

APPENDIX A: APPLICATION REFERRAL COMMENTS

AGENCY	COMMENTS
<i>Government Agencies</i>	
Alberta Energy Regulator (AER)	No comments received.
Alberta Transportation (AT)	<p>In general, the concept of redeveloping these lands from agricultural use to country residential use does not cause Alberta Transportation (AT) any significant concern. The rezoning of these lands is a local municipal decision. If the lands were rezoned, AT would need a reasonable current acceptable traffic impact assessment prior to each subdivision approval in for warranted intersection improvements to be completed prior to starting each planned phase of subdivision.</p> <p>In regards to a secondary, emergency access, there is no suitable location along the highway frontage of NE 09-52-02-W5M due either to proximity to the Township Road 522 intersection or sight line issues. The department's access management guidelines (http://www.transportation.alberta.ca/Content/ocType233/Production/chap-i-Oct2005.pdf) Table 1.5 states that access to major 2-lane highways (which Highway 770 is) from country residential developments should come from the local road and that no access be constructed within 400m of a public road intersection.</p> <p>Therefore the developer should construct his emergency access to Township Road 521 through neighbouring properties when one becomes necessary. This is why, in AT's view, an acceptable area structure plan must address the area from one local road to the next so that needed local road connections can be planned for and constructed at the proper phase of development.</p>
Historic Resources Management Branch	No comments received.
Alberta Environment & Parks (AEP)	AEP will not be proceeding with detailed review of the Storm Water Management Plan or Wetland Impact Assessment and Mitigation Proposal until the County land use and planning decisions are complete under the Municipal Government Act for the development. Please follow up with the County regarding these applications.
Alberta Health Services (AHS)	<p>This application proposes West Point Estates Outline Plan which provides a conceptual development plan for 98.5 ha (241.0 ac) within NW and NE 09-52-02-W5M. The outline plan proposes 57 lots at full build out. The Land Use Bylaw Amendment proposes redistricting portions of NW and NE 09-52-02-W5M for an area of 48.5 ha (121 ac) from AGR – Agriculture Restricted District to CRR – Country Residential Restricted District.</p> <p>There are no piped or communal water of sanitary services planned for the subdivision. Cisterns are proposed for each residential lot with water to be hauled on. The 20 year sustainable yield for water wells has been deemed insufficient when full build out of the subdivision and nearby existing water wells are taken into consideration.</p> <p>Septic holding tanks have also been recommended for the residential lots as a measure for requiring the most minimal setback distances and as method for preventing sewage runoff into the nearby Jackfish lake. Alberta Health Services (AHS) does not support the use of holding tanks as the lack of servicing and maintenance often leads to unlawful, open discharge with an increased risk of soil and water contamination thereby creating a public health nuisance. However, based on the proximity of the residential lots to the lake, a holding tank may be the only feasible option for sewage disposal systems. It is strongly encouraged that Parkland County ensure residents have contracts in place with</p>

septage haulers who in turn have agreements with waste-receiving facilities. Methods for monitoring and enforcement of adequate septage hauling practices should be considered by Parkland County.

The Phase I Environmental Site Assessment (ESA) recommends that the septic field on the north central portion of the site be decommissioned when no longer in use. The residence on site was constructed prior to 1950 and therefore the presence of potentially hazardous building materials should be considered prior to demolition of the building. AHS expects these recommendations from the Phase I ESA be followed when this area is developed.

A geotechnical report was performed for slope stability. It is expected that engineer recommendations are followed for setbacks from the slopes. The geotechnical report also discussed the use of fill for developable lands. Any fill that is brought in for use in the subdivision must be verified as "clean fill" as these lands will be designated for residential use and must meet *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*.

First Nations

Enoch Cree Nation	No comments received.
Paul Band	No comments received.

School Boards

Parkland School Division	No comments received.
Evergreen Catholic School Division	No comments received.

Public Utilities

West Parkland Gas Co-Op	No comments received.
ATCO Gas	No comments received.
AltaLink Management	No comments received.
Telus Communications	No comments received.
Forts Alberta	Fortis Alberta has no concerns. Upon the re-zoning, Developer can contact 310-WIRE (9473) for electrical services during the subdivision design stage.
Canada Post	No comments received.

Other External Agencies

Jackfish Lake Management Association (JLMA)

Reference letter dated June 14, 2017 (19 pages)

JLMA's Position Summary:

Until there is a clear, acceptable, comprehensive development plan for the entire lake, the JLMA again requests a moratorium on all planning applications including this re-zoning and the proposed West Point Estates Outline Plan (North).

Much research and detail does exist for the majority of points referred to in our response letter. They have not been included, however, they are available upon request if required by Council.

In conclusion, JLMA represented by the Board who are volunteers, wishes to work with the County to realize a mutually acceptable future build-out plan which is sensitive to the condition of our lake and our overall community.

PARKLAND COUNTY

COMMENTS

Internal Departments

Financial Services No comments received.

Legislative & Administrative Services No comments received.

Community Sustainability

July 5, 2017 Comments

First Review of Environmental Reports

Purpose:

The Outline Plan, Biophysical Environmental Assessment and associated technical documents have been reviewed by the County Biologist from an environmental perspective to determine if an appropriate level of information on environmental considerations has been included from Parkland County's perspective as outlined in the Municipal Development Plan, Land Use Bylaw and the Jackfish Lake Area Structure Plan.

Summary of Review:

The proposed development (West Point Estates North Outline Plan) is noted to have a number of environmental sensitives or impacts at the site level for the following reasons:

- 1) Impacts to terrain - Steep and unstable slopes (e.g., in excess of 20%) are present in some locations along the northern and south portion of the western shoreline of Jackfish Lake as indicated in the various geotechnical reports that have been completed.

In the Outline Plan the proponent has proposed mitigation to address this issue including the establishment of a 60 m riparian buffer along the Jackfish Lake shoreline that includes a 30 m Environmental Reserve (ER) along the shoreline that is bounded by a 30 m Environmental Reserve Easement (ERE). The riparian buffer width was determined through application of the *Stepping Back from the Water* document and the Riparian Setback Matrix Models used by Parkland County and other Counties in the province. Additionally, setback lines for development have been delineated for two areas where unstable slopes have been identified through the geotechnical assessment.

Although the proposed mitigation goes beyond the minimum 30 m requirement for designating ER, it only affords partial protection of areas with steep slopes that are longer than the riparian buffer, as the riparian buffer width is not sufficient to extend to the top of bank in all cases. However, the County does not have a top of bank policy to address areas where steep slopes are present. Development of a top of bank policy in high priority landscape areas where steep slopes (>20%) are prevalent is a future consideration that the County may want to pursue as the Riparian Setback Matrix Model (RSMM) is not intended for use in areas with steep slopes.

- 2) Impacts to soil quantity/quality - Increased potential for soil erosion and sedimentation into Jackfish Lake from construction activities and also from the steep slopes and embankments associated with the shoreline of Jackfish Lake if trails are constructed through these areas from the lakefront lots down to the lakeshore.

The proposed mitigation identified in the Biophysical Environmental Assessment report recommends that temporary and permanent erosion and sedimentation control plans be developed and implemented as part of the Environmental Construction Operation (ECO) plan during construction. These erosion and sedimentation control plans should follow existing municipal guidelines such as the City of Edmonton Erosion and Sedimentation Control Guide or the Erosion and Sedimentation Control Manual from Alberta Transportation (2011).

Additionally, the establishment of a 60 m riparian buffer along the Jackfish Lake

shoreline as ER/ERE will provide some protection from soil erosion and sedimentation provided that Best Management Practices for lakeshore protection are implemented as indicated in the Environmental Protection Plan (EPP) (Appendix F of the Outline Plan). As indicated in the Jackfish Lake ASP, a path with a width equivalent to 20% of the average lot width and to a maximum of 10 metres is allowed for access to the lake. However, provisions should be implemented to address path construction and vegetation removal in the riparian buffer, with strict guidelines for removal of vegetation and construction of paths in these areas to reduce the potential for soil slumping and erosion.

- 3) Impacts to wetlands - Loss of six Class C and D value wetlands, amounting to 1.38 ha, none of which are considered high value (Excellent or Very Good) wetlands under the Parkland County Wetland Inventory and Historical Loss Assessment.

The proposed wetland mitigation plan for this development includes the avoidance of six wetlands, which will be retained on the landscape to provide additional water control and storage functions. The remaining six wetlands that are impacted will be replaced and compensated through a combination of permittee-responsible replacement and financial in-lieu payment. Partial wetland replacement will occur through onsite constructed wetlands that are part of the proposed storm water management facilities. Constructed wetlands will follow constructed wetlands design plans and will not be deeper than two metres in depth.

It is expected that the constructed wetlands will follow AEP's Alberta Constructed Wetland Directive and Guide (forthcoming) as well as any other provincial regulatory requirements for storm water management facilities.

- 4) Impacts to native vegetation - Vegetation clearing resulting in loss of native vegetation and habitat for wildlife. Additionally, there is an increased potential for invasive species to be introduced to Jackfish Lake during the construction process or inadvertently by lot owners planting non-native invasive species or via boats and boating activity at informal boat launches.

The proposed mitigation identified in the Biophysical Environmental Assessment report recommends retaining native vegetation wherever possible; using native seed mixes and/or plantings for any revegetation activities and the development of an invasive species (weed) management plan as part of an ECO plan for construction activities. Additionally, the proposed development plan in the Outline Plan has provisions to retain native vegetation through the use of Environmental Reserve, Municipal Reserve (MR) and Public Utility Lots (PUL). A 60 m riparian buffer will also be established as ER/ERE along the shoreline of Jackfish Lake.

These measures will mitigate some of the effects to native vegetation from the development as long as the reserve is maintained in a natural state and not developed by shoreline property owners. This reinforces the need for adequate communication of property boundaries to future landowners.

- 5) Impacts to wildlife – Primarily indirect impacts to wildlife habitat from vegetation clearing and reduced wildlife habitat effectiveness.

The proposed development plan in the Outline Plan has provisions to retain native vegetation through the use of Environmental Reserve, Municipal Reserve (MR) and Public Utility Lots (PUL). Additionally, a 60m riparian buffer will be established as ER/ERE along the Jackfish Lake shoreline. These measures will provide some wildlife habitat connectivity along the lakeshore and through the development.

Additionally, the Biophysical Environmental Assessment report identifies a number of restricted activity timing and setback distances for development activities, including vegetation clearing timing restrictions for migratory birds that should be adhered to.

- 6) Impacts to surface water and groundwater quality - Direct and indirect impacts to the water quality of Jackfish Lake from the development in terms of runoff from impermeable surfaces, vegetation clearing, as well as fertilizer/pesticide/herbicide use from lakefront lots have the potential to increase eutrophication, or lake sedimentation and turbidity. Jackfish Lake is a highly eutrophic lake that has had an algae outbreak in recent years. This is of concern for the local sport fisheries due to winter oxygen depletion that may affect fish survival and the overall health of the lake in general. Jackfish Lake is also in a groundwater recharge zone, therefore groundwater sensitivity to risk of contamination is considered moderate to high.

In the Outline Plan, the proponent has indicated that there will be a requirement for all resident properties to have self-contained septic storage tanks, such that all sewage will be contained on-site in holding tanks and hauled off site. Additionally, water cisterns are to be installed at all resident properties and no ground water wells will be drilled. The 60m riparian buffer established as ER/ERE along the Jackfish Lake shoreline will also provide some protection from soil erosion and sedimentation and nutrient influx into the lake provided that Best Management Practices for lakeshore protection are implemented as indicated in the Environmental Protection Plan (EPP) (Appendix F of the Outline Plan). The proposed design of the storm water management facilities and associated constructed wetlands are intended to facilitate water storage and removal of suspended solids, nutrients (including nitrogen and phosphorus) and other potential contaminants in runoff entering into Jackfish Lake.

Implementation of these mitigation measures will help reduce impacts to surface and ground water quality. However, some form of ongoing protection of Jackfish Lake beyond the development phase should be considered for these mitigation measures to be effective in the long-term. This could be in the form of a Resident Code of Environmental Conduct as recommended in the Biophysical Environmental Assessment report or implementation of a long-term EPP in which Best Management Practices for lakeshore protection are identified. As much of the mitigation measures are reliant on the 60m ER/ERE buffer, ensuring this buffer remains primarily in a natural state is a top priority for environmental protection.

- 7) Impacts to fish/fish habitat – The Biophysical Environmental Assessment report indicates that no direct impacts to fish or fish habitat are anticipated provided that the proposed development does not directly impact Jackfish Lake, the proposed 60m riparian buffer (ER/ERE) is applied, and no boat docks or boat launches are established. However, Jackfish Lake supports a significant sport fishery and indirect impacts related to changes in water quality may have an effect on fish or fish habitat.

Provided that the mitigation measures around surface water management (described above), soil erosion, sedimentation control, and vegetation removal are fully implemented; indirect impacts to fish and fish habitat can be reduced. However, this does not preclude potential impacts to fish and fish habitat from occurring as a result of unauthorized: terrestrial/aquatic vegetation clearing, installation of boat docks and/or shoreline modification.

In addition, an evaluation of the proposed development (West Point Estates North Outline Plan) at a broader scale has identified a number environmental sensitivities or

impacts at the landscape level which are noted below:

- 8) The development is located within a high priority landscape area as identified in the 2017 Municipal Development Plan. High priority landscapes are characterized by overlapping features of ecological importance including: multiple Environmentally Significant Areas (ESAs) of various significance, wetland complexes, biodiversity hotspots and landscape connectivity corridors, sensitive surface and groundwater features, and sensitive landforms.
- 9) The development intersects with the Jackfish Lake/Star Lake Complex ESA, which is considered regionally significant. This ESA is rated as having a high environmental sensitivity due to groundwater sensitivity and high potential for surface water quality degradation. It is also noted in the Parkland County Environmental Conservation Master Plan (ECMP) that increasing development and recreation pressures are stressing the Jackfish Lake aquatic environment and that this has the potential to significantly compromise the ecological integrity and hydrological function of the area if carrying capacities are exceeded.
- 10) A State of the Watershed Report for Jackfish Lake was completed in 2016 and consolidates information on Jackfish Lake and the surrounding watershed. Some of the key findings identified in the State of the Watershed Report are as follows:
 - a. A riparian health assessment completed in 2014 identified Jackfish Lake as being moderately impaired. Many areas of the shoreline are extensively developed, particularly in the northern and southwestern bays of the lake, with many of the developed shoreline areas rated as being moderately to highly impaired from a riparian health perspective. Of note, the proposed development area is located in an area where the riparian health assessment has ranked the shoreline as healthy.
 - b. Application of a screening and assessment tool was used to develop cumulative impact approaches for assessing lake vulnerability to water quality degradation that is based on key metrics associated with watershed factors, shoreline factors, lake quality factors, and hydrologic and morphometric factors. Fifteen metrics were identified as having potential to influence or impact lake water quality, which is used as the end-point for the screening criteria. Twelve out of fifteen criteria were assessed of which six metrics indicated high concern, five were moderate concern and one was low concern. Based on the results of the screening and assessment tool, the State of Watershed report indicates that Jackfish Lake is considered highly sensitive to human encroachment and recommends that strict measures are required to minimize future degradation of the lake from shoreline disruption or watershed land use changes.
 - c. Given the preliminary information summarized in the State of the Watershed Report for Jackfish Lake there are concerns for cumulative impacts to water quality and the overall ecological health and function of the lake due to increased development and recreational pressure coupled with climatic changes that may be contributing to declining lake levels.

Additional Points of Consideration

- 11) The lack of detailed information on the watershed surrounding Jackfish Lake has made it difficult to assess cumulative impacts to water quality and the overall ecological integrity of Jackfish Lake. The Jackfish Lake State of the Watershed report does attempt to provide a measure of cumulative impacts based on fifteen metrics

that were identified as having potential to influence or impact lake water quality. However, there is a strong need for a better understanding of the incremental cumulative effects of additional development projects to fully understand what the actual development and recreational carry capacities of Jackfish Lake are. Jackfish Lake is already under considerable pressure from both development and recreational use, as well as climatic effects that may be contributing to declining water levels. This may have an impact on the resilience of the Jackfish Lake system to accommodate continued development. The last update to the Jackfish Lake ASP was in 2002 and no studies appeared to have been undertaken at that time to assess the development carrying capacity at the watershed scale. Additionally, a follow-up study on boat carrying capacity may be warranted given that the Jackfish Lake ASP does indicate that the lake is at or exceeds the boat carrying capacity. Boat carrying capacity is of importance to both lake users from a general safety perspective, as well as to the overall health of Jackfish Lake in terms of water quality; as motorized boats are known to re-suspend phosphorus containing sediment from the lake bottom through prop wash and wakes and these sediments can contribute to poor water quality.

- 12) Although a preliminary phosphorus budget has been completed for Jackfish Lake, it is noted in the State of the Watershed Report that the model over-predicted lake total phosphorus. Given the concerns over water quality in Jackfish Lake, particularly as it relates to nutrient influx from phosphorus and nitrogen, additional modelling may be warranted to fully understand the phosphorus budget, including potential sources.
- 13) The proposed riparian buffer is designated as ER/ERE which then becomes the responsibility of the County to manage as County land. Given that the development proposes lakefront lots, there is a high potential for encroachment into these areas by the adjacent property owners to increase access points to the lake, install docks or otherwise alter the vegetation in the riparian buffer designated as ER/ERE. This is an issue that is prevalent across the County in many of our lakefront developments, where various forms of encroachment from clearing of vegetation to construction of docks or beaches have occurred. This presents a liability to the County in terms of managing these lands as the County will ultimately be responsible for addressing and enforcing compliance issues related to encroachment. As much of the mitigation measures to the proposed development are reliant on the 60m ER/ERE buffer, ensuring this buffer remains primarily in a natural state through adequate communication, education and enforcement is a top priority for environmental protection.
- 14) Development of a top of bank policy in high priority landscape areas where steep slopes (>20%) are prevalent is a future consideration that the County may want to consider pursuing as the Riparian Setback Matrix Model (RSMM) is not intended for use in areas with steep slopes.
- 15) Summary of Recommended Conditions:
 - a. Require that, at a minimum, a 60 m riparian buffer along the Jackfish Lake shoreline (split into 30 m of ER along shoreline that is then bounded by 30 m of ERE) be taken during the subdivision process.
 - b. Ensure that development setbacks as outlined in the Outline Plan and technical reports are adhered to during the subdivision process.
 - c. Require that an ECO plan is develop prior to construction.
 - d. Require that both temporary and permanent erosion and sedimentation control

plans that follow existing municipal guidelines, such as that used by the City of Edmonton and other municipalities, be developed and implemented as part of the ECO plan during construction.

- e. Require that an invasive species (weed) management plan be developed as part of an ECO plan for construction activities.
- f. Require that vegetation clearing abide by the restricted activity periods for migratory birds as per the MBCA and Alberta Wildlife Act.
- g. Require that for all lakefront lots, potential house locations will be limited to the front half of the property and building plan envelopes will be developed and submitted to the County as part of the subdivision process.
- h. Require that all residents have self-contained septic storage tanks, such that all sewage will be contained on-site in holding tanks and hauled off site and water cisterns are installed at all residents as per the outline plan.
- i. Require that native treed vegetation be retained wherever possible.
- j. Require that the development use native plants/seed mixes for any revegetation activities.
- k. Require the development of an Environmental Protection Plan that clearly identifies mechanisms for protecting Jackfish Lake beyond the development phase. Provisions should be in place to prohibit motorized access or permanent development structures in the riparian buffer.
- l. Require that there be restrictions around the use of herbicides/pesticides with 100 m of Jackfish Lake for all lot owners.
- m. Require the development of a communications plan to identify mechanisms for clearly conveying all development conditions to all existing and future property owners and at each stage of the development process.

December 1, 2017 Comments

Review of REVISED Environmental Reports

Overview:

The following updated technical reports submitted in support of the West Point Estates Outline Plan and LUB Redistricting (ANC to CRR) application have been reviewed by the County Biologist:

- Biophysical Environmental Assessment revised March 1, 2017
- Wetland Assessment & Impact Report revised June 26, 2017
- Environmental Protection Plan revised October 31, 2017
- Stormwater Management Plan revised October 2017

Key Comments:

A version of the Biophysical Environmental Assessment (dated March 1, 2017) and Wetland Impact Assessment and Mitigation Proposal letter (dated December 13, 2016) were initially reviewed as part of the Biophysical Assessment review that was completed and submitted to Planning and Development Services on July 24, 2017. A review of the recently submitted documents listed above indicates that there were no apparent changes made to the Biophysical Environmental Assessment report, though the Wetland Assessment and Impact Report (WAIR) report was updated from the original letter submission, and is now in alignment with the Wetland Policy directives and guidelines for *Water Act* approval submissions. The only additional comments pertaining to these two documents are as follows:

Biophysical Environmental Assessment revised March 1, 2017

- 16) Primarily focuses on direct project-specific impacts as it relates to the terrestrial environment (e.g., soils, vegetation and wetlands, and wildlife resources), with minimal discussion of the direct or indirect impacts to Jackfish Lake in terms of surface water quality and quantity (of which surface water quality is a significant concern for this lake ecosystem).
- 17) Does not acknowledge/discuss the potential for cumulative impacts (particularly as it relates to water quality) other than a note on page 38 of the document, with no follow-up discussion.

Wetland Assessment and Impact Report (WAIR) revised June 26, 2017

- 18) Follows the wetland mitigation hierarchy.
- 19) Avoidance of six wetlands but loss of six Class C and D value wetlands, amounting to 1.38 ha, none of which are considered high value (Excellent or Very Good) wetlands under the Parkland County Wetland Inventory and Historical Loss Assessment.
- 20) Wetland Replacement incorporates both permittee-responsible wetland replacement through constructed wetland SWFMs and in lieu fee payment.

The Environmental Protection Plan (revised October 31, 2017) and Stormwater Management Plan (revised October 2017) are new documents:

Environmental Protection Plan revised October 31, 2017

- 21) The EPP for West Point Estates states the following:
 - a. Riparian setback of 60m ER will be applied as "...a key measure to protect the lake for further eutrophication and pollution..." (pg. 12).
 - b. "Fisheries values are significant with some specific fish spawning and rearing areas in Jackfish Lake.""lakeshore lots permitted access pathways to lake will be restricted to a maximum width as per the governing ASP..."(pg. 12).
 - c. "Resident Environmental Code of Conduct (RECC)....This is intended to further fortify avoidance, minimization and mitigation measures: (pg. 12). *How? Who enforces and where is the evidence that this is effective (i.e., where else has this approach been implemented and demonstrated effective and consistent uptake among residents?)*
- 22) The EPP also lays out the potential environmental impact and associated environmental mitigation measures to address those impacts in Table 5.1, but it is confusing and repetitive and includes statements that are not relevant (i.e., not actual mitigation measures). It would be far more effective if mitigation measures were grouped by those that are under the control of the Developer (e.g., pre-planning and design and construction activities related to general lot grading, SWMFs, roads etc.) verses those that rely on resident uptake and compliance (e.g., RECC related such as proper maintenance/disposal of septic, use of fertilizers/pesticides, clearing of vegetation on property, soil erosion and control plans for home builders etc.). It would also be beneficial for the EPP table to be organized by activity type, followed by the specific potential environmental effect and not intermix Valued Ecosystem Components (VECs) , activities and potential environmental effects (for example wetlands are included as an activity type but is actually the VEC – pg. 20).
- 23) It should be noted that while the EPP attempts to address cumulative effects it does not conclusively demonstrate how site-specific development mitigation will definitively minimize potential cumulative effects. The premise appears to be that any potential incremental or cumulative effects to Jackfish Lake attributed to the West Point Estates development will be minimized through site specific mitigation.

There are several concerns regarding this line of reasoning:

- a. Proponent is relying on the Resident Environmental Code of Conduct for a number of mitigation measures that are outside of the developer's control. *Where is the justification/rational for the effectiveness of this approach? Would be helpful if examples from other jurisdictions are cited in support of the rational that such an approach is effective.*
- b. Although a 60 m riparian buffer around Jackfish Lake is identified, all lakefront lot owners have the potential to clear a 10m wide path (1/3 of the lot) down to the water. *What is the impact of this and how can the loss of a third or more of the woody vegetation along this sensitive riparian area still be effective mitigation for water quality protection of Jackfish Lake? Need to provide justification/rational to support this.*
- c. Regardless of the mitigation that is proposed, there is still an additive, incremental effect of a development of this scale on a lake system that is already under stress, particularly as it relates to water quality. Conversion of a natural and semi-natural (e.g., agricultural) landscape to hard infrastructure (e.g., roads, driveways, houses) will alter hydrological inputs from both a water quantity and water quality perspective through alteration in infiltration rates, management of storm runoff, back lot drainage into Jackfish Lake and so forth.
 - i. To some extent this is acknowledged in Point 4 on pg. 24 of the EPP, though insufficient information is provided documenting supportive evidence for the statement that "These risks have been addressed, minimized, and/or compensated for in this plan." (pg. 24)

Stormwater Management Plan revised October 2017

- 24) Thirty (30) lakefront lots will have split drainages, which means that the back lots of those properties will have uncontrolled drainage into Jackfish Lake.
 - a. *If all lakefront owners are permitted to clear a 10m trail (approx. 1/3 of the each lot) and remove the woody vegetation how is the 60m riparian buffer going to effectively provide runoff treatment?*
- 25) For the constructed wetland SWMFs the design parameters appear to be primarily focused around discharge rates (i.e., managing water flow) - *how effective will these facilities be at water quality management?*
 - a. The addition of control structures to isolate a SWMF basin in the event of a contaminant spill is a positive aspect of the revised design. Additionally, considerable thought has been put into the design of the constructed wetlands.
- 26) Concern regarding post development Basin 1:
 - a. The assumption in the SWMP for this basin is that the post-development scenario will be equal to the pre-development scenario in terms of landscape features therefore uncontrolled drainage is permitted into Jackfish Lake. The SWMP refers to development restrictions which will allow the riparian area to maintain its current ecological state - this premise is not realistic if vegetation clearing for trails is permitted in the 60m riparian buffer around Jackfish Lake.
- 27) The SWMP also indicates that 2 outfalls are to be constructed that will discharge into Jackfish Lake. This will entail a number of provincial permitting requirement including COP for constructing outfalls, *Water Act* approval for discharging water into a waterbody and potentially *Public Lands Act* approvals should these outfalls be located in the bed and shore of the lake.

Summary of Primary Concerns:

- 28) Surface water quality is not specifically discussed as a VEC in any of the updated

technical reports (or previous reports) nor are direct and indirect impacts to the surface water quality of Jackfish Lake sufficiently acknowledged or addressed. This is of significant concern as the driving issue in this watershed is the health of the Jackfish Lake as it pertains to water quality, specifically a trend towards deteriorating water quality.

- 29) The EPP is not adequately addressing the potential cumulative and incremental effects of the proposed development on Jackfish Lake, particularly as it pertains to water quality. Site level (e.g., project or development related effects) are described in the EPP, however the EPP does not account for the incremental effect of this development on the ecological integrity of the entire watershed taking into consideration the level of development already present. Mitigation alone cannot remove the incremental effect of the development, as the development will alter the land use from its present state, which will result in an effect to Jackfish Lake. *The question is what effect will the addition of this development project to an already stressed, highly developed lake system have on lake health, specifically water quality and to what degree will that impact be detected?*
- 30) The SWMP includes split lot drainages for lakefront lots. In particular, post development basin 1 (lakefront lots) is based on the premise that development restrictions around the riparian buffer will allow the area in this basin to maintain its existing ecological function. This will not be possible if vegetation clearing is permitted in 10 m swaths down to the lakeshore, which could effectively remove one third or more of the woody vegetation that provides that ecological function (assuming that all lot owners clear a trail for boat dock installation). *How is the riparian buffer to work as a buffer to filtrate sediments and runoff if portions of it are cleared? To what degree does clearing impact the effectiveness of this riparian buffer? Further clarification is needed to address this.*

Conclusion:

- 31) The State of Watershed report indicates that Jackfish Lake is considered highly sensitive to human encroachment and recommends that strict measures are required to minimize future degradation of the lake from shoreline disruption or watershed land use changes. Twelve out of fifteen criteria used to develop cumulative impact approaches for assessing lake vulnerability to water quality degradation were assessed of which six metrics indicated high concern, five were moderate concern and one was low concern. Additionally, a riparian health assessment completed in 2014 identified Jackfish Lake as being moderately impaired. Many areas of the shoreline are extensively developed, particularly in the northern and southwestern bays of the lake, with many of the developed shoreline areas rated as being moderately to highly impaired from a riparian health perspective. Of note, the area where the proposed development is in an area where the riparian health assessment has ranked the shoreline as healthy, in part because the shoreline and adjacent riparian habitat along the slopes down to the lake are relatively undisturbed stands of native vegetation.

Based on the review of the updated technical reports there are still a number of outstanding issues and concerns that have not fully been addressed. First and foremost is the issue of water quality as it pertains to Jackfish Lake. The EPP does not provide sufficient information to support the conclusion that the development project will not have an effect on the water quality of Jackfish Lake. Limited information is provided regarding impacts to water quality and more specifically how and to what degree, the specific mitigation measures will be effective at reducing impacts to water quality in Jackfish Lake (there are lots of general statements but no literature to back up those statements). The SWMP does attempt to address water quality through the use of constructed treatment wetlands and installation of control structures on SWMFs but does not provide any literature to back up statements on

how effective these treatment wetlands are. Additionally, the SWMP is also relying on the 60 m riparian buffer as an undisturbed shoreline to provide water quality treatment for split lot drainages.

At a minimum, areas where improvements need to be considered are:

- 32) EPP - Provide an updated EPP that clearly identifies who is responsible for what mitigation. An effective EPP should provide clear direction of procedures and protocols that can be followed by consultants/contractors during construction activities. In this case a distinction needs to be made between what mitigation measures/actions fall under the control of the developer (e.g., pre- planning and design phase, construction activities related to lot grading, roads, SWMF's) versus those that rely on resident uptake and compliance (e.g., RECC related such as proper maintenance/disposal of septic, use of fertilizers/pesticides, clearing of vegetation on property, soil erosion and control plans for home builders) otherwise it will not be an effective document.
 - a. Suggest reorganizing Table 5.1 into two separate tables (one related to the developer activities and one related to post development activities) that links nested activity types to the potential environmental effect and then the associated mitigation. This will allow for greater clarity, particularly as the intent of an EPP is to provide clear direction of procedures and protocols to be followed by consultants/contractors during construction activities.
- 33) RECC – Once the site is developed much (if not all) of the mitigation measures are reliant upon the Resident Environmental Code of Conduct. Where is the justification/rational for the effectiveness of this approach? Where else has this approach been implemented and demonstrated effective and consistent uptake among residents? Please provide examples from other jurisdictions support of the rational that such an approach is effective.
- 34) Vegetation clearing in ER riparian buffer - If all lakefront owners are permitted to clear a 10m trail (approximately 1/3 of the each lot) and remove the woody vegetation how is the 60m riparian buffer going to effectively provide runoff treatment? What is the impact of this and how can the loss of a third or more of the woody vegetation along this sensitive riparian area still be effective mitigation for water quality protection of Jackfish Lake? Further clarification is needed to provide justification/rational to support the concept that the riparian buffer would still be effective if vegetation clearing is permitted.
- 35) Incremental/Cumulative Effects related to Water Quality - Mitigation alone cannot remove the incremental effect of the development, as the development will alter the land use from its present state, which will result in an effect to Jackfish Lake. The question is, what effect will the addition of this development project to an already stressed, highly developed lake system have on lake health, specifically water quality and to what degree will that impact be detected? Further clarification is needed.

The risk of allowing the proposed development to proceed in its current form is that the addition of a large scale-development on an already stressed lake ecosystem may be sufficient enough to exceed the threshold for acceptable water quality limits in Jackfish Lake given the lake's current vulnerability to water quality degradation. This could be the tipping point for accelerating deteriorating lake health at Jackfish Lake, particularly in light of increasing climatic stressors that may be impacting lake water levels and thus contributing to the decline in resilience of this lake ecosystem to absorb additional environmental impacts.

That being said there are several options available for working with the Developer to achieve a reasonable solution including:

- 36) Complete redesign of the conceptual plan to avoid split lot drainages along north and

west perimeter of Jackfish Lake by moving development boundary and associated lot lines to top of bank in this area. This would avoid any need for regrading and would ensure that the 60m riparian buffer would remain intact and function as an effective buffer. Isolating and containing all surface water associated with the development to controlled release SWMFs tied into a wetland treatment train is the most effective means of addressing impacts to lake water quality.

- 37) Prohibit the clearing of any vegetation in the 60 m buffer zone. In this situation no individual trails from private lots would be permitted to the lake. Perhaps work with Developer to identify one location for a communal removable dock and a single access point to that dock.

Economic Diversification

The Economic Diversification Department has no issues with this development.

Long Range Planning

No comments received.

Development Engineering Services

Development Engineering Services has evaluated the proposed redistricting and outline plan application for the proposed country residential lots and provides the following comments:

General:

- 1) At future subdivision stage, the Owner is required to enter into a Development Agreement pursuant to Section 655 of the Municipal Government Act respecting provision of the installation/construction of all required off-site and on-site improvements to support the development in accordance with Parkland County's Engineering Design Standards.

Geotechnical:

- 2) The Applicant has submitted a geotechnical investigation, slope stability assessment, domestic groundwater assessment and percolation investigation in support of the proposed Outline Plan.
- 3) The slope stability assessment identified two slopes along the top of bank of Jackfish Lake that require development setbacks of 10m and 15 m to ensure long term stability. Restrictive covenants shall be registered against these lots as part of the subdivision process to implement the required setbacks.
- 4) The development shall be serviced via individual private waste water systems on each lot. The percolation evaluation identified that traditional septic field or mound systems would generally be acceptable based on in-situ soil conditions, however holding tanks (pump-outs) are proposed to reduce potential of nutrient seepage into the watershed. Restrictive covenants shall be registered against each lot through the subdivision process. The transportation system shall be evaluated to ensure long-term use of vacuum trucks to the development.
- 5) Shallow Water Table evaluations were conducted for the Outline Plan area with few boreholes indicating concerns, specifically related to the existing identified wetlands.
- 6) The Owner will be required to follow the recommendations outlined in the reports. Future updates may be required at subdivision stage in accordance with Parkland County Engineering Design Standards.

Transportation:

- 7) The Applicant has submitted a Traffic Impact Assessment and Highway 770 Intersection Letter (Urban Systems, February 2017) in support of the proposed Outline Plan for the ultimate development. The Township Road 522 and Highway 770 intersection will have to be improved to a Type IIIB intersection to support the proposed land development. This intersection work shall be the responsibility of the Developer if not completed as part of an Alberta Transportation program.
- 8) Lutz Avenue and Township Road 522 will require additional road right of way and will have to be reconstructed with an asphalt concrete paved surface in accordance with

Municipal Development Plan Policy 10.12 and Parkland County Engineering Design Standards to support the subdivision.

- 9) **Development Engineering Services does not support the Developer's request to defer the asphalt surfacing of Lutz Avenue and Township Road 522 to Phase 2 (refer to Section 6 of Outline Plan).** The Outline Plan places no timeline on when Phase 2 or the asphalt surfacing of off-site roadways may be completed. Construction traffic as well as truck hauling (re: cistern and holding-tank servicing) to Phase 1 lots without asphalt surfacing will have an undesired impact to the enjoyment of existing lots along the roadway (Evergreen Bay). There are no policies regarding noise or dust abatement for the proposed gravel roadways within the Outline Plan. **Recommend that Council amend the Outline Plan prior to adoption requiring the Developer to reconstruct and asphalt Township Road 522 and Lutz Avenue as part of Phase 1 Improvements to reduce impact on neighbouring properties within Evergreen Bay subdivision.**
- 10) A plan for temporary alternative route access to the existing residential lots within Evergreen Bay shall be submitted and approved by the County prior to reconstruction of Township Road 522 and Lutz Avenue.
- 11) The internal roads for proposed Phase 1 exceed the allowable cul-de-sac length as per Parkland County Engineering Design Standards. An emergency exit route will have to be provided to the satisfaction of Fire Services and Alberta Transportation if connected to the Highway.
- 12) The length of the proposed temporary emergency exit to Phase 1 is approximately 800 metres. There is a concern of how the access will be built and to what standard. There is also a concern of who will maintain it since it is on private land. To be reviewed at detailed design stage.
- 13) The 57 lots are proposed to be privately serviced via individual on-site cisterns and holding tanks (pump-outs). The transportation infrastructure shall be designed to accommodate the required truck traffic in accordance with Parkland County Engineering Design Standards.

Stormwater Management:

- 14) Authorization will be required from Alberta Environment and Parks to ensure the storm water management infrastructure meets Provincial standards for the timing, quantity and quality of storm water release (i.e. *Water Act, Environmental Protection and Enhancement Act, Public Lands Act*).
- 15) Pre and post development flow designs are required to be approximately 5L/s/ha in accordance with Alberta Environment and Parks stormwater runoff rates for this area of the Capital Region.
- 16) Adequate ditching improvements are required from the pond outlets to Jackfish Lake to handle a minimum 1:100 event so as to have minimal impact on adjacent properties within the Evergreen Bay subdivision.
- 17) Each of the proposed storm water management facilities shall require an outlet structure for system shut-off in the event of a potential contaminant spill within the basin.
- 18) The detailed stormwater management plan and detailed design drawings for the off-site road improvements shall capture the roadway drainage for Township Road 522 and Lutz Avenue.
- 19) Future design consideration – emergency spill ways to be armored, please ensure conformance with Parkland County Engineering Design Standards.
- 20) Land Development Engineering understands the constraints to prevent any unwarranted surface discharge from individual lake fronting lots with the proposed

split lot grading plan and are optimistic individual lot owners are mindful of the consequences from uncontrolled surface drainage releases. We recommend the developer provide an educational brochure or written notice to inform prospective lot purchasers. Reference AEP's Lake Stewardship guidelines information AEP-Environment and Parks. <http://aep.alberta.ca>.

- 21) Four (4) SWMF are proposed; this is an unusually high number of storm ponds for the development area size; the number of storm ponds proposed will create increased future infrastructure maintenance costs to Parkland County. **We have strongly encouraged the developer and their engineering representative to seek alternatives with overall grading designs to relive Parkland County of future maintenance costs. We do not support the number of storm ponds proposed.**
- 22) The Storm Water Management Plan identifies a 4.2 ha (Basin-6) surface discharge to Hwy 770 right-of-way; Developer requires written permission from Alberta Transportation. Parkland County does not support this drainage release concept.
- 23) The drainage pattern along Township Road 522 and Lutz Avenue is not shown on the Storm Water Management Plan; please revise map to reflect drainage discharge direction.
- 24) Lot 1MR, Block 6 (north end along Township Road 522) within the Storm Water Management Plan does not show a drainage pattern; please revise map to reflect drainage discharge direction.
- 25) Permeable paving surfaces if accepted shall be restricted to "private property" locations and not roadways that fall within Parkland County ROW allowance.
- 26) Infiltration trenches require increased inspections and maintenance; they are susceptible to sediment clogging conditions. Require further review prior to acceptance.

Public Utilities:

- 27) At future subdivision stage, the Owner will be required as a condition of approval to enter into a Development Agreement requiring the installation of the following Public Utilities: gas, power, telephone lines, community mailbox site(s)

Development Planning	No comments received.
Safety Codes	No comments received.
Public Works	No comments received.
Engineering Services	No comments received.
Parks, Recreation & Culture Services	We have concerns regarding the capacity of the lake, and the potential added pressure on the County's boat launch and all of the added docks, etc. that may come with the water front properties. The Municipal Reserve parcels as currently allocated throughout the development do not provide great connectivity between subdivisions as envisioned under the Parkland County Master Recreation Plan, however, the County does not have a formalized process to follow at this point.
Protective Services	No comments received.
Fire Services	We have concerns on the emergency route in alignment to the comments from Development Engineering Services and Alberta Transportation. The emergency access/exit route should be done for phase one but if the second phase was expected to be happening quickly we would be fine with it going on the second phase.
Agricultural Services	No comments received.