GIS and Spatial Data Sources

For Wireless ISPs

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CIRA

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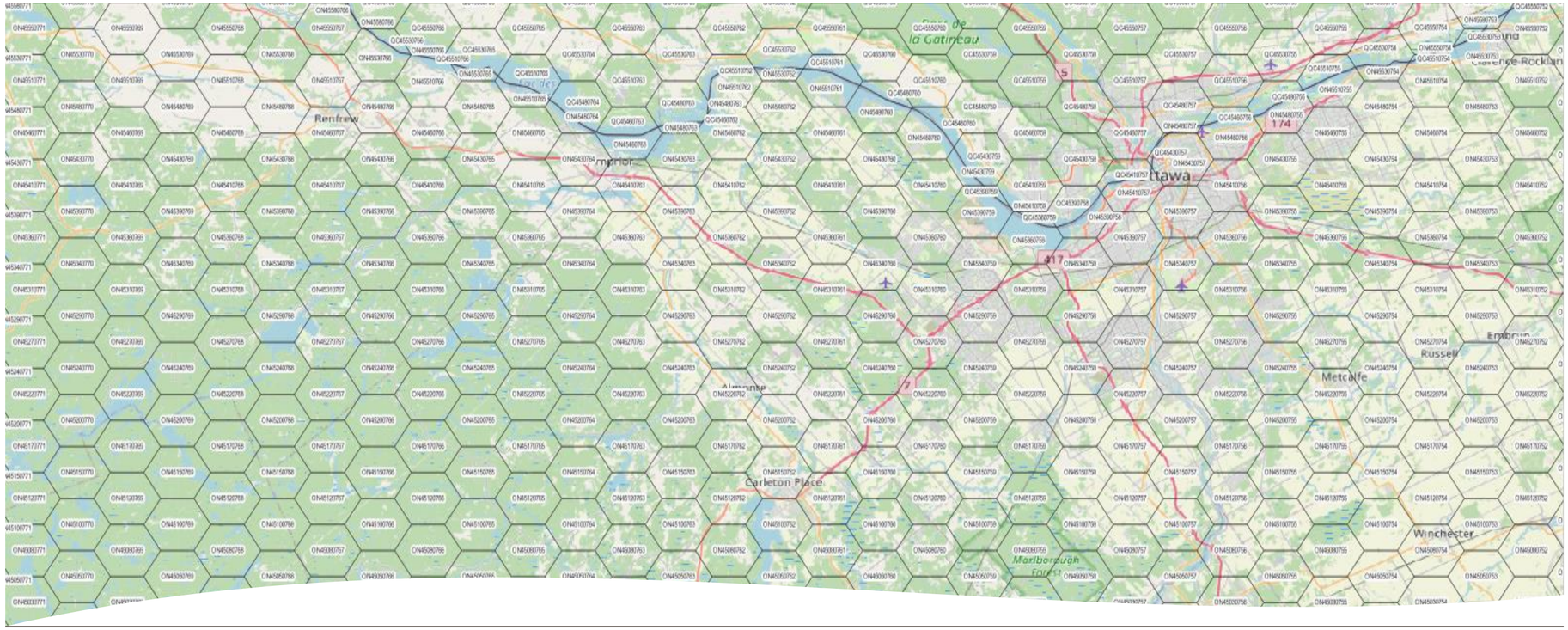
Topics:



Introduction

About CIRA: Resources, Internet Performance Test

What is GIS? What is spatial data?

Spatial Data in broadband development and funding

Spatial data available and of use to WISPs

GIS tools and software

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KUBOTA
4WD

GIS AND SPATIAL DATA

The Canadian Internet Registration Authority

Building a trusted internet for Canadians

.CA domains

- Over 3.3 million .CA domains under management

Registry Services

- Robust top-level domain products and services.

Cybersecurity Services

- Canadian Shield
- DNS Firewall
- Anycast DNS
- Cybersecurity Awareness Training

netgood BY cira

- +$10 million to Canadian internet projects
- Supports internet infrastructure resilience and online safety
- Global engagement: ICANN, others.

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CIRA Grants:

https://cira.ca/grants

grants@cira.ca

- Up to $100,000 per grant
- Non-profits, charities, academics, and Indigenous communities
- Infrastructure; Online Safety; Policy Engagement
- Funded through .ca and cyber sales
- $10.45 million has funded 201 projects

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CIRA'S INTERNET PERFORMANCE TEST

Using data to make the case for better internet

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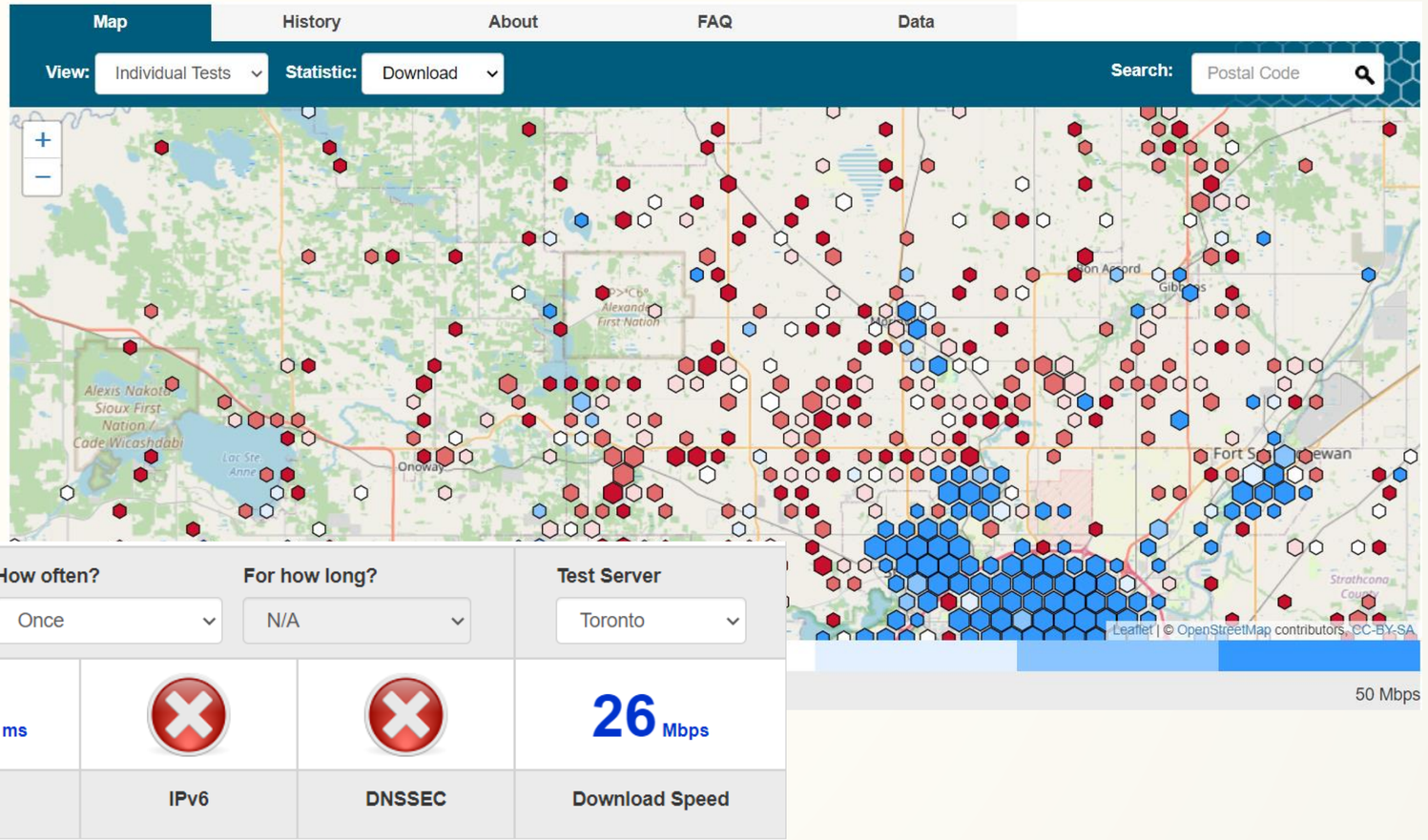

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Real world benefits for WISPs

Benchmark the current state of network performance;

Data for Advocacy;

Use as Funding Applications to Prov. & Fed.;

Measure progress of the network build by demonstrating changes in network performance levels over time;

Reveal areas with continuing challenges as network construction progresses;

Inform and involve the public and provide talking points for Government dialogue with the Public;

Regulatory compliance?

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What are Geographic Information Systems?

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GIS is a computer system used to capture, store, analyze, manage, and present spatial or geographic data

- GIS can be used to analyze and show spatial relationships between different points in a geographic area
- Create maps and visualize information from a geographic area
- Analyze the spatial distribution of features, such as population density, land use, and environmental conditions
- Generate data-driven reports and models to aid in decision making
- Create 3D models and simulations to visualize and analyze spatial relationships
- Used to monitor and track changes in geographic areas and land use.

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Benefits of Implementing GIS and spatial data.

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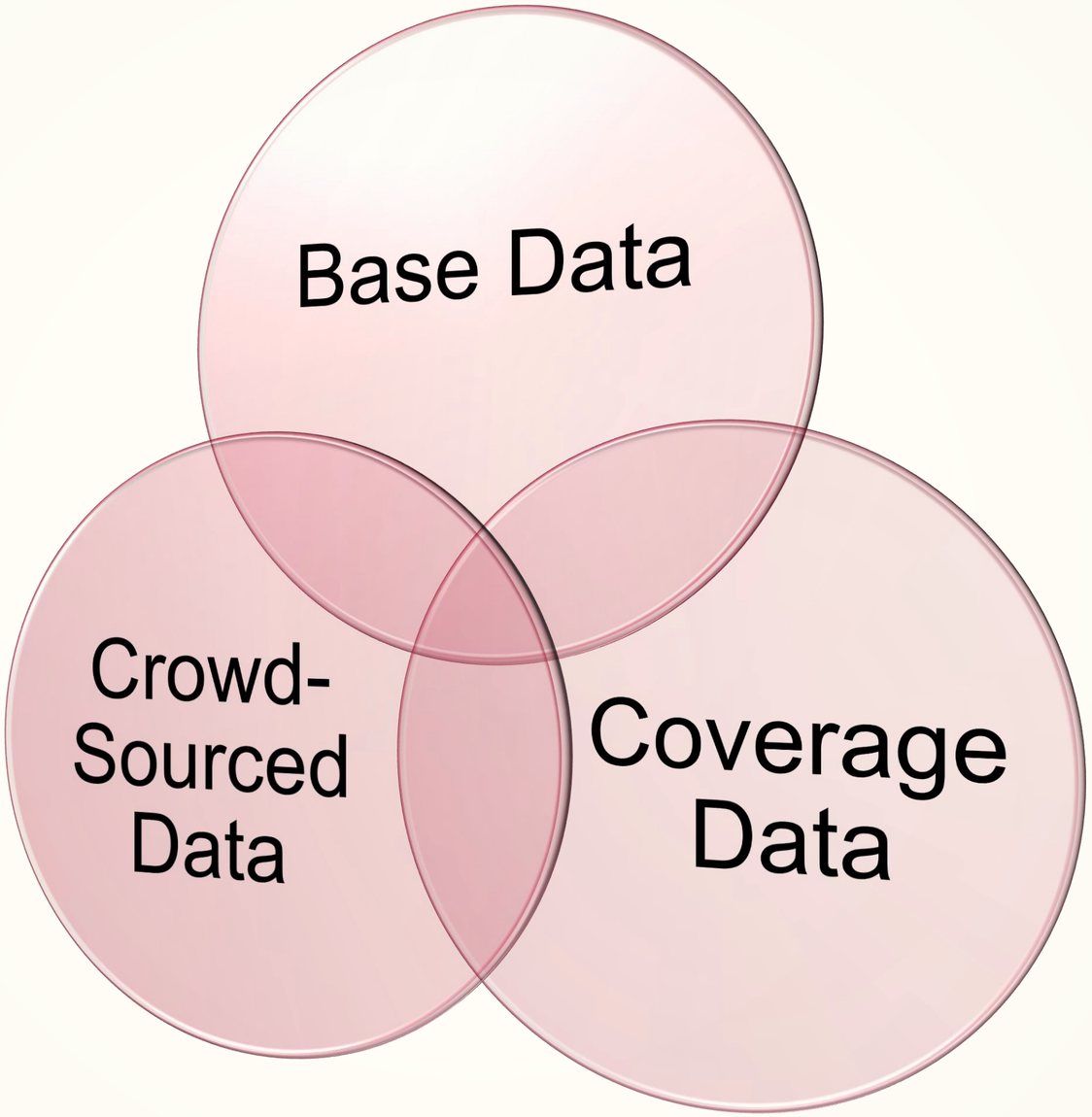

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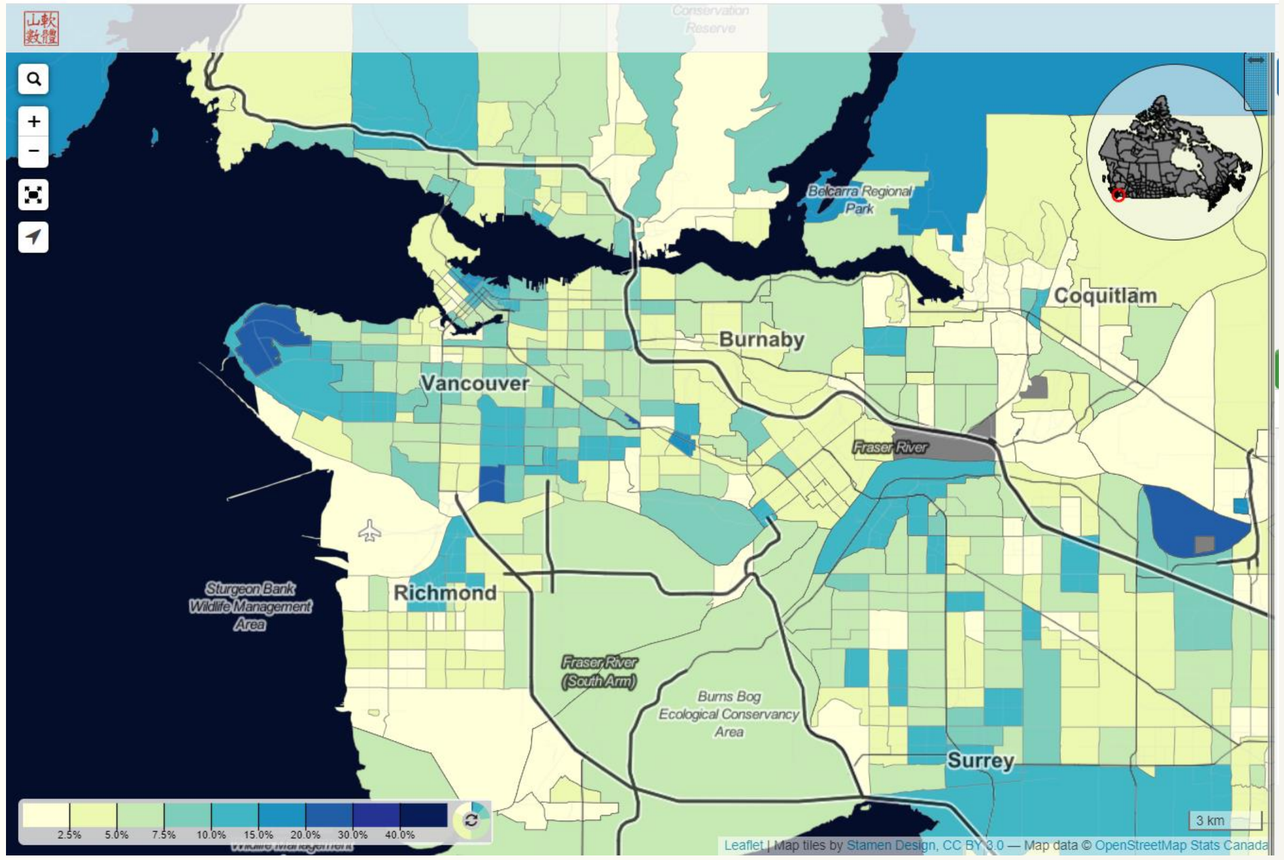
Base Data- Census Based Products

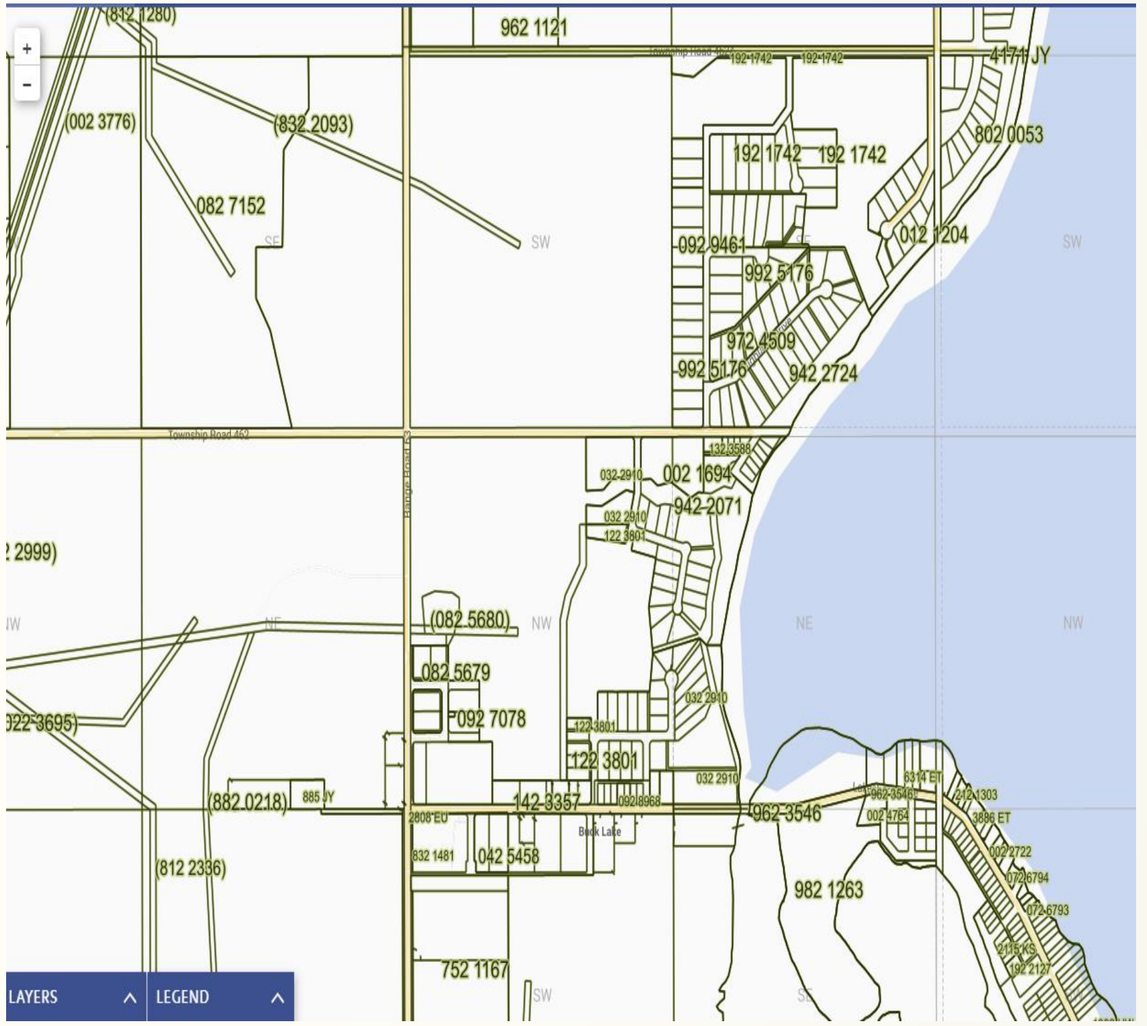
- Census Divisions, Subdivisions, Dissemination blocks.
- Variety of formats, no cost.
- Data is relatable and scales/rolls up.
- Other data available; socio-economic, other research.
- Updated.
- Non-uniform geography.
- Not granular enough, particularly in rural areas.



Source: Census Mapper, https://censusmapper.ca/maps/2491

Base Data- Digital Parcels

- Not an estimate!
- Property use, property type
- Granular
- License and use restrictions.
- Could be expensive.
- Indigenous communities.



Source: Government of Alberta

Base Data- Imagery

- Visual aids
- Foliage, topography, elevation
- Dwelling location inside parcel
- Drone work
- Site selection, maintenance
- Asset location (utility poles)
- Provincial lead initiatives

Source: Government of British Colombia

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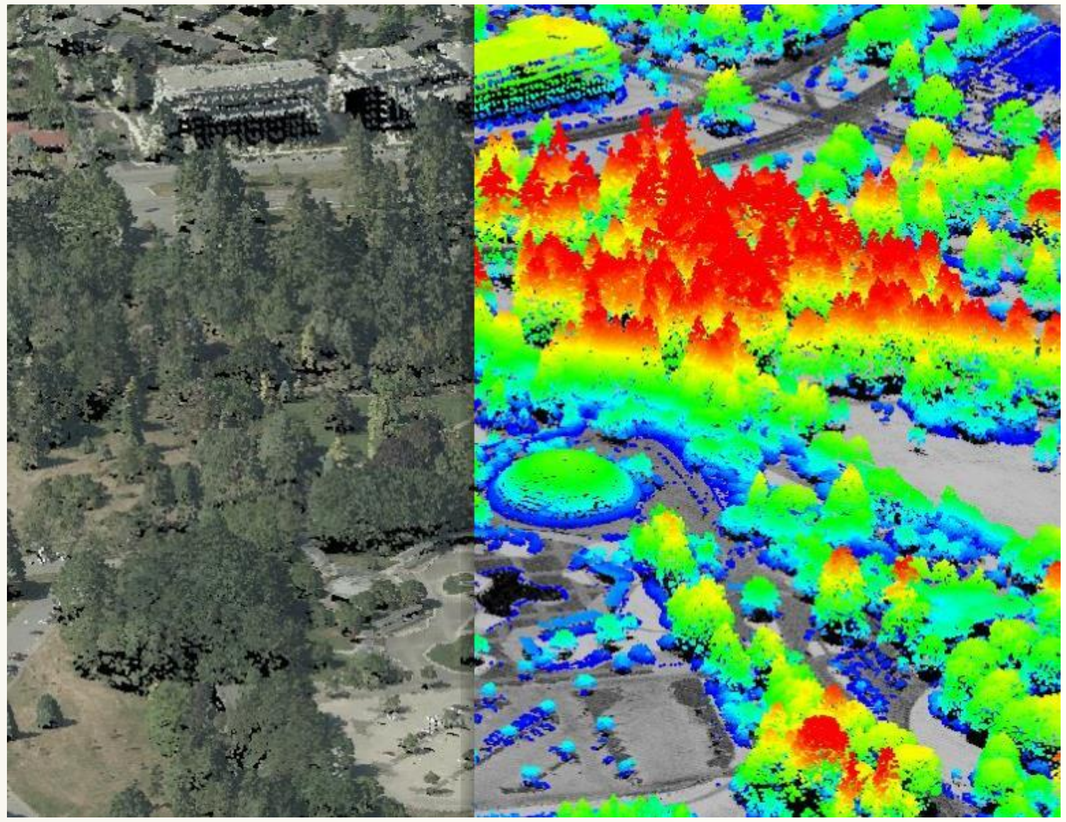
Base Data- Terrain Models, LiDAR, Point clouds



Source: Lidar BC-Open LiDAR Data Portal

- How the earth's surface impacts the service you deliver to your customers.
- Contour maps can be effective, readily available, but not high res and possibly out of date.
- Digital elevation and terrain models.
- Remote sensing tools/techniques
  - Satellite
  - Orthophotography
  - LiDAR

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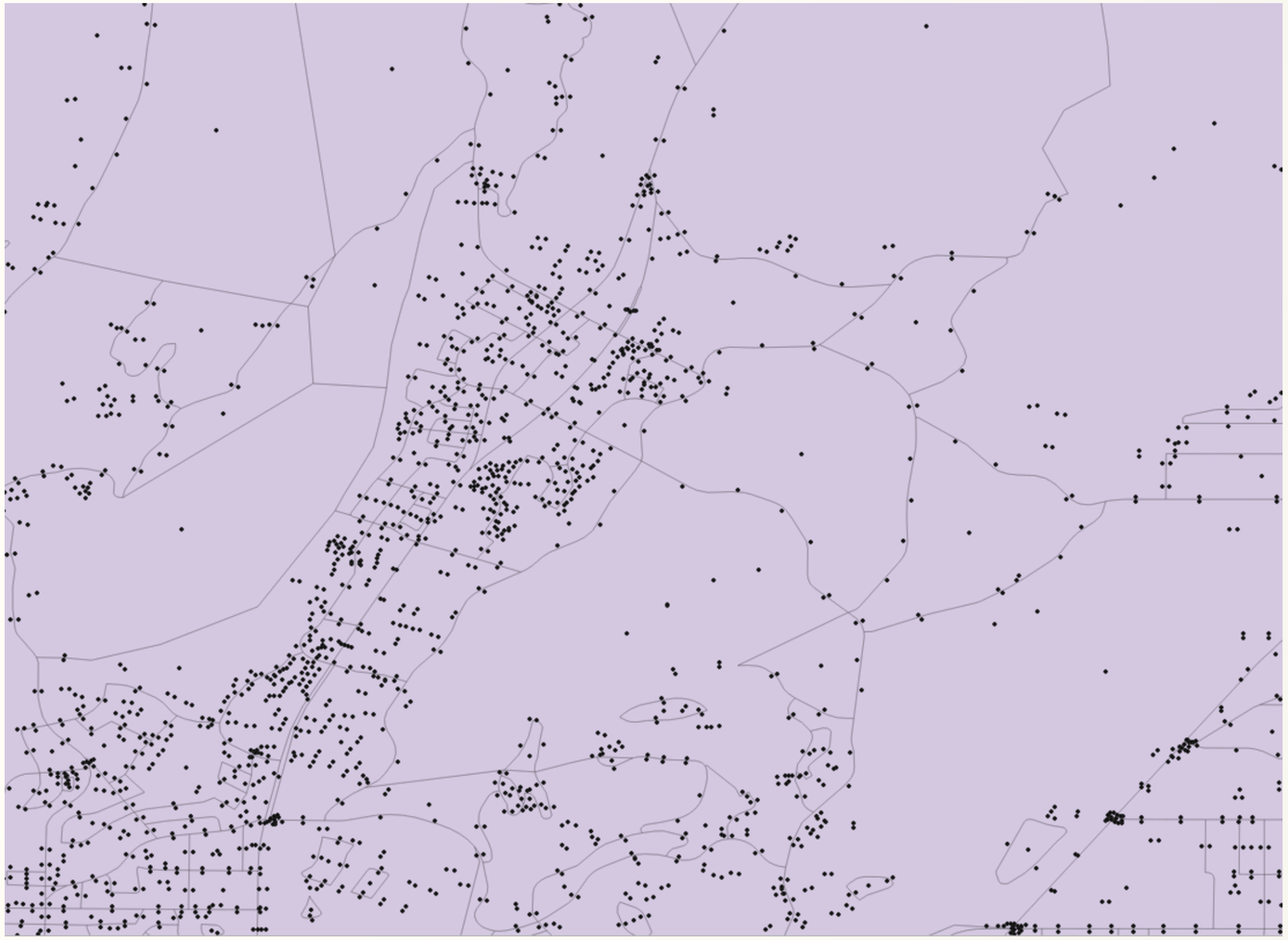
Coverage Data – Government Data

- Not just Hexagons anymore ☺!
- Web map + Open data
- Road Level Coverage.
  - Speed categories
  - Wired and wireless segregated
- Pseudo-Households
- Update schedule
- Dependent on you!



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Coverage Data- Your Network

- Customers
  - Monitoring
  - Failed Installs
- Backhaul routes
- Infrastructure and assets
- Wireless propagation and coverage
- Path profiles
- Installation, site survey plan

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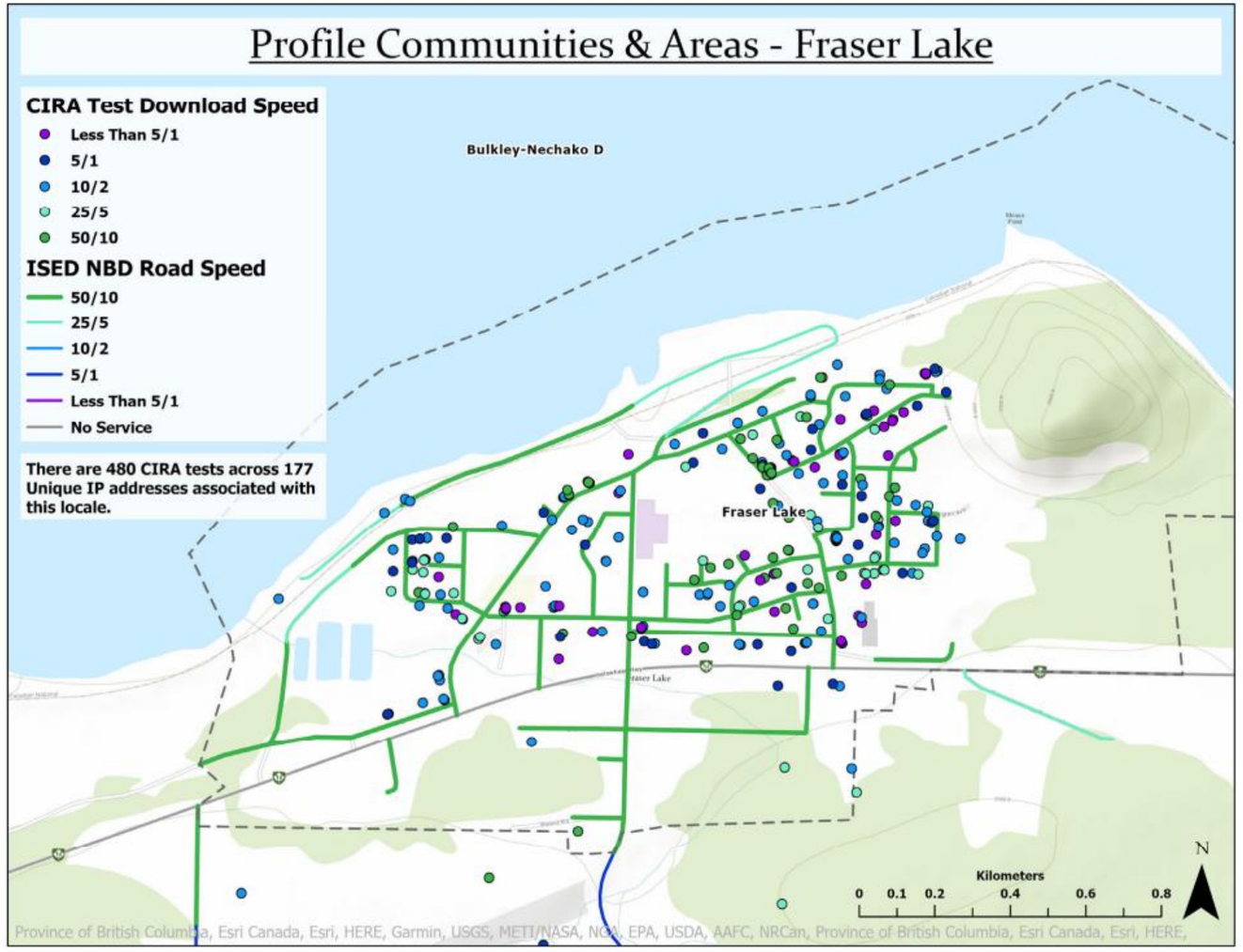
Crowd Sourced Data – Interactions with Coverage Data



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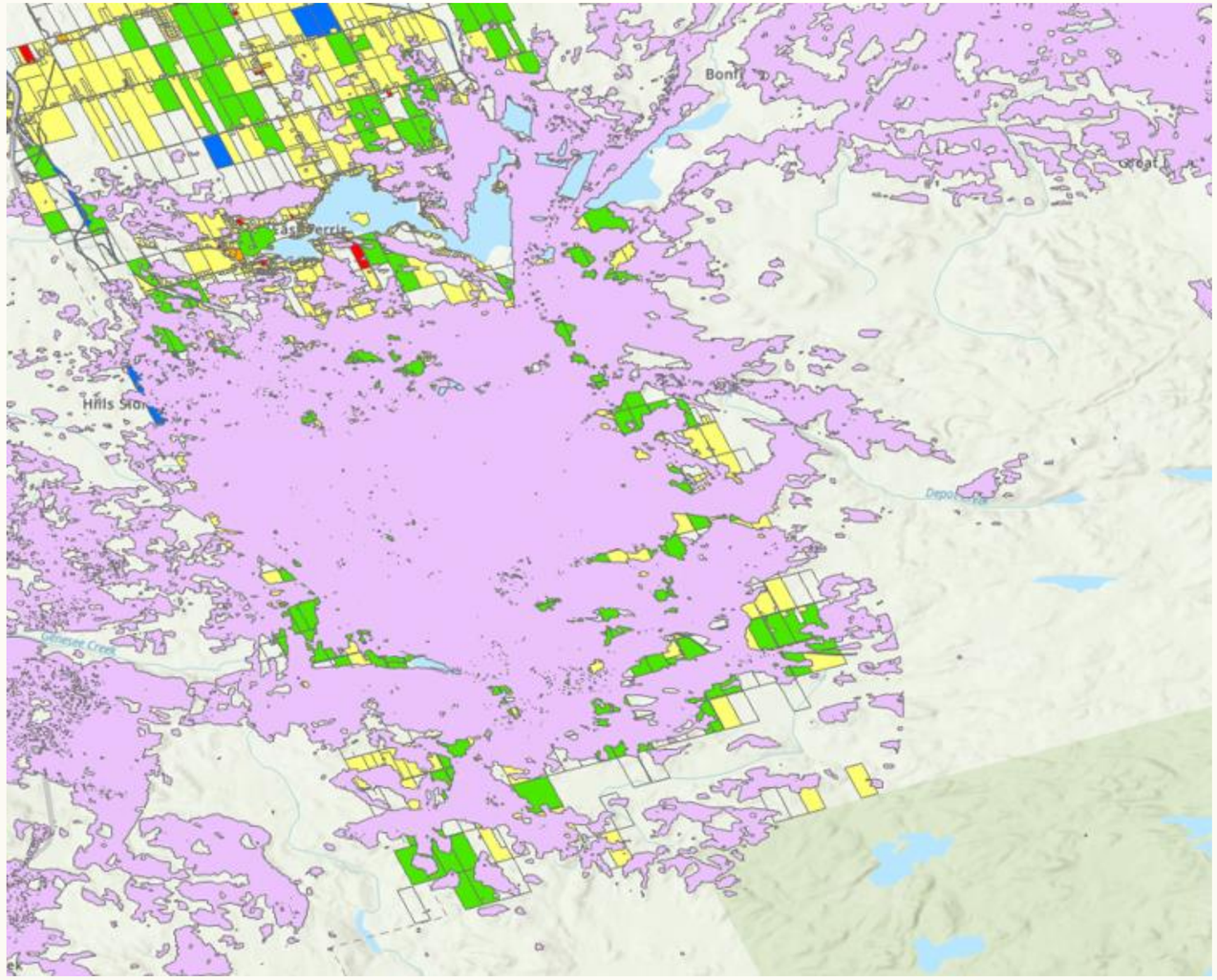
Crowd Sourced Data – Marketing and Promotion



Resources for Wireless ISPs

QGIS

ArcGIS
ESRI

Excel

Access

Visio

TowerCoverage.com

Radio Mobile Online / En ligne

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Thank You!

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