

Tree Canopy Coverage

Using Computer Vision to Measure Tree Canopy Coverage

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Outline

- Monitoring Strategy – C1.2 Land Use & Health
- Using Computer Vision to Delineate Tree Canopy Cover
- Modelling Steps
- Tree Canopy Monitoring Areas
- Dashboard for Communicating Results
- Benefits

Monitoring Strategy

- C1.2 Land Use & Health
 - Indicator #2 – Tree Canopy Coverage – Neighbourhood
- Urban forests enhance ecological, climate and human health benefits
- Indicator Goal - 30% canopy coverage

Using Computer Vision

- From imagery to insight faster.

“Computer vision, or the ability of computers to gain understanding from digital images or videos...” – ESRI

- Computer Vision is an available tool thanks to:
 - Algorithms
 - Data
 - Computer Power

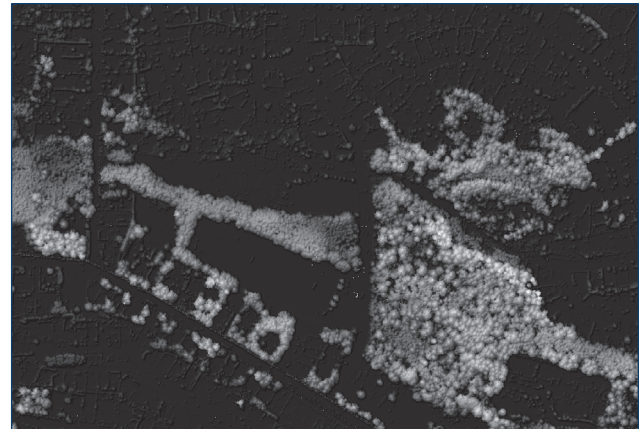
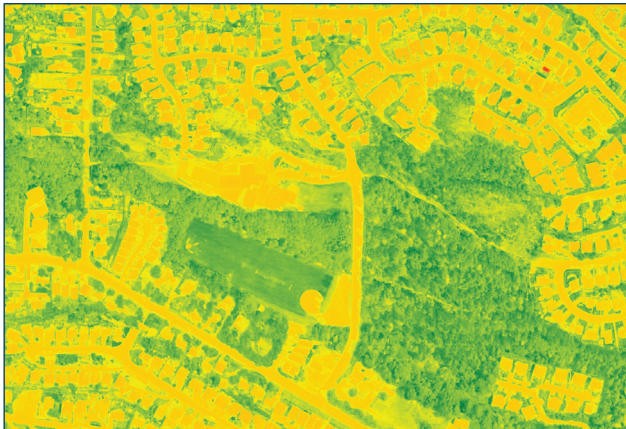
Modelling Steps

- High Resolution 2022 Ortho Imagery
- Training Areas

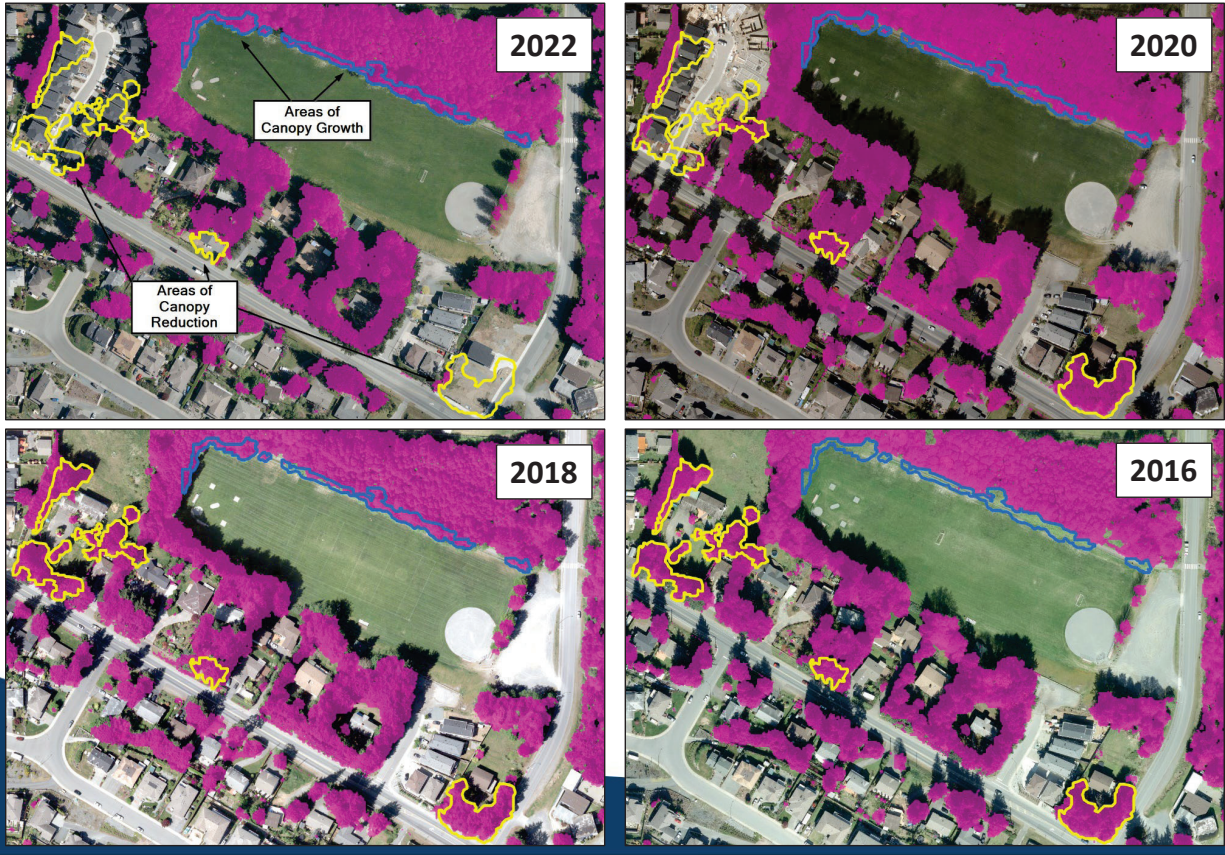


Modelling Steps

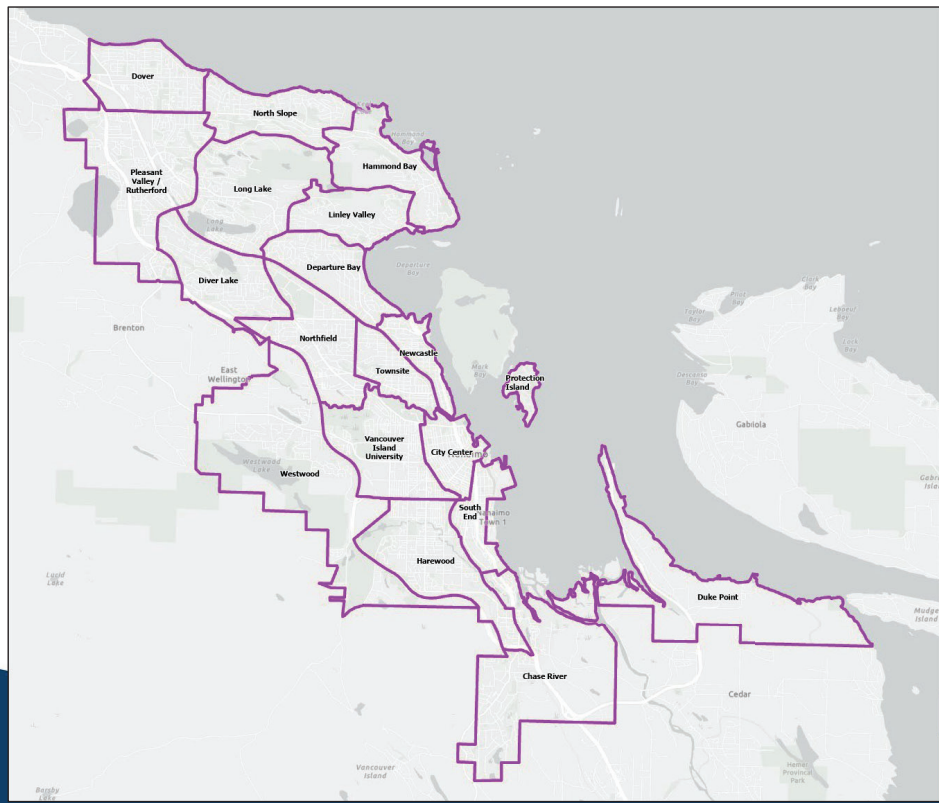
- Near Infrared (NIR) wavelength
- Light Detection and Ranging (LiDAR)



Modelling Output

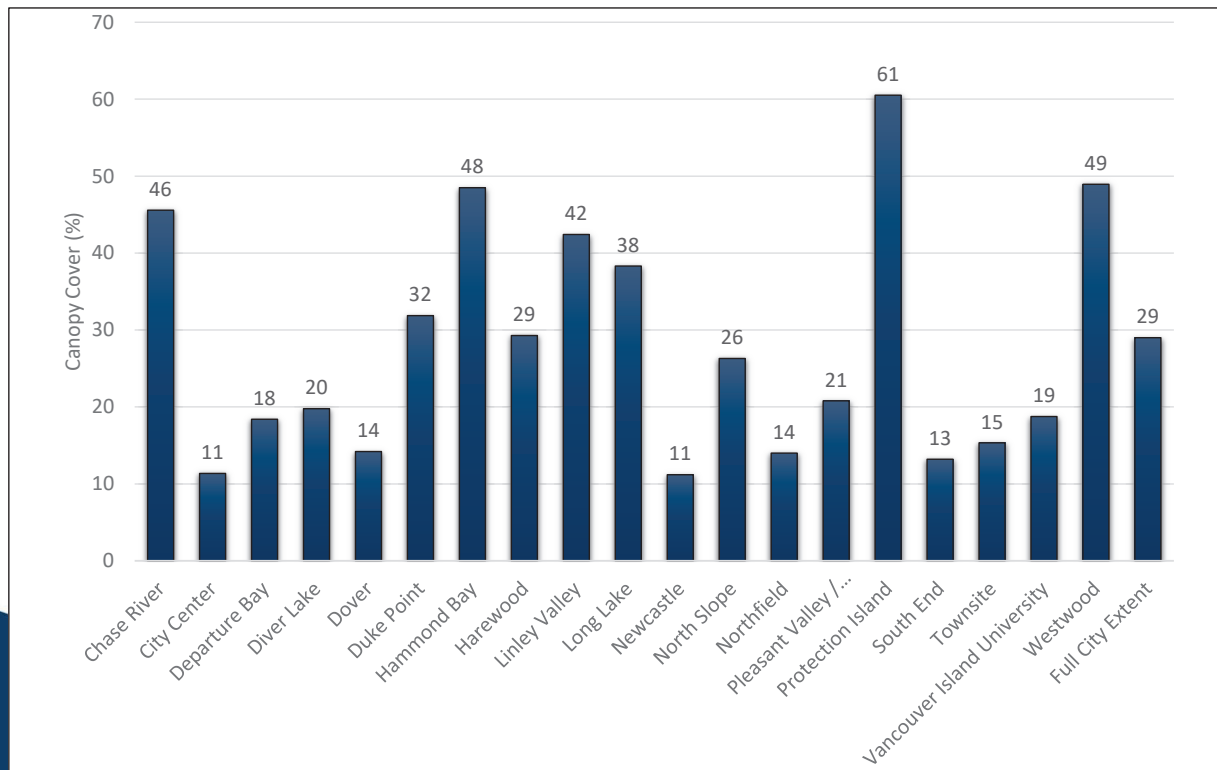


Tree Canopy Monitoring Areas

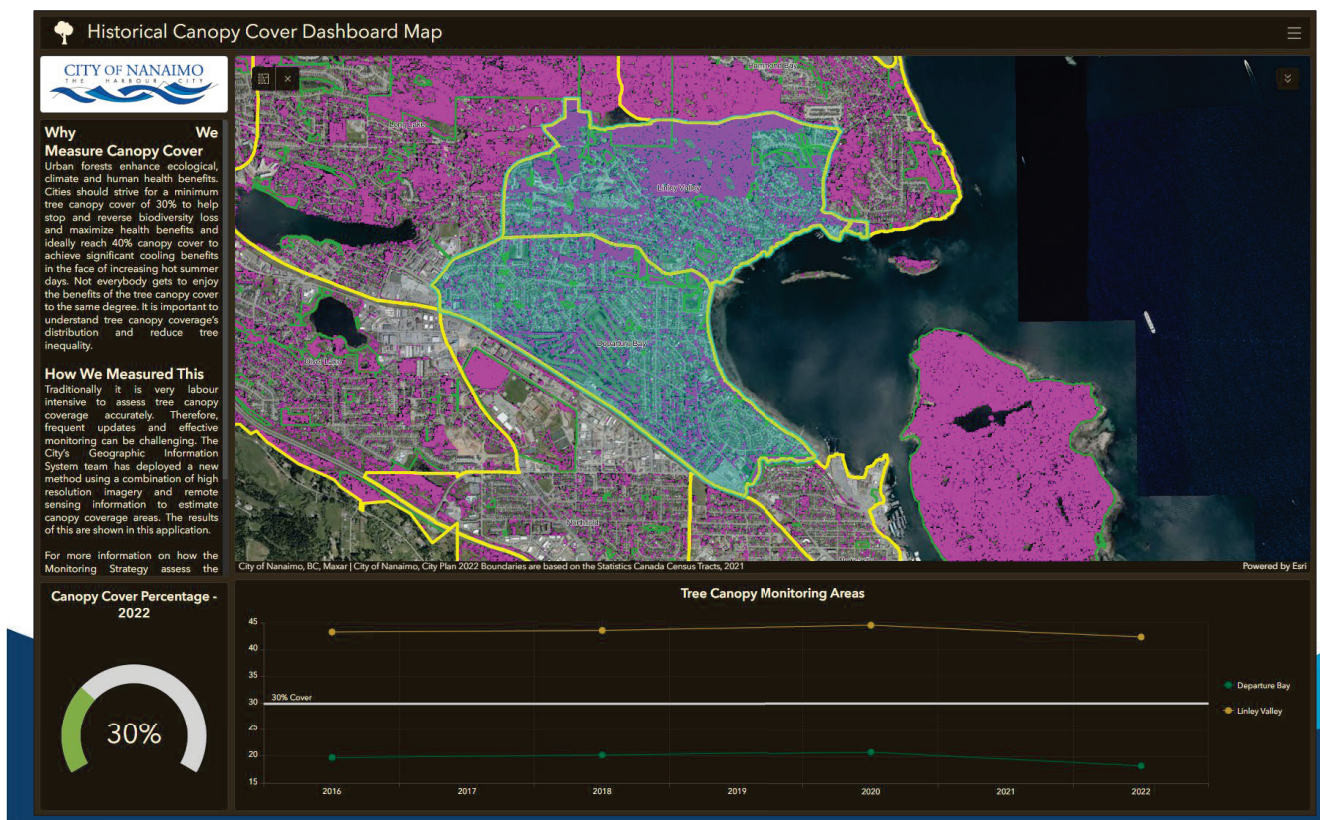


Tree Canopy Monitoring Areas

Canopy Cover



Dashboard



Benefits

- Repeatability – Monitor changes in canopy
 - Modelled canopy for 4 collections of imagery dating back to 2016.
- Total effort savings of 1500 hours.
- Improved return on investment in remote sensing data.
- Build capacity and capability.

Questions?