REGIONAL DISTRICT OF BULKLEY-NECHAKO

Planning Department Referral Report

File No. RZ B-02-25

Written By: Cameron Kral, Planner

APPLICATION SUMMARY

Name of Agent / Owners: Mark and Brandy-Ann Martens

Electoral Area: Electoral Area B (Burns Lake Rural)

Subject Property: 4215 Hope Road, legally described as Lot 2, District Lot 2545, Range 5, Coast District Plan 3722 (PID 011-785-101)

Property Size: 2.9 ha (7.2 ac)

OCP Designation: Lakeshore (L) Designation in "Burns Lake Rural and Francois Lake (North Shore) Official Community Plan Bylaw No. 1785, 2017" (the OCP)

Zoning: Waterfront Residential II Zone (R4) in "Regional District of Bulkley-Nechako Zoning Bylaw No. 1800, 2020" (the Zoning Bylaw)

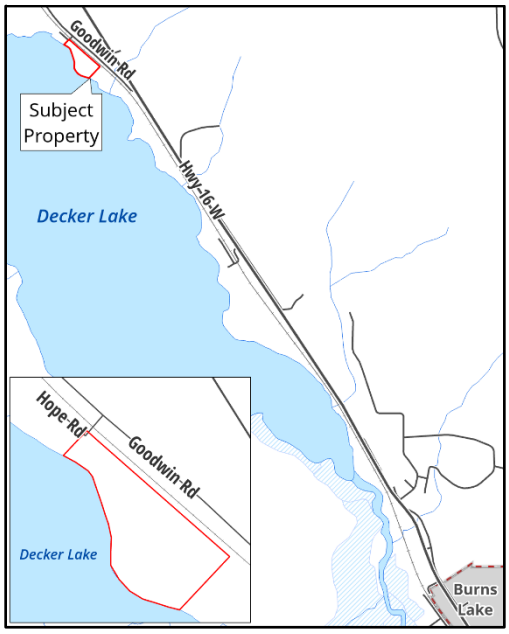
Building Inspection Within the Building Inspection area

Fire Protection Within the Burns Lake Rural Fire Protection Area

Existing Land Uses: The subject property contains a Single Family Dwelling, two storage buildings, a waterfront gazebo/storage building, and several small sheds. The RDBN has no building permit records for the two storage buildings.

Location: 5 km northwest of the Village of Burns Lake, between the CNR track and Decker Lake.

Location Map



PROPOSAL

The applicants reside on the subject property in a Single Family Dwelling and wish to construct a second detached dwelling in the form of a 900 -1600 ft^2 (83.6 -148.6 m^2) double wide manufactured home. However, the Waterfront Residential II Zone (R4) only permits two dwellings on the property within the same building, either as a Single Family

Dwelling with a Secondary Suite, or as a Two Family Dwelling. Therefore, the applicants are proposing to amend the R4 Zone in the Zoning bylaw to allow a second detached dwelling. Further, the applicants are proposing to remove the ability to have a Secondary Suite within the existing Single Family Dwelling. Therefore, this application would not increase the total number of dwellings permitted on the property.

DISCUSSION

Official Community Plan (OCP) and Zoning

The subject property is designated **Lakeshore (L)** pursuant to the OCP. The intent of the L Designation is to accommodate the demand for residential development in close proximity to lakes within the Plan area. The lands available are limited to allow in-fill development at a scale that will not impact the character of existing lakeshore development or other neighbourhoods. The density and scale of development is also limited to ensure that the environmental integrity of the lakes is not negatively impacted.

OCP policy 3.5.2(7) states that rezoning applications to allow a second Single Family Dwelling on a parcel in a Residential Zone may only be considered under the following circumstances:

(a) It has been demonstrated that any existing on-site sewage disposal system is authorized by Northern Health and is in good working order.

(b) It has been demonstrated that the parcel can accommodate an on-site sewage disposal system for two dwellings.

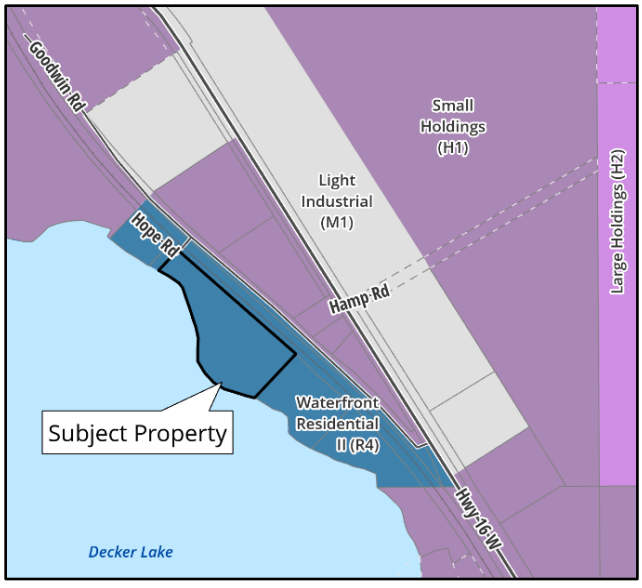
(c) The development is compatible with adjacent land uses and maintains the rural character of the area.

(d) And, the parcel is not located within a floodplain or on other hazard lands.

The applicants provided a report from a Registered Onsite Wastewater Practitioner (ROWP) stating the subject property has an authorized on-site sewage disposal system with no observable deficiencies, and the subject property can accommodate an on-site sewage disposal system for a second detached dwelling (see Attachments).

Conformity with Northern Health regulations is ensured during the Building Permit process. There are no known notable wildlife or ecological values on the subject property and no known hazards.

Zoning



Staff note the attached ROWP report contemplates a two-lot subdivision that is not being proposed as part of this application. However, the subject property is large enough to meet the R4 Zone's 8,000 m^2 (1.98 ac) minimum parcel area requirement and 60 m (197 ft) minimum water frontage requirement for a potential 2-lot subdivision.

REFERRALS

This application is being referred to the Electoral Area B (Burns Lake Rural) Advisory Planning Commission, the Ministry of Transportation and Transit, and the Village of Burns Lake.

ATTACHMENTS

- Applicant Submission
- Waterfront Residential II Zone (R4), RDBN Zoning Bylaw No. 1800, 2020
- Site Visit Photos


Hope Rd
Goodwin Rd
Driveway/Access
Storage Building #1
Storage Building #2
Sheds
Single Family Dwelling
Utility Shed & Septic Field
Second Dwelling Location
(Approximate)
Waterfront Storage/Gazebo
Decker Lake

Nos Designs Ltd.

Northern Onsite Septic

Onsite Septic Suitability Report

Proposed Two-Lot Subdivision

Lot 2, Plan PRP3722,
DL2545, Range 5, Coast Range 5 Land District
4215 Hope Road, Burns Lake

Prepared By:
Lisa Bailey, AScT, ROWP Planner

Prepared For:
Mark & Brandy-Ann Martins

Project #: 2021-082
Date: February 2022
Folio #: 26-755-12639.000

Feb. 25/2022

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Date: February 24, 2022

Ministry of Transportation
161-Hwy 16 Box 3500
Burns Lake, BC
V0J-1E0

Attention: Approving Officer

Reference: Lot 2, Plan PRP3722, DL 2545, Coast Range 5 Land District
4215 Hope Road, Burns Lake, BC
Onsite Sewerage Suitability Report

1.0 INTRODUCTION

NOS Designs Ltd. was retained to perform a site assessment of the above-referenced property for the purposes of providing an onsite septic suitability report for a proposed two-lot subdivision application. I, Lisa Bailey, AScT, ROWP Planner, performed the site assessment on this property on June 29th, 2021.

The owner of this property wishes to subdivide the existing 7.2-acre lot into two smaller lots. Proposed lot A shall be 4.2 acres (1.7 hectares) and proposed Lot B shall be 3 acres (1.2 hectares). The property has an existing three-bedroom house located on proposed lot A, which is currently serviced by an existing septic system that is pumped to a below-grade septic field. The existing septic system has a "Permit to Construct" and an 'Authorization to Operate" which was stamped received by the Ministry of Health on May 26, 1995 (please see these enclosed documents). This existing septic system showed no signs of any malfunctioning on the day of my site assessment visit. There were no signs of ponding of septic effluent on the ground or any odors in the vicinity of the existing septic system. Based upon my observations of the existing septic system at the time of the site visit, the existing septic system did not show any signs that it was causing any health or environmental issue.

During the initial site investigation, a total of six permeameter tests were conducted and a total of three test holes were evaluated to determine potential

design options for an onsite sewerage treatment system. NOS Designs Ltd. performed infiltration testing with a permeameter. One test pit and two permeameter tests were performed on proposed lot A and two test pits and four permeameter tests were performed on proposed lot B. The locations of the test pits and permeameter tests are shown on the enclosed site plan drawing 002 and the results of each test pit soil analysis and the results of each permeameter test are enclosed as well. The site assessment reviewed the site conditions and constraints present for onsite wastewater disposal.

There is an existing water well which services the existing three-bedroom house and a proposed water well can be installed to service the proposed lot B in the location shown on the site plan drawings 001 and 002. There is sufficient distance available so that the existing water well and the proposed water well will comply with the minimum 30m offset distance required from all components of the existing and proposed septic systems.

Each of the two proposed lots A & B are accessible via a frontage road and driveways that will easily allow for access to pump out the septic tanks as shown on site plan drawings 001 and 002 in appendix C.

1.1 Property Description

Civic Address: 4215 Hope Road, Burns Lake, BC
Legal Description: Lot 2, Plan PRP3722, District Lot 2545, Range 5 Coast Land District
Folio Number: 26-755-12639.000
PID#: 011-785-101
Lot Size: 2.91 Hectares
Water Supply: Existing Water Well (Proposed Lot A)
Proposed Water Well (Proposed Lot B)
Location: 54° 16′ 27" N, 125° 47' 31" W

2.0 SITE CONSTRAINTS

Site constraints include soil permeability setbacks to water supply, and surface drainage systems, percolation rates, soil texture, soil structure, land slope, depth of native soil above the restrictive layer and/or seasonal high-water table (see site assessment results attached).

2.1 Setbacks

This property is serviced by an existing water well, so the offset from a water well(s) is applicable. Any proposed sewerage absorption field shall be kept a minimum of 30m away from any watercourses, 3m away from the any existing or proposed houses, 3m away from any drinking water lines, and a minimum of 7.5m from any potential breakout point. The field shall be kept a minimum of 3m from the property lines. The septic tanks must be kept a minimum of 3m away from any drinking water line and, 1m away from any existing/proposed houses.

3.0 SOIL OBSERVATIONS & FINDINGS

3.1 Soil Field Evaluation

Three test pits (TP1 – TP3) were excavated during the initial site assessment on June 29th, 2021.

3.1.1 Soil Structure & Consistence

Test pits (TP1- TP3) were excavated to a depth of 1.27m (TP1), 1.27m (TP2), and 1.0m (TP3). The locations of each of the soil test pits are shown on the site drawing 002 in the Appendix C. The detailed results of these test pit soil analysis are enclosed in Appendix A.

For TP1, the soils at the top horizon showed favorable structure and consistence for the first 0.15m (0-6") with a strong granular structure and a dry and loose consistence. Below this from >0.15m (6") up to 0.38m (15"), the soil showed a poor soil structure and consistence with a weak granular structure and a dry and slightly hard consistence. The last soil horizon observed from > 0.38m (15") to the bottom of the test pit at 1.27m (50") was a very poor soil structure and consistence with a moderately platy structure and a dry and slightly hard consistence.

For TP2, the soils at the top horizon showed a favorable structure and consistence for the first 0.23m (9") with a strong granular structure and a dry and loose consistence. Below this from > 0.23m (9") up to 0.53m (21"), the soil horizon showed a poorer soil structure and consistence with a strong blocky structure and a dry and extremely hard soil consistence. The last soil horizon observed in this test pit from > 0.53m (21") up to the bottom of the test pit at 1.27m (50") was a very poor soil structure and consistence with a moderately platy structure and a dry and very hard consistence.

For TP3, the soils at the top horizon also showed a favorable structure and consistence for the first 0.23m (9") with a strong granular structure and a dry and loose consistence. Below this from > 0.13m (9") up to 0.33m (13") showed a very poor soil structure and consistence with a strong platy structure and a dry and slightly hard consistence. The next soil horizon from > 0.33m (13") up to 1.07m (42") also showed a very poor soil structure and consistence with a strong platy structure/massive structure and a dry and hard/extremely hard consistence.

The soil horizons for each of the test pits become increasingly poorer with depth. However, the favorability of the top soil horizons would allow for an above grade sand mound, pressurize distribution septic system.

3.1.2 Soil Texture

The soil at the top horizon for each of the test pits was a favorable sandy loam up to an approximate depth of 0.23m (9"). Although, the sandy loam observed in test pit 1 was only up to a depth of 0.15m (6"), this shallower sandy loam horizon is most likely only due to the specific location chosen for TP1. The soil texture below the top soil horizons is a sandy clay loam from approximately >0.23m (9") up to 0.31m (15") in TP1, 0.53m (21") in TP2, and 0.33m (13") in TP3. In all three test pits the soil has more clay present increasing with depth and transitioning from a sandy clay loam to a sandy clay/clay texture. Please see details test pit log results in appendix A.

Based upon the observations obtained and in my professional opinion, the infiltrative surface for a purposed septic system should be the sandy loam

horizon at the top. Therefore, further supporting the proposed above-grade, timed-dose pressurize distribution, sand mound septic system.

3.2 Field Saturated Soil Permeability

A total of six permeameter tests (PT1 – PT6) were performed as shown on the site drawing 002 in Appendix A, at various different depths using a 7.0cm diameter Edelman auger. The detailed results are enclosed in Appendix A. The field saturated hydraulic (Kfs) values obtained were as follows:

Auger Hole #	Stable Rate of Fall mm/min	Soil Factor	Field Saturated Hydraulic Conductivity (Kfs) mm/day	Depth
PT1	0	56.3	0	32"
PT2	3	56.3	168.9	13"
PT3	5	56.3	251.5	14"
PT4	0	32.4	0	30"
PT5	1	32.4	32.4	29"
PT6	2	56.3	112.6	13"

From these results, the soil is more permeable at the top 0"-14" soil horizons than the deeper soil horizons.

3.3 Depth of Native Soil Above the Restrictive Layer or Seasonal High-Water Table

Each of the test pits TP1, TP2, & TP3 were dry with no signs of a "ground water table" up to the bottom of each test pit, which was up to a depth of 1.27m (50"). There were also no signs of gleying and/or mottling in any of the three test pits.

3.4 Land Slope

The land slope of the two proposed lots is relatively flat with a gentle slope down from northeast to southwest (1-3%) towards the lakeshore. The land slope in the area of the proposed septic system is approximately 1% falling slightly down from northeast to southwest and relatively flat from southeast to northwest. There are no steep banks or slopes over 2m high or slopes of 25% or greater, within or adjacent to the proposed property.

3.5 Coarse Gravel Content

Coarse gravel content at the infiltrative layer was <15%.

4.0 SELECTING A TREATMENT SYSTEM

Based upon the above soil conditions observed, and the current Standard Practice Manual Version 3, we would recommend a Type 1, pressurized, time-dosed, uniformly distributed treatment system with a sand mound media.

Using a daily design flow of 1,300L/day for a three-bedroom house on the proposed lot B, an above grade, sand-mound septic field and a reserve field of the same type and size could fit on this proposed lot.

Should the existing septic field on proposed lot A fail, there should be sufficient room to also install the same above grade type of sand mound septic system and a reserve area on lot A.

4.1 Field Sizing

Based on the design flow of 1,300L/day for a three-bedroom house and 15 L/day/m^2 for the design wastewater loading rate (Table II-22/II-23, Pg II-6 SPM V3), the minimum total basal area required is 1,300L/day ÷ 15 L/day/m^2 = 86.7m^2. Also, the minimum length required, based upon a design linear loading rate of 25 L/day/m (Table II-27/28. Pg II-39/40 SPM V3) would be 1,300L/day ÷ 25L/day/m = 52m. Therefore, the proposed septic field to service a three-bedroom house, would need to be an approximately size of 10m wide x 60m long (including side slopes).

A field of this size could be fit on the proposed lots as shown on the attached site plan drawings.

4.2 Reserve Area

Each of the proposed two lots has available space for a septic field reserve area, if necessary. The available reserve areas are illustrated on the enclosed site plan drawings 001 and 002 in appendix C.

5.0 SUMMARY

An effective onsite wastewater technology for this site is a Type 1 septic tank system applied with a time-dosed, pressure distribution to a sand mound disposal field.

This report provides a description of the site conditions observed, identifies the site constraints and provides sewerage system design recommendations. However, this report is only for the purposes of a subdivision application onsite septic suitability report. An official design plan must be completed by an authorized person and accepted by the health authority prior to any new onsite sewerage system installation.

A properly designed, managed and maintained sewerage system will provide effective treatment with no negative impact or hazard to human health or the environment.

If you have any further questions or concerns, please do not hesitate to contact the undersigned.

Sincerely,

[redacted]

OW0530

Feb. 25/2022

Lisa Bailey, AScT, ROWP Planner
Civil Engineering Technologist
Project Manager
NOS Designs Ltd.
[redacted]

Email: lisabailey@nosdesigns.ca

Website: www.nosdesigns.ca

SECTION 8.0 - WATERFRONT RESIDENTIAL II ZONE (R4)

8.0.1 Permitted Uses

1. Principal Uses
   a) Single Family Dwelling
   b) Two Family Dwelling
   c) A building containing three Dwelling Units where each of the Dwelling Units is occupied by only one resident, only on the Parcel legally described as Lot 2, Plan 3309, District Lot 314, Range 5, Coast District.

8.0.2 Density

1. Not more than one Single Family Dwelling or one Two Family Dwelling shall be located on a Parcel.

8.0.3 Limitations on Use

1. A Two Family Dwelling is not a permitted use on the Parcel legally described as Lot 2, Plan 3309, District Lot 314, Range 5, Coast District.

8.0.4 Parcel Area

1. The minimum Parcel area that may be created by subdivision is 8,000 square metres (1.98 acres).

8.0.5 Minimum Water Frontage

1. The minimum Water Frontage that may be created by subdivision is 60 metres (197 feet).

8.0.6 Parcel Coverage

1. Structures shall not cover more than thirty-three percent of a Parcel area.

8.0.7 Setback

1. No Structure or part thereof, shall be located within the setback prescribed below:
   a) 7.5 metres (24.60 feet) from the Front Parcel Line;
   b) 2 metres (6.56 feet) from the Rear Parcel Line, which does not abut a Highway;
   c) 2 metres (6.56 feet) from each Side Parcel Line, which does not abut a Highway;
   d) 4.5metres (14.76 feet) from any Parcel Line which abuts a Highway."

8.0.8 Height

1. The maximum Height for a fence shall be 1.2 metres (4 feet) in a Front Yard and 1.8 metres (6 feet) in any other Yard.

RZ B-02-25 Site Visit Photos, dated July 11, 2025

Residence, facing west towards Decker Lake:

Residence and storage building #2, facing west

Storage building #2 (left) and storage sheds (Right), facing north:

Storage building #1, facing southeast:

Waterfront gazebo/storage building and dock, facing southwest:

North property line, facing northeast from residence:

Proposed dwelling site (approximate), facing west from north/east property lines:

East property line, facing east:

Southeast waterfront, facing west from east property line:

Septic System, facing northeast: