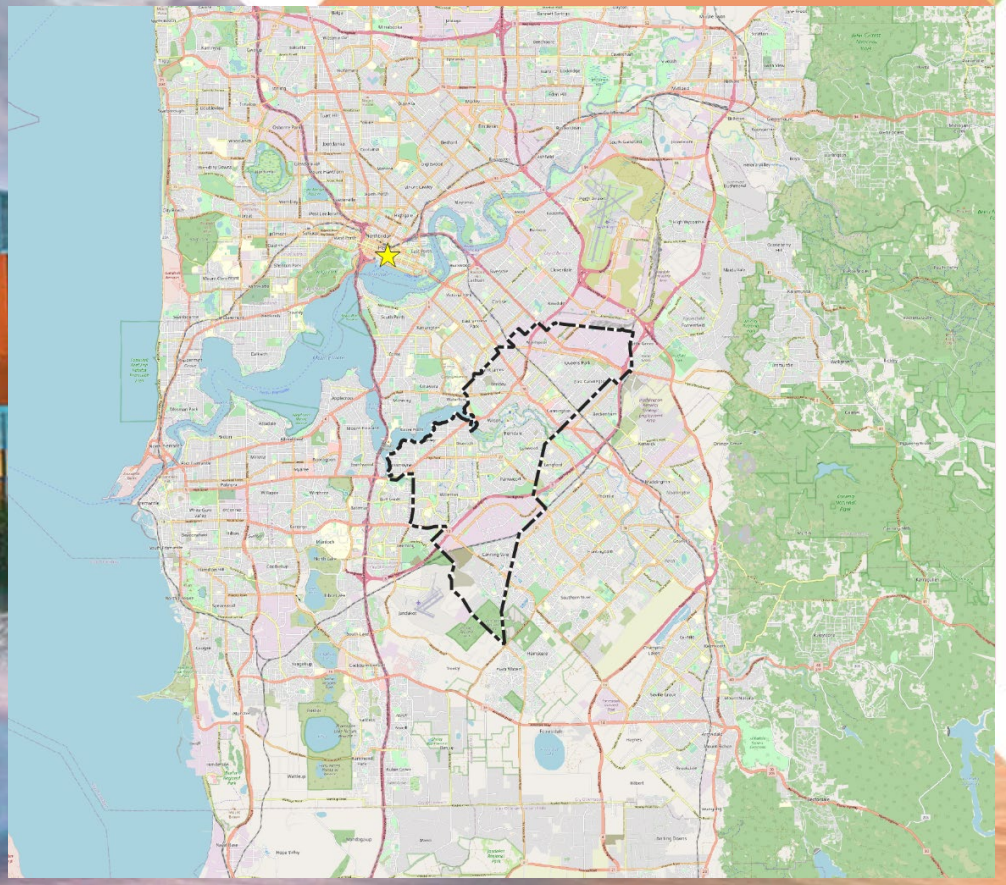
A Local Government Journey with QGIS

The City of Canning Story

Image by Larisa Koshkina from Pixabay

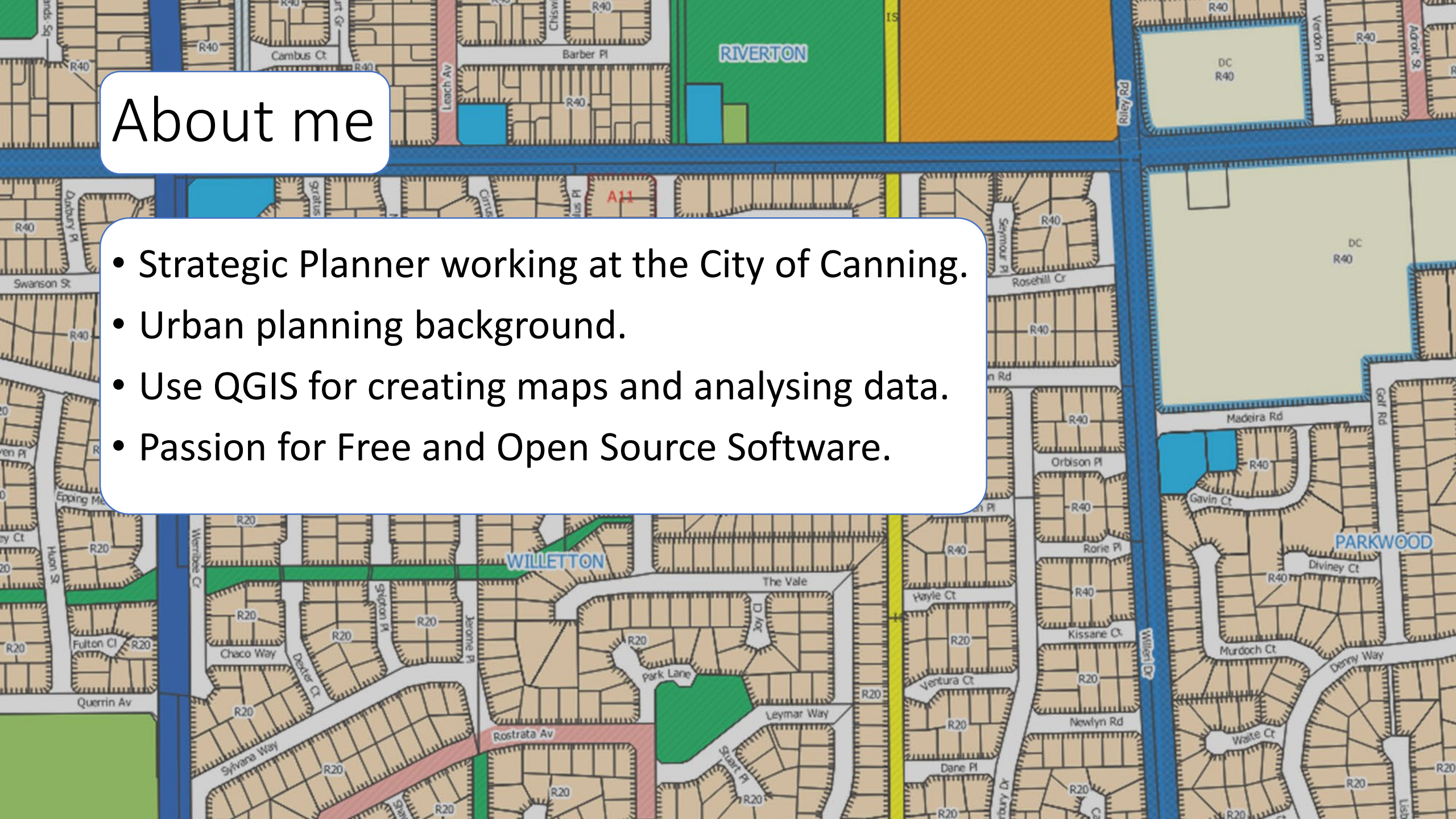
About the City of Canning

- Local Government in inner Perth Metro Area.
- Approx:
  - Area: 65Km^2.
  - Population: 93,000.
  - 10Km from Perth CBD.



About me

- Strategic Planner working at the City of Canning.
- Urban planning background.
- Use QGIS for creating maps and analysing data.
- Passion for Free and Open Source Software.



First Contact (2012)

- House Study with Curtin University.
- QGIS MCA and Scenario plugin.
- Informed Local Housing Strategy.
- Written for QGIS 1.X series.

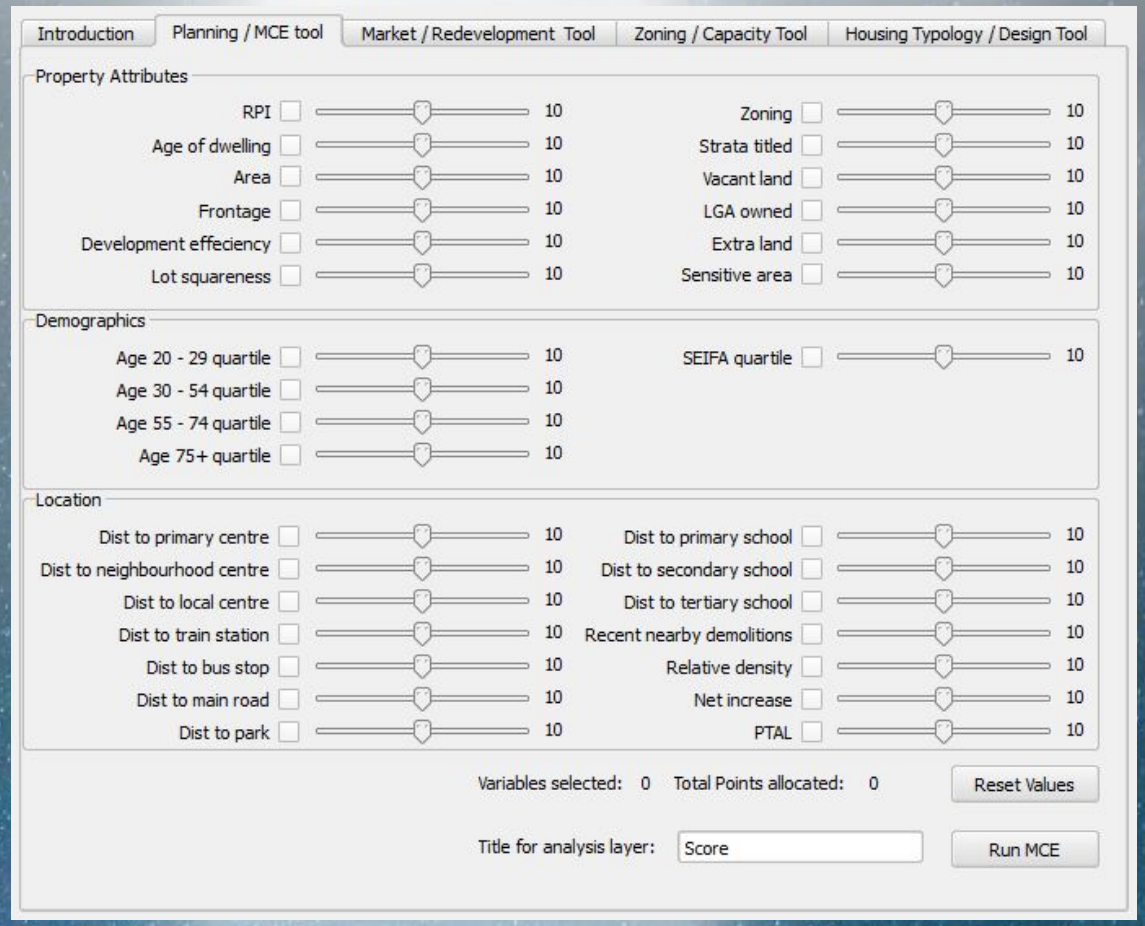


Image by Comfreak from Pixabay

Turbulent Times (2014-2015)

- GIS Officer left the City.
- For some time no formal in house GIS resources.
- Contracting GIS out for some time.
- Planner with QGIS knowledge.
- New Leader GIS started in late 2015.

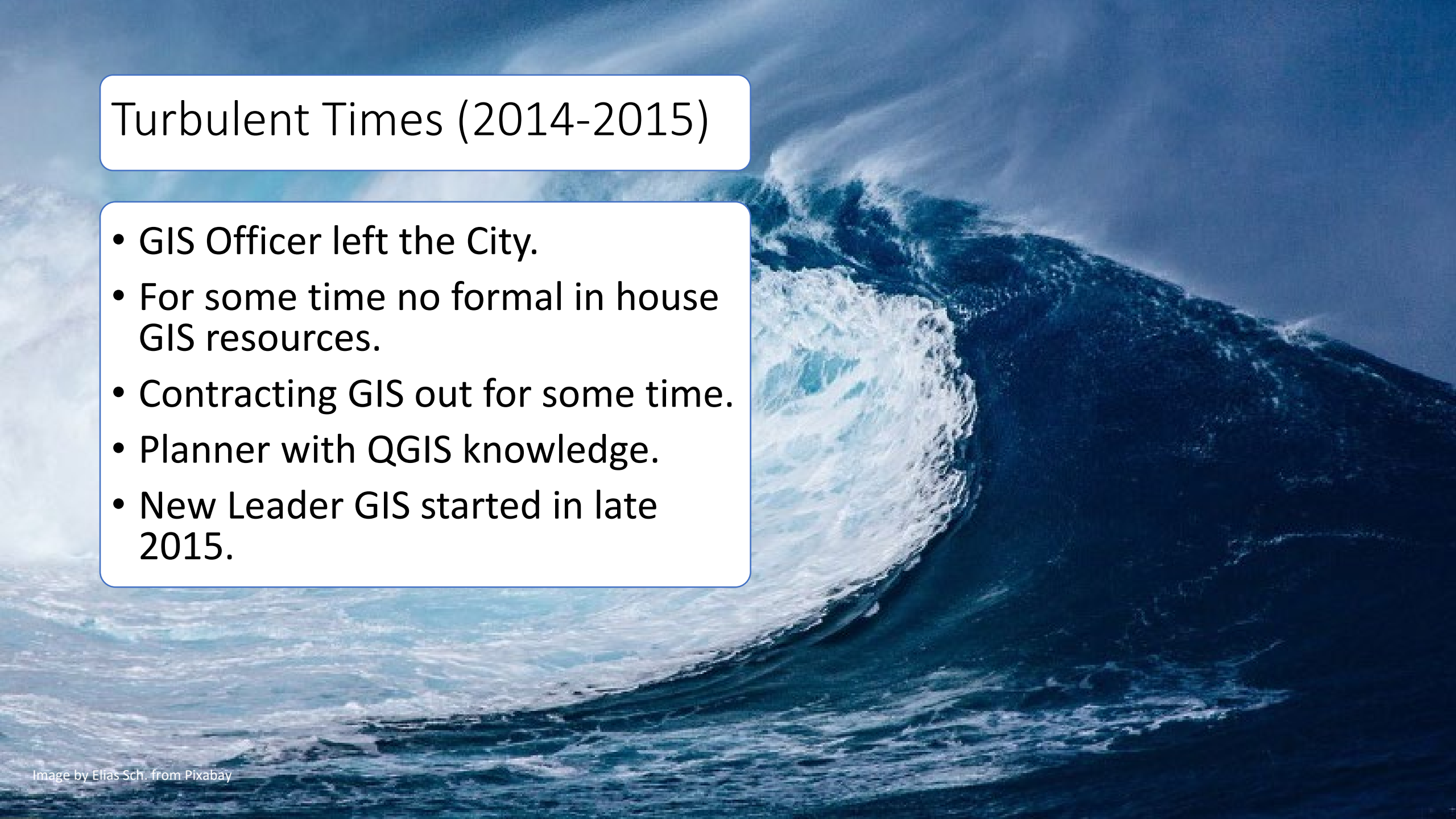


Image by Elias Sch. from Pixabay

The Great Migration (2016)

- Staff on full day training course.
- Gradual change over.
- QGIS now default GIS software.

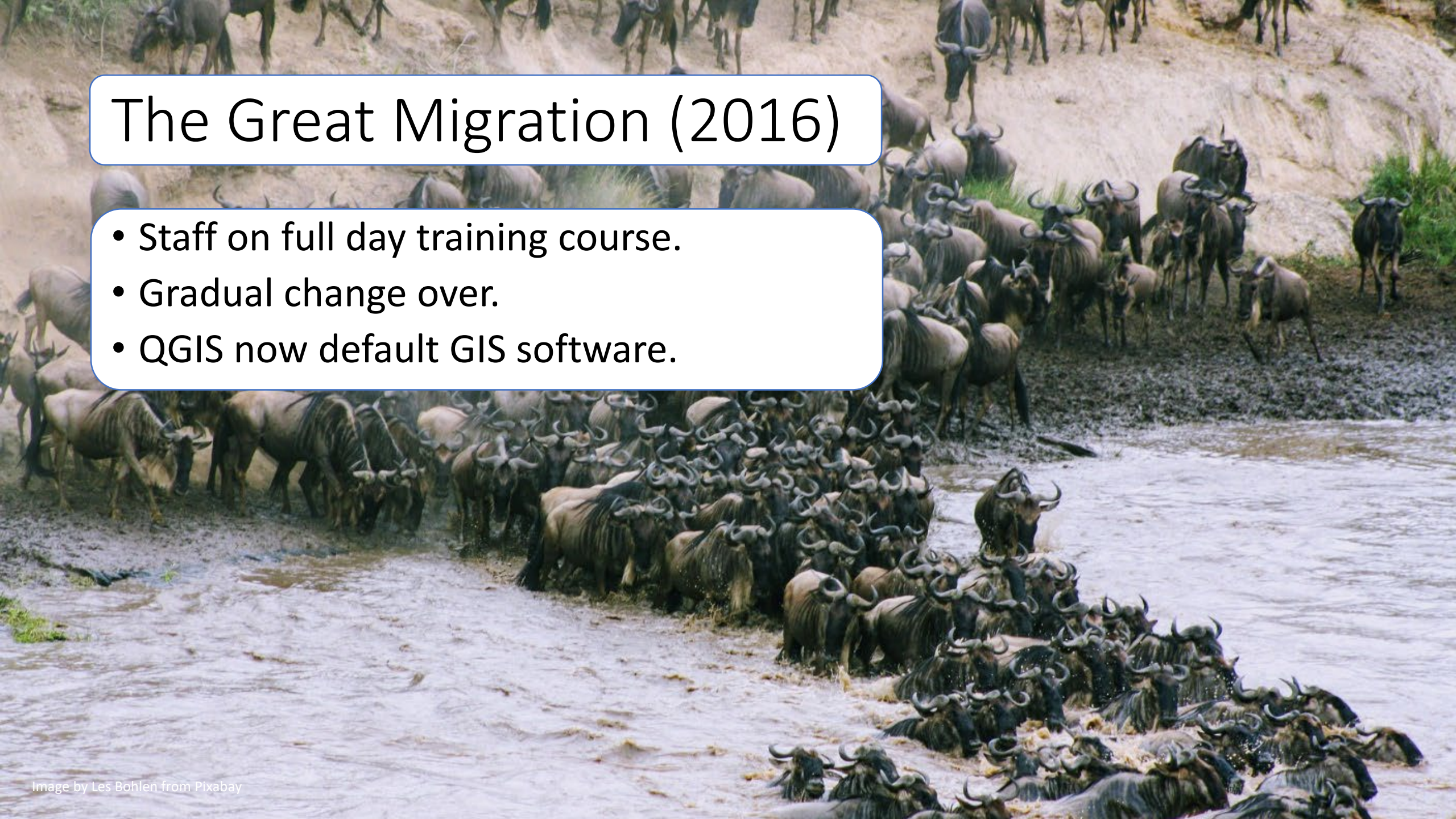
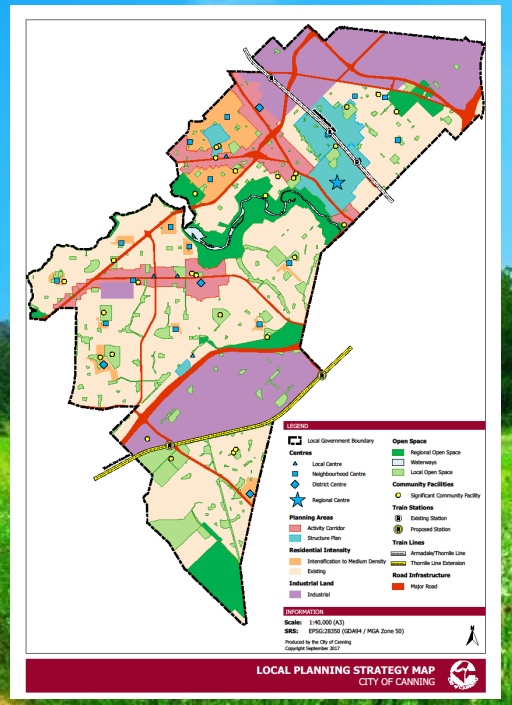


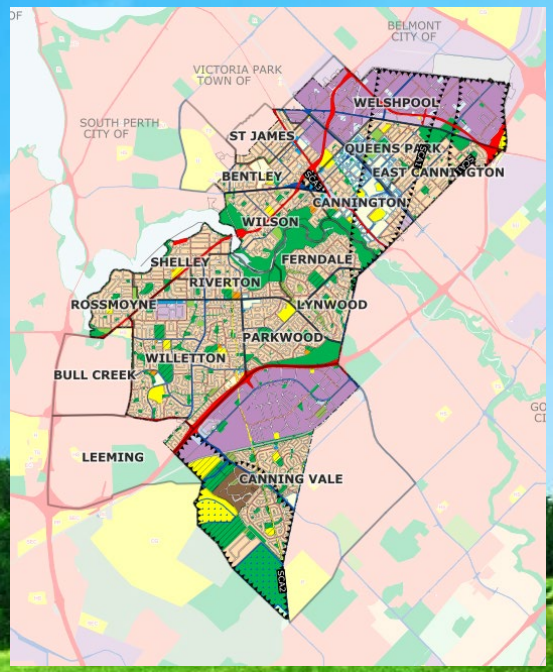
Image by Les Bohlen from Pixabay

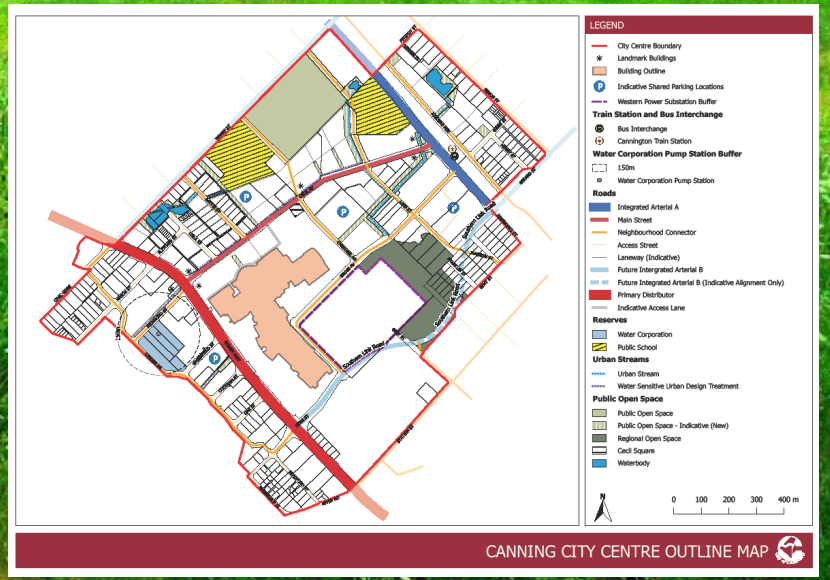
Greener Pastures (2016-2018)

QGIS used for

- Local Planning Strategy Map
- Local Planning Scheme Map
- Scheme Amendment Maps
- Structure Plan Maps







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Giving Back (2017-2018)

- Bronze sponsor/sustaining member since 2018.
- Giving back to the community.
- Recognises value of QGIS.
- Supportive GIS leader and IT manager made it possible.

City of Canning

Australia

Membership level: Small

(01 January 2020 - 31 December 2020)

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Network Analysis (2018-2020)

- Planning principles refer to walkable catchments.
- Great in theory but not easy for planners to calculate walkable catchments.
- Impacts ability to make informed decisions and recommendations.

Source: Liveable Neighbourhoods (Draft 2015)

Image by enriquelopezgarre from Pixabay

Network Analysis (2018-2020)

- Old way – measure manually.
- Desire to do walkable catchments accurately in GIS.
- Initial look at QGIS 2.18.

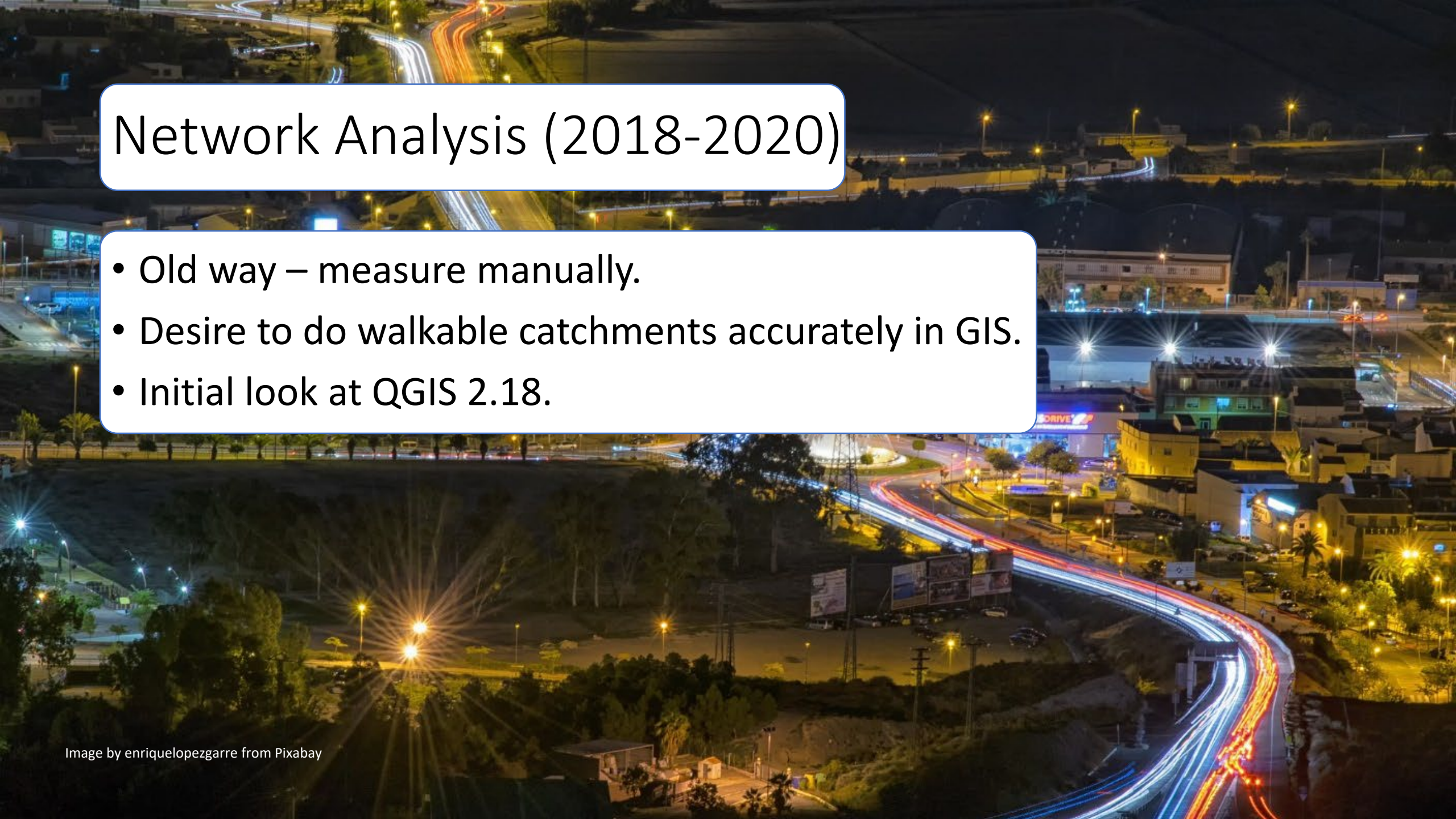
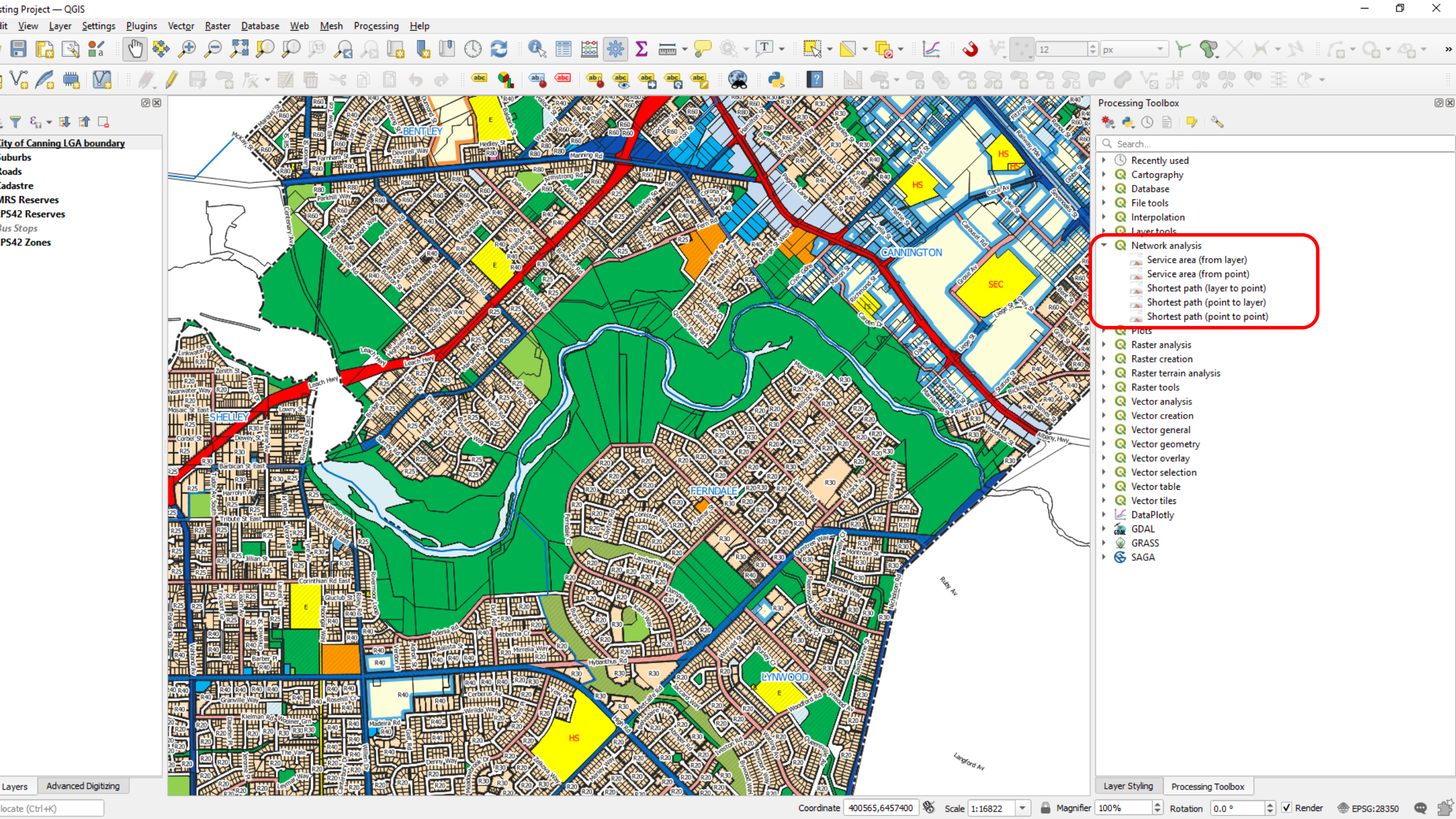


Image by enriquelopezgarre from Pixabay

Then QGIS 3.0 was released.

Image by Waltteri Paulaharju from Pixabay


sting Project — QGIS
lit View Layer Settings Plugins Vector Raster Database Web Mesh Processing Help
City of Canning LGA boundary
Suburbs
Roads
Cadastre
MRS Reserves
PS42 Reserves
Bus Stops
PS42 Zones
BENTLEY
CANNINGTON
SHELLEY
FERNDALE
LYNWOOD
HS
SEC
Processing Toolbox
Search...
Recently used
Cartography
Database
File tools
Interpolation
Layer tools
Network analysis
Service area (from layer)
Service area (from point)
Shortest path (layer to point)
Shortest path (point to layer)
Shortest path (point to point)
Plots
Raster analysis
Raster creation
Raster terrain analysis
Raster tools
Vector analysis
Vector creation
Vector general
Vector geometry
Vector overlay
Vector selection
Vector table
Vector tiles
DataPlotly
GDAL
GRASS
SAGA
Layers
Advanced Digitizing
Layer Styling
Processing Toolbox
Coordinate 400565,6457400
Scale 1:16822
Magnifier 100%
Rotation 0.0 °
Render
EPSG:28350

Network Analysis (2018-2020)

- Network analysis was now easy.
- Example Project – Review of Pedestrian Access Ways.

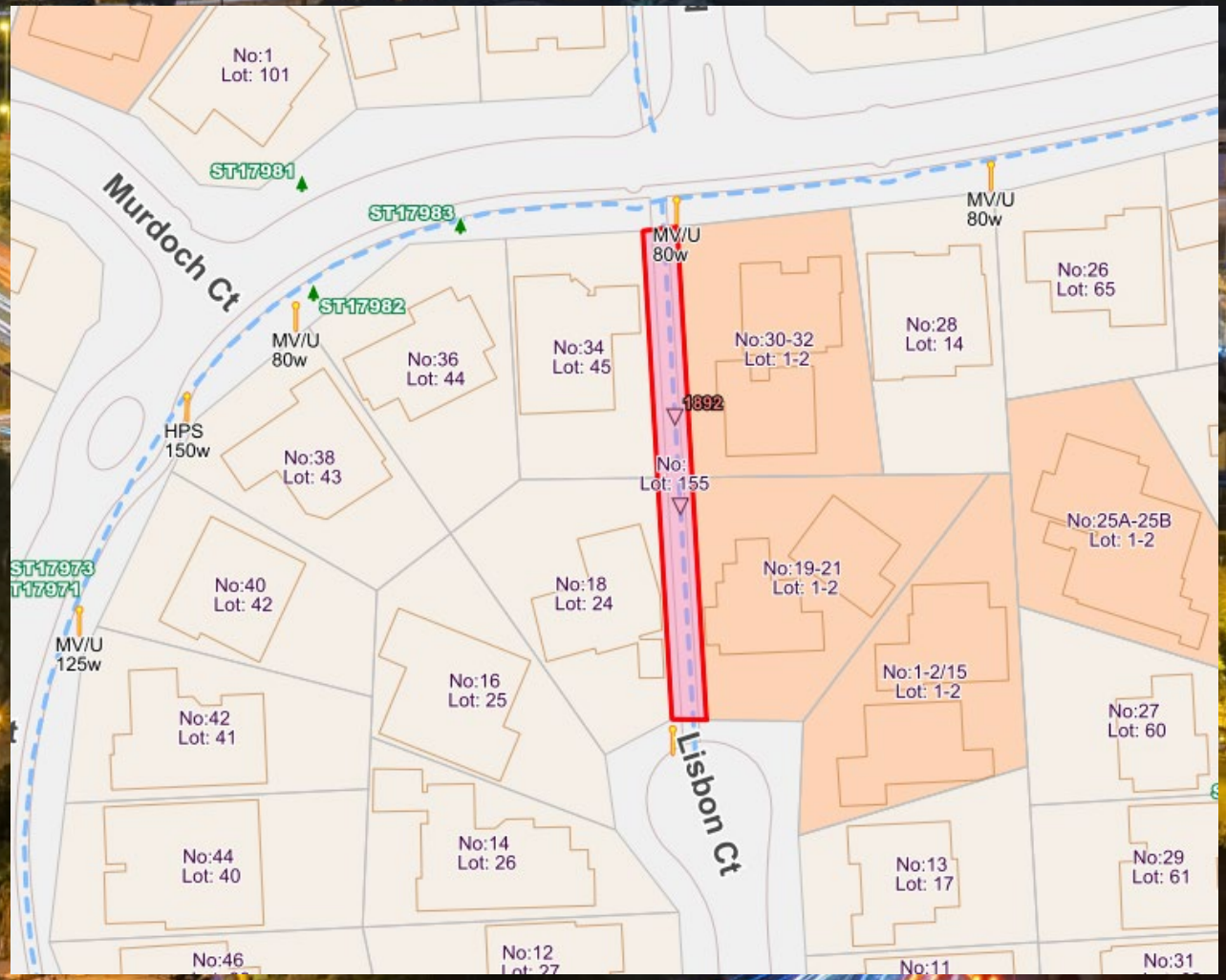


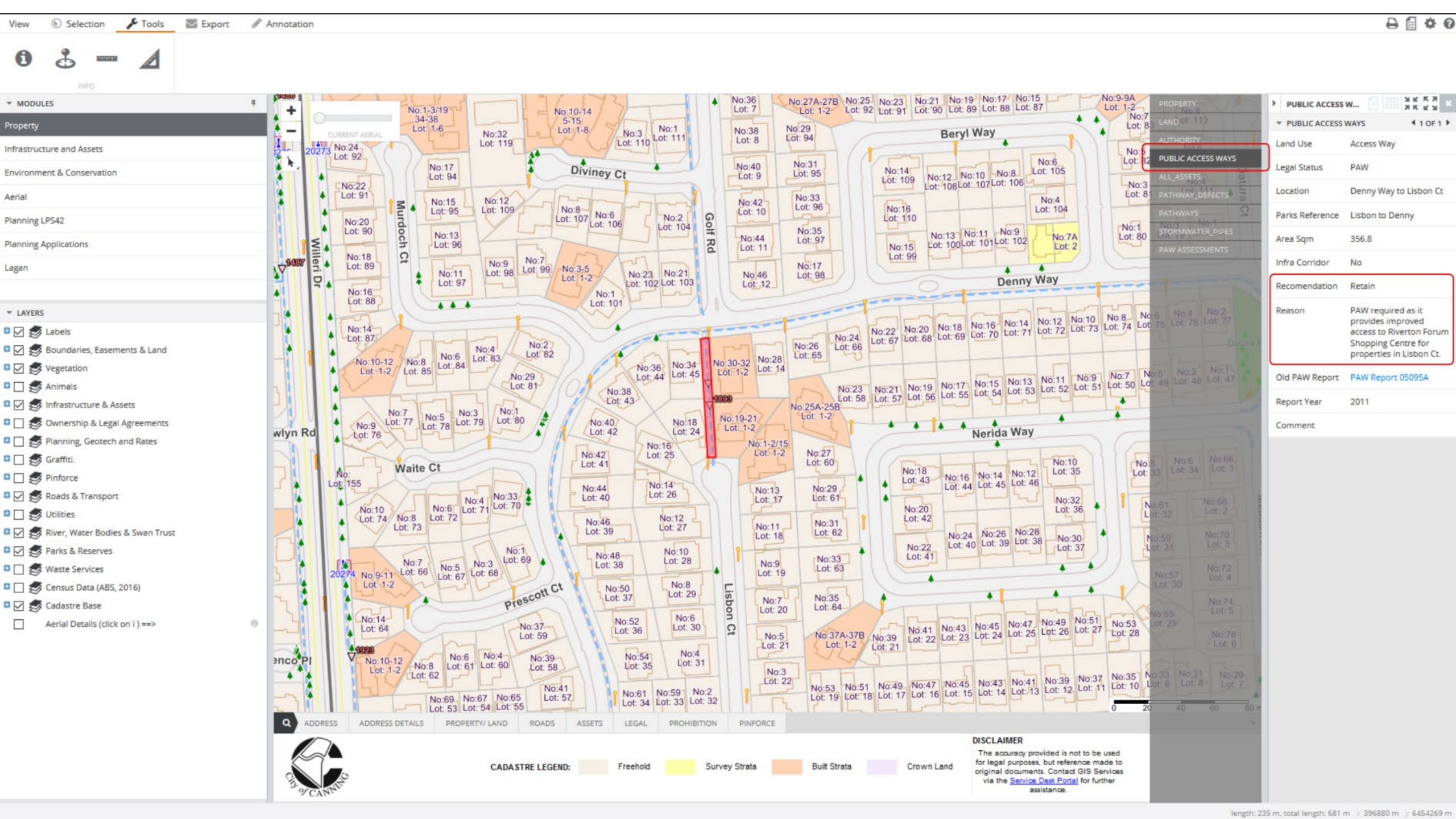
Image by enriquelopezgarre from Pixabay

DENNY

Network Analysis (2018-2020)

- Measured distance from:
  - Shopping centres
  - Parks
  - Playgrounds
  - Schools
  - Train stations
  - Bus stops
- With and without PAW in place.
- Compare the difference
  - Red Line without PAW
  - Blue Line with PAW

Image by enriquelopezgarre from Pixabay


View
Selection
Tools
Export
Annotation
INFO
MODULES
Property
Infrastructure and Assets
Environment & Conservation
Aerial
Planning LPS42
Planning Applications
Lagan
LAYERS
Labels
Boundaries, Easements & Land
Vegetation
Animals
Infrastructure & Assets
Ownership & Legal Agreements
Planning, Geotech and Rates
Graffiti.
Pinforce
Roads & Transport
Utilities
River, Water Bodies & Swan Trust
Parks & Reserves
Waste Services
Census Data (ABS, 2016)
Cadastre Base
Aerial Details (click on i) ==>
CURRENT AERIAL
Beryl Way
Denny Way
Nerida Way
Diviney Ct
Golf Rd
Murdoch Ct
Willeri Dr
Waite Ct
Prescott Ct
Lisbon Ct
PROPERTY
LAND
AUTHORITY
PUBLIC ACCESS WAYS
ALL_ASSETS
PATHWAY_DEFECTS
PATHWAYS
STORMWATER_PIPES
PAW ASSESSMENTS
ADDRESS
ADDRESS DETAILS
PROPERTY/ LAND
ROADS
ASSETS
LEGAL
PROHIBITION
PINFORCE
CADASTRE LEGEND:
Freehold
Survey Strata
Built Strata
Crown Land
DISCLAIMER
The accuracy provided is not to be used for legal purposes, but reference made to original documents. Contact GIS Services via the Service Desk Portal for further assistance.
City of CANNING
PUBLIC ACCESS W...
PUBLIC ACCESS WAYS
1 OF 1
Land Use
Access Way
Legal Status
PAW
Location
Denny Way to Lisbon Ct
Parks Reference
Lisbon to Denny
Area Sqm
356.8
Infra Corridor
No
Recomendation
Retain
Reason
PAW required as it provides improved access to Riverton Forum Shopping Centre for properties in Lisbon Ct.
Old PAW Report
PAW Report 05095A
Report Year
2011
Comment

Scratching the Itch (2020)

- Funded QGIS development work.
- Including:
  - Print layout attribute table conditional formatting (QGIS 3.12)
  - Fixed Table (QGIS 3.12)
  - Fixed Table further improvements (QGIS 3.16)
  - Atlas layer clipping (QGIS 3.16)
- Support from Manager Strategic Planning and Leader GIS

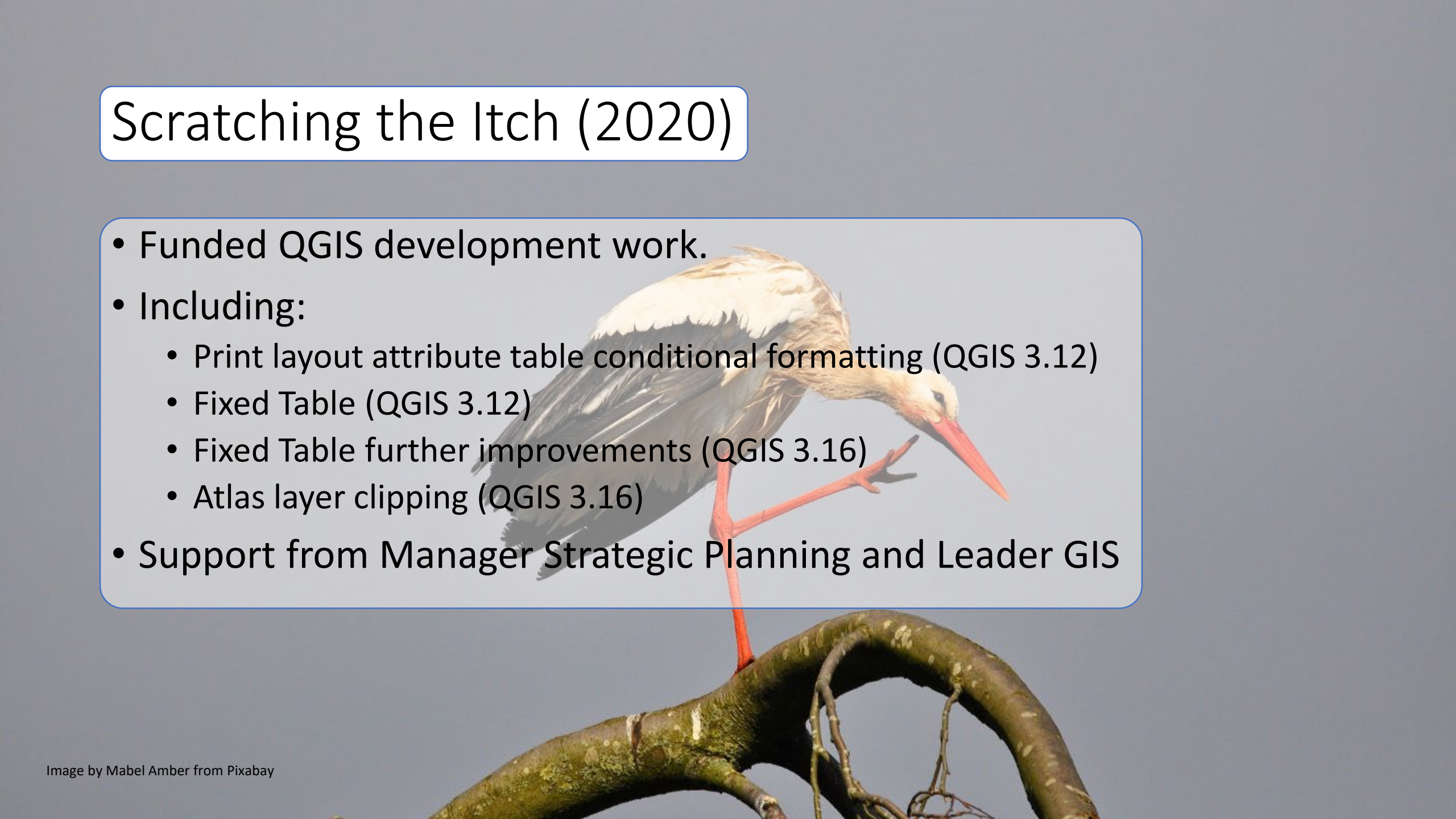
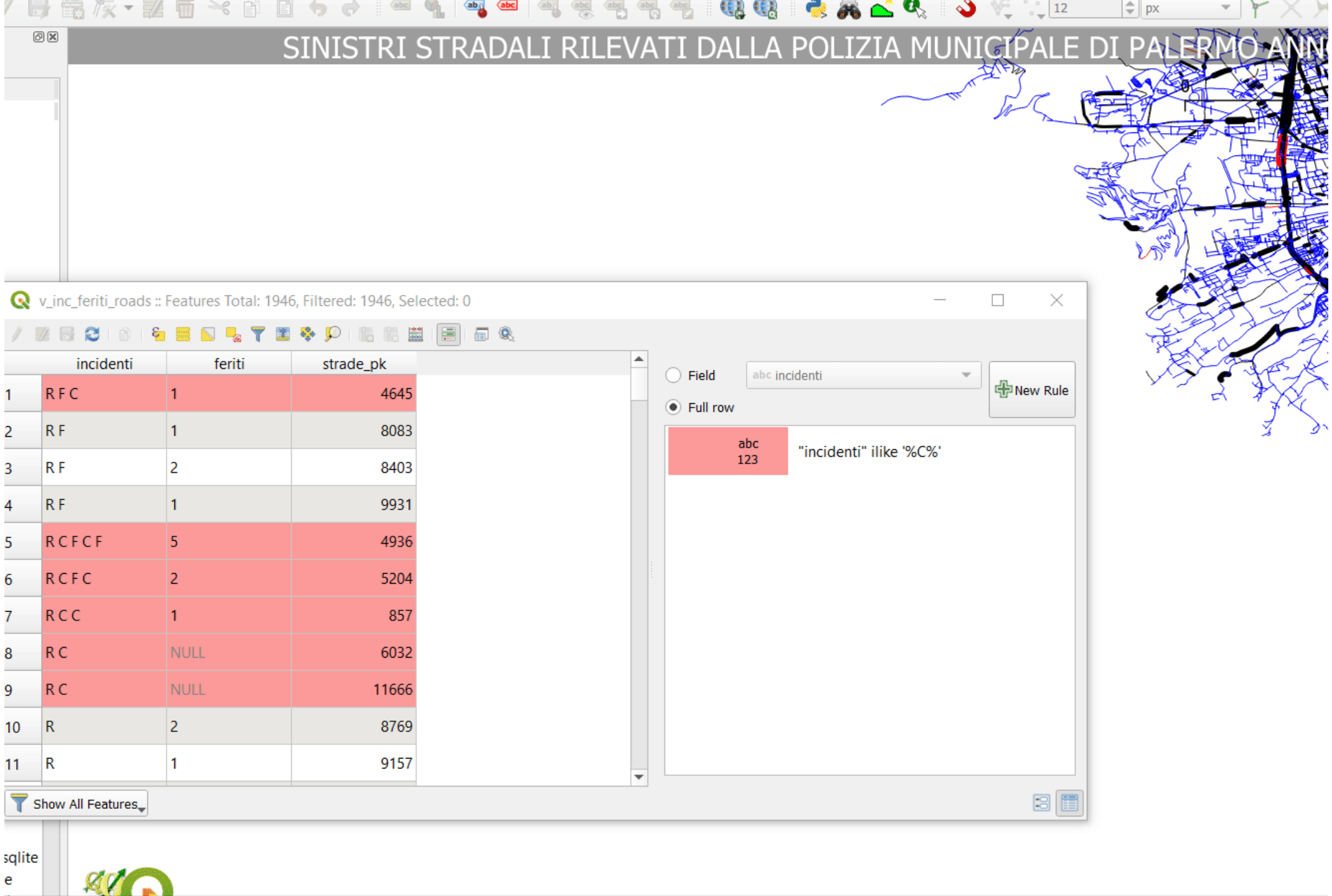
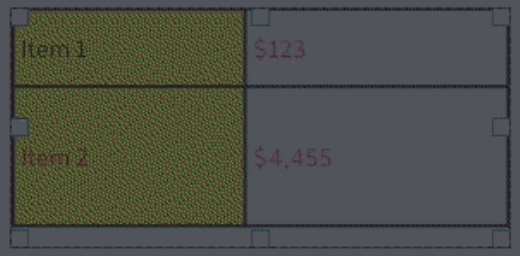


Image by Mabel Amber from Pixabay


SINISTRI STRADALI RILEVATI DALLA POLIZIA MUNICIPALE DI PALERMO ANN
v_inc_feriti_roads :: Features Total: 1946, Filtered: 1946, Selected: 0
incidenti
feriti
strade_pk
1 R F C 1 4645
2 R F 1 8083
3 R F 2 8403
4 R F 1 9931
5 R C F C F 5 4936
6 R C F C 2 5204
7 R C C 1 857
8 R C NULL 6032
9 R C NULL 11666
10 R 2 8769
11 R 1 9157
Field
abc incidenti
Full row
New Rule
abc 123
"incidenti" ilike '%C%'
Show All Features

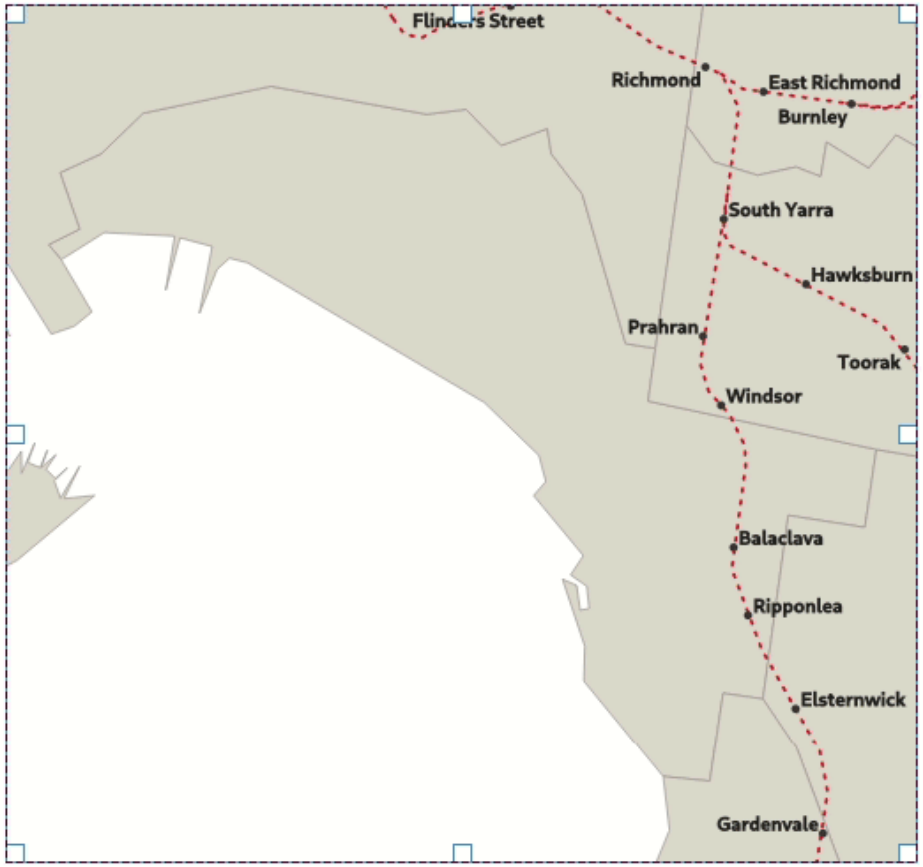


1

View Items Add Item Atlas Settings

1: PORT PHILLIP

PORT PHILLIP



Items

Item

Map 1

Layout | Item Properties | Guides | Atlas

Item Properties

Map 1

Main Properties

Scale 48597

Map rotation 0.00 °

CRS Use Project CRS

Draw map canvas items

Layers

Follow map theme (none)

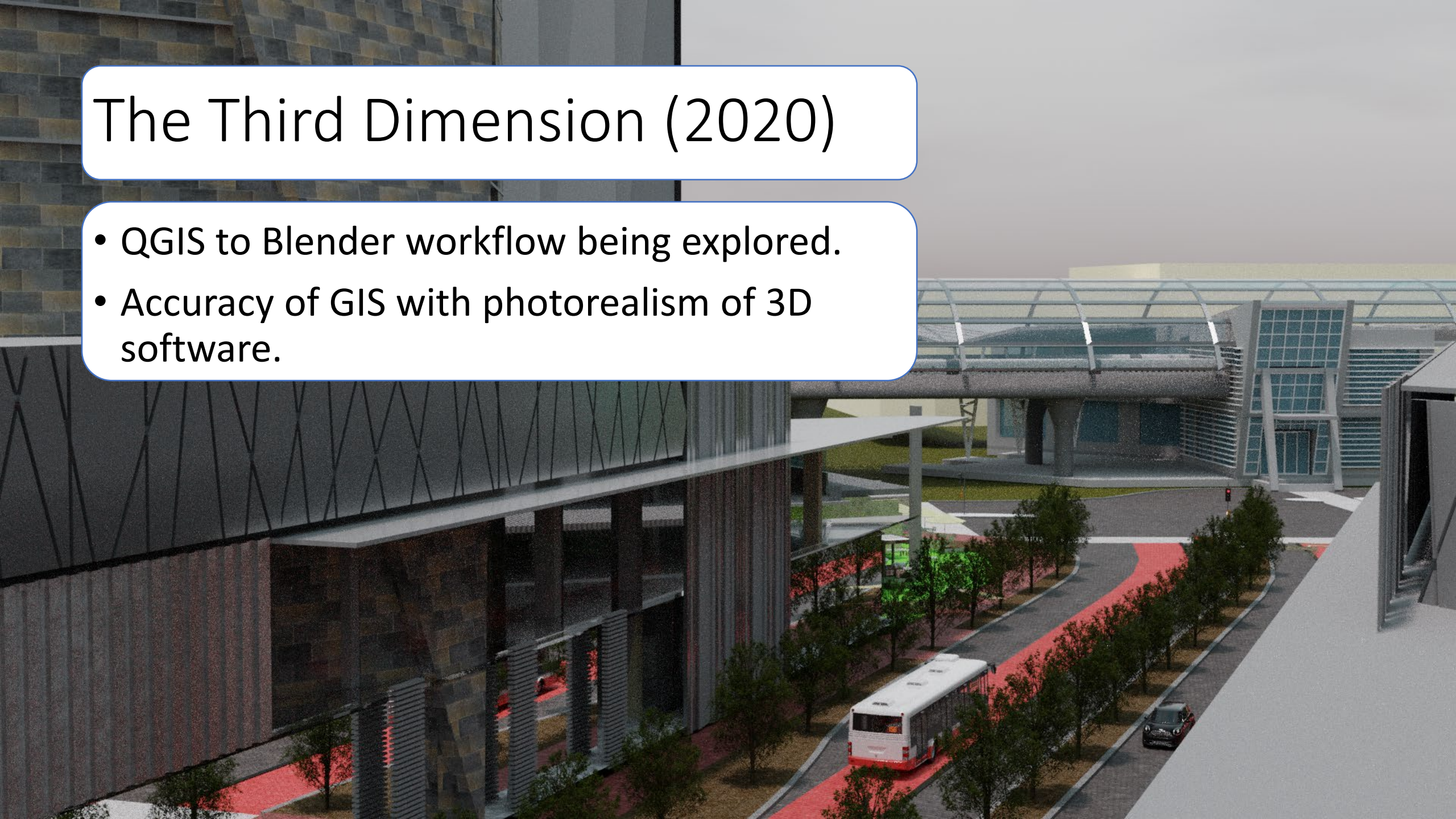
Lock layers

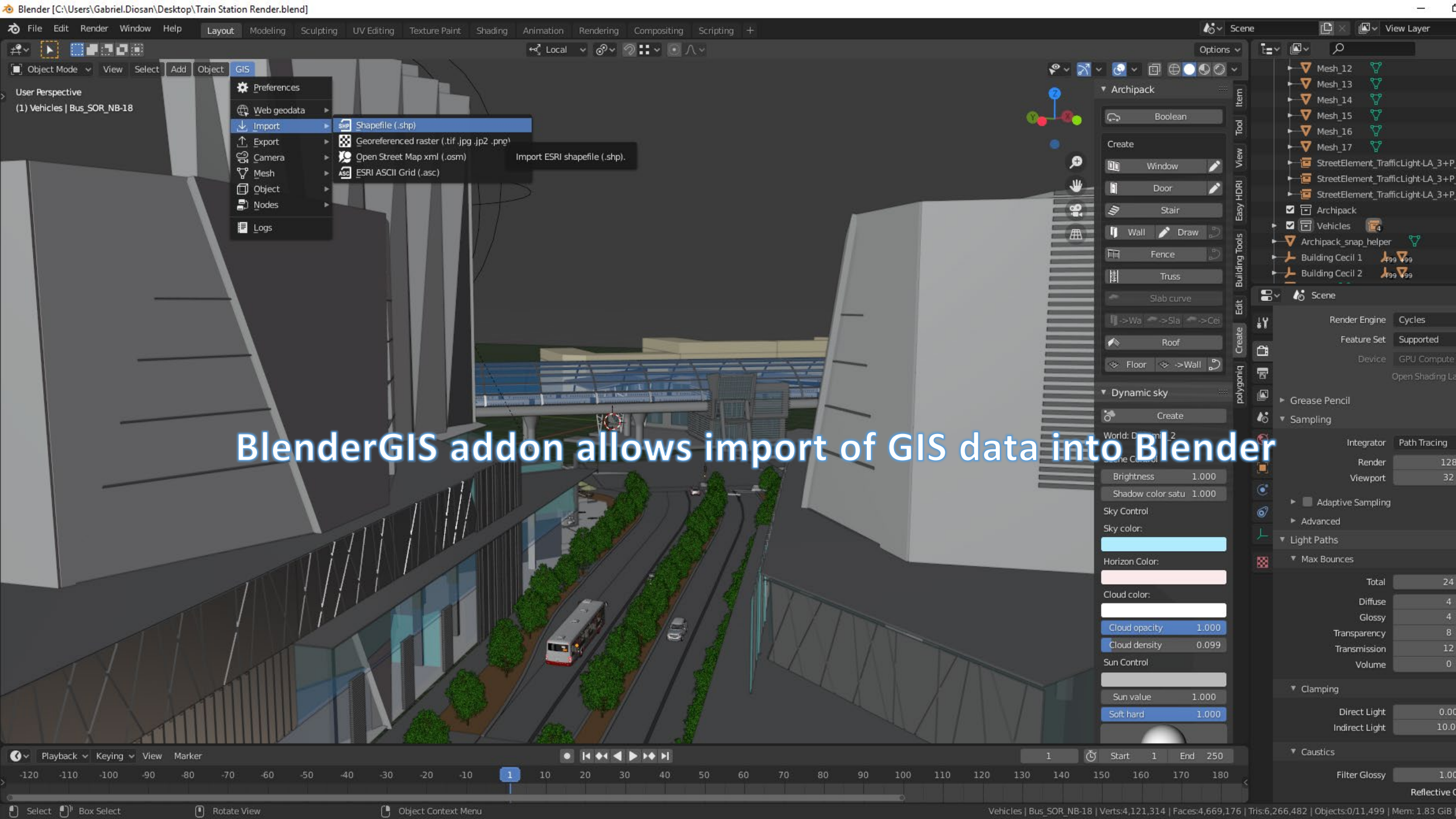
Lock styles for layers

Extents

The Third Dimension (2020)

- QGIS to Blender workflow being explored.
- Accuracy of GIS with photorealism of 3D software.




Blender [C:\Users\Gabriel.Diosan\Desktop\Train Station Render.blend]
File Edit Render Window Help
Layout Modeling Sculpting UV Editing Texture Paint Shading Animation Rendering Compositing Scripting
Scene
View Layer
Object Mode View Select Add Object GIS
Local
Options
User Perspective
(1) Vehicles | Bus_SOR_NB-18
Preferences
Web geodata
Import
Export
Camera
Mesh
Object
Nodes
Logs
Shapefile (.shp)
Georeferenced raster (.tif .jpg .jp2 .png
Open Street Map xml (.osm)
ESRI ASCII Grid (.asc)
Import ESRI shapefile (.shp).
Archipack
Boolean
Create
Window
Door
Stair
Wall
Draw
Fence
Truss
Slab curve
Roof
Floor
->Wall
Dynamic sky
Create
Brightness 1.000
Shadow color satu 1.000
Sky Control
Sky color:
Horizon Color:
Cloud color:
Cloud opacity 1.000
Cloud density 0.099
Sun Control
Sun value 1.000
Soft hard 1.000
Mesh_12
Mesh_13
Mesh_14
Mesh_15
Mesh_16
Mesh_17
StreetElement_TrafficLight-LA_3+P
StreetElement_TrafficLight-LA_3+P
StreetElement_TrafficLight-LA_3+P
Archipack
Vehicles
Archipack_snap_helper
Building Cecil 1
Building Cecil 2
Scene
Render Engine Cycles
Feature Set Supported
Device GPU Compute
Grease Pencil
Sampling
Integrator Path Tracing
Render 128
Viewport 32
Adaptive Sampling
Advanced
Light Paths
Max Bounces
Total 24
Diffuse 4
Glossy 4
Transparency 8
Transmission 12
Volume 0
Clamping
Direct Light 0.00
Indirect Light 10.0
Caustics
Filter Glossy 1.00
Playback Keying View Marker
Start 1 End 250
Select Box Select Rotate View Object Context Menu
Vehicles | Bus_SOR_NB-18 | Verts:4,121,314 | Faces:4,669,176 | Tris:6,266,482 | Objects:0/11,499 | Mem: 1.83 GiB
BlenderGIS addon allows import of GIS data into Blender

Summing up

- QGIS has significantly improved our ability to make evidence based decisions.
- Improvements in QGIS over time have made it more accessible and powerful.
- Options available to fund development and improve QGIS.
- Giving back to the QGIS community is important for the growth of the project.

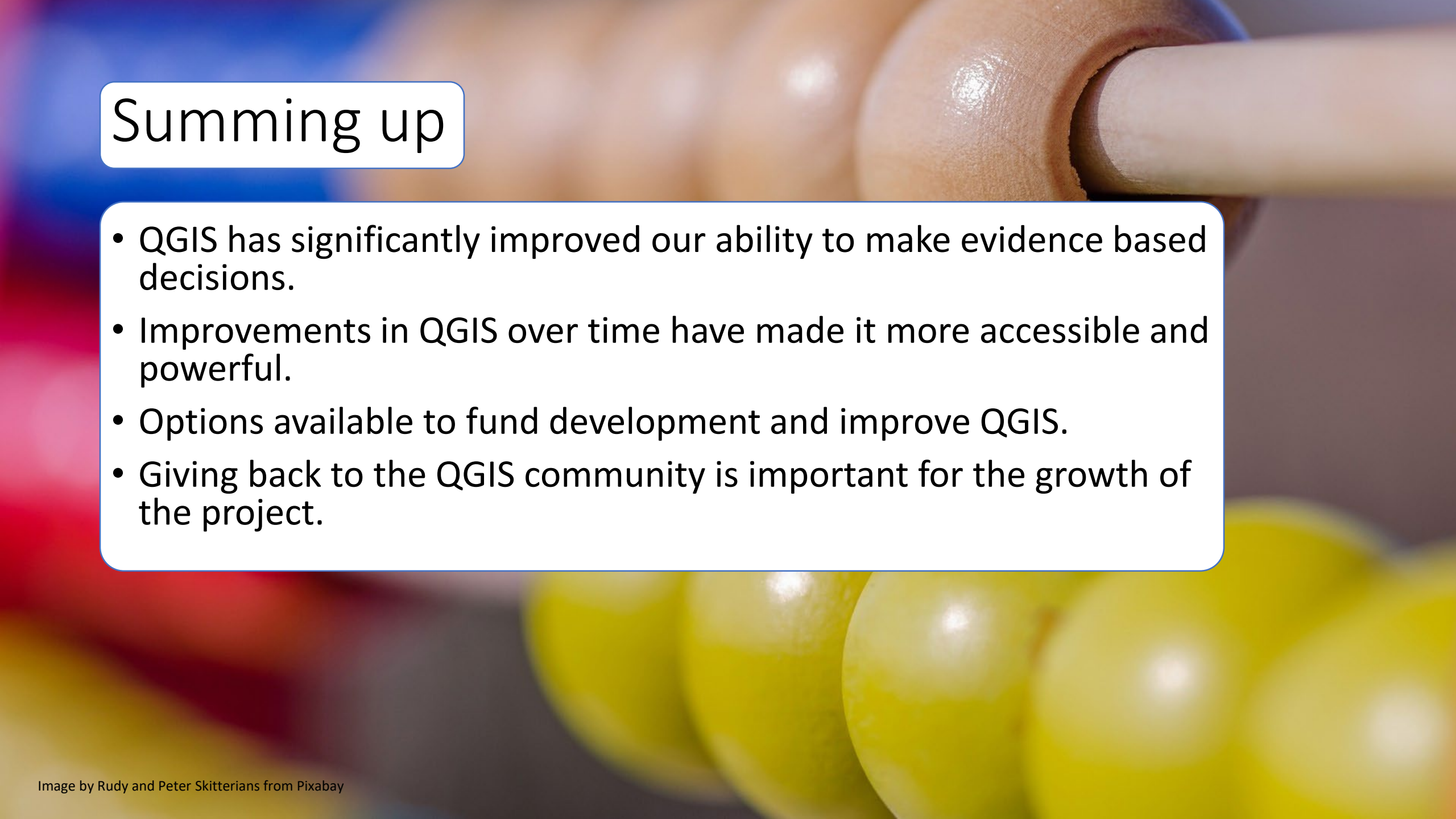


Image by Rudy and Peter Skitterians from Pixabay