STAFF REPORT

File No.: PLRZ20250001
X – File: SS-BE-2022.13

DATE OF MEETING:	December 11, 2025
TO:	Salt Spring Island Local Trust Committee
FROM:	Oluwashogo Garuba, Planner 2 Salt Spring Island Team
COPY:	Chris Hutton, Regional Planning Manager
SUBJECT:	Application to amend Salt Spring Island Land Use Bylaw to permit three dwelling units Applicant: Serena Klaver Location: 120 Mansell Road, SSI (PID: 018-319-050)

RECOMMENDATION

1. **That the Salt Spring Island Local Trust Committee request staff to proceed with application PLRZ20250001 (120 Mansell Rd).**

2. **That the Salt Spring Island Local Trust Committee direct staff to prepare a draft bylaw to amend Salt Spring Island Land Use Bylaw No. 355, 1999, to rezone LOT A, SECTION 6, RANGE 4 EAST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN VIP56901 (PLRZ20250001, 120 Mansell Road) from Rural (R) zone to a Rural (R) zone variant that:**

    a. **Permit two existing oversized seasonal cottage (Building 1 & Building 3 as shown in site plan - Figure 1) to be converted into full time dwelling units**

    b. **makes the setback from front lot line 0.95 meters for the existing building 1 (as shown in site plan - Figure 3)**

3. **That the Salt Spring Island Local Trust Committee withhold third reading of the proposed bylaw until the legal non-conforming cottage (Building 1) has been decommissioned.**

REPORT SUMMARY

The purpose of this report is to present the Salt Spring Island Local Trust Committee (LTC) with a preliminary staff report for the proposed amendments to Salt Spring Island Land Use Bylaw No. 355 to rezone the 1.27 ha (3.3 ac) subject property from Rural (R) to Rural (R) zone variant to permit three dwelling units. Staff recommend drafting and advancing bylaw at the initial stage but withhold third reading of proposed bylaw until the decommissioning of the legal non-conforming building.

BACKGROUND

The subject property (Figures 1 & 2) is located at Mansell Road on the east end of Salt Spring Island is 1.27 ha (3.3 ac) in area and zoned Rural (R). Currently located on subject property are:

- Single family dwelling

- Seasonal cottage 1
- Seasonal cottage 2
- Farm building (barn)

Seasonal cottage 1 (Building 1 as shown on the site plan in Figure 1) is a legal non-conforming structure, built around 1945 according to BC Assessment. It has a floor area of 101.7 sq m (1,094.7 sq ft) and is located within the required setback from the front lot line 0.95m (3.12 ft). Seasonal Cottage 2 (building 3 as shown on the site plan in Figure 1) and barn have floor areas measuring 62.89 m^2 (676.94 sq ft) and 61.3 sq m (659.82 sq ft) respectively. The floor areas of the seasonal cottages are greater than the maximum floor area permitted for seasonal cottages.

Properties in the R zone are permitted to have one single-family dwelling. For parcels larger than 1.2 hectares (2.97 acres), one seasonal cottage is also permitted as an accessory use. Agricultural uses including farm buildings and structures are also permitted within the Rural zone. Based on LUB regulations, the subject property is permitted to have one (1) single family dwelling up to 500 sq m (5,381.96 sq ft), one seasonal cottage up to 56 sq m (602.78 sq ft) and farm buildings and structures up to 465 sq m (5005 sq ft).

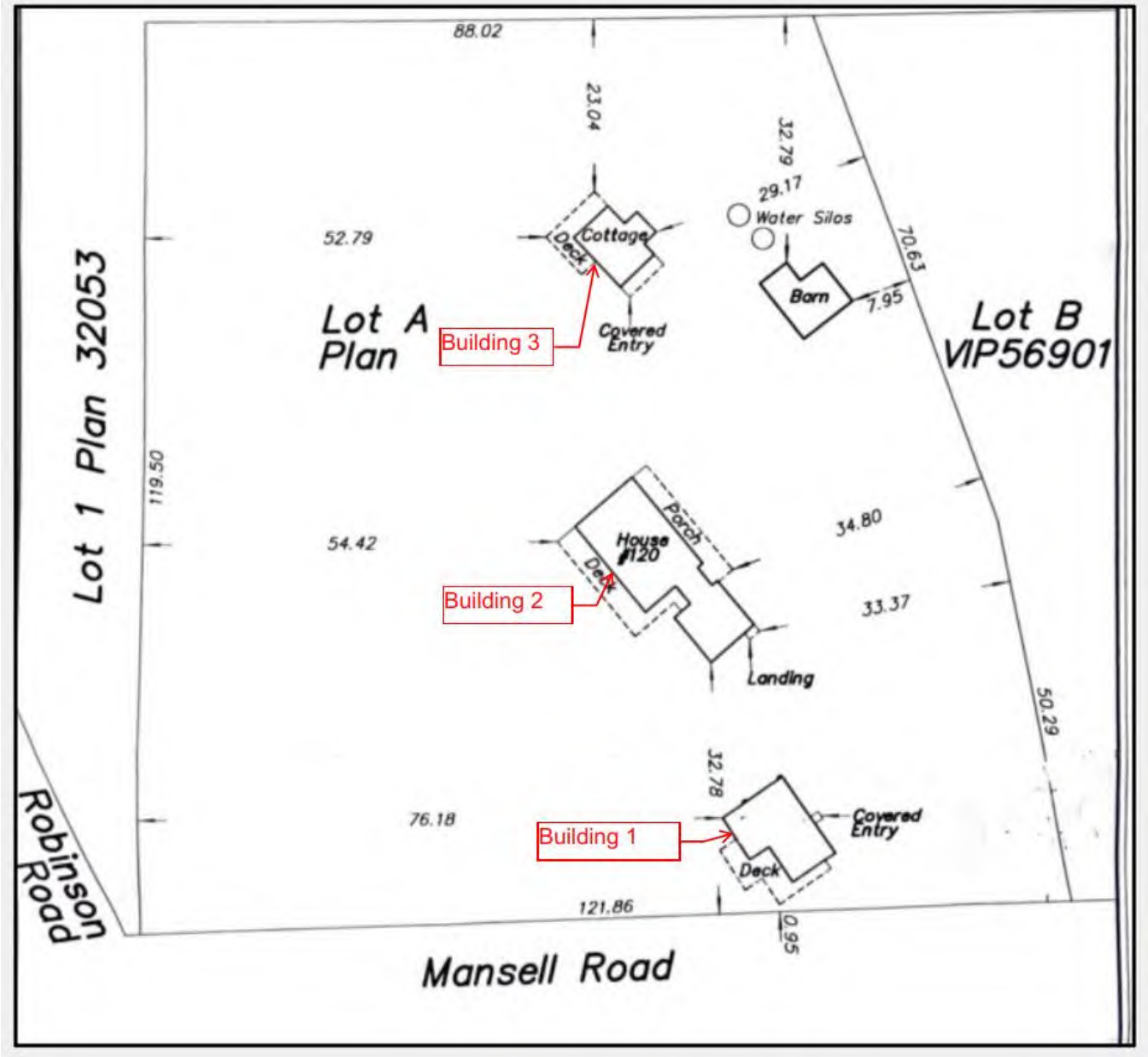

Figure 1: Site Plan

Currently, there are three (3) dwellings on the subject property, which is not permitted according to the LUB. As a result, the applicant has submitted an application for a site-specific amendment to the LUB to permit these dwellings. The application is also proceeding as a result of a bylaw enforcement action (SS-BE-2022.13) for multiple unlawful dwellings on subject property. The applicant's rationale (see Attachment 2) for this application includes the following:

- The structures have been on the property as at when the applicant purchased it in 2018
- The seasonal cottage 1 will be decommissioned and converted into an accessory building when the standing resolution regarding unlawful dwelling is revoked by the SS LTC

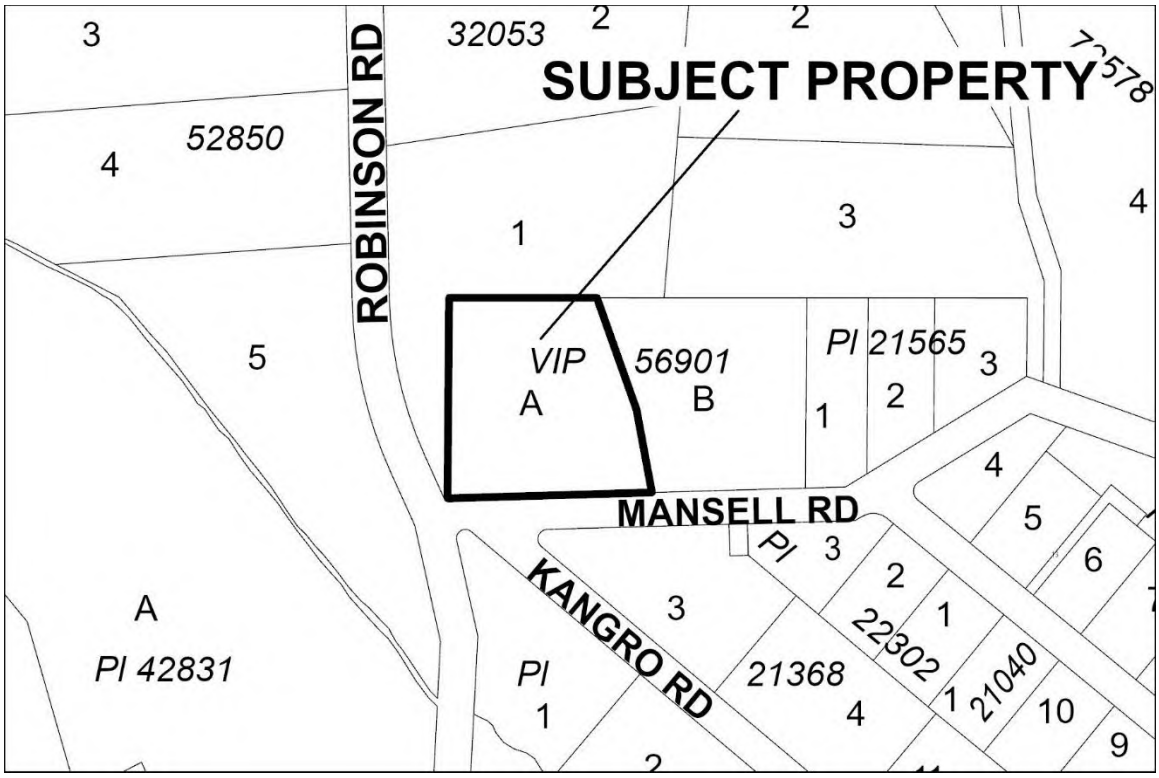

Figure 2: Subject Property Map

ANALYSIS

Policy/Regulatory

Islands Trust Policy Statement:

Staff have reviewed the Islands trust Policy Statement (ITPS) and highlighted several policies that relate to the application. Relevant policies of the ITPS relating to this rezoning proposal are:

4.4.2 *Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address measures that ensure:*

- *neither the density nor intensity of land use is increased in areas which are known to have a problem with the quality or quantity of the supply of freshwater,*
- *water quality is maintained, and*
- *existing, anticipated and seasonal demands for water are considered and allowed for.*

Planner comments: The application seeks to increase the intensity of land use as outlined in the OCP and therefore not in compliance with this policy. However, if the applicant decides to decommission one of the cottages, the intensity of use of land will not be increased and the proposal will be in compliance with this policy.

5.1.3 *Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address the protection of views, scenic areas and distinctive features contributing to the overall visual quality and scenic value of the Trust Area.*

Planner comments: This application for rezoning is not in conflict with this policy as the development has not caused a degradation of the visual quality or scenic value of the trust area.

5.2.3 *Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address policies related to the aesthetic, environmental and social impacts of development.*

Planner comments: The rezoning application is not in conflict with this policy as there is no visible negative impact on the aesthetic, environmental or social impact of development and therefore supported by this policy.

5.2.4 *Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address any potential growth rate and strategies for growth management that ensure that land use is compatible with preservation and protection of the environment, natural amenities, resources and community character.*

Planner comments: The above policy is not in conflict with the rezoning application as the land use is not incompatible with the preservation and protection of the environment, natural amenities and community character of the zone.

If LTC decided to proceed with drafting bylaws, the ITPS policy checklist and a full policy statement analysis would be presented to LTC for review and consideration in a future staff report if at such time draft bylaws are presented for first and second reading.

Official Community Plan:

Policy B.2.5.2.2 considers the density as it relates to the subject property. It provides that "Zones within the Rural Neighbourhoods Designation will continue to allow medium density residential development and the other rural uses allowed by existing zoning." As the OCP defines medium-density residential use as between one dwelling per 0.10 hectare and one dwelling per 2 hectares, the current density would be consistent with this policy.

B.2.4.2.2 Zones within the Residential Neighbourhoods Designation will continue to accommodate the medium density residential uses and the other compatible land uses allowed in the existing bylaw. Existing commercial, general employment and multi-family zones will also remain, but zoning changes should not be made to locate more of these zones on additional lands in this Designation, with the exception of multiple-family affordable housing projects.

Planner comments: This policy supports this application as the proposed density is considered medium according to the definition of medium density (where the density of dwellings is between one per 0.10 ha and one per 2 ha) in the OCP; the application is therefore supported based on this reason.

B.2.2.2.16 Seasonal cottages should continue to be allowed wherever they are allowed by current zoning. The Local Trust Committee may also consider amending the Land Use Bylaw to allow the use of seasonal cottages as full time affordable rental housing units in certain areas. In order to encourage housing for families, the Land Use Bylaw may be amended to permit cottages with a maximum floor area of 90 m2 on lots 2 hectares or larger in area, while retaining the existing floor area limits on cottages on lots between 1.2 hectares and 2 hectares in area.

Any amendment to zoning to allow cottages to be used as full-time residences should address the following criteria:

a. Full time residence of cottages should only be allowed in areas with an adequate supply of potable water.

b. Full time residence of cottages should not be allowed in areas that are community water system supply watersheds or in community well capture zones.

Planner comments: This application is not supported by this policy as the subject property is less than 2 ha and therefore cannot have a full-time rental cottage with floor area up to 90 m^2.

Development Permit Areas:

There is no Development Permit Area (DPA) on the subject property.

Other relevant OCP policies to this rezoning proposal include:

Land Use Bylaw:

The Salt Spring Island Land Use Bylaw No. 355, identifies the subject property within the R zone at present. The application requests to rezone the property to a new R zone variant. Here are the permitted uses, buildings and structures in R zone:

- Single-family dwellings
- Two family dwellings constructed before July 31, 1990
- Dental and medical offices for a maximum of two medical practitioners
- Elementary schools, pre-schools and child day care
- Public health care facilities
- Community halls
- Churches and cemeteries
- Veterinarian clinics and animal hospitals
- Pet boarding services and kennels
- Pounds
- Active outdoor non-commercial recreation, excluding golf courses and activities primarily involving the use of power-driven means of conveyance
- Lighthouse stations
- Agriculture

Accessory uses include:

- Seasonal cottages subject to Section 3.14
- Home-based business use, subject to Section 3.13

One single family dwelling, a seasonal cottage (subject to section 3.14) and the barn building located on subject property are permitted in the current R zone. However, the seasonal cottage on the subject property although permitted, exceeds the maximum 56 sq m floor area in the LUB and therefore in contravention of the LUB. The legal non-conforming cottage is also not permitted based on the floor area as this brings the number of full-time dwellings on the lot to three rather than one as specified in the LUB. The subject property therefore requires a rezoning with site specific regulations to address the maximum floor area and number of dwelling units.

Islands Trust Conservancy:

The Islands Trust Conservancy does not have a nature reserve or covenant adjacent to the subject property, so it not required to be referred the application in accordance with Islands Trust Conservancy Board Policy 3.1.

Issues and Opportunities

Staff have identified the following issues, which are discussed below, and may be considered further once an amendment bylaw is tabled, and through referral responses, if the LTC chooses to proceed with the application:

Front Lot Line Setback

The site plan submitted indicates that the accessory building (cottage 1) on the subject property does not meet the setback requirements specified in the LUB. It is located within the front lot line setback area. Although the structure is a legal non-conforming structure (constructed in 1945 according to BC assessment report), all non-conforming structures need to be addressed in the rezoning application. Staff has identified this non-conformity and recommends that the new zoning include a 0.95m setback from the front lot line, with this adjustment reflected in the setback regulations of the new Rural zone variant p (R (p)).

Density

According to the LUB, in any zone unless otherwise stated, no more than one dwelling may be permitted. This proposal brings an increase to the permitted number of dwellings permitted for any lots as specified in the LUB. In addition, if the applicant chooses to decommission one of the cottages, the floor area of accessory buildings and structures on the subject property will be within the limits of the maximum floor area of accessory buildings and structures permitted on lots greater than 1.2 ha. The zoning amendment can therefore be site specific with the second dwelling permitted at its current floor area.

Archaeological Potential

Desktop review indicates that there are areas of archaeological potential within the subject property. The Islands Trust reviews all applications to ensure the preservation and protection of cultural heritage, archaeological sites, and ancestral places. As reviewed, the application is consistent with respect to LTC Standing Resolutions on reconciliation. Notwithstanding, to provide applicants with awareness regarding unknown archaeological areas, staff forwarded the Islands Trust Chance Find Protocol and the provincial Archaeological Branch guidelines on Heritage Act directly to the applicants with the initial application. In the event that archaeological features or materials are found, either intact or disturbed on the subject properties, work should stop immediately and until the BC Archaeology Branch has been contacted at 250-953-3334 or archaeology@gov.bc.ca for further direction.

Water and Septic

According to the OCP, the applicant needs to provide evidence guaranteeing adequate supply of potable water as well as sufficient area for septic facilities. Staff reached out to CRD to confirm water connection and was informed that the subject property is connected to Cedar Lane Water Service but the applicant's Engineer is required to provide capacity information for subject property. The applicant has provided a Potable water system scoping and design basis document prepared by an Engineer which analysed the current water demand of the property as well as the rainwater storage capacity available for domestic use (Attachment 3). If the application proceeds, applicant's Engineer will be required to provide connection information and also it will be referred to Cedar Lane Water Service for comments. Additionally, the application will be referred to Island Health for comments regarding septic and water servicing requirement.

Consultation

Provided that further policy analysis confirms no inconsistency with the OCP, a public hearing may not be required for this application, in accordance with section 464(3) of the Local Government Act.

Agencies

Should the application proceed, staff recommends that the application be referred to the following agencies:

Adjacent Local Trust Committees and Municipalities
Galiano Island Local Trust Committee
Mayne Island Local Trust Committee
North Pender Island Local Trust Committee
Thetis Island Local Trust Committee
Cowichan Valley Regional District

Non-Agency Referrals
BC Ambulance Service
RCMP
SSI Fire-Rescue
Salt Spring Island Coast Salish Society

Provincial Agencies
BC Assessment Authority
Front Counter BC

Regional Agencies
CRD – All Referrals
Vancouver Island Health Authority
SSI Advisory Planning Commission

LTC may also direct staff to include additional agencies for referral.

First Nations

The Islands Trust reviews all applications to ensure the preservation and protection of cultural heritage, archaeological sites, and ancestral places. As reviewed, the application is consistent with respect to LTC Standing Resolutions on reconciliation. Notwithstanding, to provide applicants with awareness regarding unknown archaeological areas, staff forwarded the Islands Trust Chance Find Protocol and the provincial Archaeological Branch guidelines on Heritage Act directly to the applicants. Staff have identified the following First Nations for early engagement and referral:

- Cowichan Tribes
- Halalt First Nation
- Lyackson First Nation
- Pauquachin First Nation
- Penelakut Tribe
- Semiahmoo First Nation
- Stz'uminus First Nation
- Tsartlip First Nation
- Tsawout First Nation
- Tsawwassen First Nation

- Tseycum First Nation
- Ts'uubaa-Asatx (Lake Cowichan) First Nation

If the LTC decides to proceed, staff would notify these First Nations and request for their input on the proposed rezoning application.

Rationale for Recommendation

The recommendations on page 1 are supported as:

1. The proposal appears to be inconsistent with some of the policies of the Salt Spring Island Official Community Plan No. 434 (OCP) and Islands Trust Policy Statement (ITPS).

ALTERNATIVES

The LTC may consider the following alternatives to the staff recommendation:

1. Request further information

The LTC may request further information prior to making a decision. If selecting this alternative, the LTC should describe the specific information needed and the rationale for this request. Recommended wording for the resolution is as follows:

That the Salt Spring Island Local Trust Committee request that the applicant submit to the Islands Trust...

2. Deny the application

The LTC may deny the application. If this alternative is selected, the LTC should state the reasons for denial. Recommended wording for the resolution is as follows:

That the Salt Spring Island Local Trust Committee deny application PLRZ20250001 for the following reasons…

NEXT STEPS

Should the LTC direct staff to draft a bylaw, staff will do so and provide it to the LTC for consideration at a future meeting. If an alternative course of action is chosen, staff with implement the LTC's direction accordingly.

Submitted By:	Oluwashogo Garuba, Planner 2	October 27, 2025
Concurrence:	Chris Hutton, Regional Planning Manager	December 2, 2025

ATTACHMENTS

1. Site Context
2. Applicant's Letter of Rationale
3. Potable water system scoping and design basis

ATTACHMENT 1 – SITE CONTEXT

LOCATION

Legal Description	LOT A, SECTION 6, RANGE 4 EAST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN VIP56901
PID	018-319-050
Civic Address	120 Mansell Road
Lot Size	1.27 ha (3.13 ac)

LAND USE

Current Land Use	Rural – Residential use
Surrounding Land Use	Rural

HISTORICAL ACTIVITY

File No.	Purpose
SS-BP-2022.27	Construction of new carport
SS-CL-2021.4	Existing use groundwater
SS-DP-2005.3	To allow installation of a new septic field in the Cedar lane well capture zone
SS-DVP-2023.7	Variance to allow for increased size of seasonal cottage and increased floor area of accessory buildings

POLICY/REGULATORY

Official Community Plan Designations	Salt Spring Island Official Community Plan Bylaw #434, 2008 - Rural Neighbourhood Development Permit Areas: DPA 5 – Community Well Capture zones

Land Use Bylaw	Salt Spring Island Land Use Bylaw #355, 1999 – Rural (R)
Other Regulations	None
Covenants	None
Bylaw Enforcement	SS-BE-2007.7 – Density SS-BE-2018.74 – STVR SS-BE-2022.13 – Unlawful dwelling

SITE INFLUENCES

Islands Trust Conservancy	The application has no considerations for the Islands Trust Conservancy
Regional Conservation Strategy	This application has medium considerations for the Regional Conservation Plan.
Species at Risk	Western painted turtle
Sensitive Ecosystems	None
Hazard Areas	Steep Slopes mapping indicates medium to low hazard at the subject property. 
Archaeological Sites	Desktop review indicates subject property has areas of archaeological potential and is within 100 meters of archaeological potential sites. Notwithstanding the foregoing, and by copy of this report, the owners and applicant should be aware that there is still a chance that the lot may contain previously unrecorded archaeological material that is protected under the Heritage Conservation Act. If such material is encountered during development, all work should cease and Archaeology Branch should be contacted immediately as a Heritage Conservation Act permit may be needed before further development is undertaken. This may involve the need to hire a qualified archaeologist to monitor the work.
Climate Change Adaptation and Mitigation	No additional impacts to GHG emissions anticipated as a result of this application.
Shoreline Classification	Not applicable
Shoreline Data in TAPIS	Not applicable

Application for zoning amendment

I have been instructed by Island's Trust to request a zoning amendment for our property at 120 Mansell Road (PID 018-319-050) which would allow for a slightly oversized seasonal cottage which already existed on our property when we purchased it.

We bought our property in 2018 and did not realize that an existing jut out on the seasonal cottage on our property put the outside square footage of the cottage 6 square meters over the allotted 56. Accounting for the width of the outside walls (5.25 inches) the cottage is actually 58.25 square meters.

This property is used as a private residence. The cottage is used for family only. The main house is occupied by my husband and myself. The accessory building at the front of the property was the original house on this property (dating back to 1945-1955) and is a legal non-conforming building built before 1971. I have enclosed the bc assessment file (received directly from bc assessment authority) showing their estimation that it was built between 1945-55. Currently due to the standing resolution SS-2022-017 it can be used for occupancy. It has its own septic system. We recently used it to help a family of 4 who had been in difficulties (we provided the cabin rent free). They have now moved on and it will be kept as is until the standing resolution is removed in case we can be of assistance to another family. When this standing resolution is no longer available this building will be converted full time into an accessory building. There is another accessory building (we call it the Barn) on the property as shown on the survey. This is for storage and has no heat or insulation but does have power.

Our entire property measures 1.266 hectares The property is serviced by a rain water harvesting collection system. This was installed in 2013 before we purchased the property in 2018. We have 2 cisterns which hold 10000 US gallons of water. We have these cleaned and disinfected twice a year by a professional cistern cleaning service (Environmental Cistern). The water then passes through a sediment filter, then a carbon filter and finally a UV filter. These are changed on a regular basis by Scott's Plumbing (located on Salt Spring Island). We have the water tested 3 times a year at MB labs in Sidney, BC. We have not used our local water system, Cedar Lane Water in more than 6 years and do not rely on them for water. We continue to pay our quarterly contribution toward the maintenance of the community water system.
In 2022 we had a leak in our underground pipes between the houses on the property. The leak could not be found so we had to have new pipes supplied underground. When connecting the new pipes to the seasonal cottage the plumbers could not access the old pipes which entered the cottage to supply the water. They had to attach the new incoming water pipes to existing pipes which were in the jut out in question. Without this access, the seasonal cottage would not be able to be used.

The seasonal cottage in question is serviced by its own septic system which was approved when the cottage was built in 1993.

I have enclosed a Planning Application Authorization Form, a title search, a property tax form, a survey of the property, current floor plans of the front accessory building, the seasonal cottage and the Barn along with exterior elevation drawings of each, a drawing of the property from 2005 (received through a freedom of information request to the CRD) which shows all buildings existing on the property in 2005.

I hope you will consider our request for a Zoning Amendment to allow the already existing extra square footage on the seasonal cottage

This property will remain as a private residence. These buildings already existed and will not affect any properties in the area. In fact because of the fact that we do not use the local water system it is actually a benefit to the local community. There is no stress on the Cedar Lane water system by this property.

Thank you,
Nancy Mullins,
120 Mansell Road,
Salt Spring Island,
[redacted]

POTABLE WATER SYSTEM SCOPING & DESIGN BASIS DATABOOK

FORM

PROJECT NO: 2025.025

PROJECT NAME: 120 MANSELL RD

DOCUMENT NO.: 2025.025-40-DBD-001

FORM NO. APG-40-FRM-008

Form Revision Log

Revision #	Date	By	Description
1	22-Feb-2023	BF	Updates to structure; add risk table
0	31-Oct-2020	BF	Issued for Use

1. TABLE OF CONTENTS

2. PROJECT INFORMATION

Table 1: Summary Information

Project No.	2025.025	**Project Name:**	120 Mansell Rd
Site Type:	☐New Construction ☐Replacement ☒Repair / Alteration	**Prepared by:**	Bradley Fossen
Owners / Client:	KANOENA HOLDINGS LIMITED, INC.NO. BC0607292	**Jurisdiction:**	CRD / VIHA
Legal Description	LOT A, SECTION 6, RANGE 4 EAST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN VIP56901	**PID # (Parcel Identifier Number)**	018-319-050
Common Address	120 MANSELL RD, SALT SPRING ISLAND	**Folio. # (Tax Assessment Roll #)**	01-764-00742.010
Engineer of Record	Bradley Fossen	**Project Stage:**	Existing
Owner Declaration Completed:	☒Yes ☐No	**Bedrooms**	1 bedroom
Catchment Footprint	367 m2	**Daily Demand**	Described within.
Estimated Water Use / Person	Described within	**Estimated Outdoor Demand**	None.
Usage Type	☒Typical Residential , Water Conservers (160 LPD/person) ☐Other)	**Supplemental Water Source:**	Bulk water, community water system
Purpose of Report:	• To identify site constraints • To analyze flows available for water needs • To confirm sizing of storage and required catchment area • To provide design and specifications for permitting.		
Summary of Activities:	• Site Visits x 3 • Client and Owner coordination, meetings, and correspondence • Desktop review • Analysis, Costing, and Report Writing		

3. SUMMARY

We understand that this document may be used for the purposes of a land use application. For that reason, we have included additional information and attachments that may aid in that process, along with the content that we typically provide in building permit applications. We welcome any questions from planning staff, should they have them.

This report remains in the general format typically used by Aurora Professional Group Inc. for potable rainwater system permit packages requiring BCBC Letters of Assurance. The applicable letter of assurance for this project will be the 2024 Schedule “B” “Assurance of Professional Design and Commitment for Field Review” at the time of permitting, followed by the 2024 Schedule “C-B” “Assurance of Professional Field Review” after field reviews and prior to building code permit close-outs.

The potable rainwater system described herein is based on information and assessments current to 18-Sep-2025. Our field review and findings focus on a pre-existing rainwater system that has been used for potable service, although its design was not included in any prior permitting efforts.

Based on these findings, we have determined that the rainwater system has adequate catchment surface area and storage volumes to support the demand of a 1-bedroom, 2-person, full-occupancy cottage. To function as a permitted, potable rainwater system, upgrades are required and are detailed within this report. Our assessment is based on a design compliant with CSA B805-22/ICC 805-2022.

We understand that the purpose of the land use application is to provide a determination on the legal status of pre-existing buildings, one of which is a pre-existing cottage.

As part of the application, the Applicant has been requested to demonstrate an adequate water supply for the existing structures on the parcel. We believe, but are not certain, that this request pertains to Land Use Bylaw No. 355 ("LUB") Sections 3.14 "Seasonal Cottages" and perhaps 3.15 "Full-Time Rental Cottages".

Table 1: LUB Definition of Full-Time Rental Cottages

"full-time rental cottage"	means a dwelling unit not exceeding 56 square metres in floor area on lots with an area less than 2 hectares or 90 square metres on lots with an area 2 hectares or greater, that is occupied only pursuant to a residential tenancy agreement as defined in the Residential Tenancy Act and that comprises, with the single family dwelling to which it is accessory, a single real estate entity.
"seasonal cottage"	means an accessory dwelling unit not exceeding 56 square metres in floor area which, despite the definitions of "dwelling unit" and "residential" in this Bylaw, is occupied or intended to be occupied on a temporary basis by a person or persons having a permanent domicile elsewhere and using the cottage primarily in conjunction with recreation.

We expect that this request aligns with the LUB Section 3.15 Information Note, which mandates that new cottages or additions to cottages include plans for a rainwater system.[1] We note that the code specified by the Information Note is CSA B805-18. CSA B805-22 has superseded this code and will be the standard of practice used for this design.

In this report, we compare the current rainwater system's supply capacity with the cottage's water demand. To assist the planner, we will also evaluate total water needs for all structures, factoring in rainwater supply and use of supplemental sources if full occupancy occurs.

[1] Information Note Full Text: *Building permit applications for new cottages or additions to existing cottages submitted to Islands Trust for land use review should include plans for a rainwater harvesting system certified by an ASSE-certified designer, professional engineer or geoscientist to comply with the above-noted standard. Installation of the system will be made a condition of permit applications deemed to be land use compliant.*

3.1. RISK CATEGORIZATION

The following table denotes what classification of design this project has been assigned and whether or not a project-specific risk review is required.

Table 2: Risk Category

Risk Category[2]			Date	By	Comment
☒Global (Low Risk)	☐Global (Repetitive Moderate Risk)	☐Project Risk Review Required	18-Sep-2025	BF	No innovative features or departures from standard practice are required; basic complexity.

3.2. APPLICABLE STANDARDS OF PRACTICE

The following table indicates what standards of practices, codes, or regulations were utilized in the design for this project. These documents form the key, "top-level," design basis for the project.

We note that other regulations may also have jurisdiction on the project and that this list is not exhaustive. Further, additional documents and references may be indicated later where warranted.

Table 3: Applicable Design References.

A Basis of this Design Filing	Code, Standard of Practice, Regulation
☒	CSA B805-2022/ICC 805-2022 (“CSA RWC”)
☒	BC Building Code (2024) (“BCBC”)
☒	BC Plumbing Code (2024) (“BCPC”)
☒	Other: • BC Guidelines for Pathogen Log Reduction Credit Assignment (2022), Drinking Water Officers’ Guide 2022 – Part B: Section 15 (“BC LRCA”) • BC Guidance for Treatment of Rainwater Harvested for Potable Use (2020), Drinking Water Officers’ Guide 2024 – Part B: Section 14 (“BC TRWH”)

3.3. DEPARTURES

Any departures from the above documents, when indicated as a design basis document, shall be documented herein, along with rationale, mitigation measures, and any supporting references to do so.

[2] In the cases of a global risk categorization, a global risk assessment must already be in place.

4. CONCEPTUAL DESIGN

4.1. RAINWATER SYSTEM – COTTAGE DEMAND

Catchment surfaces are, and will remain, from the on-parcel single-family dwelling. This structure is estimated to provide 367 m² of catchment surface in the geographic plane using drone photogrammetry and legacy building construction documents.

This catchment area could sufficiently support a water reserve of 48755L (10725 IG), based on a use-needs assessment (simulation) based on the Owner's demand projections as shown in Table 4 and Figure 1. Outdoor water use has not been considered in this assessment, as a separate non-potable rainwater system on the subject parcel manages it. This tabulation is based on two persons: full occupancy.

Table 4: Demand Projections- Cottage Use

Year	Season	Month	Demand [L]	Cumulative [L]
2025	Winter	October	9760	9760
2025	Winter	November	9760	19520
2025	Winter	December	9760	29280
2026	Winter	January	9760	39040
2026	Winter	February	9760	48800
2026	Winter	March	9760	58560
2026	Winter	April	9760	68320
2026	Winter	May	9760	78080
2026	Winter	June	9760	87840
2026	Summer	July	9760	97600
2026	Summer	August	9760	107360
2026	Summer	September	9760	117120
2026	Winter	October	9760	126880
2026	Winter	November	9760	136640
2026	Winter	December	9760	146400
2027	Winter	January	9760	156160
2027	Winter	February	9760	165920
2027	Winter	March	9760	175680
2027	Winter	April	9760	185440
2027	Winter	May	9760	195200
2027	Winter	June	9760	204960
2027	Summer	July	9760	214720
2027	Summer	August	9760	224480
2027	Summer	September	9760	234240

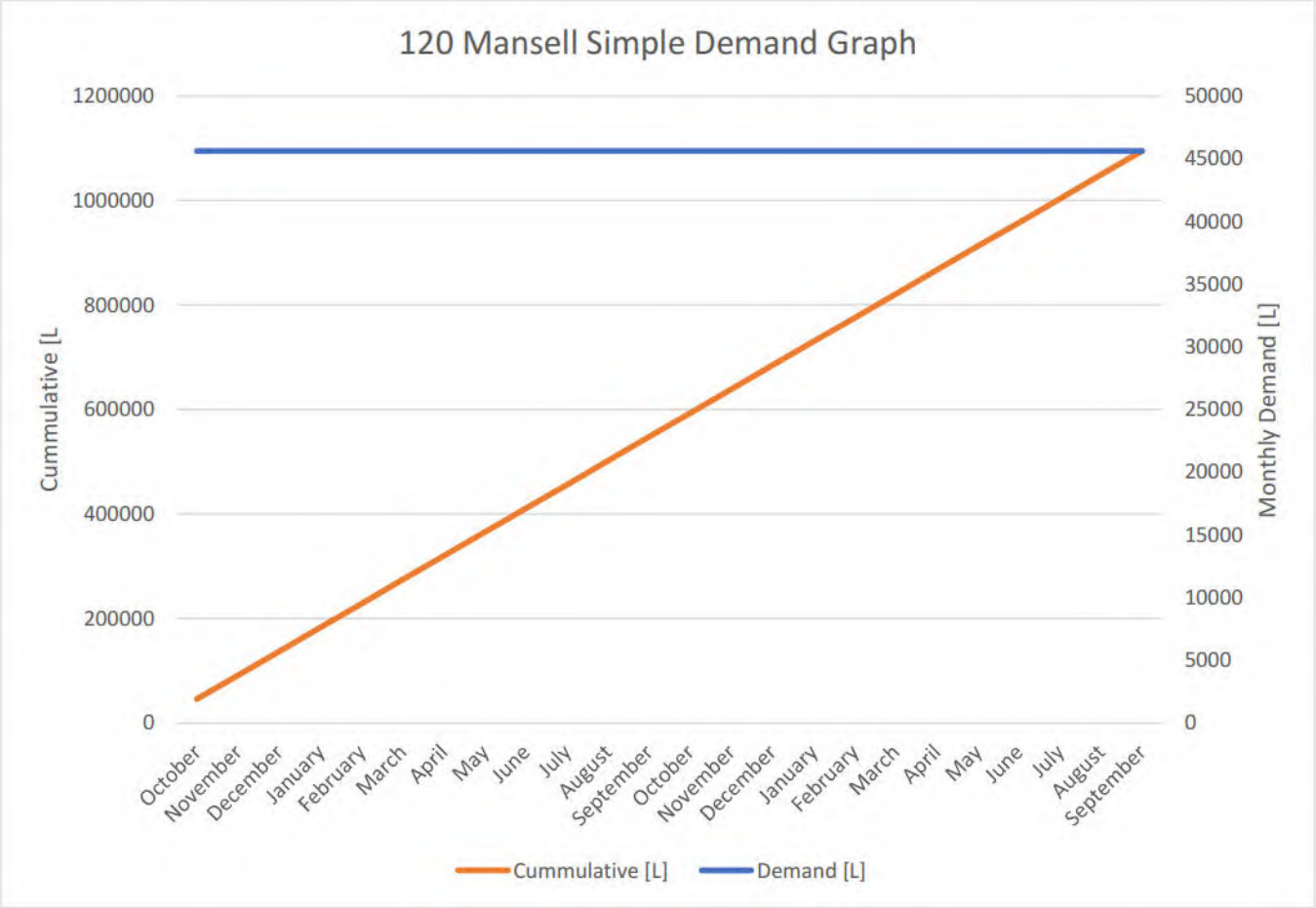

Figure 1: Demand Graph

Our water demand analysis is based on our typical parameters for water demand from users who are water-conscious, which is typically the case with users of rainwater systems. The value used for water simulations is 160 LPD/person. This is generally in line with the 167 LPD/person average used by the CRD, when omitting outdoor values[3]. Other commonly reported values exist; however, based on experience, the 160 LPD/person estimate is effective when projecting demand for potable rainwater systems. A suitable occupancy projection for the cottage is two persons, full-time (all months), similar to the owner's current use profile.

[3] [Capital Regional District, "Environmental Education: Drinking Water Conservation," 2014, [Online]. Available: https://www.crd.ca/media/file/drinkingwater-activity-weeklywaterusechartgr-4

Where 73% of a 232 LPD/person average is 167 LPD/person, for indoor use. Specific to this parcel, outdoor water demand is managed with a separate rainwater system.

We note from conversations with the Owners, that:

- The rainwater system, as it is currently configured, supplies all structures on the parcel. We have inspected the plumbing and confirmed this.
- Water from the CRD – Cedar Lane water system (the "water system") is connected to the parcel and available for use, though it is not utilized.
- The owners have, for multiple years, relied only upon rainwater, without the need to augment their supply with bulk water deliveries or with supply from the water system.
- The typical occupancy profile for the parcel has been 2 people, though with regular increases in the occupancy over weekends and sporadic weeks through the summer season. At some points, they have used the different structures on the parcel to accommodate others.

This information helps us validate the results of the water demand simulation. The simulation has been completed using the same standard practice that we use for all rainwater projects, which is described in more detail within this report.

Rainwater collection volumes are estimated based on projected weather data (2011-2040) from the Centre for Forest Conservation Genetics, University of British Columbia, in this case, for location generally near St. Mary Lake on Salt Spring Island. Precipitation estimates are detailed in Table 5.

Table 5: Precipitation Projections (2011-2040)[4]

Month	**[mm]**	**[in]**
January	156	6.1
February	87	3.4
March	96	3.8
April	49	1.9
May	39	1.5
June	32	1.3
July	16	0.6
August	21	0.8
September	45	1.8

[4] Wang T, Hamann A, Spittlehouse D, Carroll C (2016) Locally Downscaled and Spatially Customizable Climate Data for Historical and Future Periods for North America. PLoS ONE 11(6): e0156720. doi:10.1371/journal.pone.0156720

Mahony, CR, Wang, T; Hamann, A and Cannon, AJ, 2022. A CMIP6 ensemble for downscaled monthly climate normals over North America. International Journal of Climatology 42 (11), 5871-5891 DOI: https://doi.org/10.1002/joc.7566

https://climatena.ca/

Month	[mm]	[in]
October	100	3.9
November	150	5.9
December	131	5.2
Total	**923**	**36**

The existing system utilizes 40597 L (8930 IG) of suitable NSF-61 storage. Considering occupancy, water demand, precipitation forecasts, catchment surfaces, and storage, our simulation indicates the storage water table projection as illustrated in Figure 2 and the rainwater utilization graph in Figure 3.

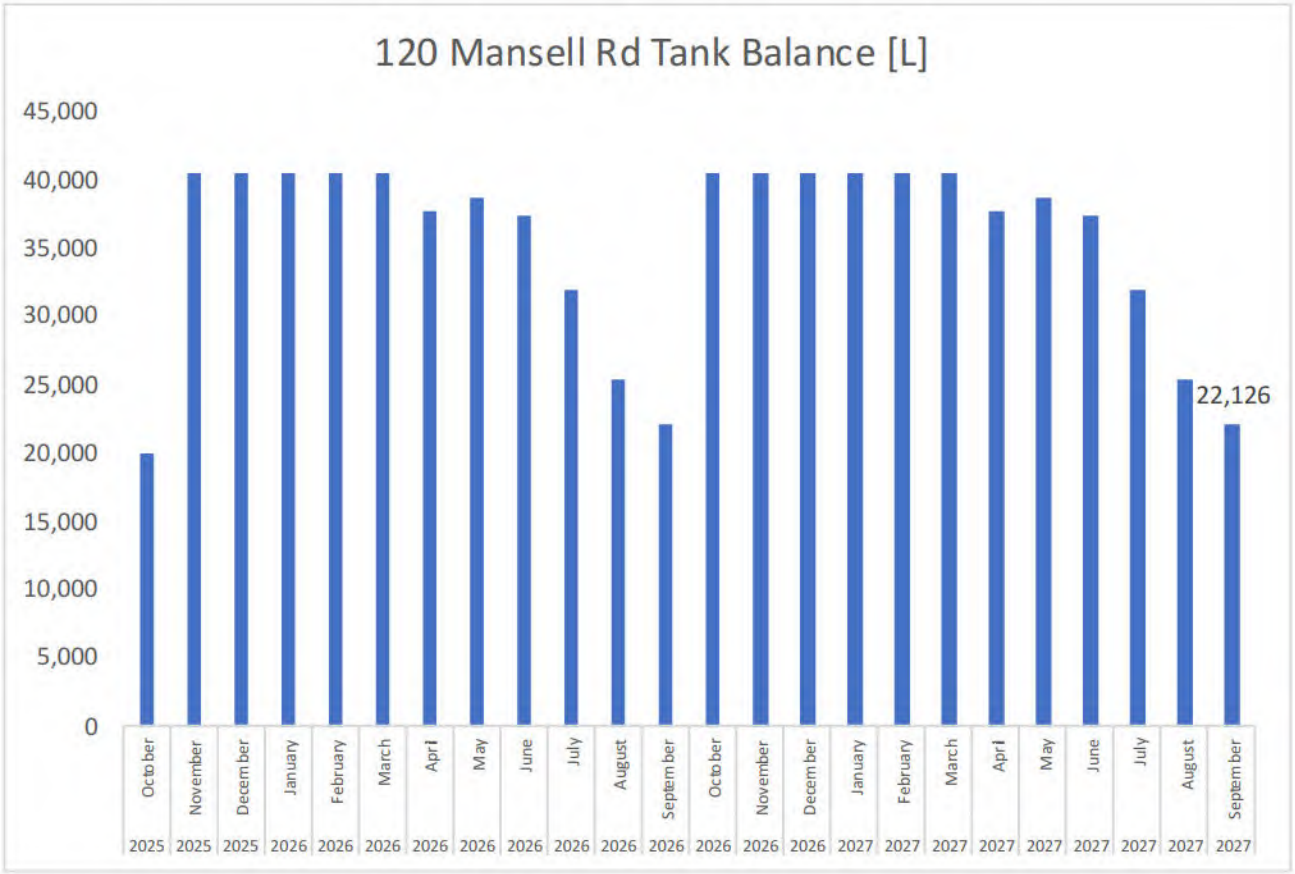

Figure 2: Water Table Balance

Figure 2 demonstrates that with a water demand from 2 persons, full-time, throughout all months, there is a projected water surplus given the system's current configuration. Our calculations indicate that with as little as

18471 L (4063 IG) of storage, the rainwater system would have likely adequately supplied the demands of the Owner's current occupancy profile.

If used strictly for the cottage, we would expect that the system would retain approximately 22,126 L in surplus water that could be used for other water demands on the parcel.

This is further demonstrated in Figure 3, where, with the existing storage in place, water demand from the cottage is self-sufficient from rainwater, requiring no makeup water, either from bulk water delivery or the community water system.

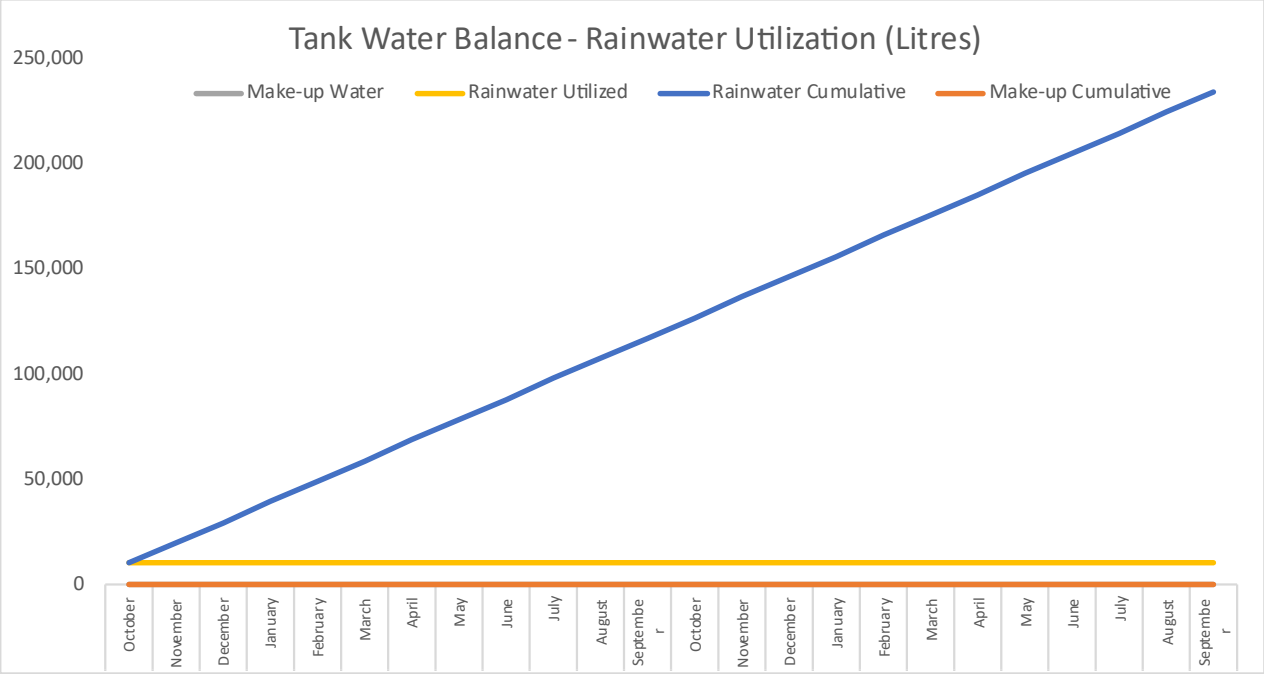

Figure 3: Water Utilization Graph

In summary, the rainwater system fully supports the demand from the cottage, based on current catchment surfaces and water storage.

4.1. RAINWATER SYSTEM – ALL STRUCTURES

While not part of our typical rainwater demand assessments, here we model how much rainwater can be utilized by the parcel as a whole, along with how much make-up water from the water system would be required, should all structures be occupied.

For this assessment, we make the following assumptions:[5]

- Barn building – no additional water demand (no additional occupancy is created by it)
- Cottage – 1 bedroom, 2-person demand
- Single family dwelling – 4-bedroom, 4.5 person demand
- Cabin – 2-bedroom, 3-person demand
- Outdoor water demand remains managed by the non-potable rainwater system.

This results in a cumulative total of 9.5-persons with full-time demand. Using our per occupant demand as earlier, we can estimate the demand profile shown in Table 6.

Table 6: Demand Projections - All Structures – Simple Method

Structure	Barn	Cottage	Dwelling	Cabin	Total
Rooms	0	1	4	2	7
Occupants	0	2	4.5	3	9.5
Daily Demand @ 160 LPD Average	0	320	720	480	1520
30-Day Demand Average [L]	0	9600	21600	14400	45600
Yearly Demand Average [L]	0	116800	262800	175200	554800

The daily, monthly, and yearly demands are displayed again in Table 7, in multiple units.

Table 7: Total Average Demand - All Structures

Average Demand	L	IG	USG
Daily Demand @ 160 LPD Average	1,520	334	402
30-Day Demand Average	45,600	10,031	12,046
Yearly Demand Average	554,800	122,039	146,563

The simulation is then redone based on this demand profile. Figure 4 illustrates our water simulation based on demand from all structures, and with the current rainwater configuration, though with make-up water from the water system.

[5] Occupants are based upon the BC Sewerage System Practice Manual (V.3), Table II-9

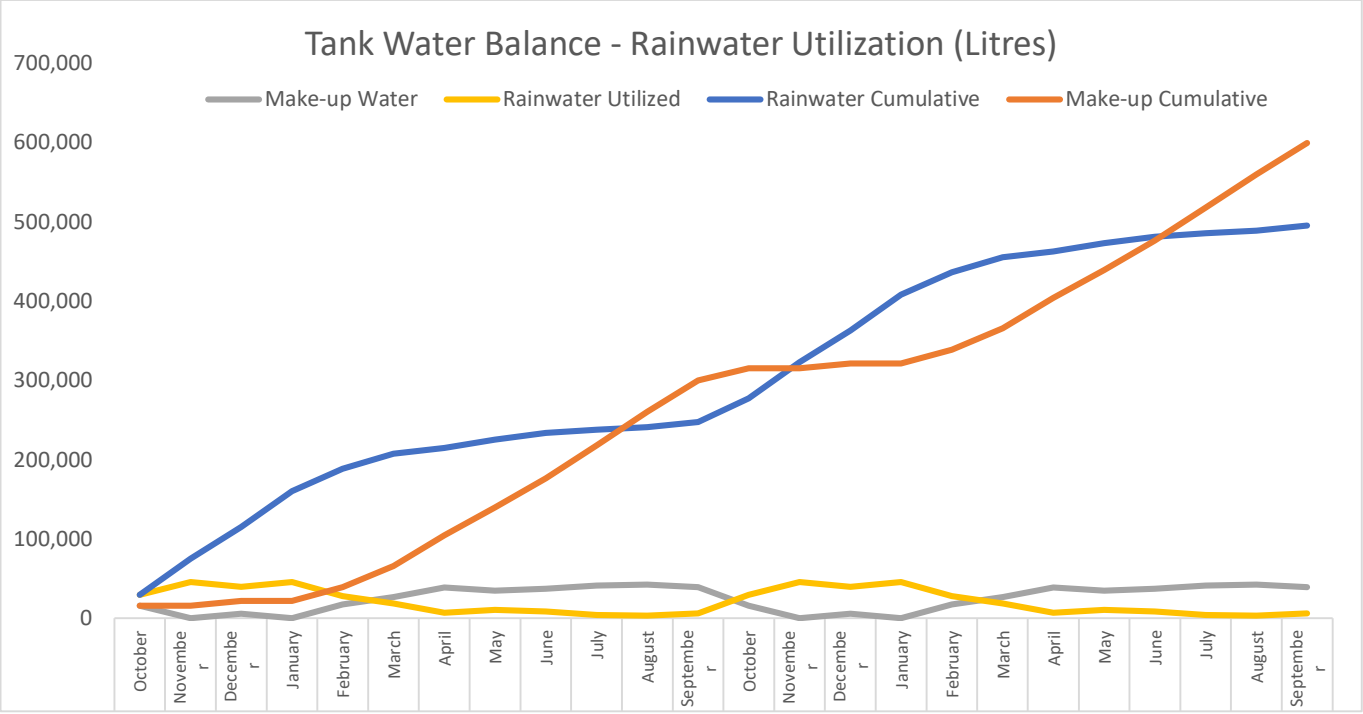

Figure 4: Simulation - Rainwater and Make-up Water Demand – All Structures

We see that in rainy months (September through March) rainwater is utilized more than make-up water. Then, in dry months (April through August), make-up water is utilized more than rainwater. We note, this simulation would change if additional water storage was in place.

When we consider one 12-month period of January through December, we can tabulate the total volume of rainwater and make-up water, and use that to provide simple averages for yearly, monthly, and daily flow based on both rainwater and make-up water (water system water).

Table 8: Simulated Rainwater and Make-up Water Use: Yearly, Monthly, Daily

Water Source	Rainwater	Water System	Total
Yearly Projected Volume [L]	247,632	299,568	547,200
Monthly Average Volume [L]	20,636	24,964	45,600
Daily Average Volume [L]	678	821	1,499

We note that the total amount has a slight variance from Table 6 and Table 7, owing to a slight difference in methodology. However, this variance is minimal (21 LPD).

Based on our evaluation, if all structures are fully occupied, the Cedar Pt water system would be required to supply an average annual volume of 299,568 litres (65,418 US gallons), an average monthly volume of 24,964 litres (6,595 US gallons), and an average daily volume of 821 litres (217 US gallons).

4.2. GENERAL DESIGN NOTES

Subsequent sections in this report detail the alterations required to in order to permit the rainwater system as compliant with CSA B805-2022.

- Field photographs of underground piping, taken during construction, were reviewed. Although not all elements could be verified, the materials and methods used generally meet the requirements of a design that aligns with current standards.

For all proposed alterations, the following shall apply:

- Site management, installation, and site safety are the responsibility of the Installer and the Owner.
- The construction sequence is to be determined and managed by the Installer.
- Site soil stability management is the responsibility of the Installer, and they shall follow best practices. Any concerns relating to stability should be forwarded to the Owner and Designer immediately, and work should be halted after it has been made safe.
- Any departures from the construction drawings, design and construction specifications require prior written approval from the Engineer.
- Further tank installation is not required. However, should the owners elect to install additional storage, the installer shall follow the configuration noted in the Construction Drawings. However, the Installer will determine the final placement, depending on site conditions, with approval from the Engineer. Tank installation must follow the manufacturer's instructions.
- The Installer is to orient mains, cleanouts, and manifolds so that they are accessible yet not a nuisance, either for maintenance or aesthetics and that gravity flow meets best practices and does not create instances of "pocketing."
- Any exposed pressure piping must be freeze-protected.
- Mechanical rooms must have adequate drainage.
- We strongly suggest that sloped rooves have anchor points at ridges for fall protection anchoring, designed by others.

4.3. POTABLE RAINWATER CONFIGURATION

The system will be generally configured as follows:

- Collected rainwater from the structure roof will first pass through a flush diverter, which disposes of a prescribed amount of water for quality purposes. The water will then undergo pre-treatment filtration (Maelstrom filter) before being deposited into storage, via a calmed inlet.
- Storage is comprised of 8930 IG of above-ground potable storage tanks, with the possibility of expansion, though it is not contemplated at this time.
- The storage temperature is expected to be less than 25 degrees Celsius. However, the temperature must be monitored to determine if additional control measures will be required in the future.
- Pre-treated rainwater will be pumped through a filter train and disinfected with a Class 'A' UV system. After which, and when validated by water testing, the water can be deemed potable at this point, when meeting the standard of the CSA RWC.

- Initial and ongoing testing will be specified by the water safety plan (WSP), which will be provided to the Owner at project completion after inspections and as-built drawings have been completed. At that time, the Owner will also be provided with an operations and maintenance manual for the rainwater harvesting system.
- Sizing of the main supply pump, potable distribution, and electrical will be completed under the design of others. We expect that the existing DAB Esybox will remain sufficient.
- Non-potable portions of the system will be labelled as such, along with other safety provisions required by CSA B805-22/ICC 805-2022.

4.4. DESIGN CONSIDERATIONS

1. Our involvement requires the review and approval of all collection and conveyance materials.
2. We strongly suggest including anchor points at different points on the roof crests to aid in future roof cleaning or travel restraints in flat roof areas. Fall protection mechanisms require structural engineering review.
3. Including an automatic water shut-off within the system can be beneficial to prevent the accidental pump out of storage reserves. This would shut down the pump if it runs freely over a certain time.
4. Including a moisture sensor in the mechanical room/area can also be beneficial. This would shut down the system if a leak is detected near the sensor.
5. Other sensors, meters, and controls can be incorporated into the design to promote automation or work in conjunction with a remote monitoring system.
6. Rainwater systems require regular maintenance and testing to function as designed and prevent a health risk. This includes regular component inspections, roof cleaning, tank cleaning, filter replacements, lamp replacements, and other activities. If the structure is unoccupied for a certain length of time, we recommend utilizing a third party to perform your maintenance.
7. Our water safety plan requires diverting your rainwater during the pollen season.
8. Upon commissioning and water testing, the system will be certified as part of an Owner-signed operations and maintenance plan.

4.5. DESIGN RATIONALE

This system design is based upon our standard potable design that meets and exceeds the CSA RWC. Additional component provisions have been included for further risk mitigation:

- Inclusion of a 1 micron absolute filter, exceeding the CSA RWC requirement and achieving a further 2-log reduction for Cryptosporidium Oocysts and Giardia Cysts (BC LRCA) and is part of a double treatment approach.
- Our water safety plan assessment did not provide indications that the collection surface would be at risk to human fecal contamination. Our assessment indicates that a 2-log Virus reduction for UV (Class “A”) is applicable, which represents a 2-log safety factor in excess of CSA RWC requirements.

- The design includes a departure of the recommended 4-Log Virus reduction suggested by the BC TRWH. This departure is mitigated with the above-noted points for Virus reduction, general pathogen reduction, and in consideration that our assessment of human fecal contamination risk is low (remote).

5. SPECIFICATIONS FOR DESIGN AND CONSTRUCTION

The following tables outline the design and construction parameters required for a potable-rated rainwater system.

5.1. RAINWATER REQUIREMENTS

	Element / Requirement	Options / Results	Permit Doc.	Stamped & Record	Final Turnover	Reference Code	Reference Doc. No.
1.	End-use Tier	☐1 ☐2 (Irrigation) ☐ 3(Recreational) ☒4 (Potable)				CSA B805-22	WSP
2.	End User	☒Public ☐Private					WSP
3.	Is this a rental property?	☐Yes ☒No					
4.	Stormwater Management Design Included	☐Yes ☒No	☐Yes ☐No ☒N/A	☐Yes ☐No ☒N/A	☐Yes ☐No ☒N/A		N/A
5.	Building Type Type	☐Single ☒Multi ☐Other					
6.	WSP (Water Safety Plan)	☒Required ☐Not Required	☒Yes ☐No ☐N/A	☒Yes ☐No ☐N/A	☒Yes ☐No ☐N/A	CSA B805-22	WSP
7.	Operations & Maintenance Manual	☒Required ☐Not Required	☒Yes ☐No ☐N/A	☒Yes ☐No ☐N/A	☒Yes ☐No ☐N/A	CSA B805-22 BCPC	OM
8.	Available Secondary Supply	Community water system.					
9.	On-site Fire Suppression Desired	☐Yes ☒No	☐Yes ☐No ☒N/A	☐Yes ☐No ☒N/A	☐Yes ☐No ☒N/A		
10.	Fire Dept. Connection Desired	☐Yes ☒No	☐Yes ☐No ☒N/A	☐Yes ☐No ☒N/A	☐Yes ☐No ☒N/A		
11.	Weather Station	Forecasted – CFCG, UBC	☐Yes ☐No ☒N/A	☐Yes ☐No ☒N/A	☒Yes ☐No ☐N/A		Catchment calculations
12.	Comments:						

5.2. RAINWATER – SITE CONDITIONS, DESIGN TYPE, & INSTALL REQUIREMENTS

<table>
<tr><th colspan="2">Element / Requirement</th><th>Describe</th><th>Relevant Codes</th><th>Reference Doc. No.</th></tr>
<tr><td>1.</td><td>Collection Surface Materials</td><td>• Coated metal roofing is acceptable per CSA RWC</td><td>• CSA B805-22</td><td>Water Safety Program (WSP), Schematic</td></tr>
<tr><td>2.</td><td>Conveyance Materials</td><td>• Per CSA B805-22</td><td>• NSF P151</td><td>WSP, Schematic</td></tr>
<tr><td>3.</td><td>Operational Considerations</td><td>• Neutralization exists, a backwash head could be added though is not a requirement of the code.</td><td>CSA B805-22</td><td>WS, Calculations</td></tr>
<tr><td>4.</td><td>Proximity to other services</td><td>• Sleeve rainwater conveyance lines as necessary (if within 3m of sewerage services)</td><td>SPM</td><td>WSP</td></tr>
<tr><td>5.</td><td>Treatment Performance Criteria required</td><td>Described above</td><td>• CSA B805-22</td><td>WSP</td></tr>
<tr><td>6.</td><td>Suitable treatment systems</td><td>
<table>
<tr><td></td><td colspan="3">Applicability</td></tr>
<tr><td>Treatment</td><td>Viruses</td><td>Bacteria</td><td>Protozoa</td></tr>
<tr><td>Lime softening</td><td>☒</td><td>☒</td><td>☐</td></tr>
<tr><td>Filtration</td><td>☐</td><td>☒</td><td>☒</td></tr>
<tr><td>UV</td><td>☒</td><td>☒</td><td>☒</td></tr>
<tr><td>Ozone</td><td>☒</td><td>☒</td><td>☒</td></tr>
<tr><td>Micro-filtration</td><td>☒</td><td>☒</td><td>☒</td></tr>
<tr><td>Ultra-filtration</td><td>☒</td><td>☒</td><td>☒</td></tr>
<tr><td>Nano-filtration / RO</td><td>☒</td><td>☒</td><td>☒</td></tr>
<tr><td>Chlorine*</td><td>☒</td><td>☒</td><td>☒</td></tr>
</table>
Note: the above is general only and is not prescriptive. Manufacture log reductions are to be consulted for the treatment system and application. All components need to meet respective NSF/ANSI requirements. Treatment requirements may vary or change depending upon initial and ongoing water testing.[6]
</td><td>• CSA B805-22</td><td>WSP</td></tr>
</table>

[6] Referenced from Table 7.7 Reductions of bacteria, viruses and protozoa achieved by water treatment technologies at drinking-water treatment plants for large communities, Guidelines for Drinking-Water Quality: Fourth Edition Incorporating the First Addendum. Geneva: World Health Organization; 2017. Table 7.7, Reductions of bacteria, viruses and protozoa achieved by water treatment technologies at drinking-water treatment plants for large communities. Available from: https://www.ncbi.nlm.nih.gov/books/NBK442381/table/ch7.t7/

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
7.	Assessment of site for rainwater catchment	The site is rural-developed. Typical hazards exist – organics, dust, and vectors.		WSP
8.	Hazards	Care will be needed to maintain a clean roof, free of organic materials and birds and animal feces.		WSP
9.	Electrical Permit	☐Required ☒Not Required ☐Not Applicable		N/A
10.	Plumbing Permit	☒Required ☐Not Required ☐Not Applicable		N/A
11.	Gas Permit	☐Required ☒Not Required ☐Not Applicable		N/A
12.	Ground Disturbance	☐Required ☒Not Required ☐Not Applicable		N/A
13.	Tank Type	Above-ground, vertical HDPE	CSA B126 CSA B128	
14.	Control System	Pump controller and controls.		WSP, Schematic
15.	Signage	Non-potable access points; confined spaces	CSA B805-22	WSP, Schematic
16.	Comments & Special Instructions:			

5.3. SUBSYSTEMS DESIGN AND INSTALLATION SPECIFICATIONS

5.3.1. COLLECTION SURFACES

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
1.	Ponding / Pooling	Not allowed, except in pumped conveyance lines.	CSA B805-22	
2.	Stormwater Management	Not applicable		
3.	Collection Roof Material	Coated metal roofing is acceptable.	CSA B805-22	Layout and schematic
4.	Conveyance Materials	Per CSA B805-22	CSA B805-22	Layout and schematic
5.	Special Weather Considerations	Ensure that leaders can manage extreme storm flow.		Calculations
6.	Coating / Paints / Lines	Per CSA B805-22	CSA B805-22	Layout and schematic
7.	Gutter Sizing	By others.		Layout and schematic
8.	Gutter Guard	Designer Approval Required.	CSA B805-22	
9.	**Comments & Special Instructions:** None.			

5.3.2. CONVEYANCE SUB-SYSTEMS

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
1.	Roof Drains Style	N/A		
2.	Materials	Per CSA B805-22		
3.	Joints	Use NSF 61 grade joining materials		
4.	Cleanouts	Per BCPC	CSA B805-22, BCPC	Layout and schematic
5.	Access Considerations	Cleanouts, filter tanks, filters, tanks mechanical room, treatment replacements, valving	CSA B805-22	Layout and schematic
6.	Vermin / Insect Control	Required	CSA B805-22	Layout and schematic
7.	Conveyance Inlet Sizing	2" or greater	BCPC	Calculations, layout & schematic
8.	Pre-Filtration / Downspouts	200 micron minimum		Calculations, layout & schematic
9.	Pre-Filtration / Conveyance Pipe	2" or greater	BCPC	Calculations, layout & schematic
10.	Pre-Filtration / Filter Tanks	Maelstrom	CSA B805-22	
11.	First Flush Diversion	Volume by designer.	CSA B805-22	Calculations, layout & schematic
12.	Vertical Conveyance Sizing	2" or greater	BCPC	Calculations, layout & schematic
13.	Horizontal Conveyance Sizing	3" with min 50:1 slope	BCPC	Calculations, layout & schematic
14.	Above Ground / Below Ground Size and Material Requirements	UV rated; NSF 61 unless material substitution approved by Engineer.	CSA B805-22	Layout and schematic
15.	Comments & Special Instructions:			

5.3.3. STORAGE

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
1.	General	Above-ground, virgin polyethylene		Layout and schematic
2.	Sizing	Per water balance.		Layout and schematic
3.	Materials requirement	NSF-61or engineer approval.		Layout and schematic
4.	Foundation requirement	Per manufacture requirements		Layout and schematic
5.	Location considerations (sanitary, storm, etc.)	Tank siting is dependent on topography and as-built site conditions.		Layout and schematic
6.	Access requirements	Manway for intermittent cleaning and inspection.		Layout and schematic
7.	Secondary supply requirements	Not applicable		Layout and schematic
8.	Overflows	• Sizing – 2" • Cleanouts – required for lengths >50' • Backwater/vermin prevention required • Direct to daylight • Per BCPC	CSA B805-22 / BCPC	Layout and schematic
9.	Flange types	Not applicable		Layout and schematic
10.	Fire department connection	Not applicable		Layout and schematic

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
11.	Fill connection type	Not applicable		Layout and schematic
12.	External pump out connection type	Required, sufficient size for pump supply.		Layout and schematic
13.	Inlet style	Calming device required.		Layout and schematic
14.	Outlet style	Specified by plumber		Layout and schematic
15.	Stormwater management	N/A		Layout and schematic
16.	Interconnection / balancing	2" PVC.		Layout and schematic
17.	Electrical	By Others / N/A	NEC	Layout and schematic
18.	Venting	3" min, candy cane/goose neck, or similar with vermin/insect screen. Tank lids are not hermetically sealed and can serve as vent/overflow.	CSA B805-22	Layout and schematic
19.	Draining	Pump out connection can be placed on balancing manifold.		Layout and schematic
20.	Marking & Signage	Required	CSA B805-22	Layout and schematic
21.	Comments & Special Instructions:			

5.3.4. TREATMENT

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
1.	Treatment levels	Log Reduction (% Reduction) Requirement Viruses: 2 log; Bacteria: 6 log; Protozoa: 4 log	CSA B805-22	
2.	Treatment types required	Multi-filtration + Class A UV		Layout and schematic
3.	Alarms	Alarm and shut-off on UV required.		Layout and schematic
4.	Sampling	Connection for sampling pre and post treatment required.		Layout and schematic
5.	Aeration	Not required		Tank Datasheet
6.	Filtration	Accessibility for maintenance (cartridge replacement) required. Performance monitoring – included gauges for differential pressure Isolation and maintenance – upstream and downstream isolation NSF 42 & NSF 53		Layout and schematic
7.	Treatment	• Neutralization filter, to mitigate slightly acidic rainwater (consideration)		
8.	Filtration - Canister 1	5-micron min (NSF 42/53)	CSA B805-22	
9.	Filtration - Canister 2	Carbon or equivalent (NSF 42/53)	CSA B805-22	
10.	Filtration - Canister 3	1-micron absolute (NSF 42/53)	CSA B805-22	
11.	UV	Class A NSF/ANSI 55 or equivalent Vertical clearance required for lamp change outs Isolation and maintenance – allow for isolation, but no bypass	CSA B805-22	
12.	UV – Pre-filtration requirement	Intrinsic with assembly from manufacture		
13.	UV – Dose & Sizing	40 mj/cm^2	CSA B805-22	
14.	Chemical Systems	Not required		

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
15.	Ozone Systems	Not required		
16.	Microfiltration	Not required		
17.	Nano Filtration and/or RO	Not required		
18.	Comments & Special Instructions:			

5.3.5. DISTRIBUTION – SCOPE BY OTHERS

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
1.	Material requirements	Needs to meet BCPC & be non-copper type system. If brass fittings are included, then an alkalinity/neutralizing solution is suggested in the treatment train.	BCPC	
2.	Supply Pump	Sized and provided by certified plumber		
3.	Pump Controls/Alarms	Standard pump controller cw/alarm & automatic shut-off		
4.	Indoor distribution	Pex with non-copper fittings (unless rainwater system has an alkalinity/neutralizing solution considered)		
5.	Outdoor distribution	Potable for any recreational water use.	CSA B805-22	
6.	Marking and signage	Required on any non-potable access points.	CSA B805-22	
7.	Restricted Access Points	Must be ladled and controlled – describe in operating and maintenance plan.		
8.	Comments & Special Instructions:			

5.3.6. WATER QUALITY

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
1.	Performance criteria, per table 8.1	Potable, single home residence.		
2.	Control of growth of opportunistic pathogens	Note in WSP that temperature monitoring is required.	CSA B805-22	Water Safety Plan
3.	Verification & Substantiation requirement	☒Yes ☐No		
4.	Inspection requirements	Per Water Safety Plan	CSA B805-22	Water Safety Plan
5.	Monitoring requirements	Per Water Safety Plan	CSA B805-22	Water Safety Plan
6.	Cleaning / maintenance requirements	Per Water Safety Plan	CSA B805-22	Water Safety Plan
7.	Applications, per 8.22	Per Water Safety Plan	CSA B805-22	Water Safety Plan
8.	Testing & Substantiation Requirements	Per Water Safety Plan	CSA B805-22	Water Safety Plan
9.	Comments & Special Instructions:			

5.3.7. COMMISSIONING, TESTING, & FINAL INSTALL INSPECTIONS

Element / Requirement		Describe	Relevant Codes	Reference Doc. No.
1.	Cross-connection testing	Required if there is a common header between rainwater and other systems. Ensure isolation and check valves are in place.	BCPC	
2.	FFD Testing	Required		
3.	Conveyance & Venting testing	Required		
4.	Tank disinfection	Required		
5.	Make-up water supply testing	Required		
6.	Backflow prevention testing	Required		
7.	Vermin and Insect Guards	Inspect		
8.	Separate flushing / washing water system	Not applicable		
9.	Water testing	Required		
10.	Final inspection	Required		
11.	Permit inspection	As required		
12.	Deficiency close-out	Note deficiencies and rectification in final turnover.		
13.	Comments & Special Instructions:			

6. WATER SAFETY PLAN - PRELIMINARY

Water Safety Plan - Risk Assessment
This risk assessment is not all inclusive. It has been developed to facilitate design. A standalone water safety plan will be produced after installation and as-building, to ensure all risks have been properly considered and mitigated.
Risk Evaluations:
Negligible – potential for contamination is very low or nonexistent
Low – Risks have been satisfactorily managed
Medium – Risks remain that can be adequately controlled. Monitoring measures are elevated and mitigation controls may increase depending on results.
High – Risks remain that cannot be adequately controlled. Testing and additional assessments required.

	Risk	Contamination Source	Hazard	Mitigation / Controls	Monitoring	Risk Evaluation
1	Natural organics	• Tree pollen • Tree debris • Animal feces	• Organics provide food source for harmful bacteria • Microbe contamination of RWS	• Manual diversion of harvested water during pollen season • Maintain vegetation clearance over catchment areas • Regularly clean roof (2x year) • First flush diversion • Use of gutter guards or primary filtration • Maintain water treatment	• Monitor and assess catchment surfaces and conveyance for signs of debris (4x year) • Check FFD for proper functioning (4x year) • Check primary harvesting filtration for proper functioning (4x year) • Check water treatment system for proper functioning (4x year)	Low (1)
2	Opportunistic Pathogens	• Tank water temperature >25C	• Water stored at temperatures higher than 25C for extended periods of time create an environment for opportunistic pathogens	• Screen the above-ground tanks behind the structure to minimize direct sun exposure • If this does not control the risk, other measures will need to be considered (chemical dosing, etc.)	• Testing/Monitoring as previously prescribed • Regular temperature checks	Medium (2)
3	Collection Surfaces	• Roof Materials	• Certain materials can be hazardous	• Low likelihood as house as suitable collection material.	• Identify product, if possible • Monitor with regular testing & modify system as required	Medium (2)

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	Risk	Contamination Source	Hazard	Mitigation / Controls	Monitoring	Risk Evaluation
4	Insects and small animals	• Trapped animals/insects • Laid eggs and other organic debris	• Contamination per' natural organics' above • Plugging of conveyance lines	• Per 'natural organics' above • Ensure large ingress points are screened with 30 industrial mesh screen or 20x20 consumer screen • One-way valve on first flush diverter dripper end • Backflow preventers on overflows • Insure vents have insect screens	• Per 'natural organics' above • Regularly inspect catchment, gutter guards, harvesting filters, conveyance, and vents for properly functioning	Low (1)
5	Airborne human particulates	• Vehicle exhaust in parking area • Combustion exhaust	• Exhaust products contaminate catchment surfaces	• Low likelihood considering location • First flush diversion • Water treatment	• Testing/Monitoring as previously prescribed	Low (1)
6	Leaching	• Unsuitable materials used in system	• Harmful chemicals enter system and are not removed prior to use	• Ensure suitable RWH materials are used, per CSA B805-22 • Ensure suitable plumbing materials are used, per BCPC • Ensure that plumbing system does not utilize any copper construction • Consider alkalinity treatment if water acidity becomes an issue	• Inspect materials of construction • Testing/Monitoring as previously prescribed	Med (2)

7. ATTACHMENTS

1. Land Title Documents
2. Drawing Package.

8. FURTHER CONSIDERATIONS

Any significant deviations from this document require approval from the Designer.

9. DISCLAIMERS

By using this document you agree to our standard Terms and Conditions. In addition to our terms and conditions, we offer the following disclaimers when using this document:

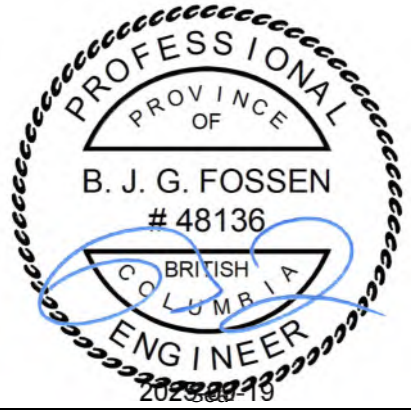
- The findings and recommendations contained in this document are based on the information and assumptions made available to us at the time of our investigation, and are subject to limitations that may not have been identified. Our work is not intended to and does not relieve the owner, user, or third parties from their responsibilities to exercise due care and comply with applicable laws and regulations.
- We have exercised due care and professional judgment in our work, but we make no warranty, express or implied, with respect to the accuracy or completeness of the information, data, conclusions, opinions, or recommendations contained herein. We assume no responsibility for errors, omissions, or other discrepancies between our findings and any subsequent changes to the site or other conditions.
- Our investigations and assessments rely on public information that has the potential to be inaccurate, and our testing of soils and other materials cannot reveal all underground conditions. We endeavor to make all reasonable efforts to manage this uncertainty; however, it cannot be eliminated.
- Should site conditions change, this document becomes void.
- The use of this document shall be in its entirety; that is, assessments cannot be used piecemeal.
- Any design drawings or constructed works that are based on the assessments and conclusions in this document should be provided to its author for review.
- When installed per our guidance, any system components described in this document can reasonably be expected to operate in a manner that does not create a health hazard. However, this is contingent on the owner operating their system as designed and following the requirements of the most up-to-date maintenance plan for their system.
- This document relates only to the subject property and is not transferable to any other location or property.
- We reserve the right to update or modify the information contained in this document at any time without prior notice.

10. SIGN OFF

Construction can not begin until the Designer has provided an Authorization to Proceed.

Contact the Designer, Brad Fossen, before starting construction in order to arrange a pre-construction meeting.

Designer, if other than Engineer of Record	Name	Sign

Engineer of Record: Bradley Fossen, P.Eng.

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