What is the Connected Coast project?

By Julie Chadwick for the Lasqueti Internet Access Society
2024 June 10

What is Connected Coast

The stated goal of the Connected Coast Network project is to provide high speed internet via a fibre optic cable that runs under the ocean from Prince Rupert to Haida Gwaii, down to Vancouver, with branches that break off to circle Vancouver Island and service both coasts.

The project is part of the federal government's plan to connect every household in B.C., including rural, remote and Indigenous communities, with high-speed internet access to 98 per cent of Canadians by 2026 and achieve 100 percent access by 2030.[1] This appears to be part of a general plan on the part of the provincial and federal governments as a way to level out access to opportunities for economic development (however that may be defined, and the impacts this may have is up for interpretation), and though it's expensive the investment pays off as an "easy win" that can be shown off come election time.

"The impact of the project and the opportunities it will provide to these communities will be enormous," states the Connected Coast explainer on Strathcona Regional District's website. Access to reliable high-speed internet service means that residents will be able to access online learning and health services, emergency notifications, news and participate in online discussions and sharing. It will also open new economic development opportunities for residents who will be able to work remotely and participate on e-commerce and online business development.

If all goes according to plan, it will offer these high speed internet services to 139 rural, remote and First Nation coastal communities along the BC coast from north of Prince Rupert, to Haida Gwaii, south to Vancouver, and around Vancouver Island.

This internet will be provided via a partnership between Strathcona Regional District (SRD) and a municipal corporation called CityWest, which provides telecommunications services. CityWest is based out of, and owned by, the municipality of Prince Rupert — which is its sole shareholder.

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[1] Further timeline breakdown is that the CC project was announced in 2018. Design, permitting and public engagement started in 2021 and the first deployment of equipment was in Sept. 2022, according to this FAQ: https://connectedcoast.ca/faq/. Feds internet plan is here (and other places, the 98 per cent/100 per cent goal is widely stated): https://ised-isde.canada.ca/site/high-speed-internet-canada/en/universal-broadband-fund

Described by CityWest as "the largest coastal festoon fibre network in the world, bringing top tier and best in class carrier grade connectivity," one of the 139 rural communities this project intends to service is Lasqueti Island.[2] "Carrier grade" is generally a term that means well-tested, reliable and of high quality.

Festoon fibre networks connect coastline locations by using unrepeated passive submarine (under the ocean) cables in order to avoid routes that go over land and the associated challenges with terrain like mountains or going through cities.[3] Usually when going over long distances, repeaters are usually necessary, but along coastlines it's possible to use unrepeated cables. The "festoon" part refers to the use of branching units to to interconnect multiple shoreline locations.[4] The "passive" part means there's no power or electromagnetics in the cable itself.

A sub-sea cable comes to Lasqueti from Qualicum Beach and arrives onshore via an underground trenched conduit. The cable, which comes onto shore in a cast iron split pipe, then connects into a small underground vault. This vault then connects to a telecommunications cabinet with network equipment located near the shoreline — this cabinet varies in size.[5]

Initially the cable was intended to arrive onshore in False Bay near the ferry dock but a large archaeological site has been found in the area, according to Connected Coast's Project Lead Wes Eisses, so that the contact point will likely come in on the right of way off Weldon Road next to the boat launch.[6]

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[2] In a Oct. 27, 2022 letter from CityWest to LIAS directors

[3] https://www.researchgate.net/figure/Types-of-submarine-cables-eg-SDM-festoon-uncompensated_fig5_359892529

[4] https://www.ciena.com/insights/articles/to-repeat-or-not-repeat-that-is-the-question.html

[5] https://connectedcoast.ca/faq/

[6] Conversation with CityWest's Bart Kuntz, Connected Coast's Project Lead Wes Eisses and CityWest's permitting coordinator Christina Owen.
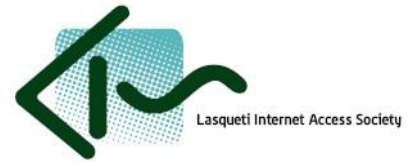
Sign in False Bay as of March, 2024.

"When you come up to the shore, it really is anyone's access. So it's full access, there's a location for anyone to come in and be able to have service from the vault and the Connected Coast platform," said Bart Kuntz, VP of Operations for CityWest, during an interview with LIAS on May 7, 2024. The telecommunications cabinet "will carry all the bandwidth and all the equipment needed to provide the last mile" to residents' houses, he added.

Last-mile connection refers to what is necessary to run the cable from a landing site directly to homes and businesses. The last-mile infrastructure will likely look different for each community depending on what residents want, the resources and terrain involved and what services already exist.

Generally, the Connected Coast project is meant to provide "backbone" infrastructure and as such, does not include "last-mile" connectivity for communities to connect to the high-speed infrastructure, and that is where CityWest comes in and provides the connectivity to people's homes (the connection is typically free, depending on the funding CityWest has acquired and how far the cable can go — in some cases residents have to pay an extra amount per metre to get the connection right to their home).

According to conversations LIAS has had with Connected Coast and CityWest representatives in early May, the logistical plan for Lasqueti after this initial point of connection is still uncertain (or undecided) and dependent on funding, so it is unclear as to what if anything they plan to do regarding the delivery of internet services throughout the Island. There are a variety of possibilities, and a variety of unique

challenges involved (for example, the last mile cables to residents' houses typically travel underground or aerially on telephone poles, the latter being impossible on Lasqueti).

The last-mile infrastructure, maintenance and oversight seems to be specific to each community, but it generally falls into two categories: it's either completed entirely by CityWest and funded by grants, after which CityWest then becomes that community's internet service provider (ISP) and handles the internet maintenance and billing (according to the CityWest website, services range from approximately $70 to $140 a month).[7]

The other option is that the Connected Coast project brings the fibre optic cable to the community, and then the last mile work is handled by the local communities themselves, via organizations and local internet service providers (ISP) like LIAS. The funds to do this are either raised by additional government grants, funded partially by CityWest, or by the community's own fundraising (or some combination of these).

If the residents of Lasqueti decide they want this type of internet, given the physical and logistical challenges of providing service everywhere, it is likely that some sort of agreement to form a hybrid ISP with CityWest will have to be struck, both organizationally and technologically, to fully realize the project and have the internet maintained into the future.

Funding-wise, CityWest has an active application for a federal Universal Broadband Fund grant to fund last mile connectivity on Lasqueti (among other communities) which is so far unconfirmed.

"The application is still alive," said Eisses, on May 3. "We haven't been declined, but we also have not been awarded anything there yet."[8]

The funding application that City West submitted was for last mile fiber connectivity that would either loop around the island or run as buried cable through it, with the intention of reaching the majority of households on-island, explained CityWest CEO Stephan Woloszyn during a May 7 meeting with LIAS.

"That application hasn't been raised by the government," he explained. "So effectively, there is an application stage, [where] we submit interest to the government to a funding program. The next phase is that the government then raises it into a technical review process, and then subject to it passing the technical review process, it then goes into a finalized funding agreement where we kind of shore up the

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[7] CityWest's billing structure and costs: https://www.citywest.ca/quantum-internet

[8] Universal Broadband Fund grant page, with communities that have been awarded: https://ised-isde.canada.ca/site/high-speed-internet-canada/en/universal-broadband-fund/selected-universal-broadband-fund-projects If this fund is awarded, it is done so conditionally and CityWest then has to go through a contract process to nail down the scope of the project, total cost, etc. With a conditional award, some work can be done but it is still uncertain what can be done until the funding agreement is fully settled.

number of homes [with] the amount of dollars associated with it. So it still hasn't moved from that application bucket into the technical review bucket. Effectively sits there right now."

In terms of funding options, there appears to be a grant available for LIAS to acquire funds for this last-mile infrastructure via Connecting Communities B.C., which provides money specifically for underserved communities, to support the expansion of high-speed internet throughout the province. The application closes on June 20, 2024. There may also be other grants available, for example through organizations like Island Coastal Economic Trust (ICEt), who granted funds to LIAS previously.[9]

Broadly, when it comes to the completion of the entire Connected Coast project, at present parts of the network are currently live along portions of the inner, eastern (Georgia Strait) coast of Vancouver Island and up into Haida Gwaii. On the western portion of Vancouver Island about half of the connections are permitted, and half are waiting for permits to be signed off on by the provincial government's Ministry of Water, Land and Resource Stewardship.[10]

The section that connects Lasqueti runs from Qualicum Beach, and falls into this latter category of being in the permitting process. CityWest is working on its license of occupation with the province, according to CityWest's permitting coordinator Christina Owen. Woloszyn estimated that approval could happen in a matter of weeks (from early May).

"Teams are effectively mobilized on the 18th of May to start the work from Vancouver up towards the Sunshine Coast," said Woloszyn. "We've been lobbying our butts off to have the government provide us with the permits that we are waiting for, so that we can actually do that Lasqueti link as part of the same mission that starts up in the second half of May."

In terms of overall completion, the project seems to be moving forward but is well behind its initial estimated end date of March 2021 and that deadline has been extended by the federal government at least once (factors impacting completion are things like the COVID-19 pandemic, weather, consultation with First Nations, permitting, unexpected challenges within communities etc.).[11]
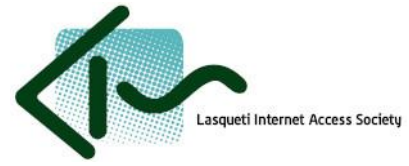
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[9] Connecting Communities B.C. grant page:
https://www2.gov.bc.ca/gov/content/governments/connectivity-in-bc/20530/20601
Island Coastal Economic Trust grants: https://islandcoastaltrust.ca/apply-for-funding/
[10] According to Connected Coast's interactive map, accessed on May 20, 2024.
https://strathconard.maps.arcgis.com/apps/webappviewer/index.html?id=9afde2dc71124ad68f09913c7888abad
[11] Deadline extension is according to a 2020 information note sent out by the province:
http://docs.openinfo.gov.bc.ca/Response_Package_CTZ-2021-11109.pdf

The funding and motivation for Connected Coast

According to the provincial government, it intends to invest in high-speed internet access for coastal communities as part of an economic recovery plan called Stronger BC.

Among issues it intends to focus on, the high cost of installing internet infrastructure in rural and remote communities was identified by those residents as a key barrier to expanding internet services (and is an economic barrier), so the province started a program called Connecting British Columbia which got a $90 million provincial grant in 2020.[12]

Aimed specifically at the coastal communities in B.C., the Connected Coast project is funded by $45.4 million in both provincial and federal money, though the federal government is considered the lead funder.[13]

The provincial part of this money comes from Connecting British Columbia, and the federal part of it is being sourced through the Government of Canada's Connect to Innovate (CTI) program and Indigenous Services Canada. On a much larger level, the Canadian government have earmarked $3.225 billion for its Universal Broadband Fund (UBF).

The $45.5 million has been divided into $32.5 million for the Strathcona Regional District and $12.9 million for CityWest.

Current situation on Lasqueti

LIAS as a society in 1999 when False Bay School received a T1 connection from the local school district. It then applied for and began to receive funding, in part from the federal Community Access Program (CAP), Industry Canada and Island Coastal Economic Trust (ICEt). As a non-profit, member-based organization LIAS is run by volunteers and governed by a board of directors.[14]

By approximately 2005, LIAS took on the task of becoming an internet service provider (ISP) with help from Network B.C. and Telus and received a $20,000 grant in seed money to get started.[15] The current internet system is wireless and utilizes a broadband radio transmitter mast on the Quality Foods
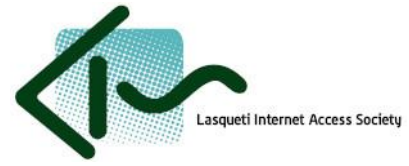
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[12] Provincial press release, Aug. 5, 2021.
[13] http://docs.openinfo.gov.bc.ca/Response_Package_CTZ-2021-11109.pdf. Of the $45.4 million, the federal government is the lead funder. It breaks down to $22.2 million from the Connect to Innovate program administered through Innovation Canada, $12 million from Indigenous Services Canada, and $11.2 from Connecting British Columbia administered by Northern Development (as well as other smaller funders).
[14] According to Rainie Polaskie, in this 2008 summary: https://lasqueti.ca/node/463
[15] The entire project was completed for $26,000. Information on this section is gleaned mostly from here: https://lasqueti.ca/files/lias_history.pdf

warehouse building roof along the Alberni highway above Parksville. Quality Foods (or whatever entity now runs the building) supplies the electricity to this tower in what has been described as a community-minded gesture.

In March of 2017, billionaire Jimmy Pattison bought the entire Quality Foods grocery store chain. Last year, Pattison shut down operations at this warehouse in favour of using Pattison Food Group's warehouses in the lower mainland. At present, the warehouse building still houses some offices and a few staff so the electricity is still running, but the future of this site is uncertain and somewhat precarious.[16]

This signal from the Quality Foods tower provides a high-speed connection to Lasqueti residents via several access point towers that are distributed throughout the island, as well as from one access point on Texada Island. From these access point towers, the signal is then re-transmitted in clusters to household receivers or routers that are primarily installed on a resident's property. Approximately 80 to 85 households on Lasqueti currently use this system, according to LIAS service technician Larry Manahan. Most of the initial construction and maintenance of LIAS's infrastructure was entirely volunteer and resident-led.

Some residents not served by the current network (for geographic or other reasons) choose to access the internet via Xplorenet, a New Brunswick-based rural internet service provider or Starlink, a satellite internet constellation started in 2019 and owned by Elon Musk's American aerospace company SpaceX. Others use cell data hotspots, cell booster antennas or internet hub boxes from Rogers or Telus that connect to the cell network and cost approximately $50 a month.

Though independent in structure, LIAS's services are still dependent on the Telus Corporation to provide a fibre optic connection to the Quality Foods mast, which they do so at a discounted or legacy rate compared to what is provided for other businesses. This discount is passed on the Lasqueti

The quality of a fibre optic internet system is generally accepted as being far superior to a wireless or satellite system. The option of getting a fibre optic connection or using the existing Telus phone lines to get an ASDL connection was initially explored by LIAS early on, but the former was deemed too expensive and the latter was refused by Telus as it was not within their funding mandate.[17]
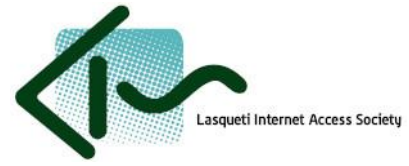
According to former LIAS board president Willy Clark, when LIAS started the general understanding was that the timeline of the Lasqueti internet project was limited, and that in some ways the society functioned as "a place-holder" until at some point a new technology was likely to take over.

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https://www.timescolonist.com/business/quality-foods-distribution-centre-to-close-at-end-of-year-6852862

[17] https://lasqueti.ca/files/lias_history.pdf

"That wasn't everyone's opinion, because not everybody really understood the technology. At the time, almost everybody was in love with the idea that we were an independent and we could make our own rules and didn't have to follow anyone else's rules," Clark said during an interview in mid-May. "Once we got going and realized the limitations of the service that we were providing, and the number of households that we could theoretically service, we realized that we couldn't service the whole island. The technology was really old technology."

By 2010, LIAS was up and running as an ISP but the service struggled to pay for itself, says Willy. At the same time, provincial and federal funders were shifting their financial focus towards projects that could increase the numbers of households using the internet, and as LIAS's capacity in that sense was limited, funding dried up — the federal CAP program was cut in the spring of 2012. Waning resident participation, limited volunteer support combined with increased ability to access internet at home (among other issues) led to the closure of Lasqueti's public internet centre at this time, which was located in a portable beside False Bay School.[18]

Around this time in the early 2010s, the idea of Connected Coast was floated (though it wasn't officially announced until late 2019), and sensing an opportunity, members of LIAS attempted to explore what it was and what it offered.

Those early experiences with CityWest and SRD representatives were somewhat fruitless and uninformative (they were just directed to the website, said Clark) but once it looked like Lasqueti was potentially going to be involved in the project, a Zoom meeting happened some time in 2019 or 2020 with all of the Connected Coast representatives and some LIAS representatives that included Clark, Andrew Fall, who followed it from the regional district level, Lasqueti.ca webmaster Joseph Fall and network technician Larry Manahan, who was investigating the technical angle.
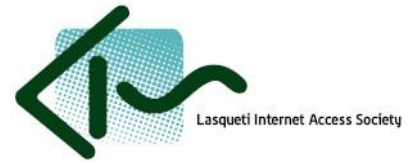
Both Clark and Manahan say they got the impression early on that Connected Coast representatives were prone to making ambitious promises and projections, given the massive scope of the project. At times there were disconnections in what different representatives were saying or offering, and there seemed to be a general lack of awareness of the unique topographical (mountains, hills, rocky terrain) and physical (road structure, lack of telephone poles, long driveways) challenges specifically involved in bringing fibre optic to Lasqueti. These challenges (along with funding) continue to be the primary hurdles to completing the project.

It was also initially difficult to get the point across that due to these challenges, any new internet brought to the island would likely need to function as a hybrid system that incorporated elements of both the

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[18] This summary is according to former long-time LIAS president Willy Clark, the cut in cap funding can be found here and elsewhere:
https://www.cbc.ca/news/canada/nova-scotia/ottawa-cuts-cap-public-web-access-funding-1.1152248

CityWest-run fibre optic and Lasqueti's wireless radio to deliver services to the highest number of residents, though CityWest seems to endorse the hybrid concept now.[19]

On Oct. 27, 2022 CityWest sent LIAS a proposal to partner with and explore the acquisition of the society. Some of what this proposal included was an offer to partner on joint lobbying for money from the Universal Broadband Fund, exploring a purchase of LIAS's assets, assuming responsibility for the operations and maintenance of the network by CityWest, and the continued service of customers too geographically far away with LIAS's wireless infrastructure "until a better solution is found," the proposal stated. On Dec. 8, 2022 the LIAS board accepted the proposal.

Given the context of conversations with CityWest representatives in early May, a partnership with LIAS is not yet a settled matter and is still on the table as a possibility.

What CityWest are proposing

As stated previously, pending permits, it is likely that the sub-sea fibre optic cable will come to and land on Lasqueti. From there, CityWest has submitted its application for last-mile funding from the federal Universal Broadband Fund. From that point on, CityWest appear to be entirely dependent on what plays out funding-wise from the government.

When asked by current LIAS board president Lucas Damer about what it would take to trigger the landing permit process into approval during a meeting with LIAS representatives on May 7, CityWest CEO Stefan Woloszyn said that it's a "bit of a black box" but that it is often helped along if the community or an organization like LIAS helps push or lobby the province to approve it. [The same goes for UBF funding].
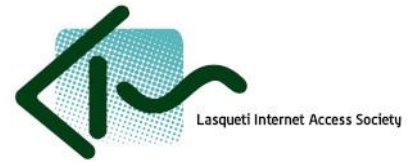
Though the federal government has stated repeatedly that it is committed "to ensure that 98 per cent of Canadians have access to high-speed Internet by 2026, and 100 per cent by 2030" representatives from Connected Coast say it's still unclear what exactly that means on a practical level.

"The intent of the backbone project and last-mile funding from the funders is to provide service to rural, remote communities that are underserved, because let's be honest, for the larger telecoms there's no business model to serve them. So the funders ultimately determine how much money they're going to give us to service these communities. What are eligible, what's non-eligible, where they're gonna go," said Dave Leitch, CEO of the Strathcona Regional District and CEO of the Connected Coast Network Corporation.

Despite the high aspirations of the government's stated aims, the funding doesn't always play out that way, said Leitch. Woloszyn agreed and said they thought the province was "slightly naive" when it came to their expectations of meeting that mandate.

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[19] As stated by Stefan Woloszyn in the May 7 meeting (is quoted later to this effect in this report as well).

"So let's take Denman [Island], for example. They've given us money, but they haven't given us money to service every home on Denman. So I don't know what their plan is at the end of the day. And the same narrative would be for Lasqueti. We apply for full funding for everything. But we gotta wait and see what they give us. And then what do we do with the remainder? I don't know what their plan is."

The funding for Denman was for last-mile services connecting about 75 per cent of the households on the island, and though CityWest have reached that mark, they are still continuing to work on the last 25 per cent, said Woloszyn. "As a business, it's in our interest to continue to build out to the communities [once] we've already got on-land infrastructure there. So the incremental cost of providing services to the next home, justifies the economic investment, but it's complicated, it is really, really complicated."

Last-mile delivery of services to all the homes on Lasqueti may not be achievable, despite the best intentions of both CityWest and the government, added Woloszyn, especially given what they've experienced on Denman.

"It has been one hell of an exercise to be able to look at that specific user case, because we have been hit so hard by permitting authorities on the road, by archeological related issues off the road, and then parks-related issues between roads," he said. "It is one hell of an exercise. And then the number of homes, which are ultimately not actually known until we actually get into the field."

Another issue that came up on Denman (and is likely for Lasqueti) is that the funding only provided for the first 30 metres of drop from the road connection onto a property. As CityWest have committed to 200 metres of drop, they have had to fund the last 170 metres out-of-pocket, said Woloszyn.

When asked what would happen to homes on Lasqueti that were in a similar situation — a kilometre or more from the road — Woloszyn referred to the model that CityWest implemented on Cortes Island, which was to charge approximately $10 a metre for anything in excess of the 200 metre threshold. They have not been able to provide servicing at that pricing to some homes further from the road on Denman thus far as the project there has "timed out" due to geotechnical and archaeological issues, but hope to return at a later date to work on those.

Final steps

What are the options if Lasqueti doesn't get last mile funding, but the Connected Coast fibre optic cable at least lands on-island?

It's worth looking at what happened in Gillies Bay on Texada Island, where the federal government determined that the island's pre-existing coaxial cable network was "good enough" and decided not to fund any last-mile infrastructure.

What CityWest decided to do in that situation was to connect the Connected Coast fibre optic cable into the existing coaxial system to provide an increase in residents' connectivity.

During the May 7 meeting, Woloszyn said that a similar (but technologically different) hybrid internet scenario might also be the most feasible option for Lasqueti, with some form of on-ground build and a fiber connection that would increase the existing radio signal bandwidth along the Lasqueti's east (Texada) side. Specific details of any project often have to be worked out on a case-by-case and step-by step basis as it moves along, he added.[20]

"The hybrid [model] is the most likely way to be able to provide part of the island with extreme high speed connectivity — like the same as downtown Vancouver — and the rest of the island would use the legacy system, with a significant bump in connectivity, but not like fiber. That's something that, for me personally, I would be interested in exploring with you because that really is using the best of what we can both bring to the table," said Woloszyn.

How this would work out organizationally is that CityWest and LIAS would likely form a hybrid ISP. This can take a number of forms, Woloszyn said, adding that City West has worked with a lot of societies across the coast in this capacity.

"Sometimes societies want to continue to operate as an ISP, in which case we take the position of a supplier of bandwidth for the ISP. In other cases, we work with the ISP to actually amalgamate the ISPs services into the CityWest network itself. We're never prescriptive with that, so we let the ISP ultimately make that decision themselves," he said (amalgamation is what ultimately happened in the case of the Gillies Bay Internet Society).

According to meeting notes from an Oct. 17, 2022 meeting between LIAS, SRD and CityWest, CityWest stated that their mandate is to return any profits to the communities. When asked about this during a May 3 meeting, Connected Coast Project Lead Wes Eisses said that this was sometimes negotiated with communities according to a range of factors.

"I would suggest that the next step would be to discuss internally whether or not LIAS would like to be able to collaborate in any way with CityWest as a company. And if you make the decision, that you would like to be able to collaborate with us, then come back to us and then what we would do is explore what that could ultimately look like," said Woloszyn.

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[20] Stefan Woloszyn: "A hybrid scenario would make the most feasible sense to me on an island like Lasqueti because [you have] a government dock, lots of density that exists there, it would make sense to be able to do some form of a civil on-ground build to be able to provide connectivity services. And then what I would propose as a logical hybrid would be to provide a fiber that would service your microwave shot on the Texada side so that you can actually increase your bandwidth through your shots to the east side of Lasqueti. We actually went through a process last year and bought 100 megahertz after the 800 spectrum in the Courtenay zone, which covers Lasqueti. So there's lots of spectrum availability to be able to make that work."

Other next steps could include hosting a community meeting, public forum and/or referendum, during which residents can express concerns and make an informed decision about whether to move ahead with the project. LIAS also needs to adopt a clear position regarding the project, though board members like Larry Manahan feel that there still is not enough information, and that the cultural impacts of a project like this also need to be considered.

"If you could, in some way, find a coherent view among the islanders it would help a lot, but I would only do that if you actually had accurate information about what their plans are, and we don't. And they also haven't consulted with the community," said Manahan.

"In the meeting that LIAS [recently] held on-island here there are several viewpoints that I'm aware of — for one, the people who moved here to get away from all this stuff. I have my own views on such things, but I would always respect and at least account for that, and want to know how many people feel that way, and where they are. That kind of thing."

Other issues worth considering include residents' concerns that once the cable goes in, it potentially paves the way for 5G technology and the Internet of Things (which is beyond the scope of this report to investigate, but could be the task of a specific island-based committee.)

It also may be useful to consult with and report back on the pros and cons experienced by other communities who have adopted fibre optic internet via CityWest — has the service changed the demographics of the type of person who wants to live in their communities? How has it affected the local culture in other ways, to have steadier access to the internet where prior to Connected Coast it was absent or nonexistent? These findings could be reported in a public forum like the Lasqueti website or newsletter.

For residents and community members interested in advocating for last-mile connectivity funding or pushing the permitting process forward, qathet Regional Director Andrew Fall has indicated he is available to provide supports for residents in that capacity.