The Importance of Broadband and Cellular for Rural Communities

And How Community-Owned Broadband Networks Can Bridge The Gap

Municipalities Newfoundland and Labrador Webinar
July 28, 2020

ROCK NETWORKS

Newfoundland and Labrador deserves access to the same opportunities as the rest of Canada.

ROCK NETWORKS

President & CEO

JOE HICKEY

- Home Town: Terrenceville, Fortune Bay, NL
- Education:
  - Memorial University of Newfoundland, Bachelor or Mechanical Engineering, 1990
  - University of Toronto Rotman School of Management, Executive MBA, 1996
- Career:
  - Nortel Networks
  - CEO of 2 Venture Funded Startups
  - Worked in 3 countries (Canada, US (Silicon Valley), India)
  - Travelled and done business in over 40 countries
  - Founded ROCK Networks in 2007
  - Acquired Nova Communications 2017
- Personal
  - Married (Jeanette), 5 children, 1 grandchild

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AGENDA

Communications Infrastructure Challenges

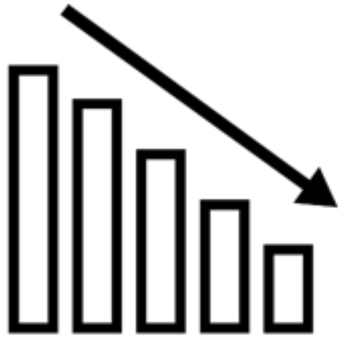
Fiscal Reality

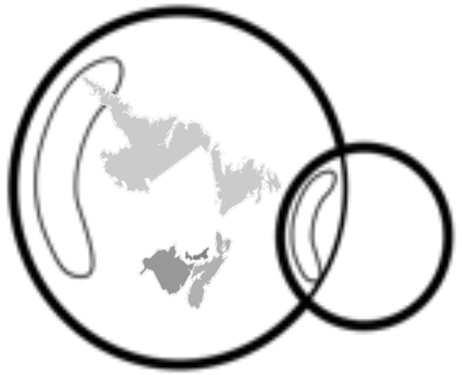
Community Broadband Networks

Where Do We Go From Here

QUESTIONS

CRISIS OPPORTUNITY





Opportunities for The Province of NL…

- What if we could say “The digital economy will diversify and help grow the NL Economy above 5% per year while improving services and saving money etc.”…
- What if we could say “We will have 1 Gbps Broadband Internet Connectivity available to every community in NL”…
- What if we could say “We will enable cell phone service to every community in NL”…
- What if we could say “NL Public Safety workers will have a state of the art communications network allowing them to do their jobs more effectively and more safely”….

Communications Infrastructure Challenges

Communications Issues

Rural Broadband

98% of NL is connected with obsolete technology.

Current infrastructure can not meet new CRTC definition.

Eastlink and Bell own network and decide where investment is made.

Lack of access infrastructure prohibits competition.

Cellular

Many communities and highways have little to no cellular coverage.

Rural citizens are paying for a service that they do not use.

Degree of investment prohibits competition.

Public Safety

Obsolete Networks

Low # of users

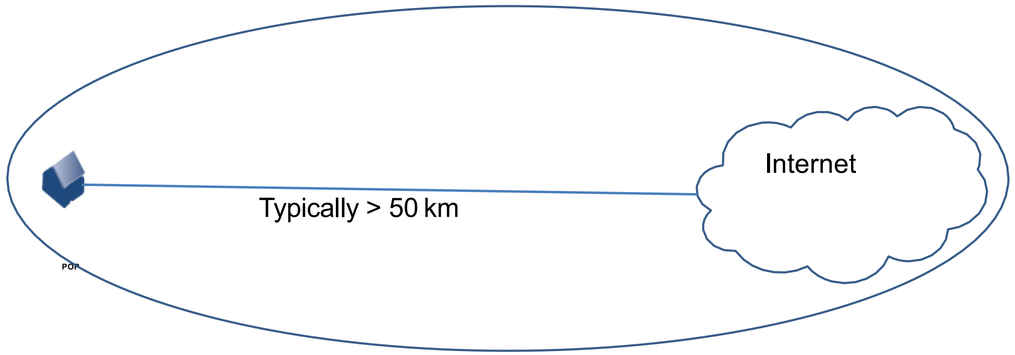
Satellite Phones (Remote Areas, Trans Labrador) endanger worker safety.

“How do you expect us to grow, be vibrant and stay in a community if we don’t have internet access?”

- Shared with Federal Rural Economic Minister Bernadette Jordan while visiting CLARENVILLE, NL

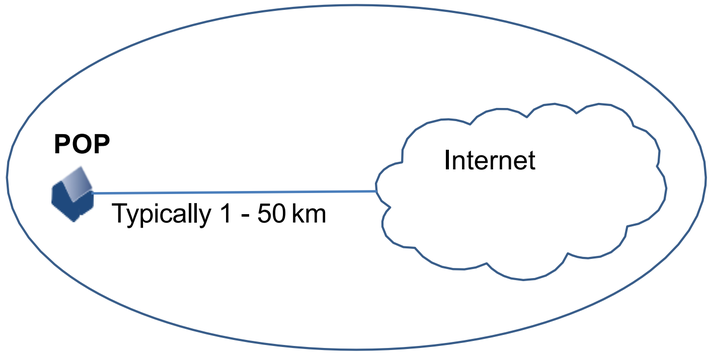
Network Basics

Long Distance



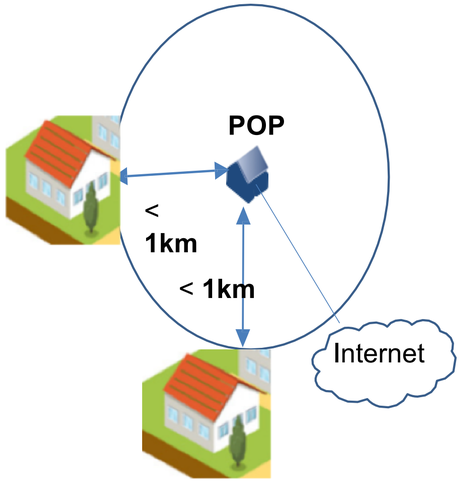
Technology
wireless, optical, or satellite.

Middle Km



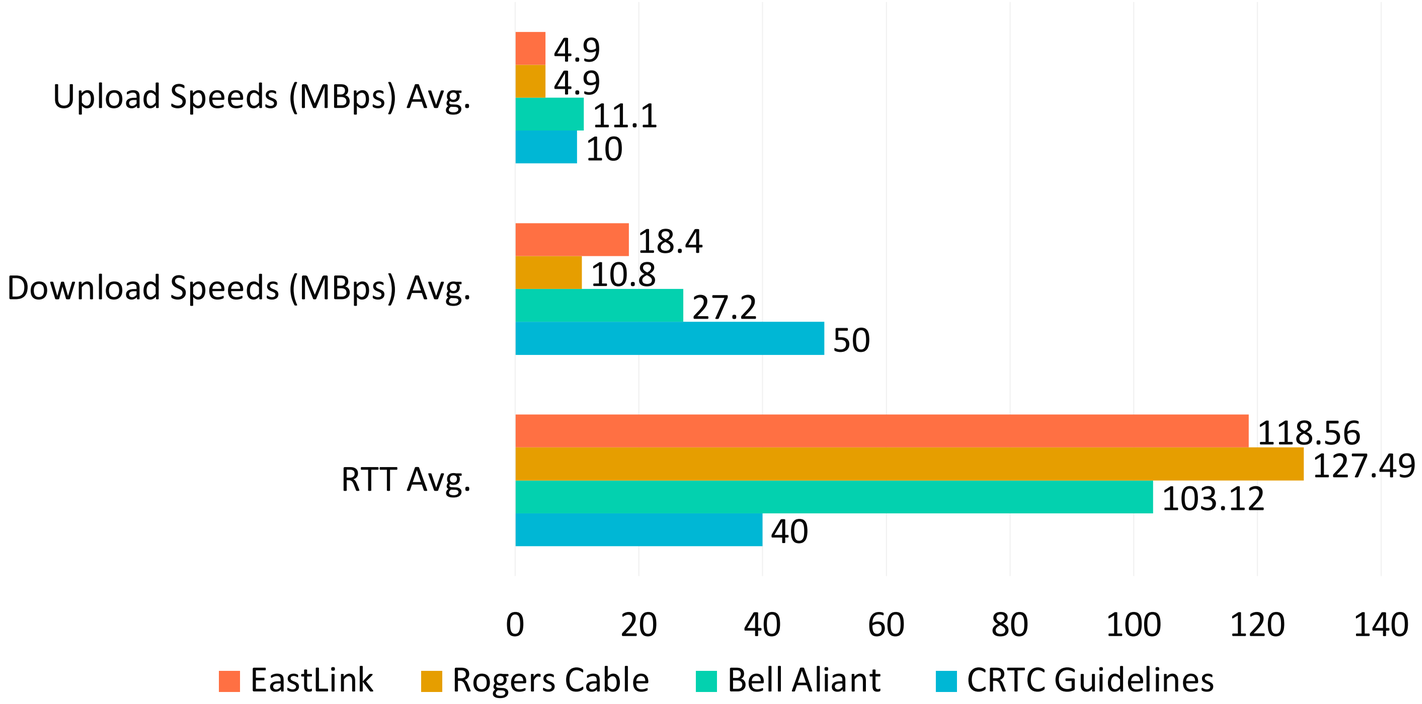
Technology
wireless, optical, or satellite.

Last Km



Technology
copper/cable, wireless, optical, or satellite.

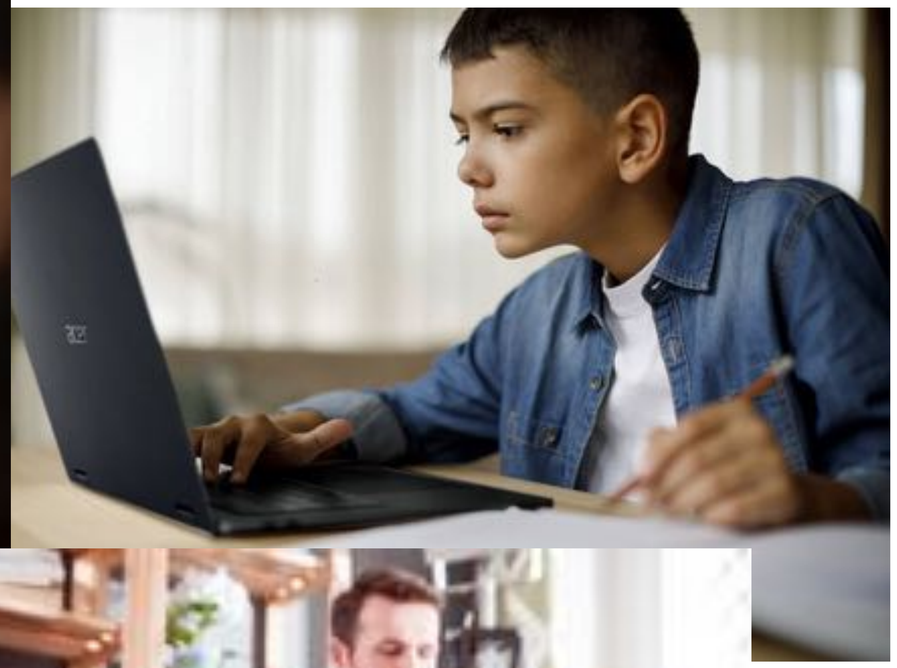
NL Broadband Speeds: Where we stand



- Federal Government Definition of Broadband
  - 50 Mbps Download
  - 10 Mbps Upload
- NL has connections but they are not broadband
- Average Speeds are skewed by Bell Fibe in Urban Centres

Our goal of 1000/100/25ms

You can test your current speed here: https://performance.cira.ca/



NETFLIX

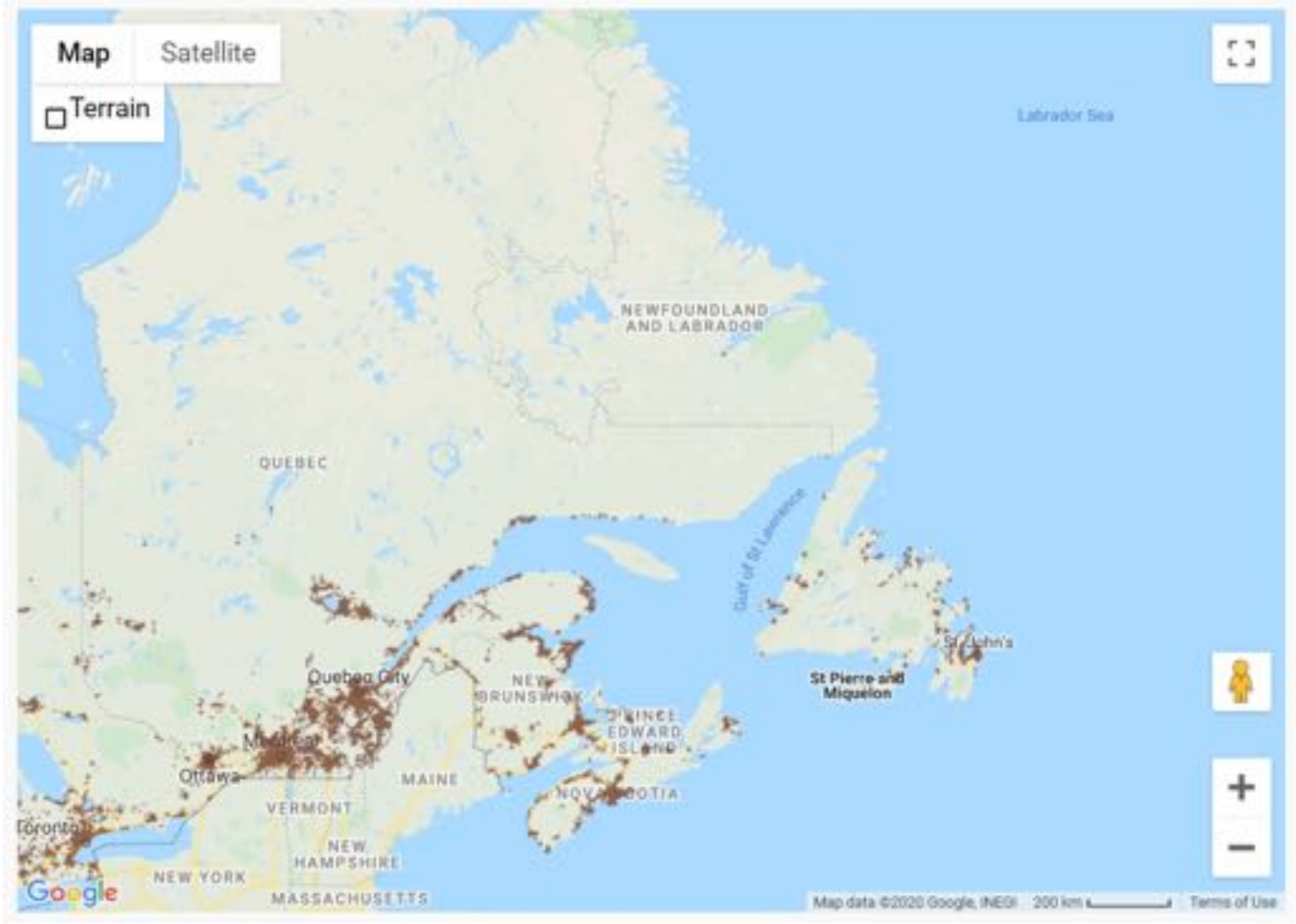
Network Technology Options

Current

Objectives	Cable/ Copper	Traditional Satellite	Fixed Wireless	Optical/ Fibre	Future, LEO Satellite
Low Equipment Cost	X	X	✓	X	X
Low Installation Cost	X	X	✓	X	X
Low Subscription Cost	X	X	✓	X	✓
Low Operational Cost	X	X	X	✓	X
Long Technology Lifecycle	X	✓	X	✓	TBD
High Performance	X	X	-	✓	-
Performance Limitations	Throughput Distance Cable	Throughput Weather Foliage Latency	Through put Distance Foliage	✓	Throughput Weather Foliage
Low Latency	✓	X	✓	✓	-

Future Technology

Current Network

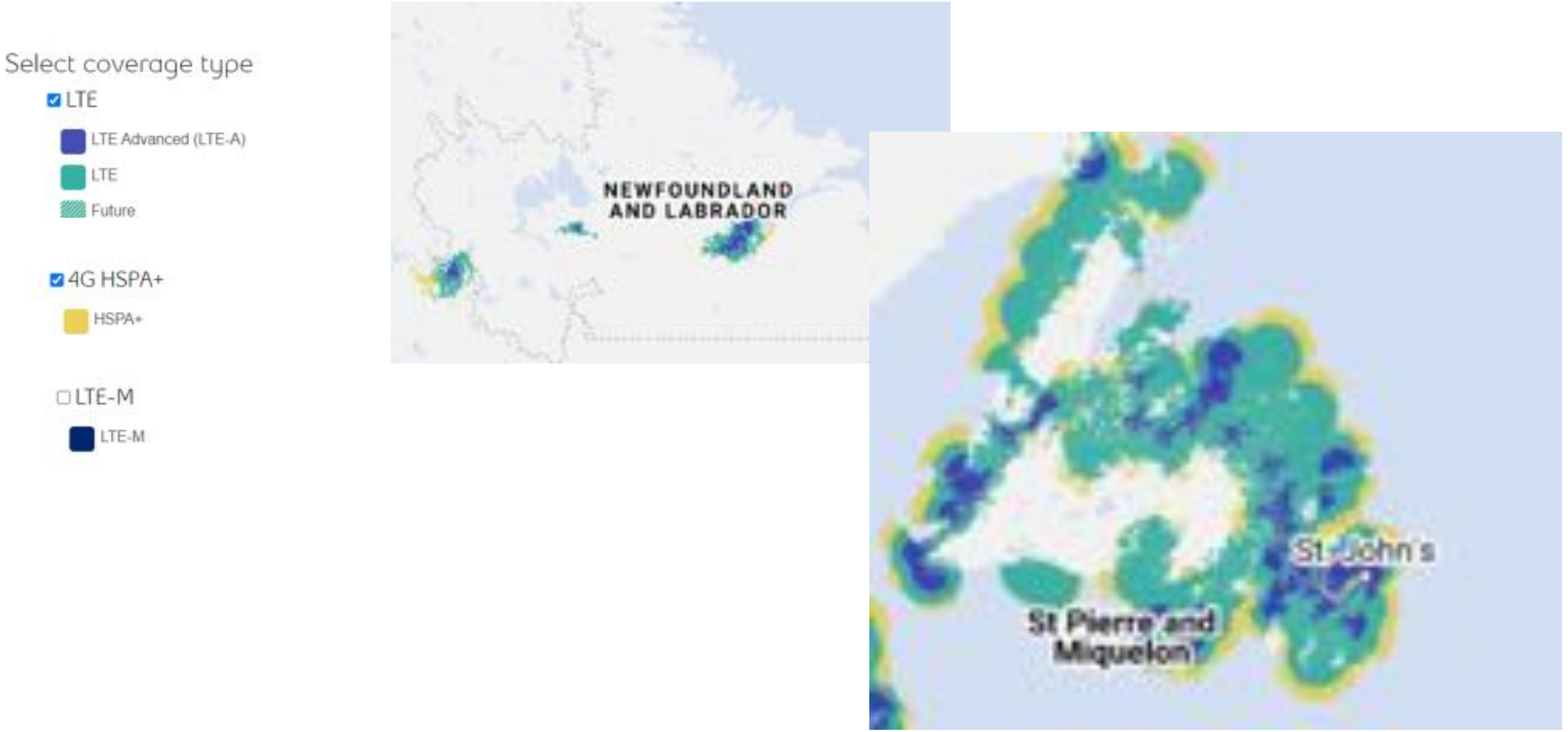


Cellular

“There is a social need to talk to the family and an economic need today where businesses can’t operate without cell service. It really hurts the ability of tourism operators where visitors expect to be able to use their cell phones, to use debit cards and Interac. When they find out the cell service is spotty at the best of times, it takes them back.”

- Tony Keats, past president of Municipalities Newfoundland and Labrador, Western Star Reporter, Feb 2019.

Bell’s Stated Cellular Coverage



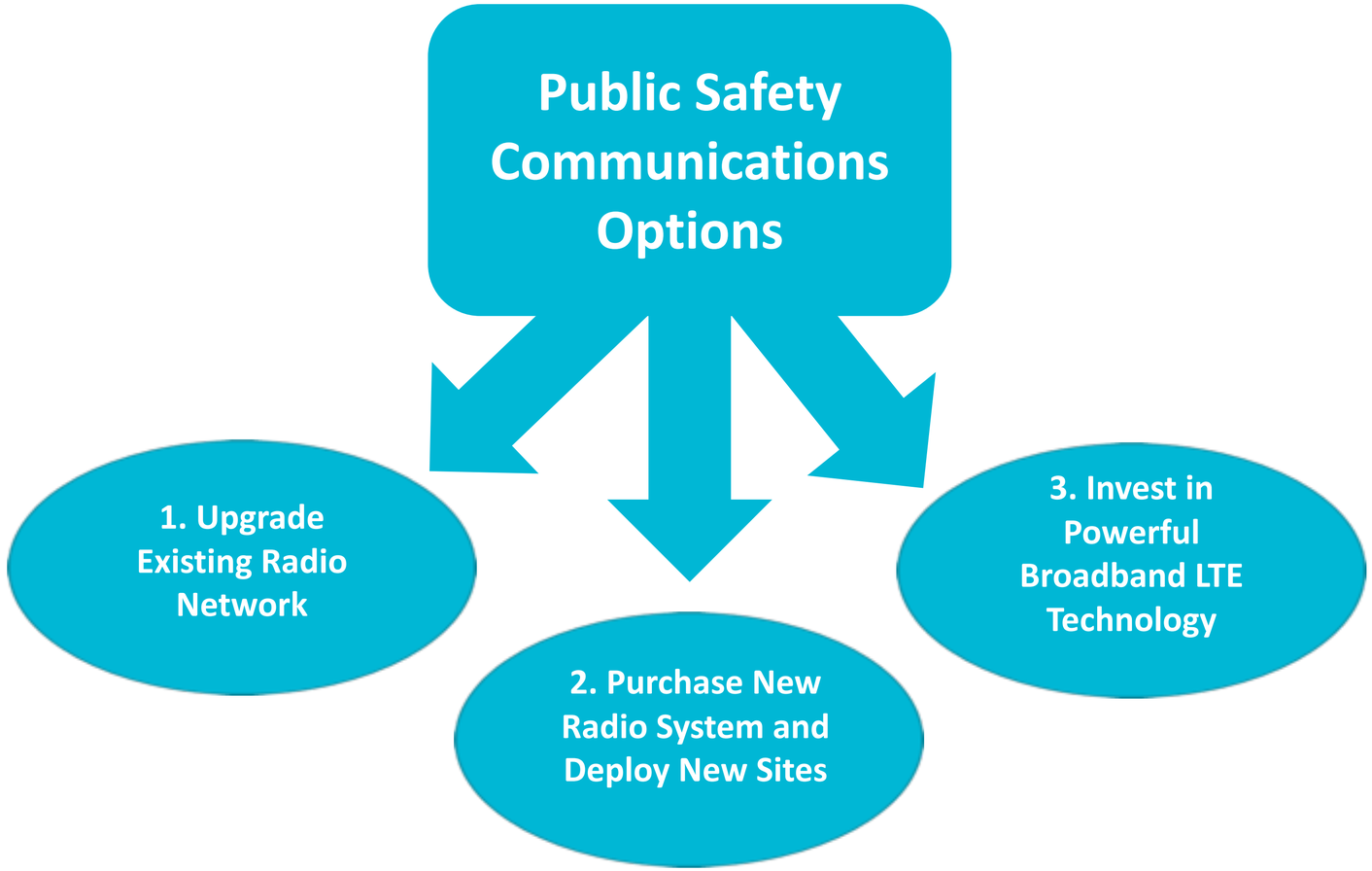
https://www.bell.ca/Business/Mobility/Our_network_coverage

Public Safety

“Our government is committed to investing in and supporting quality services and equipment for first responders in our province. Emergency responders work diligently to keep our residents safe, and this new comprehensive system will allow them to communicate and provide timely assistance to those in need across Newfoundland and Labrador”

- Honourable Derrick Bragg Minister of Municipal Affairs and Environment

“NL63x” Conundrum: Public Safety vs. Maritimes



- Coverage Area: 3X
  - 405,000 km^2 vs. 133,000 km^2
- Users: 1/6
  - 5,000 vs. 30,000
- Lower Tax base for Major Projects 1/3.5
  - 528,000 vs. 1,850,000
- Government Fiscal Reality
  - How to do more with less
  - 3 x 6 x 3.5 = 63x factor

Option	1	2	3
Cost $	$	$$$	$$$$
Capability	Voice	Voice	V/V/D
Impact	Low	Low	High

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FirstNet: US Broadband for Public Safety

FirstNet
First Responder Network Authority

- The FirstNet mission is to deploy, operate, maintain, and improve the first high-speed, nationwide wireless broadband network dedicated to public safety. This reliable, highly secure, interoperable, and innovative public safety communications platform will bring 21st century tools to public safety agencies and first responders, allowing them to get more information quickly and helping them to make faster and better decisions.
- All 50 States are supporting FirstNet
- This powerful broadband LTE network allows first responders and other public safety personnel to **send and receive voice, data, video, images, and text** without concerns about network congestion. The FirstNet network offers guaranteed priority and pre-emption when they're needed.
- FirstNet is Deployed!

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Fiscal Reality

“Access to scalable broadband networks is essential as the digital economy in Canada expands”

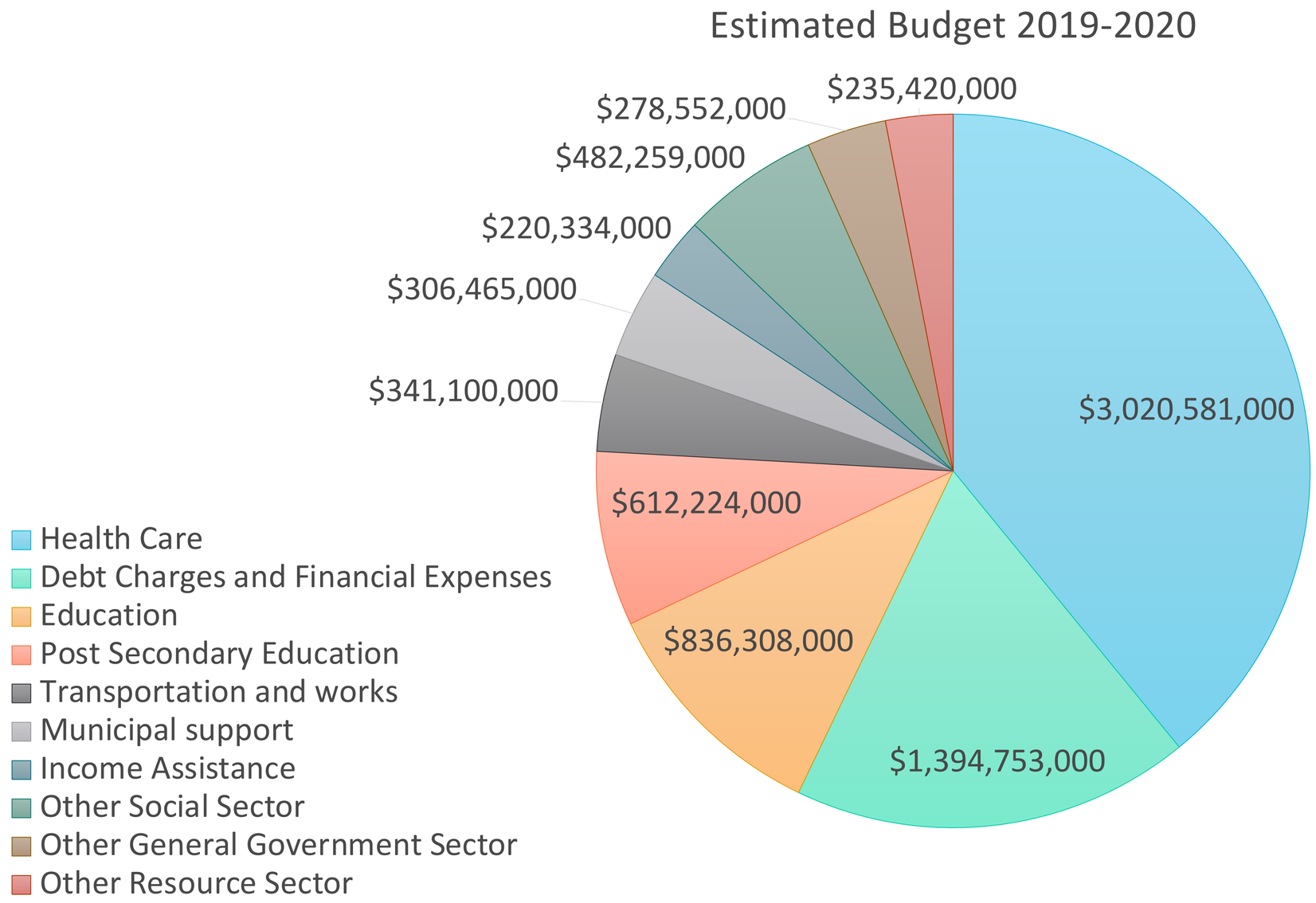
Modern Telecommunications services – the path forward for Canada’s digital economy

Telecom Regulatory Policy CRTC 2016-496

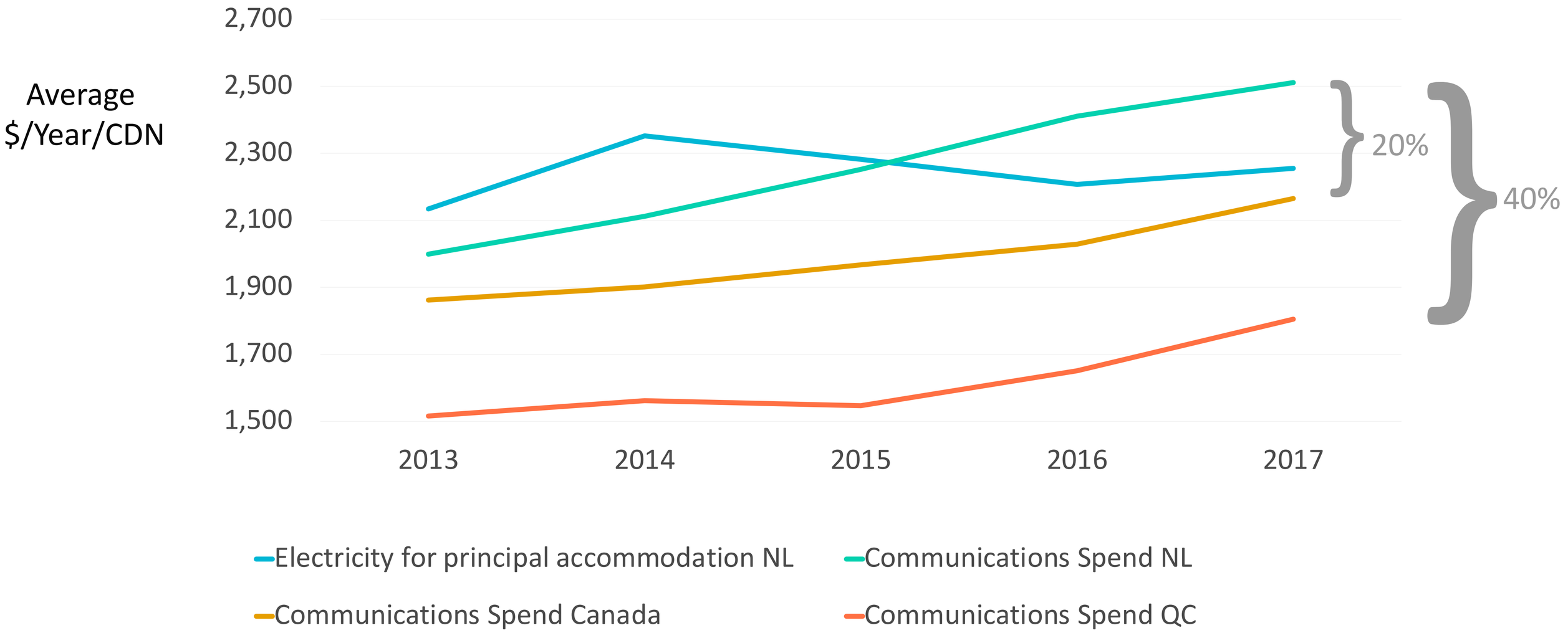
Today's Financial Reality

- The average NL household spends more on communications than they spend on electricity.
- NL realizes no return on the communications spend: communications is a cost paid to mainland corporations.
- Opportunities lost in rural NL due to lack of access to broadband and cellular services.
- The current government services model unsustainable and cost must be reduced to remain viable.

Estimated Budget 2019 - 2020



Household Spend on Communications is Rising



https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110022201

Community Broadband Networks

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Rural Broadband

Cellular

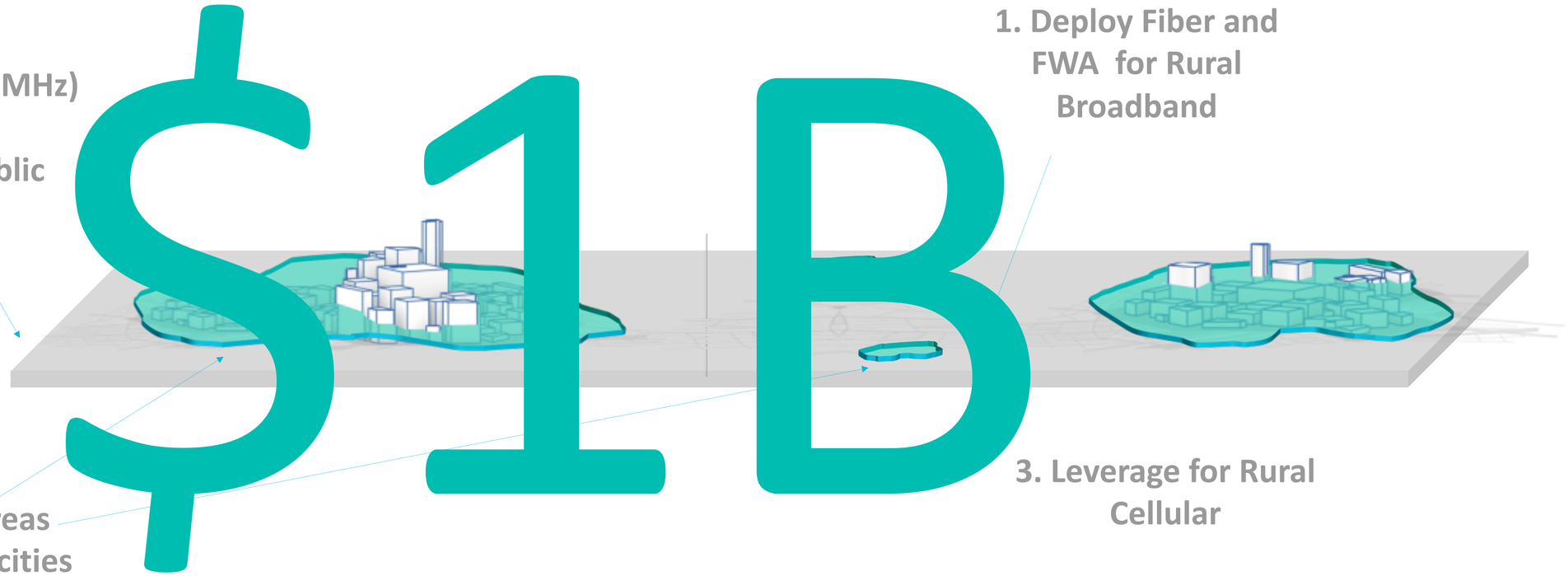
Public Safety

Fiscal Reality

Leverage ONE Network to address all three challenges

2. Deploy Public Safety LTE (700 MHz) Across province For both Public Safety and Public Safety Broadband

1. Deploy Fiber and FWA for Rural Broadband



3. Leverage for Rural Cellular

4. Add 5G and 4G LTE in areas requiring even further capacities

One Network to support all Newfoundlanders

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Big Telco's

- $$$ Driven
- ROI Focused
- Legacy Technology

Bell Quote: “Our latest 5% increase in the BCE common share dividend to $3.33 is effective with the Q1 2020 payment on April 15, 2020. This is the 12th consecutive year in which we have increased the dividend by 5% or more while maintaining our payout ratio within the target policy range of 65% to 75% of free cash flow. Our total shareholder return over that timeframe has been 324%.”

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Community Broadband Networks

Affordable & High Quality

Serve all residential and commercial needs.

Equitable

Fundamental to the future economic and social prosperity, it is for all citizens and businesses; 100% coverage.

Municipally-Governed

It will be governed by Community Internet Board. A revenue return to the Municipalities from network usage.

Future-Proof

It is based on technologies that are flexible and adaptable to future changes.

Open Access Networks

The network is based on a competitive Carrier-neutral model.

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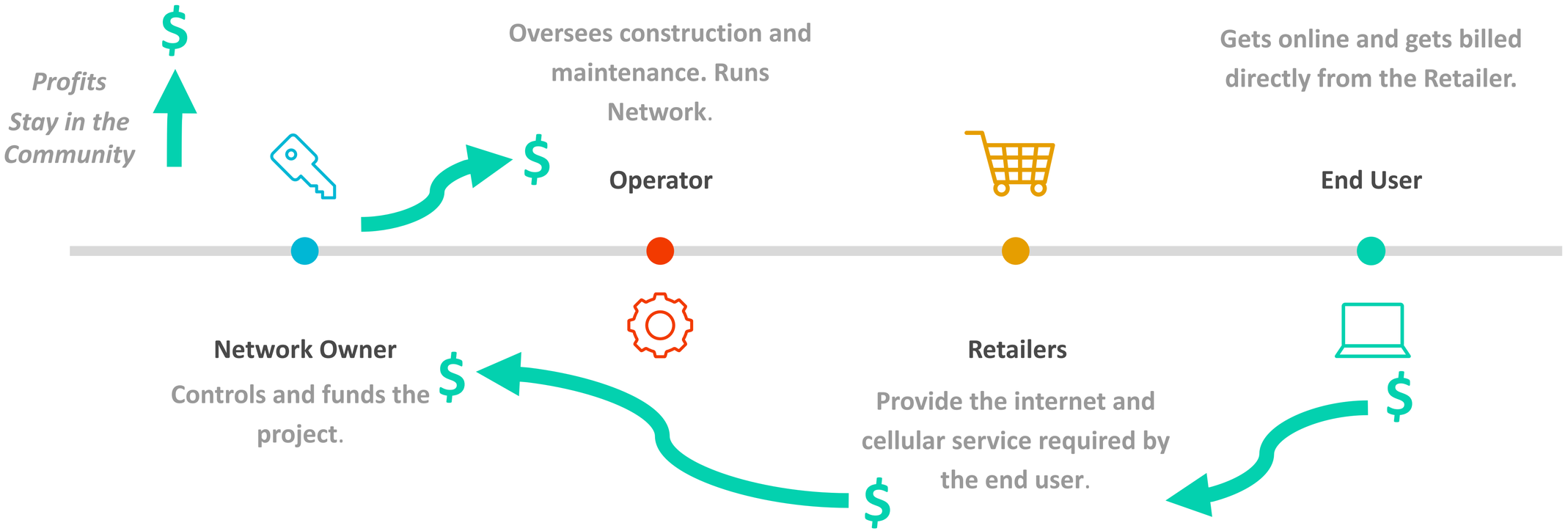
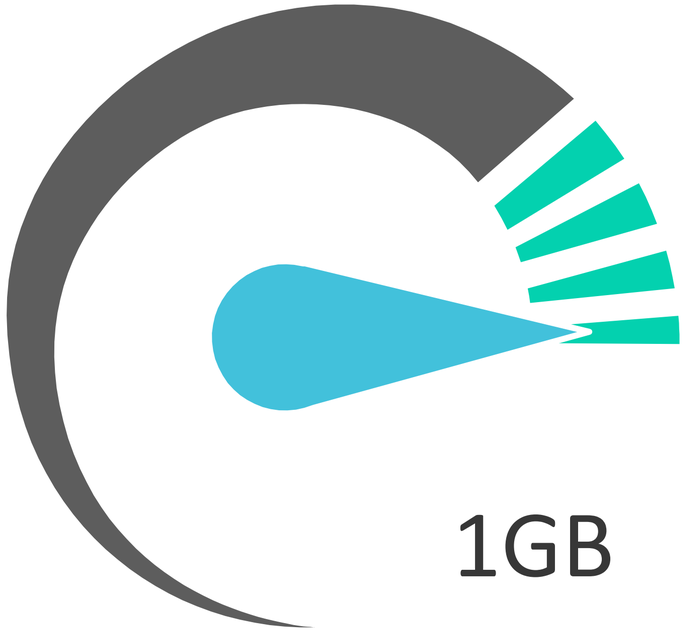
How It Works: Open Access Networks



The Difference:
Community Broadband Networks

1GB for home & 10GB business!



1GB

25MB

Our Solution VS COMPETITOR

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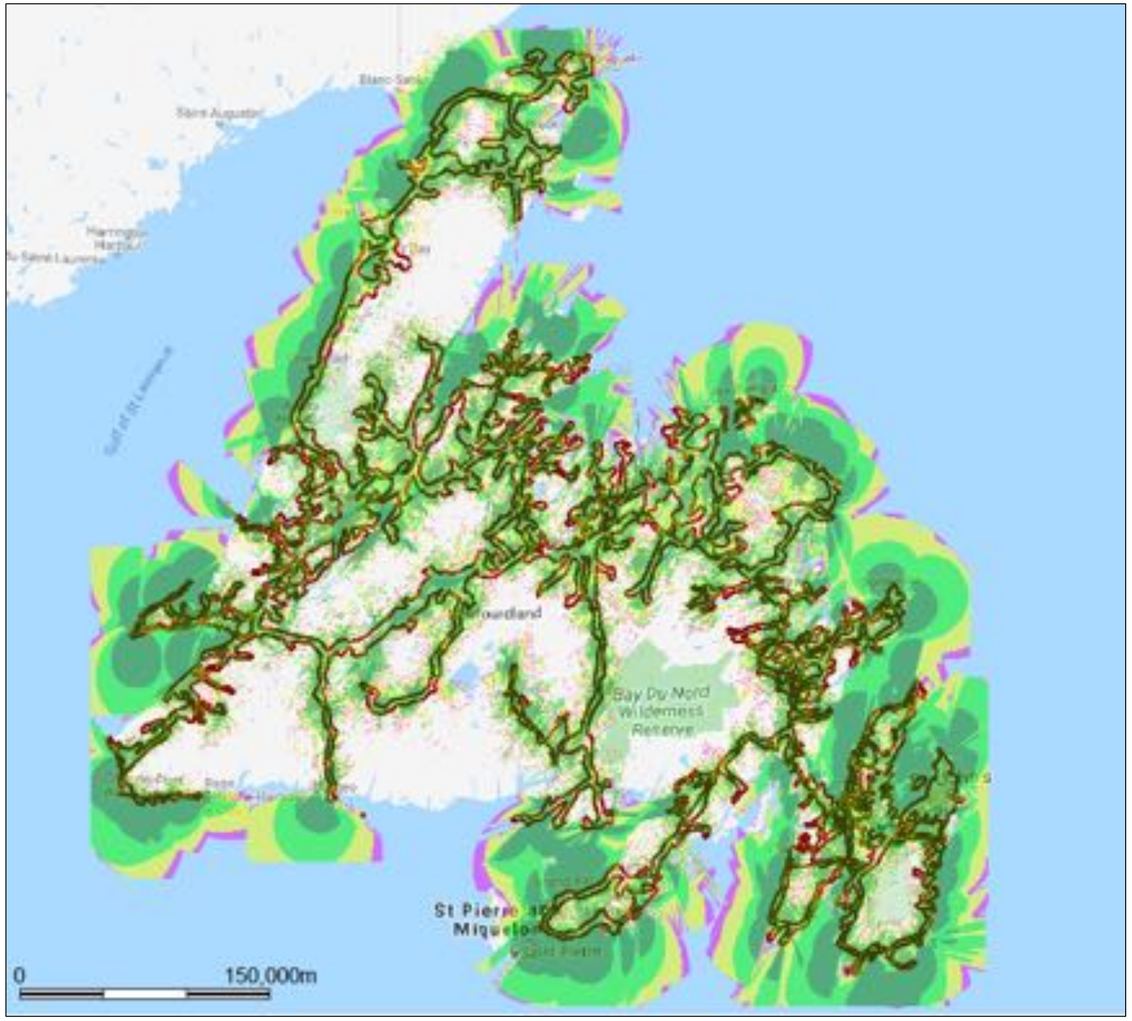
Our Network Vision



Summary

Island of Newfoundland

- 337 sites used
- 115 Existing and 222 New planned sites used in the study.

Labrador

- 57 sites used
- 14 Towns as per RCMP RFI and includes TransLabrador Highway.

Coverage Results

- At the level of -110dBm, 95% of major roads & communities are covered.

Is there a business case for rural broadband networks? Really?

- Are there rural economic and social benefits from more competition within the Canadian telecommunications industry (w/o foreign investment)?
  - ***Yes, its about a sustainable business model and new technologies.***
- Is there a different approach the government should be investigating to overcome the challenges telephone companies have delivering rural Internet coverage?
  - ***Yes, community owned and operated Open Access Networks.***

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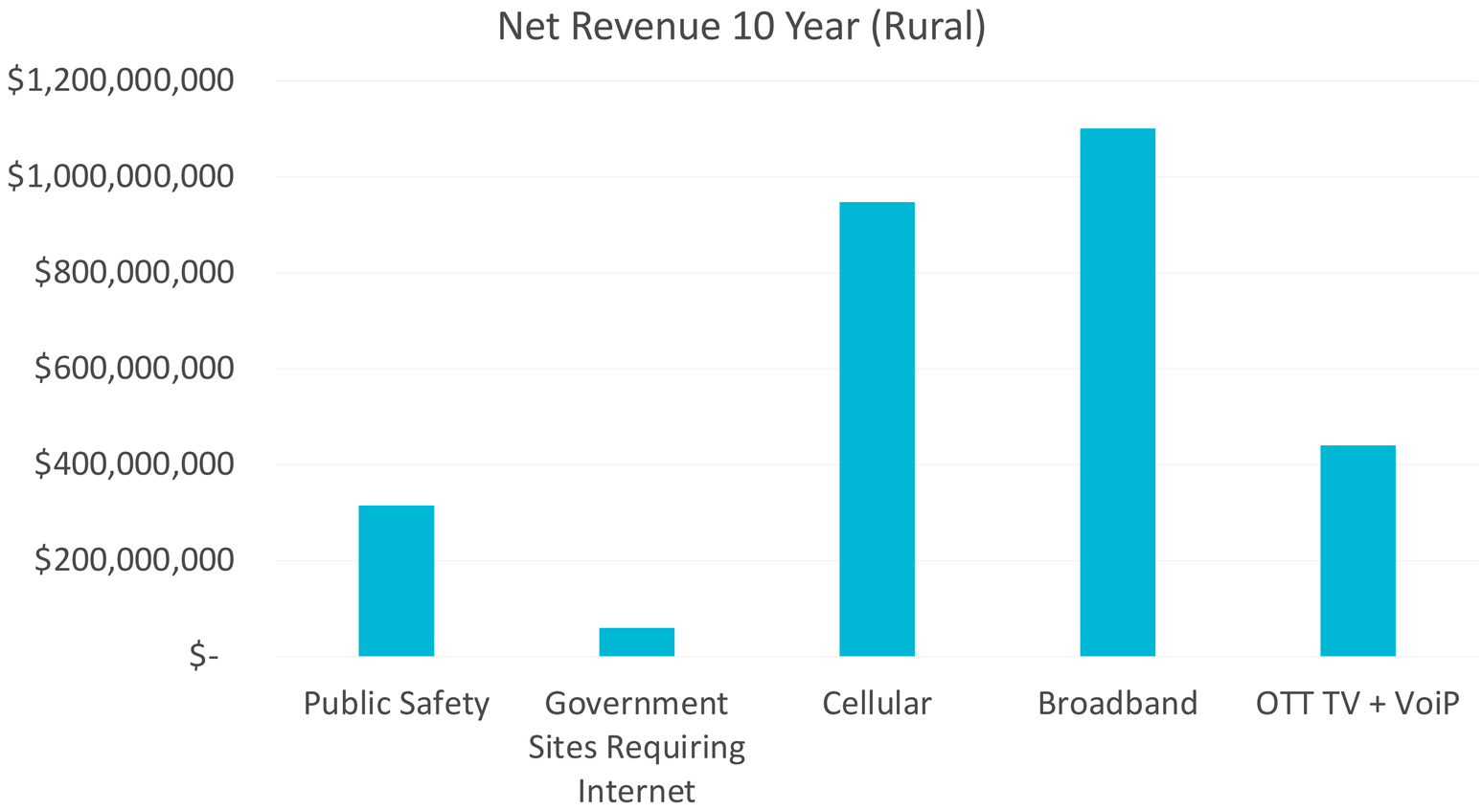
The Value of the Telecom $

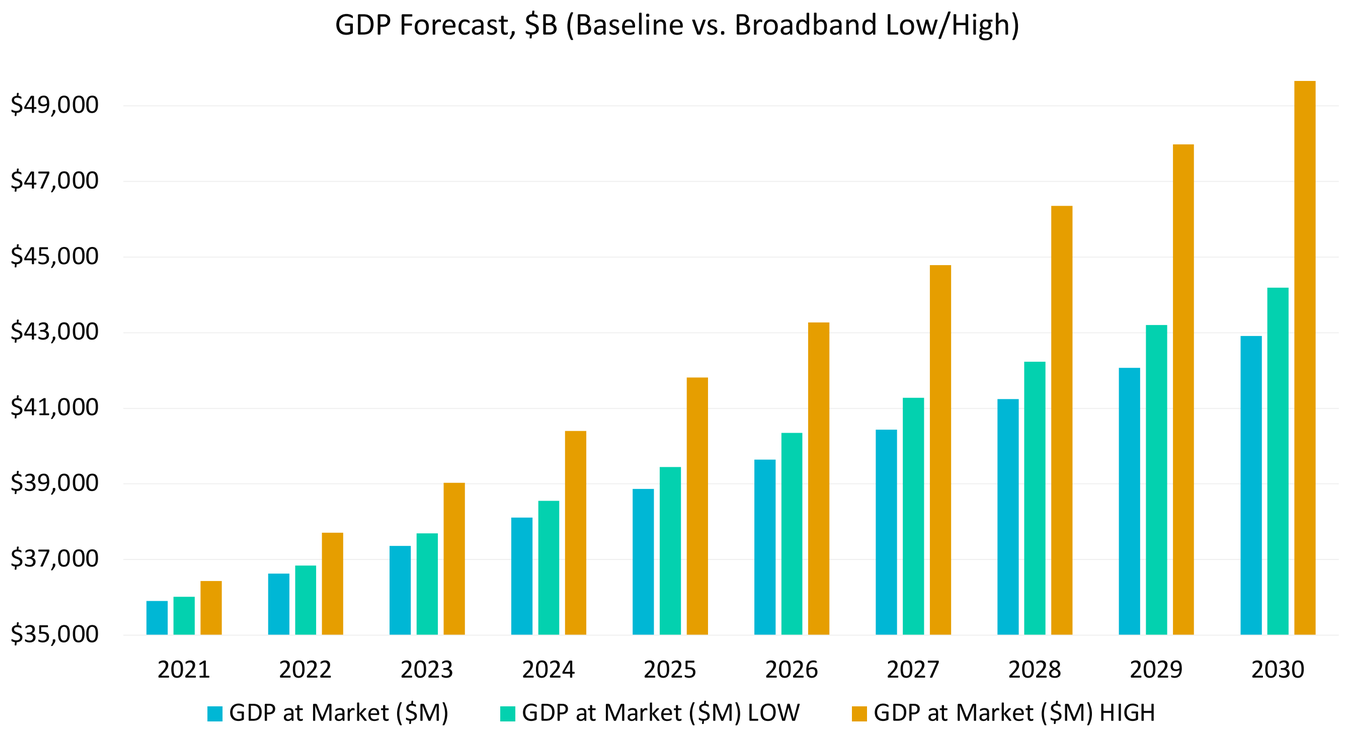
- There are 219,000 homes, 153,000 underserved or unserved
- Based on $100/month average price for Internet Service over 10 Years
- 153,000 homes x $100 x 12 months x 10 years
- There is a potential of $1.84B in revenue
- There is a Business Case for investment in a Community Broadband Network!

Revenue Sources and Market Opportunity



$2.9 billion over 10 years

Economic Forecast Indicators



Assumptions

- Baseline GDP Growth @ 2%
- Rural Broadband Increase
  - Low End 0.3% / year
  - High End 1.5% / year
- $ Impact = Digital Dividends
  - $1.3 to $7B by 2030
- As per McKinsey Report Digitalization cuts across all industries and sectors.

Data Source
Exploring the Relationship Between Broadband and Economic Growth Background Paper
Prepared for the World Development Report 2016: Digital Dividends
Published January 2015

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Potential Sources of Financing

- Federal Government
  - CRTC Broadband Fund
    - $750m over 5 Years
  - Universal Broadband Fund
    - Minimum $6B over 10 years
- Municipal Government
  - Gas Tax $
  - Municipal Loans
- Provincial Government
  - Regional Economic Funds (TCII)
    - Limited $
- Financing Agencies
  - Canada Infrastructure Bank
    - 50:50 Match with 3rd Party Finance
  - 3rd Party Financing
    - Requires business plan
    - 0 to 100% of project value

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Where do we go from here?

McKinsey Report on NL Economic Growth Strategy

- McKinsey Report, issued Feb 2019
- 37 Recommendations across 12 sectors
- Top 3
  - Tourism
  - Aquaculture
  - Oil & Gas
- Digitalization: Broadband Infrastructure is considered an enabler
- PSBN is a potential enabler

Source:
Economic Growth Strategy for Newfoundland and Labrador
Final Report | February 2019
RECOMMENDATIONS TO THE
GOVERNMENT OF NEWFOUNDLAND

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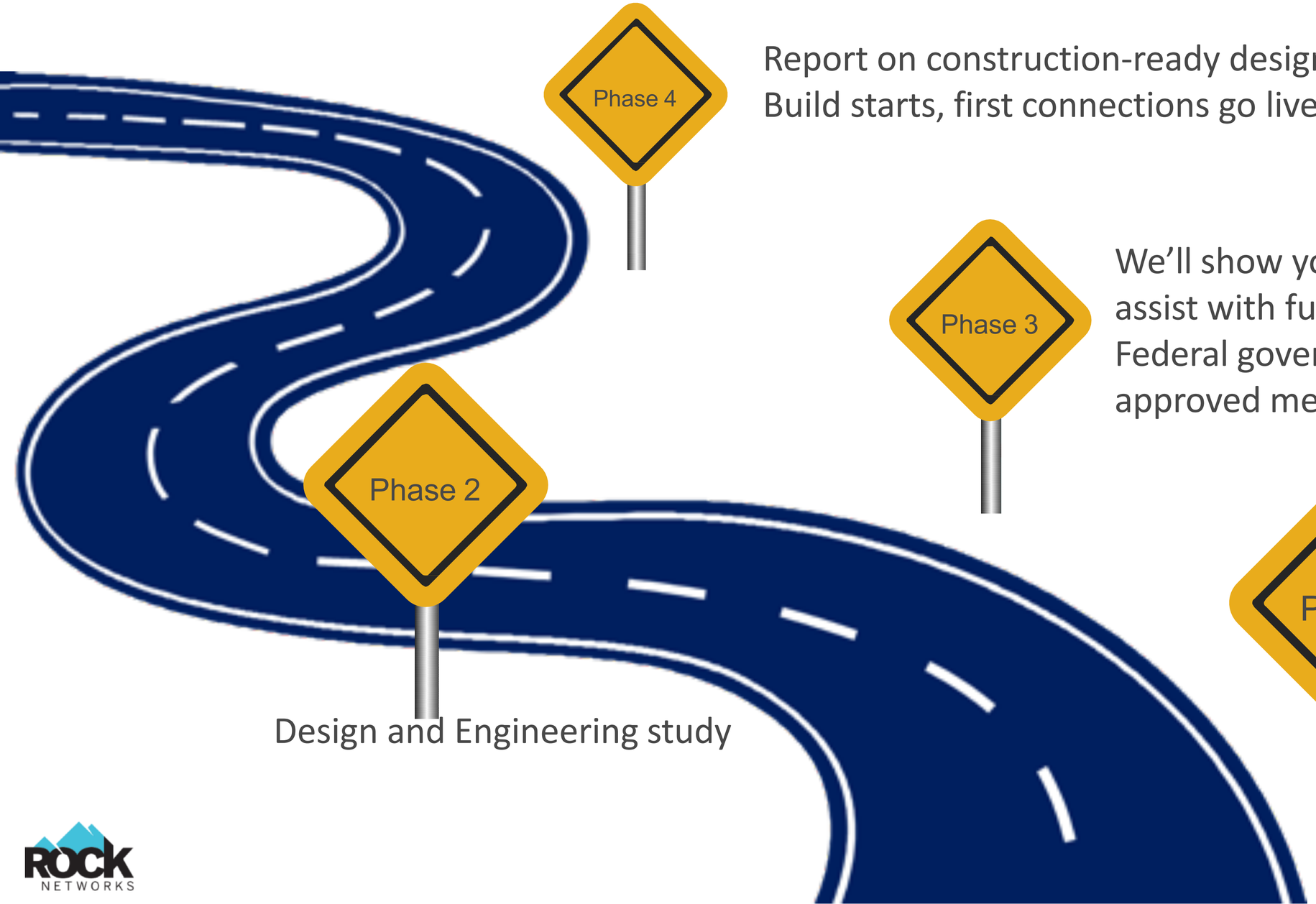
Connected Community – How we get there



Report on construction-ready design.
Build starts, first connections go live.

We'll show you a way to finance and assist with funding applications to the Federal government, using their approved methodology (Phase 1 & 2).

Site Survey - Real-world accounting of the need for broadband.

Design and Engineering study

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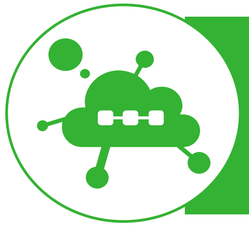
ROCK Networks Consortium Differentiator

CONSORTIUM EXPERIENCE

- Global Leader in Communication Technology (NOKIA, DataDuct)
- Global Leader in E2E Infrastructure (WesTower, Plexus, Eagle, F6)
- Global Leader in E2E Smart City Capital & Planning (Digital Ubiquity)
- National System Integration & Local Experience (ROCK Networks)

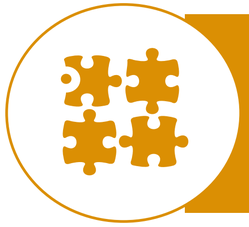
OUTCOME-BASED MODELS

- Matching Smart City Adoption “Know How” to Monetization Models
- Disruptive Short & Long Term Monetization Models



RISK MITIGATION

- Mitigate Delivery Risk via Consortium “Know How”
- Mitigate Technology Risk via Consortium Global Leadership Position
- Mitigate Financial Risk (De-risked Funding Models up to 100%)



COMPLETE SOLUTION

- Technology, Program Management, & Services
- Innovative Structured Finance Options

Next Steps

- Any Community can contact us if you are interested in exploring Rural Broadband.
- Contact your federal MP to ask about their views on
  - Support for feasibility studies
  - CRTC Broadband Fund $ available to NL
  - Universal Broadband Fund $ available to NL
- Contact your local MHA to ask about their view on
  - Community Broadband Networks
  - Public Safety Broadband Investment vs. Radio Only Investment

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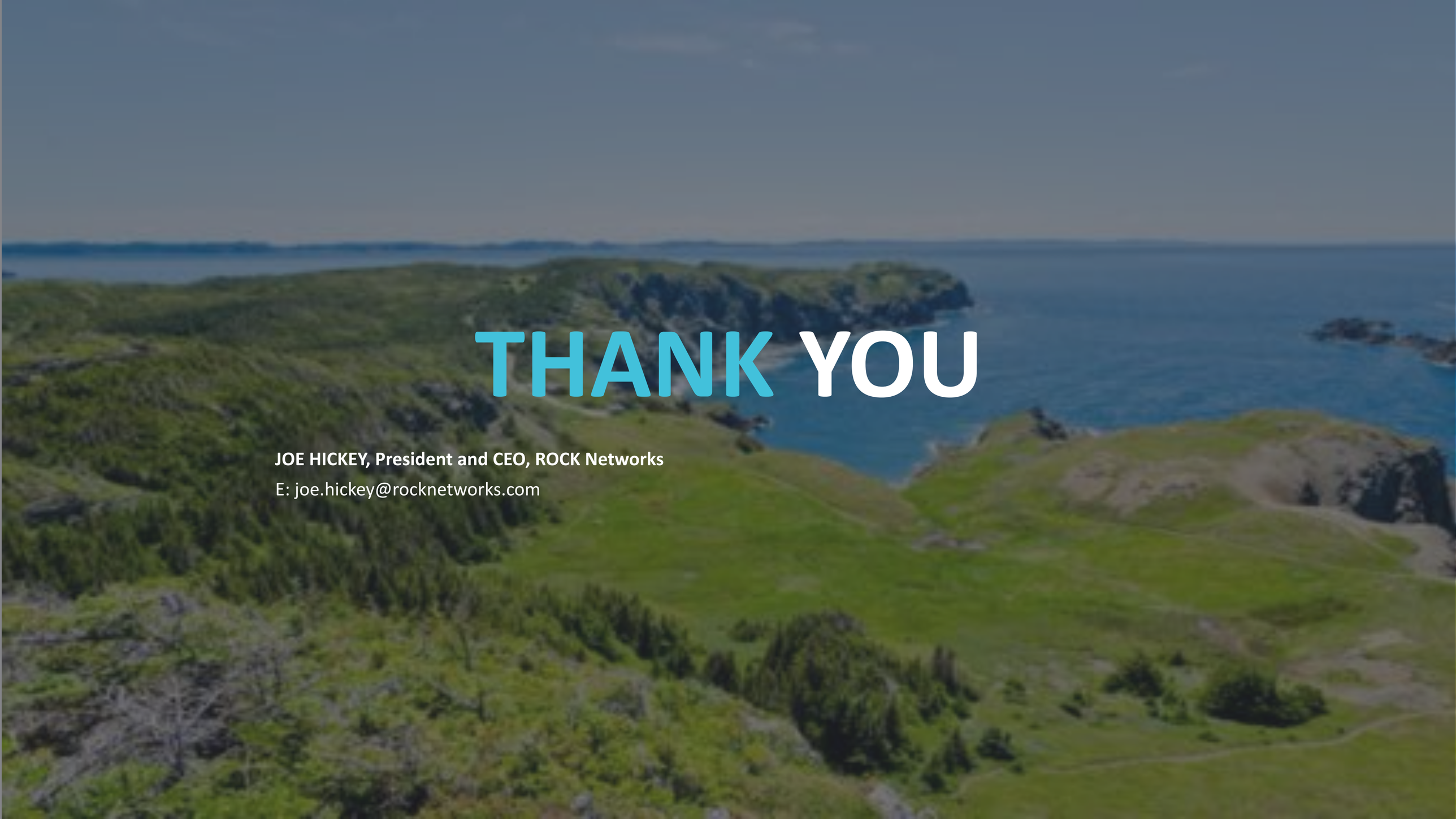
Any Questions?



THANK YOU

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