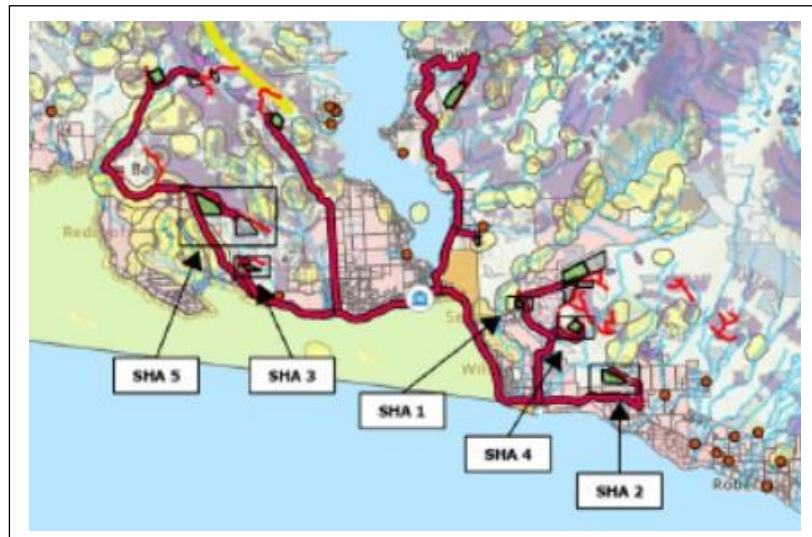


DISTRICT OF SECHELT SEPTAGE FACILITY LONG-TERM PLAN



Technical Memorandum No. 3: Location Options

October 5, 2023

Submitted by: Sperling Hansen Associates

Revisions: October 25, 2023 – Draft 2
November 23, 2023 - Final

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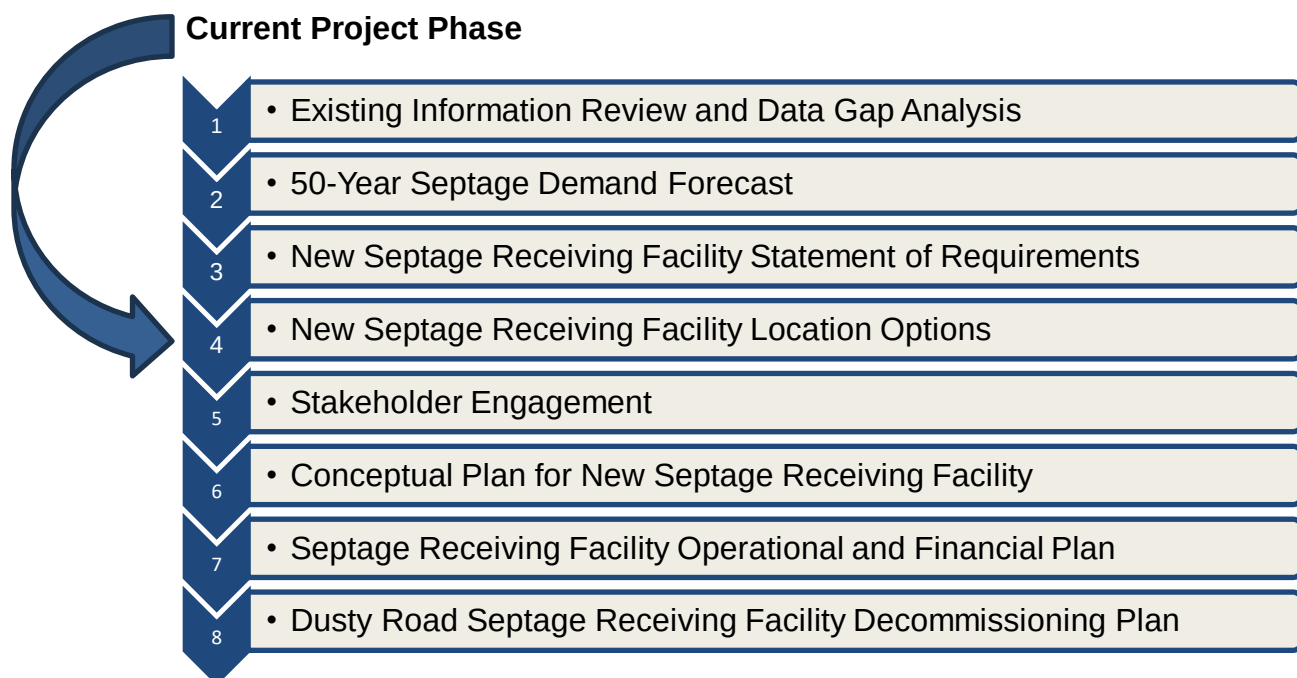
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1 INTRODUCTION

The District of Sechelt (the District) is in the process of developing a Septage Receiving Facility Long-Term Plan (the Plan) to replace the Dusty Road Septage Receiving Facility (DRF). The Plan will guide the District in reviewing design options and locations for the new facility and servicing plans with project stakeholders.

Sperling Hansen Associates (SHA) was hired in February 2023 to develop the Plan. This Technical Memorandum (TM) provides a review of the current Parks and Public Works Yard (Lot “L”), a listing of five candidate sites, an assessment of the sites along with the current Dusty Road Facility against a numerical scoring matrix and criteria developed and reviewed by the project team. As outlined in SHA’s project proposal, SHA is prepared to recommend a preferred location(s) once SHA has learned more from stakeholders on the shortlist of candidate sites. Before SHA can recommend a site for further consideration, it is imperative SHA fully understands the interests in the site(s) and of respective neighborhood(s) to assist the District in making an informed decision(s). We trust that stakeholders, through the planned engagement and consultation process, will help the project team to better understand the site(s) by informing the team of any characteristics SHA is currently not aware of including property purchase, neighborhood, governance and recreation interests.

The following diagram shows the phase the project is currently in.



2 CONTEXT AND SCOPE

The selection of the location for the new septage receiving facility is a critical step in determining the long-term plans for a new facility. The outcome of the tasks related to this phase (4) is to present candidate sites based on initial selection criteria and in the absence of direct stakeholder consultation to Council and receive direction to go to the engagement and consultation phase (5).

From Technical Memorandum No. 2, the 50-year forecast model and statement of requirements for a new facility were used to determine the size of property needed, including buffers between the facility and neighboring properties. Based on the current Dusty Road facility footprint, an initial 4.3-hectare minimum size of property was input into initial search criteria. This initial property assessment was performed using a GIS constraint mapping process as described in more detail in Section 6.

SHA identified nine potential candidate sites and compared the sites along with the current Dusty Road site, and as requested, Lot “L” also on Dusty Road. SHA selected and has presented six of the eleven sites for more detailed evaluation, including the current Dusty Road and Lot “L” sites, using a decision matrix developed by SHA with criteria approved by the District’s project team and described in more detail below (Section 5). The constraint mapping and matrix were provided to the District for review and comment prior to finalizing this report.

Note that if a smaller facility footprint using more suitable or appropriate technology is determined to be more viable and/or can be sustainable for the long-term using pertinent septage pretreatment or treatment, more sites could feasibly be found and run through the constraint mapping process as well as the decision matrix. This may open up more sites within the District’s boundaries and sewer service area.

3 CURRENT LOCATION

The District needs to explore options to replace the current Dusty Road facility due to the upcoming expiry of the Crown lease on the land in 2031. Although the site has been slated for replacement, based on initial effluent testing results, the facility is currently pretreating the waste sufficiently for the effluent to be discharged to the Water Resource Centre.

The current location has a number of operational challenges that would require extensive and costly upgrades, including the following:

- Outdated electrical control components are requiring a complete rebuild.
- The septage receiver requires an overhaul.
- Clarifier arm/bearings have failed and require replacement.
- Blowers and aeration grid are at the end of their life.
- There is significant inflow into the treatment plant from the surface area of the ponds and grounds.
- Redundant infrastructure and ponds on site, e.g., open tanks are still tied into the system.
- It is difficult to desludge the solids lagoon and manage solids accumulation throughout the site.
- Solids management (composting and/or disposal) is difficult.
- It is difficult to manage restricted flow and plugging lines.
- Outflow effluent is used as service water for the site, e.g., for wash down, making it necessary to constantly maintain nozzles and strainers.
- No potable water at site poses a health and safety risk.
- Staffing is an ongoing issue.
- It is difficult to police incoming waste.
- The building roof has leaked.

When initiating the site selection process, SHA used the Dusty Road site area of 4.3 hectares as a minimum for candidate sites.

3.1 LOT “L”

As outlined in the Request for Proposals (RFP), there was a plan to build a purpose-built biosolids/septage receiving facility at Lot “L”, which is the current site of the Parks and Public Works Operations Centre on Dusty Road. This plan was not advanced in favour of

continuing use of the old Upper Dusty Road Wastewater Treatment Facility once the new Sechelt Water Resource Centre was commissioned in 2015. Lot “L”, however, is considered by the District to be a possible option as there is still some space that could be used for a new septage receiving facility as well as other features as outlined in Table 6-1. Lot L was run through the constraint mapping exercise to determine whether or not it would be suitable under the initial site selection criteria.

4 POTENTIAL SITES

In order to find at most ten (10) potential sites for a new septage receiving facility, the following steps were taken using ArcGIS Pro software:

1. Initially geodata was gathered (see Table 4-1 below with respect to layer source) based on different criteria including zoning, environmental, etc. This was determined in-part using client requirements, and past requirements from similar projects.
2. Secondly the data was first classified using zoning information from the District and the SCRD to determine suitable areas. Initially SHA looked at “industrial” zoned areas, and subsequently in discussion with the District, SHA expanded this selection to include “resource” zoning. During this stage, First Nation lands and interests were also identified.
3. Based on Environment Canada guidelines used around similar sewage related infrastructure, setbacks were then applied for “residential” zoned areas (300 m), “agricultural” zoned areas (150 m), and for “commercial” zoned areas (SHA used 200 m).
4. Next, setback buffers were applied for riparian areas of 35 m based around the typical 30 m expectations under the BC Riparian Areas Protection Regulation as well as for drinking water points of 300 m following Environment Canada expectations. We also applied relevant setback buffers for critical wildlife habitats of 200 m based only on a minimum guideline associated with raptors and sensitive areas such as community watersheds and recreational areas of 120 m based on Environment Canada guidelines.
5. Using separate cadastral data available, private property was isolated into a separate layer that could be reviewed for site evaluation.
6. A slopes layer was used next, with different surveyed patches of land with averaged slopes provided. This was re-organized into bands, with areas of extreme slope (>12.5%) isolated and determined to be unusable.
7. The suitable lands from Step #2 were then combined and the unsuitable areas from Steps #3 – #6 were subtracted, leaving behind areas for further consideration.
8. Visual inspection was used to further isolate areas, primarily where it was assumed that datasets were not always telling a full story. Areas that were geographically isolated, e.g., no road access and extremely far from the core, were removed manually.

9. For the areas of general interest, greater scrutiny was given and road setbacks were generated, to create areas for ongoing consideration.
10. After reviewing several areas, SHA found a total of nine parcels identified as possible candidate sites for evaluation besides Lot “L” and the existing Dusty Road site. For each of these areas, measurements were carried out to confirm total haul distance from the District of Sechelt Municipal Hall, distance from existing three-phase power, and distance from the nearest Sechelt sewer collection mainline.

The following are the layer names and source used to access the layers:

- First Nation Treaty Lands iMapBC (iMapBC (gov.bc.ca))
- District of Sechelt Zoning – Bylaw 580 Sechelt Explorer (Explore Sechelt)
- Sunshine Coast Regional District Zoning – Bylaw 337 & 722 SCRD
Maps Property Viewer (SCRD Maps)
- Drinking Water Point of Diversion iMapBC (iMapBC (gov.bc.ca))
- Wetlands iMapBC (iMapBC (gov.bc.ca))
- Critical Animal Habitats iMapBC (iMapBC (gov.bc.ca))
- Pressurized Main iMapBC (iMapBC (gov.bc.ca))
- Property Parcels iMapBC (iMapBC (gov.bc.ca))
- Slopes iMapBC (iMapBC (gov.bc.ca))
- Fault Line iMapBC (iMapBC (gov.bc.ca))
- Karst iMapBC (iMapBC (gov.bc.ca))

Figures 1 to 12, attached to this report, were prepared to show the locations of the nine sites plus the existing site and Lot “L”. These sites are listed below with a location reference. Sites SHA 1 to SHA 9 are all Crown land with no interest. The Dusty Road Facility and Lot “L” are owned by the District.

Table 4-1: Summary of Long List of Site Locations

Site	Address or General Location
SHA 1	District of Sechelt, near Field Road
SHA 2	District of Sechelt, near Pell Road
SHA 3	Area B: Halfmoon Bay, off Highway 101 near Redrooffs Road
SHA 4	Area D: Roberts Creek, southeast of Field Road
SHA 5	Area B: Halfmoon Bay, east of Trout Lake off Highway 101

Site	Address or General Location
Dusty Road Facility	District of Sechelt, 5297 Dusty Road
Lot "L"	District of Sechelt, 5400 Dusty Road
SHA 6	Area B: Halfmoon Bay, Trout Lake Road
SHA 7	Area D: Roberts Creek, Wilson Creek Forest Service Road
SHA 8	Area B: Halfmoon Bay, Sechelt Inlet Road
SHA 9	Area B: Halfmoon Bay, Mason Road

It should be noted that SHA did not eliminate any jurisdictions within the region for this exercise nor did SHA eliminate sites that were outside the District's sewer catchment area. It is noted that this will impact design decisions with respect to the type of pretreatment, treatment and effluent disposal determined most practical for each site, i.e., discharge to land may be required if determined viable.

5 NUMERICAL SCORING MATRIX

SHA used a scoring matrix to evaluate the multiple site options based on a set of criteria reviewed and approved by the District. The matrix consists of a table that lists the criteria in rows and the options in columns. In this matrix the criterion was not weighted, rather each option was given a ranking of low, medium or high which indicates how well it meets the criterion. A ranking with a score of 1 point, and shown red in the matrix, indicates the site does not meet the criterion and there is a higher level of concern with respect to the location. A medium ranking with a score of 2 points, and shown yellow in the matrix, indicates that there is a lower level of concern with respect to the location. A low ranking with a score of 3 points and shown green in the matrix, indicates that the site meets the initial criteria and there is less concern with respect to the location.

The following is the list of evaluation criteria categorized into environmental, land tenure, regulatory, physical suitability, logistics, infrastructure upgrade requirements, and compatibility with surrounding land use. A description of each criterion is provided along with the measurement or descriptor for the ranking evaluation.

Table 5-1: Numerical Scoring Matrix Evaluation Criteria

Item	Initial Evaluation Criteria	Description & Notes	Ranking		
			Low	Medium	High
		Matrix Scoring	3 points	2 points	1 point
Environmental Criteria					
1	Distance to known critical habitat for Federally listed Species at Risk habitat	Protected and endangered species habitat - Based on iMapBC data & Use federal and provincial data	200-500 m	100-200 m	<100 m
2	Riparian area conflicts	Riparian area protection legislation - 35m setback from high water level	No Concern	Low Concern	High Concern
Land Tenure					
3	Ownership - Ability to secure use	Currently belongs to District of Sechelt, federal, provincial, private, leasing potential	No Concern	Low Concern	High Concern
4	Expected stakeholder interest in the area	Desktop study iMapBC based on known land uses - <i>Direct engagement required</i>	No known Interest	Low Interest expected	Some Interest expected

Item	Initial Evaluation Criteria	Description & Notes	Ranking		
5	First Nation Reserve, Rights & Title and Treaty Lands	Based on iMapBC and other available information - Determine expected areas of interest. October 4, 2018 shishalh Foundation Agreement consulted - <i>Direct engagement required with appropriate First Nation representatives</i>	No known Interest	Low Interest expected	Some Interest expected
Regulatory					
6	Archeological sensitivity	Mapped Arch Sites based on BC Remote Access to Archeological Data (request to Arch Branch required once parcels short listed) - Confirmation with shishalh Nation and other neighbouring - <i>First Nations communities to confirm if unmapped sites within area</i>	> 300 m	300 m - 100 m	<100 m
7	Proximity to domestic water supply - Licenced	Groundwater wells, surface water intake - Environment Canada uses 300m for stabilization lagoons	> 500 m	500 m- 300m	<300 m
Physical Suitability					
8	Potential footprint size (ha)	Dusty Road Facility - 4.3 Ha	>5 Ha	4 - 5 Ha	<4 Ha
9	Suitable buffer capacity	Vegetated site boundary, berms, hills - Can the facility be seen? Google Earth Consulted	No Concern	Low Concern	High Concern
10	Proximity to unstable areas	Faults, slides, clear cuts	No Concern	Low Concern	High Concern
11	Proximity to floodplains and shorelines	iMapBC data & SCRD Data	No Concern	Low Concern	High Concern
12	Surficial geological formations compatibility	Karst?	No Concern		Concern
13	Bedrock compatibility	iMapBC data	No Concern	Low Concern	High Concern
14	Suitability of site topography / terrain	Steepness or existing ravines and size of facility location	Flat or Gentle Terrain <10:1	Rolling Terrain <8:1	Valley or Side Hill <6:1

Item	Initial Evaluation Criteria	Description & Notes	Ranking		
Logistics					
15	Hauling through sensitive areas	Areas such as residential neighbourhood, commercial, resort area, picnic/recreation area - Impacts with respect to odour and/or spillage from trucks and vehicle size and/or speed	None	Moderate	Significant
16	Total hauling distance from Sechelt reference location	City Hall at 5797 Cowrie Street. Reference for operation & maintenance purposes only - All community distances should be considered	<5 Km	5 -10 km	> 10 km
Infrastructure Upgrade Requirements					
17	Proximity of Sewer Collection System	Forcemain required - Ability to service other parcels	Fronting	<500 m	>500 m
18	Proximity of electric power connection (3 Phase)	Based on iMapBC data and measured from proposed locations to known 3 Phase power line	<500 m	500 m-1 km	>1 km
19	Need for highway and other road upgrades	Left turn lane, resurfacing, bridge upgrades	< \$100K	\$100K - \$250K	>\$250K
20	Suitability for haul trucks	Grade, alignment & curvature of road - Time & Road Safety	Suitable		Low suitability
Compatibility with Surrounding Land Use					
21	Odour and noise impact - Mechanical Plant	Nearest residential development or land zoned residential, institutional and recreation - For mechanical plants & stabilization lagoons, Environment Canada uses 150m for isolated dwellings and 300m for dwellings in built up areas/subdivisions. Odour control may be required for sites within 1000m of developed properties when factoring typical wind patterns	> 500 m	500 m-300m	< 300 m

Item	Initial Evaluation Criteria	Description & Notes	Ranking		
22	Odour and noise impact - Mechanical Plant	Nearest commercial or industrial development or land zoned commercial or industrial - Environment Canada uses 30m. Odour control may be required for sites within 1000m of developed properties when factoring typical wind patterns	> 400 m	400 m - 200 m	< 200 m
23	Proximity to existing and planned sensitive land use	Areas such as community watershed, parks, hiking trails, other recreation, traplines - <i>Additional engagement required</i> - Environment Canada uses 120m for lined stabilization lagoons to lakes/rivers	>250 m	250 m - 120 m	<120 m
24	Conflict with Official Community Plan	Conflict with planned future development to be considered	None	Some	High
25	Proximity to Primary and Secondary Roads	Environment Canada uses 30m - 100m	> 100 m	30 m - 100 m	< 30m
26	Land type	Previous use considerations: Contaminated site, green field vs brown field	Brownfield Site	Developed	Greenfield Old growth
Desktop Review Score					

The eleven sites, including the existing site and Lot “L” on Dusty Road, were evaluated based on the above criteria and five of the sites, plus the existing site and Lot “L” were short-listed. The full matrix with scoring for the short-listed sites is attached as Appendix A.

6 ALTERNATIVE SITES ASSESSMENT

The eleven sites, including the existing site and Lot “L”, were selected for constraint mapping, as described above. Five of these sites, plus the existing Dusty Road Facility and Lot “L”, were selected for evaluation with the Numerical Scoring Matrix to bring the list to a more manageable number as they were considered more favourable by the project team than the other four sites. The Numerical Scoring Matrix can easily be used for any alternative site chosen by the District and/or stakeholders throughout this planning process.

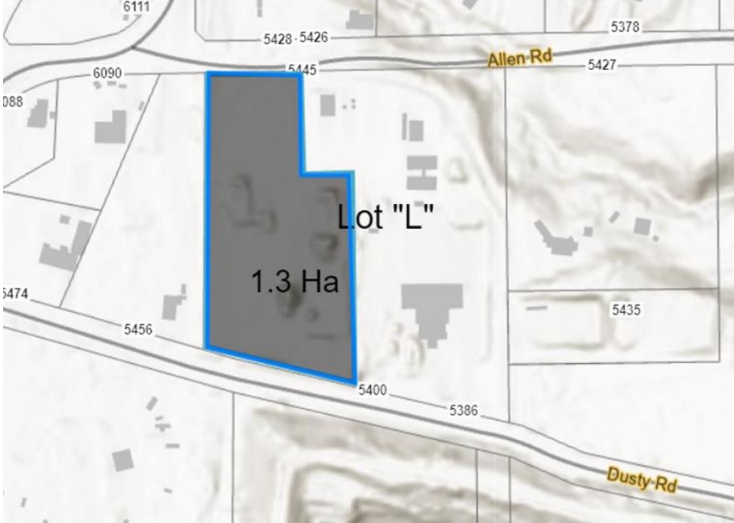
The six sites presented here, including the Dusty Road Facility and Lot “L”, for the most part, meet the criteria laid out above in Section 5, excluding interest in the site by First Nations, hauling distance to Sechelt center (except the two Dusty Road sites), proximity to a sewer system connection (except the two Dusty Road sites), and archaeological interests (unknown at this time) . A detailed breakdown of scoring is provided in Appendix A. It should be noted that Lot “L” does not meet our initial site size constraint but has a number of positive attributes that should not be ignored at this time. As stated earlier, the preferred type of treatment and effluent discharge, e.g., District sewer connection or subsurface infiltration, will likely dictate site size, facility configuration and location in the end.

The new sites have a number of criteria in common including they meet the environmental criteria with respect to distance to known critical habitat for Federally listed species at risk and have no conflict with a riparian area. They also are all not in proximity to a domestic licensed water supply, they meet the initial footprint size, have suitable buffer capacity, are not in proximity to unstable areas (e.g., faults, slides), are not in proximity to floodplains and shorelines, have compatible surficial geological formations, are compatible with respect to bedrock, and are suitable with respect to topography and terrain. These five sites are all Crown Provincial land and there is expected to be stakeholder interest in the area. There is expected to be low to medium odour and noise impact (mechanical plant) on residents and commercial businesses.

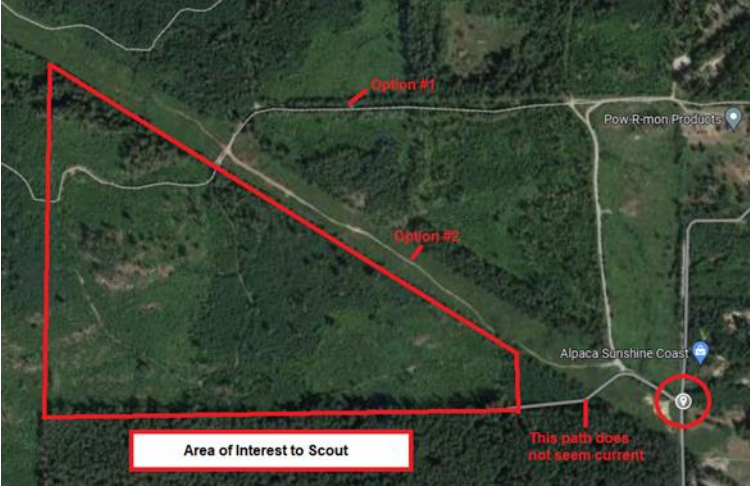
All five new sites are within the 2015 shishalh Statement of Intent Area and Statement of Intent Traditional Territory Boundary of the Squamish Nation. Remote Access to Archaeological Data (RAAD) has not been forthcoming at this time. It is expected that there will be some interest from the First Nations with respect to culturally significant areas, trees and artifacts at or near these five sites. There is also a shared concern with respect to total hauling distance from the Sechelt reference location (District Hall), proximity to a sewer system connection, proximity to a 3 Phase electricity supply, conflict with official community plans, proximity to primary and secondary roads and the land type (e.g., an assumed ‘greenfield’). Any issues with respect to hauling septage through sensitive areas has not yet been determined and is hoped to be assessed through consultation.

Table 6-1: Alternative Sites Location and Score

Site and Score	Location Description	Comments / Pros & Cons
Dusty Road Facility 60	District of Sechelt, 5297 Dusty Road   View of entrance off Dusty Road	This site score is higher than the new sites primarily due to it being in the District, already connected to a sewer main, connected to hydro, on good road access, and within an industrial setting. This site did not score well on distance to known critical habitat, First Nation interest, and setback to a primary or secondary road. Operational challenges, that are very much present at this site, were not one of the criteria as the other sites do not have a currently active facility to compare.

Site and Score	Location Description	Comments / Pros & Cons
Lot "L" 58	District of Sechelt, 5400 Dusty Road   View of entrance off Dusty Road	This site is shown as a portion of Lot "L" as the new Parks & Public Works Operations Centre was recently built on this site and other structures related to public works operations also exist on this property. The 1.3 ha area may be sufficient depending on the type of treatment and effluent discharge preferred. This site has a number of positive attributes including it is owned by the District, in the sewer catchment area, close to power and good road access, however, it is also close to residents and an ephemeral stream. City staff working at the Operations Centre can also expect to be impacted by odour.

Site and Score	Location Description	Comments / Pros & Cons
SHA 1 59	District of Sechelt, ~750 m NW of Field Rd, then ~470 m N on Forest Service Road   View from Forest Service Road	Further to the common attributes and concerns listed above, this site requires less upgrades to access the site than the other sites except SHA4 and is more suitable for haul trucks with respect to the grade alignment than SHA3 and SHA5. This site is closer to existing and planned sensitive land use than SHA3 and SHA4.

Site and Score	Location Description	Comments / Pros & Cons
SHA 2 58	District of Sechelt, NW of Pell Rd., ~400 m along Hydro R/W   View from road intersection NW of Pell Rd.	Further to the common attributes and concerns listed above, this site requires slightly more upgrades to access the site than SHA1 and SHA4 and is more suitable for haul trucks with respect to the grade alignment than SHA3 and SHA5. This site is closer to existing and planned sensitive land use than SHA3 and SHA4.

Site and Score	Location Description	Comments / Pros & Cons
SHA 4 58	Area D: Roberts Creek, ~800 m SE of Field Road, then ~350 m North   View from Forest Service Road	Further to the common attributes and concerns listed above, this site requires less upgrades to access the site than the other sites except SHA4 and is more suitable for haul trucks with respect to the grade alignment than SHA3 and SHA5. This site is farther from existing and planned sensitive land use than SHA1, SHA2 and SHA5.

Site and Score	Location Description	Comments / Pros & Cons
SHA 5 58	Area B: Halfmoon Bay, ~1.3 km SE of the Sunshine Coast Hwy on unnamed road along Hydro R/W, turn-off ~340 m East of Trout Lake   View across Hydro R/W from unnamed road	Further to the common attributes and concerns listed above, this site requires slightly more upgrades to access the site than SHA1 and SHA4 and is more suitable for haul trucks with respect to the grade alignment than SHA3. This site is closer to existing and planned sensitive land use than SHA3 and SHA4.

Site and Score	Location Description	Comments / Pros & Cons
SHA 3 54	Area B: Halfmoon Bay, ~1,100 m NW of the Sunshine Coast Hwy on unnamed road – turnoff ~750 m south of Redrooffs Rd   View from unnamed road	Further to the common attributes and concerns listed above, this site requires slightly more upgrades to access the site than SHA1 and SHA4 and is less suitable for haul trucks with respect to the grade alignment than the other sites. This site is much farther from existing and planned sensitive land use than the other sites.

7 RECOMMENDED SITES

Based on the above criterion and constraint mapping, SHA recommends that the five shortlisted sites, plus the existing Dusty Road Facility, be considered for further evaluation. When the District Council approves the list of candidate sites to be released for public and key stakeholder consultation and engagement, other factors that could eliminate one or more of the shortlisted sites may be revealed such as there may be planned trails or natural conservation spaces at or near the site, proximity to a main electrical right-of-way may be problematic, archaeological artifacts and ancient culturally modified trees may be present, and/or rezoning or amending an Official Community Plan may not be possible.

8 REFERENCES

Atlantic Canada Wastewater Guidelines Manual for Collection, Treatment and Disposal, Environment Canada. ABL Environmental Consultants, 2006

District of Sechelt Zoning Bylaw No. 580, 2022. District of Sechelt, 2022

Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia 2013, A companion document to Develop with Care 2012. B.C. Ministry of Forests, Lands and Natural Resource Operations, 2013

iMapBC found at web address: <https://www2.gov.bc.ca/gov/content/data/geographic-data-services/web-based-mapping/imapbc>

Organic Matter Recycling Regulation, Environmental Management Act. BC Ministry of Environment. Ministry of Environment & Climate Change Strategy, February 2002

Quick Guide for Waterfront Land Owners & Developers. BC Ministry of Forests, Lands and Natural Resource Operations, 2016

Sewerage System Standard Practice Manual, Version 3. Health Protection Branch, Ministry of Health, September 2014

Sunshine Coast Regional District Zoning Bylaw No. 722. Sunshine Coast Regional District, December 2022

9 LIMITATIONS

This report has been prepared by Sperling Hansen Associates (SHA) on behalf of the District of Sechelt in accordance with generally accepted engineering practices to a level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions in British Columbia, subject to the time limits and financial and physical constraints applicable to the services.

The report, which specifically includes all tables and figures, is based on engineering analysis by SHA staff of data compiled during the course of the project. Except where specifically stated to the contrary, the information on which this study is based has been obtained from external sources. This external information has not been independently verified or otherwise examined by SHA to determine its accuracy and completeness. SHA has relied in good faith on this information and does not accept responsibility of any deficiency, misstatements or inaccuracies contained in the reports as a result of omissions, misinterpretation and/or fraudulent acts of the persons interviewed or contacted, or errors or omissions in the reviewed documentation.

The report is intended solely for the use of the District of Sechelt. Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. SHA does not accept any responsibility for other uses of the material contained herein nor for damages, if any, suffered by any third party because of decisions made or actions based on this report. Copying of this intellectual property for other purposes is not permitted.

The findings and conclusions of this report are valid only as of the date of this report. The interpretations presented in this report and the conclusions and recommendations that are drawn are based on information that was made available to SHA during the course of this project. Should additional new data become available in the future, Sperling Hansen Associates should be requested to re-evaluate the findings of this report and modify the conclusions and recommendations drawn, as required.

We appreciate the opportunity to work with the District of Sechelt on this project. Please do not hesitate to contact the undersigned if you have any questions.

Sincerely,

SPERLING HANSEN ASSOCIATES

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PRJ23024 - District of Sechelt
Septage Receiving Facility
Long-Term Plan

Legend

Potential Site Footprints

- Primary Option
- Secondary Option
- Dusty Road
- Lot L
- Potential Zoning Areas

District of Sechelt Zoning -
Bylaw 580

- Restricted

Sunshine Coast Regional
District Zoning - Bylaws
337 & 722

- Restricted
- First Nation Treaty
Lands
- Road Setbacks
- District of Sechelt
Municipal Hall

Truck Haul Routes

- Existing
- Proposed

Scale: 1:60,000

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



SPERLING
HANSEN
ASSOCIATES

FIGURE 1

Legend

Potential Site Footprints

- Primary Option
- Potential Zoning Areas

District of Sechelt Zoning - Bylaw 580

- Restricted

Sunshine Coast Regional District Zoning - Bylaws 337 & 722

- Restricted
- Road Setbacks

Truck Haul Routes

- Existing

Scale: 1:7,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



SHA 1

5.93 Ha

Selma Park

Selma Park Rd

Chapman Creek

Selma Park Rd

0 0.25 0.5 1 Kilometers

FIGURE 2

SHA 2

PRJ23024 - District of Sechelt
Septage Receiving Facility
Long-Term Plan

Legend

Potential Site Footprints

- Primary Option
- Potential Zoning Areas

District of Sechelt Zoning - Bylaw 580

- Restricted

Sunshine Coast Regional District Zoning - Bylaws 337 & 722

- Restricted
- Road Setbacks

Truck Haul Routes

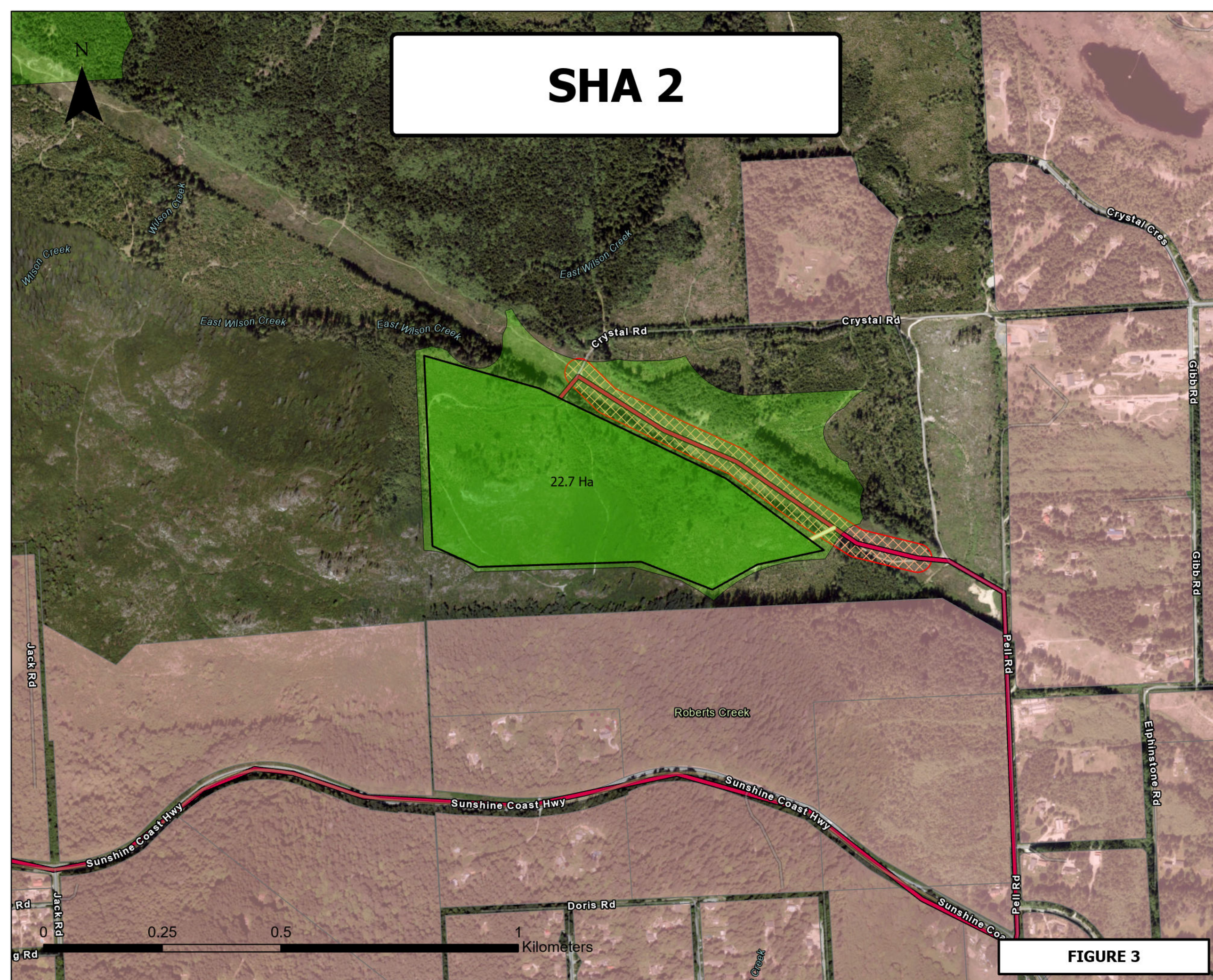
- Existing
- Proposed

Scale: 1:7,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



FIGURE 3



SHA 3

PRJ23024 - District of Sechelt Septage Receiving Facility Long-Term Plan

Legend

Potential Site Footprints

- Primary Option
- Potential Zoning Areas

District of Sechelt Zoning - Bylaw 580

- Restricted

Sunshine Coast Regional District Zoning - Bylaws 337 & 722

- Restricted
- Road Setbacks

Truck Haul Routes

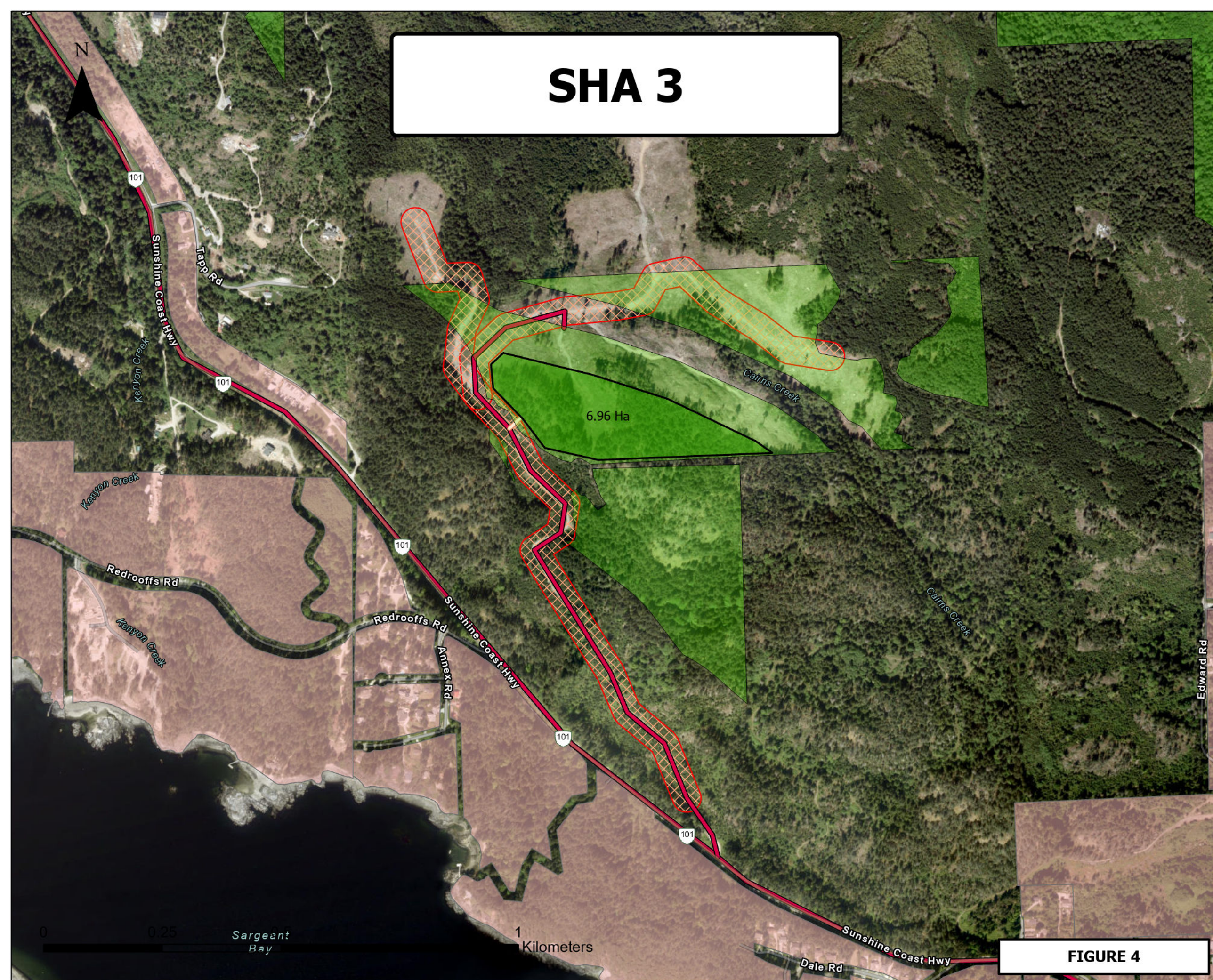
- Existing
- Proposed

Scale: 1:7,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



FIGURE 4



Legend

Potential Site Footprints

- Primary Option
- Secondary Option
- Potential Zoning Areas

District of Sechelt Zoning - Bylaw 580

- Restricted

Sunshine Coast Regional District Zoning - Bylaws 337 & 722

- Restricted
- Road Setbacks

Truck Haul Routes

- Existing

Scale: 1:7,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



SHA 4

12.41 Ha

FIGURE 5

Legend

Potential Site Footprints

- Primary Option
- Secondary Option
- Potential Zoning Areas

Sunshine Coast Regional
District Zoning - Bylaws
337 & 722

- Restricted
- Road Setbacks

Truck Haul Routes

- Existing
- Proposed

Scale: 1:7,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



SPERLING
HANSEN
ASSOCIATES

SHA 5

37.9 Ha

32.42 Ha

FIGURE 6



Trout Lake

Sunshine Coast Hwy

Sunshine Coast Hwy

Sunshine Coast Hwy

Sunshine Coast Hwy

Birch Way

Colvin Creek

0 0.25 0.5 1 Kilometers

Legend

Potential Site Footprints

- Primary Option
- Secondary Option
- Potential Zoning Areas
- Road Setbacks

Truck Haul Routes

- Existing

SHA 6

18.65 Ha

11.93 Ha

Halfmoon-Carlson Forest Service Rd

Halfmoon Bay Creek

Halfmoon-Carlson Forest Service Rd

Halfmoon Bay Creek

0 0.25 0.5 1 Kilometers

FIGURE 7

Scale: 1:7,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen

Legend

Potential Site Footprints

- Primary Option
- Secondary Option
- Potential Zoning Areas

District of Sechelt Zoning - Bylaw 580

- Restricted

Sunshine Coast Regional District Zoning - Bylaws 337 & 722

- Restricted
- Road Setbacks

Truck Haul Routes

- Existing

Scale: 1:7,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



SHA 7

33.46 Ha

33.86 Ha

11.2 Ha

16.57 Ha

FIGURE 8

0 0.25 0.5 1 Kilometers

Legend

Potential Site Footprints

- Primary Option
- Potential Zoning Areas

District of Sechelt Zoning - Bylaw 580

- Restricted
- Road Setbacks

Truck Haul Routes

- Existing

Scale: 1:7,500

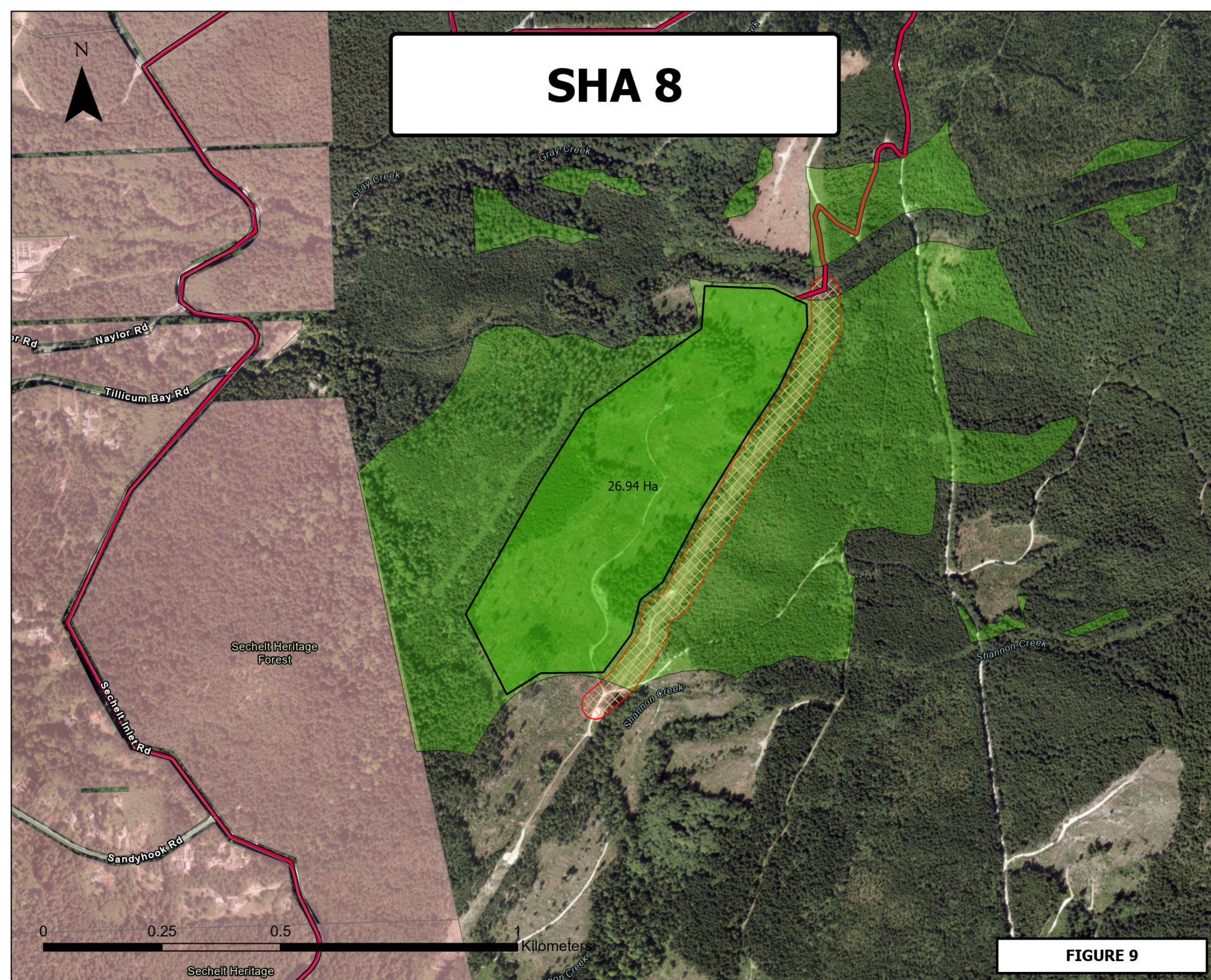
Date Issued: Sept. 13, 2023
Map Author: G. Betlen



SHA 8

26.94 Ha

FIGURE 9



Legend

Potential Site Footprints

- Primary Option
- Potential Zoning Areas
- Road Setbacks

Truck Haul Routes

- Existing

Scale: 1:7,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



SHA 9

14.94 Ha

FIGURE 10

0 0.25 0.5 1 Kilometers

DUSTY RD

PRJ23024 - District of Sechelt
Septage Receiving Facility
Long-Term Plan

Legend

Potential Site Footprints

Dusty Road

District of Sechelt Zoning -
Bylaw 580

Restricted

Sunshine Coast Regional
District Zoning - Bylaws
337 & 722

Restricted

First Nation Treaty
Lands

Truck Haul Routes

Existing

Scale: 1:2,500

Date Issued: Sept. 13, 2023
Map Author: G. Betlen



FIGURE 11

0 0.07 0.15 0.3 Kilometers

Legend

- Potential Site Footprints
- Lot L
- District of Sechelt Zoning - Bylaw 580
- Restricted
- Truck Haul Routes
- Existing

Scale: 1:2,500

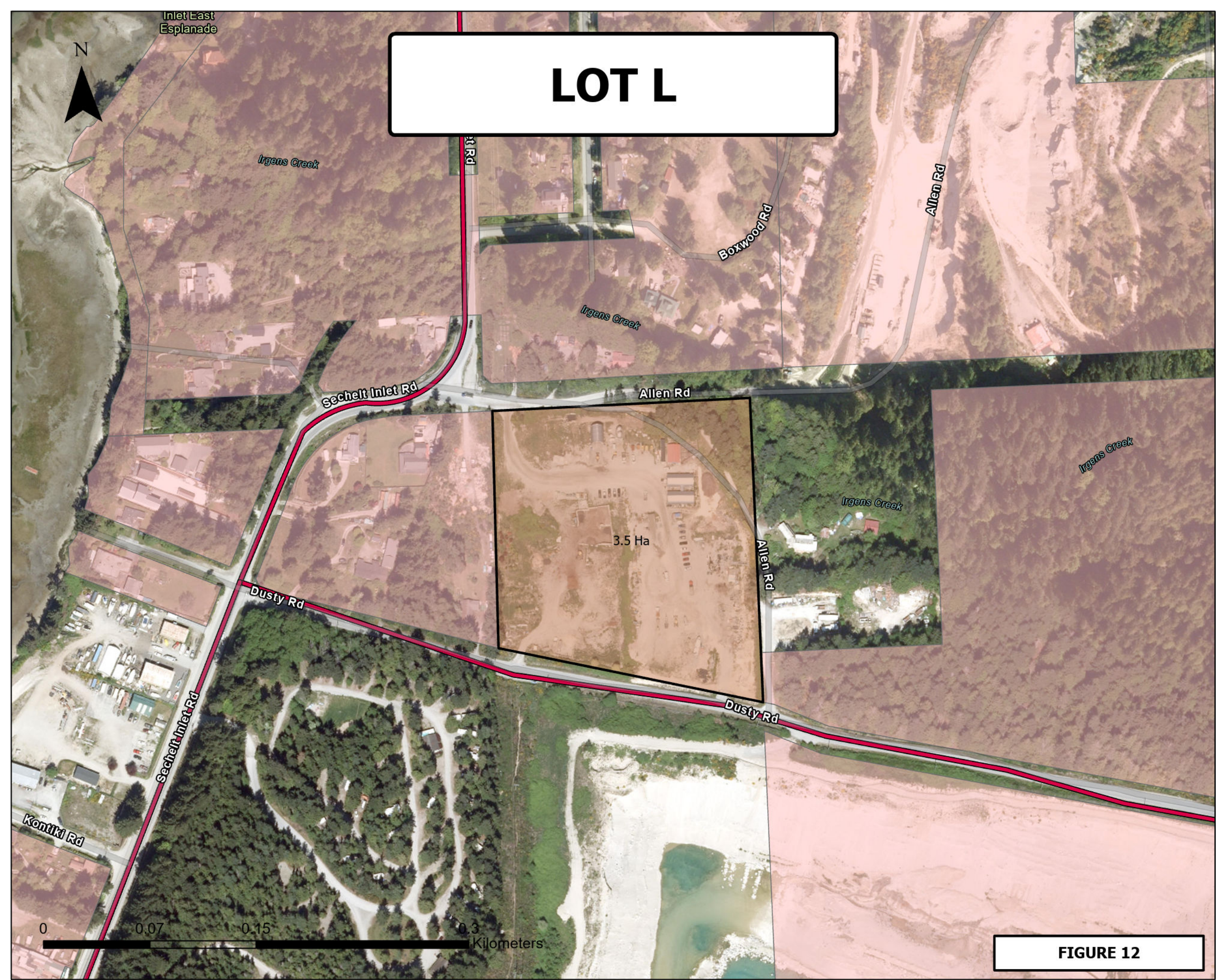
Date Issued: Sept. 13, 2023

Map Author: G. Betlen



LOT L

FIGURE 12



APPENDICES

APPENDIX A
Septage Receiving Facility Site Options Evaluation Matrix

Table 1. Septage Receiving Facility Site Options Evaluation Matrix - Desktop Review - iMapBC Study

Item	Initial Evaluation Criteria	Description & Notes	Title Ranking					Lot L					Dusty Road Facility						
			Low	Medium	High	SHA 1		SHA 2		SHA 3		SHA 4		SHA 5		Existing			
	Matrix Scoring		3 points	2 points	1 point														
Environmental Criteria																			
1	Distance to known critical habitat for Federally listed Species at Risk habitat	Protected and endangered species habitat - Based on iMapBC data & Use federal and provincial data	200-500 m	100-200 m	<100 m	200 m from Marbled Murrelet	3	280 m from Marbled Murrelet	3	980 m from Western Painted Turtle	3	1150 m from Marbled Murrelet	3	270 m from Western Painted Turtle	3	936 m from Marbled Murrelet	3	0 m - SE of Property Overlap with Marbled Murrelet Critical Habitat	1
2	Riparian area conflicts	Riparian area protection legislation - 35m setback from high water level	No Concern	Low Concern	High Concern	No Concern	3	No Concern	3	No Concern	3	No Concern	3	No Concern	3	More than 35 m from Irgen Creek	3	No Concern	3
Land Tenure			Sub-Total				6		6		6		6		6		6	4	
3	Ownership - Ability to secure use	Currently belongs to District of Sechelt, federal, provincial, private, leasing potential	No Concern	Low Concern	High Concern	Untitled Provincial - PIN (7123810)	2	Crown Provincial	2	Untitled Provincial - PIN (7708299)	2	Crown Provincial - PID (15941035)	2	Crown Provincial	2	Municipal (Sechelt) - PID (025043773)	3	Crown Provincial - PID (25062021)	2
4	Expected stakeholder interest in the area	Desktop study iMapBC based on known land uses - <i>Direct engagement required</i>	No known interest	Low interest expected	Some interest expected		2	Robert's Creek OCP - https://www.inlettechnic.com/only-corniche-history	2		2	Distance from residential clusters and logging areas.	3	Distance from residential clusters and logging areas.	3	Zoned I-1 but adjacent to R-1 on two sides	2		3
5	First Nation Reserve, Rights & Title and Treaty Lands	Based on iMapBC and other available information - Determine expected areas of interest - <i>Direct engagement required</i>	No known interest	Low interest expected	Some interest expected	Within 2015 ishishah Statement of Interest Area & Statement of Interest Traditional Territory Boundary Squamish Nation	1	Within 2015 ishishah Statement of Interest Area & Statement of Interest Traditional Territory Boundary Squamish Nation	1	Within 2015 ishishah Statement of Interest Area & Statement of Interest Traditional Territory Boundary Squamish Nation	1	Within 2015 ishishah Statement of Interest Area & Statement of Interest Traditional Territory Boundary Squamish Nation	1	Within 2015 ishishah Statement of Interest Area & Statement of Interest Traditional Territory Boundary Squamish Nation	1	Within 2015 ishishah Statement of Interest Area & Statement of Interest Traditional Territory Boundary Squamish Nation	1	Within 2015 ishishah Statement of Interest Area & Statement of Interest Traditional Territory Boundary Squamish Nation	1
Regulatory			Sub-Total				5		5		5		6		6		6	6	
6	Archeological sensitivity	Mapped Arch Sites based on BC Remote Access to Archeological Data (<i>request to Arch Branch required once parcels short listed</i>) - Confirmation with ishishah Nation and other neighbouring First Nation communities to confirm if unmappped sites within area	>300 m	300 m - 100 m	<100 m	Need access to RAAD		Need access to RAAD		Need access to RAAD		Need access to RAAD		Need access to RAAD		Need access to RAAD		Need access to RAAD	
7	Proximity to domestic water supply - Licenced	Groundwater wells, surface water intake - Environment Canada uses 300m for stabilization lagoons	>500 m	500 m-300m	<300 m	2600 m to Irgen Creek Registered Domestic Intake	3	1300 m to Flame Creek Registered Domestic Intake	3	950 m to Patterson Creek Registered Domestic Intake	3	3400 m to Flame Creek Registered Domestic Intake	3	3200 m to Patterson Creek Registered Domestic Intake	3	618 to Irgen Creek Registered Domestic Intake	3	330 m to Irgen Creek Registered Domestic Intake	2
Physical Suitability			Sub-Total				3		3		3		3	0	3		3	2	
8	Potential footprint size (ha)	Dusty Road Facility - 4.3 Ha. Baseline facility concept in the order of 5 hectares including 30m perimeter buffer	>5 Ha	4 - 5 Ha	<4 Ha	5.93 Ha	3	22.69 Ha	3	11.85 Ha	3	12.41 Ha	3	37.9 Ha	3	1.3 Ha - Although For Thought was to mechanically de-water with centrifuge & haul away sludge	1	4.3 Ha	2
9	Suitable buffer capacity	Vegetated site boundary, berms, hills - Can the facility be seen? Google Earth Consulted	No Concern	Low Concern	High Concern	Cannot be seen.	3	Cannot be seen.	3	Cannot be seen.	3	Cannot be seen.	3	Cannot be seen.	3	Seen from Industrial - R-1 adjacent	2	Seen from industrial	2
10	Proximity to unstable areas	Faults, slides, clear cuts	No Concern	Low Concern	High Concern	No concern.	3	No concern.	3	No concern.	3	No concern.	3	No concern.	3	No concern.	3	No concern.	3
11	Proximity to floodplains and shorelines	iMapBC data & SCRD Data	No Concern	Low Concern	High Concern	1650 m to Ocean	3	980 m to Ocean	3	780 m to Ocean	3	2560 m to Ocean	3	2270 m to Ocean	3	270 m to Porpoise Bay	3	830 m to Porpoise Bay	3
12	Surficial geological formations compatibility	Karst?	No Concern		Concern	No Karst or other concern.	3	No Karst or other concern.	3	No Karst or other concern.	3	No Karst or other concern.	3	No Karst or other concern.	3	No Karst or other concern.	3	No Karst or other concern.	3
13	Bedrock compatibility	iMapBC data	No Concern	Low Concern	High Concern	No concern - All sites are on same bedrock shelf as built-up Sechelt and neighbor areas	3	No concern	3	No concern	3	No Concern	3	No Concern	3	Existing	3	Existing	3
14	Suitability of site topography / terrain	Steepness or existing ravines and size of facility location	Flat or Gentle Terrain <10.1	Rolling Terrain <1.1	Valley or Side Hill <0.1	Roughly 30.1 - iMap 3.3%	3	1.16 - iMap 6.2%	3	1.42 - iMap 2.4%	3	1.10 - iMap 10%	3	1.42 - iMap 2.4%	3	Existing - Graded	3	Existing - Graded	3
Logistics			Sub-Total				21		21		21		21		21		18	19	
15	Hauling through sensitive areas	Areas such as residential neighbourhood, commercial, resort area, picnic/recreation area - Impacts with respect to odour and/or spillage from trucks and vehicle size and/or speed	None	Moderate	Significant	Residential, Commercial and Highway Corridor		Rural Residential and Highway Corridor		Highway Corridor		Residential, Commercial and Highway Corridor		Highway Corridor		Residential and Commercial		Residential and Commercial	
16	Total hauling distance from Sechelt reference location	City Hall at 5797 Cowie Street - All community distances should be considered	<5 km	5 -10 km	>10 km	10.9 km	1	12.0 km	1	7.5 km	2	10.6 km	1	12.8 km	1	3.9 km	3	5.9 km	3
Infrastructure Upgrade Requirements			Sub-Total				1		1		2	0	1		1		3	3	
17	Proximity of Sewer Collection System	Forcemain required - Ability to service other parcels	Flowing	<500 m	>500 m	2500 m	1	6890 m	1	2090 m	1	4360 m	1	4100 m	1	0 m - Front of Property	3	430 m	2
18	Proximity of electric power connection (3 Phase)	Based on iMapBC data and measured from proposed locations to known 3 Phase power line	<500 m	500 m-1 km	>1 km	From Commercial area to the south - 1.87 km	1	From "How-R-man Products" building - 950 m	2	From Hwy - 850 m	2	From Commercial area to south west - 1.05 km	1	From Hwy - 110 m	2	Connected	3	Connected	3

Item	Initial Evaluation Criteria	Description & Notes	Title Ranking													Lot L		Dusty Road Facility						
			Low	Medium	High	SHA 1			SHA 2			SHA 3			SHA 4			SHA 5					Existing	
19	Need for Highway and other road upgrades	Left turn lane, resurfacing, bridge upgrades	< \$100K	\$100K - \$250K	> \$250K			3	ROW Road Improvement	2	Likely need to re-grade surface.	2			3	ROW Road Improvement	2			3				
20	Suitability for haul trucks	Grade, alignment & curvature of road - Time & Road Safety	Suitable		Low suitability			3		3	Steeper approach for haul trucks is needed for site.	1			3	Sharp right from Sunshine Hwy. on satellite imagery. May be improvable.	2			3				
Compatibility with Surrounding Land Use		Sub-Total					8		8		6		8		7		12		11					
21	Odour and noise impact - Mechanical Plant	Nearest residential development or land zoned residential, institutional and recreation - For mechanical plants & stabilization lagoons, Environment Canada uses 150m for isolated dwellings and 300m for dwellings in built up areas/subdivisions	> 500 m	500 m-300m	< 300 m	950 m	3	310 m	2	350 m	2	1200 m	3	380 m	2	45 m	1	650 m	3					
22	Odour and noise impact - Mechanical Plant	Nearest commercial or industrial development or land zoned commercial or industrial - Environment Canada uses 30m	> 400 m	400 m - 200 m	< 200 m	650 m to Airport Outbuilding	3	500 m to Light Industrial Warehouse	3	330 m to Highway Truck Parking Area	2	370 m to Aggregate(?) Site Building	2	950 m to Lumber Storage Yard	3	30 m to Local Commercial	1	370 m to Light Industrial	2					
23	Proximity to existing and planned sensitive land use	Areas such as community watershed, parks, hiking trails, other recreation, trailhikes - Additional engagement required - Environment Canada uses 120m for lined stabilization lagoons to lakes/streams	> 250 m	250 m - 120 m	< 120 m	415 m to Chapman Creek	3	400 m to Roberts Creek Provincial Park	3	35 m to Cairns Creek	1	225 m to Wilson Creek	2	620 m to Trout Lake	3	Less than 120 m - NE corner of property includes out of Ingers Creek	1	280 m to Ingers Creek	3					
24	Conflict with Official Community Plan	Conflict with planned future development to be considered	None	Some	High	Zoned Resource - Requires Rezoning	2	Zoned Resource - Requires Rezoning	2	Zoned Resource - Requires Rezoning	2	Zoned Resource - Requires Rezoning	2	Zoned Resource - Requires Rezoning	2		3		3					
25	Proximity to Primary and Secondary Roads	Environment Canada uses 30m - 100m	> 100 m	30 m - 100 m	< 30m	Selected site 30 m from FSR	2	Selected site 40 m from Utility ROW	2	Selected site 30 m from FSR	2	Selected site 30 m from FSR	2	Selected site 35 m from Utility ROW	2	Assumes facility would be located at the back of the lot	1	No setback	1					
26	Land type	Previous use considerations: Contaminated site, green field vs brown field	Brownfield Site	Developed	Greenfield (Old growth)	Assumed Greenfield - Partially Cleared	2	Assumed Greenfield - Partially Cleared	2	Assumed Greenfield - Partially Cleared	2	Assumed Greenfield - Partially Cleared	2	Assumed Greenfield - Partially Cleared	2	Brownfield Site	3	Brownfield Site(?)	3					
		Sub-Total				15		14		11		13		14		10		15						
		Desktop Review Score				59		58		54		58		58				60						