



Enhance. Expand. Empower.

EORN Presentation to York Region Broadband Strategy Advisory Task Force

June 1, 2016

What Is EORN?



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- It's a model of public-private collaboration and joint investment;
- It's multi-government endeavour working towards a shared goal;
- It's the vision of the Eastern Ontario Wardens' Caucus
- It's a game changer for the region

Who Is The EOWC



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- The EOWC is comprised of Wardens/Mayors from the 11 Upper Tier and 2 Single Tier Municipalities in Eastern Ontario
- An advocacy group committed to ensuring the regional needs of Eastern Ontario are heard, understood and fulfilled by the provincial and federal governments
- Became an active group in 2002
- Highly respected by the provincial and federal government

The Beginning of EORN



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- 2007 EOWC recognized need for change and embraced the concept of a “knowledge economy”
- Staff formed small working group to look at broadband connectivity as a way of changing how Eastern Ontario does business
- EOWC supported CFDC connectivity gap analysis and used this data as a starting point for a proposed project

The Beginning of EORN



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- Network concept was developed and REOI was completed to test the market and feasibility of the design
- Advocacy to all levels of government and their staff began
- 2009 initial business case submitted – both federal and provincial governments endorsed project
- 2010 after 51 weeks of work with provincial and federal staff the Contribution Agreement was executed

EORN Mandate



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A Network Superhighway with higher speeds, bandwidth and efficiency than currently exists

ACCESS: 95% of the households & businesses

HIGER SPEEDS: Up to 10 Mbps for 85% of the households/businesses in EOWC region

AFFORDABLE RATES: Affordable Pricing

EORN Governance



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- EOWC established EORN Inc. – Non-Share Non Capital
- Oversight & contract management by EORN Board
- Board has 9 members from public, EOWC Inc., First Nations and Eastern Mayors group
- Board in place until 2024

EORN Operation



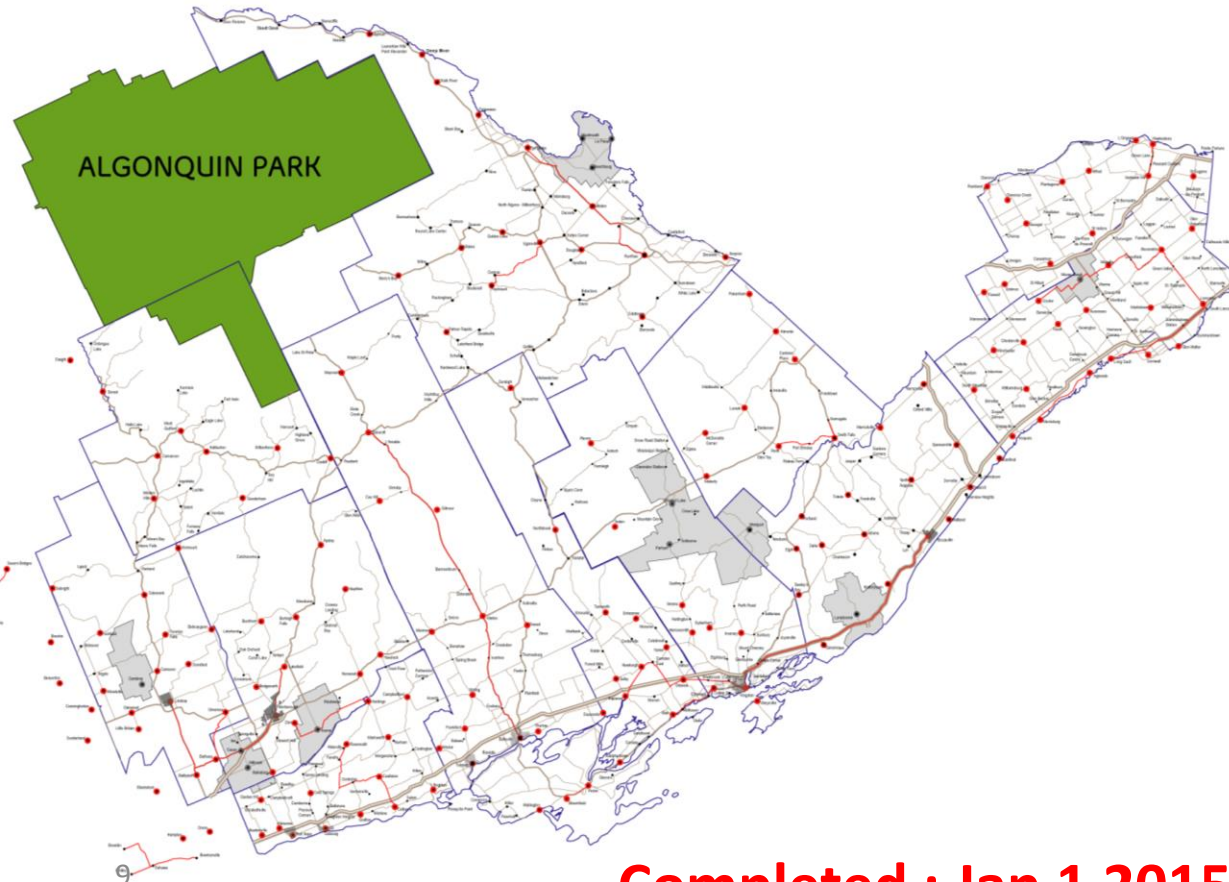
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- Network will be operated by private sector partners
- EOWC contractually bound to both the private sector partners and the upper levels of government until 2024
- EOWC/EORN owns 51% of the network for first 7 years
- EOWC will never operate the network

EORN – Accomplishments



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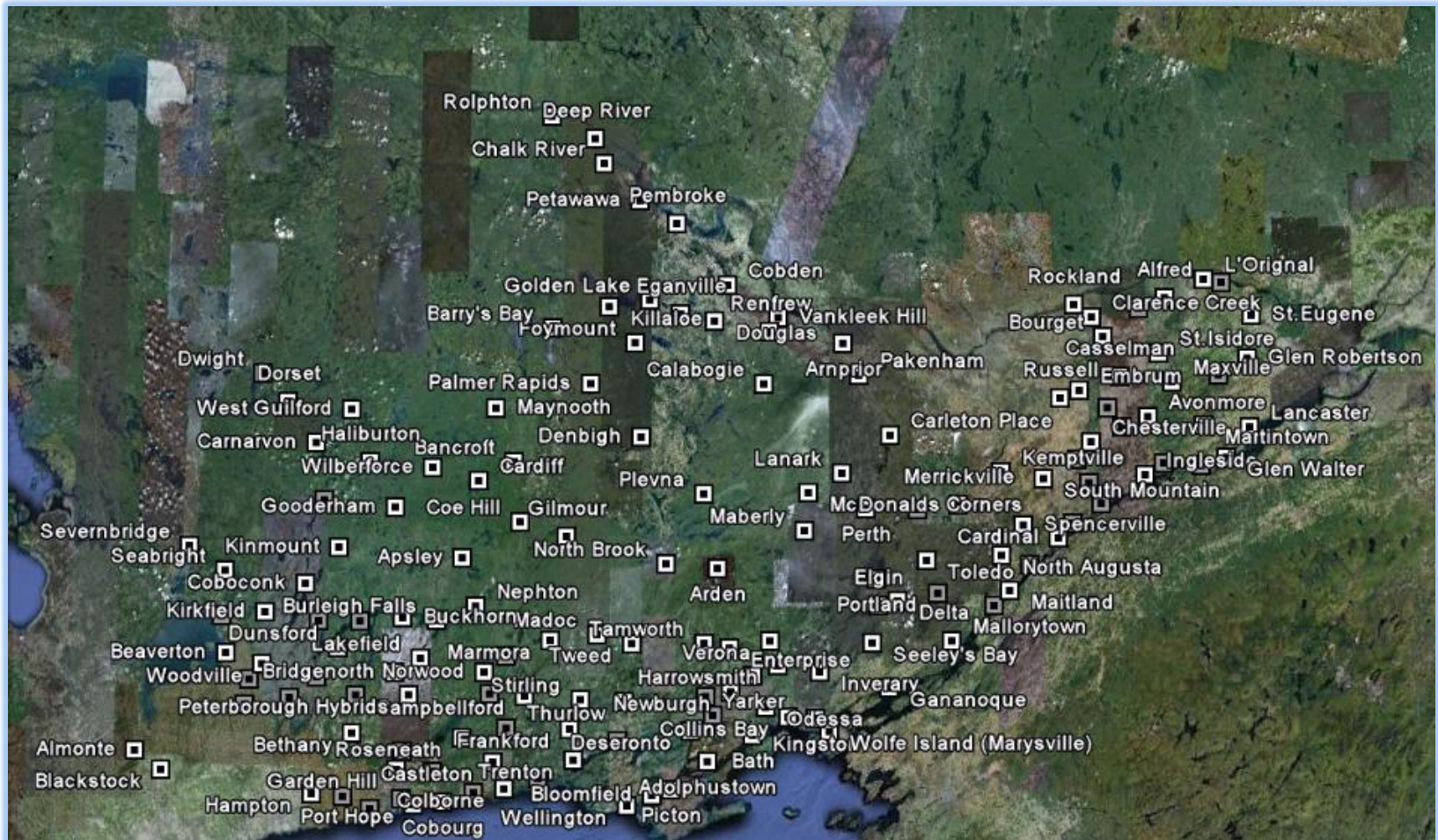
Completed : Jan 1 2015

- 50,000 sq km coverage area
- 5,500 km+ of new GigE fiber core
- 160 enhanced Optical Ethernet POPs scalable to 100 Gigs per POP
- Last mile FW, ADSL, Satellite
- 423,000 homes/business with access up to 10Mbps
- 63 fibered business parks
- \$175 million build (\$260 value)
- Connected 4 of 6 First Nations
- Spurring \$90+ m new investments
- Completed December 2015

EORN – Backhaul



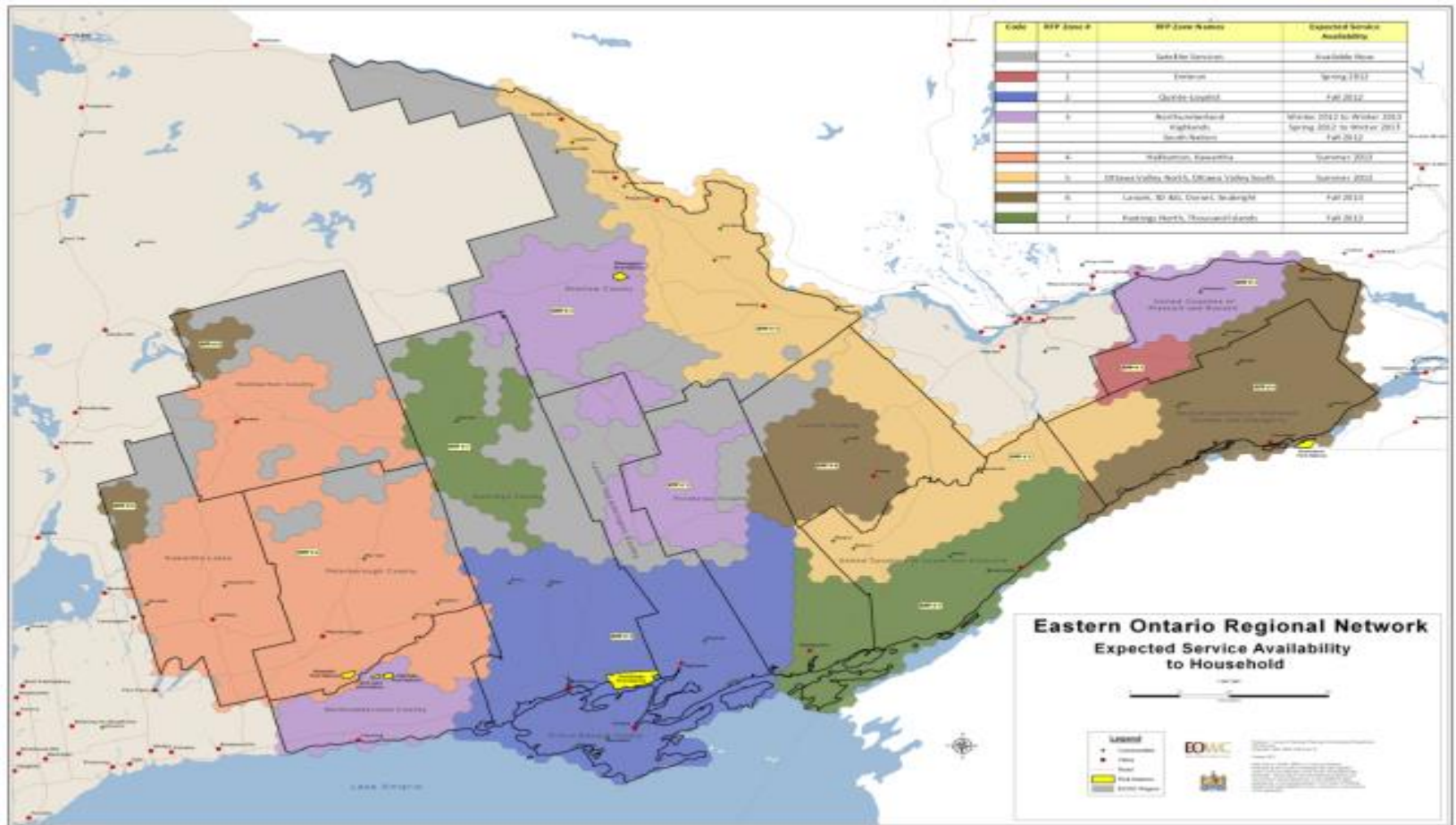
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EORN Access Zones



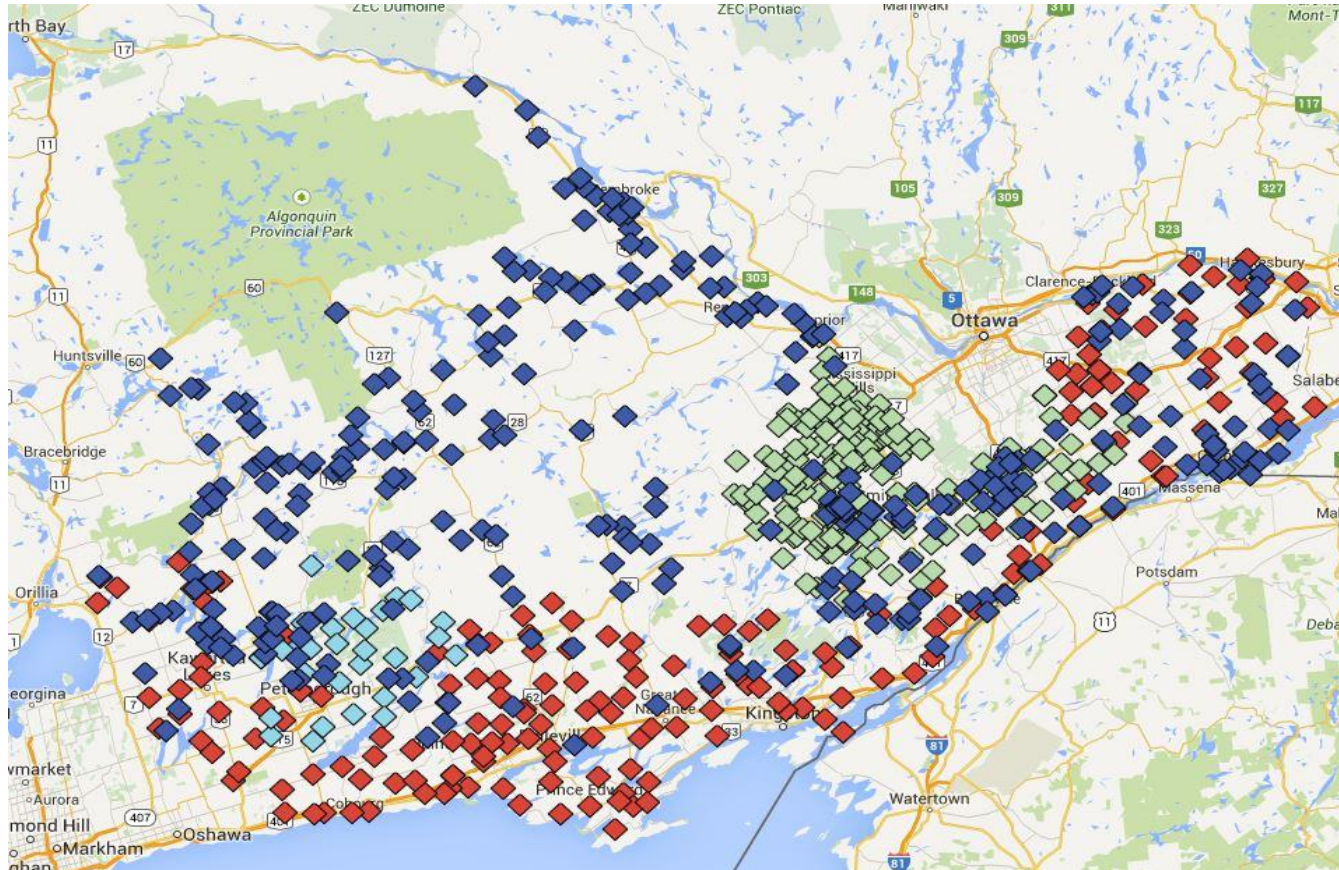
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EORN Funded Access Sites



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- ✓ 414 Fixed Wireless
- ✓ 252 Advanced DSL
- ✓ 2 FTTN
- ✓ **Total Last Mile Sites = 668**

Satellite & Capacities



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- EORN mapped region
- Anticipated 14,000 customers
- Purchased dedicated 1 Gigabyte of capacity
- 20,000 now connected
- Using much more bandwidth
- New satellites being launched Q4 2016 and Q1 2017 – improved speeds (up to 25 Mbps) and capacity

EORN Partners



Government

- Federal Government
- Provincial Government
- 13 Upper Tier Eastern Ontario Municipalities (EOWC) and their local municipalities (94 in total)
- 4 First Nations

Private Sector

- Backhaul Network – Bell and Bell Aliant
- Access Network – Bell Aliant, Xplornet, Nexicom, Storm
- Satellite – Xplornet
- Business Parks (63) – Bell Aliant, Nexicom, Storm, Cogeco, Utilities Kingston

EORN – Not Done Yet!



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Ongoing Initiatives

- EORN continues monitoring the contract requirements with the private sector partners to ensure services level agreements are met.
- Work on initiatives from EORN Digital Strategy
- Advocacy continues with all levels of government to ensure the continued investment in the development of the region.

Two Major Projects Identified for 2016

- Municipal Connectivity Project – utilizing network and adding more fibre to the region
- Cell Mobility Project – ability to network for backhaul of traffic on a mobility network

Municipal Connectivity Project



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- EORN issued an RFP in July 2015 to obtain Broadband Services (focus on Fibre) available to all Municipalities in the EOWC
- Master Business Internet Agreements have been entered with both Bell and Nexicom for Broadband services
- Municipalities may enter into contract directly with Bell/Nexicom if interested in the services offered
- Agreement has resulted in **significant price reductions** in the provision of 100Mbps symmetrical Fibre services and in addition reduced rates for DSL services.
- Phase 1 of project has been met (55 Fibre and 88 DSL) and is underway
- Phase 2 of project will begin Summer of 2016

Mobile Broadband Cell Gap Project



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Closing both coverage and capacity gaps essential for:

- Economic development for existing/new businesses
- Public demand for mobile connectivity
- Public services increasingly rely on it (intelligent roadways)
- Public safety (ambulance, police, fire, response to emergencies)
 - Emergency services “interoperability” (talking to each other in emergency situations)
- Making EOWC region known as the one of best “connected” areas of Canada

Two Important Aspects



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Coverage

- Physical geography that signals cover
- Signal reception and intensity (bars)
- Enables you to “make call” & surf

Capacity

- Channels of spectrum are limited
- More users in a given area the less bandwidth available to any given user

It is possible to have coverage with strong signal but insufficient capacity for all users to be operating

Coverage & Capacity Results



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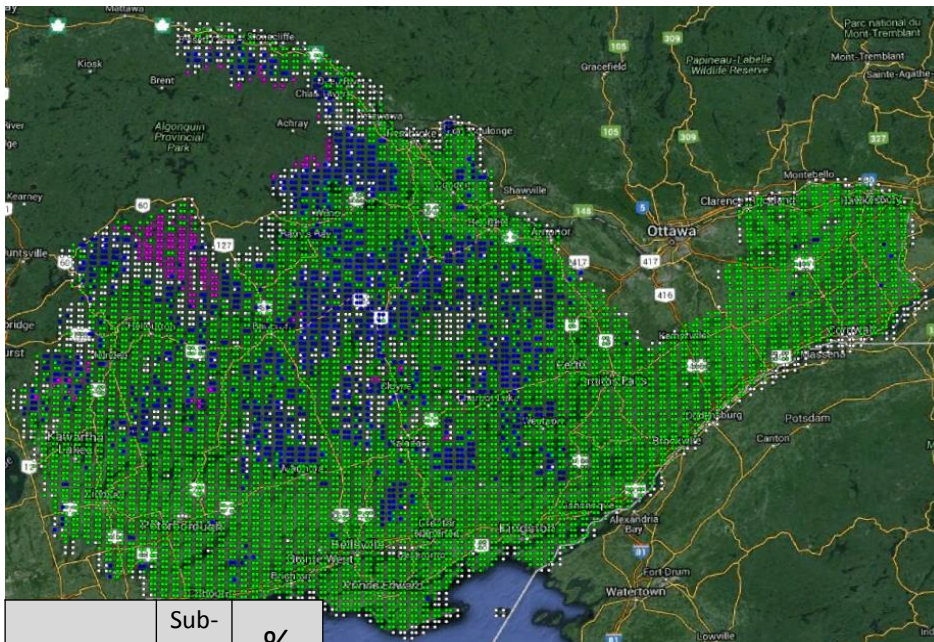
- No mobility carriers cover Eastern Ontario adequately
- Carrier 1 has a 30% coverage gap with an estimated capacity gap of 34.3%
- Carrier 2 has a 22.4% coverage gap with an estimated capacity gap of 24%
- Combined coverage is 15.9% with combined capacity at 20.4%
- There is no business case for the carriers to fill these gaps without incentive
- If a cell project could be built coverage gap falls to 0.5% and capacity to 4.9%
- Opportunity to combine a Public Safety Broadband Network for emergency services

Coverage



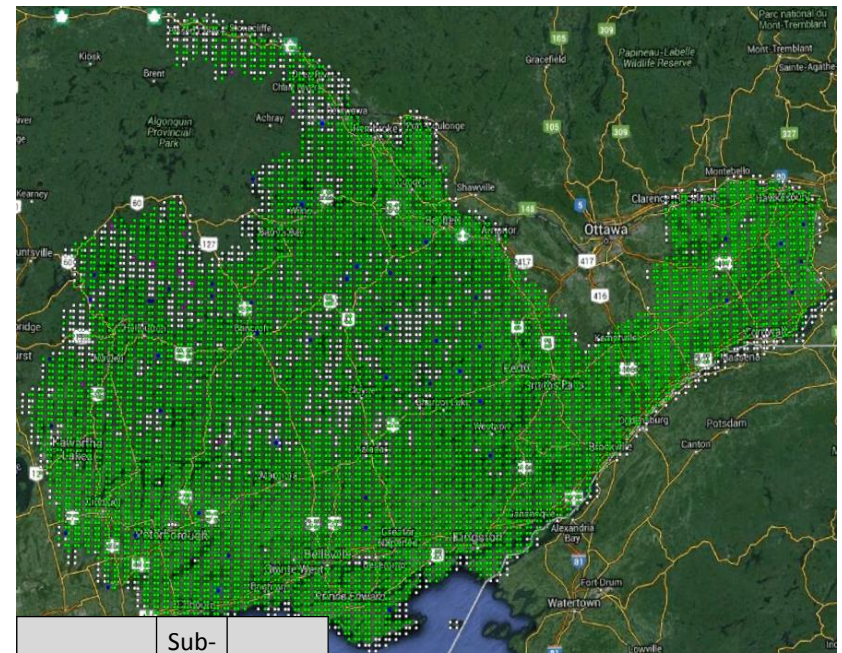
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Current Combined Coverage



Legend	Sub-hex	%
No Demand	1109	12.9%
Covered	6111	71.2%
Coverage Gap	1206	14.1%
Coverage Gap (unpop)	154	1.8%

Post Cell Gap Build Combined Coverage



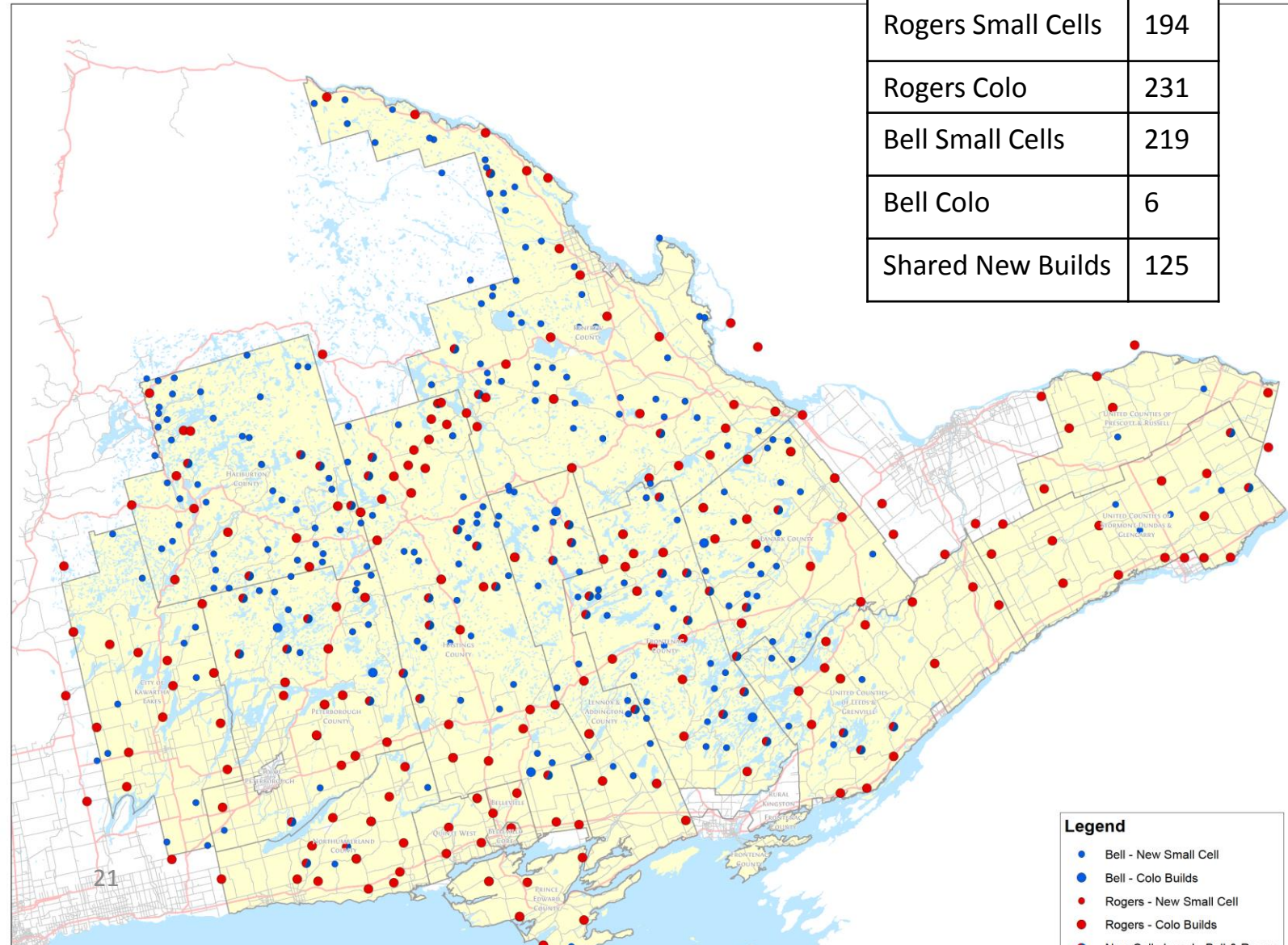
Legend	Sub-hex	%
No Demand	1109	12.9%
Covered	7414	86.4%
Coverage Gap	46	0.5%
Coverage Gap (unpop)	11	0.1%

Fixing Coverage (Design)



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Rogers Small Cells	194
Rogers Colo	231
Bell Small Cells	219
Bell Colo	6
Shared New Builds	125



Legend

- Bell - New Small Cell
- Bell - Colo Builds
- Rogers - New Small Cell
- Rogers - Colo Builds

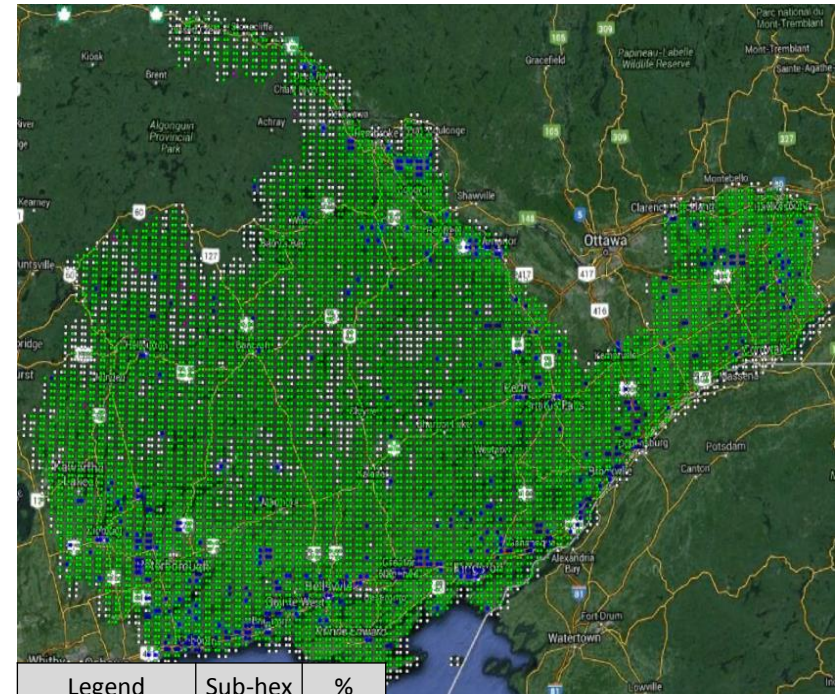
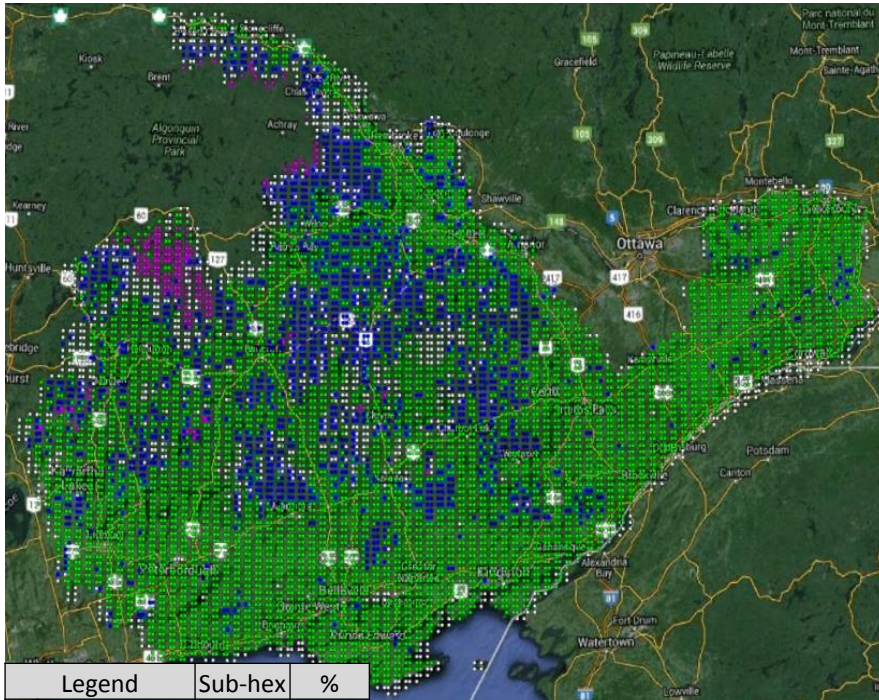
Capacity



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Current Combined Capacity

Post Cell Gap Build Combined Capacity



Legend	Sub-hex	%
No Demand	1109	12.9%
Adequate Capacity	5894	68.7%
Capacity Gap	1423	16.6%
Capacity Gap (unpop)	154	1.8%

Legend	Sub-hex	%
No Demand	1109	12.9%
Adequate Capacity	7045	82.1%
Capacity Gap	417	4.9%
Capacity Gap (unpop)	9	0.1%

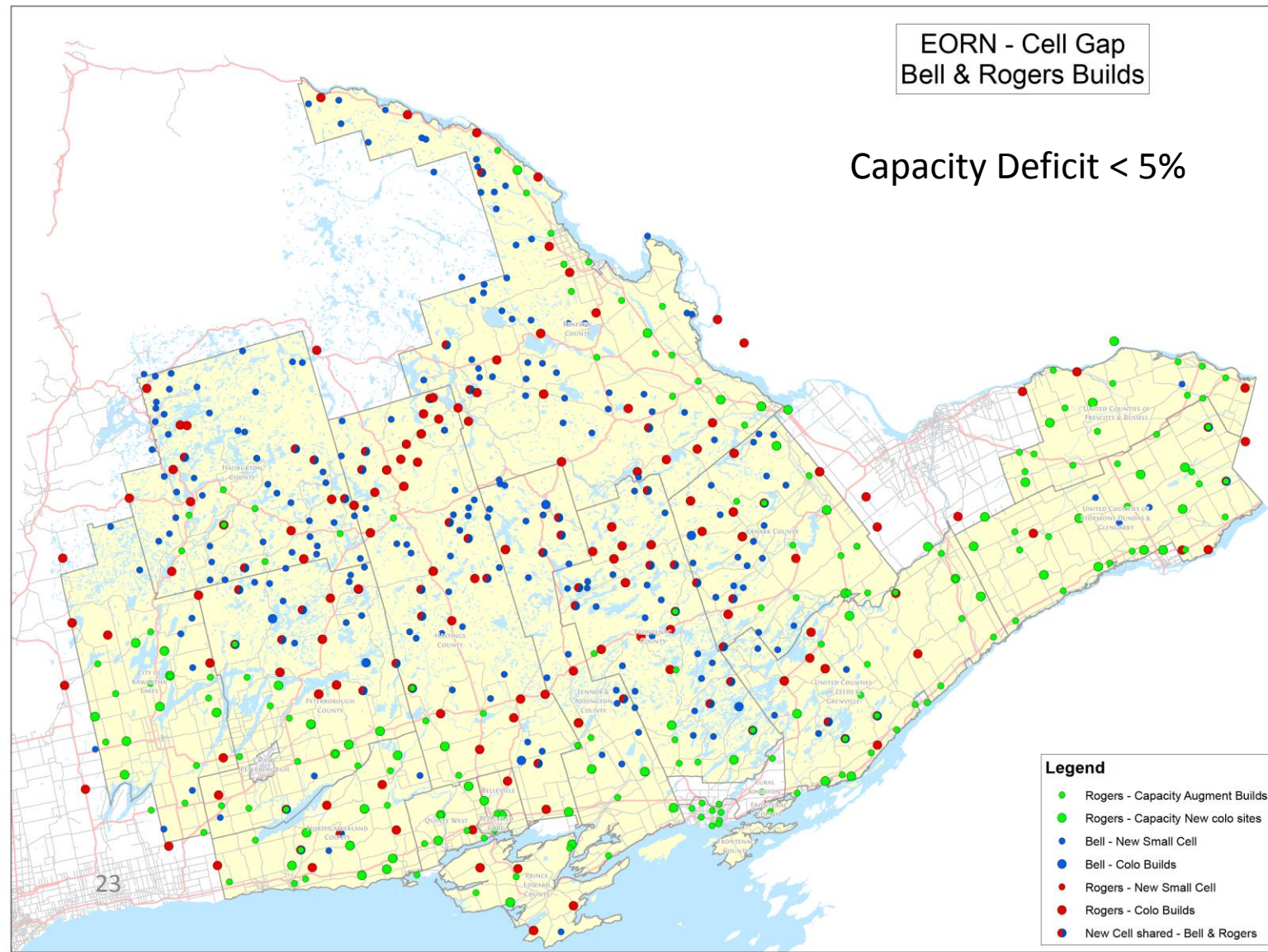
Coverage & Capacity Build



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EORN - Cell Gap
Bell & Rogers Builds

Capacity Deficit < 5%



Legend

- Rogers - Capacity Augment Builds
- Rogers - Capacity New colo sites
- Bell - New Small Cell
- Bell - Colo Builds
- Rogers - New Small Cell
- Rogers - Colo Builds
- New Cell shared - Bell & Rogers



Public Safety Broadcast Network



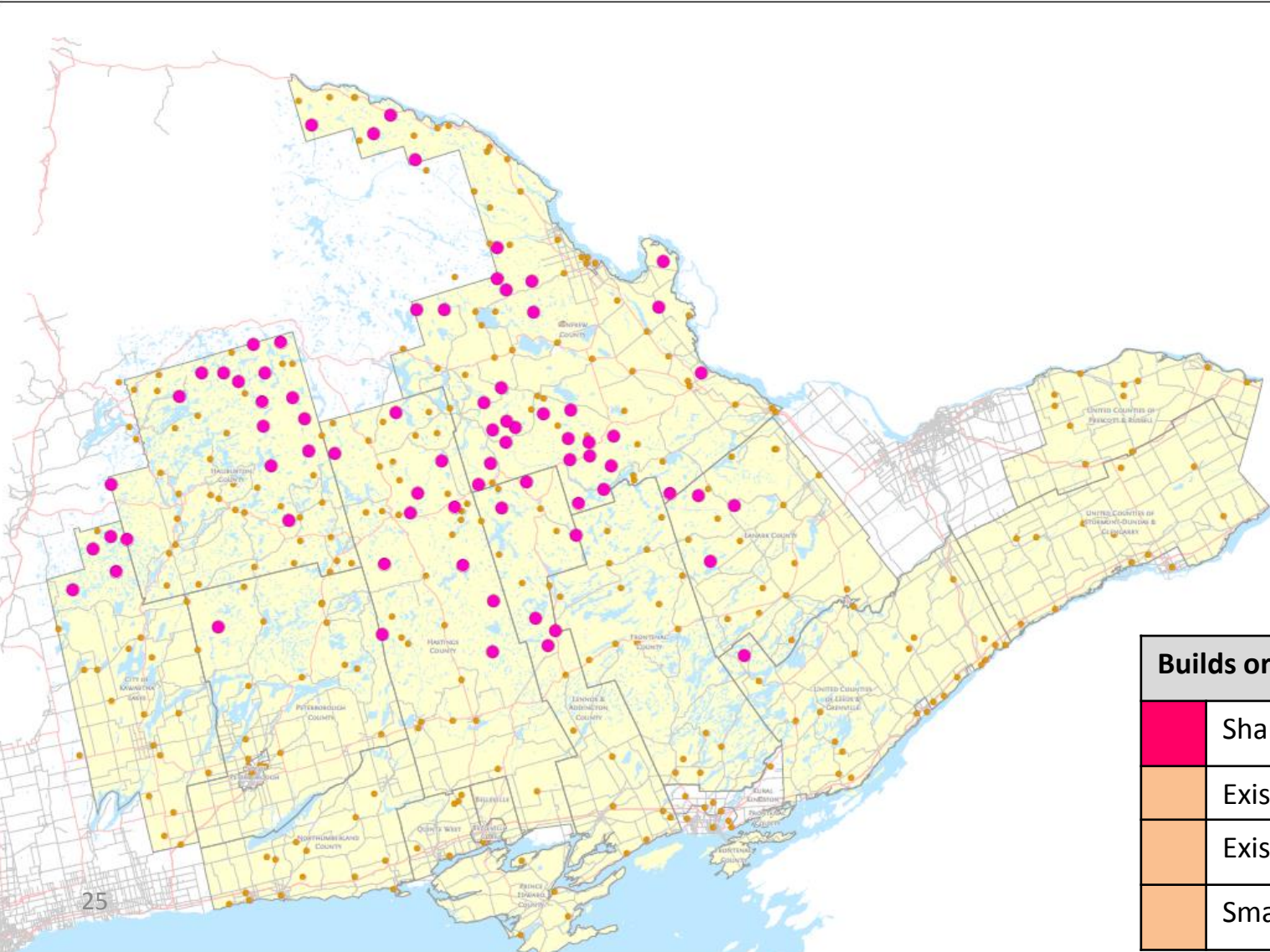
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- PSBN supports Canada's National Strategy for Communications Interoperability
- 20 MHz of spectrum is reserved to support future data/voice services for First Responders and Public Safety
- Tactical video will play key role in Situational Awareness during emergency events
- Urgency as many UTs are looking at investing soon to replace aging existing LMR and obtain interoperability
- **Sharing infrastructure costs where possible can save both initiatives capital while delivering services**

Public Safety Shared Towers



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Builds or Additional Radios		
	Shared Builds	75
	Existing PS Colo	181
	Existing Cell Colo	61
	Small Cells	50

Cost to Combine Initiatives



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Scenario	Total Capital
Commercial Build	\$ 184 M
Public Safety Build	\$ 108 M
Separate Build Totals	\$292 M
Combined Build with Tower Sharing	\$ 247 M

Combining initiatives offers savings of \$45 M

Next Steps



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- Business case being completed now with draft anticipated in Fall 2016 and submission to upper levels of government in 2017
- Meet with MPs, MPPs and local governments to inform of gaps facing Eastern Ontario
- Garner support from local government to help push a cell project forward.