Community Engagement
At Nootka Elementary School

By: Josef Drechsler

jdrechsler@nhcweb.com

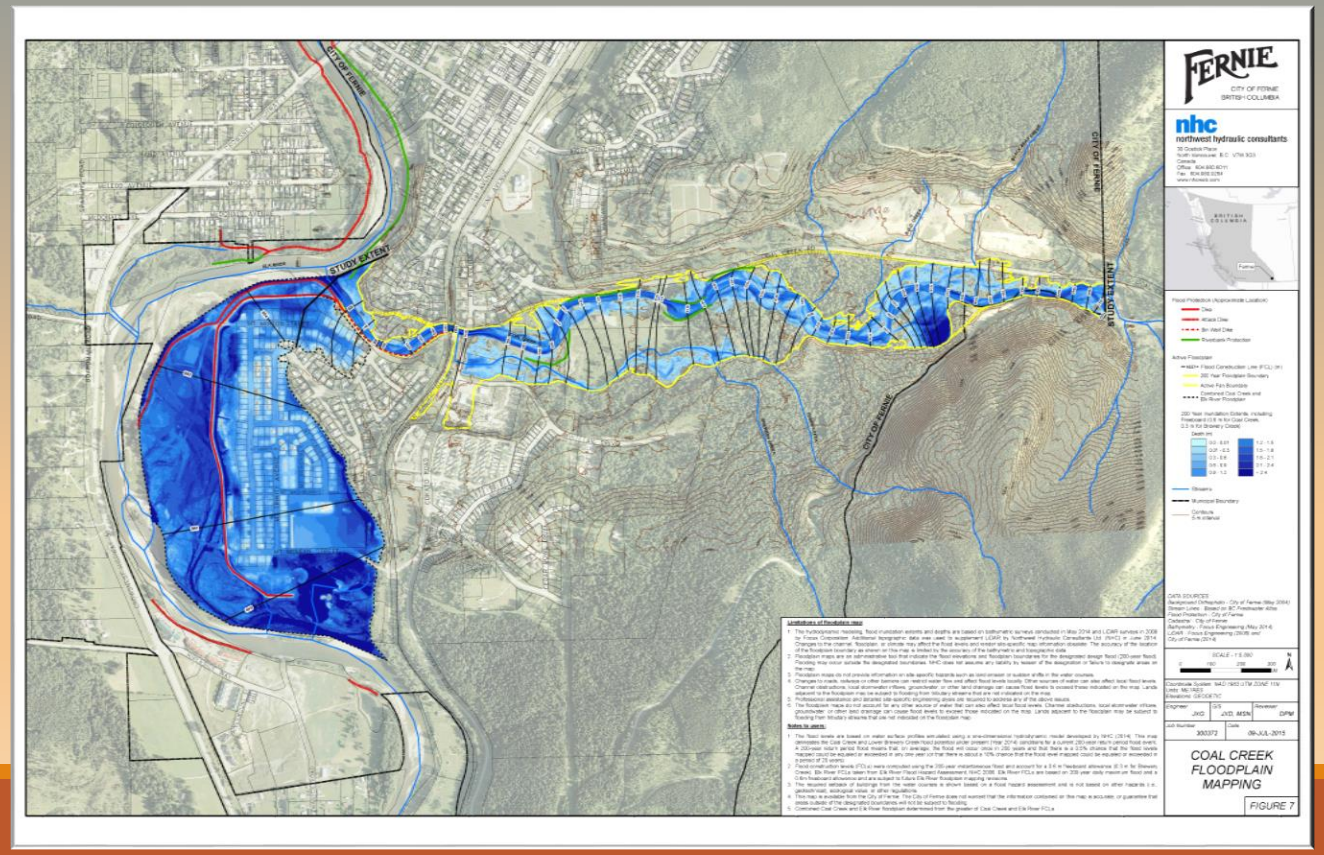
Overview

- Personal background
- Description of Nootka Elementary
- Examples of Community Engagement at Nootka
- Other examples of Community Engagement
- Links and Resources
- Q&A

nhc northwest hydraulic consultants

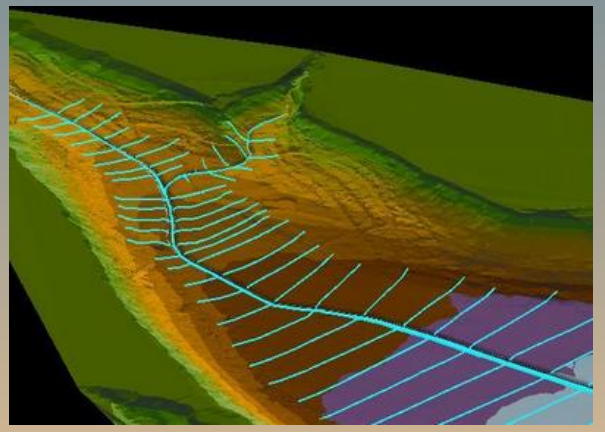
12 years of experience working in the water resources industry:

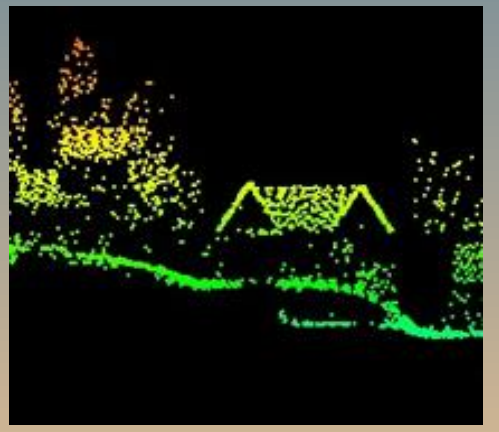
- DEM development for numerical and physical modelling
- Bridge scour monitoring and mitigation
- Drainage basin delineation and analysis
- Flood inundation/hazard studies
- Historic bank line analysis
- Fish habitat mitigation
- Stream restoration
- Bank stabilization
- Stream survey
- Hydro electric

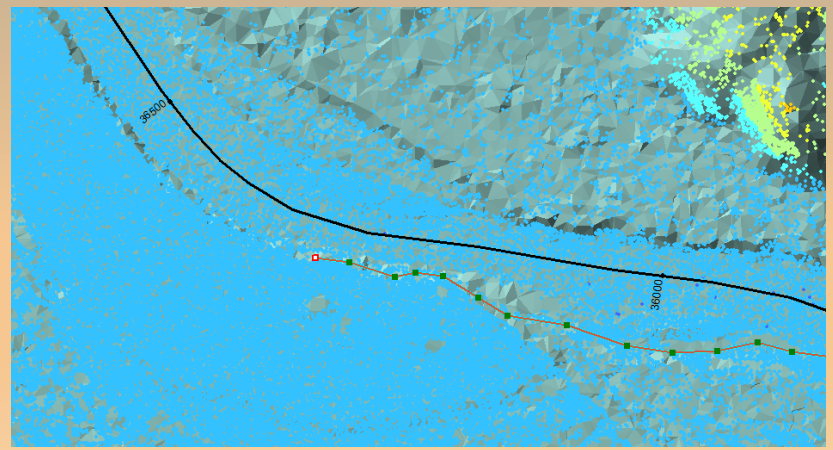


Technical requirements:

- 3D Analyst
- Spatial Analyst
- LAS Viewer
- Arc Hydro
- HEC-GeoRAS
- Standard editing tools
- Custom scripts

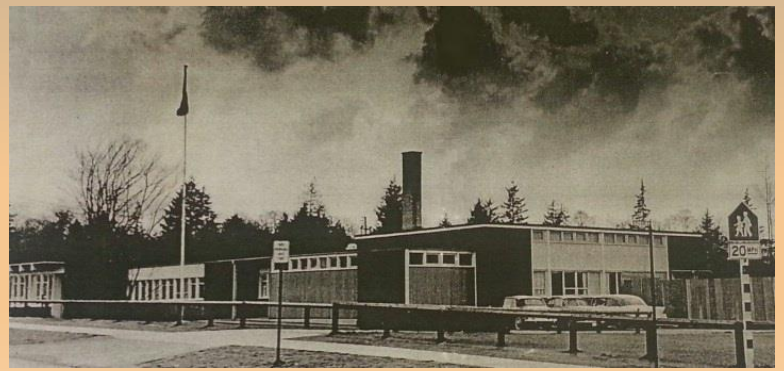






Nootka Elementary School

- Opened in 1959 as Lord Beaconsfield Annex
  - Gained School Status in 1963
- Fine Arts Program
  - Focus on artistic expression
- Located at 3375 Nootka St.
  - Adjacent to the Renfrew Ravine



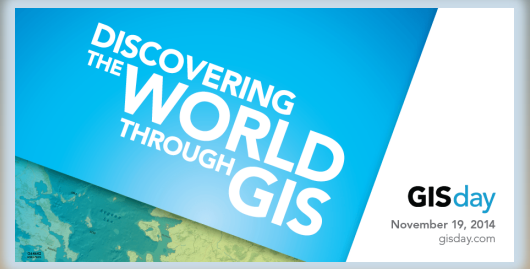
Why do Community Engagement?

1. It’s fun!
   - You'll feel good about yourself
   - Impress your kids
   - Broaden your experiences

2. GISP Accreditation…
   - New application or recertification
   - Professional development points

Two opportunities in the last few years

1. Classroom Presentation at Nootka Elementary (2014)
   - GIS Day November 19, 2014 (this year it falls on Nov 15, 2017)
   - Esri Canada was happy to sponsor the presentation
     - Water bottles, bracelets and a copy of the 2014 Map Book for the classroom



2. Lost Streams Project at Nootka (2016)
   - Produced a 3x3m map of the underground streams Nootka
   - Project was led by “Still Moon Arts”
     - Large installation art piece created with student involvement

GIS

GEOGRAPHIC INFORMATION SYSTEMS

MINNESOTA N D N D

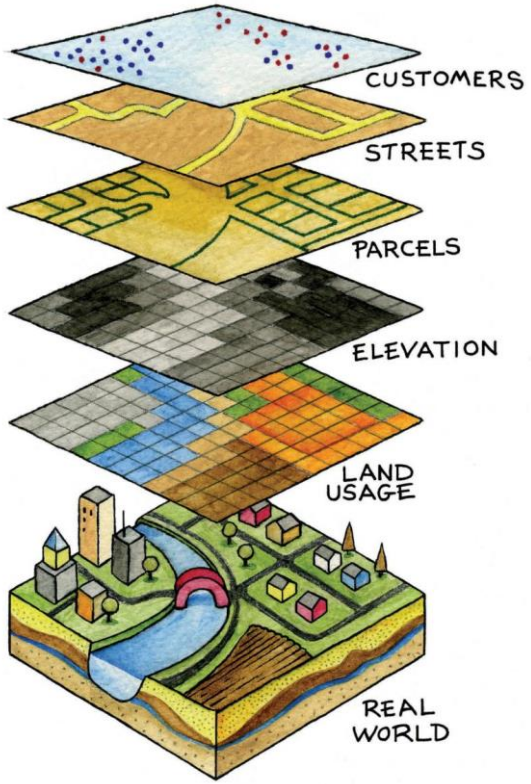
GIS day

GeographyAwarenessWeek.org

What is GIS?

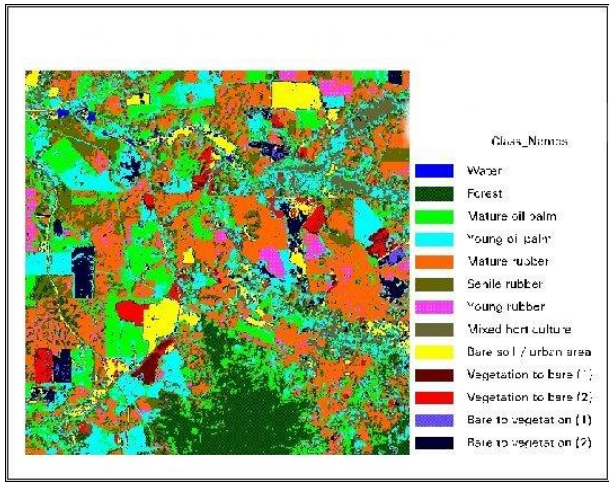
A **geographic information system** (**GIS**) is a computer system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.

OR



Also:

AND



AND

Points Lines Polygons

GIS and Engineering

nhc
northwest hydraulic consultants
water resource specialists

Father of GIS

Roger Tomlinson

CANADIAN!!!

GIS Quotes

“The early days of GIS were very lonely. No-one knew what it meant.”

Roger Tomlinson, Father of GIS

“The application of GIS is limited only by the imagination of those who use it”.

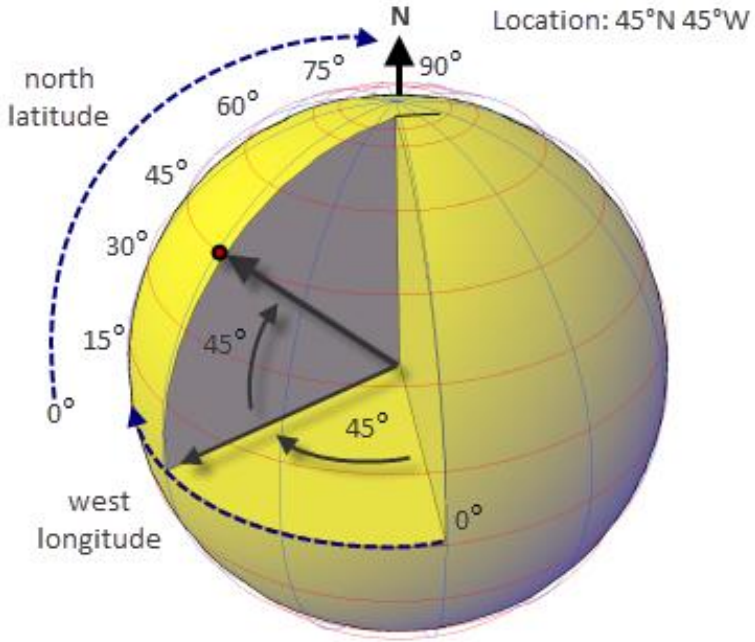
Jack Dangermond, Esri

“GIS is a form of digital mapping technology. Kind of like Google Earth, but better.”

Arnold Schwarzenegger

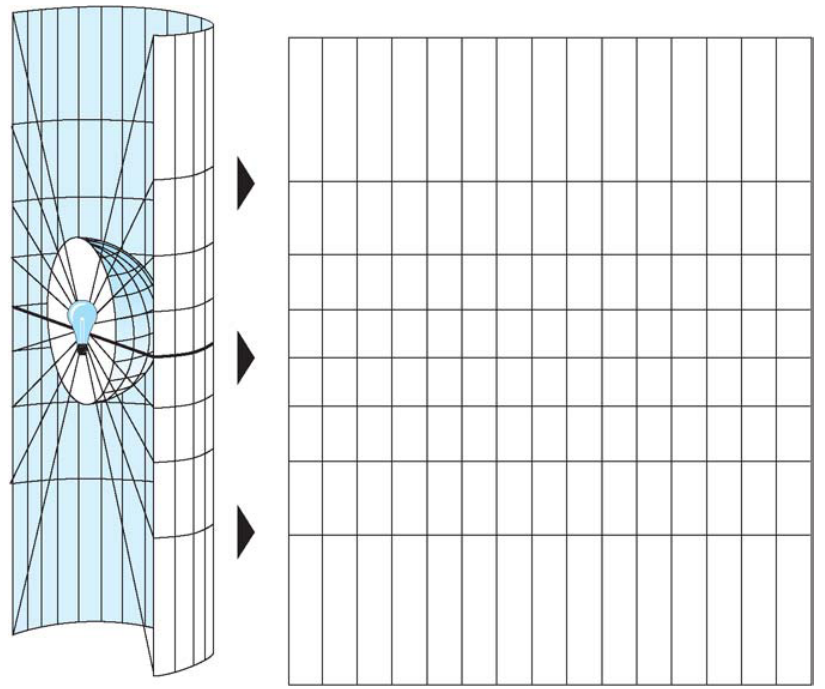
Geographic Coordinate System (GCS)

- - Measured as an angle from the Equator (Northing or Latitude or Y)
- - Measured as an angle from Greenwich (Easting or Longitude or X)
- - Represented as Degrees Minutes Seconds

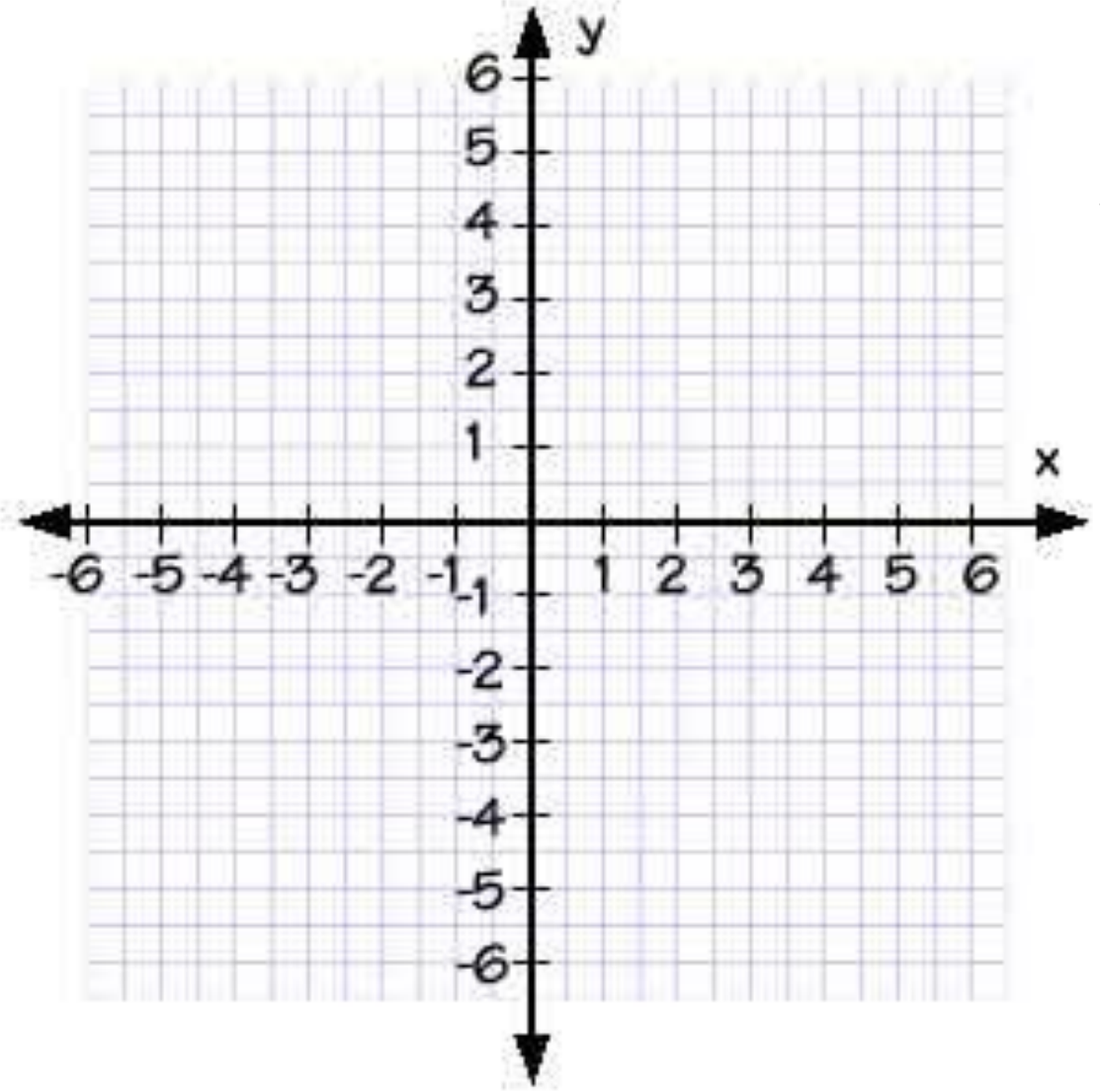


Projected Coordinate Systems (Converts a Sphere to a flat surface or map)

- - Measure from Greenwich in Metres (Easting or X)
- - Measure from the Equator in Metres (Northing or Y)
- - Represented as X,Y (as in graphing)

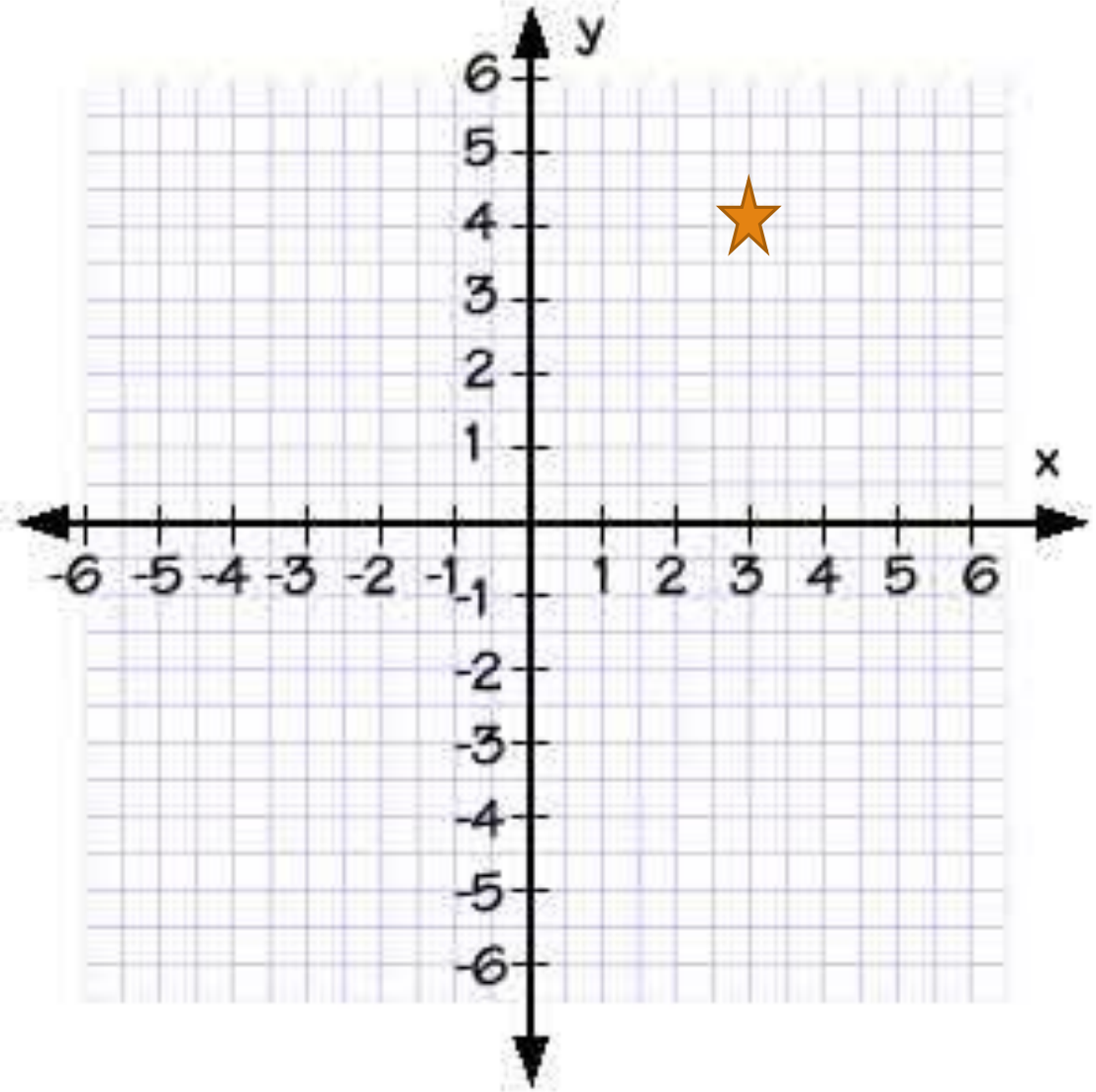


Graphing



(x,y)

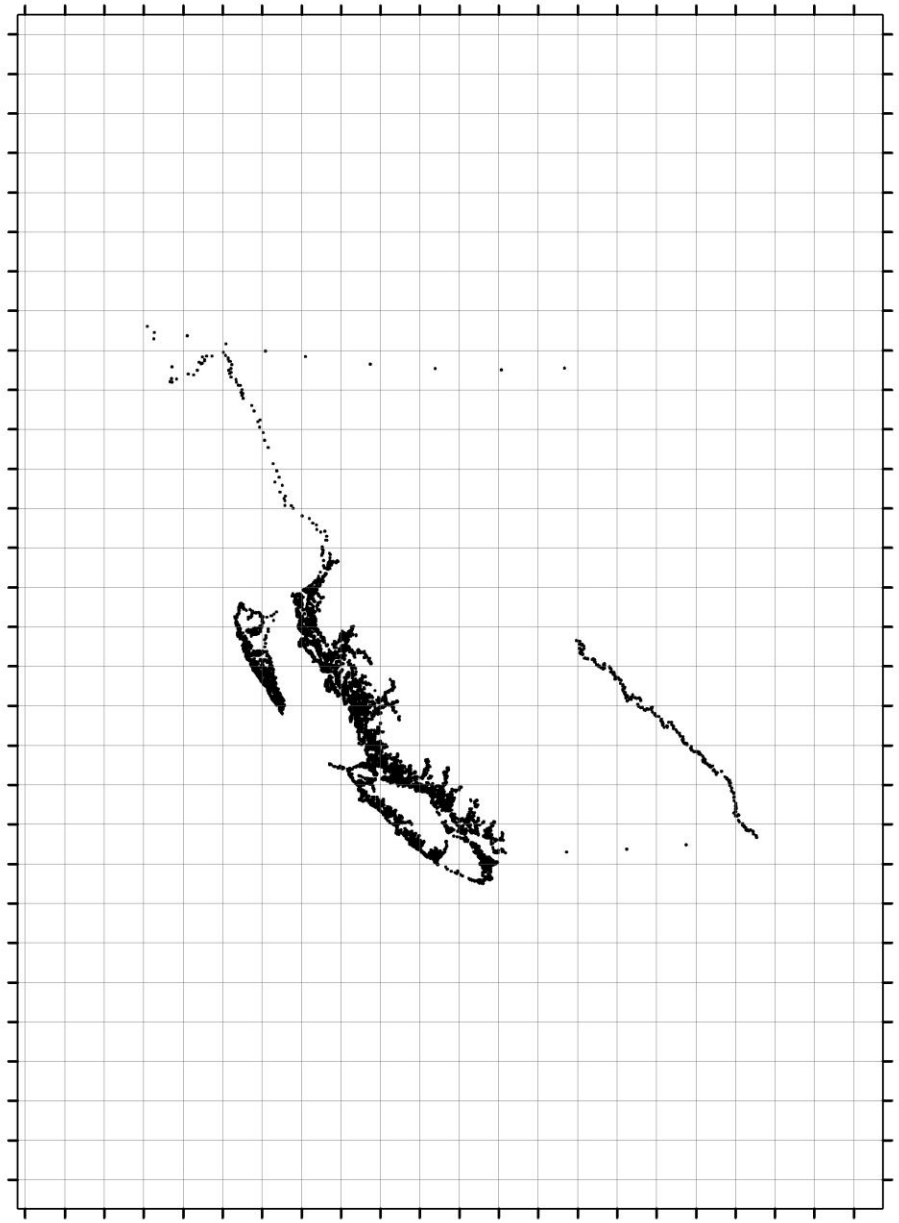
Where x = 3
and y = 4
Or (3,4)



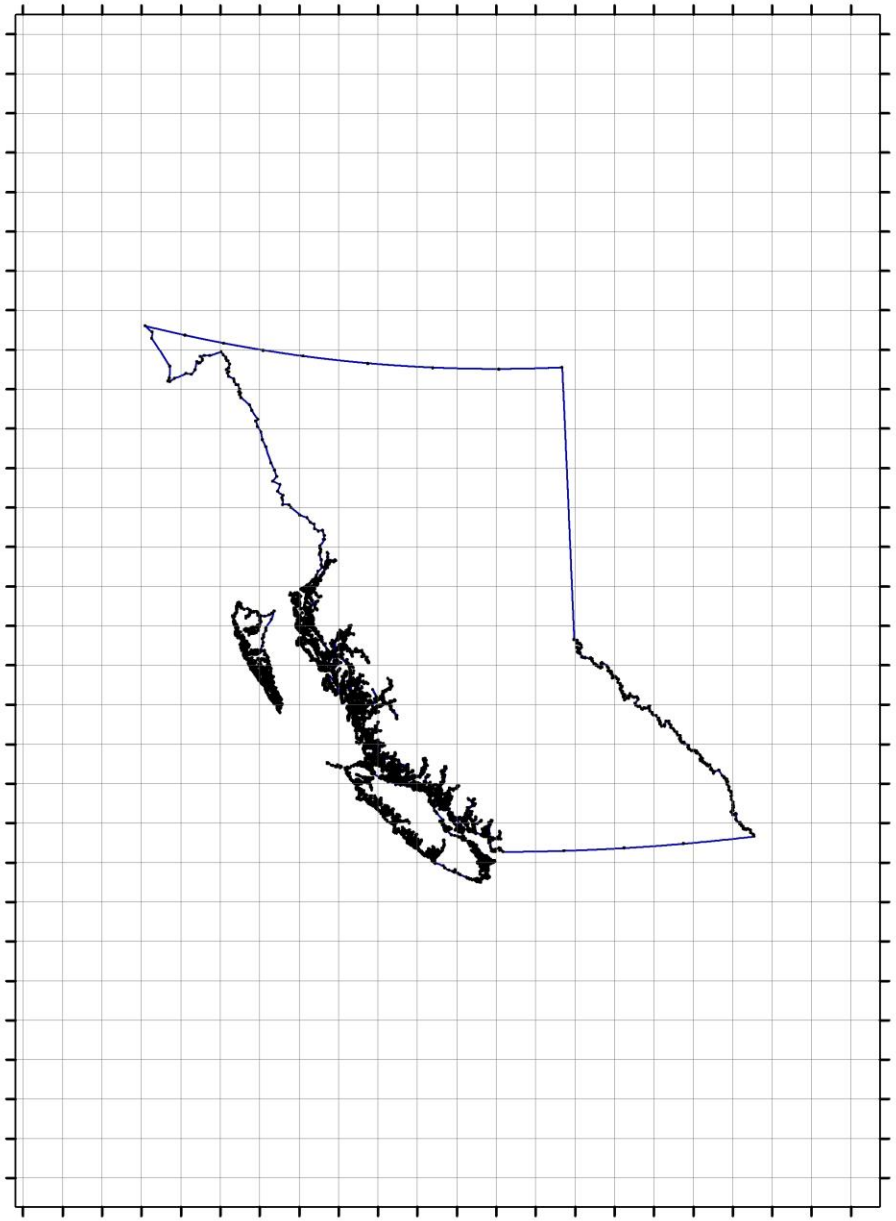
Coordinates

X,Y	460284.0125,5349722.547	457789.2289,5351159.509	454955.6242,5351598.487	351227.6525,5417193.904	306267.5939,5449645.806
460699.2125,5349419.033	460343.5911,5349727.034	457851.2009,5351179.504	455001.9989,5351666.488	351250.3458,5417192.923	305240.5099,5449663.812
460668.3943,5349419.042	460341.0109,5349701.038	457881.4569,5351118.005	455018.5954,5351549.501	351247.7462,5417156.388	305139.008,5449542.816
460692.3099,5349439.034	460074.7474,5349737.003	455493.3256,5351275.497	459441.2752,5351618.517	325624.0228,5418223.321	305082.8522,5449602.796
460699.2125,5349419.033	460023.9014,5349729.485	455457.7022,5351267.996	459410.6641,5351614.536	325601.1053,5418220.325	305240.5099,5449663.812
460725.5821,5349441.022	460082.6531,5349783.02	455478.8312,5351320.008	459426.5322,5351636.026	325599.1926,5418244.299	302997.6974,5449817.811
460708.884,5349441.535	460074.7474,5349737.003	455493.3256,5351275.497	459441.2752,5351618.517	325624.0228,5418223.321	302961.8796,5449812.823
460720.9244,5349449.02	460429.5029,5349824.524	456132.3422,5351318.505	459426.5977,5351685.536	324994.0854,5418261.302	302990.9693,5449841.813
460725.5821,5349441.022	460411.2255,5349838.045	456130.9482,5351293.995	459363.0441,5351678.519	324958.0816,5418252.818	302997.6974,5449817.811
460801.694,5349453.025	460423.1211,5349848.044	456103.1022,5351299.487	459455.9643,5351734.537	324993.8021,5418282.297	305558.0637,5449730.805
460792.1485,5349445.528	460429.5029,5349824.524	456132.3422,5351318.505	459426.5977,5351685.536	324994.0854,5418261.302	305537.715,5449729.802
460799.3859,5349460.518	460633.365,5350177.54	455546.7914,5351333.988	459980.5634,5351720.542	325474.3461,5418186.824	305546.6065,5449767.802
460801.694,5349453.025	460579.5027,5350166.514	455528.8872,5351332.513	460118.8685,5351260.537	325403.6431,5418199.307	305558.0637,5449730.805
460773.1424,5349453.534	460597.7436,5350194.046	455514.891,5351352.999	459344.701,5350875.521	325412.4317,5418276.814	274440.7073,5451012.683
460763.7839,5349453.52	460633.365,5350177.54	455546.7914,5351333.988	459980.5634,5351720.542	325474.3461,5418186.824	274454.0773,5450971.508
460766.2804,5349468.52	456421.7503,5350665.995	455478.4354,5351352.49	455413.0325,5352120.011	320042.4147,5418412.514	274414.6821,5450983.588
460773.1424,5349453.534	456323.4911,5350727.493	455466.1043,5351344.012	455382.2325,5352087.489	319954.7163,5418453.014	274440.7073,5451012.683
460704.4567,5349467.042	456447.2683,5350751.511	455461.0925,5351358.512	455334.4435,5352138.503	319982.9978,5418497.985	306553.0539,5449697.796
460695.036,5349474.519	456421.7503,5350665.995	455478.4354,5351352.49	455413.0325,5352120.011	320042.4147,5418412.514	306525.8599,5449692.809
460706.8895,5349474.523	456748.2246,5350898.465	455150.5245,5351514.485	455411.784,5352218.994	480691.0812,5411867.671	306551.8864,5449735.821
460704.4567,5349467.042	456607.7277,5350874.459	455137.5278,5351505.002	455355.5512,5352216.995	480678.5153,5411880.664	306553.0539,5449697.796
460659.9227,5349605.043	456779.7941,5350961.478	455126.9211,5351531.989	455374.102,5352243.01	480706.533,5411890.659	450714.5326,5443833.999
460486.5043,5349521.538	456748.2246,5350898.465	455150.5245,5351514.485	455411.784,5352218.994	480691.0812,5411867.671	450704.3713,5443824.001
460535.0695,5349636.045	455218.5507,5351188.015	459211.3566,5351248.014	455640.9592,5352545.008	325339.8446,5418190.81	450691.6921,5443831.512
460659.9227,5349605.043	455182.9677,5351193.486	459300.8108,5351436.545	455602.6524,5352530.005	325293.922,5418095.311	450714.5326,5443833.999
460341.0109,5349701.038	455228.3648,5351210.982	459283.0865,5351316.547	455648.945,5352629.001	325164.6899,5418282.303	307600.6821,5449710.823
460284.0125,5349722.547	455218.5507,5351188.015	459211.3566,5351248.014	455640.9592,5352545.008	325339.8446,5418190.81	307612.178,5449760.803

Import Points

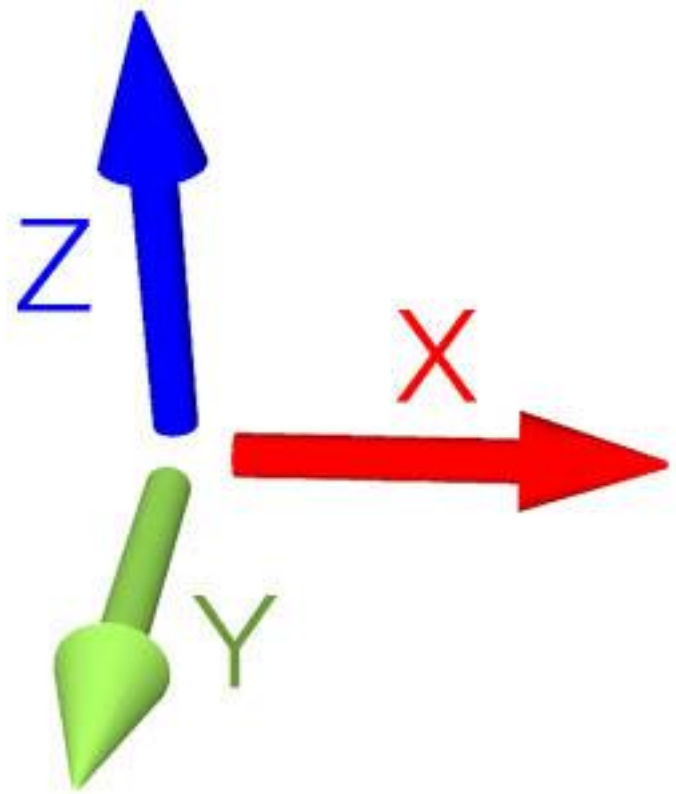


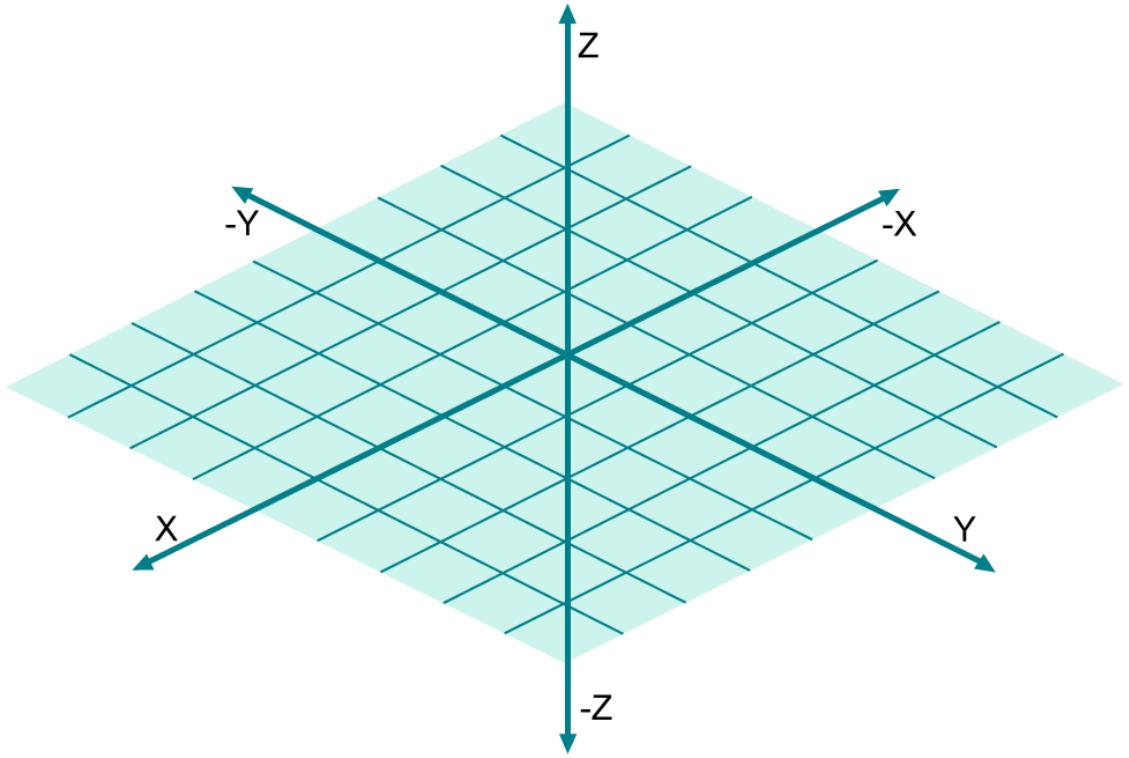
Add Lines



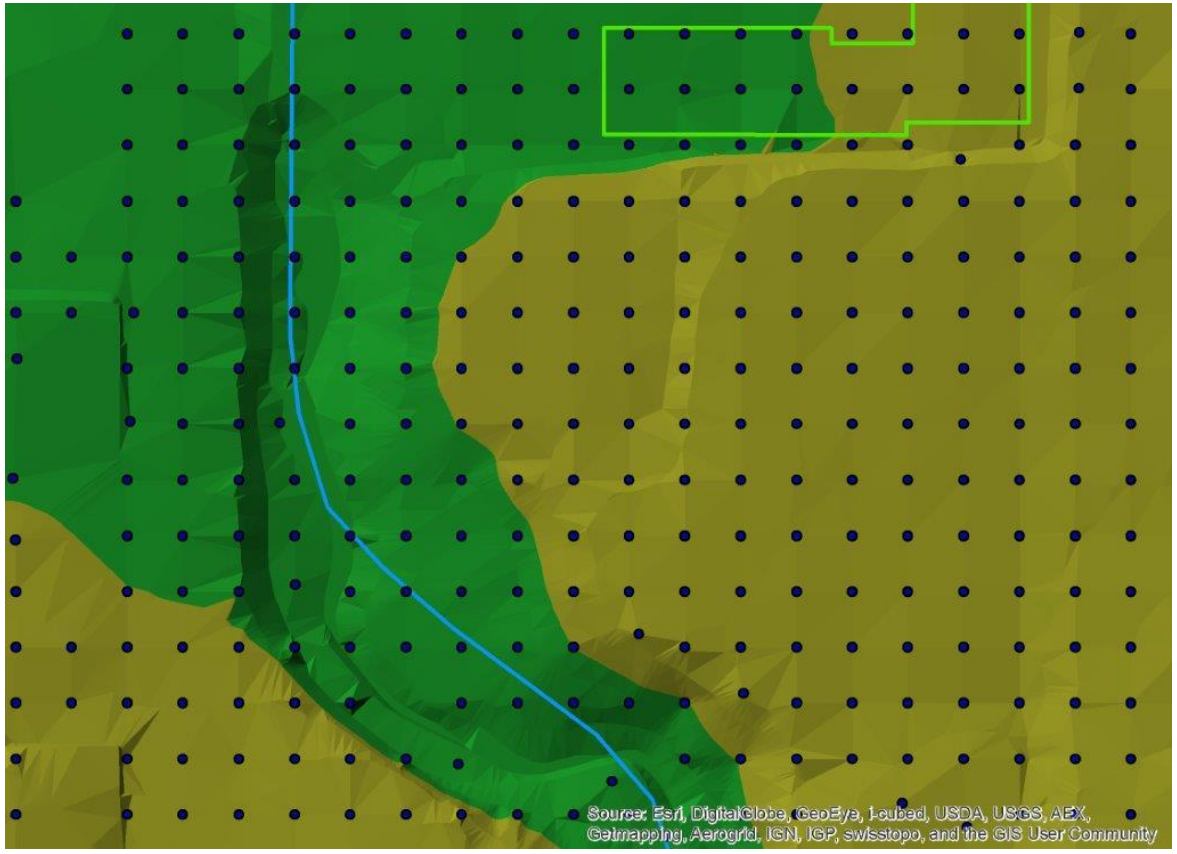
British Columbia

X,Y,Z





Points with Z values:



What is a Ravine?

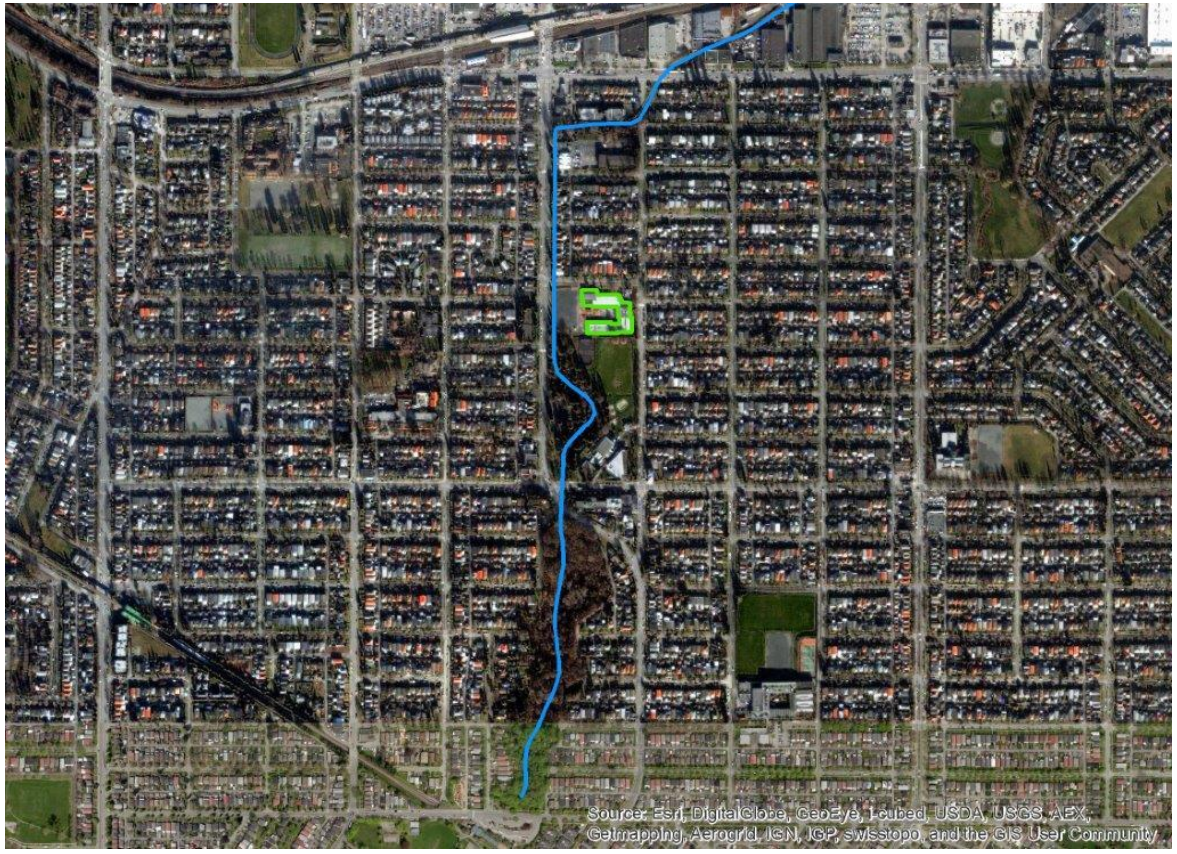
a **canyon** is a narrow chasm with steep cliff walls formed by running water;

a **gorge** is a deep, narrow passage with steep rocky sides formed by running water;

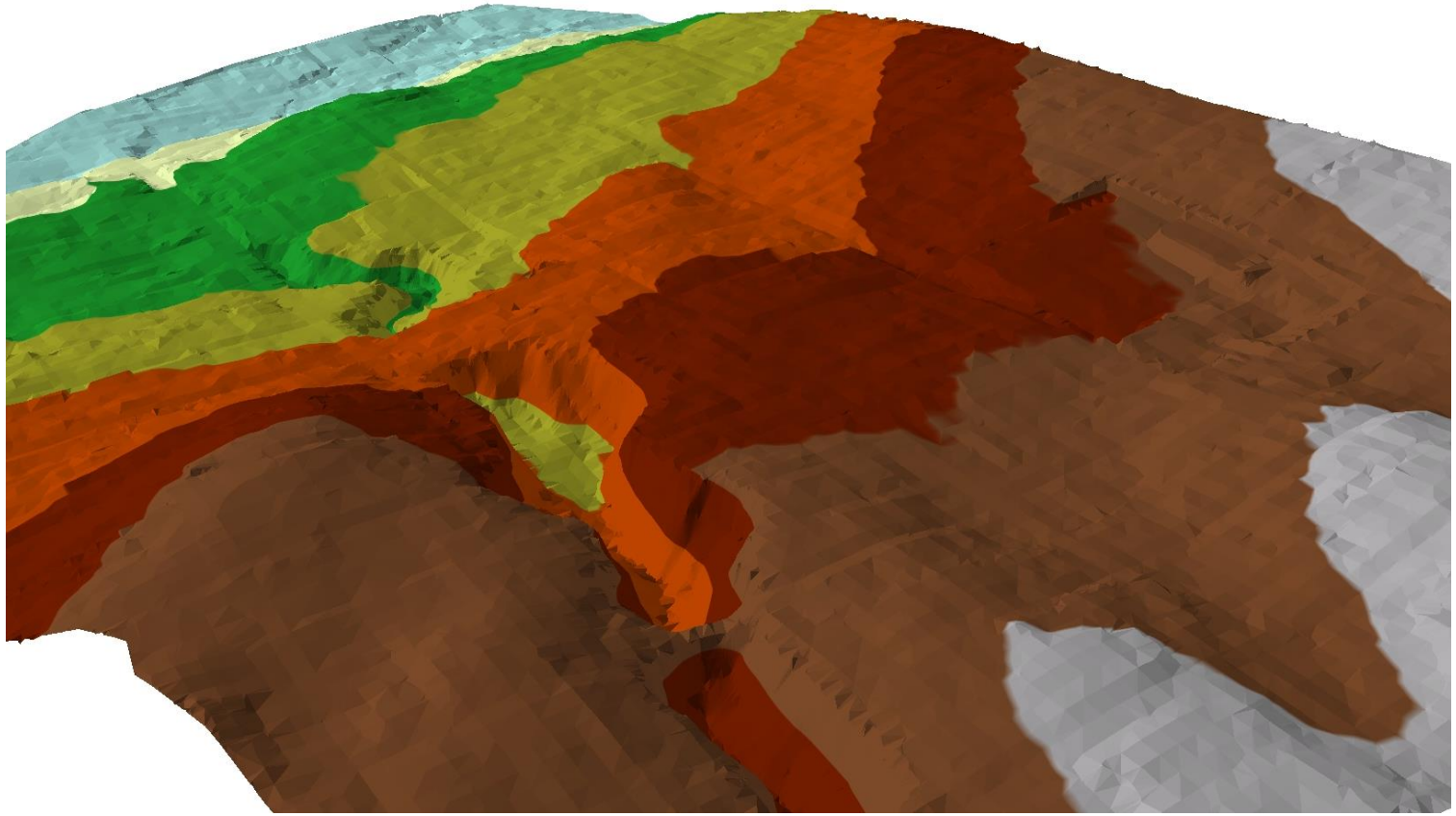
a **ravine** is a deep, narrow steep-sided valley formed by running water.

Ravine?

Renfrew Ravine: Orthophoto



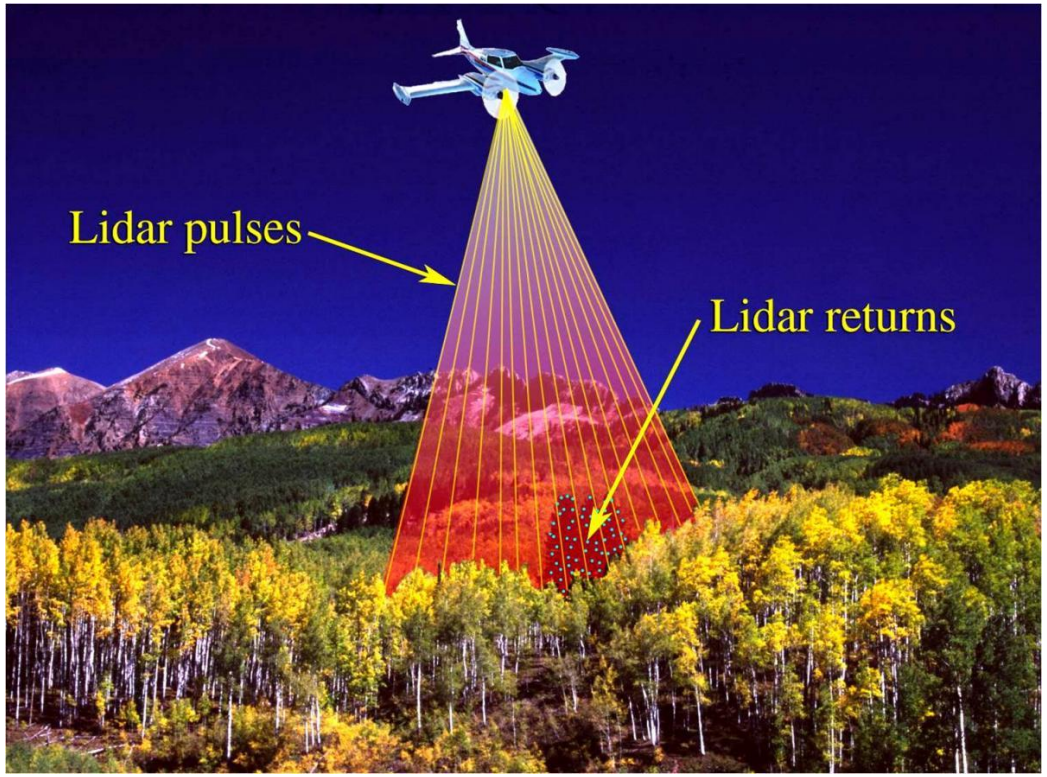
Renfrew Ravine: Surface

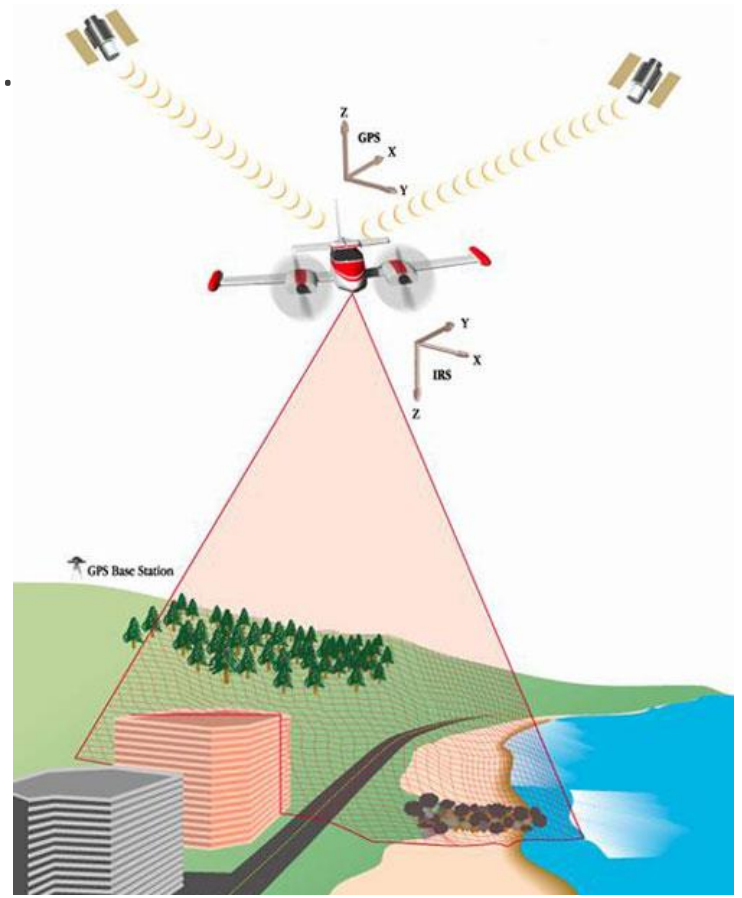


Renfrew Ravine:
City of Vancouver 3D Model

LiDAR:

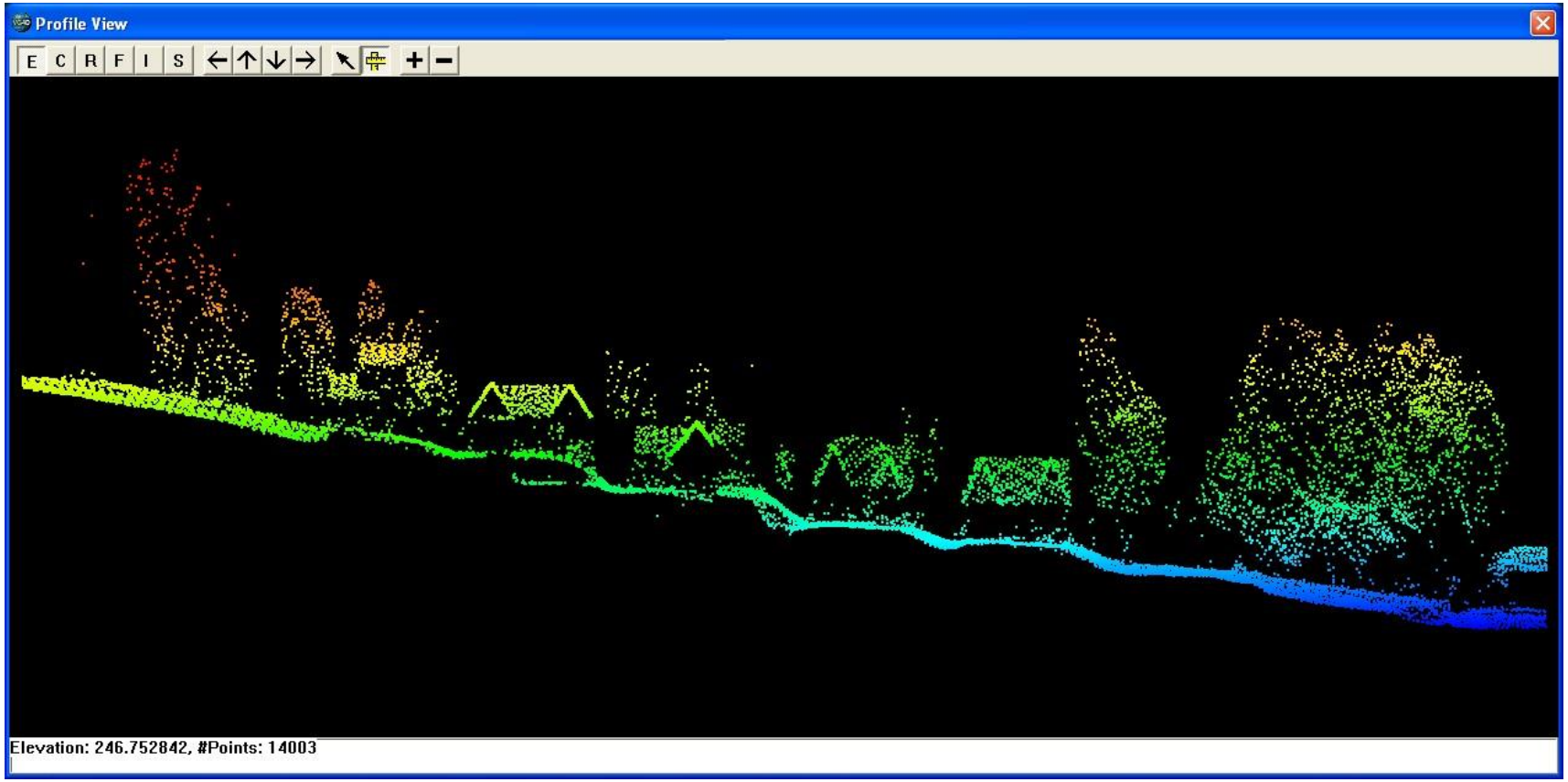
is a remote sensing technology that measures distance by illuminating a target with a laser and analyzing the reflected light.





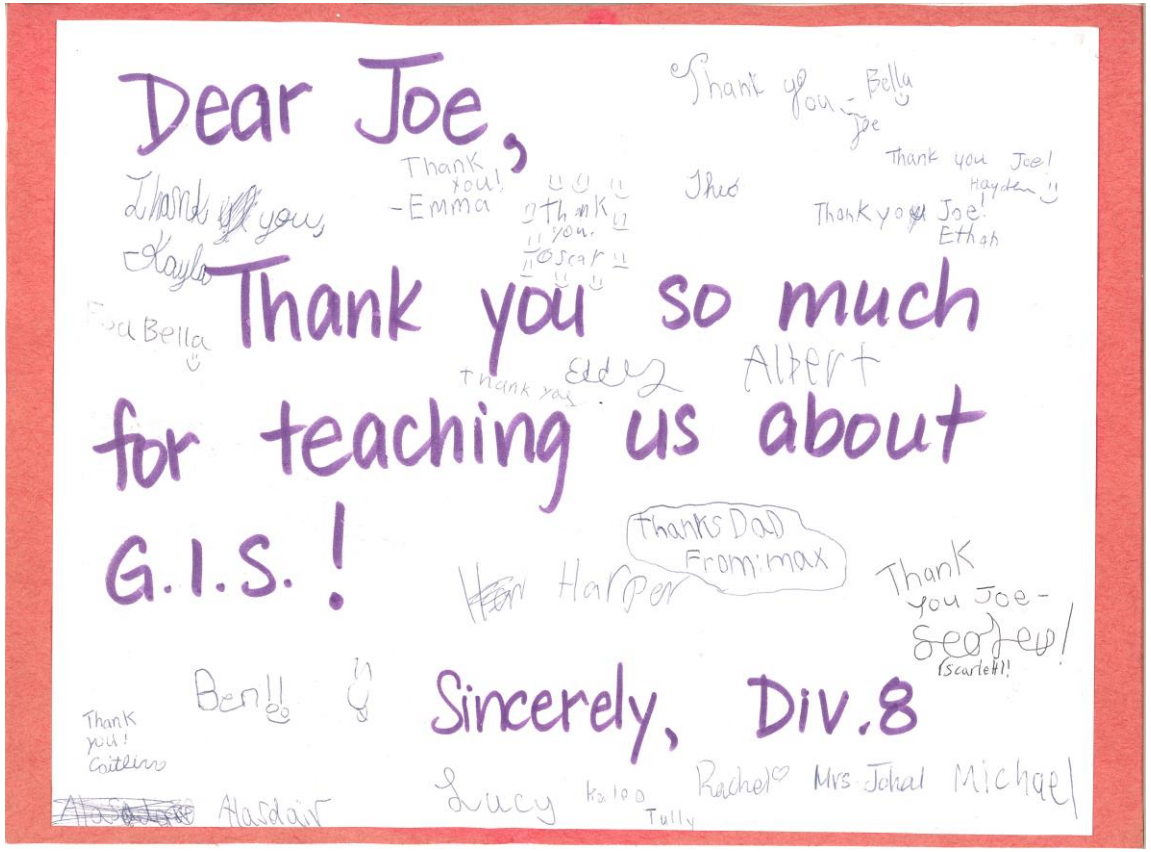
LAS

The LAS file format is a public file format for 3-dimensional point cloud data.



fin

Thank you card from the class:



Lost Streams Project

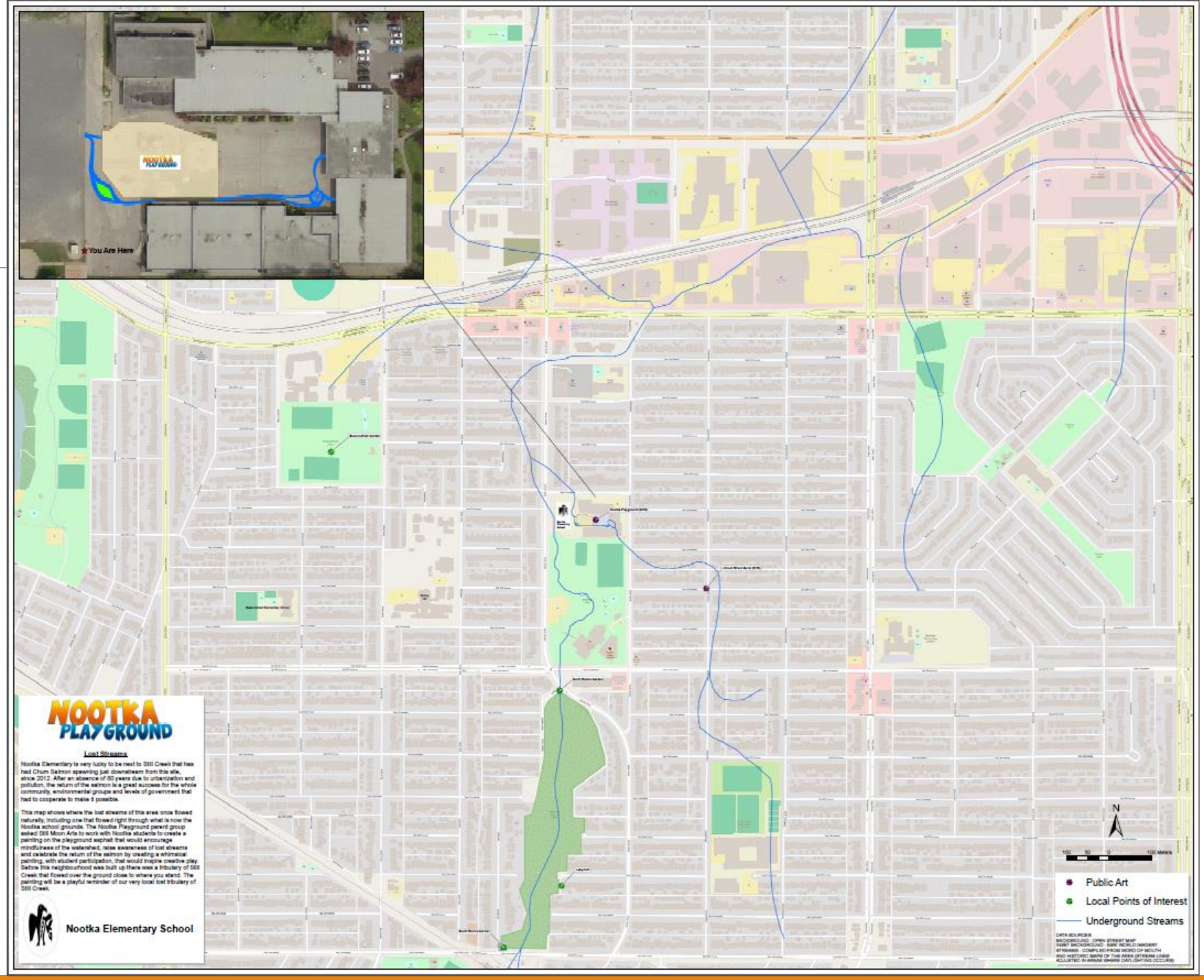
Large 3x3m map created for the Still Moon Arts Installation

- Map was placed on to the earthquake container
  - large metal shipping container with emergency supplies

nhc
northwest
hydraulic
consultants

STILL MOON ARTS

Lost Streams Map

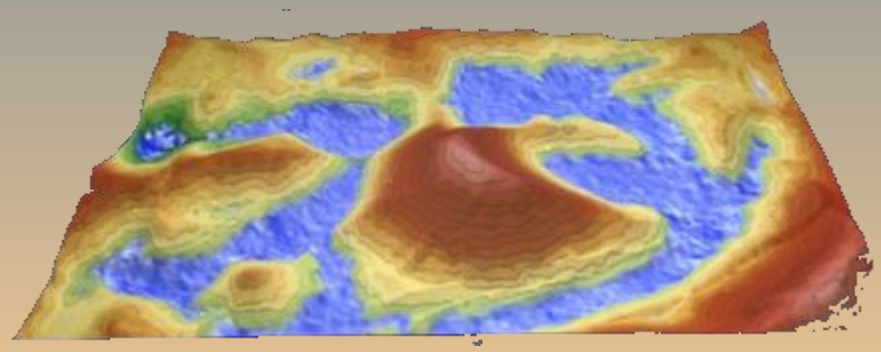


Why is community engagement important?

- Generate interest
- Showcase interests
- Gain experience
- Teach people
- Enjoy yourself!

Other Examples of Community Involvement:

- Recent Geological Survey of Canada Open House
  - GIS demonstration and a 3D Sand Box (May the 4th)
- Post Secondary Presentations
- High School Presentations



- All of these examples from just one discussion session after a presentation at a Vancouver GIS User's Group meeting…

Resources and Contact Information

Resources

- GIS Day
  - Resources for Event Hosts http://www.gisday.com/resources.html
- Mentoring Programs
  - URISA Mentoring Program https://sites.google.com/site/mentoringurisa
- GIS Education Programs
  - Esri ConnectEDhttp://www.esri.com/connected

Contact Information

- Josef Drechsler jdrechsler@nhcweb.com

Thank You