



**strategic**  
networks group

advancing economies in a digital world

# City of St. Helens Broadband Assessment and eStrategy Report

Prepared for:  
City of St. Helens, Oregon

Final Report – Issued:  
June 14, 2024



## Project Acknowledgments

The SNG team would like to thank the following for their contributions to the success of this project:

John Walsh, City of St. Helens, City Administrator

Paul Vogel, Executive Director, Columbia Economic Team

Rick Scholl, City of St. Helens, Mayor

Patrick Birkle, City of St. Helens, City Councilor

Ginny Carlson, City of St. Helens, City Councilor

Keith Locke, City of St. Helens, City Councilor

Stephen Topaz, City of St. Helens, City Councilor

R Barry, City of St. Helens Government Affairs and Project Support Specialist

Doug Hayes, Port of Columbia County Executive Director

## Table of Contents

1	Executive Summary.....	5
2	Glossary of Terms .....	9
3	Introduction.....	11
3.1	The Context for Action.....	13
4	Digital Needs and Readiness Assessment of City of St. Helens .....	14
4.1	Challenges and Aspirations – the Strategic Role of Broadband .....	16
4.2	Summary of DNRA Findings .....	17
5	Broadband Economic Case Analysis .....	18
6	St. Helens Broadband Impact and Market Assessment .....	20
6.1	Connectivity and Affordability.....	21
6.2	Reliability and Satisfaction.....	22
6.3	Internet Utilization .....	23
7	Analysis of Existing Digital Infrastructure and Broadband Service .....	27
8	Digital Inclusion for Economic and Local Development .....	29
8.1	Internet Adoption and Digital Inclusion .....	29
8.2	Community Anchor Institutions in St. Helens.....	29
8.3	Leadership with Digital Infrastructure in St. Helens.....	31
9	Digital Infrastructure for St. Helens.....	32
9.1	Strategy for Broadband and Digital Infrastructure Investments.....	32
9.2	Path Forward Options for the City of St. Helens .....	33
9.3	Digital Infrastructure Model to Enable Competition.....	35
10	eStrategy for St. Helens.....	36
10.1	Recommendations and Next Steps for St. Helens.....	36
Appendix 1 -	Community Anchor Institutions in St. Helens.....	38
Appendix 2 -	Broadband Deployment Cost Calculation Methods.....	40
Appendix 3 -	Definition of Concordance .....	41

## List of Figures and Tables

Figure 1. Digital Infrastructure Project Methodology .....	11
Figure 2. Household Connectivity.....	21
Figure 3. Household Monthly Spending on Internet .....	21
Figure 4. Likelihood of Relocation for Broadband by Age Group.....	22
Figure 5. Likelihood of Relocation for Broadband by Household Income.....	22
Figure 6. Household Internet Use for Productivity.....	23
Figure 7. Increase to Annual Household Income DED Comparison .....	23
Figure 8. Telework Motivation for Households.....	24
Figure 9. eCheckup Business Online Practices .....	25
Figure 10. Household Use of Telehealth Services .....	25
Figure 11. eCheckup and DED Remote Working Comparison.....	26
Figure 12. Household Barriers to Using the Internet .....	26
Figure 13. BroadbandAnalyzer Mapping: Unserved Census Block Locations .....	28
Figure 14. Structural Separation of Digital Infrastructure.....	35
Table 1. Analysis of Unserved Locations by 25/3 with Fiber Cost Estimates .....	6
Table 2. Glossary of Terms .....	9
Table 3. St Helens Top Five Goals.....	14
Table 4. St Helens Top Five Issues and Needs .....	15
Table 5. St Helens Broadband Quality.....	15
Table 6. DNRA Other Issues and Challenges.....	16
Table 7. Economic Case Municipal Broadband Investment Options.....	18
Table 8. Economic Case Municipal Broadband Costs and Savings .....	18
Table 9. BroadbandAnalyzer: Unserved Households by Census Block.....	27
Table 10. BroadbandAnalyzer: Fiber Deployment to Unserved Locations Cost Estimate .....	27
Table 11. Options in Addressing Broadband Gaps .....	34
Table 12. Community Anchor Institutions: Location and Type .....	38
Table 13. Fiber Deployment Cost Estimate Figures.....	40

## 1 Executive Summary

Broadband service gaps in the City of St. Helens exist and will continue until a viable solution aligns community needs with a viable business case for internet service providers. To bridge these gaps, the City of St. Helens can pivot to facilitating a digital infrastructure model, which like an airport authority, reduces the capital cost barrier for the private sector to provide broadband to unserved and underserved areas.

This **Broadband Assessment and eStrategy Report** identifies areas that are unserved with high-speed internet (broadband), as well as specific groups that are underserved and disadvantaged resulting in broadband gaps in St. Helens (see Section 6). The findings and insights were developed from data collected in St. Helens and broadband supply and demand analytics to identify gaps, barriers, and opportunities. The economic case and cost estimates in Section 5 are a basis for negotiating a public-private partnership and serve as a framework for mounting competitive grant applications for the significant state and federal broadband funds available (e.g. BEAD funding in 2024-25) and for attracting private investment. The recommendations in Section 10 are designed to chart a roadmap for short and longer-term community prosperity and resiliency, addressing both the needed infrastructure improvements and how different groups would benefit from better broadband.

### Background

Areas unserved and underserved with broadband exist in St. Helens because private sector internet service providers, on their own or collectively, do not have enough of a business case to invest, otherwise they would have done so already. Private sector providers have a fiduciary obligation to only target areas they assess to be profitable. Furthermore, most of the payback from digital infrastructure investments are community benefits, which are off-balance sheet to private sector internet service providers. As a result, the City of St. Helens needs to find inclusive, long-term solutions that leverage economies of scale for sustainability, and that enable the private sector to provide internet service in the city and surrounding area in a less capital intensive and more cost-effective manner.

The City of St. Helens **can realize the full economic impacts and community benefits from digital infrastructure over the long term** by facilitating the process and investment in digital infrastructure. A core municipal network can be self-financed with the reallocation of existing telecommunication budgets in St. Helens. There is also sufficient unmet demand for broadband in St. Helens to make the case for investment from the incremental economic impacts and community benefits from digital infrastructure, such as smart-community services, local business retention and growth, and increased opportunities for remote working.

The City of St. Helens can facilitate a public-private partnership to bring investments in digital infrastructure and inclusion that are needed for network sustainability, local economic growth, and community benefits

Digital inclusion activities will be needed to transform the unmet potential demand<sup>1</sup> in St. Helens to grow the broadband market for private service providers and to drive local economic impacts and community benefits. This growth in broadband demand and resulting socio-economic benefits make a case for investing in digital infrastructure in the City of St. Helens.

### A New Approach to Investing in Broadband – Digital Infrastructure

Digital infrastructure is more than simply fast broadband access. Digital infrastructure connects all anchor institutions, residents, and businesses in the community so that all can effectively participate in an

<sup>1</sup> See <https://sngroup.com/broadband-demand-definitions/>

increasingly online economy. Indirect community benefits (local job retention and growth, increased local GDP and tax base, etc.) are significant and primary drivers for public investment in infrastructure (roads, water and sewer systems, electric utilities). Like roads and electrical grids, digital infrastructure enables benefits to local economic vitality, competitiveness, resilience, and quality of life.

Ubiquitous, affordable broadband can be achieved through digital infrastructure by building enough critical mass and network scale that enables sustainability and partnerships with investors (public and private) in which network ownership is structurally separated from operations and retail internet service delivery. This enables competitive service offerings without increasing government liabilities or becoming a competitor to incumbent providers. Instead, digital infrastructure reduces barriers to entry, enables competition, and reduces capital costs for private providers to enhance internet service delivery to St. Helens residents, organizations, and businesses.

### Key Findings for St. Helens

The broadband assessment and development of an eStrategy for St. Helens was conducted in phases: Phase 1: Scope, Vision, and Goals, and Phase 2: Community Engagement and Market Assessment. Each phase had steps with a go/no-go decision to proceed to the next step based on whether there was a strong enough case to move forward.

Key Findings from the City of St. Helens Broadband Assessment and eStrategy Report identified broadband gaps, including verification of areas where St. Helens had connectivity challenges:

- Analysis of FCC Data shows there are 1,073 unserved households at 25/3 Mbps whereas FCC broadband mapping reports the area is fully served with 25/3 Mbps
- 27% of St. Helens residents do not have access to the minimum level of broadband of at least 25/3 Mbps
- There are 14 community anchor institutions (schools, medical institutions, government facilities) located within 7 unserved census blocks
- Locations within “served areas” are still reporting low internet speed tests, and there is documented interest in better service and speed
- There is a strong interest among residents and businesses to participate in the digital economy as indicated by findings related to telehealth and teleworking utilization (See Section 6.3).

*Table 1. Analysis of Unserved Locations by 25/3 with Fiber Cost Estimates*

<b>BroadbandAnalyzer® Overview Analysis</b>				
<b>Broadband Availability</b>	<b>Number of Locations</b>	<b>% of Locations Served/Unserved</b>	<b>Total Fiber Cost Estimate</b>	<b>Avg. Fiber Cost per HH</b>
<b>All Households</b>	5,636	100%	-	-
<b>Unserved: 25/3 Mbps</b>	1,073	27%	\$3,123,495	\$2,911
<b>Served: 25/3 Mbps</b>	4,563	73%	-	-

St. Helens will need **capital investments of \$3.1 million to bridge identified broadband gaps** in the unserved and underserved areas within St. Helens, as summarized in Table 1 above (for details see Section 7: Analysis of Existing Digital Infrastructure and Broadband Service).

There is also an economic case for municipal investment towards upgrading broadband service to local community anchor facilities – including City Hall, Libraries, Public Works Facilities and Recreation Centers. These locations were identified during the Economic Case Analysis (see Section 5) and financial modeling shows that **St. Helens can self-finance up to 93% of a \$1.35 million core municipal network by reallocating existing internet service budgets to digital infrastructure**. This approach will enable the city to expand the existing broadband availability footprint within municipal boundaries, while also facilitating the development of digital infrastructure and network backbone to serve all St. Helens residents and businesses.

St. Helens has a vested interest in undertaking a broadband initiative and becoming a steward of its digital future because affordable, ubiquitous broadband is the key that unlocks local economic potential, sustainability, and community vitality. St. Helens has an important role as facilitator of the process for digital infrastructure investment and deployment. While providing internet service to all locations should be viewed as a priority, it is only part of the comprehensive solution needed to ensure the City's digital competitiveness. There is also a benefit and compelling need to enhance the utilization of online practices (eLearning, telehealth, online civic services, etc.).

Based on the research and analysis from assessing digital needs and readiness, analyzing the economic case for self-financing digital infrastructure, and assessing the broadband market, the following recommendations and next steps are proposed (see **Section 10: Developing a Path Forward – eStrategy for St. Helens**):

- **Hire a Digital Economy Manager:** hire a half-to full-time position, or secure necessary expertise, to implement and coordinate eStrategy action items and promote innovative uses of the digital infrastructure by local businesses, organizations, and households.
- **Train Digital Navigators** to implement digital inclusion activities and thereby support local residents, organizations, and businesses by leveraging efforts of local stakeholder organizations and developing Digital Inclusion Hubs
- **Access Federal and State Funding:** pursue funding opportunities summarized in *Section 9.5*
- **Prioritize which Digital Gaps to Bridge:** based on eCheckup findings, develop targeted outreach strategies to bridge those gaps. This includes engaging local stakeholders in the process and raising awareness about offerings and opportunities.
- **Track Economic Impacts and Community Benefits:** regularly measure outcomes and impacts to enable the city to share success stories and demonstrate benefits from community investments. These efforts will not only build local and regional consensus, but can also enable feedback mechanisms needed to identify and address evolving digital needs in a timely and effective manner.

These eStrategy recommendations for St. Helens promote and support continued efforts to improve broadband availability, as well as the need for increased engagement from local stakeholders and leaders to support local household and business adoption of online practices (i.e. utilization).

It is critical to engage local leadership to support these activities and support stakeholders that are actively working to improve broadband service and utilization. The Digital Needs and Readiness Assessment (Section 4) showed that there is consensus among leadership and local stakeholders to address broadband issues and move forward in a collaborative approach. The coordination of increasing service availability while also supporting end-user utilization will help to develop a more innovative digital economy that supports local businesses while also improving the quality of life for St. Helens residents.

There are a number of funding / financing options from federal, state, and other capital funding partners to enable St. Helens to build-out digital infrastructure and drive digital inclusion so that all St. Helens residents and business can participate in new local economic opportunities and realize community benefits.

With this Broadband Assessment and eStrategy Report, St. Helens City Council, local leaders, and residents have actionable data and an analysis of consensus among leadership of their broadband state and the necessary information to make informed decisions regarding options going forward for broadband and digital infrastructure. By taking a **proactive and holistic approach with digital infrastructure and inclusion**, the City of St. Helens can foster local economic growth, cultivate local innovation, and enhance quality of life for all residents.

**How to use this report:** The findings and insights on broadband gaps, barriers, and opportunities (see Section 6) were developed using primary data collected in St. Helens and SNG's proprietary broadband supply and demand analytics. The recommendations in Section 10 are designed to chart a roadmap for short and longer-term community prosperity and resiliency. The economic case assessment and cost estimates (see Section 5) are a basis for negotiating a public-private partnership and serve as a framework for mounting competitive grant applications for available state and federal broadband funds and private investment.



## 2 Glossary of Terms

The following terms appear throughout this report. To provide clarity to the reader, the glossary provides a definition, along with an explanation and examples to help clarify.

Table 2. Glossary of Terms

Term	Definition / Explanation
<b>Broadband</b>  <b>25/3 Mbps</b> <b>100/20 Mbps</b> <b>100/100 Mbps</b>	Reliable, high-speed internet connectivity with a minimum speed that evolves with technology improvements. FCC-acknowledged minimum broadband speed. Anything below 100/20 Mbps is a priority for BEAD funding. Minimum broadband speed for future-ready broadband.
<b>Cable</b>	Internet connectivity over coaxial cable
<b>Community Digital Infrastructure</b>	Internet networks that are paid for with public investment and owned by localities. Like airport authorities, the locality can make substantial, longer-term capital investment. With structural separation of network ownership from operations and from retail services, the private sector can then operate and provide services over the network (based on negotiated service agreements and performance criteria). See <i>Section 8.5</i> for details.
<b>Current Broadband Demand</b>	Current demand is the current number of subscriptions to broadband services, also known as take rates or adoption rates. This is an indicator for the level at which broadband is currently being used. Please note that even if an end user has a subscription, they may not be using their broadband connection to its full potential.
<b>Digital Economy Manager</b>	A coordinator for the city who manages grant applications, broadband infrastructure funding and process, and collaborations with local service providers and who drive digital transformation through Digital Navigators.
<b>Digital Equity</b>	Digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services.
<b>Digital Inclusion</b>	Digital Inclusion refers to the activities necessary to ensure that all individuals, including the most disadvantaged, have access to and use of Information and Communication Technologies. This includes five elements: affordable broadband service, internet enabled devices that meet user’s needs, access to digital literacy training, quality technical support, applications and online content designed to enable and encourage self-sufficiency, participation and collaboration.
<b>Digital Innovation Hub</b>	A location that is convenient for local residents and businesses to: <ul style="list-style-type: none"> <li>• learn about and access new online practices for showcasing broadband speeds, new technologies, telehealth services, smart community services, online business practices, etc.,</li> <li>• access trusted advice from vendor-neutral and technology-agnostic technical support accompanied by resources and support to successfully implement and use new online practices, and</li> <li>• become a community focal point for digital inclusion and transformation.</li> </ul>
<b>Digital Navigators</b>	Individuals who address the whole digital inclusion process — including home connectivity, devices, and digital skills — with community members through

	repeated interactions. Navigators can be volunteers or cross-trained staff who already work in social service agencies, libraries, health, and more and who can offer remote and socially distanced, in-person guidance.
<b>DSL (Digital Subscriber Line)</b>	Internet connectivity over phone lines (copper pairs)
<b>FCC (Federal Communications Commission)</b>	The agency overseeing telecommunications regulation in the US
<b>Fiber</b>	A broadband connection that can reach speeds of up to 10 Gigabits per second (Gbps), with low latency. The technology uses fiber-optic cable that can send data as fast as about 70% the speed of light.
<b>Fixed Wireless</b>	Wireless communication devices or systems used to connect two fixed locations (e.g., building to building or tower to building) with a radio or other wireless link supporting point-to-point and point-to-multipoint transmissions through the air over a terrestrial microwave platform rather than through copper or optical fiber. Fixed wireless devices usually derive their electrical power from the public utility mains, unlike mobile wireless or portable wireless devices, which tend to be battery-powered.
<b>Future-ready Broadband</b>	At least 100 Mbps upload and 100 Mbps download
<b>Internet Service Provider (ISP) / Service Provider</b>	ISPs are organizations that provide services to personal and business customers for accessing, using, or participating in the internet. ISPs can be commercial, community-owned, non-profit (including electricity or telephone cooperatives), or otherwise privately owned.
<b>Mbps (Megabits per second)</b>	The speed that data can be downloaded or uploaded on a network. Bandwidth is the theoretical speed. Throughput is the actual speed. The type of connection and speed needed depend on number of users, types of use (video calls, telehealth, gaming, etc.), required reliability, etc. <sup>2</sup>
<b>Online Education</b>	Online education and training, e-learning, distance education, virtual classrooms, etc. are all terms used interchangeably to describe educational programming delivered over the internet. It can be part of a formal degree or certification program or informal, self-initiated instruction. Interactive modes and increasingly rich graphic content are escalating bandwidth requirements.
<b>Potential Broadband Demand</b>	Potential demand is the demand that is nurtured and grown when end users understand the value of broadband and online services and personalize them to their needs. Potential demand becomes current demand by raising awareness with residents and businesses of what they could and should be doing online.
<b>Remote work</b>	Facilitated by broadband internet and digital communication technologies, remote work allows employees to work from home, coworking spaces, or other locations, offering flexibility and often leading to increased productivity, reduced commuting time, and a better work-life balance.
<b>Smart Community Services</b>	Include internet-facilitated emergency services, public safety, online permitting, registrations, bill paying, utility metering, etc.
<b>Telehealth</b>	Provision of health services remotely through internet technology platforms

<sup>2</sup> <https://broadbandnow.com/bandwidth-calculator>

### 3 Introduction

The City of St. Helens has taken an important step to better understanding its options for evolving its digital future and economic sustainability by commissioning this **Broadband Assessment and eStrategy Report**. Through the use of locally-derived data that provides critical insights on broadband needs and availability, St. Helens is provided with a holistic understanding of its broadband gaps, barriers, and opportunities.

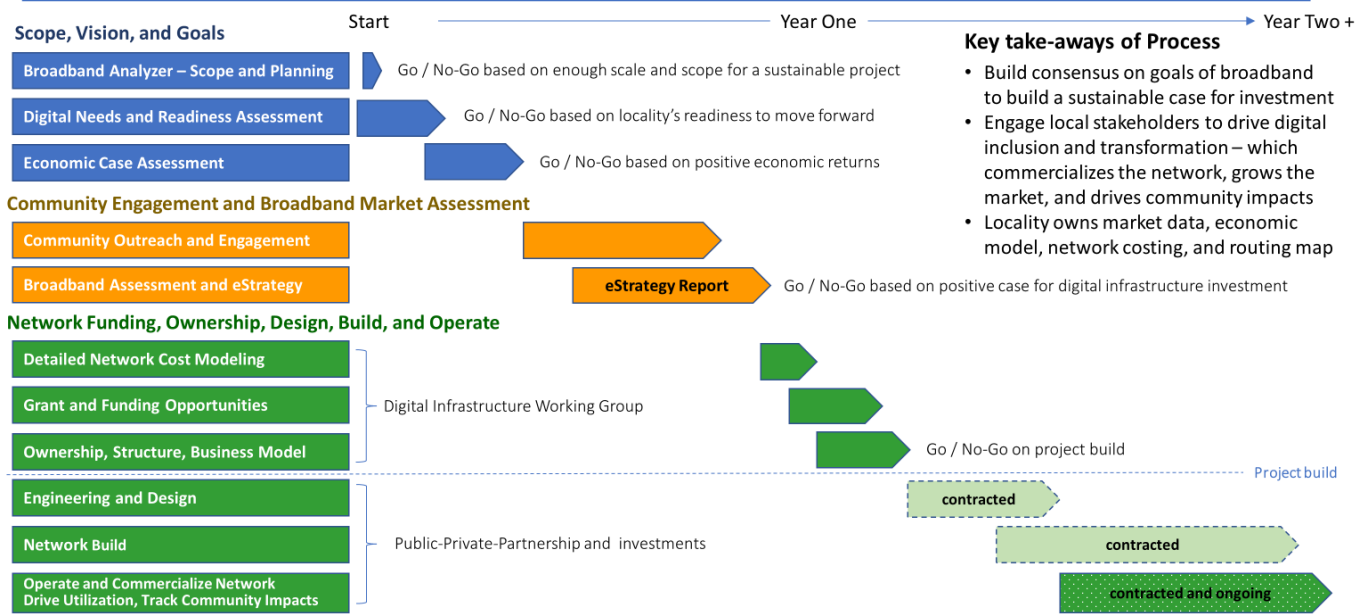
This report provides insights needed to bridge gaps in St. Helens’ broadband services and digital infrastructure, as well as to build the digital skills and capacity of businesses and residents to more effectively benefit from these technologies.

The broadband assessment and development of an eStrategy were conducted in phases: Phase 1: Scope, Vision, and Goals, and Phase 2: Community Engagement and Market Assessment. Each phase had steps with a go/no-go decision to proceed to the next step based on whether there was a strong enough case to move forward:

- **Digital Needs and Readiness Assessment** – Why do we need broadband? How will broadband address the locality’s goals and needs?
- **Broadband Economic Case Assessment** – Can this pay for itself? To what extent do community benefits outweigh costs?
- **Broadband Impact and Market Assessment** – Can a case for investment be made? What are the addressable market needs and benefits?



## Digital Infrastructure Project Methodology



© Strategic Networks Group, Inc. 2023

Figure 1. Digital Infrastructure Project Methodology

The data and findings developed as part of the **Digital Infrastructure Project Methodology** (see above Figure 1) enabled St. Helens to make ‘go / no-go’ decisions in the discovery and analysis process of assessing its broadband needs and availability. The process informed local leaders of their options and helped them decide where to focus and allocate appropriate resources to drive community broadband benefits – which is a strategic approach to bridging gaps in St. Helens’ digital infrastructure and helping benefits for St. Helens’ residents, organizations, and businesses (i.e. Phase 3: Network Funding, Ownership, Design, Build, and Operate).

### **Digital Infrastructure Project Methodology Applied with the City of St. Helens**

Extensive outreach and public engagement, rigorous analytics benchmarking local utilization, application of economic analysis, and state-of-the-art geospatial infrastructure mapping tools were used to produce this Broadband Assessment and eStrategy Report. The methodology addressed broadband challenges unique to the City of St. Helens. The concluding data-driven recommendations provide a roadmap for short and longer-term actions grounded in the St. Helens context and serve as a framework for mounting competitive grant applications for the significant state and federal broadband funds becoming available in 2024.

The methodologies and analysis used to prepare this broadband assessment identified broadband infrastructure gaps, barriers, and opportunities for the City of St. Helens, including strategies to build the digital skills and capacity of businesses and residents to more effectively use these technologies. Key methods included:

- **Engaging local leaders in the process from the outset:** Fostering a hands-on and inclusive planning process, involving community leaders to determine how broadband can achieve desired outcomes and make a meaningful impact. Starting with the end in mind ensures that broadband strategy aligns with local needs and goals.
- **Rigorous analysis of broadband availability:** To accurately assess the state of broadband access, analysis went beyond relying solely on FCC-reported data. Thorough evaluations of end-users were conducted using the eCheckup broadband assessment tool, covering various aspects of the experience of end-users like service quality, reliability, value, and tested speeds. Additionally, we examined demand for smart services like telehealth, distance learning, and public safety, which rely on broadband connectivity.
- **Estimating place-based fiber connection costs:** In order to facilitate budget and funding request estimates, costs were calculated at a granular level per premise by census block. This approach allows for aggregate estimated costs at the community, city, or regional level, aiding in the preparation of comprehensive budgets and funding proposals.
- **Mapping broadband demand:** Valuable insights can be provided to potential service providers by mapping the demand for broadband and online services. This information assists in identifying new markets that align with business interests and encourages investment in underserved areas.

This Broadband Assessment and eStrategy Report assesses both current and future broadband needs, and findings make a compelling case for investments (public and private) in digital infrastructure. The report that follows provides St. Helens with a roadmap for ensuring digital readiness through:

- Robust, affordable broadband infrastructure that will serve the existing and future connectivity demands of St. Helens, as well as regional accessibility, performance measures, community design, and smart mobility outcomes.
- Development of place and population-based strategies to optimize the capacity of businesses and residents to utilize broadband for economic and personal benefit.

### 3.1 The Context for Action

Broadband infrastructure and the capacity to utilize it are essential to full participation in all aspects of modern life, leaving those communities and individuals without digital resources severely disadvantaged. Left unaddressed, these gaps will inevitably weaken the competitiveness of the economy in the city, the sustainability of the region, and the quality of life of its residents. The urgency for action, combined with the increasing awareness of the need for broadband investment, **has made broadband funding a high priority for state and federal economic and community development grant programs**. The resulting convergence of need and opportunity provides the context in which the St. Helens Broadband Plan was developed.

Broadband technology and the increasingly sophisticated applications and services it delivers is extraordinarily dynamic, providing another context for approaching existing gaps in its availability, access, and use in St. Helens. As broadband evolves, the data-carrying capacity (bandwidth) and speed requirements steadily ratchet upwards, making the definition of “adequate” a moving target. The current FCC definition of competitive broadband is technology that supports data speeds of at least 100 Mbps download and 20 Mbps upload.

Future-ready broadband allows for interactive, content-rich applications, including many used in education, telehealth, and emergency management. For this reason, SNG recommends symmetrical (i.e. in both directions) upload and download speeds of at least 100 Mbps. Compared to this standard, many areas of St. Helens are unserved or underserved (See Section 7 – Analysis of Existing Digital Infrastructure and Broadband Service). These gaps are explained in large part by the economics of traditional broadband deployment, which do not favor low-density communities where the higher costs of deployment and lower returns on investments do not meet the internal business case requirement of private sector internet service providers (ISPs). Furthermore, digital literacy and inclusion challenges limit the addressable market and interest to invest by private internet service providers, which limit the ability for residents and businesses to access lower-priced and higher-bandwidth internet services.

Findings in this report provide St. Helens with actionable intelligence on the scale and scope of the challenge, options for addressing existing gaps, optimal placement of additional resources, and opportunities to optimize the benefits through targeted initiatives to increase digital skills and capacities. Bridging these gaps will require longer-term creative, public-private partnerships that leverage and pool together local resources, public grants, and/or favorable loan funds. No single stakeholder can bridge these gaps on their own – otherwise they would have done so already.

Infrastructure should not be planned for in a vacuum. The **scale of broadband investment is best justified if done in a context of community impacts and returns on public investments**; this is especially true when limited public dollars are at stake. This report has presented broadband gaps, barriers, and opportunities in the context of a holistic approach that involves a hard examination of existing infrastructure against the current needs of the community, projected growth in demand for important applications, the digital capacity of local businesses and demographic groups to take advantage of better infrastructure, and local resources that can be leveraged to attract potential service providers and partners to build digital capacities.




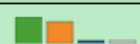

## 4 Digital Needs and Readiness Assessment of City of St. Helens

Successful local planning efforts are predicated on a common understanding among local leaders and stakeholders of the rationale and benefits of the proposed undertaking. There is enormous benefit in curating a common understanding of the need for broadband and fueling the effort necessary for undertaking and aligning expectations, goals, and readiness to move ahead collectively. The Digital Needs and Readiness Assessment (DNRA) tool used in this assessment captured the current state of awareness, motivation, and readiness to undertake a broadband initiative, as well as assisting in building consensus for action with a broadband initiative.

The **Digital Needs and Readiness Assessment (DNRA)** provided community leaders an objective assessment of where key local stakeholders had consensus on goals and issues that could be addressed through digital infrastructure, as well as an assessment of the current state of broadband and readiness to move forward with an initiative. The DNRA uncovered varying perspectives across stakeholders – whether there was alignment on project success criteria, or whether there were gaps in perspectives or approach. Time, money, and political capital could be saved and common pitfalls avoided by identifying and addressing these gaps early in the planning process. Building a shared vision among elected officials, community leaders, and local stakeholders grows buy-in around strategies and commitments for the project participants.

The DNRA Report summarized the results of eight leaders participating from the City of St. Helens in December 2020. The intent of the DNRA scoring system is to reveal areas where the locality may be more ready, or less ready to move forward successfully, as well as areas where more agreement may be required. The following figures indicate the leadership reported scores and concordance<sup>3</sup> towards goals and priorities for St. Helens.


Table 3. St Helens Top Five Goals

St Helens Top Five Goals		Score	Concordance	Responses
1	Expanded online education and training opportunities	100.0%	100.0%	
2	New opportunities for work and economic growth	100.0%	100.0%	
3	Access to robust and competitive broadband	95.8%	88.2%	
4	Remote and better integrated access to health services	83.3%	82.2%	
5	Smart community services - smart use of technologies to benefit residents and businesses	79.2%	75.2%	

<sup>3</sup> For a definition and methodology of concordance calculations, see Appendix 3





Table 4. St Helens Top Five Issues and Needs

St Helens Top Five Issues and Needs		Score	Concordance	Responses
1	Increasing good-paying job opportunities	95.8%	78.0%	
2	Stimulating local business growth and innovation	95.8%	78.0%	
3	Retaining and attracting businesses and population	91.7%	71.1%	
4	Expanding local workforce skills	87.5%	67.7%	
5	Increasing opportunities and abilities to participate in the community (social inclusion)	83.3%	66.7%	

When asked to assess the city's existing broadband service availability, city leaders indicated a majority negative view of the existing service (see Figure 3)<sup>4</sup>. Additionally, leadership were in agreement that 50% or more of St. Helens remains unserved or underserved by the existing broadband availability.

Table 5. St Helens Broadband Quality

Higher score means better quality or value

St Helens Broadband Quality	Score	Concordance	Responses	Consensus Value
Broadband Speed	31.3%	55.9%		Fair
Broadband Value	25.0%	66.7%		Fair

Other issues that were identified as important for the community as reported by leadership. The comments from elected officials and local leaders through the DNRA indicated that efforts have been made to determine how to address broadband needs, with key challenges still recognized amongst leaders.

<sup>4</sup> Broadband quality options available for response included Excellent, Very Good, Good, Fair, and Poor

Table 6. DNRA Other Issues and Challenges

St Helens Other Issues and Challenges Identified by Participants
Create economic development opportunities, work from home digital infrastructure, improve education opportunities, digital equity for all users
Rural area left out, businesses not served well, schools are way behind with lack of access
More education/training
Alignment of efforts is needed between Columbia County and South County cities
The key challenge will be to clearly define the public investment roles with regard to ownership, operations and general control of the infrastructure investment.

#### 4.1 Challenges and Aspirations – the Strategic Role of Broadband

Broadband and the digital skills to utilize it are essential to attracting and sustaining populations and firms in St. Helens and the region. Developing innovative practices and workforce will empower local competitiveness and growth in sectors cited as growth engines. In particular, access to healthcare in St. Helens will benefit greatly from broadband improvements, especially with aging populations. Additionally, the leisure and hospitality, professional and business services, and construction sectors could be unleashed from poor internet service to discover benefits from broadband access and the digital skills to effectively use online practices. The availability of improved broadband also removes barriers for telework, opening up broader opportunities both for St. Helens firms seeking skilled workers and for St. Helens residents seeking better employment.

St. Helens local leaders and key stakeholders noted the following challenges in their input to the Digital Needs and Readiness Assessment:

- Uneven economic development and opportunities across St. Helens.
- Lack of provider reinvestment in infrastructure.
- Absence of dedicated facilities and assistance to promote and support remote work.
- Disparities in opportunities between different demographic groups (gender, socioeconomic status, ethnicity, etc.).
- Improving smart community services — i.e., building climate control, lighting, water quality and wastewater treatment, power generation and smart grid services, traffic flow and mass transit controls, public safety, emergency response, and support of incubator labs for local innovation.
- Youth unemployment workforce training programs.
- Wage disparities and uneven earning potential.
- Training/pathway gap between existing skills and those demanded in the workplace.
- Patchy broadband service within community.

In every instance, a long-term community focused integration of better broadband enabled through digital infrastructure and targeted digital inclusion programming to increase the facilities and technical assistance needed for digital skills training is essential to effectively addressing these challenges.



## 4.2 Summary of DNRA Findings

The overall **Digital Needs and Readiness Assessment (DNRA) score of 63% for the City of St. Helens** indicated that broadband planning was in progress, with additional work required to take the next steps towards improving community broadband service and availability.

DNRA findings showed that leadership acknowledged broadband as an important and relevant issue deserving further attention and room for improvement. The primary emphasis of local leaders was on economic growth included focusing on enhancing workforce skills, attracting and retaining businesses, and improving job opportunities.

A key criterium for successful broadband initiatives is community engagement and creating community-wide awareness and support. This requires local leadership to develop a clear vision and understanding of the rationale for an initiative, as well as influencers and champions in the community who can help to communicate that vision.

Before taking action on a broadband initiative, the City of St. Helens leadership noted there should be an assessment of the cost of a broadband project and how to get it funded, as well as community engagement and getting the public on board.

*The DNRA found that leaders considered the existing state of broadband as inadequate to meet the city's established goals and needs.*

## 5 Broadband Economic Case Analysis

From July to September 2021, SNG conducted a Broadband Economic Case Analysis with guidance and input from City of St. Helens officials. The analysis yielded key findings indicating a neutral net cost to the city for the establishment of a core network connecting all existing municipal locations.

The estimated cost for a municipal core network, including capacity for future expansion, amounted to approximately \$1,350,000. This cost would be financed annually at 4% over 20 years, totaling \$99.3K per year. It's important to note that this estimate was based on aerial fiber construction and is subject to more detailed engineering and design.

Table 7. Economic Case Municipal Broadband Investment Options

Nominal Investment Amount	\$1,350,000	\$1,350,000	\$1,350,000
Investment Term (years)	25	25	20
Investment Rate	4.0%	5.0%	4.0%
Required Annual Payment	-\$86,416	-\$95,786	-\$99,335
Percent self-financed by St. Helens from existing budgets	94%	93%	93%

Based on the above cost analysis, **the City of St. Helens could self-finance 93 percent of the cost to connect its anchor institutions with core digital infrastructure by reallocating existing and planned municipal spending** on telecom and internet services. With this budget reallocation, the City of St. Helens would have sovereignty over its digital future.

A significant finding of the economic case analysis was the potential cost savings for the municipality based on current service spending. It was estimated that St. Helens could save \$101,543 per year solely from municipal locations, excluding schools or other community anchors. These cost savings would effectively offset the expenses of financing the network over the 20-year period, resulting in a neutral net cost for St. Helens. There are even greater potential benefits and cost offsets if the schools could allocate their budgets for internet services to the municipal network.

Table 8. Economic Case Municipal Broadband Costs and Savings

Municipal Spending	Monthly	Annual	Annual Cost	Annual Net Savings to St. Helens
Existing Services	\$8,461.88	\$101,543	-\$99,335	\$2,207

There are additional economic and community benefits above and beyond cost savings. The establishment of robust broadband infrastructure enables St. Helens to retain and expand the tax base, as well as encourages opportunities to attract investment from community partners. The outcomes include increased local economic activity, appealing to mobile workers and businesses seeking well-connected environments. An investment in local broadband infrastructure incentivizes the implementation of smart community services to enhance efficiency in the delivery of civic services, which improves quality of life and convenience for residents.

The Economic Case Analysis also underscored the cost of inaction, emphasizing the limited competitive ability of St. Helens if it fails to address its gaps in broadband infrastructure. Without such investment, the city would struggle to deliver services online, hindering its ability to attract new businesses and maintain competitive tax rates. Furthermore, the absence of adequate digital infrastructure would exacerbate existing digital divides within the community, impeding efforts to enhance resident’s quality of life and promote digital inclusion and adoption. With a net neutral investment cost, the economic case assessment recommended investments in future-ready digital infrastructure to ensure the long-term prosperity and competitiveness of St. Helens.

## 6 St. Helens Broadband Impact and Market Assessment

To develop a sustainable economic case for building digital infrastructure in St. Helens, it was necessary to identify and assess the existing market conditions and demand for broadband and online services, as well as identify gaps, barriers, and opportunities that need to be addressed by digital inclusion programming. In order to develop such granular market intelligence, residents and businesses in St. Helens were asked to complete SNG's proprietary broadband assessment (the eCheckup<sup>5</sup>) to collect data on how they are connected, using, and benefitting from the internet, as well as identifying digital inclusion gaps and barriers.

The City of St. Helens identified local stakeholder organizations and businesses to assist in the outreach of the broadband initiative and increase eCheckup participation. A coordinated effort was conducted to reach as many residents and businesses as possible, given the project timeline and available resources. Messaging for direct mailing was delivered through local stakeholder communication channels.

Data collection for the eCheckup occurred from October 2021 to May 2022, resulting in responses 580 households and 102 businesses in St. Helens. Based on Census data indicating 5,172 total households in St. Helens, the eCheckup respondent sample size represents a statistically significant 11.2% portion of households that participated in this assessment.

Data analysis and broadband benchmarking was used to identify gaps, barriers, and opportunities related to Internet connectivity and utilization. eCheckup results were analyzed using over 130 metrics and indicators on broadband usage and digital inclusion in the development of eCheckup findings. Results were compared against Digital Economy Database (DED)<sup>6</sup> with responses from 90,000 households and businesses across North America.

Detailed findings from the eCheckup and broadband impact and market assessment were presented to city commissioners in December 2023.

---

<sup>5</sup> <https://sngroup.com/broadband-demand-checkup/>

<sup>6</sup> <https://sngroup.com/digital-economy-database/>

### 6.1 Connectivity and Affordability

Broadband infrastructure should be present and of a capability to deliver robust, high-speed service that is accessible and meets the needs of those who wish to be connected. A critical consideration is not only whether the infrastructure and technology employed meet current needs, but also whether it is capable of supporting anticipated demands — is the connection future proof? To assess the broadband service availability in St. Helens, the existing broadband connectivity among eCheckup participants was analyzed, including the technologies employed to deliver service and speeds and the cost of service.

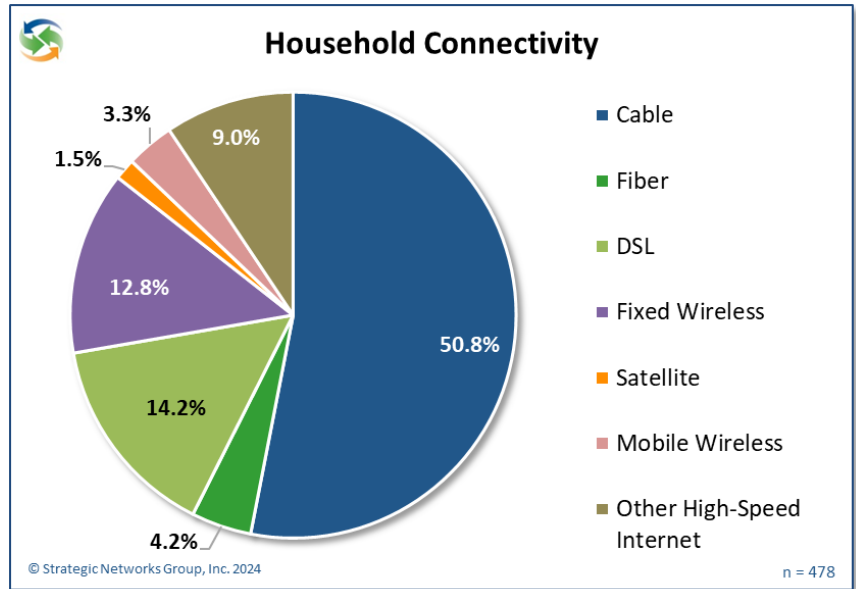


Figure 2. Household Connectivity

The majority of St. Helens residents and business eCheckup respondents reported using cable to connect to the internet. 51% of eCheckup households reported using cable, followed by DSL (14%) and fixed wireless (13%). There was a low amount of reported fiber use for their household internet connectivity at 4% of respondents.

Over half of household respondents to the eCheckup (51%) reported spending greater than the national average of \$75 on their monthly internet service (see Figure 3). This suggests a lack of competition in the local broadband service market, as providers do not have incentive to offer lower prices in the community.

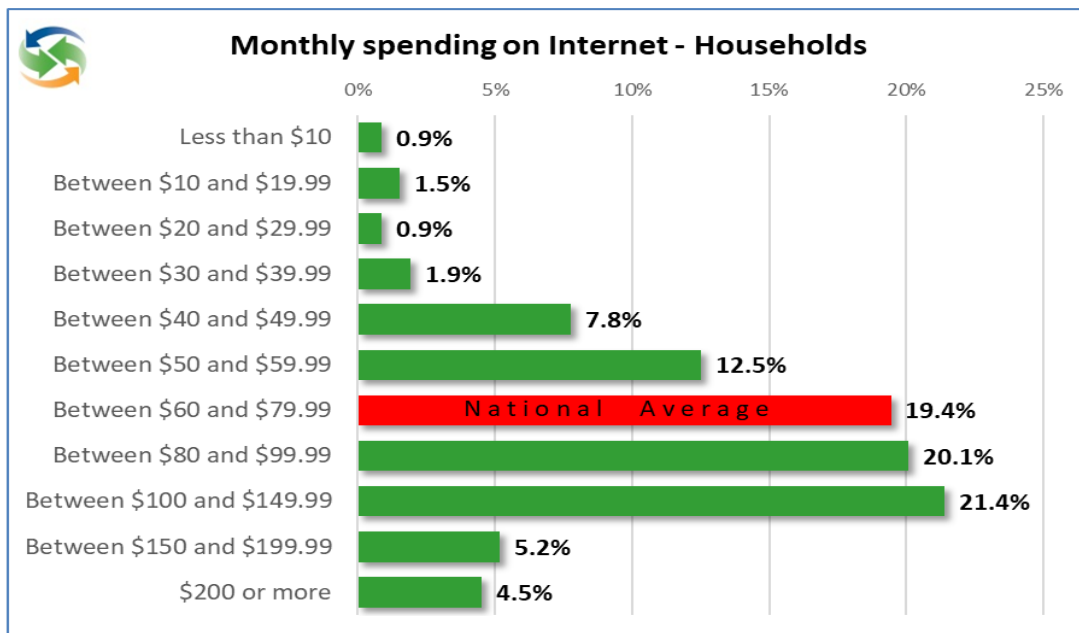


Figure 3. Household Monthly Spending on Internet

## 6.2 Reliability and Satisfaction

When asked about their interest in obtaining better broadband service, over 50% of households indicated that they “Want something better now”, with 40% of businesses responding the same way. This demand for improved service is further supported by 70% of both households and businesses stating they would be “Very likely” to change internet service providers. Analysis reveals that technology type is a strong indicator of broadband satisfaction levels, with the highest amounts of dissatisfaction from households with Satellite and DSL technologies.

### Internet Speed Test Results

As a component of the eCheckup online assessment, participants were asked to conduct a speed test of their existing internet download and upload speeds. Results from St. Helens residents indicated that there were a significant number of households that should be considered underserved, with over one-third (34%) of household speed tests registering below the FCC minimum standard of 25/3 Mbps.

When assessing the available broadband in St. Helens as reported by the FCC, the speed tests gathered by the eCheckup suggested that the community is not as well ‘served’ as is depicted. There are many considerations to take into account when comparing a household’s reported speed to the available broadband internet speed of the area, including the household’s equipment used for connection. Additional research should be conducted to ensure that residents and businesses are receiving the broadband speeds they are paying for.

### Risks of Relocation

There is a risk for St. Helens in not providing access high-speed internet services that are essential to participating in today’s digital economy. Among all eCheckup Household respondents, 52% reported that they would “Definitely” or “Very Likely” consider relocating without the availability of broadband service. This was especially true among younger age demographics and higher-income households, as indicated by Figure 4.

Additionally, households in St. Helens that earn a higher income were more likely to relocate for broadband service compared to other households in the community (see Figure 5). These findings indicate that the most vulnerable demographics to relocation for broadband services, include those high-income earners and younger population groups who support the local economy. There is also a consideration that providing enhanced access to high-speed broadband internet services can attract these groups to live and stay in St. Helens.

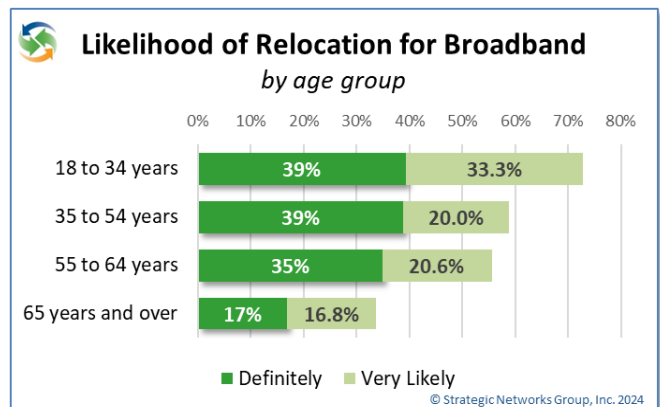


Figure 4. Likelihood of Relocation for Broadband by

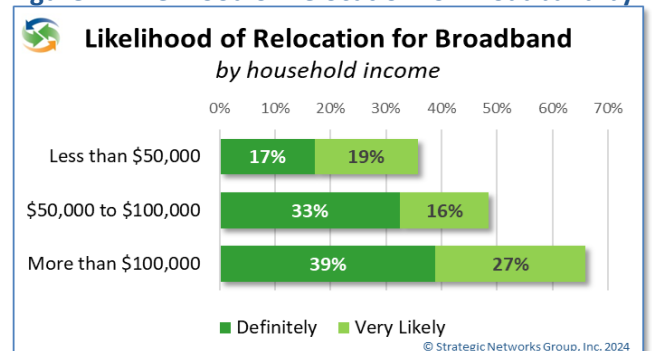


Figure 5. Likelihood of Relocation for Broadband by Household Income

### 6.3 Internet Utilization

The economic impacts and community benefits from broadband are a product of how households and businesses are utilizing their internet connection and online practices. Analysis of gaps, barriers, and opportunities in the use of online practices enables benchmarking the impacts of increasing the adoption of internet and online practices with targeted groups in the community.

#### Household Internet Utilization

Respondents to the eCheckup were asked to report on their utilization of existing internet service among their household, and also indicate if they have a plan to use the technology in the future. Among the utilization category for productivity (Figure 6), 62% of households were accessing the workplace with their internet connection. This was a significant number of residents that rely on internet service to maintain their livelihood. There are also figures related to a household member's 'Plan to use' internet services for productivity. 17% of participating households indicated that they planned to use the internet as a part of their home business. As the digital economy becomes more popular it can be expected that residents will access the internet to supplement or completely support their incomes. Lower speeds, high costs, unreliable connectivity are inhibitors to St. Helens residents realizing their full income potential.

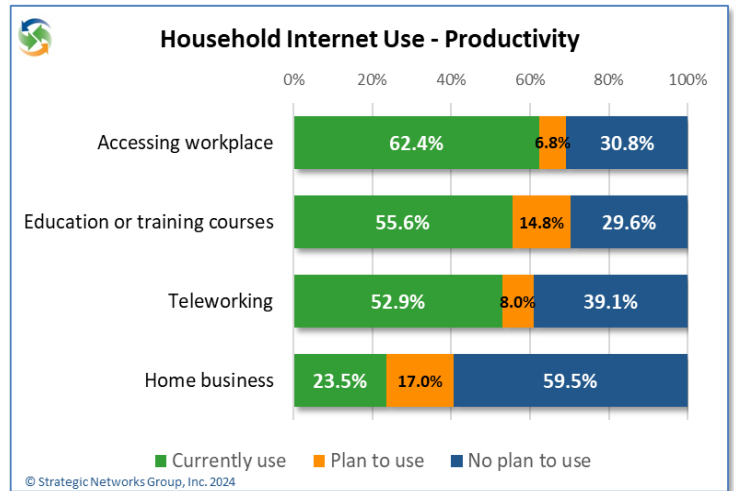


Figure 6. Household Internet Use for Productivity

As shown below in Figure 7, St. Helens' households were using the internet to contribute to their incomes at a lower rate than comparable communities in the Digital Economy Database (DED). This indicates that there is an opportunity to provide resources in the form of education and improved access, that would

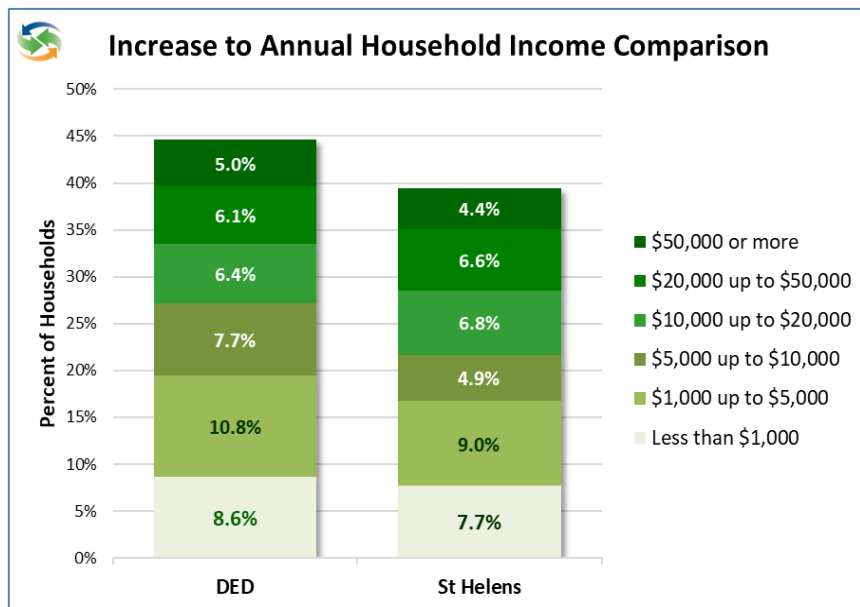


Figure 7. Increase to Annual Household Income DED Comparison



enable these types of utilization, and ultimately contribute to the local economy by increasing local household incomes.

**Teleworking**

Over 80% of eCheckup household respondents reported that they are teleworking or accessing the workplace using their internet connectivity. This is significantly higher compared to responses from other communities included in the DED, indicating that St. Helens has a strong incentive to support and enhance the ability of residents to continue these activities.

Among those households that were participating in Telework, Figure 8 indicates the reasons that

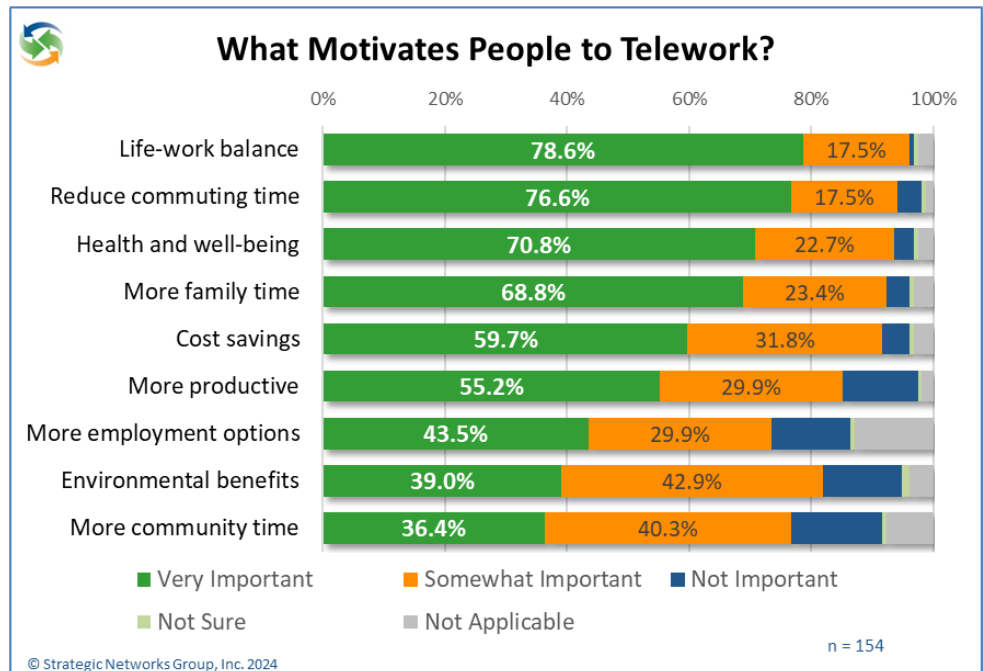
motivate residents to use the internet for working. Those most important aspects included life-work balance, reducing commuting time, and health and well-being. While there are a significant number of St. Helens residents that reported teleworking, this activity should be continually supported with the access of high-speed internet to enhance resident’s quality of life.

**Business eCheckup Findings**

Those local businesses participating in the eCheckup included 66 respondents, a majority (82%) of which were small businesses with less than five employees. This participation in the eCheckup online assessment indicated an overall interest among local small businesses to participate in the digital economy and a desire to improve operations and business practices by adapting to using more online services.

Businesses were asked to report on their current utilization of online services, with 77% of eCheckup participating businesses indicating they have a website for their businesses (see Figure 9). Significantly, an additional 16% of businesses reported that they ‘Plan to use’ a website. This interest should be supported by the community by empowering local businesses and organizations that support the development of business websites and helps businesses transition from traditional marketing methods. There were also high rates of plan to use for services related to customer service and support, as well as delivering services and content.

By supporting business adoption of online practices, there is an increase in opportunities for residents to gain meaningful employment through these organizations. The city and local stakeholders should anticipate an increase in demand for online services by working to support both business and economic development through increasing online opportunities. This symbiotic relationship should allow the community to



**Figure 8. Telework Motivation for Households**



continue to provide workforce training and local outreach to enable connections between the workforce and available job opportunities at local organizations.

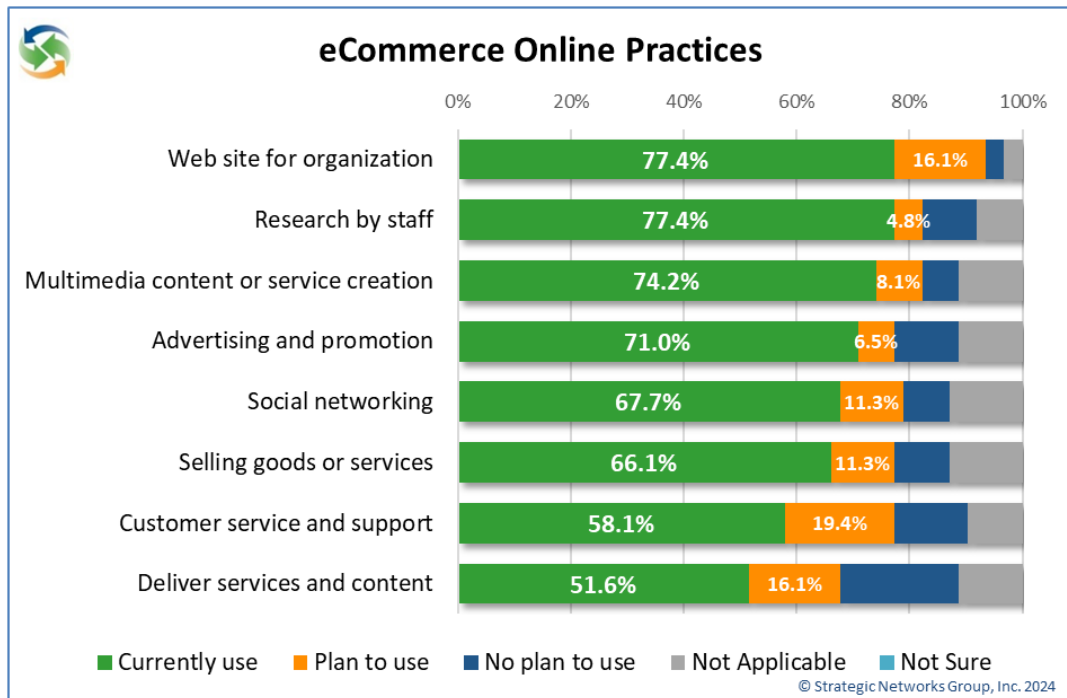


Figure 9. eCheckup Business Online Practices

**Telehealth**

The use of Telehealth service is vital for maintaining needed access to medical care that is increasingly become available online. In locations with limited access to healthcare options, telehealth can provide a cost-effective method of staying in contact with a healthcare provider, and also assist in emergency situations. While 46% of St. Helens residents participating in the eCheckup indicated that they ‘Currently use’ or ‘Plan to use’ telehealth services, there was also a significant amount (30%) that were ‘Willing to explore’ these options (see Figure 10).

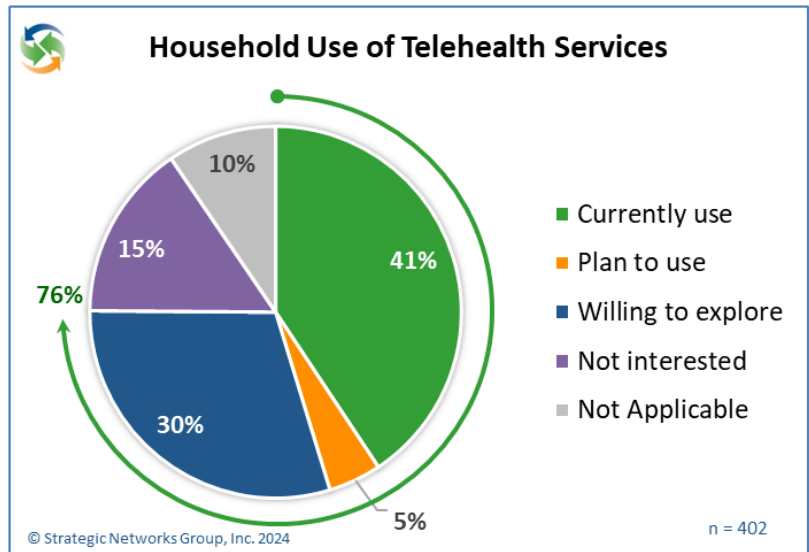


Figure 10. Household Use of Telehealth Services

Those who rely on these services should be supported with available access and speeds that allow for residents to utilize these services fully. For instance, many telehealth options require that residents participate in online video conferencing, which requires higher bandwidth than regular internet access. Residents that indicated they are interested in accessing telehealth, should be supported through raising awareness of the available services and providing information in the community about how to access and

benefit from these services. More robust connectivity would also support the availability of leading-edge imaging and monitoring tools and interactive consults with out-of-area specialists by local practitioners.

**Benefits and Barriers of Internet Use**

Households participating in St. Helens’ eCheckup realized the benefits of broadband compared to other localities responses in the Digital Economy Database (DED) (see Figure 11). As discussed in the previous section, this provides a tangible benefit to the residents of St. Helens and should be further enabled by increasing access to high-speed internet services and workforce development training to enhance the skills needed to compete in the digital economy. Additional findings related to the reported internet utilization from eCheckup participants can be found in the preliminary findings as presented to city council members as a part of this assessment.

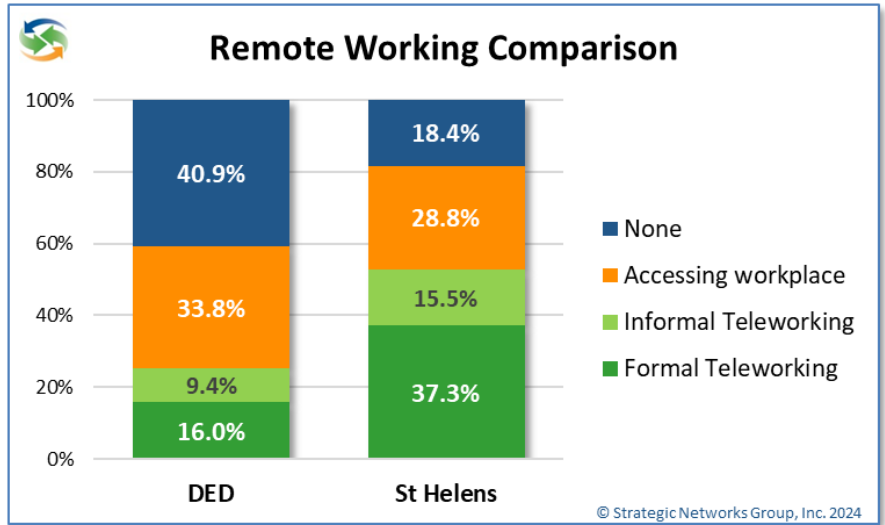


Figure 11. eCheckup and DED Remote Working Comparison

eCheckup respondents were also asked to report on any significant barriers that exist which inhibits their access or ability to take advantage of the internet. As shown in Figure 12, the most important noted barrier was the available ‘Connection speed or reliability’ of internet. This supports the previous eCheckup speed test findings that indicate many households in the community do not have existing high-speed internet service.

Additionally, the second highest reported barrier to using the internet was ‘Privacy and security concerns’. Notably, when eCheckup participants were asked specifically what is a barrier to their using telehealth, this was the primary reported barrier. This presents an opportunity for the community to engage with residents, first to understand their concerns as it relates to privacy and security on the internet, and also to provide educational and awareness outreach of best practices that can limit risks in these online areas. Addressing this barrier can help to increase overall utilization of the internet while supporting residents’ ability to participate in telehealth services and other available online platforms.

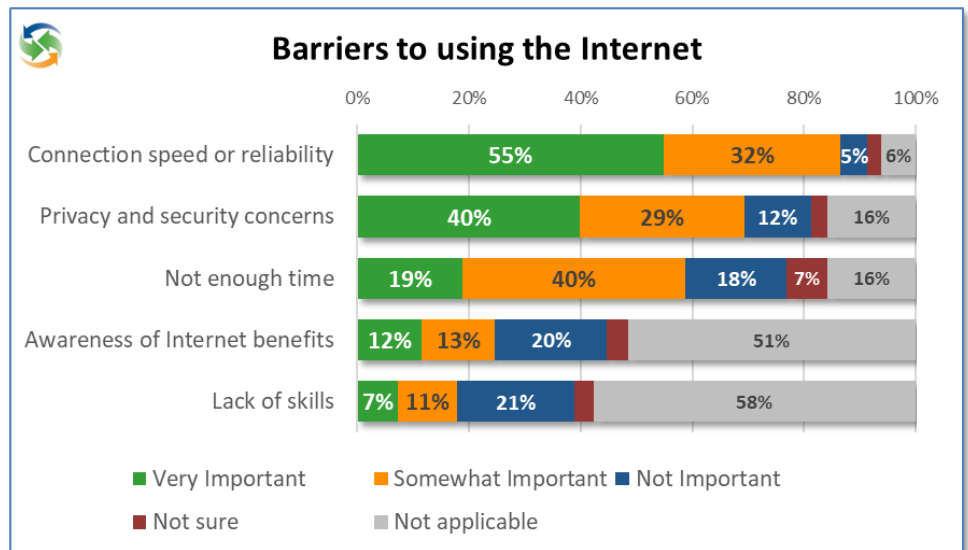


Figure 12. Household Barriers to Using the Internet

## 7 Analysis of Existing Digital Infrastructure and Broadband Service

The table below summarizes the available broadband services levels for households. The map below shows the distribution by Census Blocks – the darker the shading, the higher the percentage of unserved and underserved households in that Census Block.

Table 9. BroadbandAnalyzer: Unserved Households by Census Block

BroadbandAnalyzer® Scoping Report: St. Helens, Oregon				
	Housing (2020)	% of Households	Population (2020)	% of Population
All Households	5,636	100.0%	13,811	100.0%
Unserved: 25/3	3,936	69.8%	8,925	64.6%
Fully Served: 25/3	1,700	30.2%	4,886	35.4%

By utilizing reported broadband service availability, this analysis indicates that 70% of household are located in census blocks that include unserved broadband locations. A more granular analysis (see Table 10) indicates that of those locations, 1,073 broadband service locations are unserved with the existing broadband service availability.

Table 10. BroadbandAnalyzer: Fiber Deployment to Unserved Locations Cost Estimate

BroadbandAnalyzer® Scoping Report: Fiber Deployment Cost Estimates to Unserved Locations				
Housing in Unserved Census Blocks	Unserved Households	Road Miles / Sq. Miles	Total Fiber Cost Estimate	Avg. Fiber Cost per Premise
3,936	1,073	59.95 / 2.82	\$3,123,495	\$2,911

Applying a fiber deployment cost methodology (detailed in Appendix 2), the total cost to deploy fiber to all of the unserved locations would be \$3.1 million, at an average cost of \$2,911 per premise. This is a relatively low cost per premise which is due to the higher density within St. Helens and presents an opportunity to ensure that all broadband service locations in the municipal area are provided access to high-speed internet service.

Figure 13 below shows additional details about census block locations and broadband service levels.

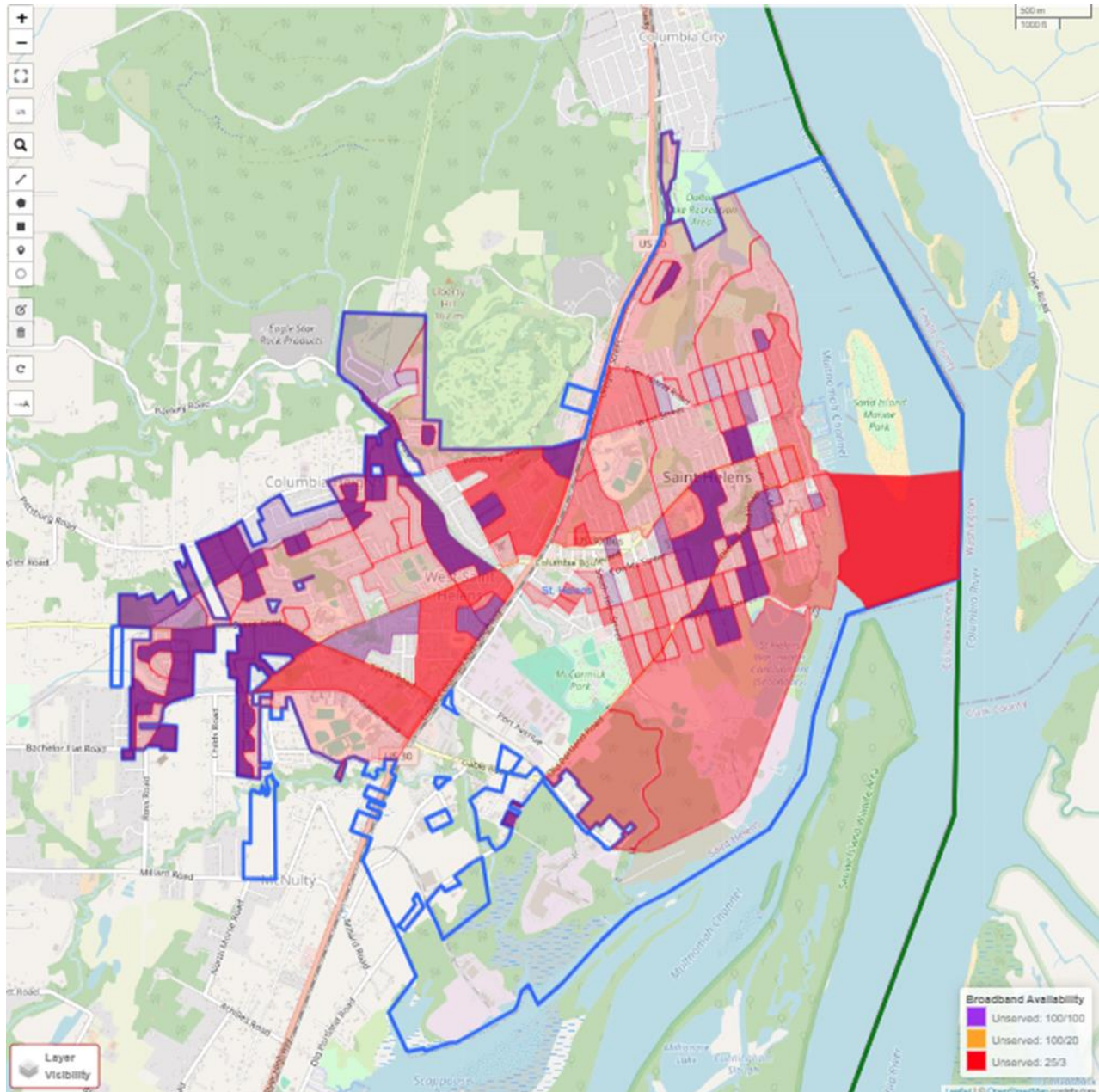


Figure 13. BroadbandAnalyzer Mapping: Unserved Census Block Locations



## 8 Digital Inclusion for Economic and Local Development

In St. Helens the digital landscape for access and inclusion reflects both challenges and opportunities. While the internet has become an indispensable tool for modern life, there remains a significant portion of households without access or ability to realize benefits from use of online practices. This absence of connectivity is not just about infrastructure; it is about ensuring that everyone, regardless of background or circumstance, can effectively participate in an increasingly digital world. Broadband technology opens doors to education, economic opportunities, healthcare, and social services. However, barriers such as socioeconomic status, educational attainment, and geographic location can limit access to these benefits, creating a digital divide that misses opportunities and stifles progress. By implementing collaborative strategies that involve government, educational institutions, non-profits, businesses, and ISPs in fostering digital inclusion, St. Helens can unlock the full potential of broadband, paving the way for economic growth, innovation, and community resilience.

### 8.1 Internet Adoption and Digital Inclusion

According to Census data, over 8% of St. Helens households are currently without an internet subscription.<sup>7</sup> Households with an annual income below \$75,000 account for 96% unconnected households in St. Helens. Furthermore, 5% of households rely on satellite for internet connection and 11% of households use a cellular data plan without another type of internet subscription. Those households that do not have access to, or the ability to afford, broadband services may also lack the devices and digital skills that are needed to participate in today's digital economy. Improving high-speed and affordable internet service to address connectivity gaps is only part of the solution. This section will address digital inclusion and participation required to fully maximize the beneficial economic impacts of broadband.

Digital inclusion is the process to achieve digital equity goals so that all segments of society have opportunity to access and the skills to effectively use the technologies necessary to advance their circumstances and their local economies in a digital world. Universal access alone will not deliver digital equity. Too many residents lack the knowledge, skills, and financial capacity to benefit from the resources and services delivered by broadband. Too many businesses have not adopted the full range of online practices to enable them to be competitive.

Factors underlying digital inequities strongly correlate with poverty, low educational attainment, disabilities, and advanced age. Ethnicity also factors in, primarily as a function of the higher prevalence of the previously listed factors in minority populations, as well as from issues arising from English not being the dominant spoken language in the homes of some minority groups. The interplay of these factors compounds the challenge and underscores the need for creative and collaborative policy, investment, and targeted programming involving partnerships with schools and universities, non-profit organizations, other community anchor institutions, the business community, and the Internet Service Providers (ISPs).

### 8.2 Community Anchor Institutions in St. Helens

Leveraging existing community facilities and resources is an essential part of comprehensive, cost-effective solutions to address gaps in broadband services and utilization by households and businesses in St. Helens. Community assets can provide benefits to both the physical infrastructure build-out to improve broadband

---

<sup>7</sup> Out of 5,172 total households in St. Helens, 423 are reported to not have an internet subscription. Census 2022 5-year Estimate Table: [S2801](#)

internet services as well as providing outreach services to the community that improve awareness and participation with targeted groups.

Community Anchor Institutions (CAIs) are local organizations with facilities that support the locality through public safety, education, municipal administration, health, and other vital services. There are 14 CAIs that are identified within St. Helens, including 6 fire and law enforcement facilities, 5 schools, 2 libraries, and a government facility (City Hall). A list of these locations with additional details is provided in Appendix 2. CAIs play a vital role in establishing a foundation of broadband service availability and ample community resources to achieve outreach and engagement with local residents and businesses. Their locations provide opportunities to provide enhanced public services for the community and improve the local infrastructure.

In an effort to raise awareness of available internet services, these locations serve as a focus to engage with the public and provide a platform for public engagement on broadband-related issues. CAIs, along with other available community facilities, can be used to educate the public and encourage adoption of telehealth, workforce development training, smart community services connectivity, and other opportunities. St. Helens should consider these locations to be utilized as local Digital Innovation Hubs. These facilities can provide community members an opportunity to engage with local resources allowing for access to internet service and other tools, as well as a chance for local businesses and social services to showcase available technologies to improve local adoption of their services (see Section 10.1 – Digital Innovation Hubs).

The FCC is currently working to ensure that CAIs are accurately and completely represented within communities as they develop broadband mapping. The spectrum of potential CAIs is broad and beyond local government-affiliated offices and service centers, and can include fire stations, community centers, churches and other faith organization facilities, drug stores, and other organizations. An important role of St. Helens and the State of Oregon going forward will be to **verify and expand the portfolio of local facilities that are able to assist in the improvement of broadband service and availability are included in future program-planning initiatives.**

### 8.3 Leadership with Digital Infrastructure in St. Helens

St. Helens has a vested interest in taking a leadership role on digital infrastructure and digital inclusion for local economic and community development. As a city government, St. Helens has a holistic, longer-term view to retaining and growing the tax base. Furthermore, as an established local entity that State and Federal funding agencies are most likely to recognize, the city has an opportunity to support the grant application process for BEAD and other funding opportunities.

Based on outreach, stakeholder engagement, and analysis of findings from SNG’s research on broadband gaps, the following Principles for Public Investment in Digital Infrastructure can be followed to find an equilibrium between city needs and fiduciary responsibilities with private-sector market interests.

#### Principles for Public Investment in Digital Infrastructure for St. Helens

- Approach broadband as digital infrastructure – public investments in infrastructure should be owned by the locality so they can be stewards of their own future, whether roads, water or sewer or broadband. For St. Helens, this means connecting everyone in St. Helens as soon as possible with at least 100/100 Mbps with digital infrastructure investments.
- Public funds should not be used to subsidize one service provider’s infrastructure (private or public) over other service providers’ infrastructure, strengthening the market power of the provider receiving public funds. Instead, public funds should enable improved and competitive services through digital infrastructure that is open to all service providers.
- Competition is a means to enable competitive services and pricing, where markets are large enough to support multiple providers (with at least two internet service provider options for residents or businesses, three is better). Where markets are not large enough, public-private partnerships between the service provider and the locality can achieve competitive service and pricing levels (in such cases, long-term service contracts with performance metrics would be signed into agreements).
- For service providers that can and are interested in expanding their footprints, St. Helens can support providers with:
  - Affordable last-mile and middle-mile infrastructure that is built with an open-access design but may be operated as a public-private partnership with one provider under a performance contract when the market size does not support multiple providers.
  - Aggregation of demand, market intelligence, and qualified leads for more effective sales and marketing, customization of offerings, and better customer service by providers.
  - Faster and simpler access to easements.
  - Community engagement because service provider outcomes are always better when supported by local champions.
  - Defined population density that makes sense for digital infrastructure investments (fiber and fixed wireless).

## 9 Digital Infrastructure for St. Helens

Areas in St. Helens remain unserved, underserved, and overcharged with broadband because private sector internet service providers do not expect enough of a financial return from investing in those areas. Communities in this situation are often waiting for new funding, new technology, or a private sector provider to step-in and solve their broadband gaps. Even for areas that are considered ‘served’ based on the FCC’s 25/3 Mbps definition of broadband, COVID-19 shined a spotlight on the need for robust digital infrastructure in all areas because unequal access, degrading internet speeds, and instable reliability hurt the local economy.

Community initiatives that attempt to address their broadband gaps by becoming a service provider using a traditional broadband service provider approach are fundamentally flawed. If broadband were financially feasible in those areas, providers would be there already. Furthermore, communities attempting to provide broadband services to those areas are at several disadvantages, most notably competing with experienced incumbents while trying to serve low-profitability areas. The private sector business case for broadband is not flawed; it is correct, which is why those areas remain unserved, underserved, or overcharged.

Relying on traditional private-sector providers to step-in and invest in community digital infrastructure is also flawed. Although communities see significant benefits from broadband investments in terms of retention and growth of local jobs and businesses and quality of life, such community benefits do not accrue to traditional private-sector service providers. This results in underinvestment in broadband relative to a community’s needs. In contrast, from the service providers’ point of view, the level of investment is rational because they receive higher returns elsewhere with higher population densities and lower buildout costs. If, for example, investments into road infrastructure depended exclusively on the direct returns to private sector investors, how extensive and of what quality would our road networks be? Compounding that misalignment, the short-term time horizons for private sector service providers (typically 3-5 years) are not long enough to fully capture investment returns from local market growth.

### 9.1 Strategy for Broadband and Digital Infrastructure Investments

Broadband gaps will continue until localities and investors find a viable solution that better aligns community needs with investors’ returns on their investments. The **critical first step is to pivot to a digital infrastructure approach** in which the longer-term economic benefit to community growth and business success is taken into account. Growing the addressable market for service providers leads to a virtuous cycle that increases network revenue opportunities and returns on investment.

Community initiatives need to take an infrastructure investment approach in order to realize the full economic and community benefits from digital infrastructure over the long term. This can be operationally achieved by partnering with digital infrastructure<sup>8</sup> investors (public and private), in which ownership and operations are structurally separated from retail service delivery. This enables competitive service offerings without becoming a direct competitor to incumbent providers.

Broadband that connects all in a community is digital infrastructure. Like roads and electrical grids, digital infrastructure enables benefits to local economic vitality, competitiveness, resilience, and quality of life. However,

**Digital Infrastructure enables benefits to local economic vitality, competitiveness, resilience, and quality of life.**

<sup>8</sup> Digital infrastructure is a platform for broadband (high-speed internet) networks that are reliable, affordable, and future-ready with at least 100 / 100 Mbps download and upload speeds.



most of these benefits from digital infrastructure investments do not accrue to private sector internet service providers. This results in underinvestment in broadband as providers only target areas they assess to be profitable.

Digital infrastructure is more than simply fast broadband access. Digital infrastructure connects all anchor institutions, residents, and businesses in the community so that all can effectively participate in an increasingly online economy, rather than only serving the most profitable areas. Ubiquitous affordable broadband increases local innovation and grows the local economy, which, in turn, grows the local market for broadband and value-added services. There is attendant upswing in demand for broadband and the value-added services it delivers. These spillover effects (sustainable local economic growth, enhanced quality of life) are indirect benefits to communities and a primary driver for public investment in infrastructure (roads, water and sewer systems, electric utilities).

When localities take a digital infrastructure approach, they are better able to capture the full community benefits over the long term, while creating the potential for competitive service offerings without becoming a direct competitor to incumbent providers. As with road infrastructure, communities can enter into public-private partnerships in digital infrastructure and retain sovereignty over their digital future, while separating ownership from network operations and retail service delivery.

Ubiquitous high-quality broadband is a goal that is often best (or only) realized through a model driven by public-private partnership in the investment in digital infrastructure. This model builds on principles established in the public funding of roads, water and sewer systems, and electric utilities because the indirect benefits to communities are a primary driver for public investment in infrastructure whereas indirect benefits are off-balance sheet to private investors.

## 9.2 Path Forward Options for the City of St. Helens

There are a number of advantages to the City of St. Helens creating a public-private partnership for digital infrastructure. Enabling competition between multiple retail service providers leads to a greater choice of offerings. It also creates new opportunities for the city to retain and attract businesses for whom availability of robust and competitively priced broadband is increasingly a non-negotiable determinant of location. St. Helens has multiple use cases for digital infrastructure that can drive operational cost savings, including public safety communications, city networking needs, and redundancy for all networking and communications needs.

Rather than attempting to directly compete with incumbent ISPs, St. Helens has a vested interest in **investing in a public-private partnership for digital infrastructure** in which options include using an existing utility or creating a Broadband Authority or Special Purpose Vehicle. This retains local assets and economic sovereignty, while enabling outsourcing operations and internet services. A similar model is an airport authority<sup>9</sup> in which operations of the infrastructure are outsourced and services are provided by private airlines who pay gate fees. This proven model for airports mirrors the "open access" model for digital infrastructure. By enabling competition among broadband providers rather than subsidizing one provider, which can create a monopoly position, broadband subscribers across St. Helens get the added benefits arising from competition. The following table summarizes traditional options for addressing broadband gaps.

---

<sup>9</sup> Airports are high-cost infrastructure investments that individual airlines would be challenged to build and operate. A proven model is for the locality to own the airport, but outsource the operations (with a performance contract) and charge gate fees to carriers like Air Canada, WestJet, etc.

Table 11. Options in Addressing Broadband Gaps

Traditional Options in Addressing Broadband Gaps for St. Helens			
Strategy	Cost	Projected Benefits	Expected Outcomes
<b>Do Nothing</b> – leave unserved and underserved market to private sector service providers	For unserved and underserved areas: <ul style="list-style-type: none"> <li>• Reduced economic opportunities and quality of life</li> <li>• Reduced tax revenues and property values</li> </ul>	No financial implications to city because city is not involved	Unserved and underserved areas will persist where there is not enough of a private sector business case to serve them <ul style="list-style-type: none"> <li>• Risk of continued digital divide</li> <li>• Limited ability to implement smart community services</li> <li>• Declining economy and population</li> </ul>
<b>Subsidize Provider Business Case</b> (traditional approach to public-private partnerships)	Subsidy (e.g., financial, rights of way, market exclusivity) by city to attract private-sector partner investment in network	Service to designated unserved and underserved areas as part of partnership agreement	Subsidization of business case to a private-sector partner <ul style="list-style-type: none"> <li>• Potentially limited competition to the provider under contract</li> <li>• City’s goals of economic vitality, community benefits, smart community services, and long-term planning may not align with provider’s goals (revenues, profitability, enough return on investment compared to other investment opportunities)</li> </ul>
<b>Become an internet service provider</b>	<ul style="list-style-type: none"> <li>• Resources to build, operate, and manage network</li> <li>• Continual need to acquire customers</li> <li>• Need to compete against incumbent and new providers</li> <li>• Legal challenges from incumbents</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to direct investments to neighborhoods, and potentially to generate positive cash flow if there is a business case</li> <li>• Control over technology updates</li> </ul>	Operating as a competitive provider in an incumbent provider market (i.e., pre-existing providers serving area), which means that demand in unserved and underserved neighborhoods may not be enough to sustain a business case for a municipal ISP
<b>Public-Private Partnership to invest in digital infrastructure</b> (outsourcing operations and using an open access model for retail internet services)	Resources to build a network and creation of a Broadband Authority/Utility or Special Purpose Vehicle (SPV)	Internet service improvements and lower costs for bandwidth because open access enables competition and ubiquitous community access	<ul style="list-style-type: none"> <li>• City is a steward of its economic and political future</li> <li>• Open access network architecture offers greatest alignment between community needs and broadband services</li> </ul>

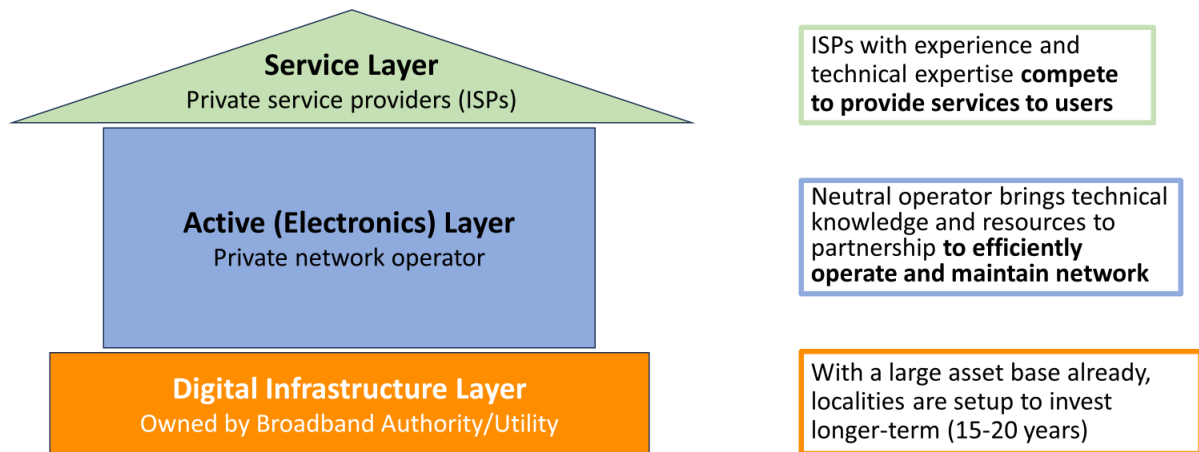
### 9.3 Digital Infrastructure Model to Enable Competition

Investments in digital infrastructure need to bridge broadband gaps identified in this report. To reduce barriers to entry for internet service providers (capital costs, technology compatibilities, etc.) to serve individual premises in St. Helens, a digital infrastructure network design should structurally separate network ownership (i.e. asset paid with taxpayer funds) from network operations and retail services. This enables the appropriate network operating model to be chosen (one provider, multiple providers via open access, etc.) based on local market circumstances, interest by private-sector partners, and network demand (current and potential)<sup>10</sup>. Providing high-capacity digital infrastructure to last mile (connecting premises) and middle mile enables competitive retail service providers to enter and operate within the locality.

Network operation revenues (primarily derived from customer subscriptions) can cover the network build and operations costs. For example, leasing the digital infrastructure can provide St. Helens the revenue to pay the costs of owning and maintaining the initial infrastructure, while retaining control over future investments, build-out phases, and network maintenance.



## Structural Separation of Digital Infrastructure



**Delivery of services by private sector, with local stewardship over digital infrastructure**

**Figure 14. Structural Separation of Digital Infrastructure**

With structural separation of network ownership from operations and service, network operators can be contracted to manage network operations. Third-party retail providers can be invited to offer their internet services at competitive rates, while also providing an ongoing fee for access to the network. The cost for retail providers to access the market is minimal compared to the cost of building their own digital infrastructure, which is a financial incentive to participate. Furthermore, digital infrastructure increases local innovation and grows the local economy, which grows the local market for broadband and value-added service providers, and retail providers are well aware of these benefits.

<sup>10</sup> <https://sngroup.com/broadband-demand-definitions/>

## 10 eStrategy for St. Helens

### 10.1 Recommendations and Next Steps for St. Helens

Priorities among elected officials, community leaders, and local stakeholders, as identified in the **Digital Needs and Readiness Assessment** (Section 2), showed a consensus on goals and issues that can be addressed through digital infrastructure and improving access to vital services that are enabled by broadband access, in particular expanded online education and new opportunities for work and economic growth.

Based on the gaps, barriers, and opportunities identified in the **Broadband Assessment** (Section 4), the following recommendations provide next steps for the City of St. Helens to address broadband and digital inclusion gaps. The following digital inclusion and transformation recommendations are designed to build an eStrategy for the City of St. Helens that:

- Raises digital awareness and builds capacity of local households and businesses to fully realize the benefits from online practices
- Leverages local stakeholder resources to sustainably meet the evolving digital needs
- Enables the community to fully realize economic impacts and community benefits from digital infrastructure and effective use of online practices

Successfully implementing an eStrategy will require a holistic approach that takes into account the needs of the community and projected growth in demand for online practices. This includes building a shared vision among elected officials, community leaders, and local stakeholders that grows buy-in around strategies and commitments for the project participants. The recommendations also include digital inclusion and transformation elements that address the digital capacity of local businesses and demographic groups.

### eStrategy Recommendations for St. Helens

#### **Broadband, Digital Infrastructure, and Digital Inclusion Need to be Managed as a Process**

Technologies, community needs and expectations, and local circumstances will change and evolve. Therefore, implementing digital infrastructure and transformation is a process. This requires an ongoing effort and focus to identify evolving digital inclusion needs, strategically address them, measure outcomes and share performance stories to substantiate investments made to plan for future phases.

#### **Digital Economy Management**

Based on the findings from this study and discussions with stakeholders in St. Helens, it is recommended that a dedicated resource be designated, or necessary expertise be commissioned, for managing and coordinating broadband and digital inclusion initiatives. This includes promoting innovative uses of the digital infrastructure by local businesses, organizations, and households

This role would involve not only the oversight of these projects but also regular reporting to the City Councilors. Engaging with the Councilors is crucial, particularly when political leverage is required, such as staying updated with the State Broadband Office or coordinating with key local stakeholders.

Additionally, this resource would support the development and coordination of grant applications and help manage funding processes for broadband infrastructure. This position is important for driving the digital

transformation within the community, ensuring that collaboration with local service providers is optimized and that the benefits of digital advancements are accessible to all residents.

### **Digital Innovation Hubs**

To enhance digital access and literacy in St. Helens, identifying local facilities that can serve as Digital Innovation Hubs will help the city build an inventory of resources that can serve the digital economy. These hubs would offer public access to computers and other internet access devices, thereby democratizing digital resources. Furthermore, these centers become meeting points for **Digital Navigators** to showcase and demonstrate existing technologies, helping individuals understand potential benefits firsthand. Activities could include 'test-driving' the speed of fiber broadband, exploring telehealth and remote monitoring, and examining the uses of precision agriculture. Alongside this, there should be a concerted effort to develop an outreach and engagement plan that informs all residents and businesses of these offerings. Local stakeholders will be vital to build local capacity and employ a train-the-trainer model, which will provide necessary resources and technical support to bridge digital inclusion gaps effectively.

### **St. Helens Broadband Planning**

St. Helens should actively pursue Federal and State funding opportunities, with a particular focus on coordinating with regional partnerships to ensure scalability and sustainability of broadband initiatives. One strategic move could be joining regional broadband coalitions, such as Col-Pac<sup>11</sup> or other similar organizations, that would provide the ability to leverage assets and expertise that could contribute to Broadband Equity, Access, and Deployment (BEAD) funding. Regional planning can result in higher scoring in grant applications.

### **Ongoing Communication and Community Engagement**

Implementing an ongoing communication process to keep local leaders and the public informed and aware of opportunities is vital. Communication and community engagement should highlight the benefits of digital inclusion and transformation initiatives throughout the city, while exploring opportunities to join other regional initiatives that serve similar interests. Outcomes and impacts from community outreach activities should be measured with performance stories shared among community members and leaders.

### **Track Economic Impacts and Community Benefits**

Regularly measure outcomes and impacts to enable the city to share success stories and demonstrate benefits from community investments. These efforts will not only build local and regional consensus, but can also enable feedback mechanisms needed to identify and address evolving digital needs in a timely and effective manner.

---

<sup>11</sup> Col-Pac is an economic development district, currently representing nearby counties of Columbia, Clatsop, Tillamook, and Washington. <https://nworegon.org/>

## Appendix 1 - Community Anchor Institutions in St. Helens

Table 12. Community Anchor Institutions: Location and Type

ENTITY NAME	ADDRESS	CATEGORY
OREGON STATE POLICE – ST. HELENS*	500 NORTH HIGHWAY SAINT HELENS, OR 97051	PUBLIC SAFETY
COLUMBIA COUNTY JAIL/SHERIFF*	901 PORT AVE ST. HELENS, OR 97051	PUBLIC SAFETY
COLUMBIA RIVER FIRE AND RESCUE – SAINT HELENS STATION*	105 SOUTH 12 <sup>TH</sup> STREET SAINT HELENS, OR 97051	PUBLIC SAFETY
COLUMBIA RIVER FIRE AND RESCUE – ADMINISTRATION*	270 COLUMBIA BLVD ST. HELENS, OR 97051	PUBLIC SAFETY
COLUMBIA RIVER FIRE AND RESCUE – TRAINING*	58555 MCNULTY WAY ST. HELENS, OR 97051	PUBLIC SAFETY
ST. HELENS POLICE DEPARTMENT*	150 S 13 <sup>TH</sup> STREET ST. HELENS, OR 97051	PUBLIC SAFETY
ST. HELENS CITY HALL*	265 STRAND STREET ST. HELENS, OR 97051	GOVERNMENT
ST. HELENS PUBLIC LIBRARY*	275 S 18 <sup>TH</sup> STREET, STE A ST. HELENS, OR 97051	LIBRARY
COLUMBIA COUNTY LAW LIBRARY*	270 S. FIRST STREET ST. HELENS, OR 97051	LIBRARY
MCBRIDE ELEMENTARY SCHOOL*	2774 COLUMBIA BLVD ST HELENS, OR 97051	SCHOOL AND EDUCATION
ST HELENS HIGH SCHOOL*	2375 GABLE RD ST HELENS, OR 97051	SCHOOL AND EDUCATION
CUBS CORNER	2375 GABLE RD ST HELENS, OR 97051	SCHOOL AND EDUCATION
THE TOT SPOT	2365 COLUMBIA BLVD ST HELENS, OR 97051	SCHOOL AND EDUCATION
SNOOPEELAND CHILD DEVELOPMENT CENTER	174 SUNSET DRIVE ST HELENS, OR 97051	SCHOOL AND EDUCATION
COLUMBIA COUNTY EDUCATION CAMPUS*	474 N 16 <sup>TH</sup> ST ST HELENS, OR 97051	SCHOOL AND EDUCATION
ST HELENS MIDDLE SCHOOL*	354 N 15 <sup>TH</sup> ST ST HELENS, OR 97051	SCHOOL AND EDUCATION
LEWIS & CLARK ELEMENTARY SCHOOL*	111 S 9 <sup>TH</sup> ST ST HELENS, OR 97051	SCHOOL AND EDUCATION
SPRING MEADOWS ASSISTED LIVING FACILITY	36070 PITTSBURG RD SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS
LEGACY URGENT CARE CLINIC	500 NORTH COLUMBIA RIVER HIGHWAY SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS
MEADOW PARK HEALTH AND SPECIALTY CARE CENTER	75 SHORE DRIVE SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS
SEMLINGS PHARMACY, INC	1804 COLUMBIA BLVD SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS
WALGREENS - 10056	175 SOUTH COLUMBIA RIVER HIGHWAY SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS

AVAMERE AT ST HELENS	2400 GABLE RD SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS
SAFEWAY	795 COLUMBIA RIVER HIGHWAY SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS
RITE AID - 5333	785 SOUTH COLUMBIA RIVER HIGHWAY SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS
WAL-MART - 2422	2295 GABLE ROAD SAINT HELENS, OR 97051	MEDICAL AND HEALTHCARE INSTITUTIONS

\* = identified as CAI by Oregon Broadband Office

**CELL TOWER INFORMATION**

COLUMBIA 911 COMMUNICATIONS DISTRICT  
Height: 38.1 meters  
FCC License ID: 2524438  
56811 MCNULTY WAY  
SAINT HELENS, OR



## Appendix 2 - Broadband Deployment Cost Calculation Methods

Fiber deployment cost is calculated per linear mile using the relevant row of the cost table using the formula:

$$\text{Fiber Cost} = (\# \text{ Unserved Households} \times \text{Fiber Cost per Household}) + (\# \text{ Linear Road Miles} \times \text{Fiber Cost per Lineal Mile})$$

Costs are determined using the following totals for fiber deployments.

Table 13. Fiber Deployment Cost Estimate Figures

Deployment Cost Estimates					
Fiber Density Group	Fiber per HH	Fiber Per Linear Mile	Wireless Per HH	Wireless Per Tower	Wireless Tower Range
Commercial	\$1,500	\$25,000	\$1,500	\$150,000	2.50
Subsidized	\$1,500	\$50,000	\$1,500	\$200,000	2.50
High-cost	\$3,000	\$100,000	\$3,000	\$350,000	2.50



## Appendix 3 - Definition of Concordance

### Inter-rater Concordance ( $r_L$ )

Numeric measurement of the level of agreement between between the responses to a categorical survey question, with  $r_L = 1$  corresponding to complete agreement (all responses are the same), and  $r_L = 0$  corresponding to complete disagreement (responses are equally split between the two extremes).

We use

$$r_L = \sqrt{r_{wg(j)}^*}$$

with  $r_{wg(j)}^*$  as defined in O'Neill (2017):

$$r_{wg(j)}^* = 1 - (S_x^2 / \sigma_{mv}^2)$$

where:

- the observed variance of the responses is  $S_x^2$ , and
- the maximum variation possible for the responses is  $\sigma_{mv}^2$ , achieved when all of the responses are split between the minimum and maximum scale values:

$$\sigma_{mv}^2 = (X_U - X_L)^2 (p)(1 - p)$$

with

- $X_U$  is the upper (maximum) value of the scale,
- $X_L$  is the lower (minimum) value of the scale,
- $p = \frac{\lfloor \frac{N_x}{2} \rfloor}{N_x}$  is the proportion of values at one extreme, computed by dividing the total number of observations  $N_x$  by 2, and then applying the floor function ( $\lfloor x \rfloor$ ) to round down



**strategic**  
networks group

---

advancing economies in a digital world