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APPENDICES

Appendix A – Biophysical / Ecological Reporting

- Riparian Setback Matrix Model Letter and Field Sheet (Urban Systems Ltd.)
- Biophysical Environmental Assessment (June 9, 2016, EnviroMAK Inc.)
- Wetland Impact Assessment and Mitigation Proposal Summary (December 13, 2016, EnviroMAK Inc.)
- Environmental Protection Plan (October 31, 2017, EnviroMAK Inc.)

Appendix B – Geotechnical and Hydrogeological Conditions – compiled (February 21, 2017, Thurber Engineering Ltd.)

Appendix C – Stormwater Management Plan (October 2017, Urban Systems Ltd.)

Appendix D – Transportation

- Traffic Impact Assessment (February 2017, Urban Systems Ltd.)
- Transportation Engineer Letter re: Highway Improvements

Appendix E – Consultation and Engagement

- Community Consultation Plan (May 19, 2016, Urban Systems Ltd.)
- Community Engagement Summary (August 23, 2016, Urban Systems Ltd.)

Appendix F – Phase I Environmental Site Assessment Update (December 21, 2015, Trace Associates Inc.)

Appendix G – Historic Resources Overview (May 16, 2016, Circle CRM Group Inc.)

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1.0 EXECUTIVE SUMMARY

This Outline Plan supports the submission of a Land Use re-designation for a portion of the lands legally described as NW and NE 9-52-2 W5M, in Parkland County.

As per County requirements, this Plan, along with the supporting documentation and technical studies, has been prepared in accordance with overarching policy and regulatory framework, demonstrating the compatibility of the proposed development within the County and the region.

The overall structure of this document outlines the plan's purpose and scope, description of the area, local and regional planning context,

development considerations and concept, and implementation strategy.

While this submission has been prepared to specifically support the redistricting of the lands identified in *Figure 2-3 – Site Context*, the Plan and supporting information provide a holistic perspective of the entire West Point Estates development. There are references to the various technical studies throughout the Plan, which have been completed for the entire West Point Estates development area, recognizing that ecological function and physical infrastructure considerations are not limited to the boundaries of the Outline Plan.

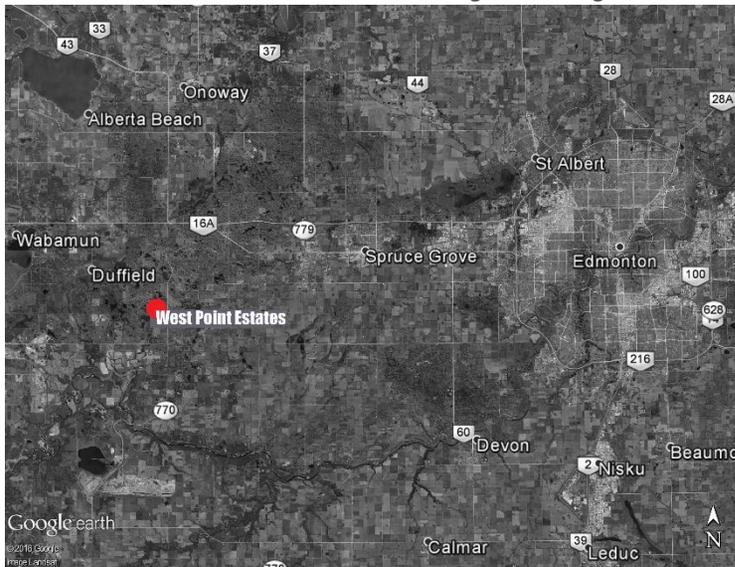
2.0 INTRODUCTION

2.1 Plan Purpose

This Outline Plan has been prepared in accordance with the direction of the Parkland County Municipal Development Plan (MDP) and the Jackfish Lake Area Structure Plan (MDP). The Outline Plan is a non-statutory document intended to describe Highland Property Development’s rationale for proposing a new residential subdivision.

The objective of the Plan is to provide a framework for the development of a small residential area that is compatible and complementary with existing and proposed development located on Jackfish Lake. Highland Property Development intends to apply the policies and design of this Plan to guide its first phase of development and the required land use re-designation, subdivision, and development permit applications.

Figure 2-1: Regional Context



Parkland County continues to experience development pressures, primarily due to its location relative to its proximity to the provincial capital of Edmonton, popular recreation destinations, including local lakes, parks, and the Rocky Mountains, and the variety of business opportunities available in the region (see *Figure 2-1 – Regional Context and Figure 2-2 – Local Context*).

Figure 2-2: Local Context

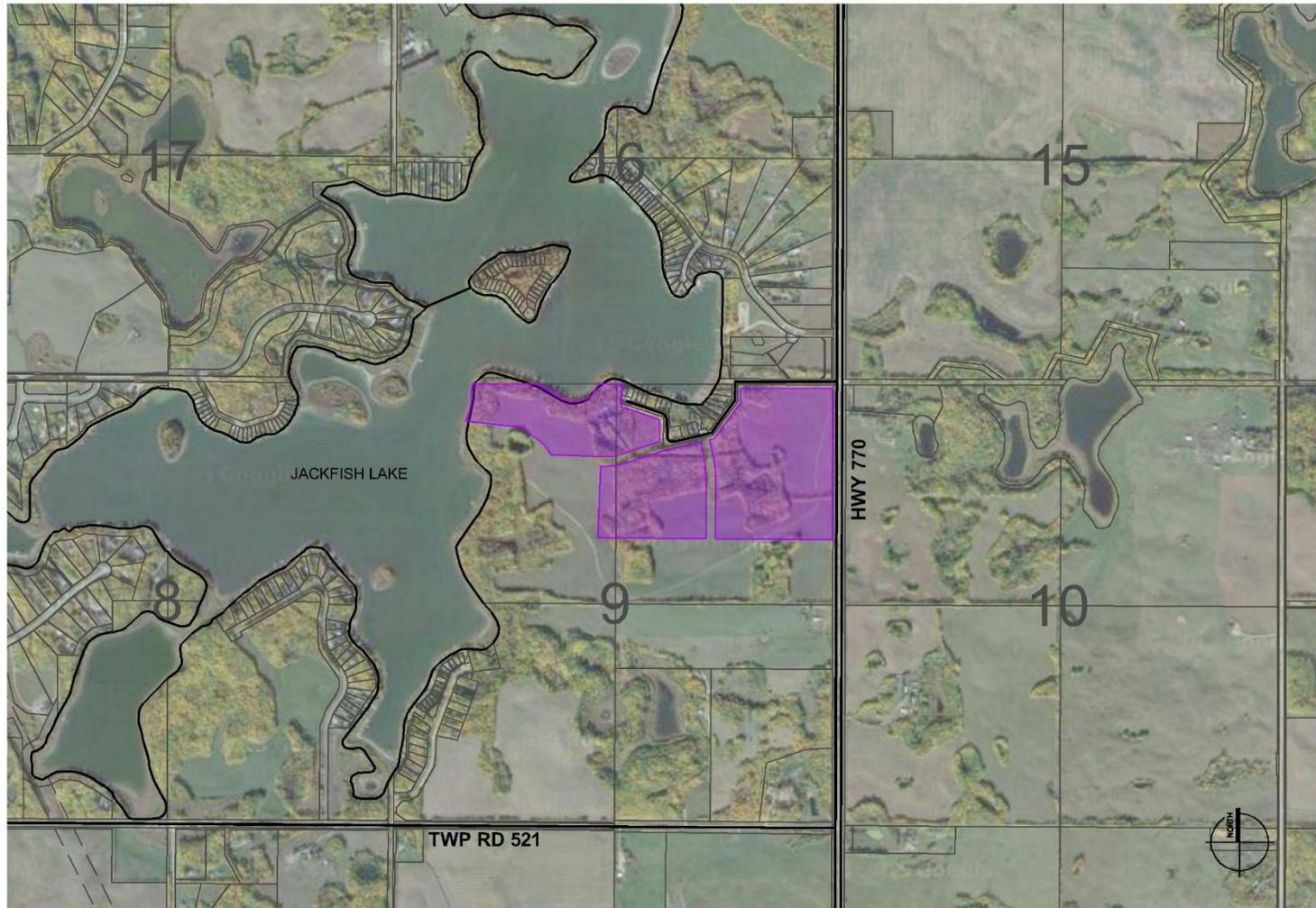


2.2 Description of Plan Area and Location

2.2.1 SUBJECT LANDS

As shown in *Figure 2-3 – Site Context*, the subject lands are located within the northern half of the section legally described as 9-52-2 W5M in Parkland County. The Outline Plan area encompasses 98.5 ha (241.0 ac), the proposed redistricting encompasses 48.5 ha (approximately 121 acres) along the southeastern shore of Jackfish Lake, west of Highway 770, and approximately 15 km west of the Town of Stony Plain.

Figure 2-3: Site Context



Legend

Proposed Redistricting Area 

Site Context

West Point Estates Phase 1 Outline Plan

0 100 1:20,000 500m

2.3

The site contains undeveloped agricultural lands with a mix of vegetation and a significant shoreline component. The site is relatively flat, sloping gently west and north toward Jackfish Lake, which abuts the north and western edges of the property.

2.3 Scope of Plan

2.3.1 BACKGROUND

The subject lands have most recently been used for cultivation and passive leisure by local residents. In June 2007, Highland Development Properties received approval for the West Point Estates Outline Plan and rezoning that addressed the lands directly to the south of the site (*as shown in Figure 5-3 – Approved Plan Area*).

Highland Development Properties has since secured the current subject lands and have initiated the process to create the West Point Estates North Outline Plan that will guide subsequent development and complete and complement previous efforts from the West Point Estates Outline Plan (June 2007). In order to maintain consistency between these two Plans, efforts were made to maintain the existing West Point Estates Outline Plan as is, but in order to ensure proper circulation and stormwater management some minor changes to the existing plan will be required.

2.3.2 PLAN ORGANIZATION

The West Point Estates North Outline Plan is organized as per the required Table of Contents outlined in the Terms of Reference.

Throughout the Plan, there are references to both the previously approved Outline Plan area, as well as the area of the current rezoning consideration (subject lands). This is to ensure that from a conceptual point of view we are working as closely as possible with the existing

Plan, while recognizing there is work within this application that pertains only to the new area.

3.0 POLICY FRAMEWORK AND CONFORMANCE

The subject lands are governed through a variety of high level provincial, regional, and county planning documents that establish a broad-based policy framework, bylaws and reports that help to direct development in the region.

3.1 Municipal Government Act

The Municipal Government Act (MGA) allows for Municipalities to request additional information and studies when considering amendments to the Land Use Bylaw, including such measures as density and phasing of a project. They are also permitted to require the proponent to dedicate up to ten (10) percent of developable land as Municipal Reserve (MR), and any undevelopable areas considered as environmentally sensitive as Environmental Reserve (ER). As per the Act and correspondence with Parkland, the proponent has provided all information that was requested to support this Outline Plan application.

3.2 Edmonton Metropolitan Region Growth Plan (EMRGP)

The EMRGP speaks to several guiding principles with regards to housing, including respecting the unique needs of municipalities to create choice and diversity of housing options to remain competitive and ensuring plans, policies and programs are responsive to needs and market conditions. It recommends Municipal Governments develop and implement flexible land use policies to enable a wide range of housing affordability and choice and support sustainable communities.

From a land use perspective, the plan also responds to the guidance of the Alberta Land Use Framework (LUF).

The purpose of the LUF is to manage growth and to sustain the provincial economy, while balancing Alberta's social and environmental goals. The LUF sets out an approach for land use management and decision-making that address provincial growth pressures. The LUF was finalized in December 2008 and includes the following strategies to improve land use decision making in Alberta:

- Develop seven regional land-use plans based on seven new land-use regions
- Create a Land-use Secretariat and establish a Regional Advisory Council for each region
- Cumulative effects management will be used at the regional level to manage the impacts of development on land, water and air
- Develop a strategy for conservation and stewardship on private and public lands
- Promotes efficient use of land to reduce the footprint of human activities on Alberta's landscape
- Establish an information, monitoring and knowledge system to contribute to continuous improvement of land-use planning and decision-making
- Inclusion of aboriginal people in land-use planning

Parkland County is included in the North Saskatchewan Regional Plan (NSRP). The NSRP has completed the Phase 1 consultation but the Regional Plan has not been initiated. It is anticipated that this Outline Plan will be adopted prior to the completion of the NSRP, but it has incorporated the intent of the Land Use Framework and the overarching policy of the Alberta Land Stewardship Act.

3.3 Parkland County Municipal Development Plan

The Parkland County MDP was adopted in 2007. As part of the overall growth management and sustainability strategy of the MDP, the County states that it will strive to be “A sustainable community that provides an enhanced quality of life by balancing conservation of its natural environment with economic prosperity and lifestyle choices” (pg. 1).

The West Point Estates North Outline Plan works within the County’s approach to managing growth by working with them to protect environmentally significant areas and providing large open spaces within the development, which are accessible to residents. It also provides traditional country residential living, which the county recognizes some residents will desire.

This Outline Plan helps the County work towards the following guiding principles:

Support Environmental Sustainability – the plan works towards protecting large intact areas of natural growth, treating stormwater to ensure a high-quality discharge into the lake, and restricts areas from development.

Respect Community Character – the plan helps to ensure lake front development is on larger lots with buffers to protect not only the riparian area, but also the character of the shoreline for its neighbours and recreational lake users by ensuring an adequate buffer.

The MDP supports a variety of housing types, understanding there are diverse needs and aspirations among their residents. This plan helps meet the following residential objectives:

Promote the development of a range of housing types and locations – it includes a complementary set of housing options relative to what is available in the area, while remaining environmentally sensitive.

Mitigate conflicts with agricultural uses - currently the site is used for agricultural uses, which are disrupted by trespassers utilizing the land for recreational vehicles such as quads or skidoos.

Ensure that country residential development conforms to environmental and public health guidelines and regulations – the development in the plan area will follow all regulations in place.

Encourage the development of attractive residential environments – the Plan protects large swaths of the natural environment, in which the houses will be sited.

Retain the character, amenities, and quality of life aspects of existing country residential subdivision while encouraging more diversity – the plan does this by expanding the riparian protection area into an Environmental Reserve Easement, which helps to ensure lake front development is on larger lots with adequate buffers to protect not only the riparian area, but also the character of the shoreline for its neighbours and recreational lake users.

The MDP section on Environmental Management (Section 6) acknowledges the importance of the high-quality land resources that the County and its residents enjoy. As such they commissioned the Environmental Conservation Master Plan which is reviewed in Section 3.5 of this Outline Plan. The goals identified are for council to support communities that protect natural systems and maintaining the environmental integrity of the County’s water bodies. As has been demonstrated by the proponent, the West Point Estates North Outline Plan meets these goals and supports the following council objectives:

- Reduce the impact of development on the natural environment to the extent possible
- Apply Environmental Reserve and other provisions to protect environmentally significant areas
- Protect water quality and quantity through effective subdivision design
- Perform a Biophysical Assessment as part of the development process and
- Promote public awareness regarding the impact of development on the environment

Those policies, which apply at the subdivision phase, shall be adhered to by the proponent (i.e. Environmental Reserve Dedication, registration of an Environmental Reserve Easement), but have been indicated in an approximate form for the purposes of this Plan.

Regarding MR dedication, this plan dedicates land that contains natural features outside the definition of ER, in an amount exceeding the 10% the County is entitled to take as per the Municipal Government Act (MGA). These MR lands are linked to the ER lands, providing enhanced access to the lakefront and additional protection of natural features. They have been located to provide enhanced recreational opportunities to residents.

3.4 Jackfish Lake Area Structure Plan (ASP)

The subject lands are included in the Jackfish Lake ASP, which was adopted by the County in 1997. The ASP focuses primarily on the environmental integrity of Jackfish Lake, recognizing the impact that intense recreational uses have had on water quality.

Section 4.7 of the ASP, Additional Lake Development, suggests that *“...properly designed and managed low density residential*

development can be developed with a negligible impact on the lake water quality”. Recognizing the sensitivities around new development in the plan area, this Outline Plan puts forth a rationale for low density residential development, with allocation of reserves and open spaces that provide a riparian setback from the lake and preserve natural features, and supported by an Environmental Protection Plan (EPP) to minimize the overall impact on the lake and improve water quality discharged.

The plan also indicates several environmentally sensitive areas of the lake, none of which are located on the subject lands, (as shown in Figure 3-1 – ASP Environmentally Sensitive Areas) and indicates that, from a land use perspective, the lake is not “at or over carrying capacity” (State of the Watershed, pg. 13).

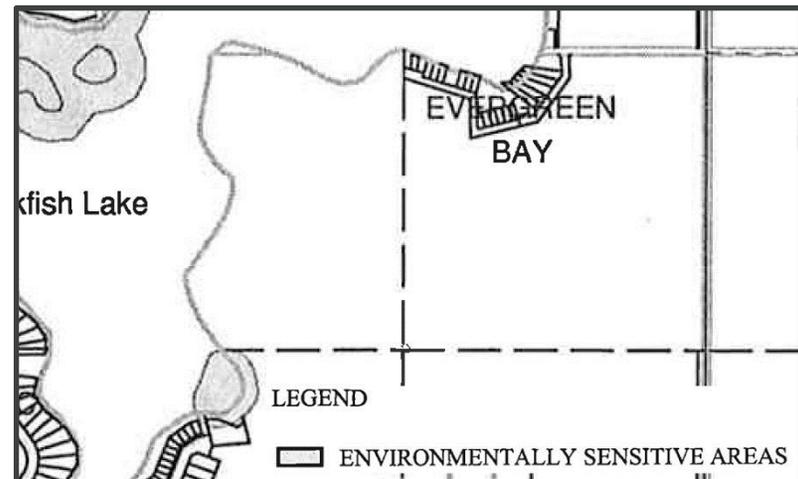


Figure 3-1: ASP Environmentally Sensitive Areas

3.5 Environmental Conservation Master Plan (ECMP)

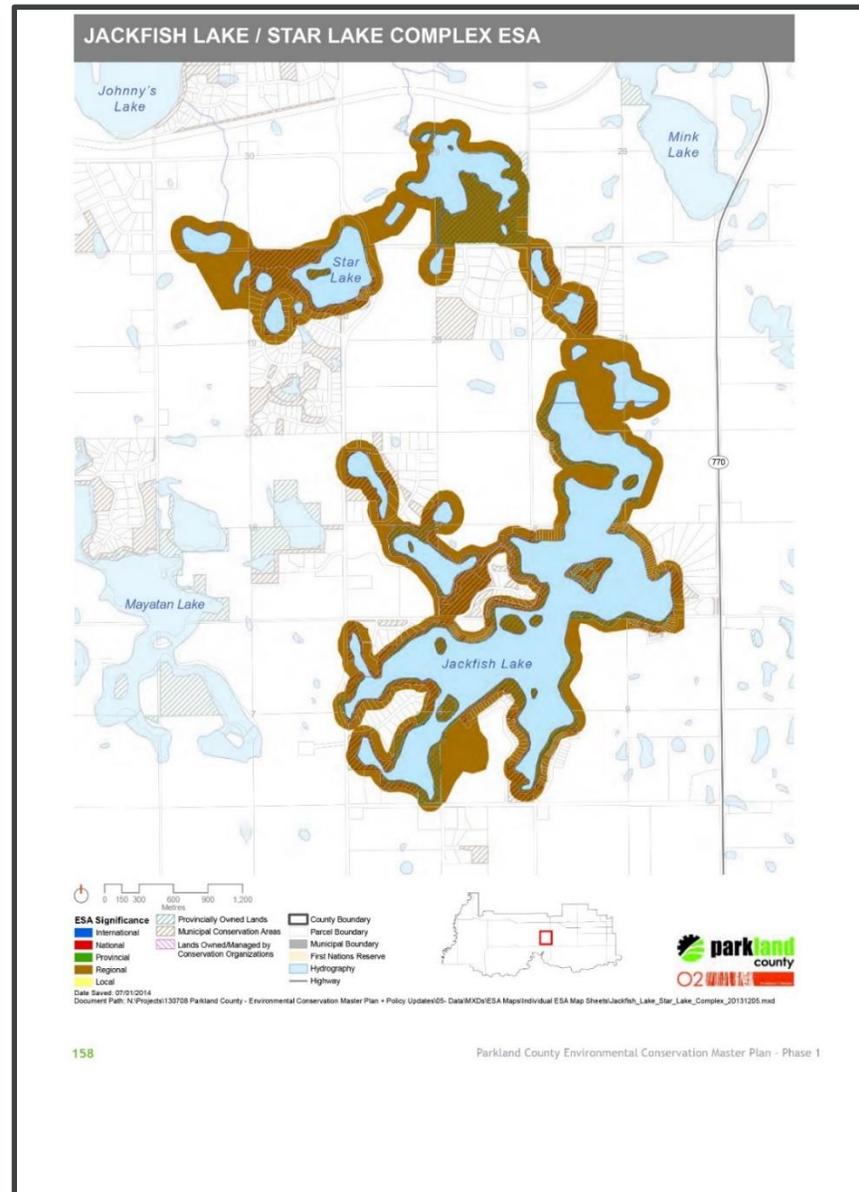
Jackfish Lake/Star Lake Complex Environmentally Significant Areas (ESA)

The Jackfish Lake/Star Lake Complex has been identified in the ECMP as an Ecologically Significant Area at the regional level (as shown in Figure 3-2 – Ecologically Significant Areas).

This is one of five (5) classes of significance on a scale of Local, Regional, Provincial, National, and International. For these areas a 100 m precautionary planning buffer around the lake is illustrated “to promote careful planning and management of fragile riparian areas” (pg. 157). The plan goes on to clarify that “this buffer is not to be interpreted as a development restriction zone” (ibid.). The water quality of the lake complex is noted as being “uniquely high”, but the Plan recognises that the complex is susceptible to water quality degradation due to its unique shape and high ground water sensitivity. The Plan suggests putting effort toward preserving remaining shoreline habitat and controlling agricultural runoff through planning strategies that:

- Include a detailed biophysical inventory and environmental assessment (included in Appendices A and F to this Outline Plan) as part of development applications
- Limit Off Highway Vehicle (OHV) use in the area
- Continue to enforce the limits on the boat launch facility as per the Jackfish Lake ASP
- Encourage use of Alternative Land Use Services (ALUS) to enhance and protect creeks and water bodies
- Restrict fishing activities

Figure 3-2: Ecologically Significant Areas



- Create a Low Impact Development stormwater management initiative at the County-owned parking lot
- Limit future subdivision development adjacent to the lakes to minimize impacts to surface and groundwater resources (using *Country Residential – Restricted* Land Use Designation)
- Prohibit residential fertilizer use in the ESA boundary area.
- Increase education and enforcement (being addressed through a proposed Environmental Reserve Easement and the Environmental Protection Plan)
- Reduce pollution from sewage through enforcement
- Prohibit clearing and sand dumping of riparian and shoreline areas (being addressed through a proposed Environmental Reserve Easement and the Environmental Protection Plan)
- Require additional environmental assessments for proposed development within the precautionary 100 m area
- Continue to enforce all policies in the Jackfish Lake ASP
- Implement Alberta Environment and Sustainable Resource Development guidelines for water and stormwater management to eliminate direct runoff into the lake
- Undertake completion of a State of the Watershed Report and Lake Management plan (see section 3.7 or review of findings of completed documentation)

In addition to the specific recommendations of the ECMP the development will follow all applicable Federal and Provincial legislation.

3.6 Parkland County Land Use Bylaw

The subject lands are currently designated Agriculture Restricted (AGR) in the current Parkland County Land Use Bylaw (LUB). This Outline Plan is intended to support a rezoning of the site to Country

Residential – Restricted (CR-R) which supports the proposed land use concept described within.

The LUB defines the CR-R land use district around its intent “*To provide for lower density multi-parcel residential subdivision/development and a limited range of related uses in locations such as lakeshore areas where it is important to limit development and to ensure sustainable development that protects a natural asset or amenity*”.

The proposed development concept meets all the requirements for CR-R, including minimum lot sizes as can be seen in Section 5.

In accordance with Section 49 of the Parkland County LUB, this Outline Plan has been prepared to ensure that the density and pattern of development reflects the characteristics and capabilities of the land. This Outline Plan identifies the location of land to be subdivided, internal roads, contour information, natural areas, and bodies of water. geotechnical reporting has been completed (see Appendix B), providing information on soil permeability, water table, and potable water supply.

3.7 State of the Watershed (DRAFT)

As per the ECMP, a State of the Watershed analysis was completed in 2016 by the North Saskatchewan Watershed Alliance. This report consolidated environmental information available for Jackfish Lake, and, in its draft form, was used to help inform the design and understand the potential impacts of this development.

W A T E R S H E D

The report identifies the unique characteristics of the Jackfish Lake Watershed, which has relatively small gross drainage area and includes three (3) non-contributing areas (see *Figure 3-3 –*

Watershed (Sal Figliuzzi & Associates 2016)). The report also acknowledges that 2015 was an exceptionally dry year from the perspective of the area's typical climate.

Figure 3-3: Watershed

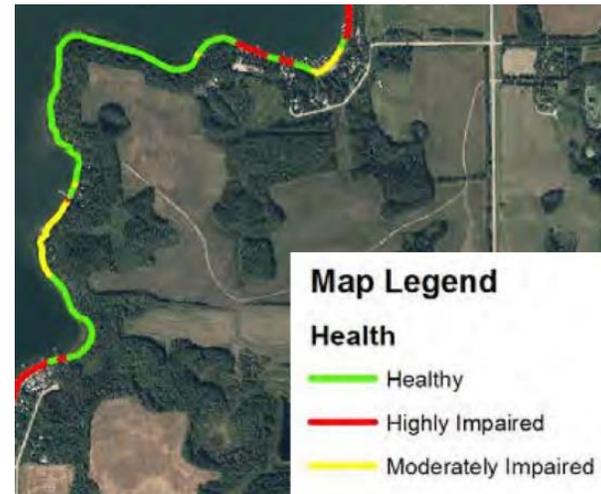


The lake is situated in a groundwater recharge zone which is part of why the risk of groundwater contamination was considered moderate to high. These characteristics, in combination with the falling groundwater levels and lack of acceptable bedrock aquifer sources are part of the reasoning for the inclusion of septic storage tanks, and cisterns rather than wells. The Country Residential - Restricted District, which is for new development that is sustainable and

maintains the natural amenities, helps to ensure the watershed's protection through thoughtful, low-density development.

An important and highly valuable asset of this site is its riparian health, which is considered to be in good condition along the area that is being considered for rezoning. Protecting this aspect of the site with a combination of Environmental Reserve and Environmental Reserve Easement to ensure the Riparian Management Area (RMA) remains in good health is paramount to this development. As can be evidenced by other low-density developments along the lake shore, low-density country residential development can be done in a way that preserves the health and vitality of the RMA (as shown in Figure 3-4 – Riparian Health).

Figure 3-4- Riparian Health



LAKE CHARACTERISTICS

Jackfish Lake itself has a limited flow through due to the small gross drainage area referenced above and, as such, it is slow to fill. In addition, the report cites that lakes within a range of 2-3 metres deep can suffer from occasional winter fish kills.

The water quality of the lake is impacted by phosphorus, which the report states is considered the most common limiting chemical factor for algal growth. The BATHTUB method, which has been used for calculating water and nutrient mass balances, found that it over-predicted observed total phosphorus in Jackfish Lake by approximately 40%. In addition, agricultural areas were shown to contribute significantly more phosphorus to Jackfish Lake than residential or cottage land uses (as shown Table 3-1 – *Theoretical total phosphorus loading to Jackfish Lake in kilograms per year, from the State of the Watershed*). As such, replacing the agricultural use with residential/cottage development would reduce the phosphorus entering the lake.

Finally, recreational use of the lake, specifically the use of power boats, have been shown to have a variety of impacts on water quality including sediment resuspension, and shoreline erosion.

Due to these concerns, regulatory requirements, and the quality of water entering the lake being of such great importance, further studies have been conducted to ensure a high quality sustainable development which will improve the quality of water entering Jackfish Lake. The key finding and conclusions of these studies are referenced in the following Section of the Outline Plan and the complete studies have been included as Appendices to the Outline Plan.

Table 3-1: Theoretical Total Phosphorus

SOURCE	MITCHELL 1988	BATHTUB GDA 2016	BATHTUB EDA 2016
Watershed			
- forested/bush	37		
- agriculture/cleared	157		
- residential/cottage	58		
- effective drainage area		159.4	159.4
- A1, A2, A3		140.8	
Sewage*	25	12.4	12.4
Precipitation/dust fall	55	66.6	66.6
Internal load		164.2	164.2
TOTAL	332	543.4	402.6

4.0 SITE CONTEXT AND DEVELOPMENT CONSIDERATIONS

4.1 Existing Description and Constraints

4.1.1 OWNERSHIP

While the land within the plan area is owned by Highland Property Development Ltd., adjoining land ownership details have been included (see *Figure 4-2 – Ownership Plan.*)

4.1.2 EXISTING DEVELOPMENT CONSTRAINTS

The existing development constraints (as shown in *Figure 4-3 – Development Constraints*) include:

- a previously approved Outline Plan with an existing Development Concept, which has been approved by council
- a high-water table, as identified in the Environmental Conservation Master Plan and described previously
- wetlands, as identified in the Biophysical Environmental Assessment (Appendix A)
- structural development setback lines as recommended by the Steep Slope Analysis (Appendix B)
- an existing access and roadway (Lutz Avenue) and an existing access from Highway 770 (which will be closed) as addressed in the Transportation Impact Assessment (Appendix D)
- existing buildings which do not constitute historical resources requiring preservation as confirmed through the Historical Resources Overview (Appendix G) or potential contamination risks as confirmed through a Phase I Environmental Site Assessment Update (Appendix F)

4.1.3 HISTORICAL RESOURCES

A Historical Resources Overview (HRO), was conducted for the site.

There are existing log cabins and accompanying buildings on site which have been documented to the satisfaction of Alberta Culture and Tourism as per the requirements for recording and reporting historic structures. These buildings are in poor repair and are currently being used as storage areas by current occupants of the modern style home on the same site, and are to be demolished.

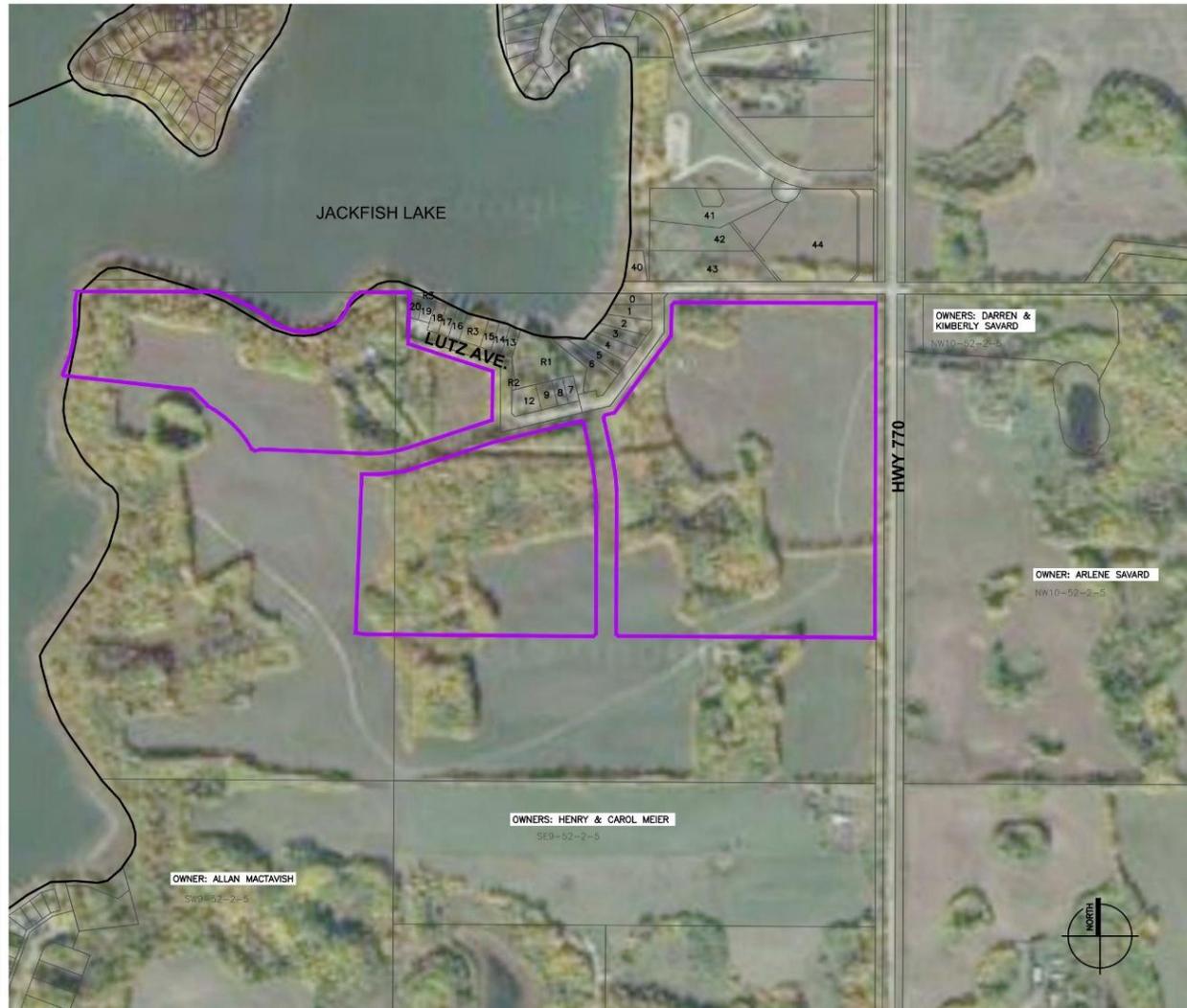
Based on the finding of the HRO Historical Resources Act approval has been granted by the Province for development of the subject lands with no further reporting required.



Figure 4-1 - Photos courtesy of Circle CRM Group Inc

Figure 4-2 – Ownership Plan

PROPERTY OWNERS	
LOT	OWNERS
0	JOHN & FREDA PATTERSON
1	MARIA AGERBOS
2	STEVEN ZELYCH
3	FRIEDA GRUNLING
4	SHELDON & CARMEN WANDLER
5	JAMES & ANNETTE MIRKA
6	EWALD & ILSE GRUNLING
7	TROY KING & KELLY LANGFORD-KING
8	JULIAN & KAREN YOUZWA
9	FRASER & ANASTASIA MACDONALD
12	WAYNE & BARBARA RIES
13	RONALD BRISEBOIS
14	IRENE, HUBERT & MICHAEL WALKER AND MICHELLE FROLAND
15	JEFFREY & CRYSTAL KOVACS
16	JOHN FALTONSON & JOANNE HARLAND
17	MARGARET & HAROLD GEISLINGER
18	GAVIN POST & TRISH VAUTOUR
19	RON & TRACY LUCAS
20	BRIAN BURTON
R1	COUNTY OF PARKLAND NO.31
R2	COUNTY OF PARKLAND NO.31
R3	COUNTY OF PARKLAND NO.31
40	COUNTY OF PARKLAND NO.31
41	CHIPRON A. INGRAHAM PROFESSIONAL CORP.
42	DAVID & TERESA PLANTE
43	DAVID & TERESA PLANTE
44	PAUL & FAYE GEIST



Legend

Proposed Redistricting Area

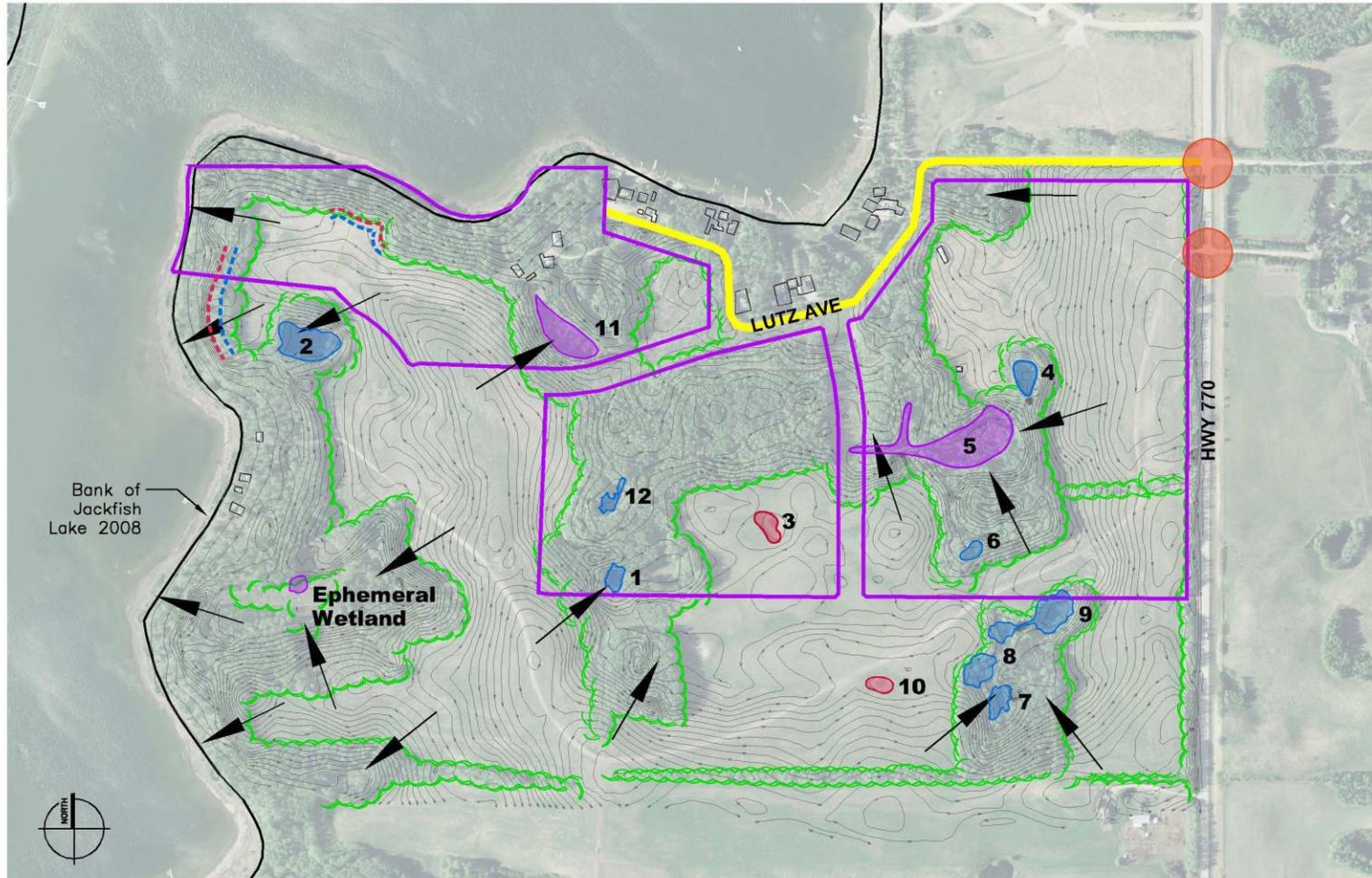
Ownership Plan

West Point Estates Phase 1 Outline Plan

0 50 1:10,000 250m

4.2

Figure 4-3 – Development Constraints



Legend

- | | | | |
|-----------------------------|---|---|---|
| Proposed Redistricting Area |  | Existing Road |  |
| Existing Wetland | | Existing Treeline |  |
| - to be retained |  | Existing Building/Structure |  |
| - to be altered |  | Delineated Top of Bank (Thurber 2017) |  |
| - to be removed |  | Structural Development Setback (Thurber 2017) |  |
| Existing Overland Flow |  | Existing Access Points |  |
| Existing Contour |  | | |

Development Constraints

West Point Estates Phase 1 Outline Plan

0 30 1:7500 180m

4.3

4.1.4 BIOPHYSICAL ENVIRONMENTAL ASSESSMENT

A Biophysical Environmental Assessment (BEA) was completed by EnviroMAK Inc. on June 9, 2016, for the entire subject area including those with a previously approved Outline Plan due to changes in Alberta Environment Wetland Policy. This assessment identified environmentally sensitive lands and conservation values that should be considered for protection and/or avoidance in the development strategy. This assessment included field surveys (on November 21 and 22, 2015 as well as on May 2 and 3, 2016), desktop and lab analysis and is considered a comprehensive, site specific, investigation.

The BEA identified that approximately half of the landscape was covered in range lands, likely used for agricultural purposes, with the bulk of the remaining land being occupied by mixed wood forest, ephemeral drainages, and wetlands.

Under the new Alberta Wetland Classification System (2015) a total of 12 wetlands were identified with a variety of types including marsh wetlands, deciduous wooded swamps, fens, and ephemeral wetlands and classifications varying from Class C to Class D (see *Figure 4-4 Wetlands*). The project was submitted to Water Boundaries to review land ownership for them to render a decision regarding the Crown's Claim to any body of water. As per communications with Water Boundaries, only the naturally occurring bed and shore of Jackfish Lake up to the water's edge is claimed by the crown, with no wetlands being claimed within the site.

The Outline Plan has been prepared in accordance with the recommendations of the BEA (Appendix A), providing for ER setback from the shoreline and retention/replacement of key wetland features through ER designation and creation of constructed wetlands. An Environmental Protection Plan has also been developed to guide

development and to educate and inform future residents related to ecological protection.

Figure 4-4 – Wetlands

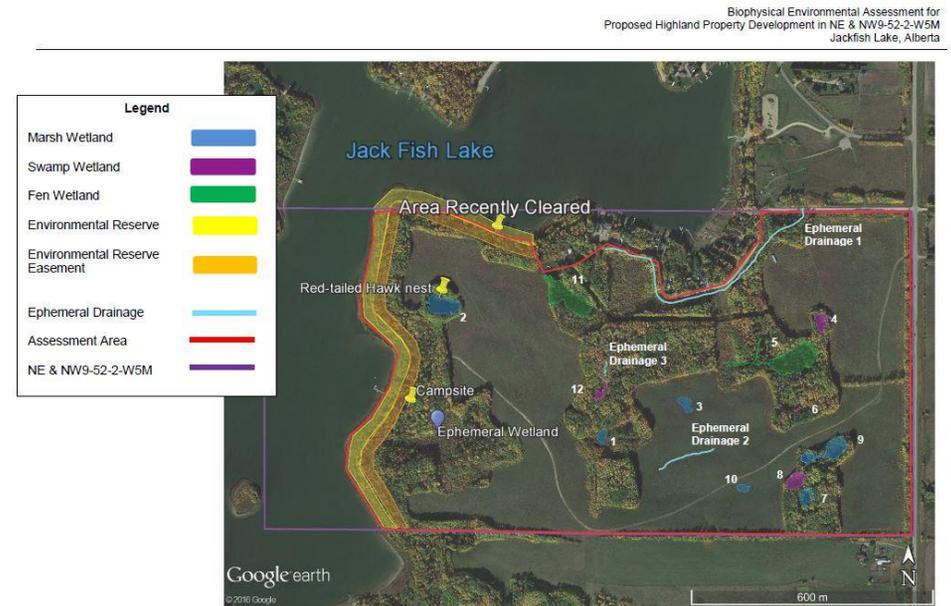


Figure 7.2. Environmental features within the proposed development activity footprint within NE & NW9-52-2-W5M on May 2 and 3, 2016 (image overlays diagrammatic – not to scale; Google Earth Pro 2016). Ephemeral wetlands/drainages denoted with light blue dashed lines, marsh wetlands with blue, swamp wetlands with purple, and fen wetlands with green. The approximate Environmental Reserve area is denoted in yellow and the approximate 30m Environmental Reserve Easement buffer is denoted in orange. Assessment area is outlined in red solid lines, with the quarter sections outlined in purple solid lines.

4.1.5 *EXISTING TRANSPORTATION NETWORK*

As shown in *Figure 4-5*, the existing transportation network includes Highway 770 which runs north-south to Highway 16 (Yellowhead Trail) to the north and to Highway 627 to the south. It is also comprised of Lutz Avenue and Township Road 522 which run west from Highway 770, providing access to existing cottages along the shore.

In addition, there is one access off of Highway 770 south of Township Road 522 which is opposing the driveway access to the lot directly east of Highway 770.

A geometric review of the existing condition of Township Road 522 and Lutz Avenue was completed to identify the offsite infrastructure upgrades required to meet current Parkland County standards. Improvements will be made to the roadway and right-of-way widths, horizontal and vertical geometry, intersection geometry, and pavement structure of Township Road 522 and a portion of Lutz Avenue to accommodate the increased traffic generated by the proposed development. These improvements are discussed in further detail in section 5.2.

4.1.6 *EXISTING INFRASTRUCTURE AND SERVICING*

There is no existing piped or communal water or sanitary servicing. Existing lots use a combination of septic fields and holding tanks, along with wells, cisterns and water drawn from Jackfish Lake.

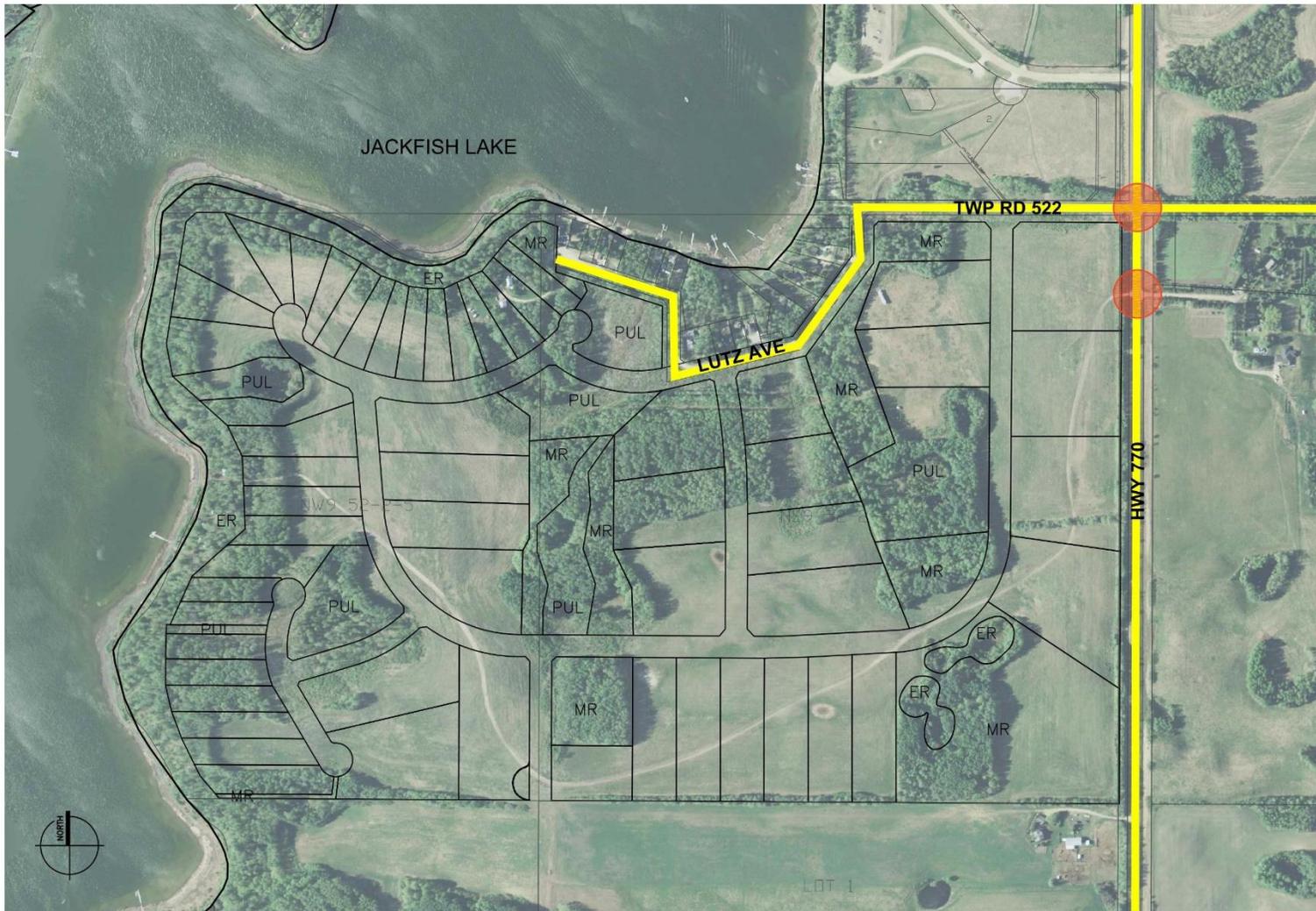
4.1.7 *LEGAL INSTRUMENTS ON TITLE*

There are 3 Legal Instruments on title for the subject lands including:

- 883ow – a caveat re: easement for Fortis Alberta Inc
- 812 133 406 – a non-specified utility Right of Way for West Parkland Gas Co-Op Ltd., and
- 162 052 666 – Mortgage through Alberta Treasury Branches

Copies of land titles and legal instruments are included as Appendix H.

Figure 4-5 – Existing Transportation Network



Legend

Existing Road



Existing Access



Existing Transportation Network

West Point Estates Phase 1 Outline Plan

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4.5

4.2 Summary of Technical Studies

4.2.1 GEOTECHNICAL INVESTIGATIONS

STABILITY & PERCOLATION

The subject land was evaluated by Thurber Engineering over a period extending from 2006-2016. The soil conditions consist primarily of silty clay to silty clay loam with topsoil varying between 50 to 60 mm. The shoreline to the north has the steepest slopes on the site which are upwards of approximately 20% grades in isolated locations. The report did not indicate any limitations to country residential development in the Outline Plan area other than the Top of Bank and Structural Development Setbacks shown in *Figure 4-3, Development Constraints*.

In addition, in-situ percolation tests as well as soil profiles were collected and evaluated to determine percolation rates. While the results of the testing suggest that the use of private sewage disposal in the form of treatment fields or mounds would be generally suitable within the proposed subdivision, the development will use holding tanks for private sewage to ensure prevention of potential nutrient seepage into the lake.

GROUNDWATER

The subject land was evaluated by Thurber Engineering in their Groundwater Supply Evaluation (April 22, 2016). The report found that the site was well drained, and had soils that were “*very fine sand loam to silt loam, to silty clay loam*”, which is not uncommon in the area.

For groundwater quality, because the Total Dissolved Solids (TDS) have average concentrations that do not meet Canadian Drinking Water Quality (CDWQ) guidelines, it is not considered potable. The study also found that deeper wells would not mitigate water quality

issues. Based on the findings in this report development will be provided with potable water using cisterns (see section 5.3 – Infrastructure and Servicing). All geotechnical reports have been included as Appendix A.

4.2.2 TRANSPORTATION IMPACT ASSESSMENT (TIA)

The TIA for the West Point Estates development explored the impact of the proposed development on the existing intersection of Township Road 522 with Highway 770. The TIA examined the effect of the traffic under background conditions as well as with the additional development for the 2017, 2022, and 2037 horizons. The TIA includes the traffic generated by the Weekend Estates development as background traffic, as the access to Highway 770 is currently being realigned to utilize the existing Township Road 522 intersection. The Synchro analysis indicated that the projected regional traffic growth as well as the proposed development will have very little impact on the capacity of the Highway 770 / Township Road 522 intersection, with all turning movements operating at a Level of Service (LOS) of B or higher for all scenarios and time frames studied.

An intersection treatment type analysis was conducted for the intersection for each design horizon and development condition, using Alberta Transportation’s Highway Geometric Design Guide methodology. A right-turn and left-turn warrant analysis was completed for each scenario.

- In 2017, a Type IIIb intersection is warranted under background (pre-development) conditions. This is due to the large volume of existing through traffic on Highway 770. No additional improvements are warranted as a result of the first phase of development.

- In 2022, a Type IIIb intersection is suitable to accommodate development traffic. This assumes full build-out of the proposed 57 lot development by 2022.
- In 2037, a Type IVb intersection is warranted under developed (combined) conditions due to the growth of background traffic volumes on Highway 770. A Type IIIb intersection is warranted by the 2037 horizon when evaluated without the effect of the development traffic.

Future right-of-way requirements for the required intersection upgrades should be considered when planning the development. Standards of the applicable road authority (Alberta Transportation or Parkland County) will apply when designing intersection treatment upgrades, improving existing roadways, or designing new roadways to service the proposed development. If the phasing of the development or the pace of the development differs substantially from the assumptions made in this report, these scenarios should be evaluated to determine what threshold of development will trigger upgrades to the Highway 770 / Township Road 522 intersection. Transportation related technical information is included as Appendix D to this Outline Plan.

4.2.3 ENVIRONMENTAL PROTECTION PLAN (EPP)

Building upon recommendations in the Stepping Back from the Water document from Alberta Environment and Parks, as well as the application of the Riparian Setback Matrix Model to the subject lands, an EPP was prepared (See Appendix A). Key elements of the EPP are related to the maintenance and management of ER, MR and PUL lands, guidance for site development and considerations within private lands. The recommendations of the EPP will be applied with development in the area and the full EPP is included in Appendix A to the Outline Plan.

4.2.4 ADDITIONAL SITE CONSIDERATIONS

At the time of development, it is recommended that FireSmart principles are considered such as:

- Landscaping provides a 10 m space immediately surrounding homes that is fuel free
- Thinning and pruning trees to reduce wild fire risk in the area between 10-30 m from homes
- Fire resistant building materials and design (such as driveway width and eave design) will also be preferred and homeowners will also be encouraged to participate in regular meetings

A temporary secondary emergency access will be constructed as a gravel roadway (see *Figure 5-4 – Transportation Concept*), in accordance with Parkland County Engineering Design Standards. Two options for providing emergency access have been identified. One option follows the Phase 2 development roadway alignment eastward to a proposed access to Highway 770, with bollards installed to ensure access for emergency use only. Alternatively, a secondary connection to Lutz Avenue, following internal Phase 2 development roadway alignments would be provided should Alberta Transportation not support an emergency only connection to Highway 770. Final emergency access will be determined in consultation with Alberta Transportation and Parkland County prior to development of Phase 1.

4.2.5 STAKEHOLDER INPUT

JACKFISH LAKE MANAGEMENT ASSOCIATION

In advance of the public open houses, both a pre-meeting with the Jackfish Lake Management Association (JLMA) President, and a further meeting with their board were held.

In these meetings background information along with the concept options were discussed. The board offered insight into the likely concerns of the broader community. This information was used to inform the concepts and the ultimate design of the development.

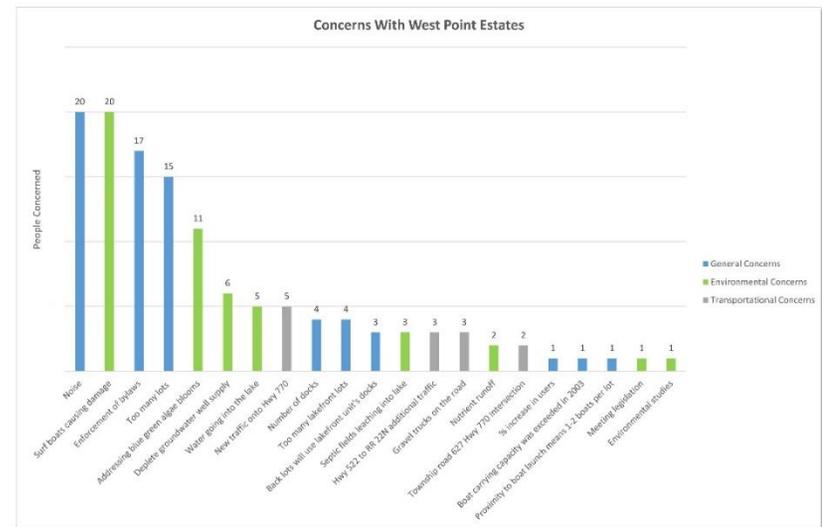
BROADER COMMUNITY

The first open house consisted of information, such as how stormwater would be managed, how transportation would be designed, along with two (2) options that were being considered for the development concept. Participants were encouraged to ask questions and provide feedback and suggestions on their preferred option and things they would like to have changed or added to the design. When the first open house was completed, those who requested further information were forwarded copies of the presentation materials for their reference. In addition, there were some phone calls that were received in which community members were able to ask questions and receive clarification.

The second open house was conducted in much the same way, with the addition of a summary of those concerns that were heard and compiled from the previous event. The changes from the first open house included a refined concept based on feedback from the JLMA meeting and the first open house, a summary of comments and concerns brought forward at the first open house, with measures currently being taken to mitigate them, as well as those being

contemplated for later stages of the development process. Attendees were given 5 coloured stickers to indicate which of the compiled concerns they felt were most important for General, Environmental, and Transportation Concerns, (as shown in Figure 4-6 – Development Concerns).

Figure 4-6 - Development Concerns



This allowed our team to better understand which concerns were priorities for the community in terms of the development. The primary concern as ranked by the participants was **the damage caused to the lake shore and bottom by additional large surf boats**, however additional concerns making up the five highest ranked priorities were:

- Concerns for lake health
- Trouble with enforcement
- The inclusion of an on-site sewage treatment facility

- Considering extending the deceleration lane to include the boat launch access

In addition to the dots, we invited participants to provide anonymous comments recorded in a survey about the event.

Each of the public concerns were identified individually and broken into Environmental, Transportation, and General Development Concerns. In the following section, each concern raised is identified and solutions explored.

Environmental Concerns

Water quality entering the lake:

Water quality remains top-of-mind for residents of Jackfish Lake. There have been some challenges over the last year which are the result of additional nutrient loading and deoxygenation of the water in the lake. West Point Estates is ensuring all water being released into Jackfish Lake will be equal or better than the quality of the receiving waterbody. Any release of waters will meet the Environmental Quality Guidelines for Alberta Surface Waters. This is achieved through a combination of preservation of a 60 m riparian development setback (as a combination of Environmental Reserve dedication and registration of Environmental Reserve Easements on private property), and a naturalized stormwater management system (which includes both existing wetlands which are being preserved, unaltered, as naturalized stormwater management facilities as well as existing wetlands altered to provide constructed wetland stormwater management facilities for ultimate water treatment).

Well water depletion:

Residents who are currently using an on site well for their potable water want to ensure that the additional development does not place

any risk to either contamination or depletion. Early studies have indicated that wells may not be the best solution for water needs in West Point Estates. As such, this Outline Plan sets forward the intent to make use of cisterns to ensure no additional strains on the existing water table.

Environmental legislative approvals:

There are many laws and regulations in place that apply to development in general, and specifically on a lake. The Water Act, associated Codes of Practice and Guidelines as well as the Fisheries Act are expected to be adhered to by all users, stakeholders, and developers. Environmental assessment and mitigation planning are intended to ensure that the development meets the regulatory requirements including but not limited to stormwater management planning, groundwater security, and wetland mitigation.

Surf boats causing damage:

Currently on Jackfish Lake there are boats causing disturbances to the lake bottom and shore, specifically there is a recognition of the increasing damage caused by surf boats and wake board boats which create significant wakes and churn the sediments and nutrients thereby releasing them back into the water. While there are no official regulations within the area, there are existing Boating Guidelines that are intended to help address this disturbance, which all users of the lake should comply with. These guidelines will be communicated to new residents upon purchase of the lots.

Preventing nutrient run off via pathways:

Poorly designed pathways can serve as an unintended watercourse during times of heavy rain which can lead to untreated water entering the lake. West Point Developments will be extending the depth of the restriction on the amount of clearing permitted in the Environmental

Reserve to also include an Environmental Reserve Easement which mirrors the limitations. This will include limiting the size of pathway that residents can clear through the Environmental Reserve and the Environmental Reserve Easement. The development will also include design and construction recommendations for proper pathway development to limit pathway erosion and reduce nutrient transmission from landscaping into the lake.

Septic fields leaching into the lake:

With challenges of nutrient loading in the lake, residents are indicating their concern at the possibility of new septic fields or mounds being created and leaching into the lake. In order to help prevent additional nutrient loading on the lake, West Point Estates will not be using any septic fields or mounds within the subdivision. All sewage will be contained on-site in holding tanks and hauled off-site appropriately.

Riparian buffers less than 2 km are ineffective:

While there are some residents who feel that the setbacks from the water are ineffective unless they are quite large, there is extensive science and literature which would suggest that setback distances/buffers are site specific and need to consider various site specific factors such as slope, vegetation, soils and local hydrology. A multitude of documented best management practices, standards and real life examples of setbacks resulting in development or activity that meets regulatory expectations exist. The Stepping Back from the Water Guidelines, which was produced by the provincial government, as well as coefficients from Riparian Setback Matrix Models (RSMM) from across Alberta, including an RSMM developed for Parkland, were all used to ensure sufficient setbacks for this subdivision to protect the ground water as well as the lake itself.

Existing blue-green algae blooms:

Recently there have been instances of blue-green algae on the lake. While this challenge is greater than one subdivision development on the lake, and multiple stakeholders, users, regulators and the Jackfish Lake Management Association will need to continue to play a role in addressing this issue. The development intends to meet the relevant regulations, standards, laws, and guidelines pertaining to lake pollution, inputs, erosion and sediment control. Tools such as the 60 m riparian setback, holding tanks for on-site sewage, and naturalized and constructed wetland stormwater management facilities all contribute to an increase in the quality of water and a reduction in the nutrients leaving the proposed subdivision as compared to the existing agricultural use. This will positively impact the lake water quality.

Studies completed by the developer and the County:

Residents want to be certain that appropriate studies have been completed to ensure the responsible development of this subdivision. The developer has hired qualified professionals to conduct technical which have been reference in the development of this Outline Plan and have also been included as Appendices.

In addition, the County has worked with qualified professionals and completed both their Conservation Master Plan as well as a Jackfish Lake Situational Analysis. The results of these studies have helped to shape the Development Concept (see *Figure 5-1 – Land Use Concept*).

Traffic Concerns

Traffic on Township Road 522 to Range Road 22 N:

Residents to the east of the development have shown some concern for potential shortcutting from the lake to Stony Plain. While there are some who use Township Road 522 to Range Road 22 N as a back road to Stony Plain, recent traffic counts show that only one or two vehicles are heading along Township Road 522 to the east during peak hours. These vehicles will be taken into account when determining any intersection upgrades that are warranted.

Increasing traffic at Highway 627 and Highway 770:

According to Alberta Transportation's traffic count records, there has been significant yearly growth in regional traffic observed on Highway 770 and Highway 627. This growth is generally expected to continue as the region develops. The traffic generated by the West Point Estates development is minor in comparison to regional traffic growth and does not warrant upgrades to the Highway 627 intersection. Alberta Transportation monitors regional traffic growth and plans for the upgrading of provincial highways and intersections as required to accommodate the traffic growth.

Additional coal plants causing more traffic:

Coal plants can create additional traffic with larger trucks. However, while there are currently operational coal plants in the area, based on provincial direction we do not anticipate any increase in the number of coal plants, nor in the amount of traffic to existing plants. Rather, as we move forward, we would anticipate a decrease in coal plant related traffic.

Existing gravel trucks on the road:

When determining the necessary upgrades for an intersection or road, gravel/heavy trucks are treated differently than regular passenger

vehicles. The models used for determining these upgrades considers the characteristics of these vehicles (weight, dimensions, speeds, distances required for sight lines and stopping, etc.) and weights them more heavily when considering safety. The traffic model accounts for a percentage of heavy vehicles based on traffic counts of actual vehicles using the roadways and develops recommended intersection improvements based on this information.

Additional traffic on Highway 770:

Additional traffic on Highway 770 at the intersection with Township Road 522 will be dealt with through an intersection improvement which is already underway with Alberta Transportation. In addition, there will be a consolidation of the current access to Weekend Estates and the boat launch with the Highway 770 / Township Road 522 intersection, which will improve existing sightlines.

Emergency access:

The subdivision has been designed with multiple accesses to Township Road 522 and Lutz Avenue, to appropriately distribute development traffic throughout the network and provide alternate accesses in the event of an emergency. An access to Highway 770 in the southeast area of the Outline Plan is proposed to be provided for an emergency access connection. In this scenario, the Highway 770 access would be closed to regular traffic via bollards but will be available as an emergency connection. Should Alberta Transportation not support emergency access at this location, a secondary connection to Lutz Avenue, via Phase 2 roadways, is proposed to provide emergency access. All roadways, including emergency access, will be constructed in accordance with Parkland County Engineering Standards.

*General Development Concerns*Number of lots:

Residents indicated that there were too many lots in the initial development concept. The number of lots has been reduced to align with the requirements set out in the ASP and County regulations. The final concept contains 57 lots.

Noise:

There is concern in the community over boat and car traffic noise, lifestyle noise such as partying, youth at play, air conditioners and lawn mowers, construction and motorized recreation vehicles noise. West Point Estates has been designed in a manner which will help to mitigate some of these concerns. Mitigation measures include:

- No additional public boat launches. The existing limits on parking and day uses will remain consistent, which will help to keep boat traffic increases to a minimum.
- No motorized access to the lake. The ER and the ERE are both restricted to pedestrian access along limited pathways which will prevent the development of private boat launches from lake-front lots.
- Traffic in the full build out will have many routing options dispersing traffic and its related noise.
- The riparian buffer area of 60 m. will remain predominantly intact and will act as a buffer to limit noise transfer across the water, such as motorized garden equipment and traffic.
- County noise bylaws regarding excessive noise will continue to apply in the area.
- Part of the construction management plan will consider noise restrictions during construction.

- Given the residential nature of this development, recreational vehicles are not anticipated to be a large issue. However, County bylaws will continue to regulate this.

Trespassing to the south:

Some members of the community have expressed concern regarding new residents from the development trespassing into the private agricultural lands to the south of the subdivision for recreational purposes. While detailed design is not yet underway, a fence is being considered to the south to discourage trespassing of residents onto adjacent property.

Boating Issues:

There were a number of boating related concerns raised by the community including the possibility of owners of lake-front lots using seasonal docks, as well as potential back-lot owners, friends and family using the lake-front unit docks, an increase in lake users, as well as the lake's carrying capacity. Each of these individual challenges is difficult to mitigate from a development perspective because they do not fall within Municipal jurisdiction. West Point Estates has ensured no new community or private boat launches by restricting the lake access to pedestrians only. By limiting the opportunity for private boat launches, we are able to reduce the boating impact associated with this specific development.

Enforcement:

Many of the concerns raised fall within Municipal or Provincial jurisdiction and can continue being enforced by the County or the Province. In addition, there is the possibility of creating an Association or enhancing the power of the JFML to be structured in such a way as to be a formal body with the opportunity to administer fines for those not following the regulations on-site.

Project Staging:

The cost of housing, and by association, lot values is something that surfaced as an area of concern for residents. Specifically concerns surrounding too many lots coming on-line at one time were raised. While different staging options have been considered, the staging as submitted in this Outline Plan has been developed with consideration to development constraints, marketability and cost of construction of various required infrastructure components, such as the constructed wetland, and the upgrades to Lutz Avenue.

PARTICIPANT SURVEY

Participants were encouraged to complete a session survey that included 3 statements for them to rank using a five-point Likert Scale (1- strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - strongly agree) along with a comments section. This was intended to record participant's feelings towards the session itself, but as is often the case, some comments included were project specific. No names or contact details were collected on this paper to ensure participants felt comfortable providing their feedback on the session.

The questions asked were:

- Statement 1: 'I understand the process and how my input will be used.'
- Statement 2: 'I feel like I was heard.'
- Statement 3: 'I was treated with fairness and respect.'

There were a total of 11 session survey's returned by participants, and while people, on average, reported only a slight agreement with both statements one (3.6 – with only 2 participants reporting some level of disagreement) and two (3.7 – with only 1 participant indicating disagreement), indicating they had some understanding of how their input would be used, and felt somewhat heard, they reported a strong agreement with statement three (4.4 with no participant indicating less than a 4) indicating that they felt they were treated with fairness and respect.

The full engagement summary can be found in Appendix E.

5.0 PROPOSED DEVELOPMENT

5.1 Development Concept

5.1.1 COMPLETE LAND USE CONCEPT

The West Point Estates Development will have a total of 57 lots at full build out. This development has been crafted in a way to remain sensitive to the context of the lake, with large lots and additional dedicated Municipal Reserves to help minimize any potential impact (see Table 5-1 for Development Statistics). This results in a density of one (1) lot per 3 ac (see Table 5-2 for Density Calculations).

Table 5-1: Development Statistics:

	Area (ha)	Area (acre)	% of Gross Developable Area
Gross Site Area	97.52	240.98	NA
Environmental Reserve	6.55	16.18	NA
Net Developable Area	90.97	224.70	100%
Country Residential Restricted	57.94	143.11	63.7%
Internal Road ROW	10.13	25.03	11.1%
Public Utility Lot	9.45	23.33	10.4%
Municipal Reserve	13.47	33.28	14.8%

The lands subject to approval for redistricting will be developed as country residential - restricted, with open spaces (designated as ER, MR and PUL) strategically identified to preserve and retain environmentally significant areas where feasible. The proposed area for re-districting includes the development of 32 residential properties as shown in Figure 5-1 – Land Use Concept, as well as a minor revision to the previously approved West Point Estates Outline Plan

(as shown on the Land Use Concept) to ensure better movement and stormwater quality throughout. Each property will have identified building lots defined at the subdivision stage of development as well as an Environmental Reserve Easement registered on title for lots adjacent to the Jackfish Lake shoreline setback.

Table 5-2: Density Calculations:

	Area (Ha)	Area (acre)
Gross Site Area	97.52	240.98
Environmental Reserve	6.55	16.18
Municipal Reserve (required 10%)	9.97	24.10
Internal Road ROW	10.13	25.03
Developable Land	70.87	175.04
Total Lots	57	57
Net Density	0.8 updh*	0.33 upda**

*units per developable ha

**units per developable acre

Based on 2011 Census data, Parkland County has approximately 2.8 people per residential unit. Based on this number, the West Point Estates North Development will accommodate 160 additional residents. The Census counts age groups which do not have any distinct break between 15 and 19 years of age, as such to determine the likely number of children for this development the average percentage of youth aged 5 – 19 was used. A total of 21% of Parkland County Residents fall between these ages, which would suggest approximately 33 school aged children living in this subdivision.

The lots are well-suited for privacy, with the ability for lake front lots to have well protected environmentally significant areas (through the registration of EREs on private lands) adjacent to the lake. To increase

the water quality, potential house locations on the lake front lots will be limited to the front half of the lot. Interior lots will primarily back onto the well-treed interior Municipal Reserves or Environmental Reserves which have been maximized to preserve as much of the natural area as possible.

5.1.1.1 Development Objectives

- To provide large lot country residential as the predominant land use in the Plan Area
- To provide a type of housing stock that has been identified by the County as complementing the existing supply of housing types
- To protect natural areas, such as in additional MR dedication
- To improve runoff quality relative to current Agricultural Land Use
- To provide adequate access for emergency response services
- To provide a level of privacy that is in line with that expected of such housing types

5.1.2 POLICIES:

5.1.2.1 All development within the identified area will consist of large lot, country residential developments or developments directly related to servicing said residences.

5.1.2.2 No additional community docks will be permitted in the Plan area.

5.1.2.3 Building setbacks from environmentally significant areas shall be in line with the supporting studies and, in the case of lake front lots will discharge to stormwater catchment areas 2, 3, and 4 to avoid untreated and direct discharge to the lake.

~~5.1.2.3~~ **5.1.2.4** All stormwater management facilities within West Point Estates will be in the form of constructed wetlands in accordance with County and Alberta Environment standards.

~~5.1.2.4~~ **5.1.2.5** All outdoor lighting shall be positioned so as not to be directed into adjoining properties or interfere with the use and enjoyment of neighbouring lands.

~~5.1.2.5~~ **5.1.2.6** All development within the identified area must be serviceable by local emergency response services.

~~5.1.2.6~~ **5.1.2.7** Alteration of natural areas should be kept to the minimum amount required for the residents to have good use and enjoyment of their land and for the appropriate FireSmart Principles to be followed. All residents will be made aware of the additional environmental protection easement on their property at time of purchase

~~5.1.2.7~~ **5.1.2.8** At time of construction, recommendations from the Biophysical Assessment Report for mitigation of sedimentation and disturbances of natural areas will be followed.

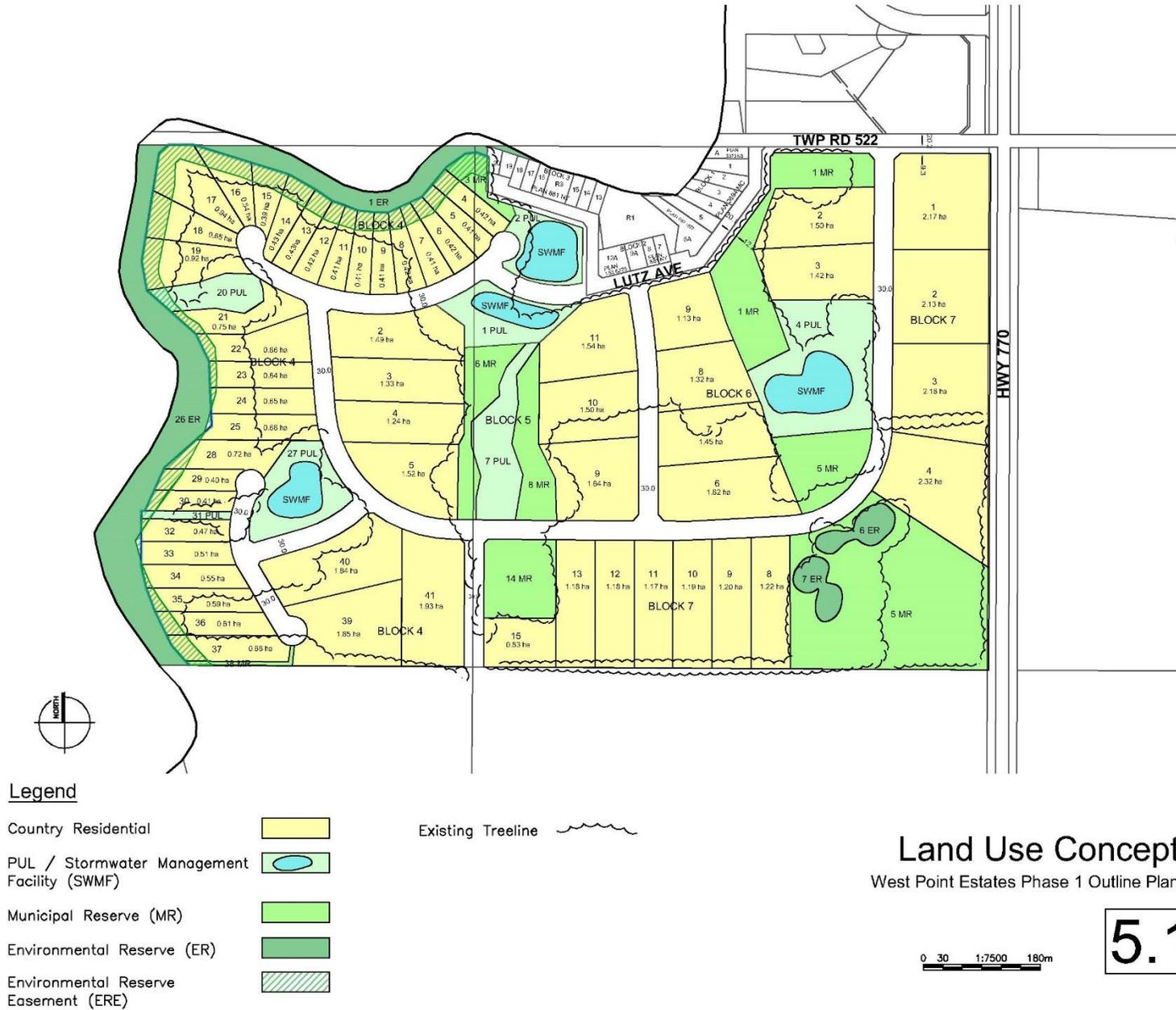
~~5.1.2.8~~ **5.1.2.9** Lake front lots that fall within 60 m of the Bank of Jackfish Lake as identified on figure 4.3 – Development Constraints will include an Environmental Reserve Easement (ERE).

5.1.2.10 Signage of all Environmental Reserve (ER) and ERE areas shall be completed with development, in accordance with the County's Engineering Design standards to identify to lot owners and the general public the location of sensitive lands.

~~5.1.2.9~~5.1.2.11 Any trails and/or viewpoints (and associated vegetation clearing) provided from private lots to the lakeshore will be a maximum of 8m in width through the environmental reserve and environmental reserve easement areas, unless additional clearing is required as part of a FireSmart program as to be approved by the County. This policy is to be implemented through the Environmental Protection Plan (EPP) identified in Section 4.2.3 of this Plan.

WEST POINT ESTATES (NORTH) OUTLINE PLAN

Figure 5-1 - Land Use Concept



5.1.3 COMPATIBILITY WITH ADJACENT USES

The adjacent lands to the north of the site along Lutz Avenue are currently zoned “Lakeshore Residential District” (LSR) of which the purpose is to “To provide for development and redevelopment of smaller, pre-existing parcels along the lakeshore of Wabamun Lake, Jackfish Lake and Isle Lake. The district is intended to not allow for new subdivisions” as shown in *Figure 5-2 – Existing Land Use*.



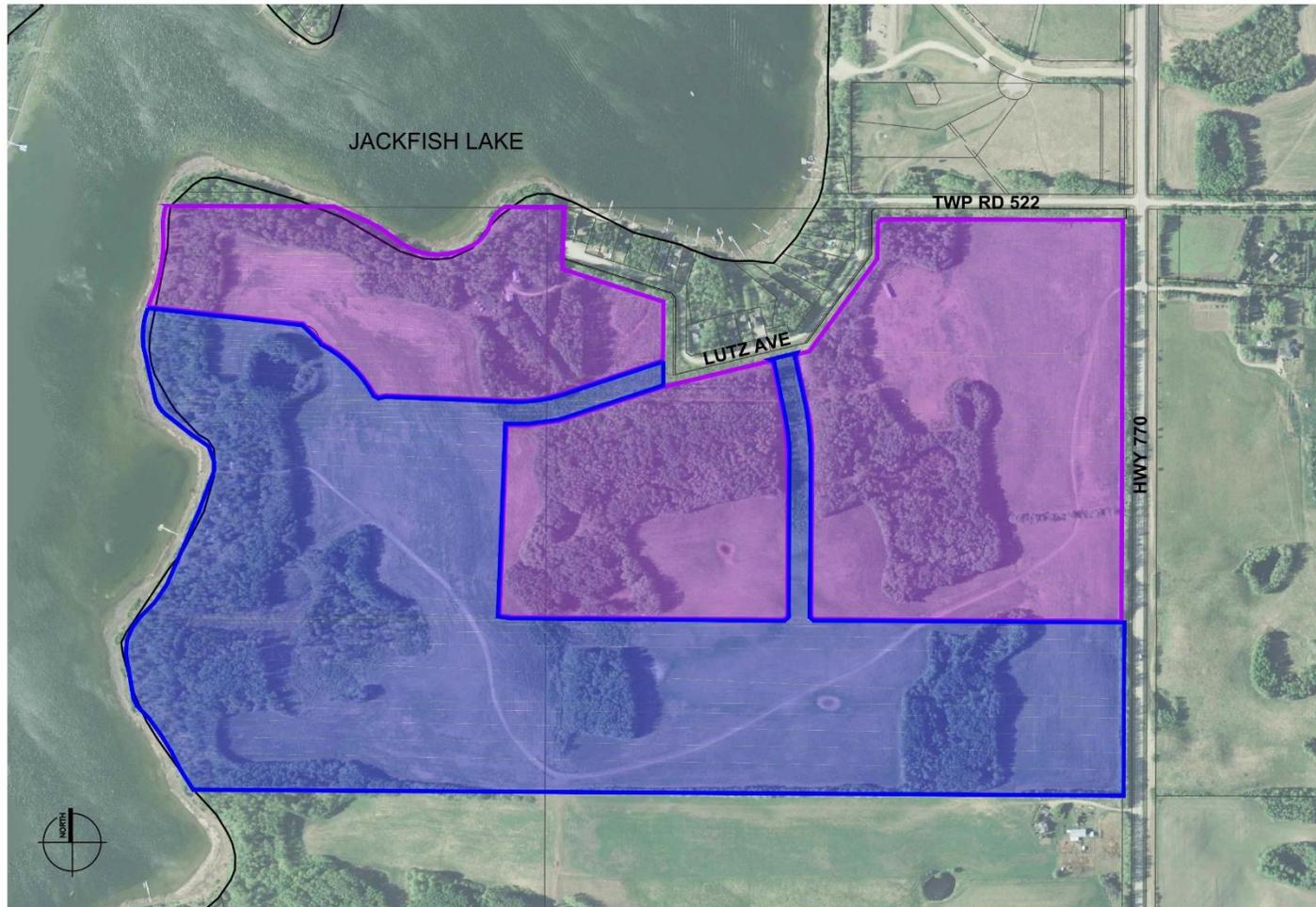
Figure 5-2: - Existing Land Use

Land to the east are zoned “Agriculture Restricted District” (AGR) of which the purpose is to “To permit agricultural production and related farming activities while providing limited opportunity on a discretionary basis for compatible non-farm related land uses, and to prevent premature or scattered subdivision.”

Finally, the lands to the south, which were the subject of a previous approval as shown in *Figure 5-3, Approved Plan Area*, are zoned Country Residential - Restricted (CRR). However, to ensure a comprehensive stormwater management plan can be developed that avoids existing wetlands, where feasible, this area will require minor adjustments. The purpose of the CRR zone is “To provide for lower density multi-parcel residential subdivision/development and a limited range of related uses in locations such as lakeshore areas where it is important to limit development and to ensure sustainable development that protects a natural asset or amenity”

These adjacent uses including LSR, CRR, and AGR are fully compatible with the additional proposed CRR district.

Figure 5-3: Approved Plan Area



Legend

- Proposed Redistricting Area 
- Previously Approved Outline Plan Area 

Approved Plan Area
West Point Estates Phase 1 Outline Plan

0 30 1:7500 180m

5.3

5.2 Transportation Network and Access

The transportation concept depicted in the Outline Plan includes the original design from the previously approved West Point Estates South Outline Plan with minor modifications, as required to ensure appropriate sightlines and dispersion of traffic. The network includes 6 new roads (as shown in Figure 5-4 – *Transportation Concept*) and incorporates upgrades to both Township 522 and Lutz Avenue into its design. The roadway network includes an additional access to Township Road 522, east of the access points to the existing properties along Lutz Avenue, in order to disperse traffic throughout the network and alleviate concerns about heavy traffic on the existing local residential roadways. This additional access will function as the major access to the proposed development and will reduce the volume of traffic that the existing local roadway network will be required to accommodate. Township Road 522 and Lutz Avenue will be maintained in their existing alignment. Due to the winding nature of Lutz Avenue, it is expected that the majority of traffic will choose to enter from the second access. The intersection of Township Road 522 and Highway 770 will be upgraded, based on Alberta Transportation standards to include dedicated right and left turn lanes and bypass lanes, as warranted, based on vehicle trips generated by each specific phase of development and regional traffic growth.

The access to the lakefront lots at the northwest corner of the proposed development has been configured to avoid funneling traffic through the last portion of Lutz Avenue. This portion of Lutz Avenue is exceedingly deficient in comparison to current Parkland County geometric standards and it would not be possible to upgrade the existing roadway to current standards within the existing right-of-way. By bypassing this section of roadway, there will be no additional development traffic on the existing Lutz Avenue and the new access

can be constructed to a current standard, suitable for the proposed 60 km/h design speed and traffic volume and type characteristics.

A geometric review of the existing Township Road 522 and portion of Lutz Avenue was conducted in order to compare the existing roadway geometrics and condition to current Parkland County standards to ensure that the offsite infrastructure can support the proposed development and identify necessary improvements.

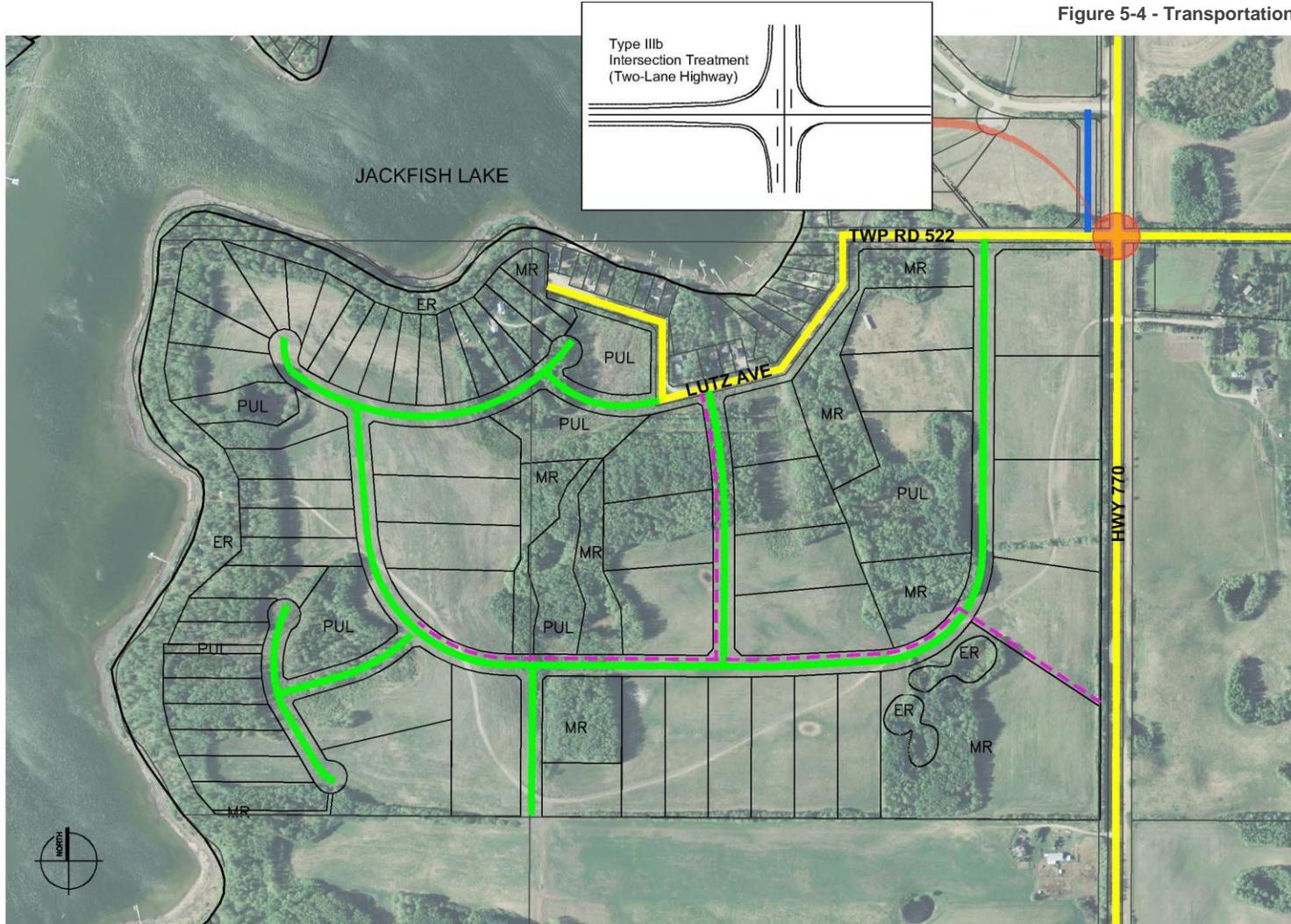
The existing portion of Township Road 522 between Highway 770 and Lutz Avenue is constructed as a gravel roadway. The roadway width is approximately 6 metres and the right-of way is approximately 20 metres wide. The alignment of Township Road 522 is generally straight, and generally slopes from the Highway 770 intersection, west towards the lake. Township Road 522 will not require major horizontal or vertical geometric improvements to meet current Parkland County standards, but is deficient in width of roadway and right-of-way and will require structural improvements and paving to accommodate the anticipated traffic loading and characteristics. The intersection of Township Road 522 with Lutz Avenue functions as a continuous curve with several driveway accesses to the island parking area and adjacent properties intersecting at the corner. Lutz Avenue is constructed as a gravel roadway, with an approximately 5.5 metre wide road top in a 20 metre right-of-way. The existing horizontal curves have radii of approximately 50 metres, short of the minimum 130 metre radius required by current Parkland County standards. The existing grades of Lutz Avenue are generally within or just above the Parkland County standard of 9% maximum, but the k values of the existing vertical curves do not meet the County's minimum standards and will require some significant re-grading. This re-grading may require some modifications to the driveway connections of adjacent lots, the extent of which will be determined in the detailed design development phase.

Township Road 522 and the portion of Lutz Avenue between Township Road 522 and the intersection with the new roadway will be upgraded to current Parkland County standards. Township Road 522 will be upgraded to rural minor collector standard with a design speed of 90 km/h. The right-of-way will be widened to 30 m to match the current standard, with an 8.0 metre ACP surface. Lutz Avenue will be upgraded to a local residential standard with a design speed of 60 km/h with a 30 m wide right-of-way and a 7.5 m ACP finished surface. The horizontal and vertical geometry of the existing roadways will be altered as necessary, within the additional road right-of-way, to meet current design standards and ensure adequate sight distance at all intersections and driveway approaches. Both Township Road 522

and Lutz Avenue will be designed to accommodate the design traffic loading, including increased local and water truck traffic.

The transportation concept has been reviewed by a Transportation Engineer with Urban Systems. A Traffic Impact Assessment (TIA) was completed on the final concept design (see Appendix D). In response to concerns regarding additional traffic along Lutz Avenue, as well as to ensure additional routes, the site has been designed in a manner so as to minimize traffic impacts on existing homes by providing a disbursed network of streets. Final approval of the TIA will be sought through Alberta Transportation and Parkland County.

Figure 5-4 - Transportation Concept



Legend

- Existing Road Upgraded Intersection
- Proposed Road
- Temporary Emergency Access Options
- Proposed Alberta Transportation Service Road

Transportation Concept

West Point Estates Phase 1 Outline Plan

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5.4

5.4 Infrastructure and Site Servicing

SANITARY SERVICING

None of the proposed lots has a piped sanitary system in place and none is prescribed, due to both the pristine nature of the area and the fact that any extra clearing will potentially unduly impact soil-cover erosion in the process of upgrading. Holding tanks have been recommended on all lots as the primary sanitary waste disposal system, which would require occasional servicing by means of vacuum truck. Effluent from the holding tanks would be delivered to a Parkland County Wastewater Transfer Station, connected to the Alberta Capital Region Wastewater Commission (ACRWC) transmission line for disposal. At the time of writing, Parkland County has confirmed that the Wastewater Transfer Stations located at 53026 Range Road 280 (Golf Course Road, Stony Plain) and 53201 Range Road 265 (Villeneuve) both have capacity to accommodate the development.

Incorporating holding tanks into the design minimizes any contamination to the existing water table and mitigates any potential impact due to the proximity of the lands to the environmental footprint of the pre-existing natural wetland area. These wetland water bodies and bounding lands are pristine and could be adversely affected by potential erosional issues due to excessive clearing during construction. Additional benefits of this include a reduction in the wildlife habitat disruption, as well as reducing potential environmental contamination. The Alberta Private Sewage System Disposal Regulations restrict the location of holding tanks to be at least 10 m from a water source or water course and at least 1 m from buildings and property lines. All proposed lots provide adequate space for locating holding tanks in compliance with these restrictions.

WATER SERVICING

Based on the findings in this report (see section 4.2.1 – Groundwater) it is recommended that an alternative water delivery mechanism will be required for each home as it is constructed. As such cisterns will be required on site, and a private water hauler will be contracted to service individual private lots within the subdivision.

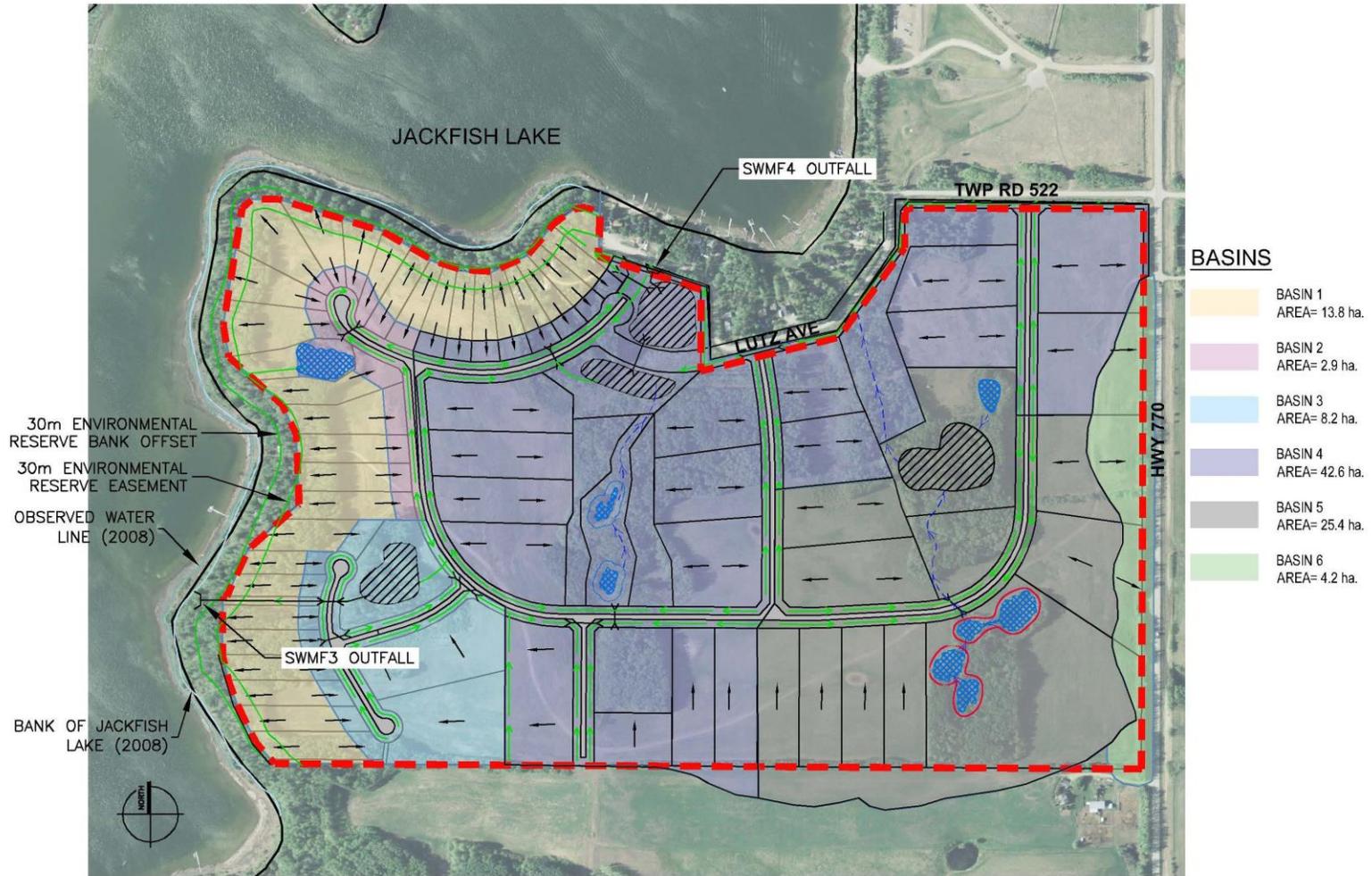
This will minimize further strains on the aquifer and preclude the possibility that additional water would be prevented from recharging the area.

STORMWATER MANAGEMENT

The stormwater management strategy for the Plan area encompasses both the current site as well as the previously approved West Point Estates South Outline Plan to ensure a holistic approach for a total land area of approximately 93 ha (see *Figure 5-5 – Stormwater Management*). The intent of the proposed stormwater management plan is to:

- Reduce the potential for flooding and erosion of both the site and neighboring properties
- Establish drainage routes for runoff during frequent and infrequent storm events to provide guidance for the development of a detailed grading plan
- Identify natural features and man-made drainage infrastructure that can provide storage for peak attenuation and removal of suspended solids, nutrients, and other potential contaminants in runoff from the subdivision into Jackfish Lake
- Provide recommendations on best management practices regarding source controls, the use of salt on roads, and fertilizer use for individual lots

Figure 5-5 - Stormwater Management



Legend

- ▬ STUDY AREA BOUNDARY
- ▬ POST-DEVELOPMENT BASIN BOUNDARY
- ▨ PROPOSED SWMF
- > PROPOSED CULVERT
- POST DEVELOPMENT LOT DRAINAGE DIRECTION
- EXISTING DRAINAGE DITCH TO BE RETAINED
- PROPOSED DRAINAGE DITCH
- ▨ EXISTING WETLAND/ DRAINAGE FEATURE TO BE RETAINED
- 6m PROTECTIVE BUFFER
- PROPOSED 7.0m WIDE ROADWAY

Storm Water Management

West Point Estates Phase 1 Outline Plan

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5.5

Overall plan recommendations for implementation includes:

- Positive drainage should be provided away from the buildings into roads, ditches, and swales. It is recommended that no impervious surfaces drain directly into Jackfish Lake.
- Land disturbance should be kept to a minimum during construction in order to minimize erosion potential by overland flow.
- The proposed stormwater management facilities should be in operation prior to construction within their respective basin.
- The developer should ensure that the proposed drainage to the stormwater management facility is maintained during the development and construction process.
- Erosion and Sediment control plans should be adopted during development of residential lots and road construction activities, to protect the integrity of retained and constructed wetlands.
- Runoff from back-of-lots, for lots backing onto the Jackfish Lake setback area,] will continue to flow into the lake in the same manner it currently does, which generally includes existing ephemeral drainage paths and sheet flow. Post-development imperviousness within this basin is expected to be the same as its pre-development condition, and as such, runoff will be allowed to flow uncontrolled towards the Lake. It is important to reiterate that development restrictions will allow this area to maintain its current ecological state and as such, the impacts to the Lake from this post-development basin are expected to be minimal.

This Plan minimizes the impact on existing wetlands, treed areas and the riparian areas of the development site. The plan and development will comply with Provincial requirements and is currently being reviewed for approval to Alberta Environment.

5.5 Reserves and Environment

Adjacent to the shoreline of Jackfish Lake, 6.55 ha of Environmental Reserve (ER) will be dedicated at the time of subdivision. A minimum 30 m ER setback from the shoreline will be dedicated to the County. An additional minimum 30 m setback from the shoreline will be protected through registration of an Environmental Reserve Easement (ERE) within private lots. This combined 60 m of ER / ERE protected land, as illustrated on Figure 5.1 – Land Use Concept, provides for preservation of the treed riparian area and serves to avoid potential development in areas of steep slopes. Three (3) of the 12 existing wetland features within the plan area will be retained, unaltered, and preserved as ER.

The Outline Plan dedicates 13.47 ha of Municipal Reserve (MR) land, which is 14.8% of the Net Developable Area (NDA). These MR land will be dedicated to the County at the time of subdivision to create natural area park spaces, preserving portions of existing tree stands that do not meet the definition of ER eligible lands in the Municipal Government Act (MGA). One (1) of the 12 existing wetland features within the plan area will be retained, unaltered, within the MR lands.

Public Utility Lot (PUL) areas have been identified for 9.45 ha of land (10.4% of NDA) to allow for stormwater management, which minimizes alteration of the natural topography within the plan area by utilizing existing wetland locations and drainage courses. Best Management Practises (BMPs) for Low Impact Development (LID) approaches to stormwater management will be applied for constructed wetland stormwater management facilities (SWMFs). Four constructed wetland SWMFs are proposed for the plan area, altering two (2) of the 12 existing wetland features. Four (4) of the existing wetland features will be retained, unaltered, within the PUL areas as

naturalized SWMFs. The remaining two (2) of the 12 existing wetlands will be removed, in accordance with the Water Act.

The combined ER, MR and PUL open spaces account for 28.47 ha (or 30.2% of the Gross Site Area). These lands provide open space

connectivity within the plan area, and to adjacent lands, creating green corridors along the shoreline and through the central and eastern portions of the plan area (*as shown in Figure 5-6 – Open Space*).

Figure 5-6 – Open Space



Legend

- Proposed MR Locations
- Proposed ER Locations
- Proposed PUL Locations

Open Space
West Point Estates Phase 1 Outline Plan

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5.6

6.0 IMPLEMENTATION

6.1 Phasing of Land Development and Infrastructure

This is a short term strategic plan and, as such, all development will be in accordance with good planning practices and logical extension of services as the market demands. The overall site (including the subject lands and Previously Approved Outline Plan area) are expected to follow a phased development plan. The full build out will be completed in two (2) phases primarily based on ensuring adequate maintenance of stormwater runoff quality and transportation servicing (see Figure 6-1 – Phasing Plan). The immediate next steps are to pursue stage 1, as outlined in Figure 6.1 with legal subdivision.

Independent of the internal phasing of the development, Alberta Transportation is completing improvements to Highway 770, including planned upgrades to the intersection at Township 522 (to a Type IIIb). With these upgrades, development traffic as well as existing traffic from the Weekend Estates subdivision will be accommodated. Weekend Estates Drive, which provides access to the subdivision and boat launch area, is currently being realigned to intersect with Township Road 522 with the direct access to Highway 770 being removed. It is acknowledged that the Type IIIb intersection improvement at Township Road 522 and Highway 770 will be required to accommodate the first Phase of development and, if not already constructed by the Province, will be undertaken by the developer at the time of development.

In addition to the improvements to Highway 770, the phasing of roadways associated with the West Point Estates development will include:

OPTION A: (Administration's Recommendation)

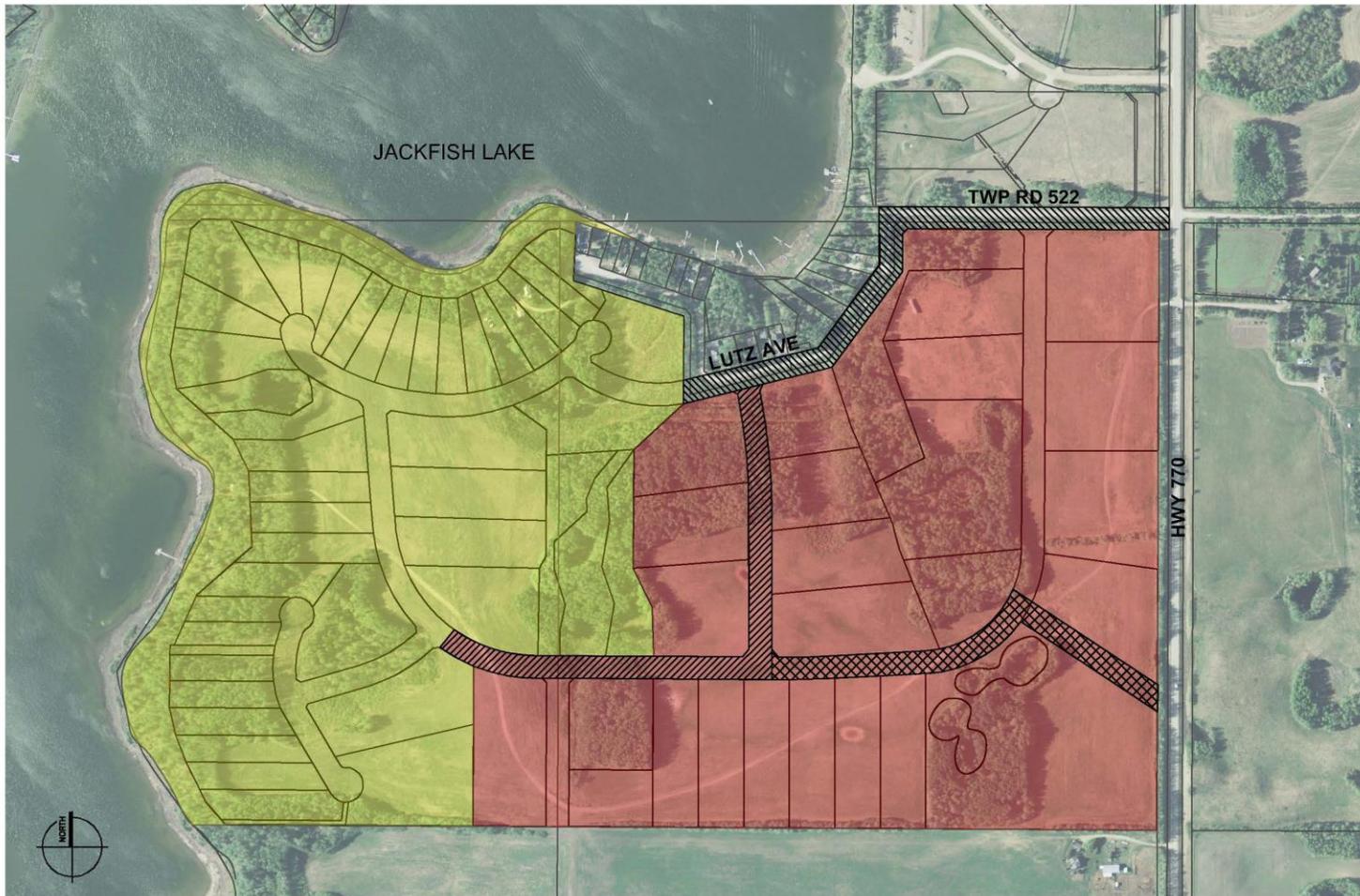
- (i) Upgrading, widening, and paving of Lutz Avenue and Township Road 522 with Phase 1, in accordance with Parkland County Engineering Standards;
- (ii) constructing internal roadways and turn-arounds within Phase 1, as paved roadways, in accordance with Parkland County Engineering Standards;
- (iii) constructing a secondary emergency access, as a gravel roadway, in accordance with Parkland County Engineering Standards (as described in Section 4.2.4) with Phase 1
- (iv) constructing paved internal roadways and turn-arounds in accordance with Parkland County Engineering Standards with Phase 2.

OPTION B: (Developer's Proposal)

- (i) road widening along Lutz Avenue and Township Road 522, for construction of an appropriate road structure to ensure additional water/sewage truck traffic can be accommodated, to a gravel standard in accordance with Parkland County Engineering Standards with Phase 1. The Developer shall ~~and~~ provide dust control to the satisfaction of the County prior to paving;
- (ii) paving of Lutz Avenue and Township Road 522 within six (6) months upon sale of 50% of the proposed lakeshore lots or within three (3) years of the Phase 1 subdivision ~~development~~ approvals, whichever comes first. Prior to endorsement/registration of Phase 1, the Developer shall provide securities (150%) for any deferred off-site road improvements (paving) in accordance with Council Policy C-PD01: Development Agreement Securities, or its replacement policy;

- (iii) constructing internal roadways and turn-arounds within Phase 1, as paved roadways, in accordance with Parkland County Engineering Standards;
- (iv) constructing a secondary emergency access, as a gravel roadway, in accordance with Parkland County Engineering Standards (as described in Section 4.2.4) with Phase 1; and
- (v) constructing paved ~~development~~internal roadways and turn-arounds ~~and upgrading Lutz Avenue to a paved roadway,~~ in accordance with Parkland County Engineering Standards with Phase 2.

Figure 6-1 – Phasing Plan



Phases

- Phase 1
- Phase 2
- Gravel Standard
- Gravel Standard Emergency A
- Gravel Standard Emergency B

Phasing Plan
West Point Estates Phase 1 Outline Plan

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6.1

8.0 PLAN SUMMATION

This plan meets the requirement for the completion of an Outline Plan for the proponents of a multi-parcel residential subdivision as described in section 3.1 of the MDP:

- a) The location, dimension and boundaries of the ¼ section to be subdivided;
- b) The portions thereof which the applicant proposes to register and all subsequent stages;
- c) The location, area and proposed dimensions of all parcels, roads and points of access to all the proposed parcels (see Appendix I – Tentative Plan of Subdivision, which provides dimensions at a level detail that cannot be reasonably illustrated within the Outline Plan);
- d) Contour information, related to a geodetic datum at an interval of 2 metres is to be superimposed over the plan;
- e) The location, dimensions, numbers and other designations shall be noted in respect to highways, secondary roads, public roadways, and rights-of-way or easements (including pipelines, well sites, power transmission and distribution lines and railway lines) on record in Land Titles which exist on or adjacent to the lands subject of the plan;
- f) The location of all existing buildings or structures on or immediately adjacent to the lands;
- g) The location, siting and plotting of natural and man-made physical features such as sloughs and/or other bodies of water, rivers, creeks and intermittent streams, muskeg or swamp, organic areas, subsidence information on valley banks, top of bank, wooded areas, man-made water bodies, major drainage ditches, gravel and/or clay deposits, and land under cultivation;
- h) Proposed methods of handling surface drainage through preliminary storm water management;
- i) Proposed methods of on-site servicing for potable water and sewage; and,
- j) The location, dimensions and areas of all proposed municipal and environmental reserve parcels, public open spaces and public utility lots.

