

EORN Update to Renfrew County

September 30, 2020



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EASTERN ONTARIO
REGIONAL NETWORK

Agenda

- EORN Phase One Broadband
- EORN Cell Gap Project update
- 50/10 Mbps and 1 Gig analysis

Phase One Broadband Project - Renfrew County

Investment

- County Contribution = \$848,848
- Project Investments = \$15,891,991*
- Business Parks = \$2,296,036
- ROI 18.7 to 1

*includes business parks

Coverage

- Total HHs in County = 39,577
- 29,494 households covered @ up to 10Mbps
- Represents 74.5% coverage @ up to 10 Mbps
- Also satellite coverage @ up to 10 Mbps
- The two zones that covered Renfrew County was awarded to Bell.

Technology Explained – Mobile Broadband

The EORN Cell Gap Project will work to address the voice call and mobile broadband gaps in eastern Ontario

Types of devices and applications include:

- Cell phones
- Tablets
- Cell calls
- Mobile apps
- Browsing
- Social media

Technology Explained – Fixed Broadband

Home or business internet connections using technology where the consumer is located a fixed location. The receiving device is fixed in place.

Types of technology, devices and applications include:

- Fibre, DSL, fixed wireless and satellite
- Business applications such as inventory, payroll and accounting
- School research and online learning
- Government services
- Home Wi-Fi for mobile devices, Netflix and streaming

What is the Technology

- In EORN's demand model was based on a 4G LTE network
- The networks created must be scalable to meet today's needs and able to evolve to ensure the future needs of the region are met.
- Towers will be constructed throughout the region and EORN is encouraging telecommunication service providers (TSPs) to share infrastructure where possible.
- EORN is currently evaluating the proposals and details will be shared once contracts has been awarded. At that time EORN staff will coordinate follow up meetings with county staff and council.

What is the Technology

- There is further information about energy and RF safety across technologies, including 5G at:
 - <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11467.html>
 - <https://www.cwta.ca/for-consumers/radiofrequency-safety-standards/>
- There is good general information available about cell towers at
 - <http://www.ic.gc.ca/eic/site/ic-gc.nsf/eng/07422.html#ic-subnav-1>

EORN Cell Project Goals

- Achieve 99% coverage in the eastern Ontario region where people live, work and travel so that they can make and receive cell phone calls.
- Achieve 95% coverage in the eastern Ontario region where people live, work and travel with standard definition service level which can support email, web browsing and social media services.
- Achieve 85% coverage in the eastern Ontario region where people live, work and travel with high definition service level which can support video conferencing, movie streaming and other more data intensive applications.

Partners Funding the Project

EOWC/EOMC	\$10 million ✓*
Canada	\$71 million ✓
Ontario	\$71 million ✓
Telecom service providers (TSPs)	\$61 million (request for proposal)
<hr/>	
Total	\$213 million

EOWC stands for Eastern Ontario Wardens' Caucus

EOMC stands for Eastern Ontario Mayors' Caucus

* Renfrew County's contribution is \$905,996

How Can Municipalities Help?

- Municipalities can provide municipal lands which TSPs may consider for tower builds.
- Have tower siting plans in place. Local Land Use Authorities (LUA) will be asked to approve proposed tower sites in your municipality.
- Work with the TSPs to expedite permitting.

Cell Gap Project Status

- New EORN staff hired March 30, 2020
- RFP issued April 20, 2020 and closed September 3, 2020
- Transfer payment agreement (TPA) signed May 15, 2020
- Negotiate contracts with private sector November 2020 to February 2021
- Start construction 2021
- Build out of project over five years. Completion in 2025
- Ongoing contract monitoring to 2030

50/10 Mbps and 1 Gig Analysis



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The Reality of Getting to 50/10 Mbps

Canadian Radio-television and Telecommunications Commission (CRTC)
aspirational goal:

- 90% of all Canadians have access to broadband at speeds of at least 50 Mbps download and 10 Mbps upload (50/10 Mbps) by December 2021

EORN 2019 analysis shows that currently:

- 46% of EOWC rural homes and business have access to 50/10 Mbps
- 63% of homes and business have access to 50/10 Mbps if the EOMC municipalities are included

Cost Analysis

50/10 cost analysis:

- Estimated cost to bring 50/10 Mbps service to 95% of the demand across the region using a mixture of 75% wireline (1 Gbps capable) and 20% fixed wireless across the region
- Minimum of 90% of each county's demand

1 Gbps cost analysis:

- Estimated cost to bring 1 Gbps service to 95% of the demand across the region using a wireline

Based on an engineering model, not detailed designs from TSPs

Cost Estimates

50/10 Mbps to 95 per cent of the EOWC demand area

- \$500 million to \$750 million
- Renfrew County's estimated cost \$51,048,779*

• 1Gbps to 95 per cent of the EOWC demand area

- \$1.2 billion to \$1.6 billion
- Renfrew County's estimated cost \$211,067,385*

Key variable in range of cost estimates is access to utility poles and pole replacement costs

*Based on \$30 per meter for fibre

EORN Analysis

EORN developed analysis for two different models:

50/10

- Design a model that will provide 50/10 Mbps service with mixture of wireline (1 Gbps capable) and wireless (50/10 Mbps capable) pushing wireline out as far as reasonable

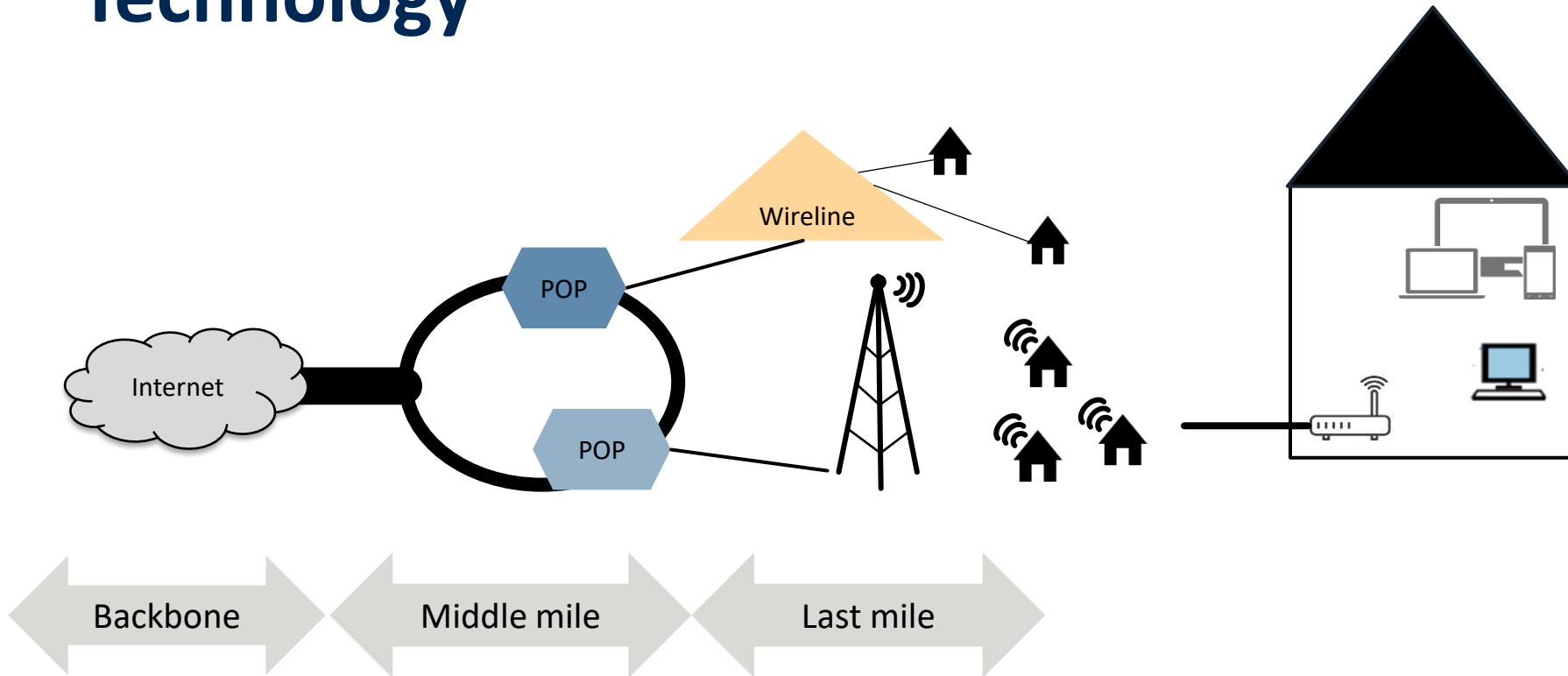
1 Gig

- Design a model that will provide a wireline service capable of 1 Gbps

Wireline is defined as a technology providing broadband service through a fibre or cable direct to a premise

Wireless is defined as a technology providing broadband service through a radio link to a premise

Technology



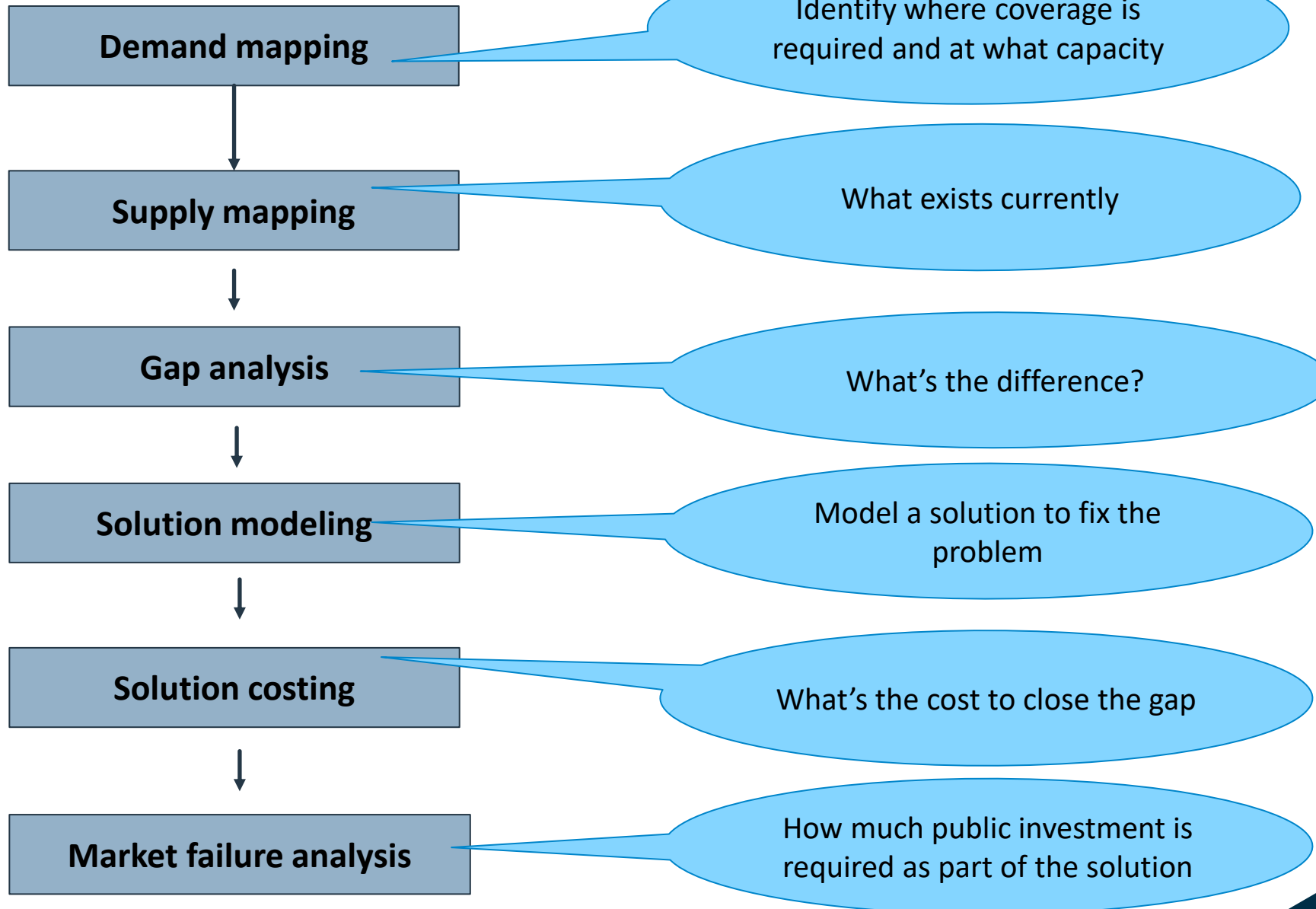
POP is point of presence and refers to an access point to the core or backbone network

Wireline is defined as a technology providing broadband service through a fibre or cable direct to a premise

Wireless is defined as a technology providing broadband service through a radio link to a premise

Wi-Fi is a wireless service that allows devices to connect within a range of about 30 metres, usually in a home or business

Analysis Process



Demand Mapping - Coverage

Demand is modelled for premises (households, businesses and facilities)

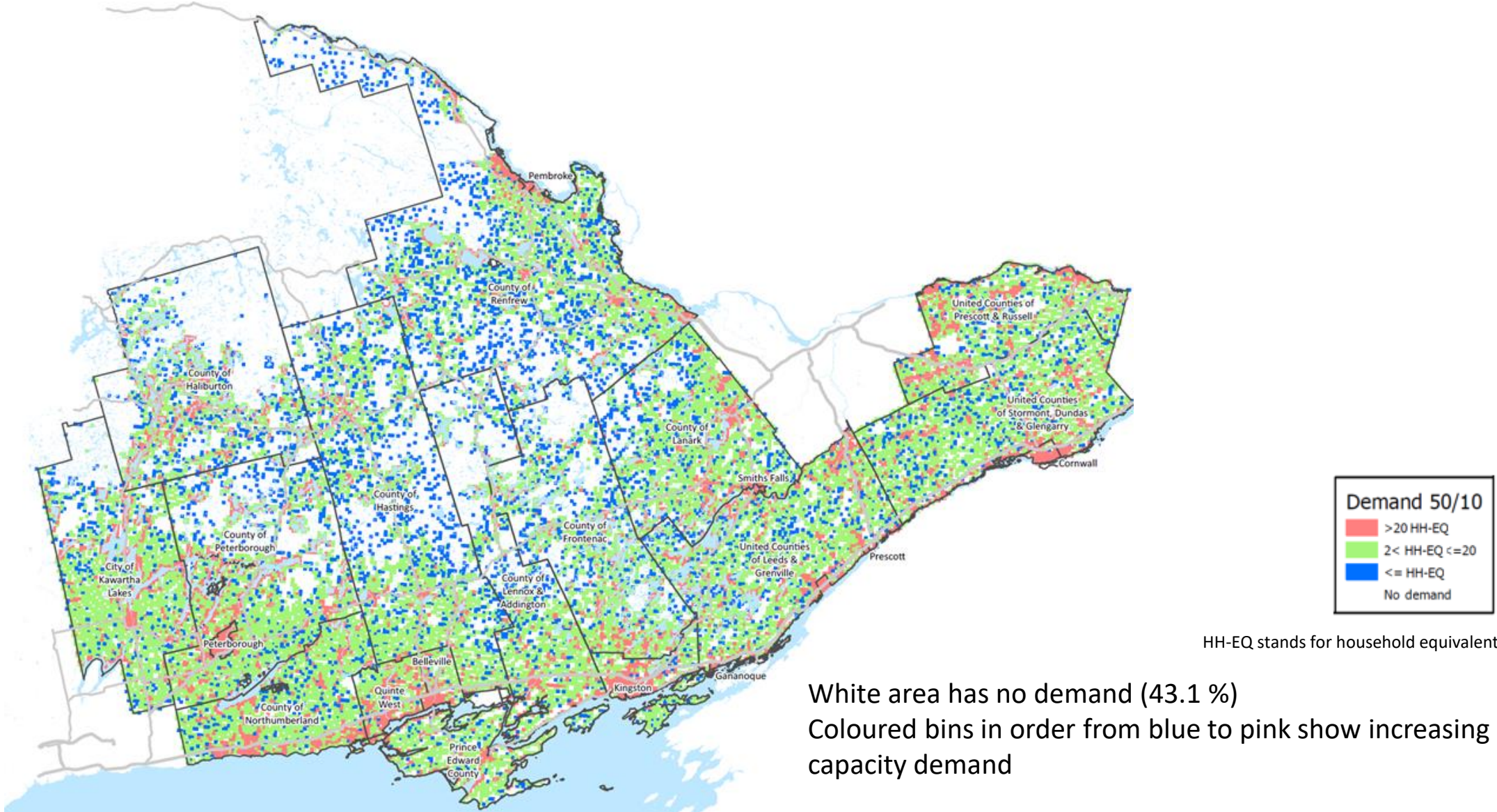
- **Coverage** is where they are located
- **Capacity** that each premise would use projected to 2027

EORN mapped where coverage is required by:

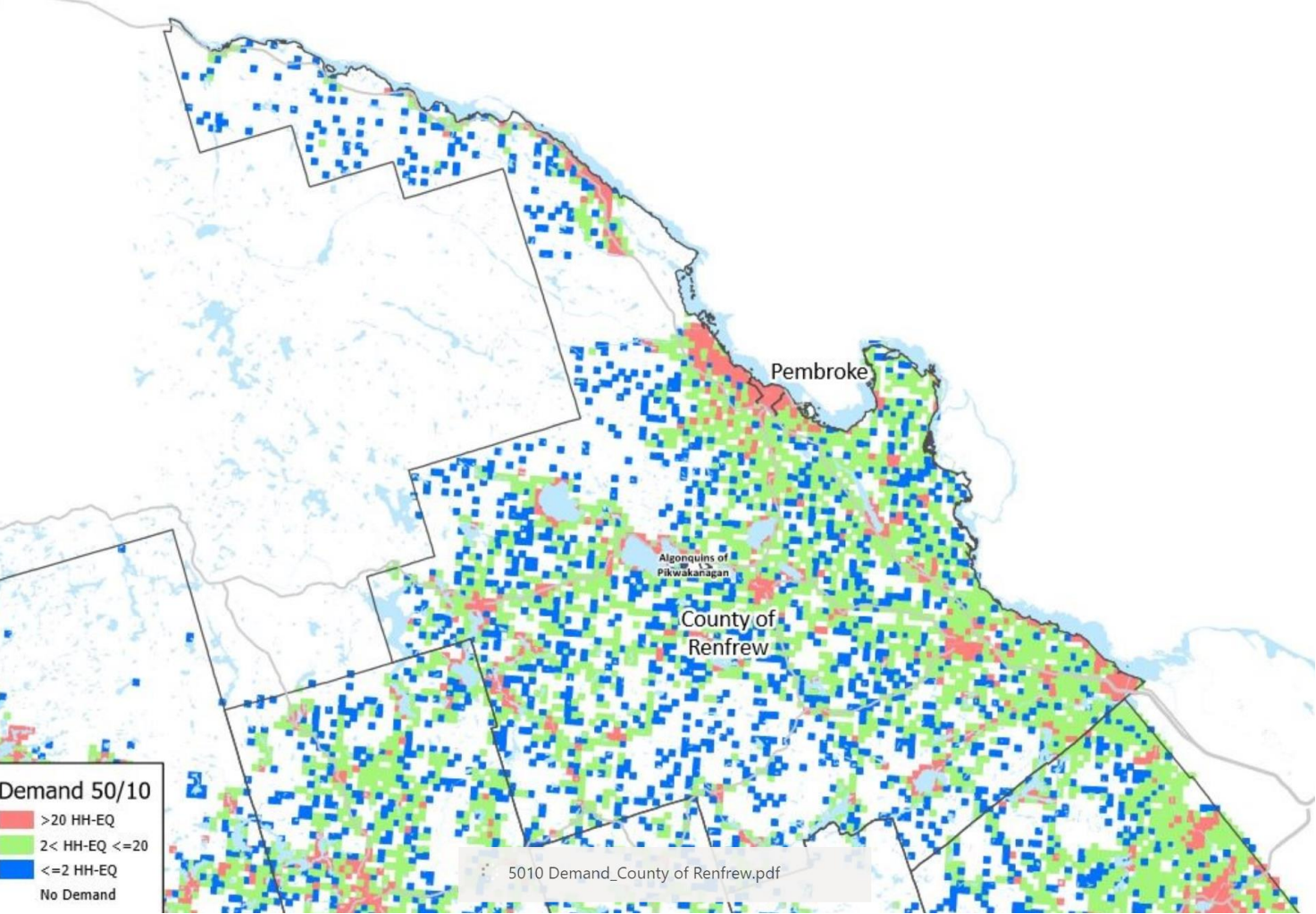
- Using MPAC and Teranet data from 2019
- Identifying what MPAC parcels require broadband coverage
- Included households, businesses, arenas and facilities
- Same coverage for both 50/10 model and 1 Gig model

EORN used a 1 km by 1 km grid for mapping purposes

50/10 Demand Coverage and Capacity



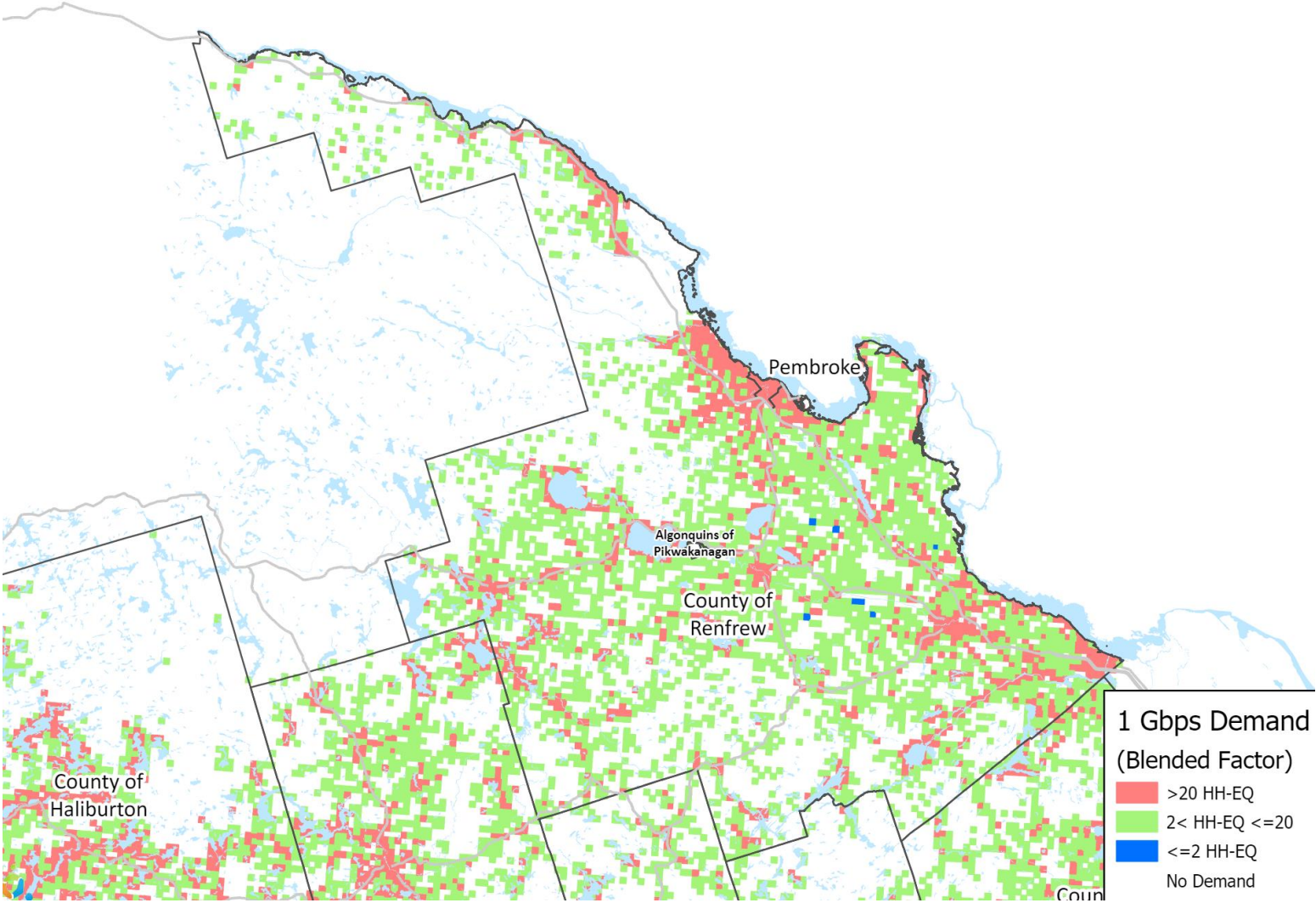
50/10 Demand Coverage and Capacity



We will be providing a detailed information package for each county to the CAO's and information technology directors

Household information for First Nations communities is not available through Municipal Property Assessment Corporation (MPAC)

1 Gbps Demand Coverage and Capacity



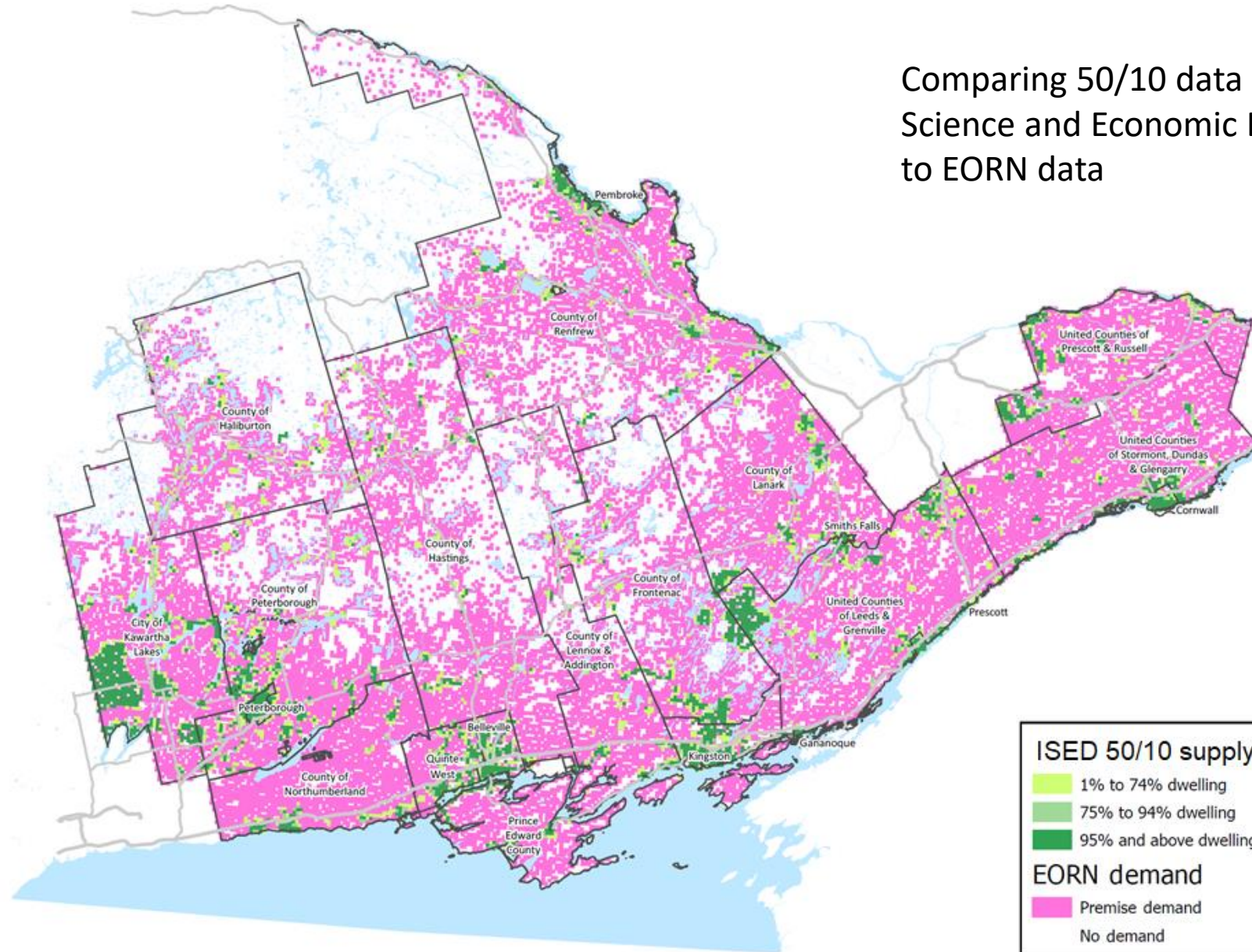
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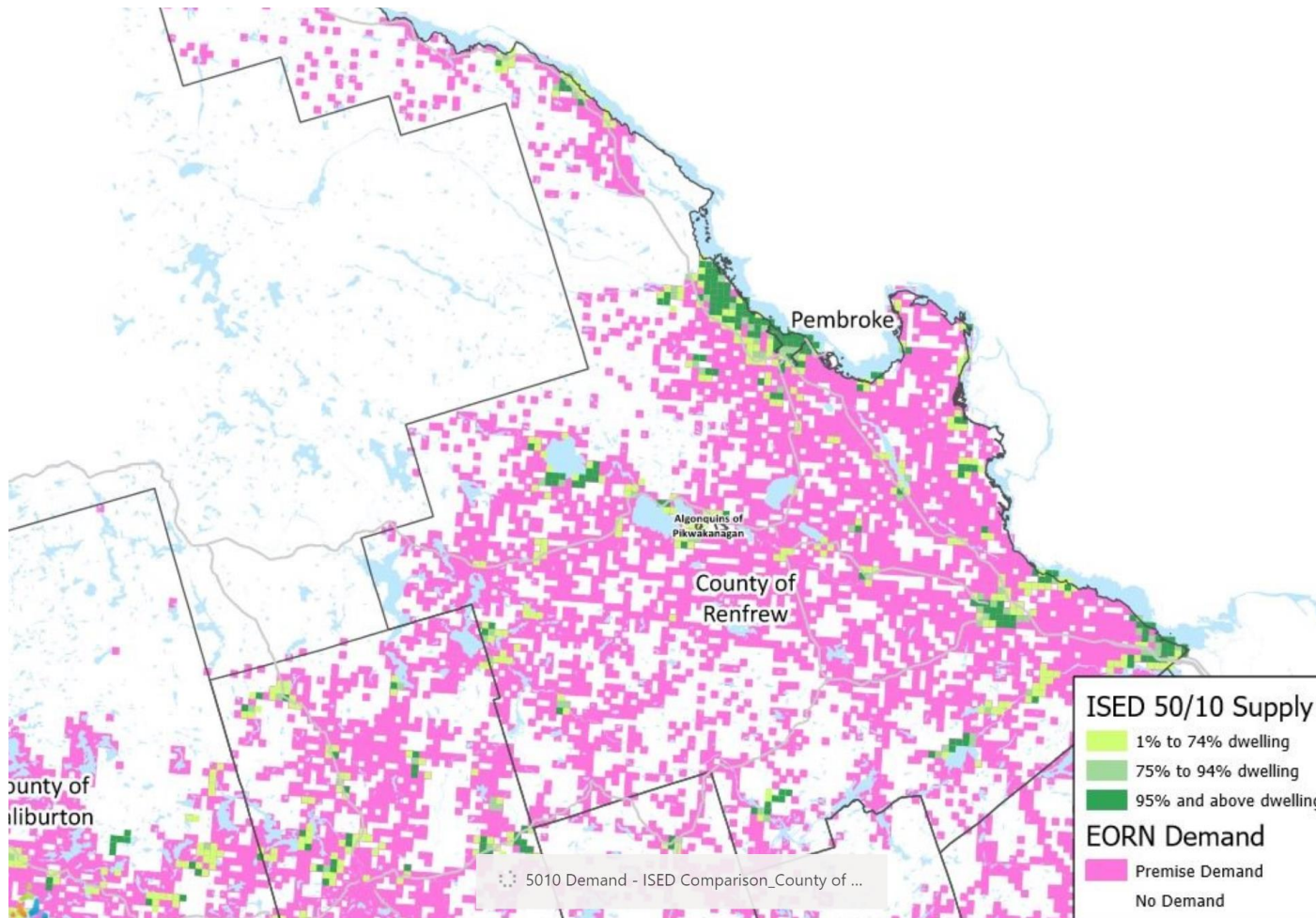


EORN Demand Comparison

Comparing 50/10 data supplied by Innovation, Science and Economic Development Canada (ISED) to EORN data



Comparison of ISED Supply Data and EORN Demand Coverage



Green bins (any shade) show where EORN has mapped ISED supply data for 50/10

Pink is EORN's coverage demand. What's shown is expected to be eligible for funding

Together We Can Make a Difference

On Friday May 29, 2020, the EOWC endorsed and directed EORN to pursue a 1 Gig project for eastern Ontario

On Thursday June 4, 2020, the EORN board endorsed and directed EORN to pursue a 1 Gig project for eastern Ontario

Next Steps

- EORN will continue to advocate to the provincial and federal government
- EORN could have an RFP in place for EOWC region by February 2021
- EORN model can be replicated across Canada

Questions?



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Cell Gap Definitions and Assumptions

- Demand: where people live, work and travel. This is determined by current premise data from MPAC (May 2018) and traffic counts for selected major roads as provided by the Ministry of Transportation (MTO).
- Capacity: even though there may be coverage in an area, there may not be sufficient resources to handle the traffic load generated by the numbers of people served by the cell network in a local area. Capacity design addresses this issue.
- Service levels can be impacted by adverse weather, high rates of local data usage, unusually high number of users in a local area and other factors.

Cell Gap Definitions and Assumptions

- Regional coverage: the coverage percentage is based on the analysis for the entire region.
- Conceptual design: the coverage and capacity metrics are for a-conceptual design pending outcome of the competitive RFP process.
- Public-private partnership: private carriers will need to contribute proportionally along with local, provincial and federal funding.
- Major roads: includes all the freeway, expressway, highway and arterial roads as defined by the Province of Ontario.
- Cell Gap Project coverage targets:
 - 99 per cent for cell call service level
 - 95 per cent for standard definition service level
 - 85 per cent for high service level