRIA) be carried on the entire project area. The HRIA was undertaken by Western Heritage in October 2013. A total of 120 shovel tests were excavated in 10 areas while conducting the archeological field assessment. Given the absence of prominent features in the general area of the proposed development, any distinctive landform and change in the terrain was shovel tested. During the heritage assessment, no new archaeological sites were discovered. Extensive subsurface testing throughout the proposed development did not locate any evidence of cultural remains or historic resources. Western Heritage has no concerns regarding the proposed development and recommends that no further archaeological investigation or assessment is required for the Richard Estates residential subdivision. A Historical Resources Act clearance was granted by Alberta Culture on January 24, 2014. The complete HRIA report and Alberta Culture signed clearance has been submitted under separate cover to the municipality.

2.4 Biophysical Assessment

Tetra Tech EBA (EBA) was retained by the landowners to conduct a biophysical assessment on the subject property. The assessment was undertaken to identify, classify and assess the health of wetlands, identify the dominant vegetation and soils, and to note wildlife activity on site and in proximity to the proposed site development. A total of 16 wetlands were identified on the site including 3 fens, 3 bogs and 10 swamps. No wildlife species of management concern were identified onsite however there is potential for several species of management concern to occur on or near the site. A map illustrating Natural Features is presented in Figure 2. In order to prevent negative impacts to biological features on site, EBA recommends that best management practices are followed as stated in Section 5.0 of the Biophysical Assessment report. Recommendations include:

- Every opportunity to minimize the size of the project footprint should be taken to reduce impacts to native plant communities;
- Natural drainage patterns should be retained; and
- Habitat clearing activities (e.g., vegetation clearing, flooding, etc.) in upland forested areas should avoid, at a minimum, the period from May 7 to August 20 to prevent disturbance of nesting bird species.

In concluding the Biophysical Assessment, EBA deems it acceptable to develop River Lot 45 as planned. The complete Biophysical Assessment has been submitted under separate cover to the municipality.



FIGURE 2
NATURAL FEATURES
 RICHARD ESTATES
 AREA STRUCTURE PLAN

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2.5 Geotechnical Assessment

A Geotechnical Assessment was conducted by Hagstrom Geotechnical Services Ltd. in July and August 2013. Twenty four boreholes were drilled at the subject site on July 6, 2013, to depths of 4.5 metres below ground surface. The soil stratigraphy encountered at the borehole locations during drilling generally consists of a variable thick cover of topsoil followed by an extensive deposit of silty clay. Sand was encountered within the clay in five boreholes and clay till was encountered below the clay in two boreholes. The topsoil thickness ranged from 5 to 38 centimeters with an average thickness of 24 centimeters. The report provides recommendations for lot design and roadway construction. The complete Geotechnical Assessment has been submitted under separate cover to the municipality.

2.6 Resource Extraction

Information received from the Alberta Energy Regulator (AER) on May 21, 2013 indicated that there are no active or suspended sour or natural gas facilities, oil pipelines or resource extraction facilities in or in the vicinity of the plan area. No abandoned wells have been identified on the AER abandoned wells online mapping system.

3 POLICY CONTEXT

This Area Structure Plan is prepared in conformance with the Municipal Government Act, Lower Athabasca Regional Plan and Lac La Biche Municipal Development Plan.

3.1 Lower Athabasca Regional Plan (LARP)

The Lower Athabasca Region Plan (LARP) was approved by the Government of Alberta in August 2012. It encourages robust growth, vibrant communities and a healthy environment within the region over the next 50 years. It provides guidance regarding land-use management for the region through various desired outcomes.

This plan supports the following LARP outcomes: Outcome 3: Landscapes are managed to maintain ecosystem function and biodiversity; and Outcome 5: Infrastructure development supports economic and population growth. This ASP supports Outcome 3 by promoting conservation of vegetation and wildlife corridors where feasible, and minimizing land disturbance impacts to the area's biodiversity. The site is designed to utilize the natural topography of the site for natural storm drainage while reducing impacts of various swamps, fens and bogs located within the site. The proposed development also supports Outcome 5 by providing housing to support the population growth within the County. This plan utilizes the existing infrastructure running along Mission Road to provide efficient and cost-effective servicing to the site.

3.2 Lac La Biche County Municipal Development Plan (MDP)

The Lac La Biche Municipal Development Plan Bylaw 13-020 was adopted in September 2013. This Plan provides a framework for future growth and development of Lac La Biche County in an orderly, economical and sustainable way. Under the MDP, the subject property is designated as Residential –

Estate. The Richard Estates Area Structure Plan supports the residential objectives as outlined in Section 4.1 of the MDP including supporting residential development that is orderly, efficient and attractive; and supporting a mix of housing types and forms to ensure a diverse housing supply within the County.

3.3 Lac La Biche County Land Use Bylaw (LUB)

The Lac La Biche County Land Use Bylaw 12-024 was adopted in August 2012. The purpose of the Bylaw is to regulate and control the use and development of land and buildings within Lac La Biche County to achieve the orderly and economic development of land. It is a tool used to execute the vision of the County's Municipal Development Plan. Under the Land Use Bylaw, the subject property is designated as "Agricultural." An amendment to the Land Use Bylaw to redesignate Richard Estates as "Serviced Estate Residential 2" will be required in order to accommodate the proposed residential development consisting of 1.0 to 3.0 acre lots.

4 DEVELOPMENT OBJECTIVES AND POLICIES

The vision for the development is to provide a variety of municipal serviced single family homes in a quality country residential subdivision with high design standards. There is a strong focus on recognizing and retaining the natural and environmental integrity of the area by minimizing environmental impact and promoting environmental conservation in public and private spaces.

4.1 Objectives

The objectives of the proposed development include the following:

1. To show an appropriate future land use scenario consistent with the County's vision as described in the Municipal Development Plan
2. To provide a logical and appropriate lot configuration given the irregular shape of the site
3. To recognize, respect and complement the existing character of the community at large
4. To recognize the value of the natural environment
5. To provide adequate and efficient servicing to the residential lots

5 DEVELOPMENT CONCEPT

The intent of the land owners is to develop this property into an estate style residential community comprised of approximately 70 single-family residential lots, ranging 1.0 acre to 3.0 acres in size, and several environmental and municipal reserve lots as illustrated in Figure 3. The anticipated density of this development is 2.0 units/ha with a projected total population of 245 people (see Table 1 and 2 – Land Use Statistics). The development will also adhere to Section 71 Landscape Requirements within the Lac La Biche County Land Use Bylaw No. 12-024.

This development is located in close proximity to existing residential developments and optimizes the existing services while facilitating the efficient extension of infrastructure networks.

5.1 Open Space

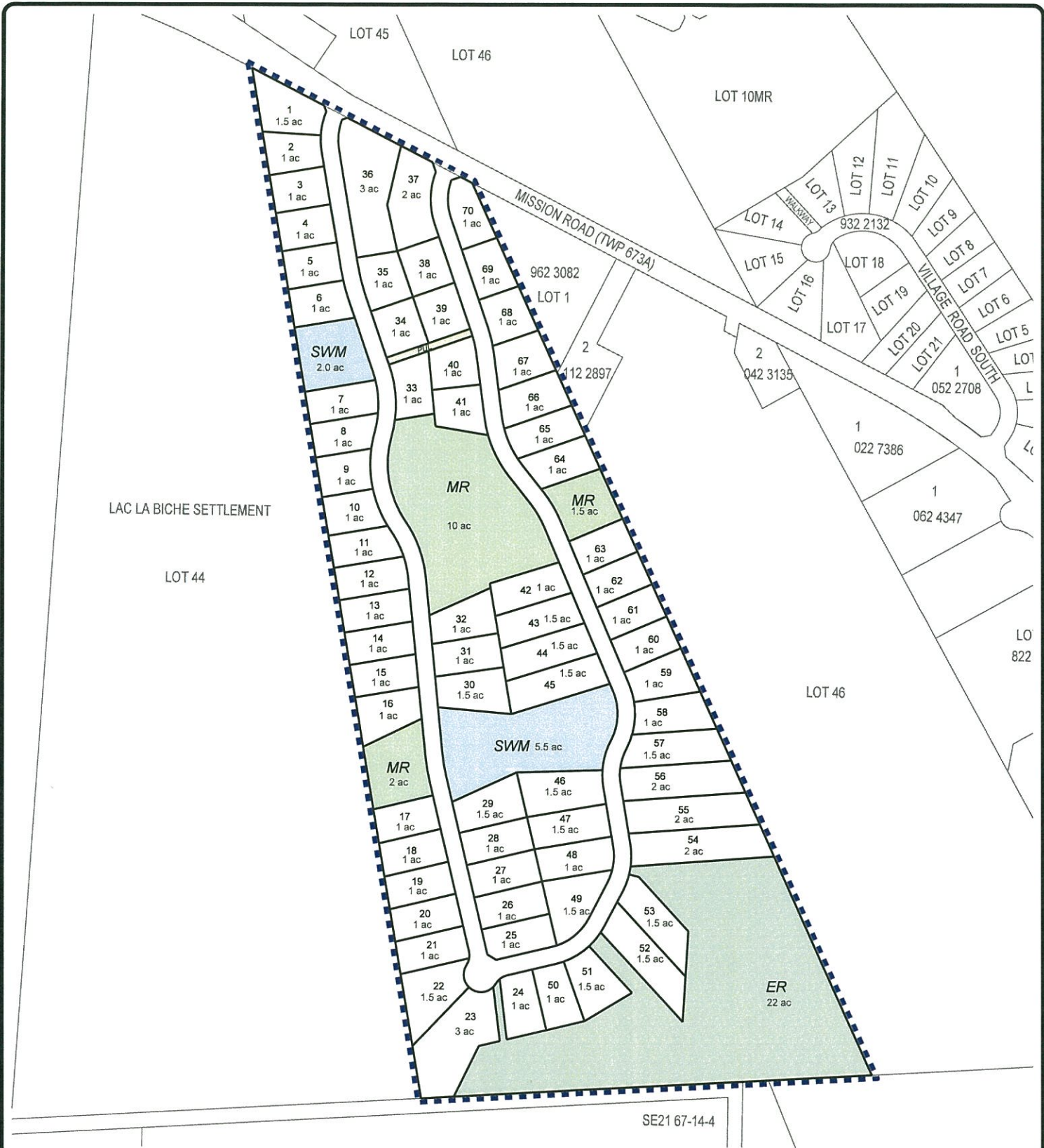
A total of 5.24 hectares has been dedicated as municipal reserve. This is equivalent to 11.1 percent of the gross developable area. As well, 9.35 hectares has been dedicated as environmental reserve, and 9.1 hectares has been dedicated as environmental reserve easements. The open space map is illustrated in Figure 4.

5.2 Environmental Protection

The landowners have a strong desire to protect and retain the “natural” environment within the site. Efforts including the creation of Environmental Reserve Easements in order to retain and preserve existing trees, natural vegetation, wetland and other natural features, will be made to promote environmental protection, and to maintain wildlife connectivity throughout the site (see Figure 5). The Environmental Reserve Easements range from 5 to 20 metres in width and run along the rear yard of most lots. Environmental Reserve Easements of 5 meters were also placed on some side yards and easements with a 5 meter buffer were placed on identified wetlands located within private lots.

Lac La Biche County uses the Riparian Setback Matrix model to protect source water by taking adequate precautions to prevent the most common forms of pollution. It is used to determine the appropriate Environmental Reserve setbacks for all private lands located adjacent to environmentally sensitive and or significant water bodies within the County. The subject lands are not located adjacent along Lac La Biche Lake.

Lac La Biche County also has a Watershed Management Plan in place which protects water quality and quantity, riparian areas and wetlands and fisheries, waterfowl and wildlife. As recommended in the document, water quality within the Area Structure Plan will be monitored post-development. Wildlife corridors, habitats and breeding areas will also be respected and protected through the implementation of recommendations identified in the biophysical report as well as environmental reserve easements.



**FIGURE 3
DEVELOPMENT CONCEPT**

**RICHARD ESTATES
AREA STRUCTURE PLAN**

LAC LA BICHE COUNTY



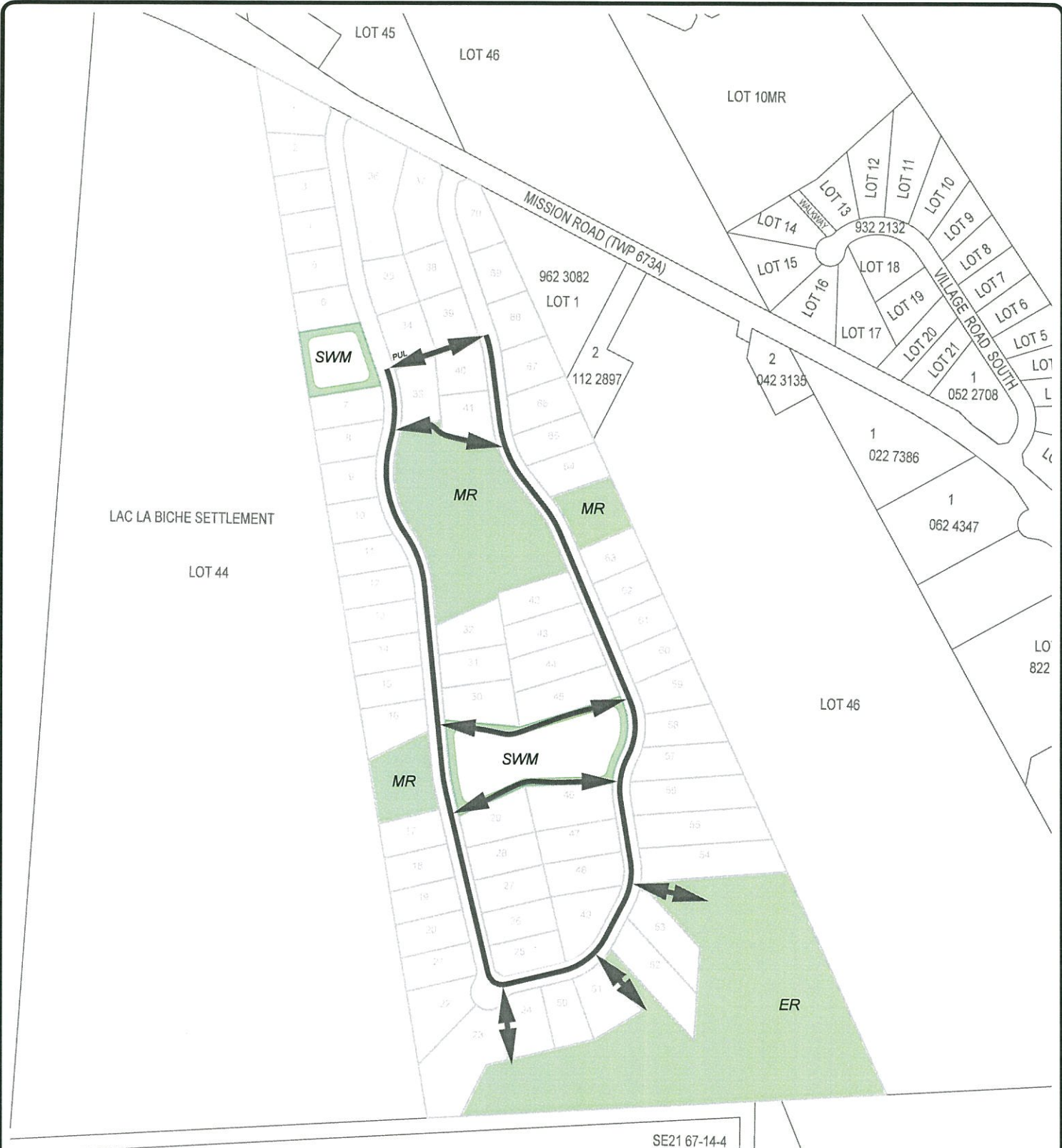
*All areas have been rounded to the nearest half acre

Table 1: Land Use Statistics

	Ha	% of GDA
Gross Area	58.6	
Less Environmental Reserve	9.4	
Gross Developable Area	49.2	100.0%
Residential – Single Family	34.6	70.3%
Municipal Reserve	5.2	10.6%
Infrastructure		
Internal Roadway	6.1	12.4%
Public Utility	0.1	0.2%
Storm Water Management	3.2	6.5%

Table 2: Residential Land Use Statistics

	Net Area (ha)	Density (units/ha)	Units	Persons/Unit	Population
Single-Detached	34.6	2.0	70	3.5	245



↔ Pedestrian Connection

FIGURE 4
OPEN SPACE
 RICHARD ESTATES
 AREA STRUCTURE PLAN

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FIGURE 5
ENVIRONMENTAL RESERVE EASEMENTS
 RICHARD ESTATES
 AREA STRUCTURE PLAN

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6 SERVICING AND TRANSPORTATION

6.1 Water Servicing

Water supply to the plan area will be extended from the existing 300 mm municipal watermain that runs along Mission Road (Township Road 674A). An internal water network of small diameter mains is proposed to service the future development area. The water distribution system will deliver a trickle-feed service to the subdivision; fire flow capacity is not available from the existing municipal system. An onsite storage cistern and pressure pump will be required at each residence to boost the in-house water system pressure for household uses. Internal water mains size will be determined at the detailed design stage. The proposed water supply system is illustrated schematically on Figure 6.

6.2 Sanitary Servicing

The proposed development will be connected to the existing 150 mm municipal sanitary low pressure sewer system that runs along Mission Road. The existing forcemain ultimately discharges the collected effluent to the Lac La Biche's gravity sewer system. This system requires each residence to have a septic tank and a pump system called the STEP System¹ that is capable of pumping screened, pre-treated effluent into the low pressure line. Internal low pressure sewer system sizing will be determined at the detailed design stage. A schematic of the proposed sanitary sewer system is illustrated in Figure 7.

The municipality has a consultant studying the capacity of the low pressure sanitary sewer system. Study results will be determined in September 2014. however there is enough capacity to service Stage 1 of Richard Estates.

6.3 Storm Water Management

The existing natural surface runoff from the site currently flows in the westerly direction across Lot 44 and into an unnamed lake located in Lot 43. This lake has a natural outlet creek that flows into the water body known as Lac La Biche.

The development area will maintain and respect the existing natural drainage. Many of the proposed lots will therefore continue to drain towards the existing wetlands within the reserve areas. The majority of the post-development runoff within the plan area will be routed by roadside ditches into the two proposed future ponds. These ponds are sized larger than required based on the 1:100 year rainfall event and will be constructed as naturalized wetlands in order to control and improve the post-development runoff water quality. All efforts will be made to minimize the amount of trees needed to be cut down due to site grading. A schematic of the proposed stormwater management system is illustrated in Figure 8.

¹The "STEP system" means a sanitary sewage system which utilizes a high head pump, alarms, and a control panel to pump grey water from a collection tank into pressurized mainlines.

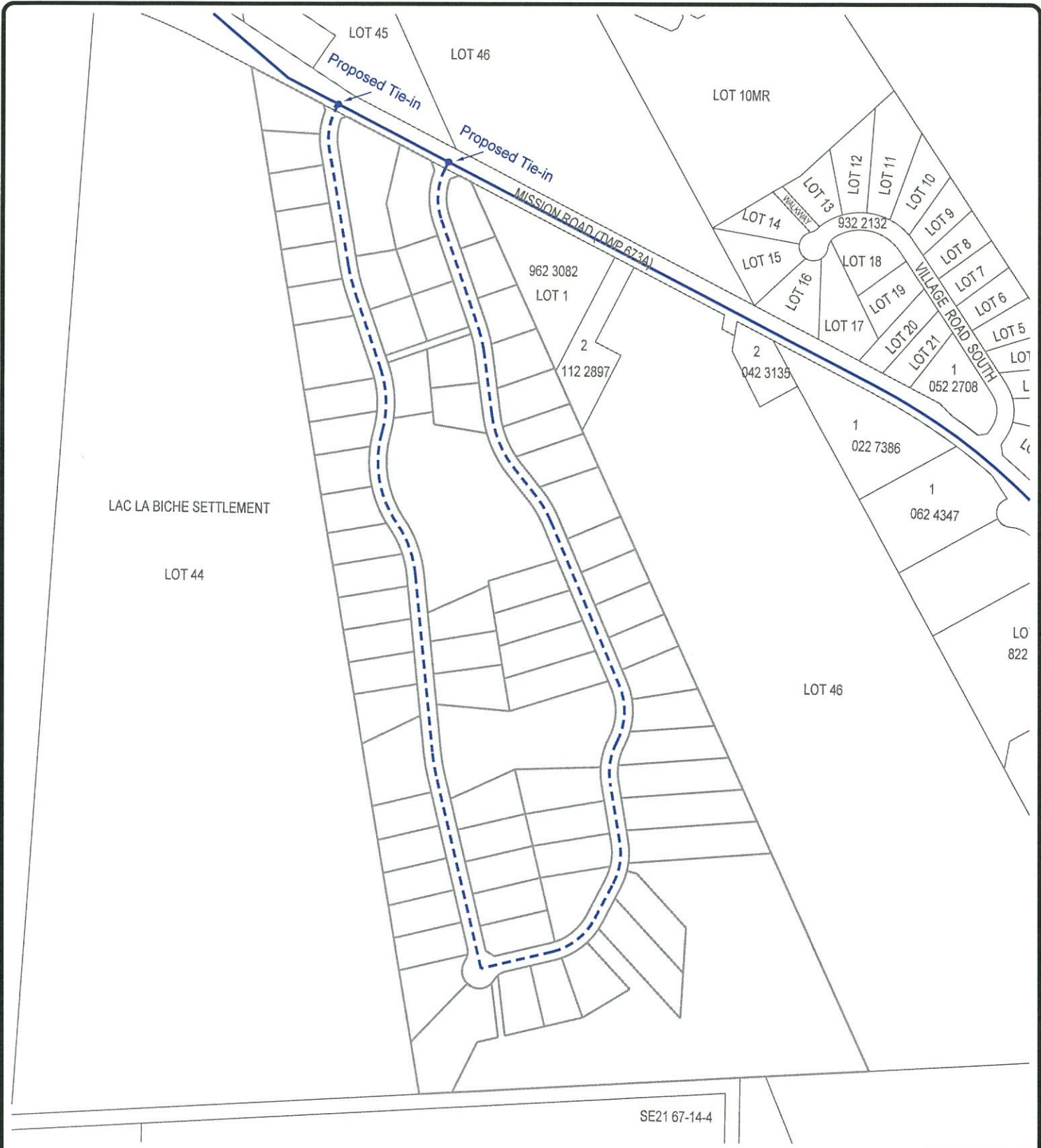


FIGURE 6
WATER SERVICING
 RICHARD ESTATES
 AREA STRUCTURE PLAN

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- Existing 300mm Municipal Watermain
- - - Proposed Trickle-Feed Water Distribution Mains



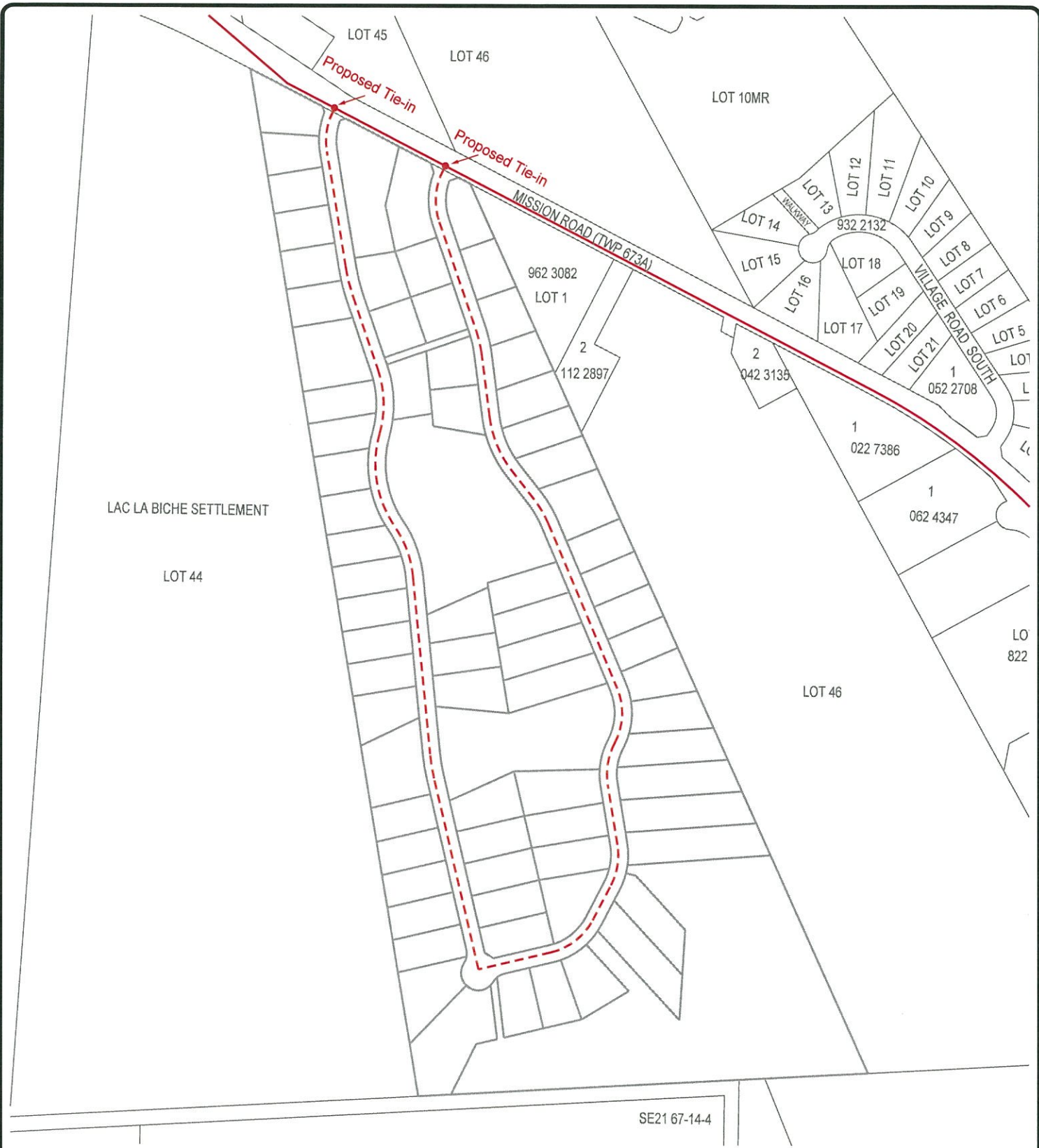


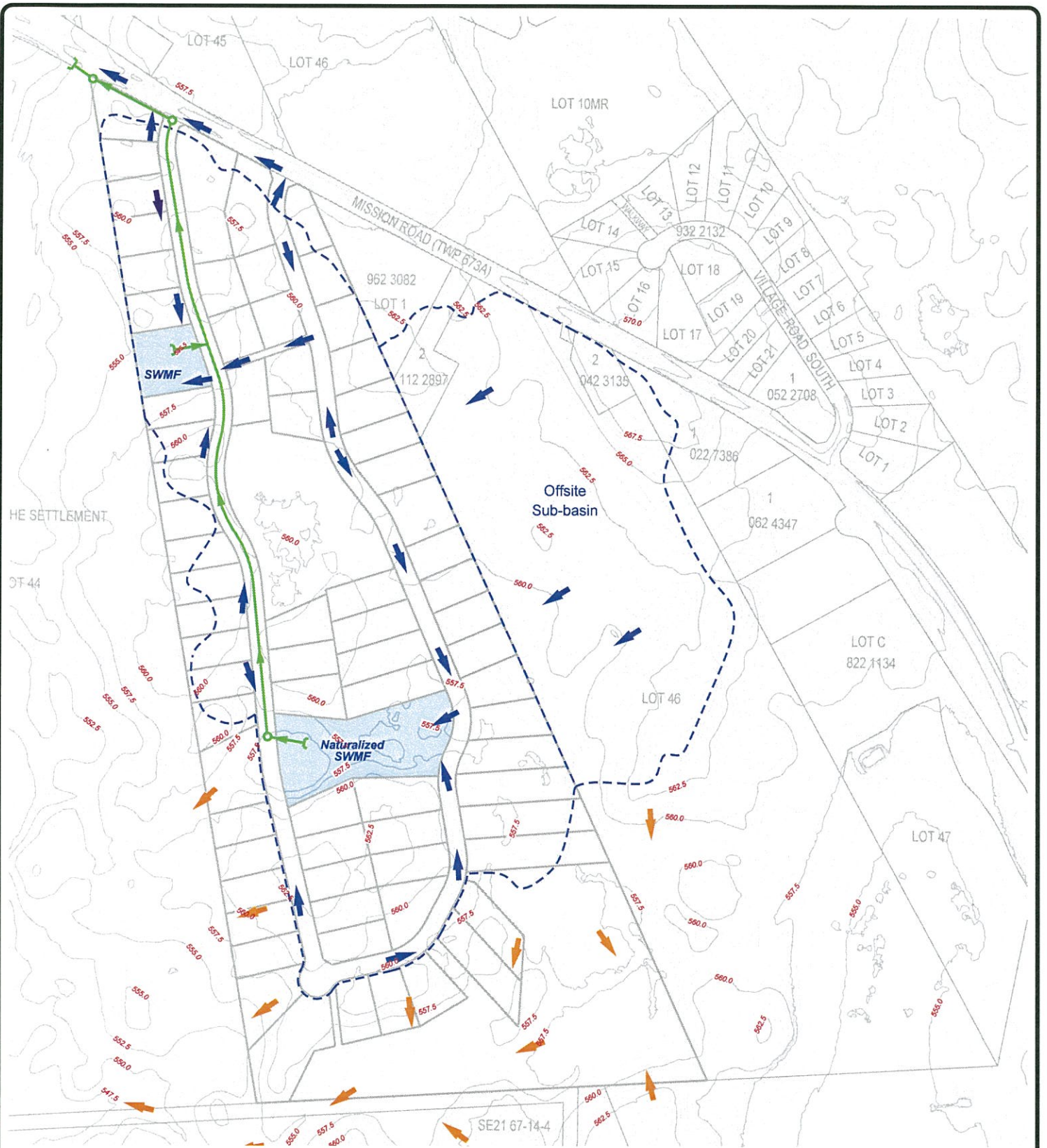
FIGURE 7
SANITARY SERVICING
 RICHARD ESTATES
 AREA STRUCTURE PLAN

LAC LA BICHE COUNTY

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- Existing 150mm Sanitary Forcemain (STEP)
- - - Proposed Sanitary System (STEP)





- Drainage Basin Boundary
- ➡ Major Overland Flow
- ➡ Proposed Storm Outlet
- ➡ Existing Natural Drainage

FIGURE 8
STORMWATER MANAGEMENT
 LAC LA BICHE SETTLEMENT LOT 45
 AREA STRUCTURE PLAN

LAC LA BICHE COUNTY



The proposed stormwater management facilities will provide the necessary water quality control measures for the post-development conditions by removing suspended solids and other materials carried with the runoff. These facilities will be designed to meet Lac La Biche County General Municipal Servicing Standard under Section F.3.1.2 and the Alberta Environment Standards and Guidelines for Storm Drainage System. Water Act approval, public notice, and licensing under the Environmental Protection and Enhancement Act shall be applied for prior to the construction of the ponds and outfall.

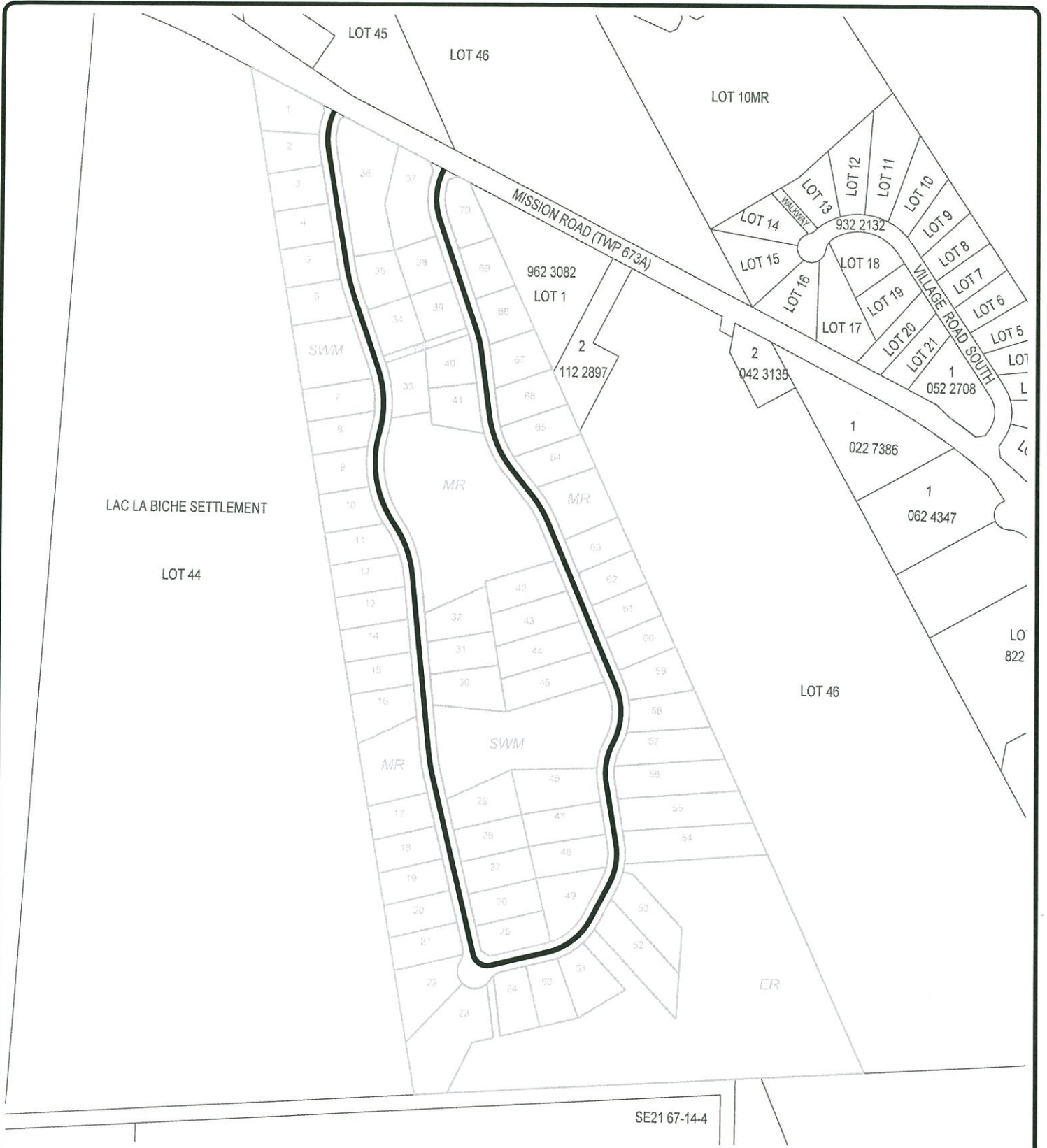
6.4 Solid Waste Collection

The municipality has advised that residents living within the plan area will have opportunity for curbside solid waste (garbage) and recycling pick-up.

6.5 Transportation Network

Currently there is a dual access road to the existing single family home in the northern portion of the plan area. Please note that the access will be discontinued and access to the property will be achieved through the internal roadway system.

Vehicular access to the subdivision will be provided via a local road entering and exiting from the north of the site, along Mission Road. In order to provide for efficient traffic movement and potential emergency access options, there are a total of two access points from Mission Road. The local road network is illustrated in Figure 9.



— Local Road

FIGURE 9
TRANSPORTATION NETWORK
 RICHARD ESTATES
 AREA STRUCTURE PLAN

LAC LA BICHE COUNTY



7 COMMUNITY CONSULTATION

A public consultation was held on September 11, 2013 at the Lac La Biche Mission in the County of Lac La Biche. The Open House was advertised in the Lac La Biche Post for two consecutive weeks prior to the consultation. Members of the public were invited to attend a public consultation on the proposed Area Structure Plan. The purpose of the Open House was to provide an informal opportunity to educate the public about the proposal and to seek input. Information and ideas received from the Open House were refined to inform the Area Structure Plan submission.

There were a total of 12 attendees at the Open House. A total of three questionnaires were submitted. The following are a summary of the responses.

	Agree	Neither	Disagree	Comment
The Development Concept Shows an appropriate future land use scenario	2		1	Glad to see wetland features are kept intact (for the most part) Too many lots for such a small area
The lot design is logical and appropriate given the irregular shape of the site	1	1	1	Not too happy that one entrance will be right opposite our driveway. It will get used as a turnaround
The Plan recognizes, respects and compliments the existing character of the community at large	1	1	1	How can you move in 200+ people and not change our rural quiet living
The Plan recognizes the value of the natural environment	1	1	1	Would like to see a tree buffer along the wood lots 1, 27, 28 and 34 ² . The ER Easement idea would help maintain trees and natural vegetation in the riparian zones around the wetlands. Very little of natural environment will be left.

² These lot numbers relate to a previous draft development concept plan. Lot numbers have changed based on feedback.

Other comments that were provided include the following:

- The subdivision would be “topnotch” if the water and sewer services were “pumpless.” This would likely involve a booster of some type. Pressurized water, as in Holawachuk Estates and a sewer system without tanks and pumps would make this subdivision equal or better than Beaver Lake. Building Code: not trailers, RTMs or modular homes.
- I’m aware that the County has a Riparian Setback Matrix Model. This may have some bearing on the idea of buffers around the wetlands. Also, Alberta has a newly approved Wetlands Policy, and the County is also working on its own Wetlands Policy. These are also relevant.
- We were living in a fairly quiet area, now this will completely change our lifestyle. Will want to see what the final plan and concept may be and what is actually written down.

Along with feedback received from the Open House, Scheffer Andrew also received email inquiries from two individuals that were requesting information. One individual finds that the project is very “ambitious.” The other individual noted that on a preliminary review, it seems that Richard Estates is a high density proposed project.

A second public consultation was held on July 3, 2014. This Open House was also advertised in the Lac La Biche Post for two consecutive weeks prior to the consultation. A total of 9 attendees signed in and one questionnaire was submitted. The following is a summary of the response.

	Agree	Neither	Disagree	Comment
The Development Concept Shows an appropriate future land use scenario	1			
The lot design is logical and appropriate given the irregular shape of the site	1			
The Plan recognizes, respects and compliments the existing character of the community at large		1		Create more traffic on local road.
The Plan recognizes the value of the natural environment	1			

Other comments that were provided include the following:

- As an adjacent owner we have concerns about stray pets (dogs).

Following the open house, an emailed response was also received noting the following thoughts for consideration:

- a) Density -As previously mentioned, this development seems very dense for the amount of land and close vicinity to the lake. This is of specific concern as it relates to the enhanced run off and increased nutrient loading (eg phosphorus and nitrates)that will occur as trees are cleared for homes and roads and as lawns are fertilized.
- b) Runoff- This run off will go to the marsh and eventually the lake. Enhanced nutrient run off as a result of increased development is a serious concern for water quality. It appears there is little information about the quality of the run off from this site, options to monitor and mitigate the nutrient levels and how this cumulatively will contribute to reduced water quality.
- c) Site assessment- Although the site assessments identify the current situation on the site, there is little information about what the impact of the development of this site will be once it is built(e.g. loss of wildlife corridors/nesting sites, increased erosion) or potential mitigation measures to reduce these impacts.
- d) Construction Plans-There is also little information on how construction will be done to reduce impacts (e.g. avoiding construction during nesting season etc.) e. Green Community-Finally, I suggest that this proposal could be a leader for future development in this area and be marketed as a unique "green community" for which there is a growing demand if there was an enhanced focus on addressing environmental considerations.

The applicant has reviewed the feedback received, and discussed these comments with the Administration. Where possible, every effort will be made to address these concerns, and provision made in the engineering design of the subdivision to minimize the impact of the proposed development.

8 IMPLEMENTATION AND STAGING

Implementation of the plan will depend on several factors. The most significant of these being the municipal approvals required at different stages of the planning process, and the development aspirations of the property owners. The rate of development in the plan area will be influenced by many factors, particularly the local real estate market, and the status of the economy.

It is expected that the area will be developed over an extended period of time in three stages in a north to south sequence. The new stages will be introduced in response to market demand in the area. It is expected that it could take up to 10 years to build out the plan area.

In order to accommodate the proposed development sequence, it is anticipated that a subdivision application will be submitted for each stage of the development in order to efficiently manage the development of the lands. Though the development is anticipated to be completed in three stages, the actual size of the development stages may differ, and can be adjusted in order to reflect local market conditions. The conceptual development sequence is shown in Figure 10.

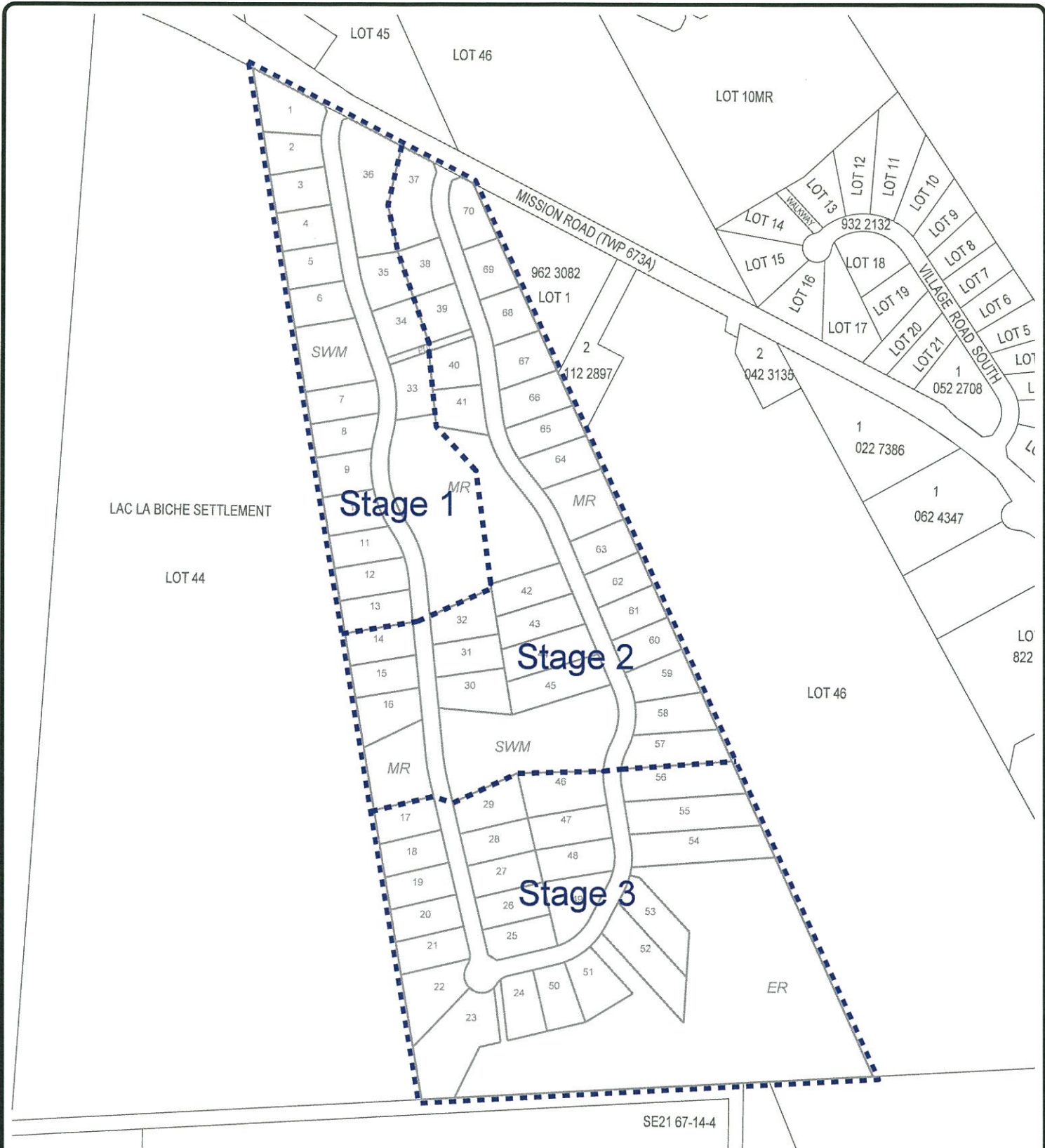


FIGURE 10
STAGING
 RICHARD ESTATES
 AREA STRUCTURE PLAN

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