



# Connecting SGI

**Connectivity Planning for the Southern Gulf Islands**

Capital Regional District  
January 2020



Making a difference...together

# Connecting SGI

## Connectivity Planning for the Southern Gulf Islands

Capital Regional District | January 2020

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## Introduction

This report documents community perceptions and experiences with internet connectivity on the Southern Gulf Islands (SGIs). The report demonstrates how greater connectivity can advance common goals of sustainable economic development, and community health and resilience for the region.

### The Southern Gulf Islands

The Southern Gulf Islands are an archipelago located in the Salish Sea, between Vancouver and Victoria, with island populations ranging from approximately 350-2,000 residents. The islands of Galiano, Mayne, North and South Pender Islands, Saturna, and associated islets make up an unincorporated rural Electoral Area under the jurisdiction of the Capital Regional District (CRD). The CRD serves as the local government for most municipal services excluding land use, which is the purview of the Islands Trust federation.

### First Nations

The Islands are situated within the territories of the Coast Salish peoples, and are specifically home to the SENĆOŦEN and HUL'Q'UMI'NUM' speaking peoples. Throughout the process, we have acknowledged the Coast Salish history, knowledge, and culture and welcome future opportunities to work together with our First Nations neighbours and collaborate on connectivity planning for the region.

### Natural Assets of the Region

The Southern Gulf Islands are unique in character, both ecologically and socially. The islands are home to diverse wildlife, from hundreds of resident and migratory species of birds, fish and intertidal life to wildlife and marine mammals. Much of the vegetation is not found elsewhere in Canada and is ecologically sensitive. Visitors and residents enjoy exceptional recreational opportunities in these dramatic coastlines such as secluded beaches, panoramic views, an extensive parks network, and sheltered waters. In recognition of the distinct nature of the SGIs, the Province of British Columbia enacted the Islands Trust Act in 1974 to, “preserve and protect the area and its unique amenities and environment for the benefit of residents of the trust area and of the province generally.”

### Regional Context

The islands are both rural and remote in character. Although located only about 50 km from Vancouver or Victoria, the overhead of time and cost to travel between the region and these nearby major centres is considerable, in

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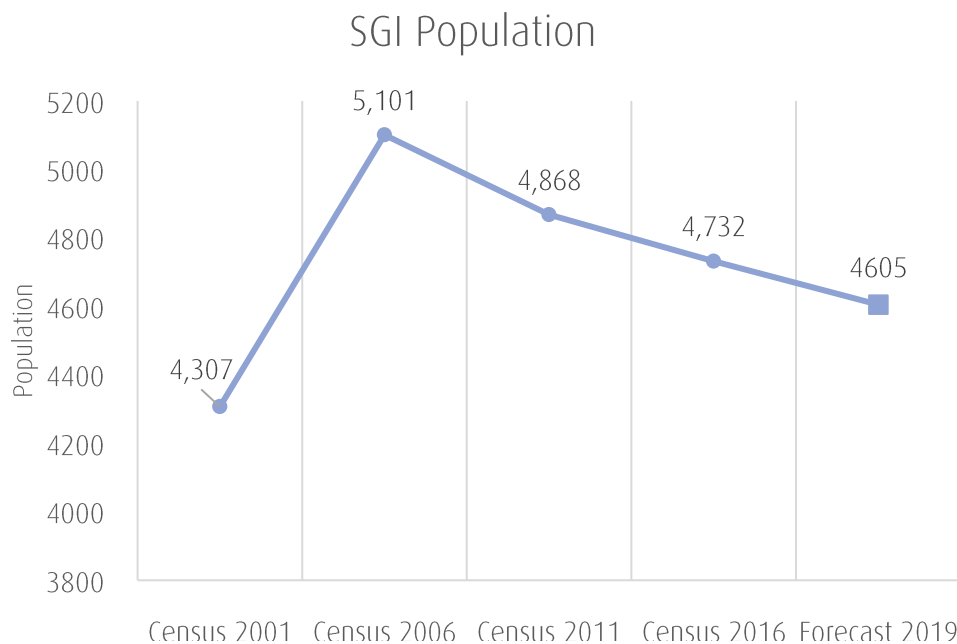
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many cases involving 12 or more hours and over \$100 for a roundtrip. The SGI archipelago was historically a community of socially and economically inter-connected islands. Significant changes in recent decades to BC Ferries routing and scheduling have weakened these inter-island ties.

Today, the SGI region struggles with demographic challenges. The average age (56.7) is significantly older than in the CRD as a whole (44.4), BC (42.3) and Canada (41), and there is a much lower proportion of families with children (10.3%) than in the CRD as a whole (17.9%). On most islands, more than 50% of residents are not in the labour force. Household incomes lag behind CRD and provincial averages, and the most substantial difference is in income for families with children, where the SGI median incomes (74,069) are much lower than the CRD (117,510) and BC (111,736) averages. Populations on most of the islands has declined in recent years and is projected to continue to drop.<sup>1</sup> These demographic challenges raise concerns as they can impact other aspects of community life such as school enrollment, volunteerism, stability for employees, and year-round viability for business.

The predominant land use on the islands is residential and the majority of the land is privately owned. Despite a long history of agriculture and forestry in the SGI, today the economic contribution of traditional land-based industries is now a small portion of the overall economic activity of the Southern Gulf Islands. In comparison to



<sup>1</sup> CRD Southern Gulf Islands Housing Needs Assessment, 2018



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other non-urban areas, the islands are disproportionately dependent upon private, non-employment income, primarily private investment income and private pensions. However, there is opportunity for island economies to diversify and to draw young families and professionals with the potential to work remotely in a wide range of fields.

### **Connectivity in the Region**

Underlying these challenges is the poor internet connectivity in the region. The SGI region lags far behind the internet speeds identified by the Federal Government as a minimum standard. Internet service is inconsistent across the region; the infrastructure is outdated in many places, and has not been maintained. Where there is high speed, the connection is often unreliable, as it is vulnerable to frequent power outages, weather fluctuations, and varied topography that interferes with line-of-sight technologies. Due to the small population sizes on the islands and natural limits to growth, there aren't the economies of scale to attract significant investment from large service providers. In some cases, small local organizations tried to fill the gaps piecemeal, but these outfits are vulnerable.

The persisting digital divide between urban areas and the SGI region limits residents' access to emergency services, healthcare, climate change adaptation, education, transportation, and government services. Further, the limiting effect on economic diversification is perhaps most significant: insufficient connectivity deters professionals from relocating to the islands and drives the relocation of young people away from home, both of which undermine efforts to resolve the communities' demographic challenges.

### Perceived Benefits of Increased Connectivity Across SGI

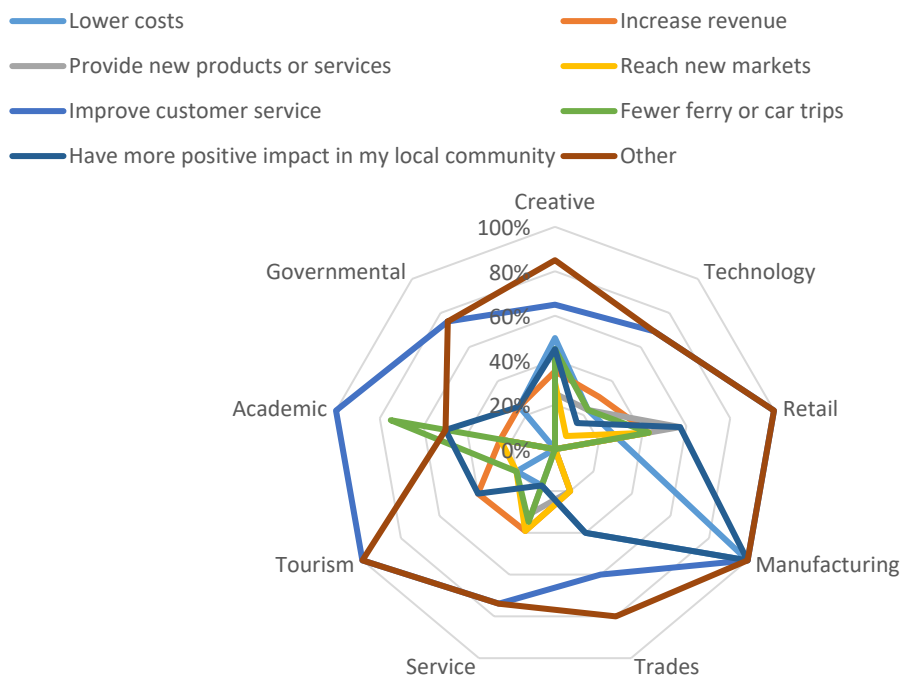


Figure 2 - Source: Business Survey 2019/2020

Southern Gulf Island businesses and organizations identified a number of interrelated benefits that would result from increased connectivity. When asked if better internet connectivity would benefit their business or organization, 93% of respondents answered yes. As indicated by Figure 2, of the options presented in the survey question, lowered costs and improved customer service were highlighted across most sectors. Consistently across the sectors the “other” option was also selected. In the comments, people indicated their reasons to be, making their business more productive and effective by saving time, enabling reliable video conferencing, improving the reputation of the business, and increasing the overall efficiency of operations.

## Executive Summary

Improving broadband connection as a way to stimulate sustainable economic growth has been a long-standing goal of the Capital Regional District's Electoral Area Director for the Southern Gulf Islands (SGI). The SGIs' limited internet speed and reliability impacts the communities' social and demographic diversity and the potential for low carbon, appropriate, and sustainable economic development. This report represents a first step towards addressing these limitations.

This project, *Connecting SGI: Connectivity Planning for the Southern Gulf Islands* was initiated in spring of 2019 by the *Southern Gulf Islands Community Economic Sustainability Commission* to consider how greater connectivity can advance common goals of sustainable economic development, and community health and resilience for the region. This report documents Phase I of the project; it represents a community based, qualitative assessment of community perceptions and experiences with internet (and to some degree cellular) service in the region. The process was led by CRD staff, including a team of contract "CRD Liaisons"—representatives living locally on each of Galiano, Saturna, Mayne, and Pender Islands. The planning process used the *Connected Communities BC Digital Development Roadmap*<sup>2</sup> as a framework tool to advance a holistic approach to connectivity planning for the islands.

The project's aim is to establish an alternative business case for integrating private and public sector investment opportunities that can be supported for advancing the community's own connectivity goals. This study has confirmed there is a strong need and widespread support for increased connectivity and the importance of upgrading internet connectivity in the SGI to at least the minimum Federal standard of 50/10 Mbps. The community feedback highlights the need for service improvements and infrastructure investment for last mile connectivity in the Southern Gulf Islands.

The SGI Connectivity Plan has integrated the voices of a range of different sectors on each island and throughout the Electoral Area. This has contributed to a richer understanding of regional commonality and demonstrated the breadth of community support for better, faster, more reliable internet in the islands. Results of the Phase I assessment indicate that connectivity is a fundamental necessity to enable the SGI communities to diversify the demographic profile of the islands and achieve economic, social, and environmental sustainability into the future. The next phase will be to pursue infrastructure design and implementation for the SGIs, ensuring that future infrastructure development is coordinated, scalable, cost efficient, and in line with the priority community

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<sup>2</sup> <https://www2.gov.bc.ca/gov/content/governments/connectivity-in-bc/connected-communities>

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objectives for the region. The information gathered in this report will be used to inform future design options and to leverage opportunities for implementation.

### Recommendations and Next Steps

This connectivity plan represents a community based assessment of the challenges faced by the rural island communities in the Southern Gulf Islands Electoral Area. It identifies how better connectivity would support solutions to the SGI's social and economic community needs. Servicing the SGI region with the minimum federal standard of 50/10 mbps would offer the base level of connectivity essential to meet community goals and should be prioritized by the Provincial and Federal governments. The following recommendations are proposed as a way forward towards resolving the issues identified throughout this process. A concerted effort to access public funds, private sector investment, and to coordinate an integrated, regional design is required.

- Technical analysis and connectivity design plan(s) should identify how the SGI as a region can be served with a level of connectivity to meet minimum national standards.
- CRD should provide a coordinating role and seek partnerships with one or more Internet Service Providers to conduct an infrastructure design plan, and advance applications to the Federal and Provincial government funding programs to support implementation.
- It is recommended that the Federal and Provincial governments remove barriers to ensure the Southern Gulf Islands Electoral Area are eligible for any possible infrastructure funding programs (Island Coastal Economic Trust (ICET), Community Futures).
- Infrastructure solutions for last mile connectivity should provide a range of options of technology and estimate the associated cost of development and maintenance. Because of the varied geography and dispersed populations, there may be a need to integrate different kinds of service delivery and thus form partnerships with more than one Internet Service Provider.
- In a phased approach to last mile connectivity, design solutions should prioritize community hubs, commercial centres, and public service buildings.
- Islands Trust Local Trust Committees should consider this report as demonstrating broad community support for service improvements when deciding concurrence with infrastructure proposals, as required to meet Innovation, Science, and Economic Development Canada (ISED) requirements.

## Community Priorities

Across the Southern Gulf Islands there is a common sense of place and rural identity which acknowledges that supporting healthy communities involves balancing environmental, social and economic sustainability. The SGI communities seek to thrive socially and economically within each island's ecological carrying capacity. This is understood by reading the Official Community Plans (OCPs) of each of the SGIs. (Within the SGI, OCPs bylaws are adopted by Islands Trust Local Trust Committees (LTCs) to guide the land use and community planning on each island. Official community plans represent each communities' unique goals and vision for the future). Across the region, each island's OCP has common themes and objectives to strengthen island economies, increase resiliency by expanding and improving the delivery of services, and to combat climate change. There are also policies that support the expansion of electronic communications to meet such community objectives.

The North Pender Island OCP supports and encourages efforts to "expand or improve the electronic communications on the island in order to reduce the need to travel" (2.3.6). Other community objectives supported by the expansion of communication networks include "[encouraging] a more compact, complete and connected community" (18), "allow[ing] seniors to remain in their own homes as long as possible" (2.3.6) and promoting home based businesses that are both self-sufficient and "compatible with the conservation of resources"(2.1.3).<sup>3</sup> The South Pender Island OCP states that "providers of internet and other electronic services are encouraged to expand and improve the delivery of services to, and the development of infrastructure for, the community" (6.2.2.d). Such improvements to electronic communications are described by the plan as "[increasing] opportunities to engage in economic activities from residences, thereby enhancing island residents' economic capacity" (3.1.2).<sup>4</sup>

The Galiano Island OCP states that "In order to enhance the social, economic, educational, environmental and cultural aspects of life on the island...the LTC will support efforts to expand electronic communications and infrastructure within the community provided it can be demonstrated that there are no harmful health or environmental effects" (4.1.1.g). The Galiano OCP also outlines several cultural objectives that could be supported through enhancements to internet infrastructure, including supports for the "volunteer-based groups" who contribute to the community (4.1.e), as well as opportunities to "identify, preserve, protect and enhance local

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3 [http://www.islandstrust.bc.ca/media/346950/ocp-bylaw-171-\\_-consolidated-dec-10-2018.pdf](http://www.islandstrust.bc.ca/media/346950/ocp-bylaw-171-_-consolidated-dec-10-2018.pdf)

4 [http://www.islandstrust.bc.ca/media/347642/bylaw-no-107-ocp\\_consolidated-2019-05-08.pdf](http://www.islandstrust.bc.ca/media/347642/bylaw-no-107-ocp_consolidated-2019-05-08.pdf)



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heritage” (3.1).<sup>5</sup> In 2018, based on the work of a special Advisory Planning Commission, the Galiano LTC adopted a land use strategy to guide the siting of cell towers and other telecommunications infrastructure.<sup>6</sup>

The Mayne Island OCP states that the Mayne Island Local Trust Committee “should support and encourage efforts to expand or improve the digital infrastructure on the island in order to reduce the need to travel” (2.6.1.10). Other community goals potentially realized through improvements to broadband infrastructure include “economic diversity” and “varied livelihoods” (1.2.6) as well as support for “local food production, processing and distribution” (2.2.1.9).<sup>7</sup>

The Saturna Island OCP states that “providers of internet and other electronic communication services should be encouraged to expand and improve the delivery of services to, and the development of infrastructure for, the local community”(F.6.6). Further community priorities supported through improved connectivity include the “community’s desire to maintain social and economic diversity” (C.3.5), the want to preserve “home occupations” (C.1.6) and “community-based businesses”(C.1.8), and the objective to “[reduce] greenhouse gas emissions” through a range of actions including “technological changes” (E.5.1).<sup>8</sup>

Finally, the Islands Trust Council, who establishes general policies for carrying out the object of the Trust, also advocates for improvements to internet connectivity in the region. In June 2019 they issued a statement requesting that “the appropriate agencies of Canada and the Province of British Columbia take steps to facilitate and fund...improvement of internet connectivity in the Trust Area.”<sup>9</sup>

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5 [http://www.islandstrust.bc.ca/media/347224/ocp-bylaw-108\\_consolidated\\_feb-7-19.pdf](http://www.islandstrust.bc.ca/media/347224/ocp-bylaw-108_consolidated_feb-7-19.pdf)

6 <http://www.islandstrust.bc.ca/media/346373/galiano-island-antenna-system-siting-consultation-protocol.pdf>

7 [http://www.islandstrust.bc.ca/media/348640/ocp-bylaw-no-144\\_consolidated-october-2019.pdf](http://www.islandstrust.bc.ca/media/348640/ocp-bylaw-no-144_consolidated-october-2019.pdf)

8 [http://www.islandstrust.bc.ca/media/345645/sa-ocp-bylaw-70\\_consolidated-april-26-2018.pdf](http://www.islandstrust.bc.ca/media/345645/sa-ocp-bylaw-70_consolidated-april-26-2018.pdf)

9 [http://www.islandstrust.bc.ca/media/347928/tc\\_2019-06\\_18-19-20\\_decisionhighlights\\_final.pdf](http://www.islandstrust.bc.ca/media/347928/tc_2019-06_18-19-20_decisionhighlights_final.pdf)

## Connecting with the Region's Businesses and Residents

Throughout the fall and winter of 2019, the SGI team engaged island residents, community groups, businesses, non-profits, and government agencies to discuss the limitations of the current lack of connectivity and the potential for better, faster, more reliable internet to support the social, economic, and sustainability goals of the Southern Gulf Islands. Conversations focused on how better connectivity can help the SGI region meet its community needs and objectives, as well as the impacts and opportunities associated with increased connectivity. Federal funding has been available to help bridge the digital divide for rural and remote areas that find themselves underserved, but in spite of this the SGI remain below the national standard.

### Goals

1. To assess the current state of internet connectivity in the SGIs and both its measurable and perceived impact on the community.
2. To serve as the foundation for building a community-based business case for improving connectivity.
3. To provide a resource to ISPs to inform investment decisions and to leverage government funding.
4. To generate a shared dialogue of the impacts and benefits of improving internet connectivity among ISPs, businesses, and residents of the SGI.

### Methodology

The SGI team of staff and island liaisons engaged residents, community groups, businesses, internet service providers, non-profits, and government agencies to discuss the limitations of the current lack of connectivity and the potential for better, faster, more reliable internet to support the social, economic, and sustainability goals of the SGIs. The total population of the Southern Gulf Island region is 4,732 people.<sup>10</sup> Resident survey responses represent only 6% of the population. While the data was analyzed and there are important insights and conclusions can be drawn by those who filled out the surveys, the recommendations in this report have been strongly informed by the significant qualitative data that was collected in the way of interviews, group discussions, and public meetings. At the time of writing this report, the survey remained open and the response rate continues to increase

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<sup>10</sup> <https://www12.statcan.gc.ca/census-recensement/2016/dp-prof/details/Page.cfm?Lang=E&Geo1=CSD&Code1=5917029&Geo2=POPC&Code2=0376&Data=Count&SearchText=Hope&SearchType=Begins&SearchPR=01&B1=All>

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offering opportunity for further study and analysis in the future. Please see Appendix 1 for a summary of the engagement conducted as part of this process.

### **Business and Service Sector Interviews:**

One-on-one and group interviews were held on each island to reach representatives of the major economic and service sectors. The results of these interviews form a substantial qualitative data set informing the SGI Connectivity Plan. During these interviews, participants were asked to describe:

- The connectivity challenges that they face operating in the SGIs.
- The resources and tools that are available to enhance operations in their sector, but that might be limited due to poor internet connectivity.
- Ways in which access to improved internet services would benefit their operations and their communities.

### **Community Meetings:**

Four Community Meetings were held, one on each of the islands. Conversations focused on how better connectivity can help the SGI meet its community needs and objectives, as well as the impacts and opportunities associated with increased connectivity. Please see Appendix 2 for documentation of workshop results.

### **Surveys:**

Two surveys options were provided, one to capture the experience of organizations operating in the SGI and the other to capture the experience of residents of the region. The surveys were posted on-line and were available in paper copy. There was also a speed test survey that guided respondents to measure their internet speed.

The Business Sector Survey was launched on October 18, 2019. Data analysis is based on results for the period between October 18 and December 27, representing a survey response from representatives of 95 organizations. The Residents' Survey was launched on November 22. Data analysis is based on results for the period between November 22 and December 27 2019, and represents a survey response of 313 people. Data was analysed and cross tabulated using SPSS Statistics software. Details of the methodology and limitations of this analysis are available upon request.

In order to improve the quality of the data sets, both surveys remained open past the time of report writing. The full data set will be used to inform the technical design phase of this project. The conclusions of this report have

therefore been more strongly influenced by the qualitative data gathered through the interviews and focus group discussions.

## National Connectivity Standards

### What is the Federal Standard for minimum acceptable internet speed?

In June 2019, the Federal Government released [Canada's Connectivity Strategy](#) and committed to "connect every Canadian to affordable, high-speed Internet no matter where they live, and to improve mobile cellular access from coast to coast to coast . . . through new investments and collaboration with our partners, ensuring high-speed access for all." Within the Strategy, the federal standard for internet service was set at a minimum of 50 Mbps download and 10 Mbps upload.

### What is the Provincial Standard for minimum acceptable internet speed?

British Columbia's connectivity standards are harmonized with the CRTC's of a minimum 50 Mbps download and 10 Mbps upload speeds.

The Connecting British Columbia program, administered by the Northern Development Initiative Trust, recently launched phase III to provide access to \$50 million to support connectivity projects throughout the province. These funds may include building infrastructure to bring connectivity to entire regions or making final connections to homes and businesses.

To ensure communities take full advantage of better connectivity, the Ministry of Citizens' Services has launched the *Connected Communities* initiative to support the digital readiness of local governments, First Nations and rural communities. As mentioned, the *Connected Communities Digital by Design* framework has been used to guide the process for connectivity planning in the Southern Gulf Islands.

### Connected Coast

The Connected Coast project is a plan to place over 3,400 km of subsea fibre-optic cable, stretching from Prince Rupert south to Vancouver, then around Vancouver Island. The project will be managed and implemented by CityWest and the Strathcona Regional District (SRD). By providing links from Northern BC, and around Vancouver Island to the internet exchange in Vancouver, the infrastructure will increase service reliability for residents on the mainland, on the island and in rural and remote coastal communities by providing an alternate route for service,

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known as a redundancy. While the project is still in the scoping and consultation stage, SGI landing sites for the program include Pender Island (Port Washington) and Saturna Island, as well as in four locations on Salt Spring Island (Fernwood, Fulford Harbour, Ganges, and Musgrave Landing). Although not within the CRD but significant because they are adjacent to Galiano Island, there are landing sites planned for Penekalut Island and Lyackson Island.

### Is service in the SGI meeting these minimums?

The level of internet service available in the SGI is in stark contrast to the Federal and Provincial minimums. In this study, 13.5% of the survey respondents indicated they had no internet access, and of those who did have access, 75% have less than 20 Mbps download speeds, and 85% had 5 Mbps or less upload speeds. It is important to note that there are a few instances of download speeds being reported at higher than 50 Mbps – these speeds are only available to residents who are located close to the United States border and have signed up with American Internet Service Providers.

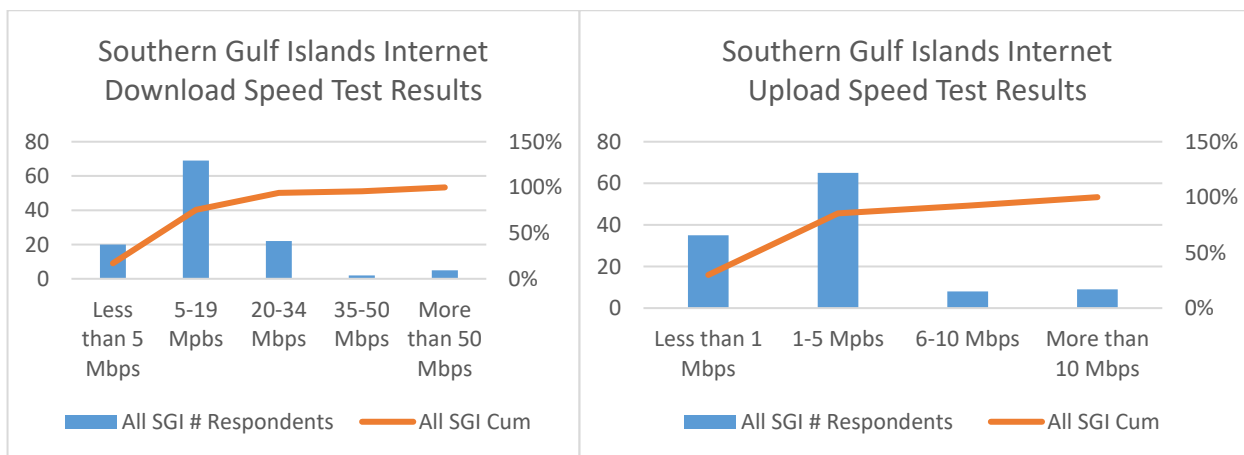


Figure 3 - Source: Speed Test Survey 2019/2020



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## SGI Internet Service Options

### What is the current state of internet service in the SGI?

As can be seen by the map below, internet service options available in the SGIs vary widely among the islands and between different areas of the same island. The inconsistent service coverage is attributed to lagging capital investment for infrastructure expansion, topographical and terrestrial interference of line-of-sight technology, and out-of-date equipment that is no longer able to support the volume of demand. This map shows North and South Pender Islands as having 50/10 Mbps service, when in fact our study found most Pederites report having less than 5 Mbps.



National Broadband Internet Service Availability Map

Source: Government of Canada <https://www.ic.gc.ca/app/sitt/bbmap/hm.html?lang=eng>

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*“There is no high speed internet on Pender now. Beacon offers 35 down and Shaw only 5 download speed. This is not high speed and is unacceptable in 2020.”*

*-Pender Island Resident*

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Currently, Shaw Communications, Telus Communications, and Xplornet are the national service providers available in the region. However, their services are not available in some areas on the islands and service options are limited. For example, on the Penders, new

subscribers to Shaw Communications services are now limited to a 5 MB download speed, which is significantly less than the 50 Mbps offered on their basic plan in other regions.

Local alternatives are available for some areas, depending on service coverage. These options include: Beacon Wireless, South Island Internet, SaturnaNet Co-operative, and Orcas Online.

Although they provide a critical alternative, the local ISPs struggle to meet market demand due to their size, lack of access to infrastructure, and the limitations of line-of-sight technology. (See more in the next section.)

As a result, residents and businesses in the SGIs are significantly underserved, as demonstrated by the following survey results

13.5 % of survey respondents did not have access to the internet.

78% of residential respondents and 70% of business respondents have less than 19 Mbps download speed. 96% had less than the Federal standard of 50 Mbps.

89% of residential respondents and 71% of business respondents have less than 5 Mbps upload speed. 92% have less than the Federal standard of 10 Mbps upload speed. In spite of the low level of service, respondents reported paying rates comparable or in excess of those who are receiving significantly higher service levels in other areas.

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*“I currently use Shaw and South Island Internet because I need the reliability of that backup for my job. I also pay Bell for 50GB per month of data. In total, I pay probably \$350 for internet”*

*-SGI Telecommuter*

*“I subscribe to two services, SaturnaNet Co-Op (SNC) and Rogers Rocket. This is so if SNC goes down, I have a reliable back up. But Rogers is expensive and not fast enough. I would much prefer to be paying for one service.”*

*-Saturna Island Entrepreneur*

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69% of respondents report that they are paying between \$50-\$100 per month and 23% report paying more than \$100 per month.

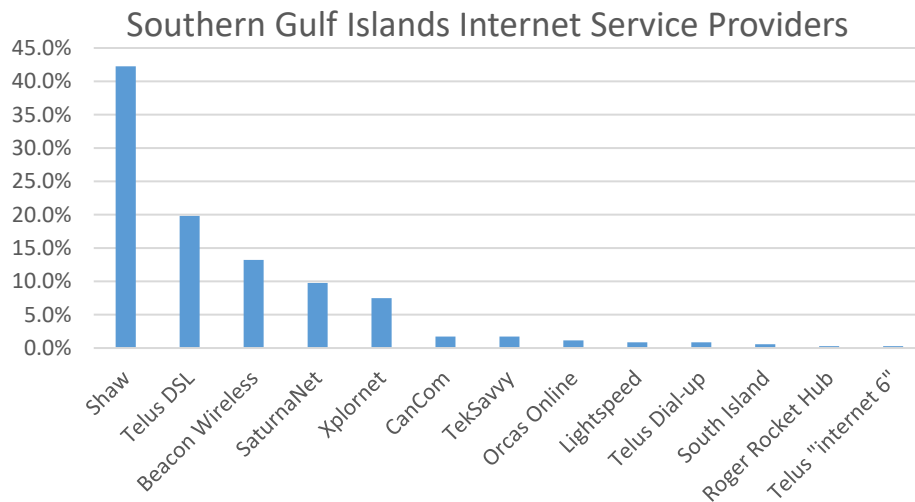


Figure 4 – Source: Speed Test Survey 2019/2020

### Why aren't ISPs making improvements?

Through one-on-one interviews, ISPs shared their frustrations with being unable to meet the needs of this region. The challenge that ISP providers face in the region is three-fold:

The location, terrain, and topography limit the types of technology that can be used. Fibre can only be brought to the island if it is submarine, the rocky terrain makes dug cables costly, and extreme elevations and dense foliage inhibit line-of-sight technologies.

Maintenance costs are elevated for the region. The area is accessible only through ferry travel and the region's densely treed characteristics create a high risk of downed lines during storms.

Low population density does not support a business model for investment in large scale infrastructure expansions and upgrades. Every kilometre of expanded service requires a minimum anticipated return of revenue in order to create a viable case for investment. Unfortunately, the small populations with a low density spread challenge that

model, which is compounded with the limitations to the types of technology solutions that can be used and the elevated ongoing cost of maintenance.

### What about local ISPs?

The region is also being supported by local ISPs, who have found innovative solutions to the challenge of delivering internet service in the Southern Gulf Islands. Beacon Wireless, South Island Internet and Orcas Online are all owned and operated by residents of the Canadian or American Gulf Islands. SaturnaNet Cooperative is owned by its members, and has served the community since 2007. These homegrown ISPs bring local experience and employment opportunities to Southern Gulf Island communities, and are driven to provide internet service for residents despite the region's low population density and service delivery challenges.

Through interviews with representatives of each of the local ISPs serving this region, it was identified that their ability to expand is challenged by the following factors:

- Difficulty securing reliable, accessible, and affordable bulk bandwidth to support the local networks as larger telecom networks are reluctant sell bulk feeds at required scale.
- Challenges brokering deals with the companies that own existing tower infrastructure.
- Lack of capacity to apply for grant monies.
- Having their small staff or volunteer resources overtaxed by regulatory and land use application processes.
- Being unable to financially carry the return on investment period for new subscriptions. Due to a lack of existing infrastructure, each new house serviced requires a significant investment to expand the system. The cost of installation is partially covered through installation fees, but the ISPs report that it takes 4-6 months before their investment is recovered. As a result, the ISPs are financially restricted on the number of new subscribers they can service.
- The median incomes of SGI residents is significantly lower than the Provincial average, and the cost of service is a barrier to many residents subscribing.
- Challenges reaching out to their market, and building customer trust.

- Issues with network congestion and network latency—as more subscribers are added to the network, throughput and the speed at which packets of data travel may decrease, leading to declines in overall network performance.

### Is there an opportunity for growth?

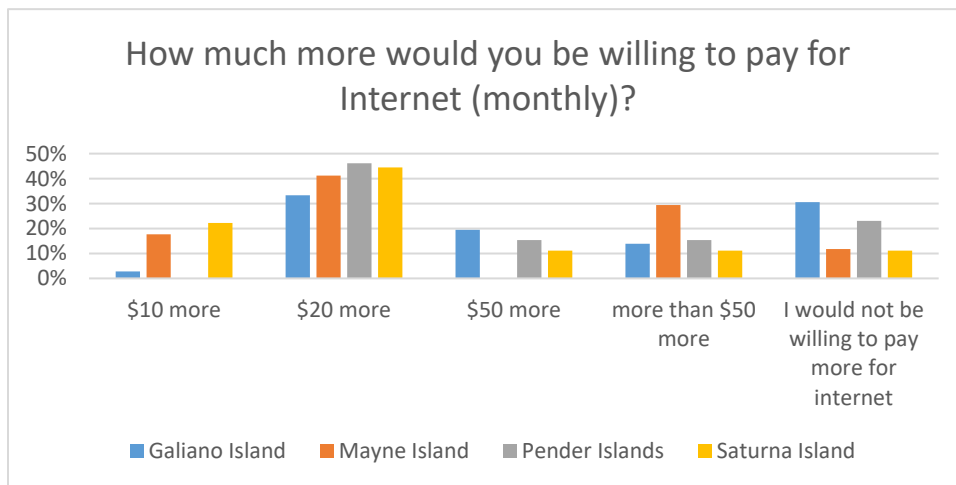


Figure 5- Source: Business Sector Survey, 2019/2020

Being able to build financial partnerships and having access to public funds to improve ISP investment margins would create opportunities for expanding infrastructure and upgrading the technology used.

Each ISP interviewed held a different vision for the future of internet service in the SGI, with possible opportunities including:

- Solar powered systems that are resilient for an area that experiences numerous power outages.
- Infrastructure to improve latency in order to maximize internet quality at lower speeds.
- Installation of submarine fibre.
- Combination solutions that integrate small segments of fibre with line-of-sight technology.



## The Digital Divide: SGI Connectivity Challenges

### How is inadequate internet impacting this region?

Historically, organizations in the SGI have struggled to provide equitable health care, education, emergency services, food security, and retail services to the region. This is largely due to smaller markets and the remote location creating barriers for building viable operations, and these are challenges common to other rural and remote regions.

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*“As the island falls behind in internet connectivity, it consequently is also falling behind economically and demographically because we are unable to attract and retain young families and professionals from our close-by big and more expensive cities (Vancouver and Victoria)”*

*Chair, Chamber of Commerce*

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With modern technology and software, there are options that could resolve some of these challenges. Unfortunately, wide consultation demonstrated that although the solutions exist, have existed for some time, and are even the standard in other similar communities, they are out of reach for the SGI due to poor digital connectivity.

### Experience of SGI Business and Service Sectors

Interviews with organizations across several sectors identified the strategic importance of internet connectivity to their operations indicate there is pent up demand for better service. Virtually all the organizations responding to the Business Sector Survey indicated that better connectivity would help them improve their operations. As sectors become increasingly dependent on digital technologies the SGI are actively losing economic sectors that used to thrive, but can no longer keep up due to a lack of access to the internet.

When services are not available locally, residents need to travel for several hours, by boat or airplane to access the nearest urban centre. Frequent travel of this nature threatens the health of the local economy by discouraging local spending, generates a large carbon foot-print, carries a high cost for organizations and individuals, and impacts peoples' efficiency and quality of life.

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### Business Sector

The following are some of the ways that local businesses and organizations reported that their operations and their communities are being hindered by poor digital connections:

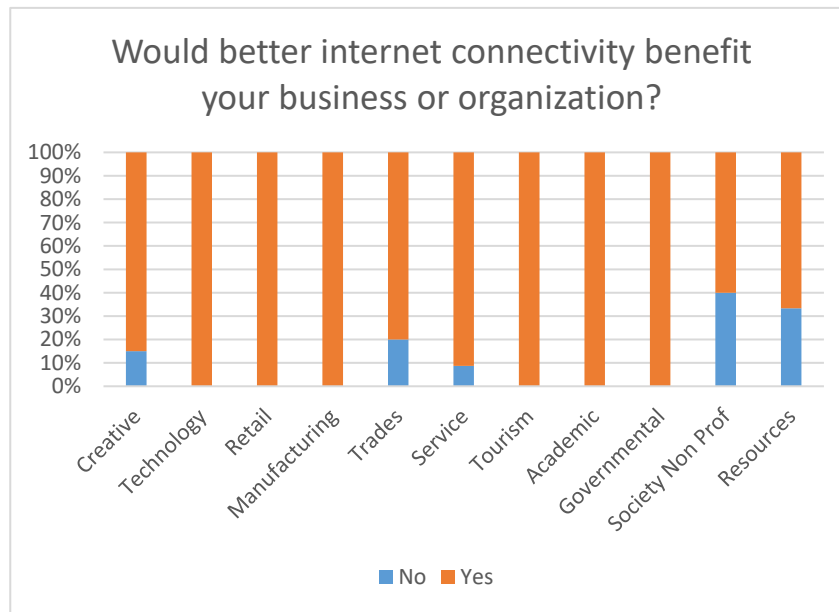


Figure 6- Survey responses indicate all sectors anticipate benefits from improved connectivity. Source: Business Sector Survey 2019/2020

### Access to Smart Technologies

Businesses and organizations in the SGIs are challenged by a small workforce, fewer resources, a limited market, and lack of access to location-based business services, such as banks. Smart business tools and digital business services should provide an opportunity to thrive and improve efficiency, but organizations in the SGIs reported that without fast and reliable internet, they are unable to use tools that most other businesses take for granted, such as:

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*“It is extremely frustrating to have poor connectivity and outages ever time it rains. Everything is online—even the phone book—and it affects everything from business to community volunteer activities and personal pursuits.”*

*-SGI Resident*

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- Online Point of Sale technologies to accept credit and debit card payments.
- Online ordering and access to online catalogues.
- Online booking for guests and clients.
- Online banking.
- Live video streaming, as a way of connecting with people in other locations.

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*"We generate innovative content that centres the life experiences of marginalized youth. e.g. Indigenous, racialized and low-income youth. We have something unique to share, and model, but without better bandwidth we can't scale up. More affordable, reliable, and efficient connectivity would support our capacity to grow the creative economy on Galiano, and share the unique cultural artifacts and resource materials we are developing with other communities across the province, and the nation."*

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For example, during interviews with Food Producers it was discovered that Smart Monitoring Systems are improving efficiency in their sector and increasing the viability of local food producers. These technologies allow Food Producers to grow more with less waste, less water, the consumption of less land, and a smaller workforce. With improved digital connectivity, Food Producers in the SGI could implement:

- Smart monitoring of produce fridge and freezer temperatures

### What does your organization currently use the internet for?

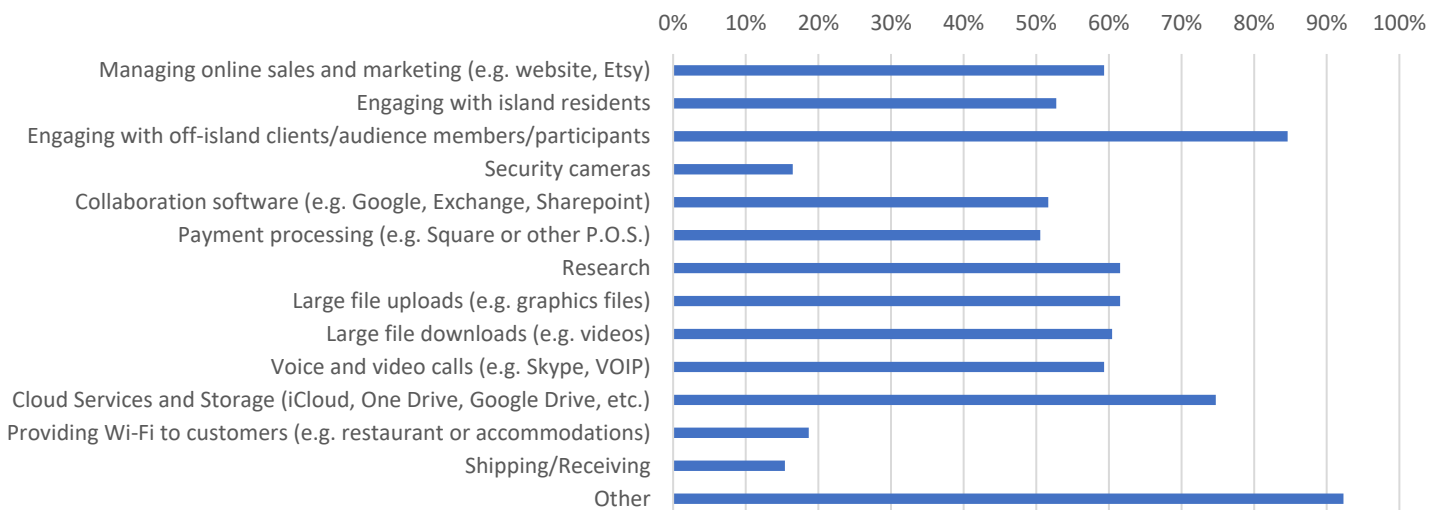


Figure 7- Survey result of how organizations currently use the internet. Source: Business Sector Survey 2019/2020

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- Smart technology to monitor livestock
- Smart timers for chicken coops
- Smart scales on feeders
- Smart thermometers on water to make sure it is not frozen
- Smart grow lights for greenhouses

Internet bandwidth requirements are expected to follow an exponential curve as consumers adopt "smart house" devices, security cams, internet of things (heating, cooling, appliances, etc.), enhanced reality and virtual reality, 3-D HD TV, streaming services, and eventually self-driving cars.

### Public Services

Federal and Provincial government services increasingly require on-line registration and access, and assume everyone has the internet to support this. For instance, when applying to the Canada Pension Plan, one has two options—either download the application to fill it out manually and mail it in, or complete it on-line. The CPP web<sup>11</sup> page indicates it "normally can take up to 120 days" to get a written notification of a decision, whereas an online application takes "between 7 and 14 days".

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*"We tell our clients we will assign our ten best people to their project. These ten can live anywhere in the world. So the internet is an essential aspect, and these people couldn't be living on Mayne Island."*

*-Principal, Business consulting organization*

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Further, due to smaller populations, the SGIs do not have local offices for government agencies and are often unable to attract fee-for-service providers. Historically, this has meant that SGI residents have had to travel, at extensive cost to themselves and social programs, to connect with health care providers, government services, and other resources.

In other remote rural and remote communities, digital networks have eliminated the necessity for users to travel to a centralized location and have allowed organizations and businesses to deliver equitable services through

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<sup>11</sup> <https://www.canada.ca/en/services/benefits/publicpensions/cpp/cpp-benefit/apply.html#>

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traveling operations or remote offices. Improvements to connectivity in the SGI will support development of satellite locations and reduce the social, financial, and environmental cost of travelling to access such services.

For example, as part of the provincial-wide system, small local libraries are able to provide their patrons with the same resources that are available in large urban locations. Unfortunately, without fast and reliable internet, local libraries are unable to do this, but with improved connectivity they would be able to:

- Provide access to digital resources and research materials.
- Order and process resources from the central locations.
- Connect with provincial system that manages daily operations.

Interviewees in the Health and Wellness Sector shared similar challenges.

### Emergency Services

During emergencies, up-to-date information flow and the ability to communicate instantly is of the essence. In the SGIs, it is during emergencies that the inadequacy of internet connectivity is most dramatically demonstrated. The lack of network redundancy means entire islands lose power, access to the internet falls and often the cellular network either becomes overloaded or becomes unavailable, leaving the island communities in the dark both literally and figuratively.

In other locations, emergency services are able to use digital technology to respond faster and gain access to the

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*“Reasonable speed, reliable internet is as essential as access to hydro. During the December 2018 storm, I had no way of finding out how long hydro was expected to be out, with no cable internet for more than 1 week and zero cell coverage at my house. So there was no communication of any kind, other than over-the-air radio coverage, which was very spotty.”*

*- SGI Resident*

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information that they need keep themselves and the public safe. These systems have been rolled out province-wide and operations have become dependent on them. Without adequate internet services, SGI departments are unable to access these systems, and since there is not a local back-up in place, the emergency responders are left out in terms of functionality. For example:

- Digital on-board systems that are the standard in other regions. These in-vehicle computers and tablets facilitate faster and safer responses to 911 calls by providing real-time information about the specific



emergency, mapping services, and the ability to connect with dispatchers and other agencies. Currently, local paramedics report that it is not until they return back to their station that they receive patient updates that their dispatcher sent to them throughout their shift.

- Digital resources and informational tools that are designed to assist in on-scene decision making are not available without a reliable internet source. Where their urban counter-parts have access to up-to-date digital resources like Hazardous Materials Databases with live support, emergency service providers in the SGI must operate using print versions which quickly become outdated.

- New robotics technologies which are improving outcomes and reducing risk to responders, but cannot be used without reliable WIFI connectivity to use.
- Tools to connect directly with residents during large-scale emergencies to provide real-time updates, education on safety risks, and information on how to access warming centres and other resources are not available unless both the responder agency and the residents have reliable internet.

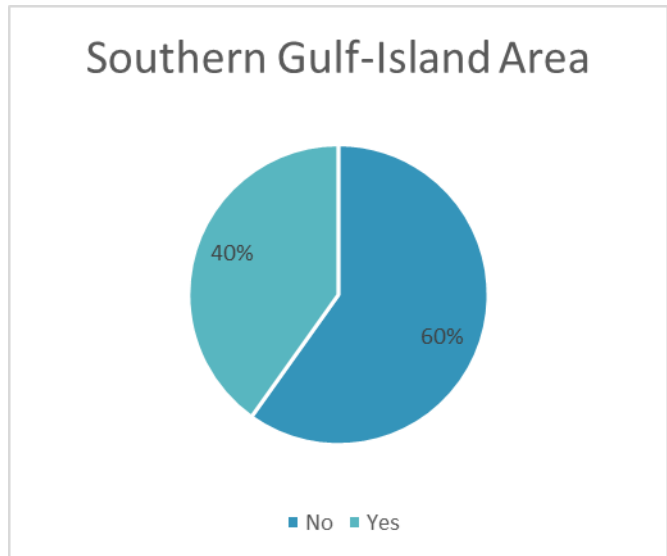


Figure 8 - 40% of survey respondents indicate they have been in an emergency situation without access to connectivity. Source: Resident Survey 2019/2020

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*“The Internet is more significant than space. If my office burns down, I can buy new computers and be back up in 48 hours because everything is on the internet.”*

*-Part-time resident*

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### Health Sector

Due to population size, and the inherent geographic constraints of islands, the SGI region struggles to attract full-time health and wellness providers. As a result, members of the community must leave the island in order to access these services at great cost to our health care system and to the individual.

While the Ministry of Health and regional health districts are working to improve equitable access to health care across rural, remote, and urban areas, their solutions are heavily reliant on reliable digital connections. Operators in this sector highlighted some of the opportunities that should be improving health care to SGI residents, but aren't available due to poor internet service:

- Initiatives like Telehealth and Home Health Monitoring provide access to physicians and specialists for those living in remote and rural locations. These services are reducing the cost of delivering health care, alleviating the burden on the travelling patient, and combating growing wait lists. Without fast and reliable internet, Island Health (the Vancouver Island Health Authority) cannot initiate these programs in the SGI.
- Counsellors and psychiatrists, massage therapists, chiropractors, community nurses, etc. are able to travel to underserved regions and provide services locally while still accessing their home office's network for schedules, patient files, and other medical resources. Without this option, SGI residents must take a

*"Our island's Assisted Living volunteer organization drives people to Victoria for medical appointments. It's a bit of a ridiculous situation because if we had enough internet bandwidth to access telehealth, we would no doubt eliminate at least half of these off-island appointments. It would allow people to take better responsibility for their health. The further you go down the hill of poverty, health, ability, age, all that stuff that takes a little bit away from your ability to advocate, the worse off you're going to be. And all these little interventions, like Home Health Monitoring, can add to people's advocacy. It may not be immediately intuitive, but better internet equals better health indicators on the islands."*  
-Health Care Representative

### Southern Gulf-Island Area

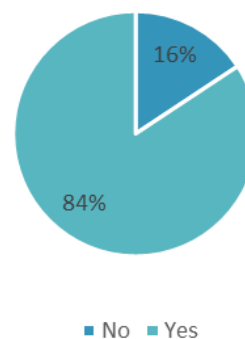


Figure 9 - 84% of survey respondents have had to go off-island to receive medical/pharmaceutical advice or consultation. Source: Resident Survey 2019/2020

# Connecting SGI

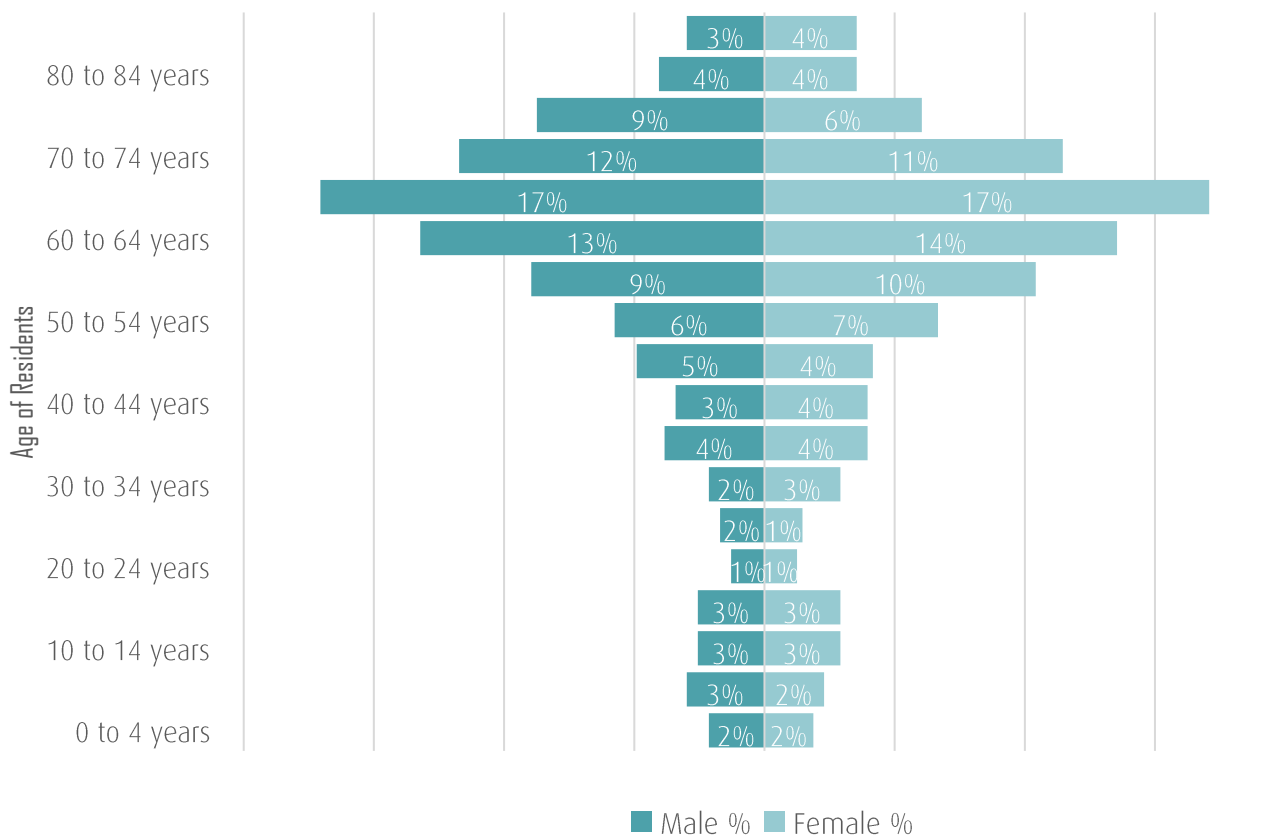
## Connectivity Planning for the Southern Gulf Islands

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day to travel to the nearest urban setting for a half-hour appointment, and this is often an insurmountable burden.

- Fast and reliable internet would allow the local clinics to provide several diagnostic and imaging services to patients by completing the tests on site and coordinate with remote experts to interpret the results.
- Telehealth would also provide relief for mental health patients who face an 18+ month waiting list to see a specialist, one of the most critical challenges for health care in SGI communities.

### SGI Age Distribution 2016



### Attracting Young Professionals

A common theme across multiple sectors was the conviction that young professionals have built their careers using digital networks and, if they had reliable internet connection, would be eager to relocate to the SGI due to the desirable location and relatively low cost of housing. Those interviewed were hopeful that attracting younger

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professionals would provide many benefits to the region, including retention of services that are currently threatened by a dwindling population.

Before widespread internet use in business, professionals needed to live close to a centralized location. In the past, this limited the type of work available to people in the SGI and consequently constrained population growth and demographic diversification. Digital options now provide the freedom for professionals to live away from urban centers and remain connected to their peers, but our heavy reliance on digital technology also creates a necessity for it—without access to the internet, most sectors are unable to operate.

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*“The Gulf Islands Film and Television School and the Access to Media Education Society have built a film-making industry on Galiano. These two organizations use film and video to do innovative, youth-centred social change work, and they have attracted professionals whose creative economy work is totally in line with low-impact community economic development. As a result, when people in the industry think about relocating from Vancouver, Galiano is one of the first places they think of. But we are losing the creative economy we have built here because of our increasing digital divide. Film requires massive file sizes now. As a result, projects done from Galiano are becoming more expensive and more complicated. We are now less appealing as a community to work remotely from because of the difficulty in communication. Improved internet connectivity with better bandwidth will allow us to revitalize Galiano's innovative film and video industry”*

*-Galiano Media Professional*

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## Remote Workers

Digital communication platforms allow individuals and organizations to connect and collaborate with their peers regardless of their location. Not only does this technology eliminate the necessity of travel for meetings, it also provides the freedom for professionals to live away from urban centers and remain connected.

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*“We've been thinking of moving our business to Victoria (away from Mayne because of unreliable internet) - that's two jobs plus all the sub-contractors we hire, plus the housekeeping person.”*

*- Resident & On-line Marketing Manager*

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In the interviews, professionals expressed their frustration at trying to work from an SGI location. Common complaints included:

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- Online collaboration with a virtual team, which is becoming a standard mode of operating, is not possible. In particular, video conferencing is often impossible, and shared platforms cannot be accessed because slow internet hinders real-time updates.
- It can take 2-3 hours to upload a large file that should only take a few minutes.
- Professionals are disconnected from their industry, client-base, and peers. The impact of professional isolation while living remotely is increased, and there is a subsequent challenge of attracting and retaining staff.
- Businesses cannot manage the increasing complexity of files and cloud services.
- Being unable to use smart technologies means that local businesses are unable to keep up with the increasing pace of their industry. The services that are online, the size of files, the expectations of customers and partners are all moving forward and growing.

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*“When using Software as a Service apps that require more bandwidth, such as travel reservations, my staff can sit at their screens for one or two minutes to refresh. It's disheartening and is a loss of productivity - impacts customer service.”*

*-Resort owner/operator*

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The cumulative impact of the lack of digital connectivity is that businesses report being unable to compete within their markets, suffering financially due to lost clients, and ultimately facing a loss of their business or employment.

### The Hospitality and Retail Sector

The business sector comprises mostly retail organizations that cater to the local population and a strong touristic component, especially during the summer months, such as restaurants, resorts and B&Bs, various shops and retail outlets. Most of these organizations use the internet to support regular operations.

Virtually all customer-facing businesses have chronic difficulty hiring and keeping sufficient

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*“When I moved to Mayne in 2002 with my family, it was a quality of life decision. I hoped to be able to move my business to Mayne. I reasoned that as an architect there was no reason, I couldn't do most of my work remotely. I was wrong. Internet connectivity was bad then, and it has gotten worse ever since. We have moved back to Vancouver, and we come to Mayne every now and then. I am very disappointed about that. If we had connectivity bandwidth equivalent to Vancouver, that would change everything. I know a few of my associated would consider it a dream come true to live in the SGI and work remotely. I do.”*

*-Former Mayne Resident*

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staff to run their operations. As mentioned in the section on Health, the difficulty of attracting younger generation residents is in part due to connectivity shortfalls. The younger generation grew up with ubiquitous internet availability and use it in all aspects of their lives. In that context the SGIs, despite being a stone's throw from major cities, are remote and undesirable. Businesses frequently suspend their operations for a few days or weeks because the owners have no back-up staff. This causes economic losses to businesses and the community-at-large. Further, visitor experience is negatively impacted and the island's reputation can suffer.

Insufficient connectivity also impacts businesses when visitors, expecting that same connectivity they get at home, discover the internet is either not available or very slow. Accommodation establishments report that they lose initial bookings and repeat business due to a lack of internet connectivity. Even establishments that promote the lack of connectivity as a feature for clients who want to "get away from it all" report that those clients do want access to the internet once they arrive.

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*"There is an increasing number of ways to pay for goods and services using both cellular and internet. For instance, paying with QR codes is coming. Without adequate internet, we can't keep up"*

*- Restaurant Manager*

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Several of our interviewees mentioned that commerce and industry are rapidly evolving toward virtual-centric model where all the work is

done online, back-ups are kept online, and increasingly brick and mortar office space is being replaced with internet-based collaboration mediated by robust multi-user apps and video-conferencing. Web-based Software, such as Service Applications, are replacing locally deployed enterprise software and cloud storage is used for back-up. In that kind of environment the federal upload and download minimum speeds of 50/10 Mbps pale in comparison to the 600 Mbps speeds presently available in urban milieus. The picture this paints is that unless internet connectivity improves dramatically, island businesses will increasingly be left behind and condemned to remaining small-scale, primarily seasonal outfits, instead of being the healthy backbone of a strong island economy.

### Conservation Economy

The Southern Gulf Islands are a beacon of ecological awareness. The region hosts large remaining tracks of endangered Coastal Douglas Fir and Garry Oak ecosystems, and is situated within the Salish Sea, home to a diminishing Southern Resident Killer Whale population that is in turn reliant on depleting Chinook salmon stocks.

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The region is also home to scientists and professionals working in the field of conservation. Examples such as the Saturna Island Marine Research & Education Society and Galiano Conservancy’s Millard Learning Centre demonstrate the potential of the region to further develop its conservation economy.

Those working in the conservation sector report that they need to modify their practices when working in the SGI and, in some cases, accept the limitations of data collection in the region. They noted that until internet connectivity is improved, they are unable to:

- Utilize specialized digital applications for field work, education, and data collection.
- Create opportunities for Citizen Science, including Bio-Blitz programs that require uploading of data in real-time.
- Expand use of programs like Seek, i-Naturalist, Report-a-Weed, and I-APP database.
- Conduct remote conservation work and ensure the security of their data.
- Offer on-site education programs.
- Create or develop real-time data collection initiatives, such as weather station tracking.

*“The two most pressing issues for the Islands Trust Conservancy as we look at the next 5 to 10 years is climate change and monitoring the impacts of that, as well as species at risk – doing more to monitor and manage, protect, restore the natural habitat of species at risk. Having improved internet connectivity would really help those initiatives in particular for environmental data collection using on site recording devices as well as monitoring devices for species at risk. Better internet would allow us to more fully implement the plan for species at risk and climate change adaptation. Further, it would enable the Islands Trust Conservancy staff to work either permanently or for longer periods of time within the islands in which they are doing their work. It would mean less commuting and that would definitely lower our carbon footprint. Also, there are so many meetings that with improved connectivity could be replaced by videoconferencing. That would strengthen connections because the staff could meet more often without having to do it in person all the time.”*

*-Islands Trust Conservancy*

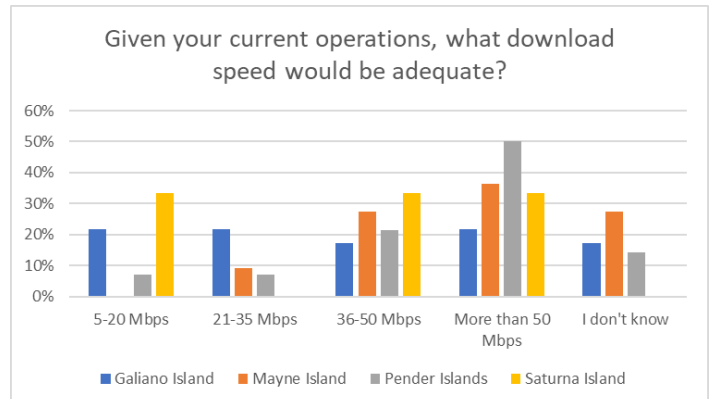
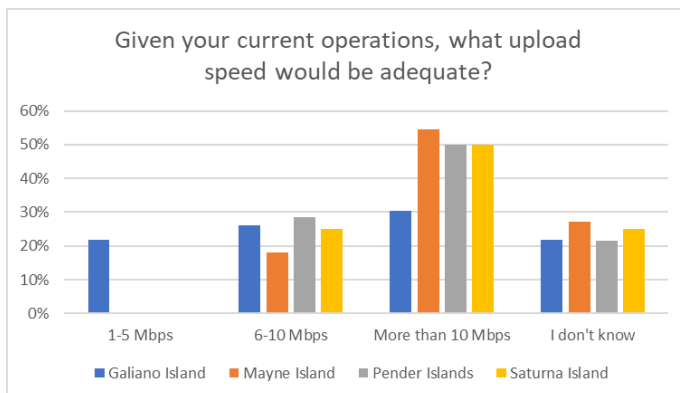


Figure 10 – Source Business Survey 2019/2020



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### Volunteerism and Island Sustainability

As part of an unincorporated rural Electoral Area under the jurisdiction of the Capital Regional District (CRD), the SGI do not benefit from all the services and supports available in a typical urban setting to meet the needs of the resident population. As a result, many non-profit societies, associations, committees and clubs have been formed through the years to meet these needs. Virtually all are run by volunteers and precariously funded by local fundraising and government subsidies. With a declining and aging population, there are increasing signs of volunteer exhaustion and a diminished ability to fundraise. This parallels the stress points mentioned earlier for the business sector. The inability to attract younger professionals to the SGIs because of inadequate connectivity also means the community is unable to replace the elders who have aged out and left the island in running these essential volunteer organizations. Besides a progressive loss of capability, there is also a reduction in competence and funding, as well-educated, affluent professionals stay away. While the islanders are self-reliant and eager to get things done, there is a lack of technical and managerial competencies which middle class professionals would bring to the islands.

### Education and Professional Development

Specialized training and education services are not available locally for SGI residents and access to them requires travel, overnight stays, and absences from work. For some that were interviewed, these barriers make it impossible to upgrade their skills or train for a new career, particularly when they are unable to travel due to their role as primary caretaker for a child or parent.

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*“Think Holodeck, where people engage in digital experiences for training and fun! That's going to require way more than 50 Mbps!”*  
*-Emergency coordinator, about evolving training technologies*

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Online education has become a standard mode for learning and is generally available for all disciplines. It requires reliable and high-speed internet, and until that is available, residents in the SGI are unable to:

- Adopt new technologies and provide related training to their staff.
- Take courses required to stay current and competitive within their professions, sometimes as mandated by professional associations to maintain credentials.
- Enjoy the health and social benefits associated with life-long learning habits.
- Remain on track in a fast-paced, information-driven economy.

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- Provide training and education locally to retain a diverse and youthful population.

The emergency services sector in particular reported that training volunteer responders has grown increasingly challenging in recent years, as fast-paced industry advancements have far exceeded the local departments' abilities and budgets to send volunteers away for training. Extensive travel and time away from work and family also overtaxes the volunteer base.

Children in this region are able to attend a local school on their island during their elementary years. These schools are served with fibre optic broadband, but due to school district requirements this service cannot be further distributed to the community. Once students age into travelling off-island for school, families report feeling marginalized from School Board governance because they aren't able to participate remotely, and some students lack access to remote learning tools needed to fully participate in learning.

### Resident Perspectives

Feedback from interviews, community meetings, and survey responses have shown overwhelming support on the part of SGI residents for improving connectivity on the islands. In particular, 88% would like to see higher internet speeds and reliability.

Residents prioritized the following ways in which improved connectivity would improve their lives: accessing information and entertainment; keeping in touch with friends and family; and saving money. Residents also identified many of the same themes and concerns about the impact of connectivity on livability as were discussed in the context of operating organizations and businesses, namely, improving emergency services and health care and thereby ensuring a safer place to live; and perhaps most importantly, attracting young professionals in the green economy to increase the population, ensure adequate volunteers to support local organizations, reduce ecological impact, and bolster the communities’ resilience against the threat of climate change. It is widely felt that the quality of life on the islands would be improved with faster and more reliable internet speeds.

#### How Would Better Connectivity Improve Your Life?

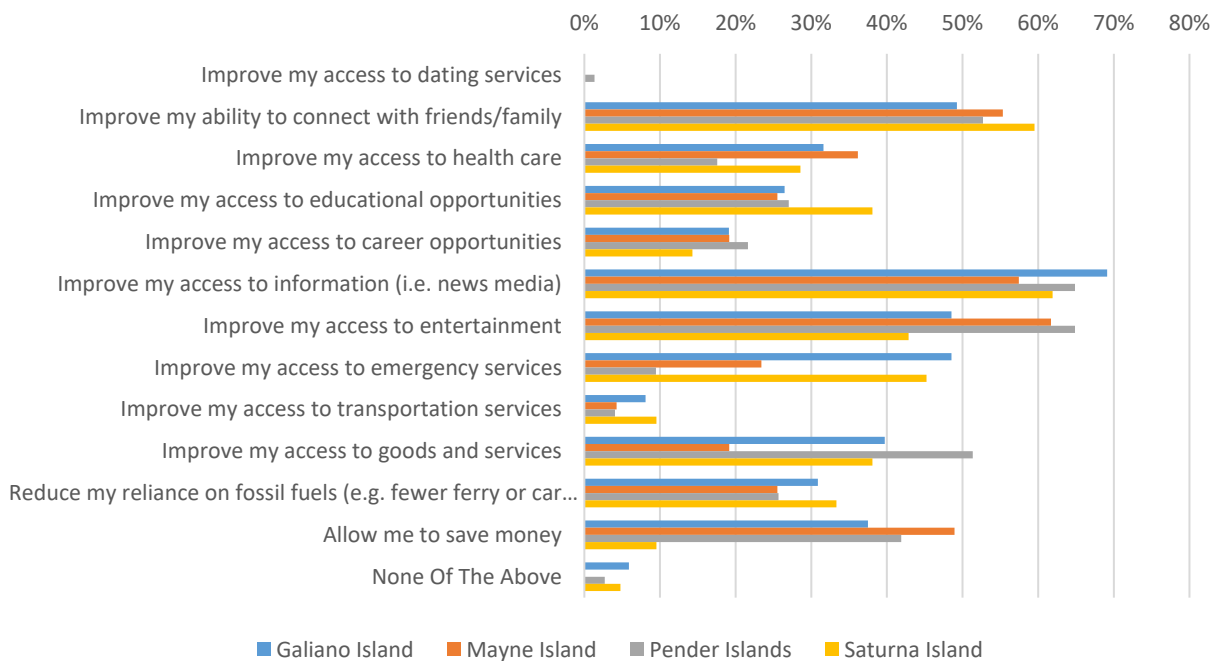


Figure 11 – Source: Resident Survey 2019/2020

### The SGI as a Home for Youth and Young Families

One specific concern that was shared was that some islands are at risk of losing their elementary schools due to low attendance. Families with children in the Southern Gulf Islands enjoy a quality of life and community not found in urban centres, but the lack of services is challenging. If these schools close, children will no longer be able to attend school within their community and will have to travel by boat for several hours each day to attend a centralized school. This extends their school day by several hours, means that they must overnight away from their family or choose to not participate in extracurricular activities, and depletes the community of its youth. The impact of transporting elementary children to a centralized location would have a negative impact on the children, their families and a loss of jobs for those who work at the schools.

The underlying problem is not the low school population. The underlying causes of the decline of island population are that the older community members move off-island to get closer to medical facilities as they grow older, and the islands have been unable to attract younger families in sufficient numbers to fill the gap.

Interviewees were particularly optimistic that with improved digital connectivity would come a bolster in youth and young families moving to the island.

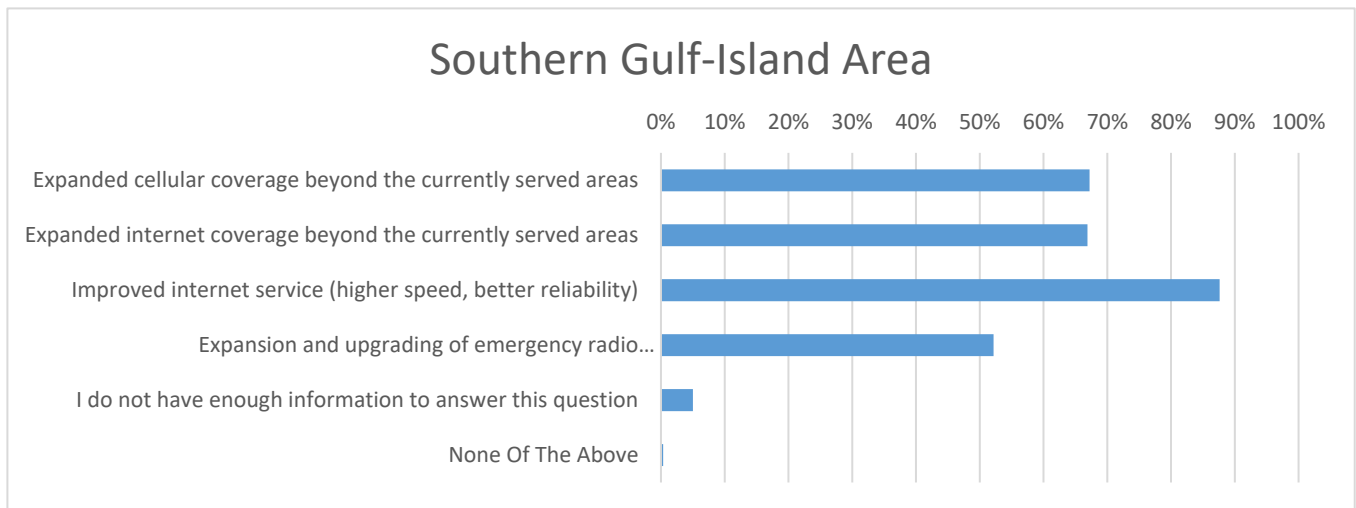


Figure 12 - Support for Connectivity Improvements. Source: Resident Survey 2019/2020

The focus of this process was on communities’ needs and opportunities for economic, social, and environmental sustainability that improved connectivity would bring. This process did not focus on the technology and

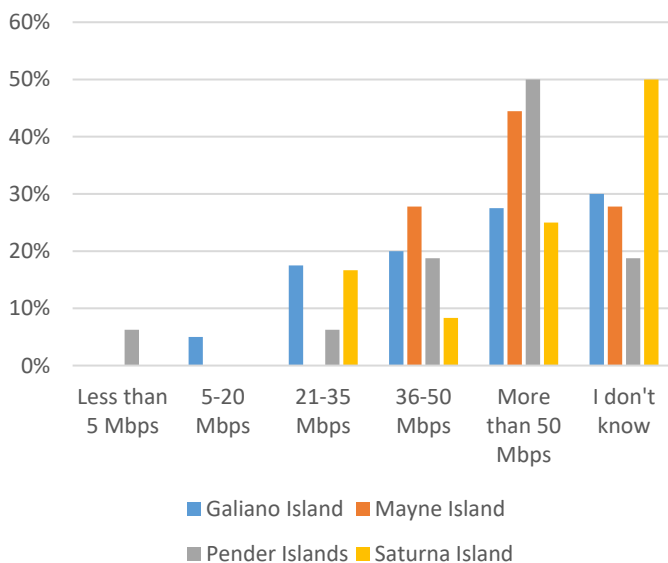
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infrastructure that would be required to deliver new service in the region and information was not provided about the different options of connectivity technology currently employed. However, when asked, 62% of respondents favoured fibre and 44% wireless. About a quarter of the respondents said they did not have enough information to answer the question. We received three responses stating concerns with EMF frequency and opposing internet expansion in general. In the community meetings and interviews, there was discussion about the expected Connected Coast undersea fibre project and hope that it will improve access to fibre optic connectivity for the region. Discussions acknowledged the high costs associated with underground fibreoptics and the site-specific island variability that impacts last mile connectivity designs. There is also an understanding that a combination of technology would likely be needed to serve the islands and meet the minimum standards of connectivity. It was brought up that overhead lines could be a first step of a phased approach, but BC Hydro owns the poles and it is costly to rent space. BC Hydro was not a part of the consultation process, however it has been flagged that they are a key player to coordinate with in the future.

What download speed do you anticipate you will need over the next 2 to 5 years?



What upload speed do you anticipate you will need over the next 2 to 5 years?

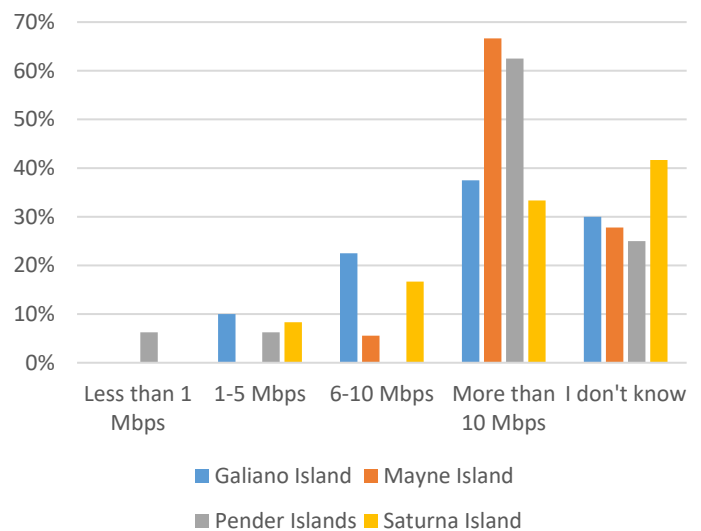


Figure 13 - Source: Resident Survey 2019/2020

## Conclusions

In-depth community engagement was conducted with residents, community groups, businesses, internet service providers, non-profits, and government agencies to discuss the limitations of the current lack of connectivity and the potential for better, faster, more reliable internet to support the social, economic, and sustainability goals of the SGIs. The conclusions and recommendations of this report are based on the survey responses and on the significant qualitative data that was collected in the way of interviews, group discussions, and public meetings.

This process has confirmed that improved connectivity is a fundamental requirement for SGI communities to revitalize their communities. Connectivity is an integral piece of core community goals, including:

### Attracting and retaining young families

- It is strongly anticipated that improved connectivity would support young families and enable more working professionals to choose to live on the islands, shifting the demographic trend of an aging, shrinking population.

### Lowering the region's ecological impact while promoting economic development

- Bringing the SGI region to meet Federal standards will reduce the significant environmental cost of travelling to access services. The health of the local economy will improve through the creation of more options for island residents to have sustainable income sources and the attraction of more professionals in green economic sectors; sustainable industries like the conservation economy can grow with the ability to store data and communicate across distances.

### Improving emergency response, community health and well-being

- Better connectivity will improve quality of life, reduce expenses, and improve access to health and social services, government programs, education options, and social cohesion. It will have a significant impact on residents' access to health and emergency services. Initiatives like Telehealth and Home Health Monitoring would provide access to physicians and specialists and not only reduce the cost of delivering health care, but also reduce the travel needed for residents to access health services.

## Recommendations and Next Steps

This connectivity plan represents a community based assessment of the challenges faced by the rural island communities in the Southern Gulf Islands Electoral Area. It identifies how better connectivity would support solutions to the SGI's social and economic community needs. Servicing the SGI region with the minimum federal standard of 50/10 mbps would offer the base level of connectivity essential to meet community goals and should be prioritized by the Provincial and Federal governments. The following recommendations are proposed as a way forward towards resolving the issues identified throughout this process. A concerted effort to access public funds, private sector investment, and to coordinate an integrated, regional design is required.

- Technical analysis and connectivity design plan(s) should identify how the SGI as a region can be served with a level of connectivity to meet minimum national standards.
- Infrastructure solutions for last mile connectivity should provide a range of options of technology and estimate the associated cost of development and maintenance. Because of the varied geography and dispersed populations, there may be a need to integrate different kinds of service delivery and thus form partnerships with more than one Internet Service Provider.
- In a phased approach to last mile connectivity, design solutions should prioritize community hubs, commercial centres, and public service buildings.
- CRD should provide a coordinating role and seek partnerships with one or more Internet Service Providers to conduct an infrastructure design plan, and advance applications to the Federal and Provincial government funding programs to support implementation.
- It is recommended that the Federal and Provincial governments remove barriers to ensure the Southern Gulf Islands Electoral Area are eligible for any possible infrastructure funding programs (especially the Island Coastal Economic Trust (ICET), and access to Community Futures).
- Islands Trust Local Trust Committees should consider this report as demonstrating broad community support for service improvements when deciding concurrence, as required to meet Innovation, Science, and Economic Development Canada (ISED) requirements for telecommunications infrastructure proposals.



## Appendix 1: Summary of Consultation

### SOUTHERN GULF ISLANDS CONNECTIVITY PLANNING

#### SEPTEMBER – DECEMBER 2019

The SGI Connectivity Planning process sought to have a wide range of input from the residents, community services, businesses, and government workers on each island. A number of different communications and engagement tools were utilized; these were provided in print and shared on-line via social media, the website, and a media release. Backgrounders, FAQs and hard copy surveys were also distributed to Sector Interview and community workshop attendees.

- Four page Frequently Asked Questions (FAQ)
- Two-pager Backgrounder on the project
- Two surveys were developed and hosted on the CRD website. They were also available in paper copy. The surveys targeted different audiences:
  - Residents
  - Business sector (included public and private service providers)
  - There was also a speed test survey people could take to measure their internet speed.
- Media Release Issued on November 6, 2019
- Print Media
  - Two project advertisements ran in the November and January issues each of the local island newspapers:
    - *Galiano Active Page*
    - *Saturna Scribbler*
    - *Pender Post*
    - *Mayneliner*
- Social Media - The project was announced and promoted using social media. The Community Economic Sustainability Commission's Facebook group was used to post to each island's home discussion page. Posts were "boosted" to increase engagement.
- Conference Presentation: Rural Islands Economic Forum

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- Project staff presented the project on a Broadband Panel at the Rural Islands Economic Forum (Poets Cove, Pender Island, November 7/8, 2019). In addition to CRD staff for the Southern Gulf Islands, the panel included representatives from the Province, Strathcona Regional District (Connected Coast), Shaw, Telus, and Beacon Wireless.
- Islands Trust
  - Letters introducing the project and inviting participation were sent to the Mayne Island Local Trust Committee, the North Pender Local Trust Committee, the South Pender Local Trust Committee, the Saturna Island Local Trust Committee, and the Galiano Island Local Trust Committee.
  - A public presentation/delegation was presented by CRD staff at four public LTC meetings (one/island).
- Mailout – Residents were sent information about the project in the mail. The information encouraged people to fill out a survey and give their input.
- CBC Radio Interview: Aired November 21, 2019 within the “On the Island,” news segments for CBC Vancouver Island.

## Sector Interviews

Interviews were conducted with a wide range of sectors on each island. The results of these interviews form a substantial qualitative data set informing the SGI Connectivity Plan. See the table below for a list of interviewees.

## Community Workshops

Community Workshops were held on each of the islands.

Mayne Island – November 22

Pender Island – November 29

Saturna Island – December 5

Galiano Island – December 13

The workshops used an interactive and iterative format to gather input. People were asked to consider how better, faster, more reliable internet would impact community themes such as economy, transportation, community resilience, conservation, emergency response, education, health care, etc. Examples from the sector interviews

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were shared with workshop participants and each island was assigned a different coloured dot to vote for statements they agreed with.

### Format:

- Presentation and background information
- Short video highlighting the experience of Port McNeil, Bella Bella, or Cumberland
- Open house – Dotmocracy/Flip Chart milling stations
- Group Discussion

## SECTOR INTERVIEWS CONDUCTED:

SGI SEPTEMBER –DECEMBER 2019

### RETAIL

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Owner, Galiano Soapworks	Manager, Tru Value Grocery Store	Mayne Island Brewery	Saturna General Store
		Home Hardware Store	Money Family Farms
		Alea Printing	Grouchy Crab Pottery & Gifts
		Village Bay Repairs	Saturna Island Propane
		Nomad Essentials	Vibrational Greens
		Active Pass Auto and Marine Ltd.	
		Terrill Walsh Art Gallery	
		Envision Gallery	

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		Meadowmist Farm	
		Barber Shop	

### HEALTH CARE

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Emergency Services Coordinator/RN	Executive Director, Pender Islands Health Care Society	Resident General Practitioner	Saturna Medical Clinic
Board Member, Galiano Health Care Society	Provider, Online Health Education	Psychotherapist	Volunteer Emergency Responder
Community Paramedic, BCAS		Mayne Island Health Center Ass'n	
Executive Director/Manager, Galiano Health Care Society		Mayne Island Assisted Living Society	

### EMERGENCY SERVICES

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Emergency Services Coordinator	Unit Chief, BC Ambulance	Mayne Island Fire Chief	Emergency Advisory Committee
Deputy Emergency Services Coordinator	Assistant Chief, Pender Island Fire Rescue	Mayne Island Emergency Coordinator	Saturna Island Fire Protection Society

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Fire Chief, North Galiano Fire Department			
Fire Chief, South Galiano Fire Department			

### INFORMATION/TECHNOLOGY/COMMUNICATIONS

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Individual tech workers	Digital Service Provider	Alea Printing/Mayneliner	SaturnaNet Coop
	Manager, Pender Post	Self-employed technical consultant	Saturna Sunset Scribbler
	Computer Technician	DarrenAndMike.com (Telemarketing)	
Shaw Cable			
Xplornet			
Beacon Wireless			
South Island Internet			

### HOSPITALITY

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Proprietor, Eagles Nest Retreat	No response	Mayne Island Resort	Saturna Island Tourism Association
		Blue Vista Resort	Money Marina
		B&B Owner	

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		Bistro Restaurant	
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### PUBLIC SECTOR

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Board members, Galiano Library Society	Recreation Coordinator, Pender Island Community Hall	Chair, Chamber of Commerce	School District 64
Director, Galiano Island Resources and Recycling	Islands Trust	Commissioner, Mayne Island Parks and Recreation Commission	Islands Trust
Board member, Parks and Recreation Commission		Chair, Community Economic Sustainability Commission	Eddie Reid Memorial Library
Operations Manager, Galiano Community Daycare		Chair, Housing Society	
Director, Community Development Office		Directors, Mayne Island Agricultural Society	
Volunteer, Galiano Club		Community Bus Volunteer	
Trustee, Islands Trust			

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### EDUCATION

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
School District 64			
Director, Galiano Conservancy Association			Saturna Ecological Education Centre
Executive Director, Access to Media Education Society			
Professor, UBC Dept. of Education			

### ARTS & CULTURE

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
2 Independent visual artists	Ptarmigan Arts	3 Independent visual artists	ArtSaturna
		Envision Gallery	Saturna Recreation and Cultural Centre
			Owner, Photography
			Owner, Photography
			Cyclone Fighting Arts

### REMOTE WORKERS

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Privacy Consultant	Telecommuter – IT sector	IBI Group	Architect



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CAD Consultant		Architect	Owner, Medical Consulting
Government researcher		Business Consultant	Owner, Database Design and Programming
Web Designer		Self-employed technical consultant	
Translator		DarrenAndMike.com (Telemarketing)	
Visual Effects Programmer			
Accountant			
Science student			
Professor, UBC Dept of Education			

### TRANSPORTATION

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Proprietor, Porlier Pass Provisions Charters	Pender Island Community Bus	Community Bus	Saturna Shuttle
Board members, Galiano Transportation Society	Pender Island Taxi	Private Charter Boat Owner/Operator	Ocean River Sports
Proprietor, Galiano Courier			
Manager, Gulf Island Kayaking			
Galiano Trustee, SD64			

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### REAL ESTATE

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Manager, Gulf Islands insurance	No Response	Chair, Mayne Island Housing Society	AA Money LTD.
Realtor, Galiano Island Realty		Builder	
Proprietor, Hunterston Homes			

### CONSERVATION ECONOMY

GALIANO ISLAND	PENDER ISLANDS	MAYNE ISLAND	SATURNA ISLAND
Curator, Biodiversity Galiano	Raincoast Conservation Society	Mayne Island Conservancy Volunteer	Saturna Island Marine Research and Education Society
Islands Trust Conservancy			

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## Appendix 2: Community Engagement Results

### Southern Gulf Islands Connectivity Workshop Results

Community Workshops were held on each of the islands in the fall of 2019.

Mayne Island – November 22

Pender Island – November 29

Saturna Island – December 5

Galiano Island – December 13

The workshops used an interactive and iterative format to gather input. People were asked to consider how better, faster, more reliable internet would impact community themes such as economy, transportation, community resilience, conservation, emergency response, education, health care, etc. Examples from the sector interviews were shared with workshop participants and each island was assigned a different coloured dot to vote for statements they agreed with (Mayne –red; Pender- blue; Saturna- yellow; Galiano-green).



The format included:

- Presentation and background information
- Short video highlighting the experience of Port McNeil, Bella Bella, or Cumberland
- Open house – Dotmocracy/Flip Chart milling stations
- Group Discussion

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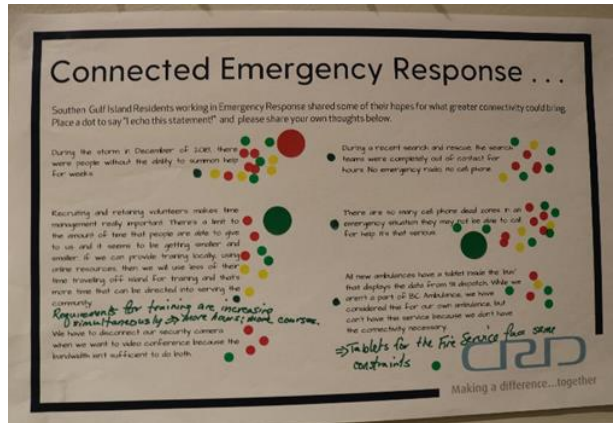
### Flip Charts Transcribed

#### Health and Wellness

"Hot line health answers to common concerns and conditions."

"Connectivity allows transmission of photos of skin/swelling/other medical conditions to support diagnosis and triage."

"Telehealth—online consultations with medical specialists would save money and time."



#### Emergency Response

"CAD (Computer and Dispatch) with accurate location."

"Training of volunteer ambulance and fire responders is very expensive for our community. Online training would save our community money and time and would help to recruit newer/younger volunteers."



"Emergency Program uses numerous online protocols to exchange information in case of disaster. For the most part these require robust hydro supply just to ensure connectivity on Saturna and Galiano. We do not at present have this reliability."

"Cell service would provide us range to reach out if in trouble on roads or trails not currently served by cell service."

"Requirements for training are increasing simultaneously—more hours, more courses."

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### **Economy**

“Solid, reliable internet forms the foundation for small to medium sized businesses in the SGIs.”

“Take part in distance education careers.”

“Young working families could live here and “renew” the community. Lots of good jobs are now done mainly online—graphic design, writing jobs, etc.”

“If I’m doing something which requires a good connection, like teaching or video conferencing then I cannot risk coming here.”

“If I can work from home it reduces the cost of living for my family.”

### **As Residents**

“Helping seniors stay at home supported by remote family members.”

“Paying for a service that doesn’t deliver is a waste of money.”

“All Service Canada submissions require internet connectivity: submitting taxes, checking pension and child tax benefit info, etc. Not having good connectivity creates second class Canadians.”

“It reduces costs to use internet for entertainment and not having to add satellite tv.”

“We could download and stream music, tv and movies.”

“Improves quality of life.”

“Affordable housing (compared to city)—if one had a real income from a full-time job that could be done mostly online.”

“Why live in the country if you want city amenities?”

“People living with principles intact.”

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“Deliver online training.”

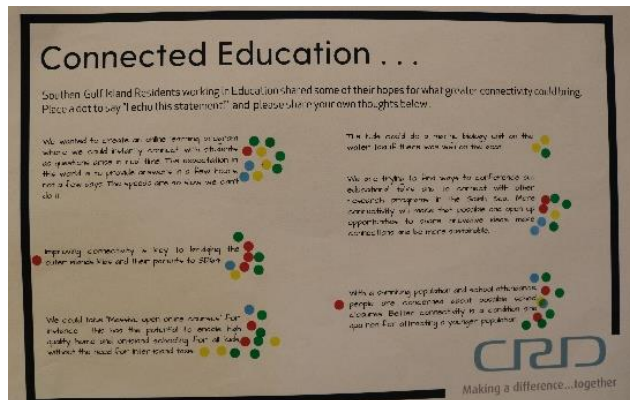
### Conservation

“Monitoring via webcam: the SRKWs [Southern Resident Killer Whales], birds, marine life.”

“Better ability to share data.”

“Ability to tap into broader support—funding for land conservation and marine conservation.”

“Perhaps we could attract scientific research to Saturna to help improve our understanding of the environment.”



### Education

“Online education programs”

“Access to SIDES (South Island Distance Education) that is consistent.”

“As a practicing music teacher I access YouTube, etc. in lessons. At my download speed presently, this is impractical.”

“Getting the answers quickly, and the culture that goes

with this expectation does not cultivate or encourage critical thinking.”

“Provide online education opportunity for all residents—not just K-12.”

“Lifelong education access.”

“Can the library hook up with the school’s high speed internet?”

### Internet Service Providers

“ISPS need to be a part of this conversation.”

“We don’t have any competition for Shaw. They operate as a gouging monopoly.”

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"No service from Shaw or Telus at all—never will be."

"Need fibre cables."

"Need good hard wired connections for privacy/security; reasonable service and prices from ISPs."

### **Arts and Culture**

"Shaw limits access to programs (TV)—costs increase if one chooses certain channels."

"Most art shows are now juried digitally."

"All graphic art/illustration jobs are computer based."

"Large presentations to whole community for interaction and discussion after presentation."

"Actually stream concerts, programs, etc."

"Someone who is ill or home-based could be a part of entertainment, learning, books etc. with connectivity and streaming."

"Artists can't maintain their websites."

### **Community Resiliency: Climate Change and Diversity**

"Critical community information sharing in emergency—a crisis in one area of the Island brings help from other areas and support."

"Connectivity is key to being able to work in a manner that mitigates climate change (and adapts to it)."

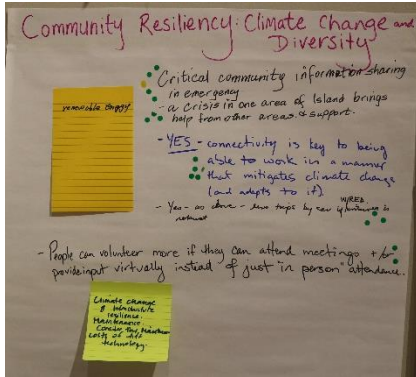
"People can volunteer more if they can attend meetings and/or provide input virtually instead of just "in person" attendance."



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"Climate change and infrastructure resilience. Maintenance—consider the maintenance costs of different technology."

"Less trips by car if wired internet is robust."

"Renewable energy."

### Hopes and Fears

"Keep in touch with family and friends."

"Emergency Public Notifications."

"Do not need another bureaucracy eating up resources that should go toward infrastructure."

"Fear—excessive costs ever climbing."

"Hope—that this time it will actually get done."

"Effects of wireless and cell phone technologies on health of animals and people."

"Health issues."

"Concerns about the fracturing of human contact because of too much wire connection. Also if there's not contact except for in-person. Effects can be both positive and negative."

"Our community "disconnected." "

"Wireless technology has not been proven to have any negative effects on health of people or animals. Risk vs. benefit scenario—benefits far outweigh potential risks."



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### **Public Service**

“Partner children with seniors.”

“BC Ferries is moving to only online schedule, this will disenfranchise islanders without reliable internet access.”

“As a senior, the internet keeps me sane and keeps me connected to friends and family and the bigger world.”

“Not all seniors have or want access to the internet.”

“Often I have several meetings on Vancouver Island per month (sometimes multiple in a week). Each time I must spend 12+ hours off-island to attend—would prefer to videoconference.”