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Kwantlen First Nation

Geographic Information
Systems (GIS)

Tanner Timothy, B.A Geography, AdvDip GIS
GIS Technician
Kwantlen Lands, Resources and Stewardship (KLRS)

“Since time immemorial we have lived by our seven traditional laws that guided our ancestors: health, happiness, generations, generosity, humbleness, forgiveness and understanding. We are tireless in our spirit to make a better world for our future generations.”



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Overview


- History of GIS at KFN
- Implementation of GIS
 - Software, Hardware
 - Data
 - Standards and Best Practices
- Benefits of GIS
- Challenges
- Resources
- Question/Comments

NEW WESTMINSTER DISTRICT BRITISH COLUMBIA

INDIAN AFFAIRS SURVEY RECORDS
No. TBC 1-A



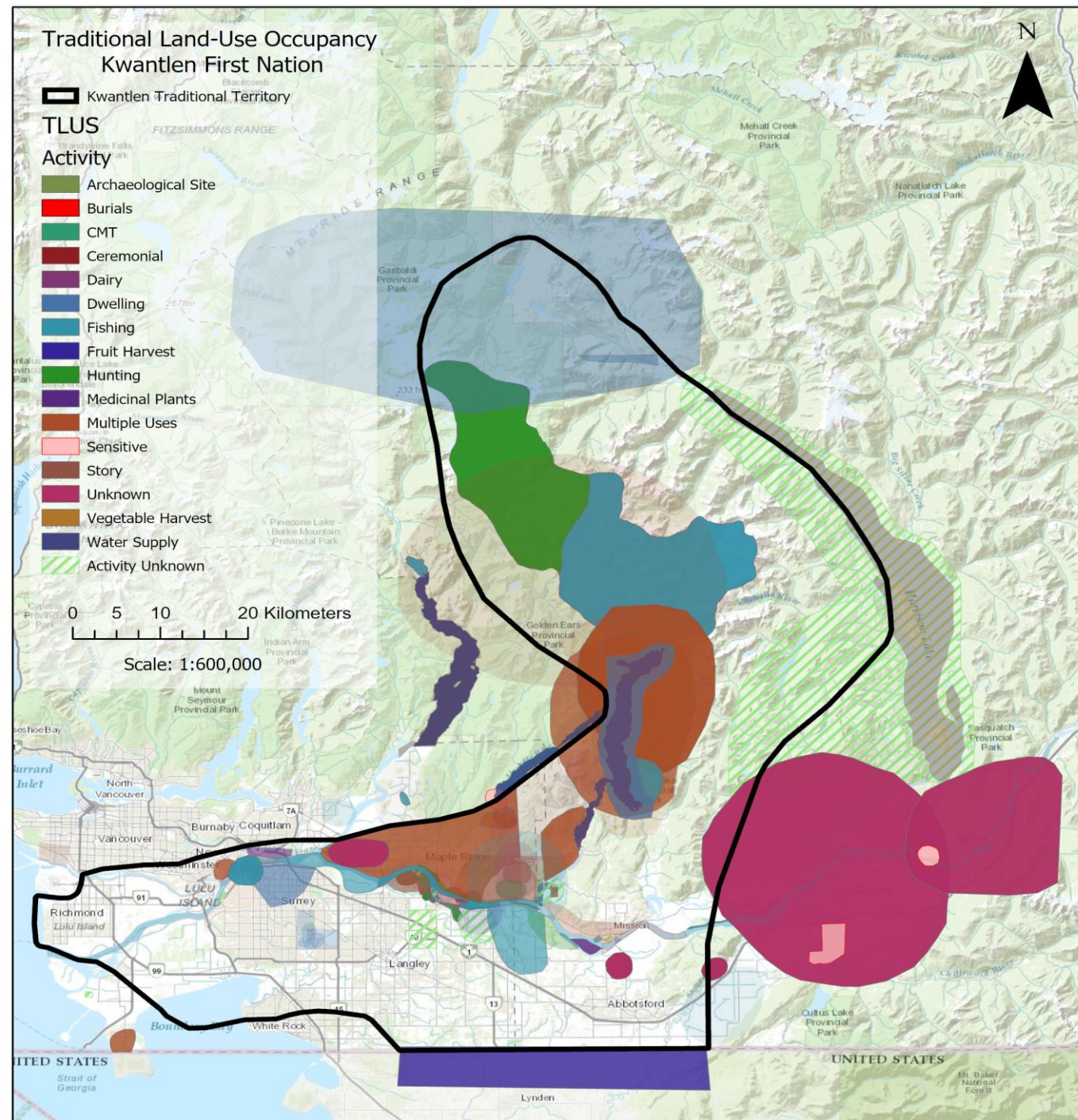
History of GIS at
q^wa:n^ʔlən'



Surveyed by W.S. Jemmett, 1880; E. Mohun, 1881.

Kwantlen Territory Knowledge Project (KTKP)

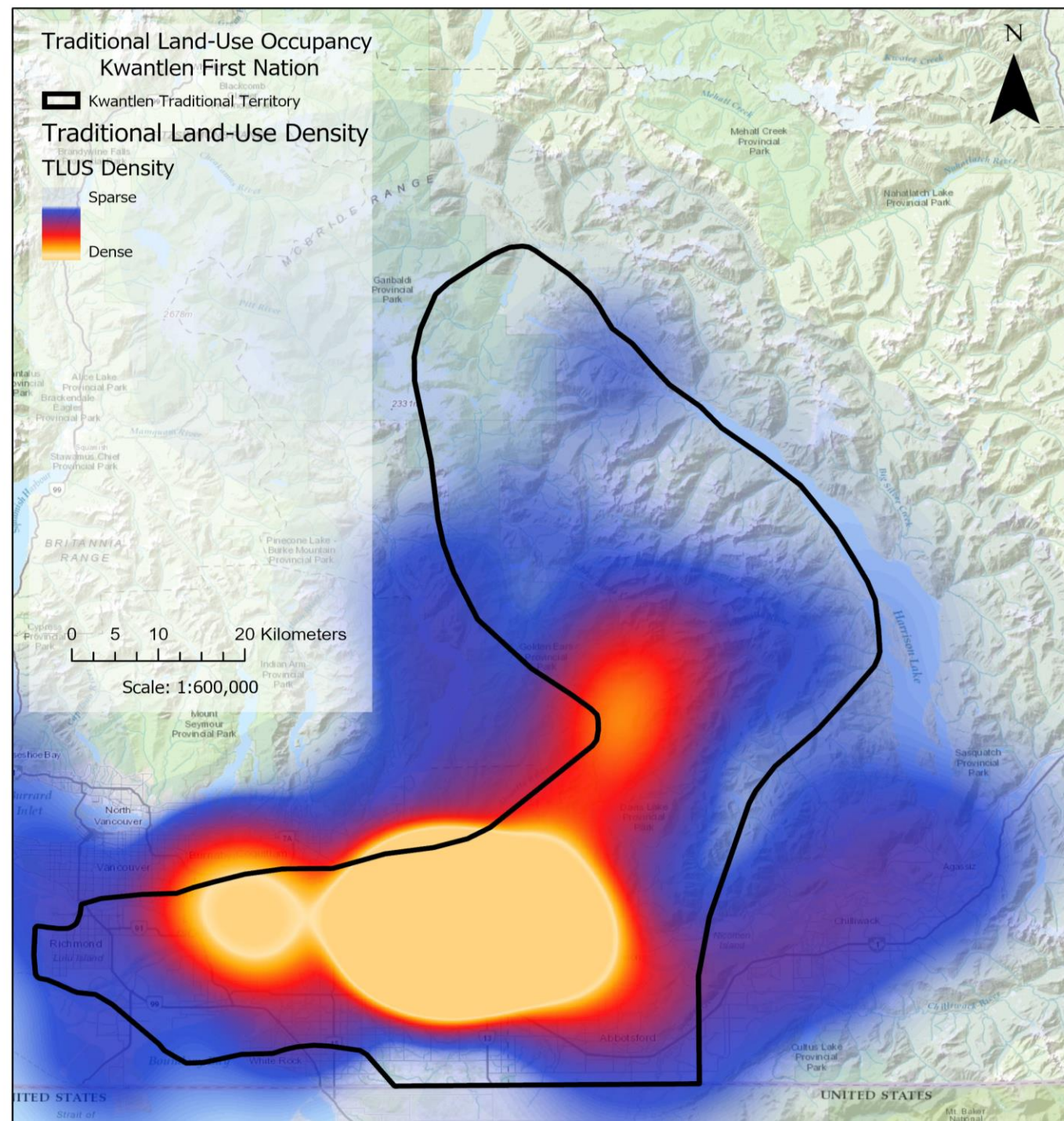
- Initiated in 2009
- Report finished 2011
- Interview's are still occurring, and data is now being continually updated



Kwantlen Territory Knowledge Project (KTKP)

This data is important!

1. Preserves History
2. Preserves Heritage
3. Preserves Culture
4. Preserves Traditions



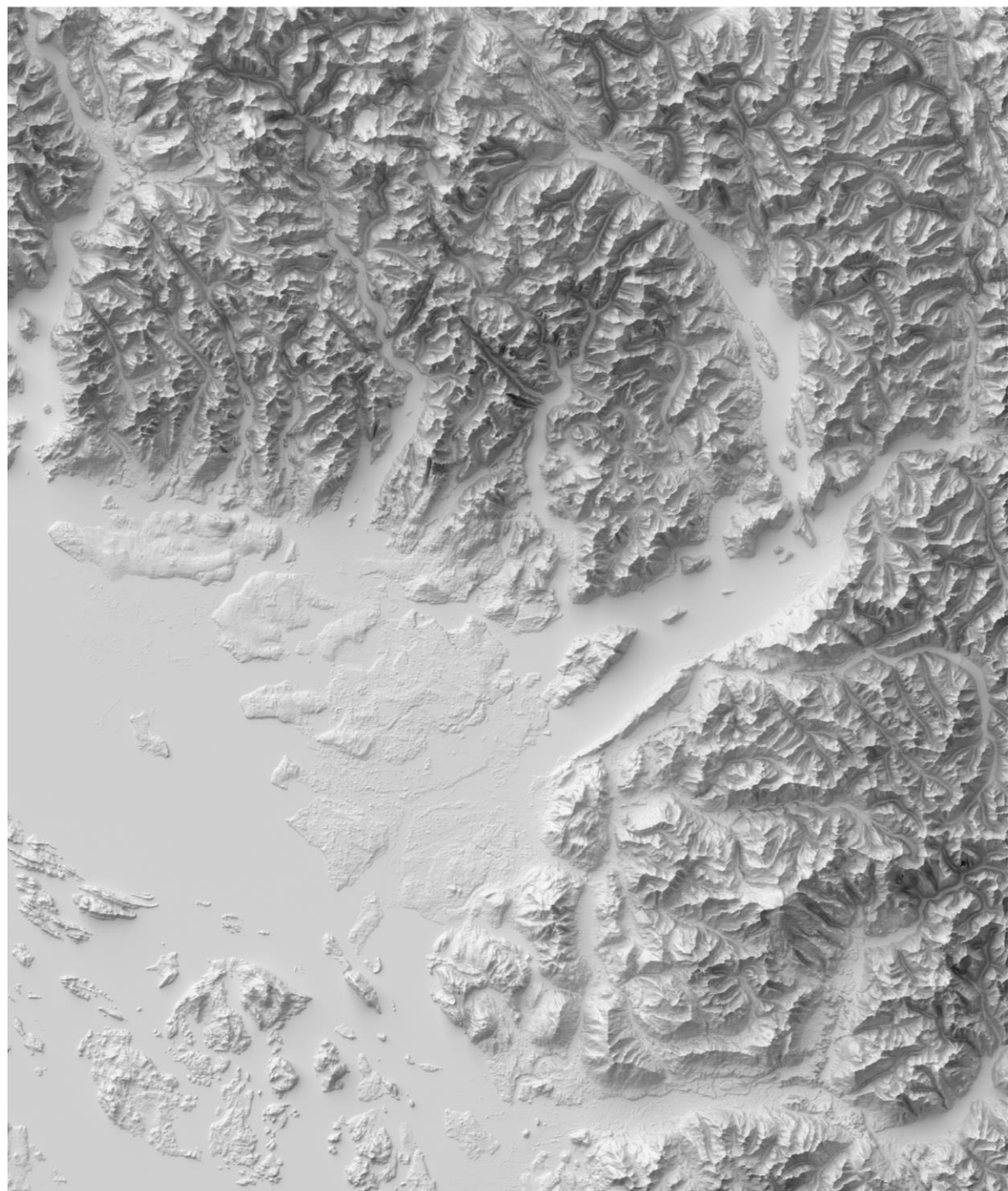


GIS Development



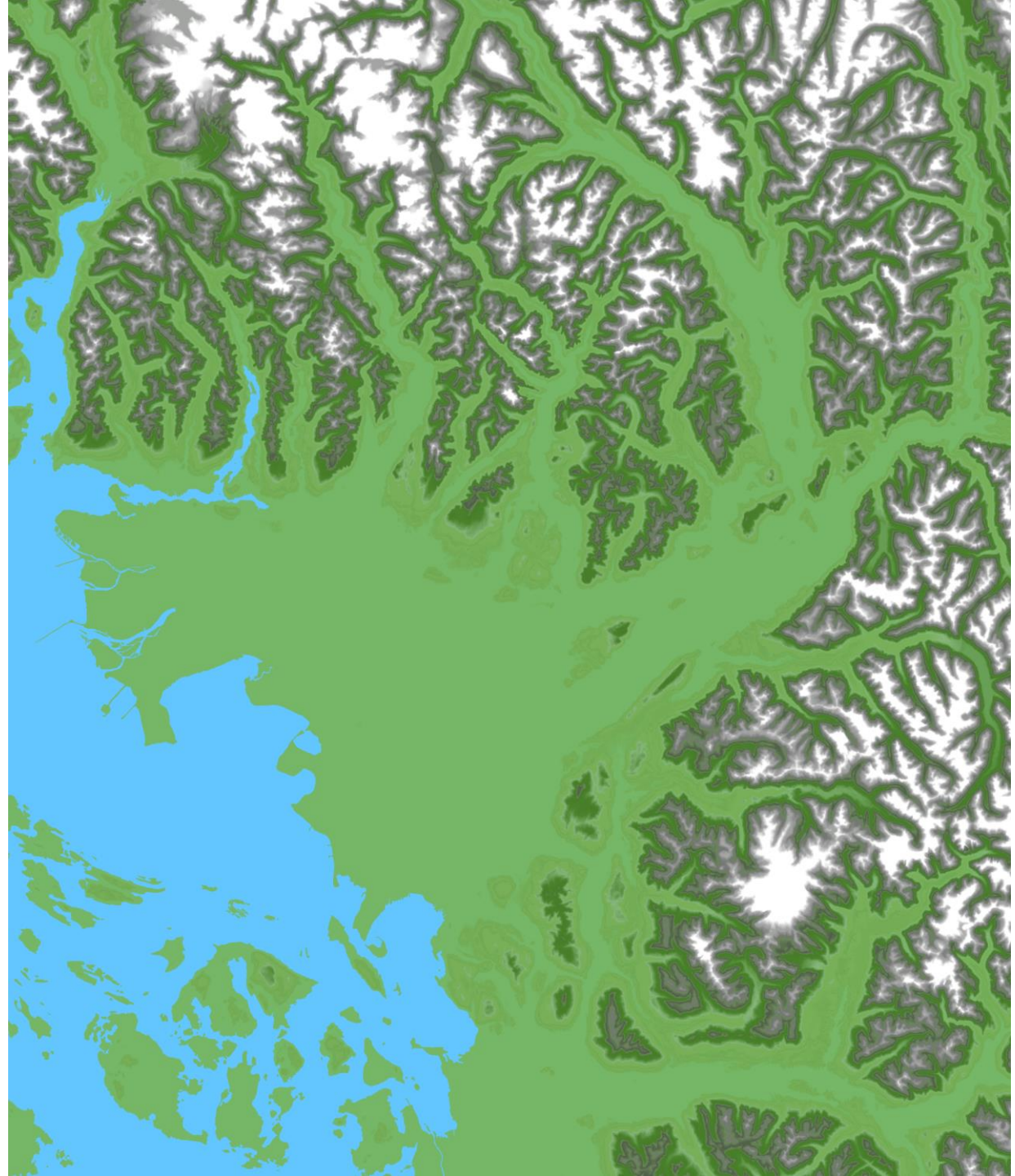


GIS Development





GIS Development



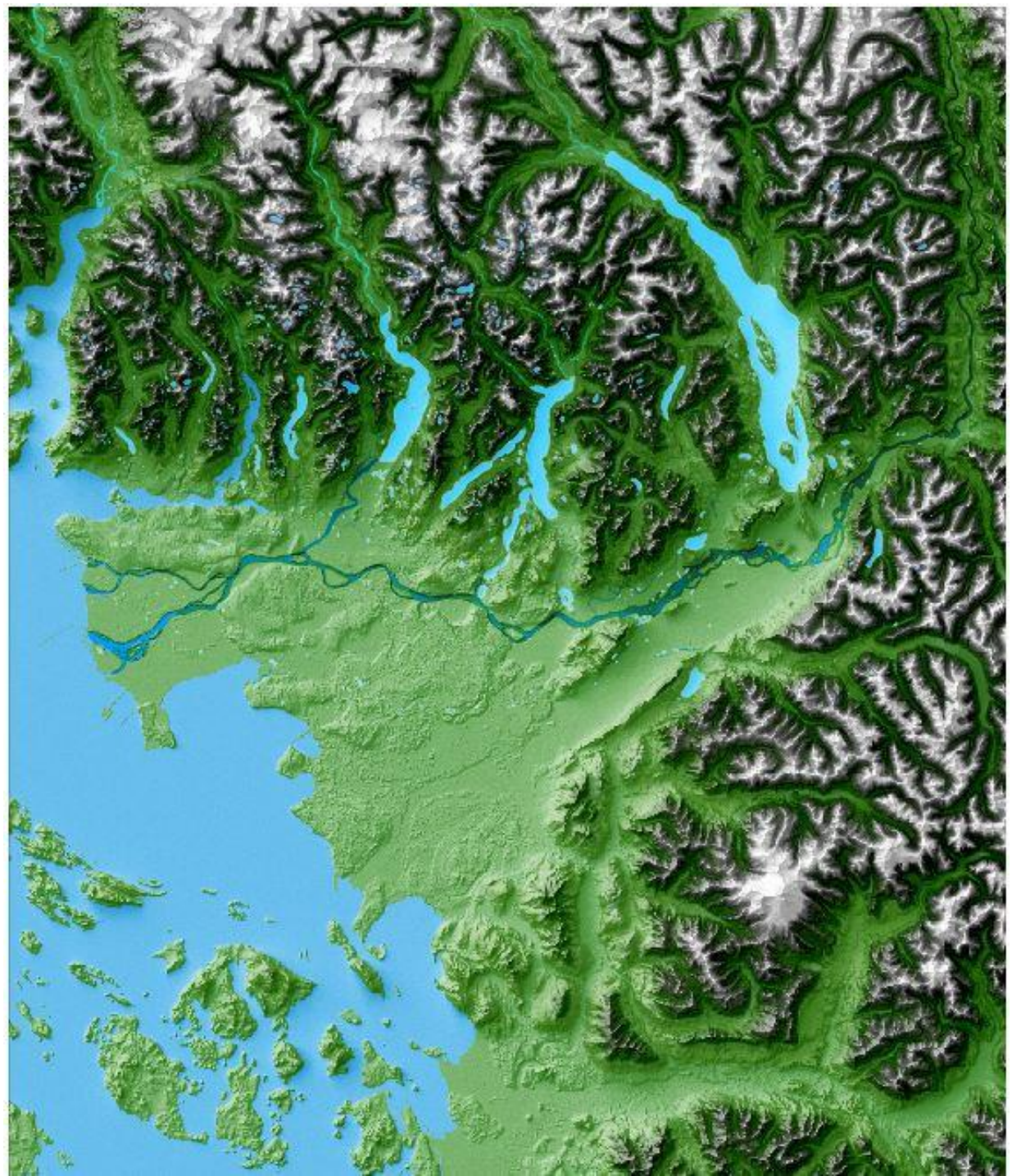


GIS Development





GIS Development



Software



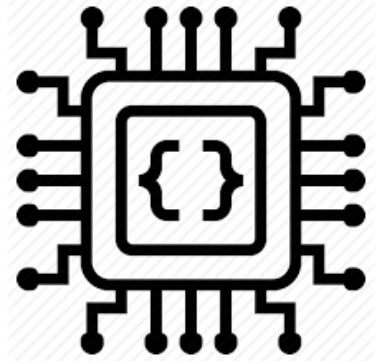
ArcGIS 10.7
ArcPro 2.4.3



QGIS 3.6.1



Hardware



Processor	Intel(R) Core(TM) i7-8750H CPU @ 2.20GHz 2.20 GHz
Installed RAM	16.0 GB (15.8 GB usable)
Device ID	65784E9E-397C-4339-8A23-2F399A312478
Product ID	00330-80000-00000-AA673
System type	64-bit operating system, x64-based processor

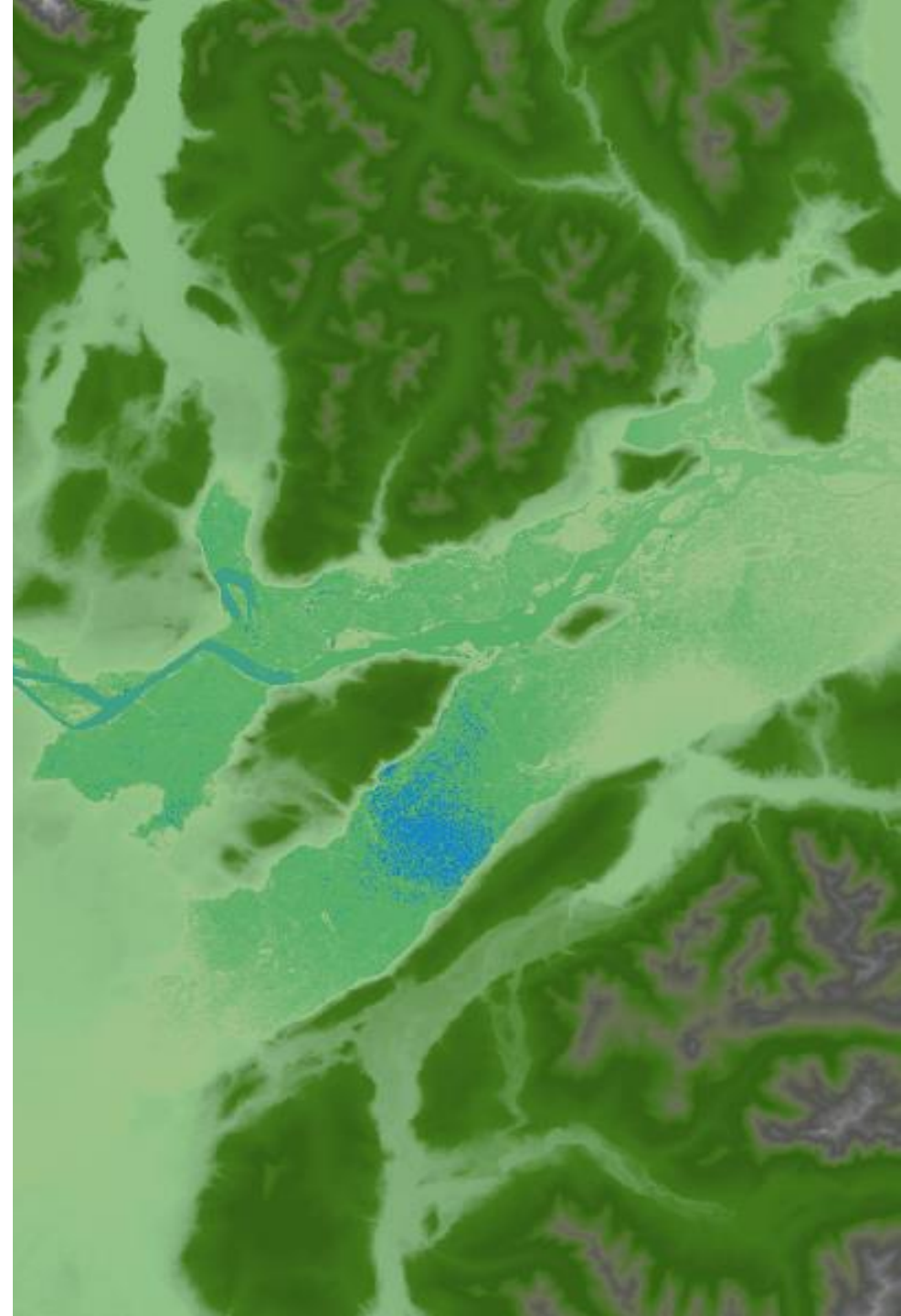
Data

- Traditional
- Civic
 - Cadastral
 - Infrastructure
 - Interest on Reserve
- Archaeology





- [-] D:\GIS
 - [+] Administration
 - [+] Archaeology
 - [+] Communities
 - [-] Data Warehouse
 - [+] Administrative_Boundries
 - [+] Annotation
 - [+] Archaeology
 - [+] Asbuilts
 - [+] CAD
 - [+] Collection
 - [+] DATA_SHARE
 - [+] DataBC
 - [+] Elevation
 - [+] Forestry
 - [+] Hydrology
 - [+] Imagery
 - [+] KTKP
 - [+] LandUse
 - [+] Misc
 - [+] Natural_Resources
 - [+] NRCAN
 - [+] Protected_Areas
 - [+] Referrals
 - [+] Scripts
 - [+] Surveys
 - [+] SXTA_TSL
 - [+] TOL
 - [+] Tools
 - [+] Transportation
 - [+] Utilities
 - [-] GDB
 - [+] scratch
 - [+] DataBC.gdb
 - [+] pgis.gdb
 - [+] r.gis.gdb
 - [+] tgis.gdb
 - [+] VE19412_Study Area.gdb
 - [+] AppendixIHistoricalrendering1.tif
 - [+] proposdtilburyphase2_map1.tif
 - [+] VE19412_Study Area.lyr
 - [+] KFN_Translink
 - [+] Layers
 - [+] Maps
 - [+] Projects



Standards and Best Practices

- Understanding how spatial data is represented
 - Coordinate Systems - Geographic and Projected
 - Datum, Geoid
- Understanding data types and formats
- Metadata
- Naming Conventions, Data Models
- Quality Assurance and Quality Control (QA/QC)
- BACK-UP DATA

Standards and Best Practices

- It may be helpful to create a user document that describes your implemented standards and an understanding of the GIS being used, created and maintained

Kwantlen Lands, Resources and Stewardship (KLRS)
Geographic Information System (GIS) User Guide and Standards

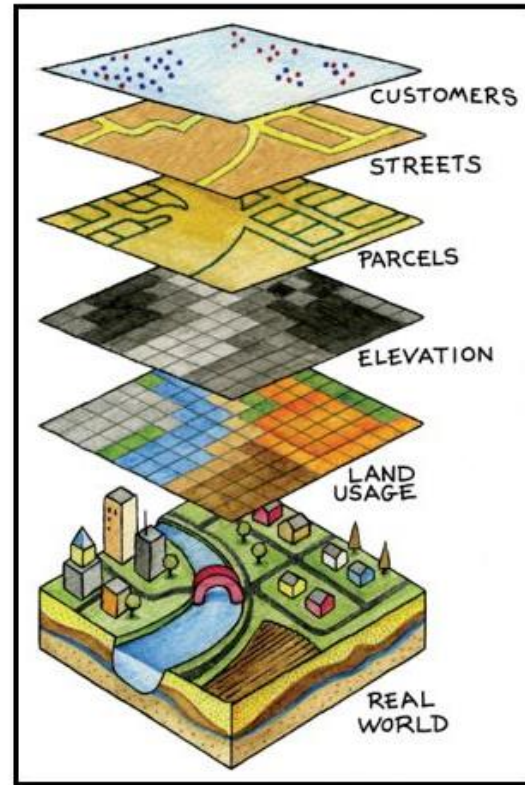


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• 2.2 What is a Geographic Information System (GIS)?	
• 2.3 How are features and phenomena represented using a GIS?	
• 2.4 Vector Data Model	
• 2.5 Raster Data Model	
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• 3.1 Spatial Reference System (SRS) Standard	
▪ Horizontal and Vertical Datum	
▪ Projected Coordinate System	
• 3.2 Data Standards	
▪ Metadata	
▪ Naming Conventions	
▪ Storage: Specific to the storage and sharing of Shapefiles	
▪ QA/QC	
• 3.3 Data Types and Formats	
• 3.4 Data Collection: Data Sources and Types of data collection	
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An aerial photograph of a river delta, showing a large body of water branching into several smaller channels. The water is a mix of dark green and brownish-green, indicating varying depths and sediment levels. The land is visible at the top and right edges, appearing as a light brownish-green color. The overall scene is a natural landscape with a prominent water feature.

Benefits of GIS

Benefits of GIS

PUBLIC WORKS/LAND DEPARTMENTS CAPITAL PROJECT IR4 Land Use Plan Mission/Hayward Street Area



- This article includes:
- Project Background.
 - What's Next?
 - Getting Involved!

Project Background

Many of you are aware that, with our growing population and the desire of members to live on Kwantlen reserve lands, we need to determine areas that are suitable for residential housing both on IR6 and IR4. We have several members on our Privately-Owned Housing Wait List who would like to build on IR4. Preparing a Land Use Plan for IR4 will determine the various uses of land for the entire reserve, such as housing, community buildings, environmentally sensitive areas, for now and into the future. This Land Use Plan will be approved through a KFN member referendum as required by KFN's Land Code.

A funding application was submitted to Indigenous Services Canada and has been approved. Other funding sources will be sought, as necessary, once the final budget has been determined. The project is planned to be completed by June 30, 2020 which includes holding the referendum.

IR4 is represented by the yellow dashed line on this Google earth map.

Urban Systems has previously completed very preliminary work identifying some of the constraints on IR4 which would eliminate areas not suitable for housing. This includes steep slopes, creeks, environmental and a blue heron nesting area. Of the IR4, approximately 60 acres is potentially suitable for housing and other potential future uses such as community buildings. This information will be used, along with other information that has been gathered in previous years, as a starting point for this project.



BC Hydro Facilities

Government of British Columbia, DataBC, GeoBC - a href="http://maps.gov.bc.ca" target="_blank" >img src="http://openmaps.gov.bc.ca/mil/Icons/SYMBOL_Bp_1111.png" >

Janitorial Services:
BC Hydro Facilities

CLIENT	BC HYDRO
PROJECT	JANITORIAL SERVICES
REGION	SOUTH WEST
SITE	37.7 Dunsmuir Substation 138 & 17
ADDRESS	49° 23' 34" N, -124° 40' 18" W
NATION(S)	Quilicum First Nation


REFERENCES
Contains information licensed under the Open Government Licence - British Columbia. Facility location provided by BC Hydro with supplementary geocoding locations.

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səyem' Hours and Operations

səyem'	Hours of Operation
9712 Glover Rd, Langley, BC V1M, 2S4 Contact us: 604-888-5556	M 9:00 - 5:00 T 9:00 - 5:00 W 9:00 - 5:00 T 9:00 - 5:00 F 9:00 - 5:00
Lelem' Cafe 23285 Billy Brown Rd #100, Langley Twp, BC V1M 0C8 Contact us: 604-343-9277	M 7:00 - 7:00 T 7:00 - 7:00 W 7:00 - 7:00 T 7:00 - 7:00 F 7:00 - 7:00
Sxwimela 23433 Mavis Ave Fort Langley, BC V1M 3R5 Contact us: 604-888-4477	M 10:00 - 5:00 T 10:00 - 5:00 W 10:00 - 5:00 T 10:00 - 5:00 F 10:00 - 5:00

Disclaimer:
This map was created for illustration of general business locations. The data provided has been compiled from various sources and is not warranted as to its accuracy by the səyem' Lands Department.

A photograph of a dense forest with tall, thin trees and sunlight filtering through the canopy. The text "Demonstration of ArcGIS Online" is overlaid in white, bold font across the center of the image. A solid orange horizontal bar is located at the bottom of the image.

Demonstration of ArcGIS Online



Challenges

- Multiple people working on a project or dataset overtime
- Lack of metadata
- Different data formats and projections
- Accuracy of Data



Resources

- DataBC
- Geogratis
- Geobase
- Local Municipalities with Data Sharing
- Integrated Cadastral Society (ICIS)
- IMAP BC
- NRCAN
- STRM Land Cover Data: <http://rmw.recordist.com/>
- Open Street Maps (OSM)
- GitHub
- GeoNet

Questions and
Comments

