CORTES ISLAND

COMMUNITY BROADBAND PLAN

Strathcona
REGIONAL DISTRICT

ABOUT CORTES ISLAND

Cortes Island is approximately 25 km long and 13 km wide, situated at the northern end of the Salish Sea (Strait of Georgia), between Vancouver Island and the British Columbia mainland. Accessible via a 40-minute ferry ride from Quadra Island and a shorter 10 minute ferry crossing from the City of Campbell River.

Like many other west coast communities, Cortes Island was inhabited by Indigenous peoples prior to colonization. Coast Salish people made use of Cortes Island for thousands of years, but a smallpox epidemic decimated the population in the late 1700's. Today, the Klahoose First Nation live at Squirrel Cove. The Indigenous comprise of 7.0% of Cortes Island's total population.[1, 2]

The island currently has about 1,035 full-time residents, and most live on the southern portion. The largest age cohort on Cortes Island is 15-64 years old and they comprise 58.9% of the population. The remainder of the population is comprised of seniors (28.0%), children 14 years old and younger (13.1%) and the median age of the population is 53.5 years.[1] The population increases in the summer, as Cortes hosts about 3,000 people per day. [3]

Cortes Island is a member of the Strathcona Regional District's Area B.

The median value of a home is $300,973 with a $383 median monthly cost of home ownership. Median monthly cost is the total cost for a mortgage, property taxes, and the cost of electricity, heat, water, and other municipal services. Only 35.8% of owner households on Cortes have a mortgage and 74.2% of owner households own their home outright. Utilities and property taxes are the only costs associated with home ownership. [2]

There is spotty cell phone coverage on Cortes Island. Many residents continue to rely on landlines, or have both a landline and a cell phone. A landline can cost $40 per month or more, depending on additional features needed.[4] An individual household can expect to pay between $44 and $180 per month, depending on desired internet speed and usage.[5] 30% of the workforce works from home on Cortes.[2]

Cortes Island's median household after-tax income is $34,432 – nearly $30,000 less than the provincial average. It is also lower than neighbouring Quadra Island, and less the Strathcona Regional District median of $55,487.2 Most income on Cortes Island is generated by employment (53.6%), while 20.6% comes from government transfers.[2]

Cortes is as an island paradise, with beautiful lakes, lagoons, forests, and white sandy beaches. Known for its abundant wildlife, delicious shellfish, and self-sufficient people, Cortes offers a wide variety of things to see and do.

[1] Our Cortes Island History , www.ourcortes.com/our-cortes/island-history
[2] Statistics Canada, Census 2016 – Strathcona B, Regional District Electoral Area [Census Subdivision]
[3] Campbell River Mirror, May 24, 2018, Cortes Island: A small island rich with stories
[4] Telus.com, Home phone plans
[5] Yellow Pages, Internet Service Providers for Cortes Island, BC and Canadian ISP, ISP search for Cortes Island

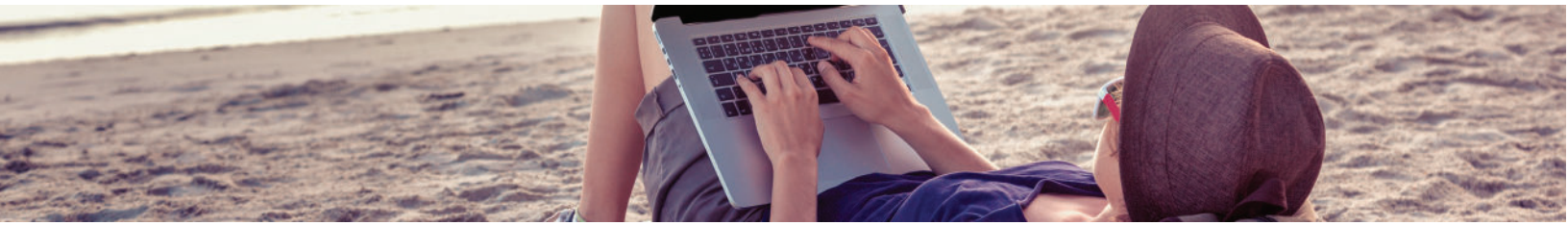
CONTENTS

Community Broadband Plan

Telecommunications Infrastructure Assessment

Prepared by:
Elaine Popove - Strathcona Regional District
Communications Coordinator (May, 2020)

This project is made possible through funding provided by Island Coastal Economic Trust.



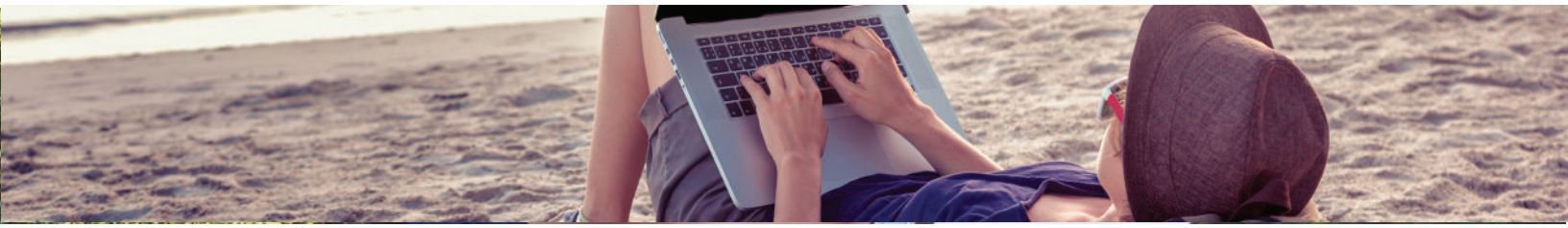
INTRODUCTION

The Strathcona Regional District (SRD) is a partnership of four electoral areas and five municipalities. These communities have relatively small populations and are often separated from each other by undulating landscapes and water.

Of the population of 44,000 residents, most reside within the City of Campbell River. Approximately 12,000 regional district residents live in rural and remote communities spread across a large geographic expanse of approximately 18,500 sq. kms that includes forested hills and alpine areas, islands and remote inlets.

Improved broadband connectivity for rural and remote communities has been a strategic priority of the SRD for several years. There is a significant gap between broadband service levels and affordability in urban areas versus rural areas in British Columbia (Connected Communities in BC, NDIT, 2018). Indeed, many communities within the SRD do not meet basic service levels, if they have any service at all.

Addressing this 'digital divide' will require intensive collaborative effort and multiple funding sources but the benefits are undeniable. It will increase the live-ability of rural and remote communities on Vancouver Island, enabling them to sustain their communities, attract investment and participate directly in social and economic initiatives.



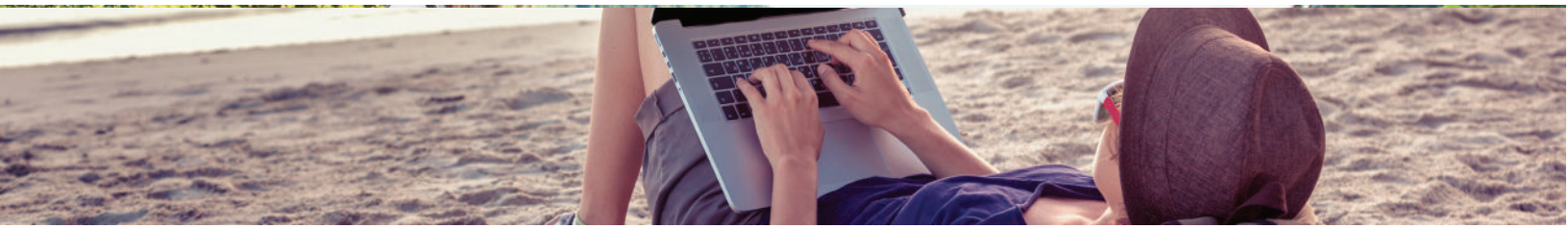
PROJECT METHODOLOGY

The Community Broadband Plans (CBP) project methodology was founded on design principles set-out by Connected Communities BC, weaving together a combination of diverse skill-sets; technical network engineers with community facilitators. 7 communities within the regional district were visited throughout a 2 week block in June of 2019.

Presentations from guest speakers and videos showcasing possibilities for a digital future while gathering ideas from the community about their current state of use as well as plans for housing, economic, environmental and social developments took place.

Information was presented about the SRD's broadband initiatives including the Connected Coast project (V.Smith, SRD), broadband technology and the existing connectivity landscape (D.Sinclair, Driftwood Communications), Innovate BC inspiration (G. Truax, Innovation Island) and the provincial Connected Communities program (C. McCormick and J.Wilkins, Ministry of Citizens' Services). A video produced by Connected Communities, showcasing how improved connectivity has been useful in Haida Gwaii was also shown.

An open discussion followed and participants provided a great deal of information about the current state of connectivity in their community as well as how improved broadband might be utilized to address community challenges and opportunities.



DIGITAL ASPIRATIONS

A Community Broadband Plan forum was held on June 19th from 4:00 – 6:00 pm at the Mansons Hall. The forum was promoted as a 'Let's Connect' workshop advertised by posters hung in high traffic locations throughout the community and online via local social media channels and community websites.

The workshop was 2 hours in length with the first hour consisting of presentations, technical info and a Connected Communities video was featured while the second hour included an open forum.

How would improved broadband address community challenges and opportunities on Cortes Island?

Improve Community & Family Connections

- Remain in contact with loved ones
- Feel connected with the whole world

Improve Healthcare

- Avoid going off island for medical appts, diagnostics, etc..

Population Growth

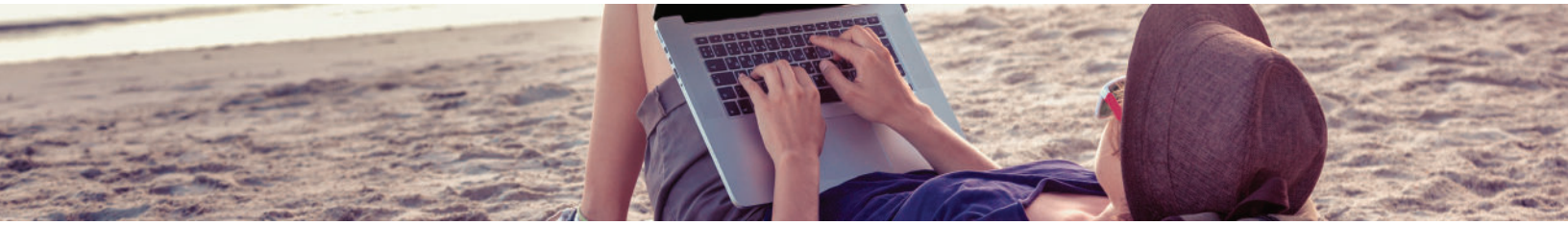
- Attract new families & younger population
- Retain population

Provide More Educational Opportunities

- Opportunity for virtual classrooms (Avoid having kids travel to Campbell River for school)
- Assistance with homework
- Research assistance
- Ability to teach via video-conferencing

Improve Connectivity

- Some residents can't even get satellite or dial up internet.



DIGITAL ASPIRATIONS (cont.)

Employment Opportunities

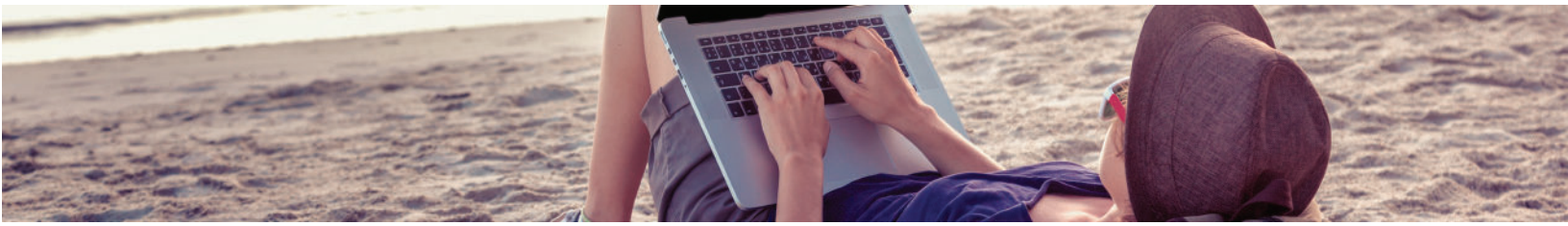
- Increase of small business entrepreneurs
- Buy & make products, realistically priced
- Online stream live happenings (events, businesses, etc...)
- Broaden opportunities for younger people (tech-based jobs)
- Able to upload and download files (currently very difficult)
  (For example. some local web designers had to move away off island, for this reason)

Entertainment Opportunities

- Video & music streaming
- Gaming

Digital Access to Services

Tax Return Submissions



CONCLUSION

The information gathered from the Let's Connect CBP forums has created a unique snapshot of the community's digital readiness and aspirations.

The world is increasingly 'online' bringing opportunities for information exchange, social connection, improved service delivery and income generating opportunities along with it. In the Regional District, improved connectivity will allow residents in rural and remote communities access to essential services, participation in the modern economy and civic life.

New economic development opportunities will allow residents to work remotely and participate on e-commerce and online business development. Access to phone and internet services is necessary for reasons related explicitly to health – including access to health and emergency services and opportunities for telehealth – but also to meet other needs as aforementioned. Improved internet connectivity will also significantly enhance the ability to take part in civic and social participation, education and professional development, improve connection to friends and family, and entertainment, among others.

For some residents, this can mean the difference between staying and improving the capacity in local communities versus having to move or board elsewhere which can be prohibitive.

This snapshot will be provided to last-mile broadband infrastructure solution designers to develop a plan based on the community snapshot along with analysis of the community's topography, climate, housing density, location of key institutions.

In this way, the infrastructure is informed by the community aspirations amongst other important technical considerations.

Strathcona REGIONAL DISTRICT

STRATHCONA CONNECTED COAST NETWORK

Cortes Island

TELECOMMUNICATIONS INFRASTRUCTURE ASSESSMENT

NOVEMBER 2019

Prepared for SRD by:

DRIFTWOOD COMMUNICATIONS LTD.
6800 VEYANESS ROAD
SAANICHTON, BC
V8M 2A8

Purpose of Study and Methodology

The SRD engaged Driftwood Communications to provide an understanding of the current connectivity landscape on Cortes Island and to investigate any improvements required to last-mile infrastructure in order to better serve the community. Suggestions for last-mile improvements must consider the proposed new high-speed capacity link being planned for Cortes Island through the Connected Coast project, as well as responding to the community's digital aspirations.

Methodology

A visit to Cortes Island was completed on Sunday, June 9th, 2019

A general survey of the area was conducted to identify:

- the proposed fibre landing location
- existing utility infrastructures, conditions and capacities
- existing ISP infrastructure
- potential anchor tenant locations
- potential opportunities

Interviews with the local ISP were undertaken to further understand their existing capabilities and where the gaps exist to achieve the targeted service levels.

A representative from Driftwood participated in a community Let's Connect forum on Cortes Island on June 9th. The purpose of the forum was to share the Connected Coast plan and what benefits it could bring to the community. Driftwood delivered a presentation of the various types of technologies that could potentially be deployed to provide these services. The open forum also provided the important opportunity for community members to share any concerns they may have had about any particular delivery method or any specific need within their community.

There are five fibre landing sites proposed for the SRD Connected Coast in the areas of Cortes and Redonda Islands which are included in this report.

Cortes Island	Redonda Island
Whaletown	Refuge Cove
Mansons Landing	
Seaford	
Klahoose First Nations	

Observations and information gathered was then analyzed by our staff to determine what potential options could best meet the objectives of providing the desired service levels to the community.

Connected Coast Submarine Fibre Routes

Connected Coast - Proposed backbone submarine fibre path and landing points
(Estimated Completion 2021)
Red, Blue & Green = Main submarine fibre

Connected Coast Landing Locations & Terrestrial Fibre Routes

Whaletown

Connected Coast submarine fibre landing site at Whaletown.
Red = Submarine fibre
Yellow = Proposed terrestrial fibre

Mansons Landing

Connected Coast submarine fibre landing site at Mansons Landing.
There is no proposed terrestrial fibre.
Red & Green = Submarine fibre

Seaford

Connected Coast submarine fibre landing site at Seaford. There is no proposed terrestrial fibre.
Red = Submarine fibre

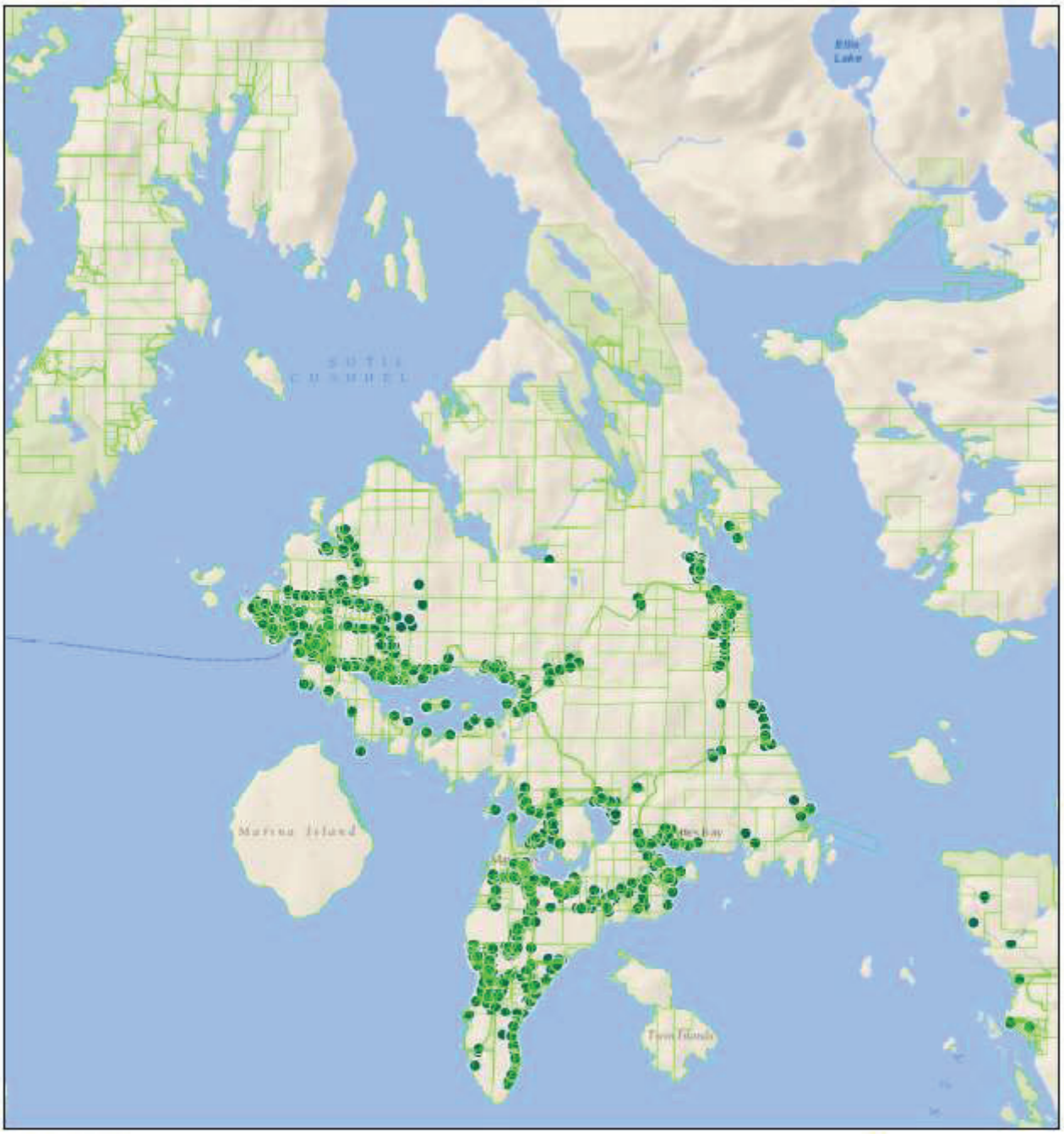
Klahoose

Connected Coast submarine fibre landing site at Klahoose First Nations.
Red = Submarine fibre
Yellow = Terrestrial fibre

Refuge Cove – West Redonda Island

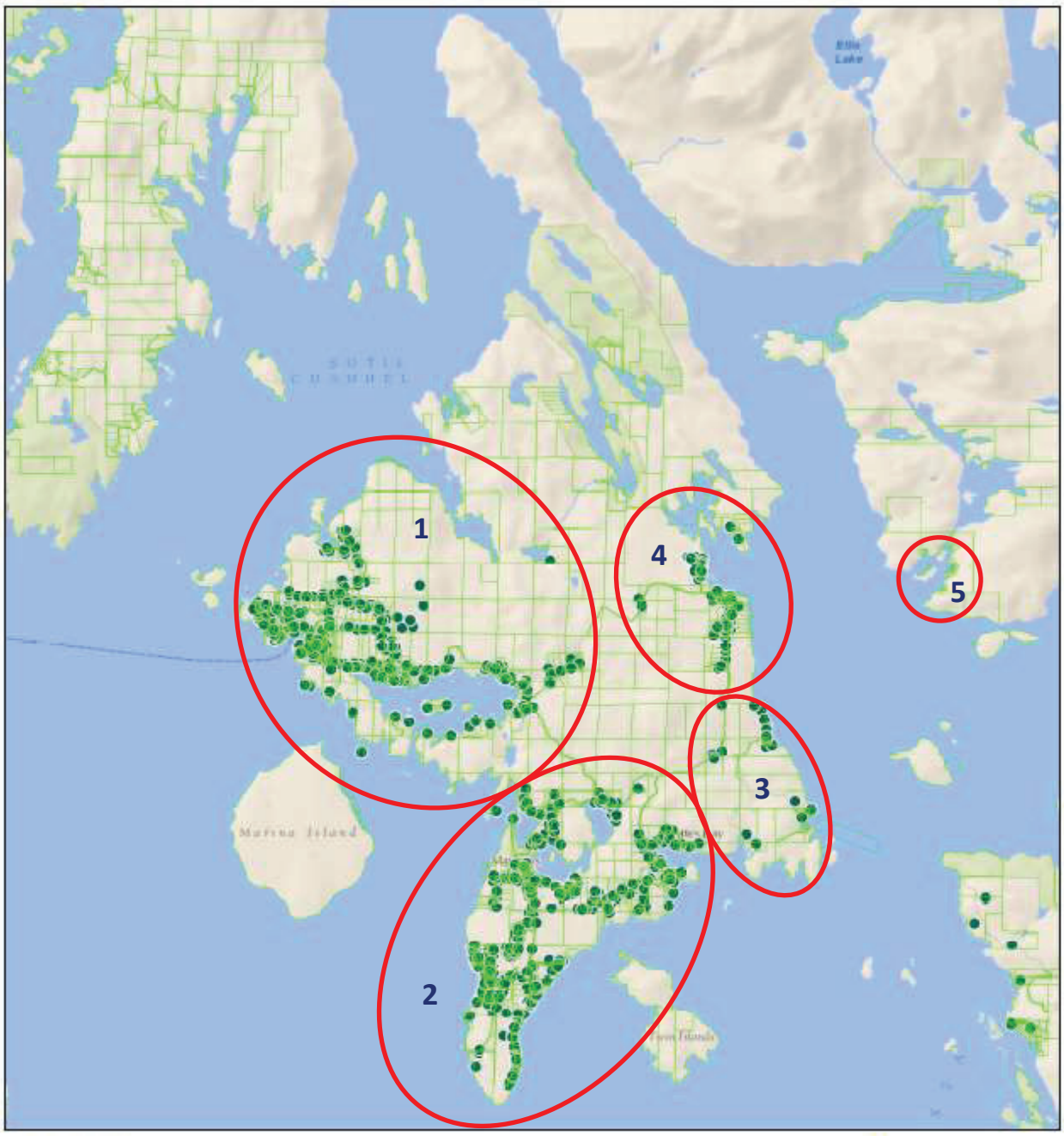
Connected Coast submarine fibre landing site at Refuge Cove. There is no proposed terrestrial fibre.
Red = Submarine fibre

Population & Address Density



Description	Quantity	Source
Cortes Island Population	~1035	SRD
Addresses on Cortes Island	748	2019 ICI Society Address BC
Addresses in Refuge Cove	~25	Visually gathered from Ortho
Report number used	773	2019 ICI Society + Visual

Area Densities



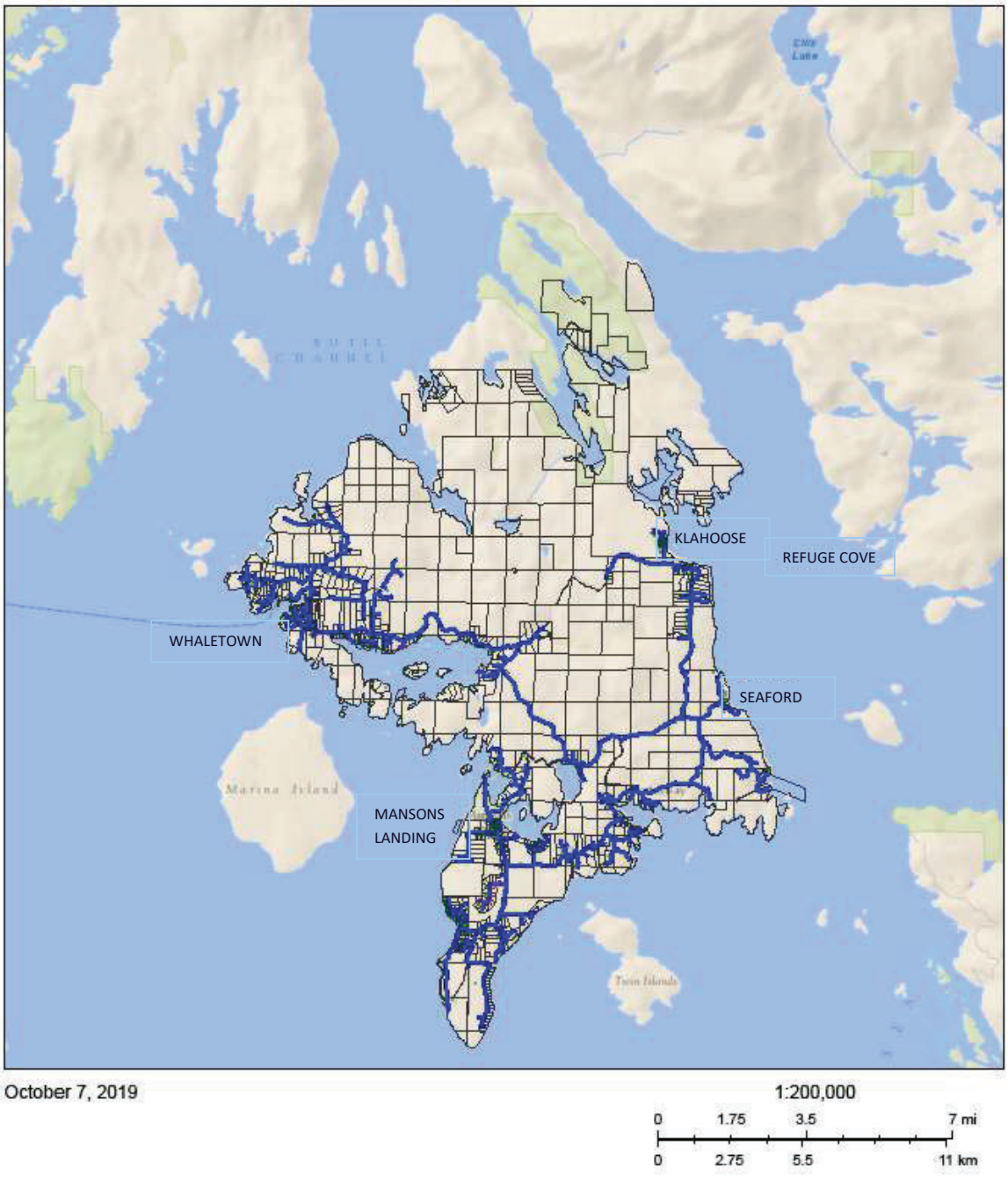
	Description	Quantity	Source
1	Whaletown	268	2019 ICI Society Address BC
2	Mansons Landing	370	2019 ICI Society Address BC
3	Seaford	22	2019 ICI Society Address BC
4	Klahoose	88	2019 ICI Society Address BC
5	Refuge Cove	~25	Visually gathered from Ortho
	Total	773	

Site Visit Observations

Utility Service Provider	Services
BCHydro	Electricity
TELUS	Landline telephone
Twincomm	WIFI internet
Xplornet	Satellite internet

Existing Support Structures

Utilities on Cortes Island are provided via a Joint Venture aerial pole network owned by BCHydro and TELUS



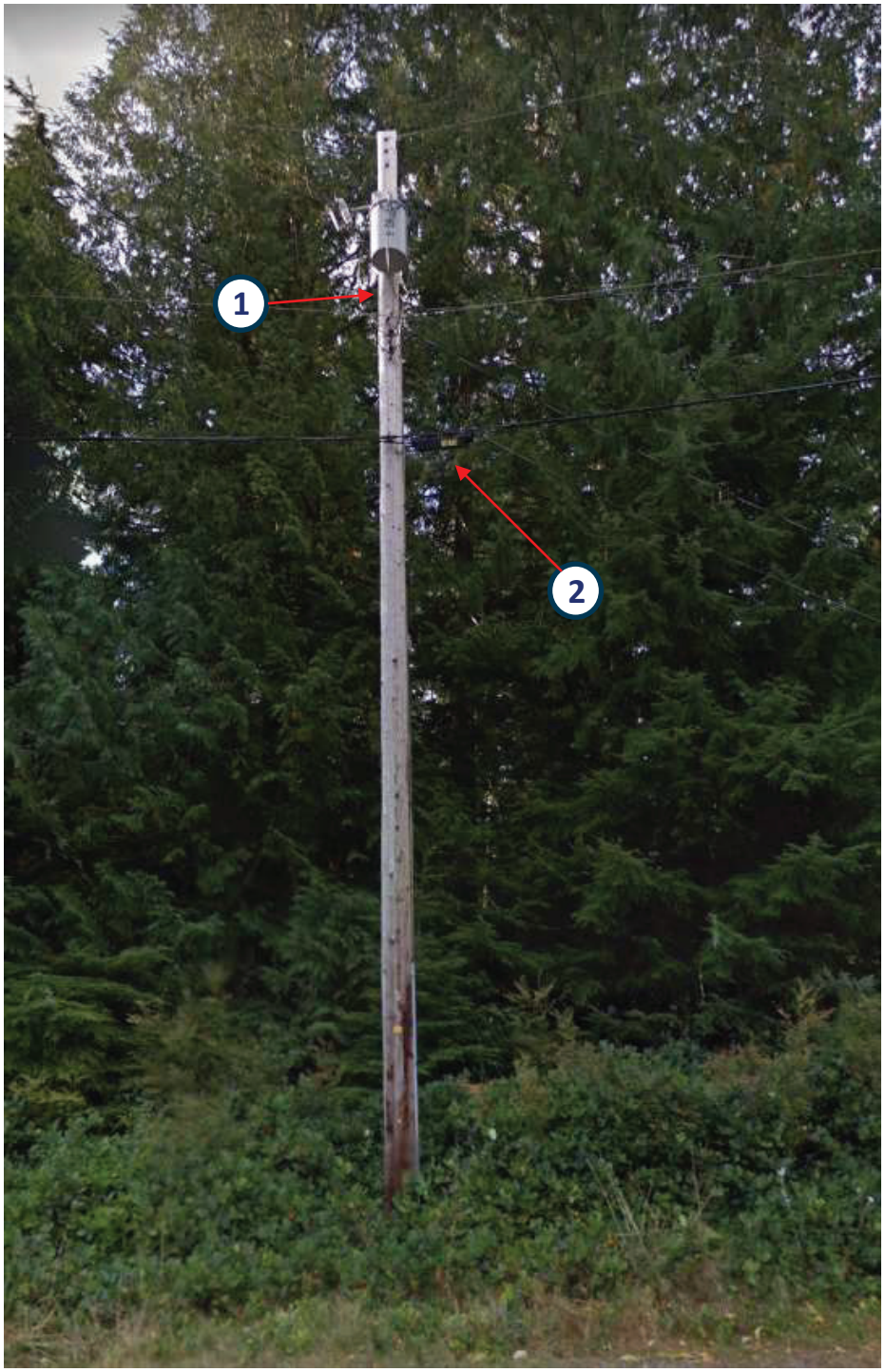
Aerial utilities

Cortes Island (~103,000 meters)

Refuge Cove (Records of roads & utilities were unavailable)

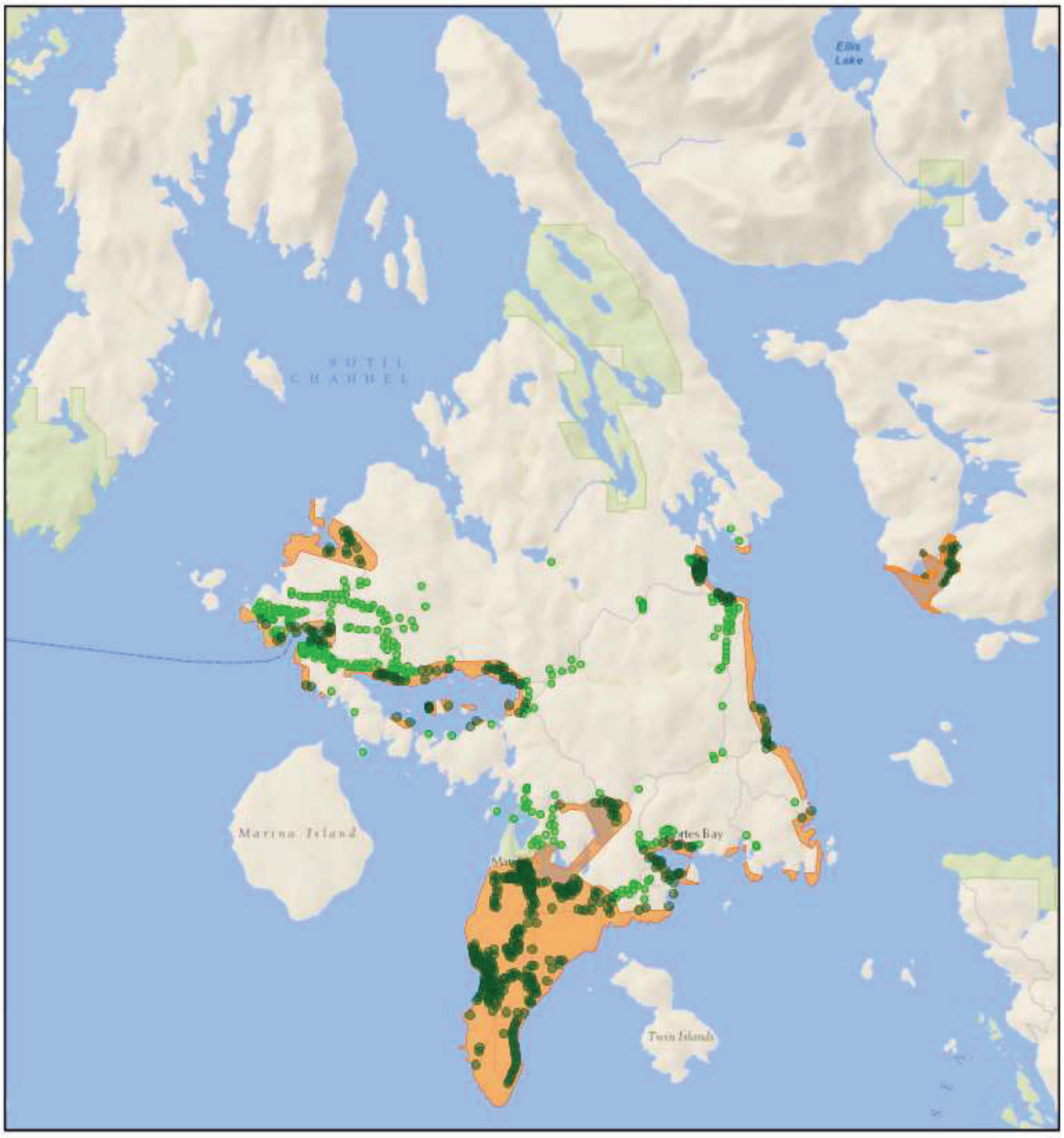
Aerial Structure Example

1	BCHydro
2	TELUS



Existing Internet Connectivity

Presently there are up to two internet service options for Cortes Island. The number of options available is dependent on location.



October 7, 2019

1:200,000

0 1.75 3.5 7 mi

0 2.75 5.5 11 km

AVAILABLE SERVICE LEVELS

Up to 15 Mbps down / 5 Mbps up — Twincomm WIFI

Twincomm approximated service areas

Up to 25 Mbps down / 1 Mbps up — Xplornet Satellite

1. Twincomm provides internet services to Desolation Sound and surrounding areas. [i]

Residential Service

Packages	Lite	Standard	Standard +	Entertainment	Entertainment +
Download	8 Mbps	10 Mbps	10 Mbps	10 Mbps	10 Mbps
Upload	3 Mbps	5 Mbps	5 Mbps	5 Mbps	5 Mbps

Business Services

Packages	Business	Business +	Business Premium
Download	15 Mbps	15 Mbps	15 Mbps
Upload	5 Mbps	5 Mbps	5 Mbps

Twincomm presently provides internet service via multiple WIFI transceiver locations with services to the areas indicated on the below map.

Source: twincomm.ca

Twincomm has successfully completed a small 20 lot subdivision FTTH build in the Mansons Landing area as a trial. They are also investigating other opportunities for aerial support structure access and the submission of applications for government grants to build wired networks such as FTTH, HFC or Coaxial solutions.

2. Satellite internet through Xplornet[ii]

Packages	SAT 5	SAT 10	SAT 25
Download	5 Mbps	10 Mbps	25 Mbps
Upload	1 Mbps	1 Mbps	1 Mbps

Satellite signals are also subject to weather conditions that will cause periods of degradation in service levels.

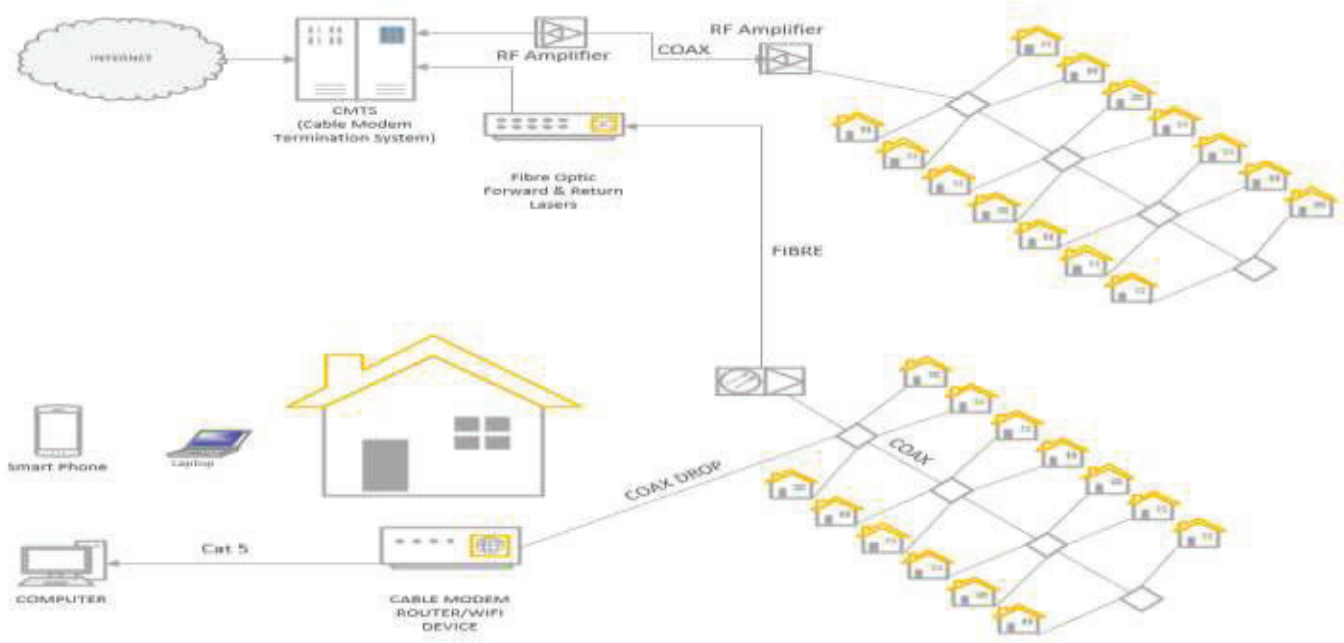
Delivery Methods Comparisons

	F.T.T.H. Fibre to the Home	HFC or Coaxial Cable Network	WIFI Wireless Network	Satellite
Current Industry Offerings	Download/Upload 940 Mbps / 940 Mbps	Download/Upload 1.2 Gbps / 200 Mbps	Download/Upload 25 Mbps / 12 Mbps	Download/Upload 25 Mbps / 1 Mbps
Future Planned Offerings	Virtually Unlimited	10 Gbps / 10 Gbps	Unknown	Unknown
Build Costs	High	Medium	Low	Low
Construction	Aerial &/or underground fibre placement, splicing, drops to buildings, building wiring and transceiver installation	Aerial &/or underground coax &/or fibre placement, splicing, outdoor active & passive installation, drops to buildings, building wiring and transceiver installation	Single &/or multiple towers &/or building mounted transceiver installation, user building external antenna (if required) building wiring and transceiver installation	Mount dish antenna at a location that provides line of sight to satellite. Could be building, pole or tower. Wiring to building, building wiring and appliance installation
Maintenance	Very Low Typically, once the fibre has been installed there is little to no maintenance other that unpredicted damage or forced relocation.	Medium to High Requires ongoing maintenance of outside active electronics, battery maintenance	Low Requires tower safety maintenance, repairs to unpredicted damage and electronic equipment failures	Low Dish antenna may move or be pushed out of alignment, unpredicted damage or electronic equipment failure
Vulnerabilities	Direct damage from exterior forces such as tree falling, auto accident, cut by excavator etc... water infiltration into a splice	Direct damage, electronics failure, power outages	Direct damage, electronics failure	Direct damage, electronics failure
Service Impacting	Fibre break, electronic device failure, water in splice location	Fibre or coaxial cable break, electronic equipment failure, extended power outage	Anything that impedes the line of sight will impact the service quality i.e. rain, snow, fog, obstructions such as tree and buildings, other WIFI signals interference	Anything that impedes the line of sight will impact the service quality i.e. rain, snow, fog, obstructions such as tree and buildings.

Construction Methods Comparisons

	Advantages	Disadvantages
Aerial Leased	• Widely available • Can be several potential leasers • Not responsible for structure or its maintenance costs • Construction costs generally lower than underground	• Open to weather & traffic • More susceptible to service interruption due to damage • Approval to use required • Ongoing lease costs
Aerial Built & Owned	• No leasing cost	• Rarely done as there are usually poles already on both sides of road or little desire by local government to approve if not already there • Expensive to build • Structure maintenance costs • Approval to construct is required • Taxable asset cost
Underground Leased	• Commonly available • Less susceptible to weather • Not responsible for structure maintenance costs • Construction cost comparable or slightly higher than aerial leased	• Available capacity issues more likely • Approval to use required • Ongoing lease costs
Underground Built & Owned	• Less susceptible to weather	• More costly • Approval to construct is required • Structure maintenance costs • Taxable asset cost
Submarine	• Provides connectivity where no other viable or cost-effective option is available	• Expensive • Approval to construct is required
Towers	• Fewer locations • Less infrastructure overall	• Unpopular to public • Land availability challenging • Land leasing cost • High construction cost • Approval to construct is required

Broadband Coaxial Cable Network Example



Coaxial cable system technologies continue to evolve at a rapid pace. With the latest version being developed to provide 1 Gbps up and 1 Gbps down connections. This method requires customers to be serviced via coaxial cables connected to a local area fibre node with no additional amplifiers.

Today there are two basic methods of design.

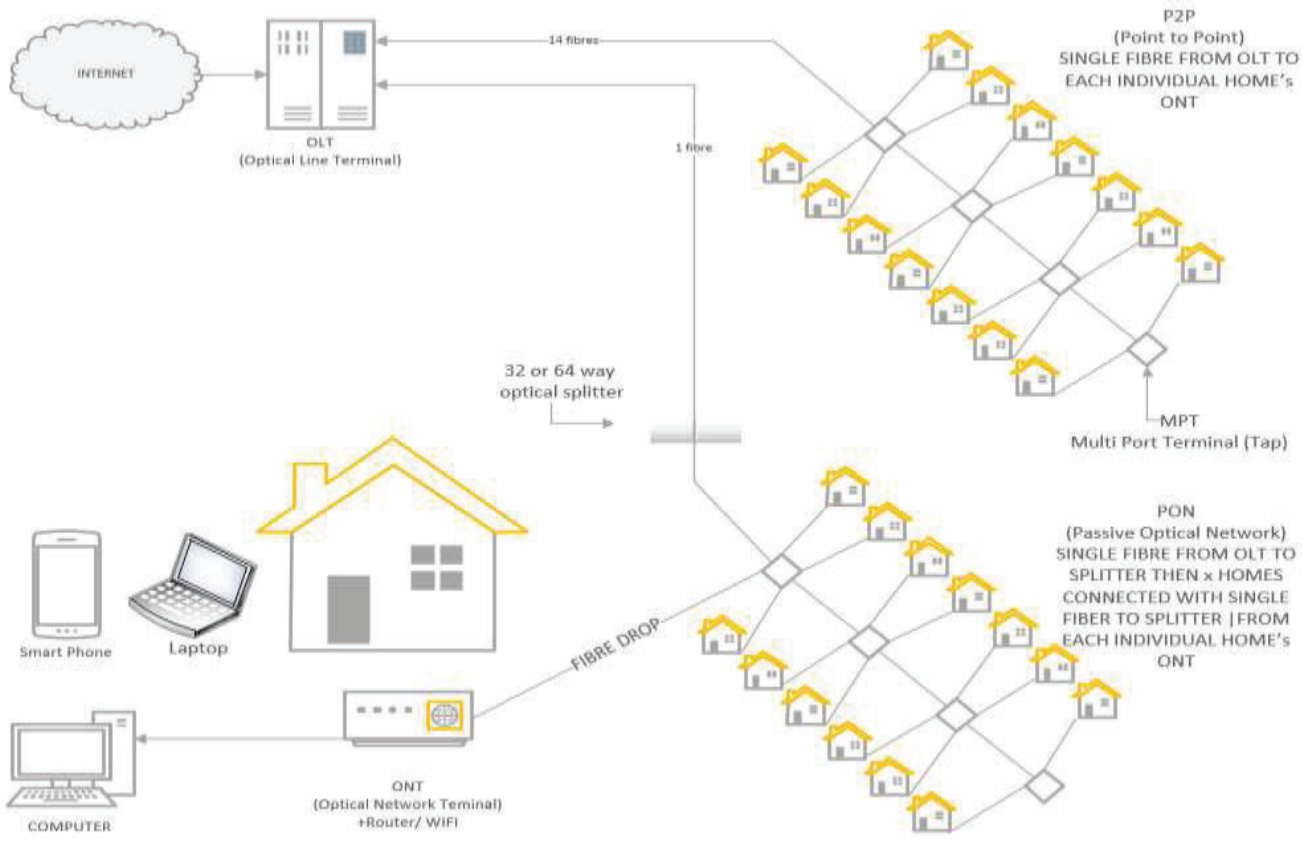
1. A coaxial cable only system with amplifiers placed at intervals to extend the area serviced. For the delivery of internet only services this method would work well in a smaller community with a few hundred customers.

2. With the addition of fibre optic nodes placed closer to the customers the design now allows for segmentation of groups of customers. In addition to higher quality service and greater reliability it also results in increased internet connection speeds.

F.T.T.H. (Fibre to the Home) Network Example

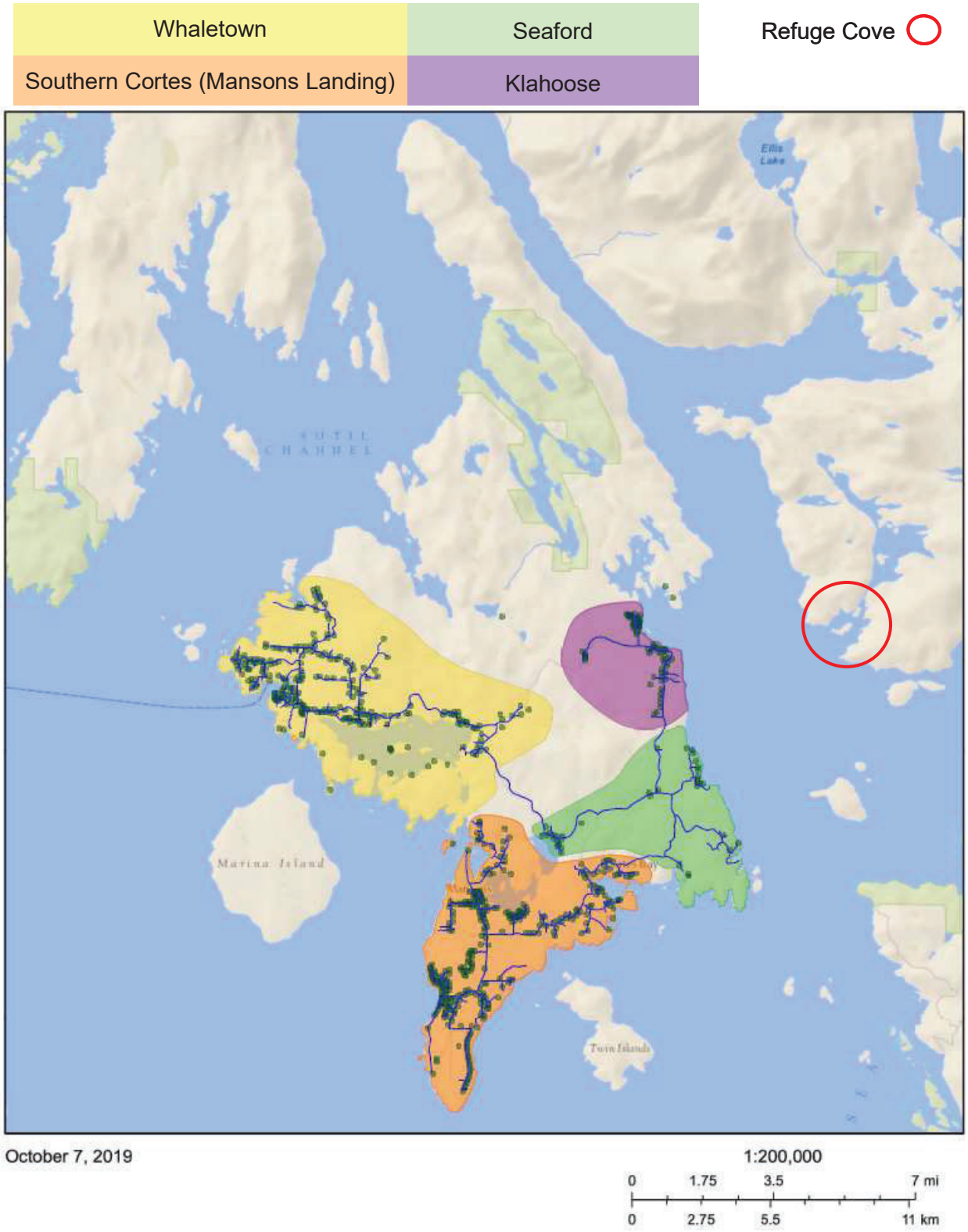
An Optical Line Terminal (OLT) is the endpoint hardware device in a Passive Optical Network (PON). An OLT has two primary functions: Converting the standard signals used by a FiOS service provider to the frequency and framing used by the PON system.

ONT stands for Optical Network Terminal. The ONT connects to the optical fibre cable.
It connects to your router via a LAN / ethernet cable and translates light signals from the fibre optic line into electronic signals that your router can read.



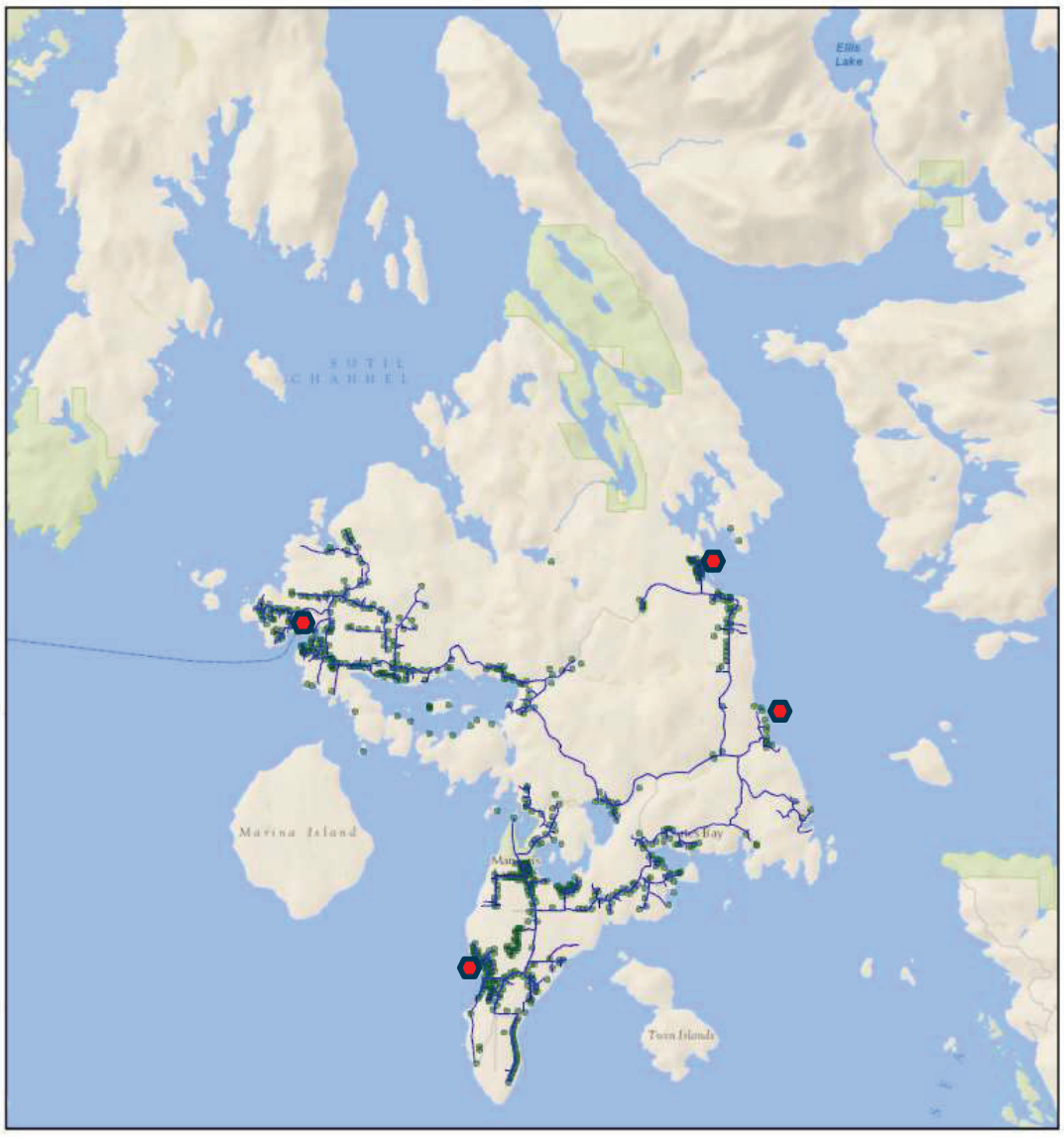
Cortes Island / Refuge Cove - Potential Service Options

Cortes Island is generally comprised of pockets of population concentrated in four general areas in addition to Refuge Cove.



Option 2 - New FTTH ISP – All of Cortes Island

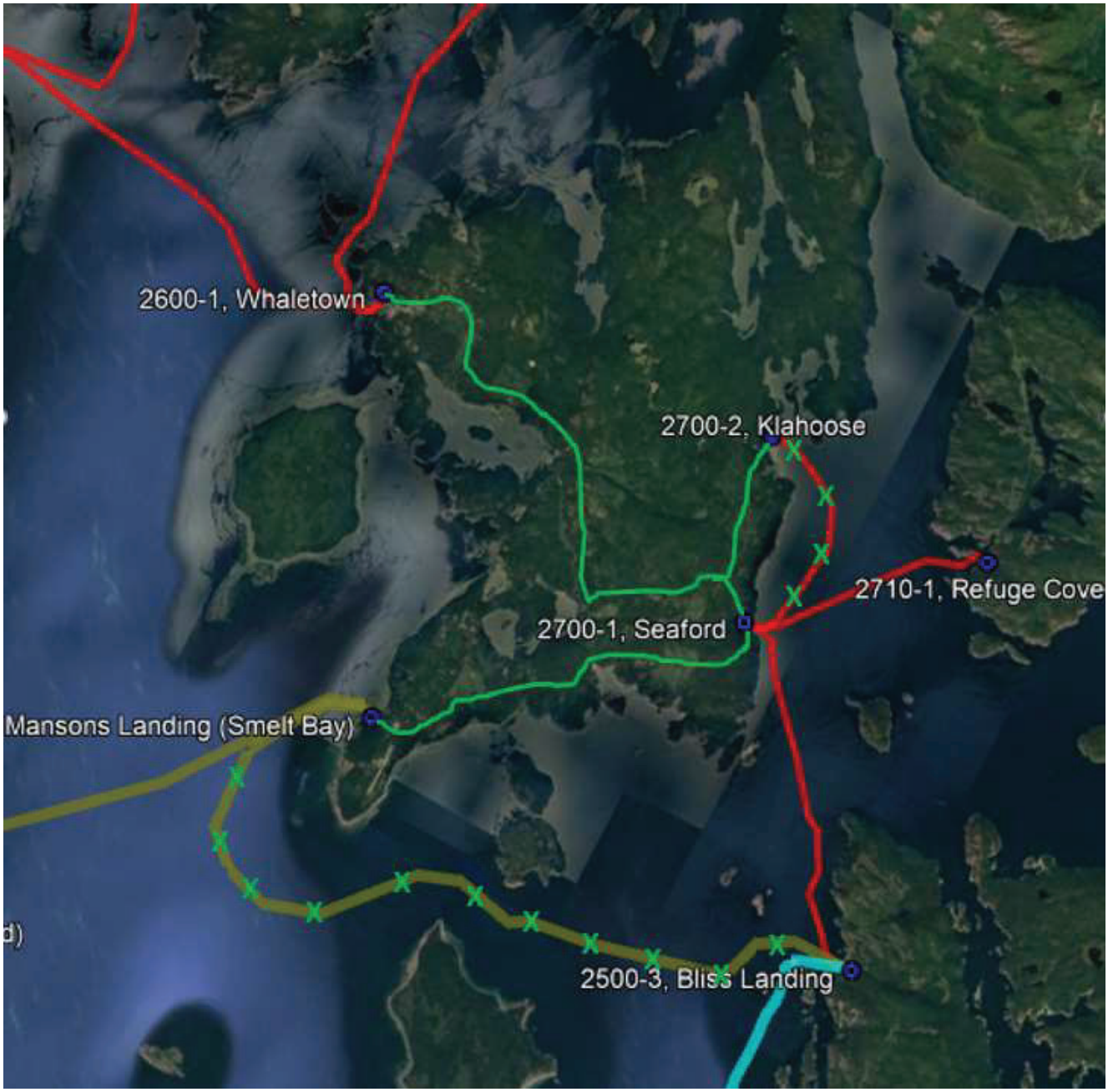
A new ISP could construct a FTTH network to provide service to all addresses on Cortes Island. A connection to the SRD Connected Coast fibre could be achieved at any of the four submarine fibre landing sites.



	Customers	Cost Per Address	Route Meters	Cost Per Meter	Total
Low Make-Ready	748	$5,625.00	103,000	$40.85	$4,207,650.00
Medium Make-Ready	748	$6,176.00	103,000	$44.85	$4,619,650.00
High Make-Ready	748	$6,727.00	103,000	$48.85	$5,031,650.00

Cost estimate includes all electronic, material, design and installation.
Land agreement & building costs are not included in the cost estimate

Should an ISP choose to proceed with a FTTH build for the entire Cortes Island, there could be a significant advantage to reducing the number of SRD submarine fibre placements in favor of terrestrial connections across Cortes Island instead as part of a joint project effort.



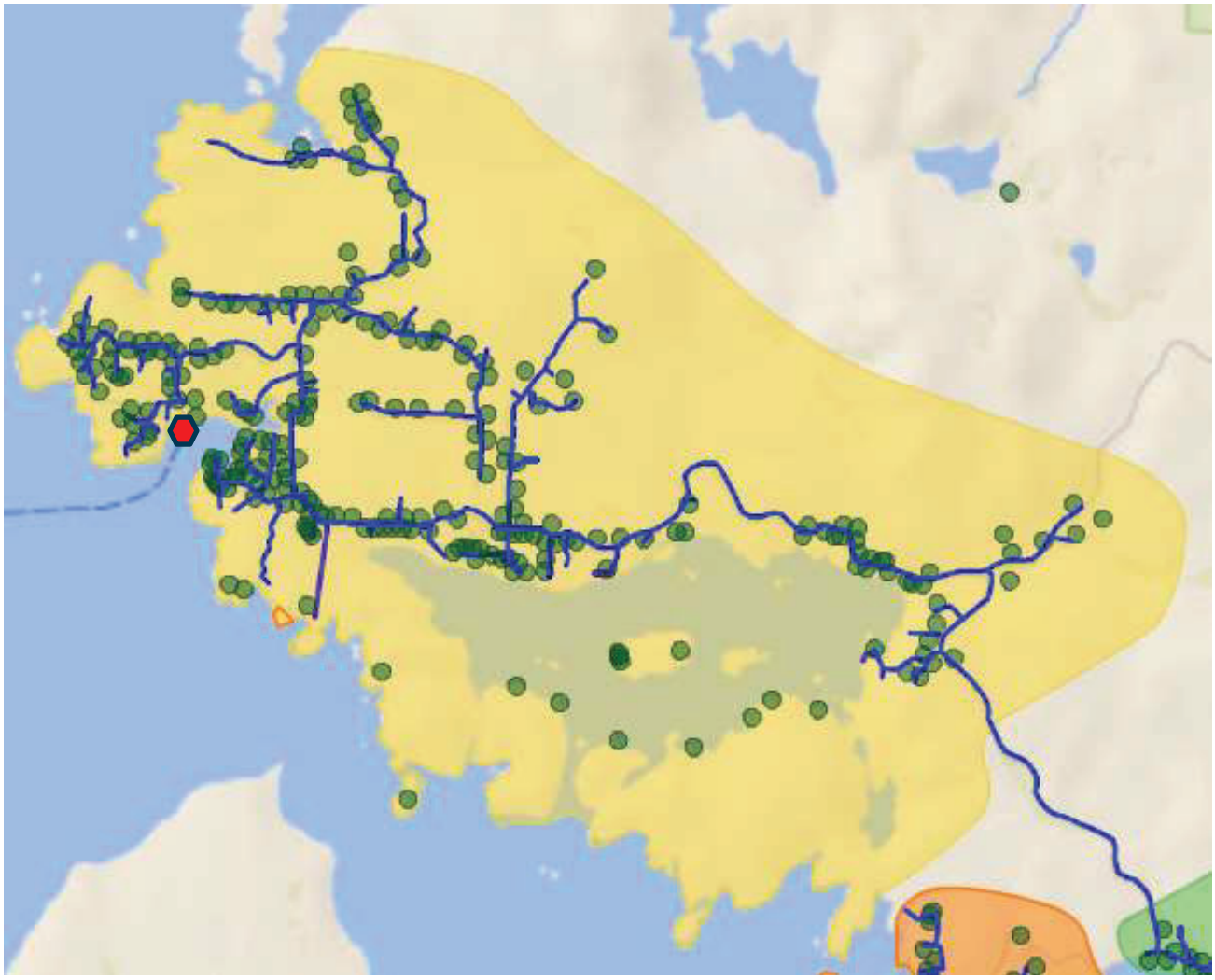
Common terrestrial fibre path for FTTH ISP and SRD potential alternate route

X Potential removed SRD submarine fibre routes in favor of terrestrial route

The above example would eliminate the need for ~29 Km of submarine fibre replaced by ~ 29 Km of terrestrial fibre

Option 2a - New ISP – FTTH – Whaletown area

There are ~ 36 Km of aerial pole lines that provide service to the addresses located in the Whaletown area. A new ISP could establish a connection to the proposed SRD Connected Coast fibre landing site in Whaletown and construct a FTTH network serving the Whaletown general area only.



Existing aerial pole line routes Address Locations SRD submarine landing site

	Customers	Cost Per Address	Route Meters	Cost Per Meter	Total
Low Make-Ready	255	$5,791.00	36,000	$41.02	$1,476,725.00
Medium Make-Ready	255	$6,356.00	36,000	$45.02	$1,620,725.00
High Make-Ready	255	$6,920.00	36,000	$49.02	$1,764,725.00

Note: Of the 268 addresses in this area 13 appear to be off the grid and not serviceable by fibre.

Cost estimate includes all electronics, material, design and installation.
Land agreement & building costs are not included in the cost estimate

Option 2b - New ISP – FTTH – Mansons Landing area

There are ~39 Km of aerial pole lines that provide service to the addresses located in the Mansons Landing southern island area. A new ISP could establish a connection to the proposed SRD Connected Coast fibre landing site on the south west and construct a FTTH network serving the Mansons Landing general area only.

Existing aerial pole line routes Address Locations SRD submarine landing site

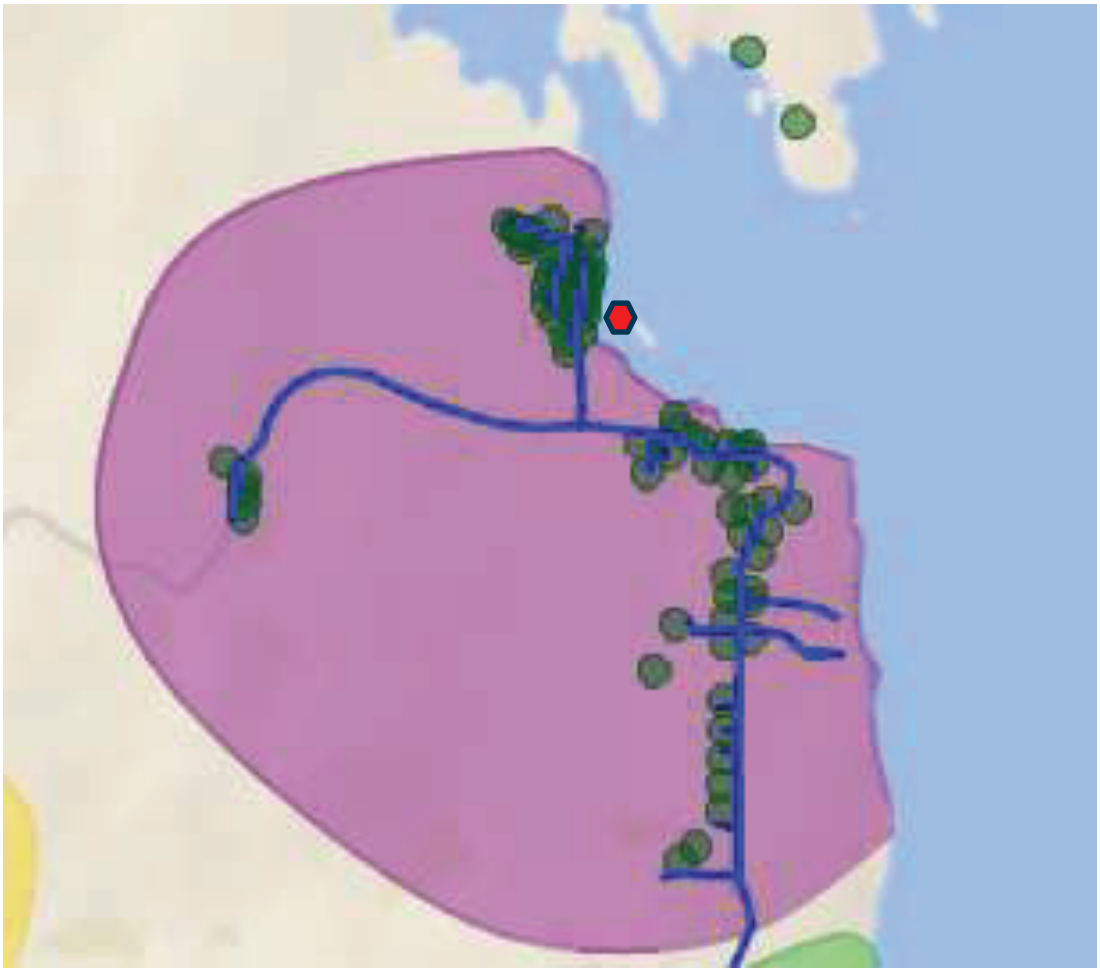
Cost Estimate

	Customers	Cost Per Address	Route Meters	Cost Per Meter	Total
Low Make-Ready	354	$4,751.00	39,000	$43.12	$1,681,700.00
Medium Make-Ready	354	$5,191.00	39,000	$47.12	$1,837,700.00
High Make-Ready	354	$5,632.00	39,000	$51.12	$1,993,700.00

Cost estimate includes all electronics, material, design and installation.
Land agreement & building costs are not included in the cost estimate

Option 2c - New ISP – FTTH – Klahoose area

There are ~ 9 Km of aerial pole lines that provide service to the addresses located in the Klahoose area. A new ISP could establish a connection to the proposed SRD Connected Coast fibre landing site on the eastern shore and construct a FTTH network serving the Klahoose general area only.



Existing aerial pole line routes Address Locations SRD submarine landing area

Cost Estimate

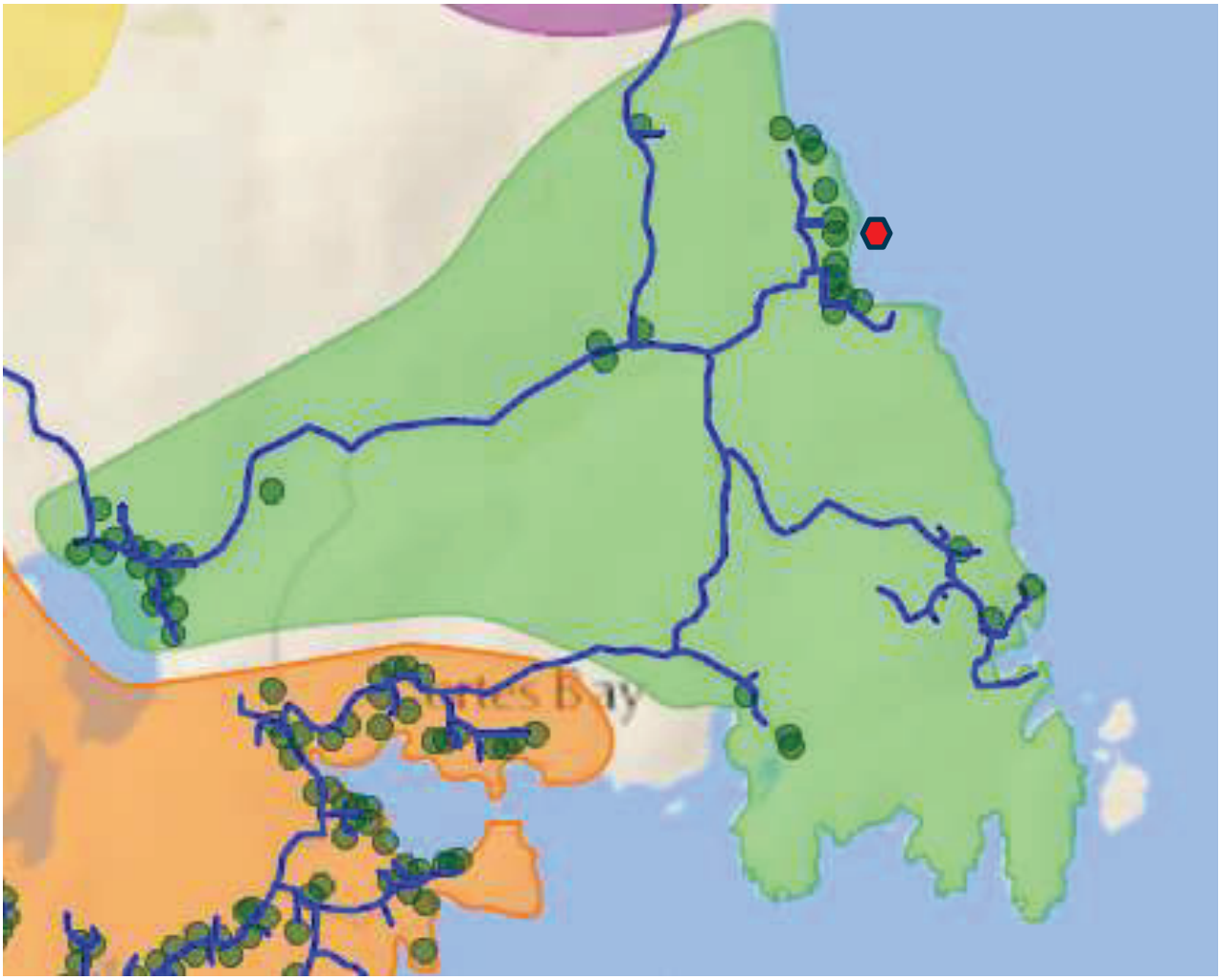
	Customers	Cost Per Address	Route Meters	Cost Per Meter	Total
Low Make-Ready	86	$4,745.00	9,000	$45.34	$408,000.00
Medium Make-Ready	86	$5,164.00	9,000	$47.34	$444,100.00
High Make-Ready	86	$5,583.00	9,000	$53.34	$480,100.00

Note: Of the 88 addresses in this area two appear to be off the grid and not serviceable by fibre.

Cost estimate includes all electronics, material, design and installation.
Land agreement & building costs are not included in the cost estimate

Option 2d - New ISP – FTTH – Seaford area

There are ~ 15 Km of aerial pole lines that provide service to the addresses located in the Seaford area. A new ISP could establish a connection to the proposed SRD Connected Coast fibre landing site in Seaford and construct a FTTH network serving the Seaford general area only.



Existing aerial pole line routes Address Locations SRD submarine landing site

Cost Estimate

	Customers	Cost Per Address	Route Meters	Cost Per Meter	Total
Low Make-Ready	37	$14,933.00	15,000	$36.84	$552,525.00
Medium Make-Ready	37	$16,555.00	15,000	$40.84	$612,525.00
High Make-Ready	37	$18,176.00	15,000	$44.84	$672,525.00

Cost estimate includes all electronics, material, design and installation.
Land agreement & building costs are not included in the cost estimate

Option 3 – Refuge Cove – WIFI ISP Connects to SRD Fibre

A WIFI ISP could connect to the SRD Connected Coast fibre in Refuge Cove. It is unknown if Twincomm currently has a tower structure in Refuge Cove. A desktop review shows that a ~12m tower located near the fibre landing site location may provide good area coverage to most potential customers in the area. With the connection to the SRD Connected Coast fibre the level of service for the area residents would exceed the Federal Government's service level objectives. A complete site survey and network design would be necessary to provide the best solution and produce a final cost. The SRD Connected Coast fibre would have an underground service box installed on land. The ISP would be required to construct a fibre connection between this location and their tower. Structure access agreements may be required to achieve this connection. The network electronics could be housed in a small climate-controlled structure adjacent to the tower. This could be space in an existing building or a small newly constructed building with electricity and heating.

Tower **Addresses (Gathered from Ortho Photo)**

Cost Estimate

	Customers	Cost Per Address	Total
Low Tower Cost	25	$1,600.00	$40,000.00
Medium	25	$2,600.00	$65,000.00
High	25	$3,600.00	$90,000.00

Land agreement & building costs are not included in the cost estimate.

NOTE: Detailed information of utility pole lines, roads and build numbers and locations were not available at the time of this report.

The delivery of WIFI services are subject to degradation due to terrain, obstructions such as vegetation, structures, topology and interfering WIFI signals. Each individual subscriber's service level may vary.

Cost Estimate Variables / Operating Cost Items

There are many variables that will impact the final cost of these types of projects including the condition and capacity of existing infrastructure. A complete engineering and permitting application process and tendering of construction would be required to ascertain a true final cost.

There are several factors that have a direct impact on the construction costs for a specific project and are unpredictable.

I. Make-Ready
   a. Condition of existing poles/duct and need for remediation/replacement or new duct
   b. Capacity of existing strand/duct and need for replacement or new additional placement
   c. Adequate anchoring and need for replacement or additional anchoring
   d. Easement agreements with landowners for additional anchors that extend into private property
   e. Engineering and application costs
II. Mobilization/demobilization – cost is increased for remote areas relative to the contractor's home base and local per diem rates
III. Transportation costs to get equipment and materials to the build site

Access Agreements
An access agreement will need to be signed with either BCHydro and/or TELUS to build and maintain an aerial network. These access agreements come with annual lease costs and responsibilities including construction standards and maintenance aspects.

BCHydro	Master Service Agreement
TELUS	Support Structure Agreement

BCHydro Support Structure Rental Fees *(These rates were not available at the time of this report)*

TELUS Support Structure Annual Lease Fees[iii] (example estimate for all of Cortes Island fibre)

TELUS General Tariff – CRTC-21461			
Structure Type	**Tariff Rate**	**Estimated Usage**	**Annual Fees**
Monthly Pole Rental Rate *(Route Meters/50 Meters avg. span)*	$1.61	2,060	$39,799
Monthly Strand Rental Rate (per 30 Meters)	$0.43	103000	$17,716
		Total	$57,515

Additional operating costs would include such items as:

- building space lease
- property taxes
- plant maintenance
- internet connectivity fees

Conclusions

[iv]	OPTION 1	OPTION 2	OPTION 3	OPTION 4	OPTION 5	OPTION 6
	F.T.T.H New ISP All Cortez Island	F.T.T.H New ISP Whaletown only	F.T.T.H New ISP Mansons Landing only	F.T.T.H New ISP Klahoose only	F.T.T.H New ISP Seaford only	WIFI ISP Refuge Cove
Downstream Data	Up to 940 Mbps	Up to 940 Mbps	Up to 940 Mbps	Up to 940 Mbps	Up to 940 Mbps	≥ 60 Mbps
Upstream Data	Up to 940 Mbps	Up to 940 Mbps	Up to 940 Mbps	Up to 940 Mbps	Up to 940 Mbps	≥ 60 Mbps
Reliability	Excellent	Excellent	Excellent	Excellent	Excellent	Good
Maintenance Requirement	Low	Low	Low	Low	Low	Low
Operating Costs	Low	Low	Low	Low	Low	Low
Quality of Service	Excellent	Excellent	Excellent	Excellent	Excellent	Medium

The servicing of Cortes Island could be pursued by one or more parties. Each of the presented FTTH options would provide a level of service far exceeding the Federal Governments objects.

The opportunity to reduce some of the submarine fibre sections in favor of terrestrial routes could provide the opportunity for joint projects, certain cost savings and mutual benefits.

Refuge Cove may have aerial utility pole lines that could also provide the opportunity for a FTTH solution.

References

[i] **Twincomm website**
[ii] **Xplornet website**
[iii] **TELUS website September 2019**

CORTES ISLAND
Community Broadband Plan

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