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Official Community Plan Implications

The subject property is designated Rural pursuant to the "Regional District of Nanaimo Electoral Area 'H' Official Community Plan Bylaw No. 1335, 2017" (OCP). The Rural designation supports a minimum parcel size of 4.0 hectares for the subdivision of land. Given that the proposal is a two-lot subdivision where Lot 1 is 4.20 hectares and Lot 2 is 4.25 hectares in size, the proposed amendment is consistent with the OCP Rural designation policies.

The proposed zoning amendment is required to demonstrate compliance with Board Policy B1.21 and OCP policy to provide verification of potable water sources and onsite sewage disposal capability that are sufficient to service the proposed development.

In support of this, the applicant has provided a Preliminary Hydrogeological Assessment prepared by Chinook Arch Geoscience Inc., (Report) dated June 23, 2022., that provides an assessment of the hydrogeological conditions of the subject property and a professional opinion on the suitability of a potable water source for the proposed subdivision.

The Report identifies that the site is underlain by unconfined Aquifer 661, assessed with high vulnerability, moderate productivity, and low demand; and additionally, a deeper confined Aquifer 662, assessed with low vulnerability, moderate productivity and moderate demand.

The Report, based on local well analysis, identifies that Aquifer 661 is currently able to supply small volumes of groundwater for domestic use, but large-scale groundwater would likely be unsustainable. Aquifer 662 is predominately recharged via infiltration of precipitation; thus, water levels vary seasonally. Currently, Aquifer 662 can supply volumes of groundwater for domestic use as well as lager scale groundwater for local water supply systems based on local well observations.

For water yield analysis of Aquifer 661, the report used data that included 8 wells which resulted in a median well yield of 54 m^3 per day. For water yield analysis of Aquifer 662, the report used data that included 111 wells which resulted in a median well yield of 38 m^3 per day. As a result, it is anticipated that future wells to support the two-lot subdivision, could sustain the required water supply of 3.5 m^3 per day for domestic use, and adverse impacts to the groundwater resources or groundwater users are not expected. To offset the additional groundwater demand, the Report recommends the use of low flow fixtures and rainwater harvesting for residential development. To support groundwater re-charge, the Report recommends implementing rainwater management techniques such as bio-swales and limiting the amount of landscaping and irrigation as part of the residential development.

Based on this information, the recommendation is for the water conservation measures be secured through a Section 219 covenant. A rainwater harvesting system plan be developed by a qualified professional in accordance with the RDN's Rainwater Harvesting Best Practices Guidebook for potable and irrigation water demands and include landscaping provisions for aquifer re-charge in accordance with the Report. This plan shall be submitted for approval by the General Manager of Development and Emergency Services at the time of building permit application. Confirmation by a qualified professional that the system has been installed and functional including installation of low flow fixtures, shall be submitted and approved prior to obtaining an occupancy permit for any new dwelling unit on proposed Lot 1 or Lot 2.

Prior to the Board's consideration of adoption of the amendment bylaw, it is recommended that the applicant be required to register a Section 219 covenant on the property title registering the Preliminary Hydrogeological Assessment prepared by Chinook Arch Geoscience Inc., dated June 23, 2022, and stating that no subdivision shall occur until such time that a report from a Professional Engineer (registered in BC) has been completed to the satisfaction of the Regional District of Nanaimo confirming that the wells have been pump tested and certified including well head protection, and that the water meets Canadian Drinking Water Standards in accordance with "Board Policy B1.21 – Groundwater – Application Requirements for Rezoning of Un-serviced Lands" (Policy B1.21). Any new well is to be constructed tested and a final well report to the satisfaction of the RDN must be submitted prior to final approval of subdivision.

The Report also concludes that the subdivision impacts to groundwater quality is expected to be very low, as properly designed septic systems will be required to be constructed to Island Health (VIHA) standards. The report recommends that all septic components are at least 30.0 metres from a groundwater well to limit potential contamination.

In support of this application, the applicant has also provided a Soil Test Pit Results for Onsite Sewage Disposal System prepared by Recap Waste Water Inc., dated November 1, 2022, to determine the suitability for onsite sewage disposal within proposed Lot 2. The summary concludes that the soils onsite are sufficient to allow wastewater systems to be designed and installed in accordance with the Sewerage System Regulation and the Sewerage System Standard Practice Manual, Version 3. This will be verified by Island Health by way of a wastewater disposal approval through the subdivision approval process.

The OCP includes direction that zoning amendments should generally be requested to include a public amenity as part of the completed project, in recognition of the increased value conferred on the land in the course of rezoning. The applicant is proposing a voluntary one-time community amenity contribution in the amount of $3,500 to the Regional District of Nanaimo Bow Horn Bay Building Reserve Fund to be used specifically for the building design and construction of the Bow Horn Bay Satellite Fire Hall project. The provision of this amenity contribution is recommended as a Condition of Approval in Attachment 6.

Land Use Implications

The existing Rural 1 (RU1) zoning of the subject property allows agriculture, aquaculture, home-based business, produce stand, silviculture, secondary suite, and residential use. The proposed two-lot subdivision would create two RU1 zoned lots.

The RU1 zone permits two dwelling units on parcels greater then 2.0 hectares in size. If a two-lot subdivision is approved according to the proposed plan of subdivision, proposed Lot 1 may construct up to 2 dwelling units and two suites. However, proposed Lot 2 is affected by BC Hydro (BCH) and Telus Communications Inc., Statutory Right-of-Way (SRW), Charge No. CA6816509. The SRW encompasses approximately 3.0 hectares of proposed Lot 2, as a result, the buildable site area is limited to 1.24 hectares. Due to this limitation, it is recommended that a Section 219 Covenant be registered on the title of the property, restricting proposed Lot 2 to one dwelling unit and one accessory secondary suite only.

The applicant has submitted a proposed plan of subdivision by JE Anderson & Associates Ltd., dated June 28, 2022, to show the potential shape and dimensions of the proposed lots (see Attachment 3 – Proposed Plan of Subdivision). Proposed Lot 1 and Lot 2 would result in a road frontage of 7.9% and 5.8% respectfully. Therefore, as part of the subdivision approval process the proposed configuration would require a relaxation of the 10% road frontage requirements of Section 512 of the *Local Government Act*.

Environmental Implications

The subject property is subject the Eagle and Heron Nesting Tree and Freshwater and Fish Habitat Development Permit Areas, per the OCP. A development permit application will be required, unless specifically exempt, prior to land alteration and/or final approval for subdivision.

Intergovernmental Implications

The application was referred to the Ministry of Transportation and Infrastructure (MOTI), who indicated that they have no objections to the rezoning application. As part of the formal subdivision application review, MOTI will also consider access, stormwater management and geotechnical implications.

The application was referred to VIHA who identified that the septic disposal for the properties must be in compliance with the Sewerage System Regulations and VIHA subdivision standards. VIHA recommends any shared wells must be in compliance with the *Drinking Water Protection Regulation*. At the time of subdivision, as part of requirements for Policy B1.21, the RDN would confirm that any drinking water system for lots containing two dwelling units have an Operating Permit from VIHA.

Given the groundwater protection policies of the OCP, the zoning amendment application was also referred to the Qualicum Bay – Horne Lake Waterworks District (QBHLWD). A portion of the property is located within the well capture zone for the community water supply. With respect to permitted uses on the property, the improvement district identified concerns with agriculture due to pesticides and fertilizers, and residential uses due to septic systems and abandoned wells. With respect to the proximity of the well head protection area and the proposed development, the QBHLWD requests that hydrogeologic testing and analysis be conducted at the time any new well is drilled on either Lot 1 or Lot 2 to assess whether there is a cumulative interference between the new water supply and the QBHLWD supply.

To address QBHLWD concerns with rural residential use and potential new well drilling as a result of the proposed subdivision, as a condition of approval, it is recommended that a Section 219 Covenant be registered on the title of the property to ensure that any existing wells on the property will be brought into compliance with the *Drinking Water Protection Regulations*, which may include upgrading well heads or decommissioning abandoned wells. To mitigate risks to groundwater contamination, the septic systems must be designed in accordance with VIHA design and maintenance standards and the applicant is required to retain a qualified groundwater professional under the *BC Water Sustainability Act* to complete a risk assessment of the proposed development in the context of Qualicum Bay – Horne Lake Waterworks District groundwater supply.

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This application was referred to BC Hydro (BCH) as the property is affected by BC Hydro (BCH) and Telus Communications Inc., Statutory Right of Way (SRW), Charge No. CA6816509. The SRW contains two large circuits: 2L123 and 2L128. Both of these circuits are currently energized at 230 kV but were built to 500 kV capacity and are treated as such. Given that these circuits could become 500 kV, BCH would like to make the future owner of Lot 2 aware of potential issues with respect to building development near the edge of 500 kV high voltage transmission lines (500 kV Lines).

Construction of buildings at or near the SRW boundary to 500 kV Lines triggers the need for further study (and potential redesign) to manage electric field impacts, including the risk of induction shocks. There may be safety issues arising from the buildings and it is essential that the developer retains a professional consultant with expertise in calculating electric fields and recommending mitigation strategies during design, construction, and after occupancy. It is the developers' responsibility to ensure that no part of the building is exposed to electric fields in excess of 5 kV/m (IEEE Standard C95.6-2002) including outer walls, balconies, overhangs, and roof. The electric field shall be calculated as per ES41K3.3.1 R0. To ensure compliance with the requirements, these comments have been submitted to RDN Building Inspection Services. These requirements will be included in the Plan Check review process and confirmed prior to building occupancy.