

## New Offering 12/2019:

# Integrated Cloud-based Geospatial Processing Services (with Web API, Web App and Web Mapping)

### Processing Service 1: Turn Your **High-quality Elevation Data** into **High-resolution, Beautiful Tile Maps** ready for Web & Desktop GIS Mapping

Many of us work with elevation data (e.g. LiDAR point clouds and Digital Elevation Models – DEMs) on a daily basis. Nowadays there are an increasing number of public sources for open elevation data, including **high-quality, LiDAR-derived DEMs**.

Elevation data is foundational in geospatial mapping but is often "heavy" in terms of its large data sizes and being hard to communicate it quantitatively. Elevation data can be significantly explored and analysed for a wide range of environmental and engineering applications.

We have recently developed a suite of cloud-based processing technologies and workflows that can quickly turn your usual DEMs into modern tile maps (on terrain and hydrology), which can then be readily consumed by web and desktop GIS mapping.

Tile maps on terrain and hydrology can include:

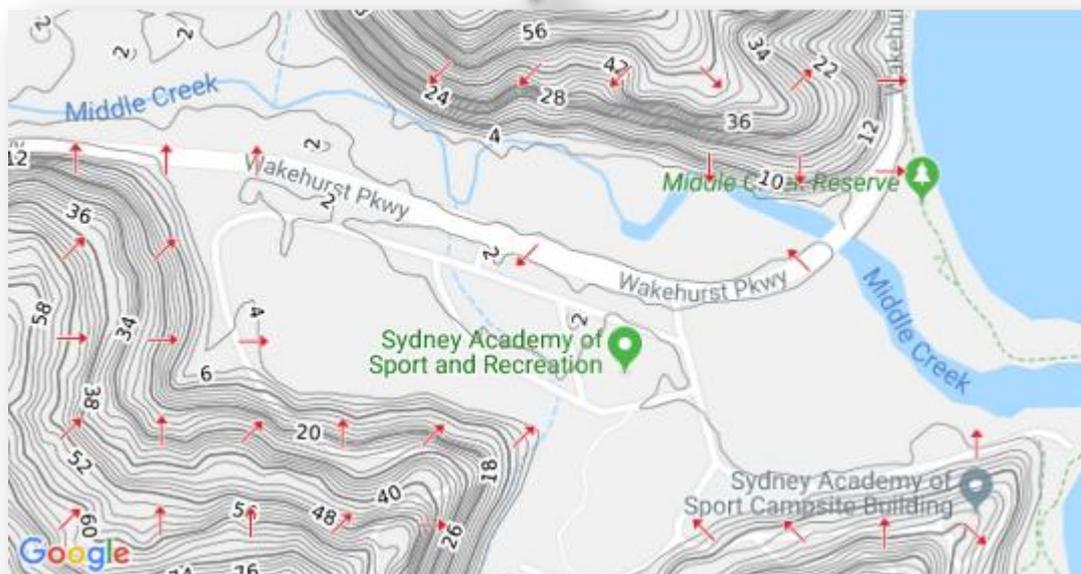
- Elevation contours
- Modelled surface water flow directions
- Shaded relief
- Other environmental metrics (upon request)

### Key differentiators

- Traditional manipulation of DEMs is often based on desktop GIS software, but here we are focused on the massive production of tile maps with cloud-based, scalable geospatial processing.
- Medium-resolution DEMs and derived information layers are in commonplace, but we are more focused on higher-resolution DEMs (e.g. at 10m, 5m or 1m resolution) and use these to derive insightful measured contextual layers, involving analytical methods and processes that can be challenging to many.
- Self-contained, beautiful outputs are very easy to use (for both web and desktop GIS mapping) and can be shared widely.

# 1. Overview

Produced tile maps (on contours, flow directions and shaded relief) are superimposed over popular basemaps (e.g. those from Google Maps).



## 2. Common Applications of Tile Maps



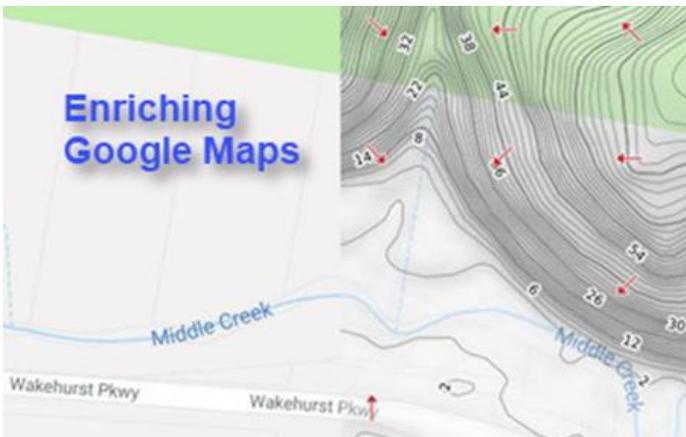
Crisp, clear and detailed contours supplementary to high-resolution satellite / aerial imagery mapping



Visualising flood-prone areas with measured context

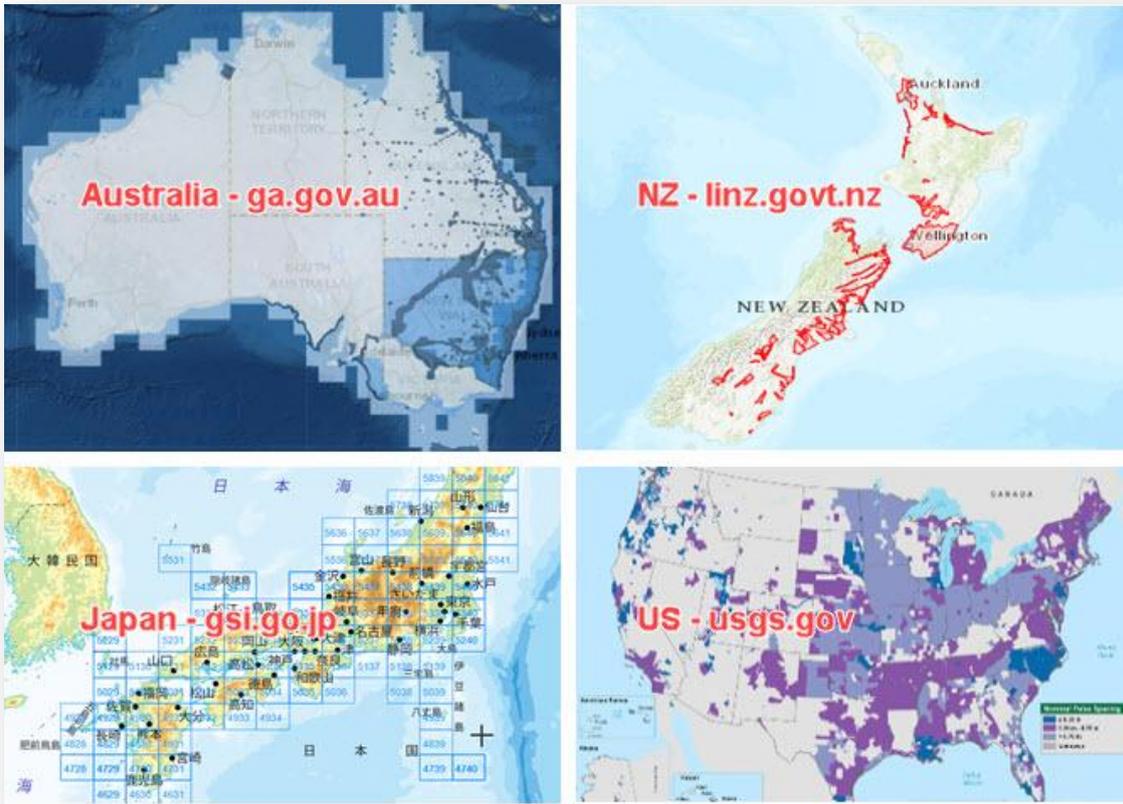


Identifying individual properties at risk



Enhancing mainstream web / online mapping

### 3. Case Studies – Tile Maps for Web Mapping



#### Australia specific:

- Two Additional Tools to Advance Flood Risk Analytics at Scale in Australia [Blog link](#)
- Applications of New National Contour Web Maps: Part 1 - Enhancing High-resolution Imagery Mapping [Blog link](#)
- Applications of New National Contour Web Maps: Part 2 - Identifying Low-lying Coastal Areas [Blog link](#)
- Applications of New National Contour Web Maps: Part 3 - Identifying Riverine Flood-prone Areas [Blog link](#)

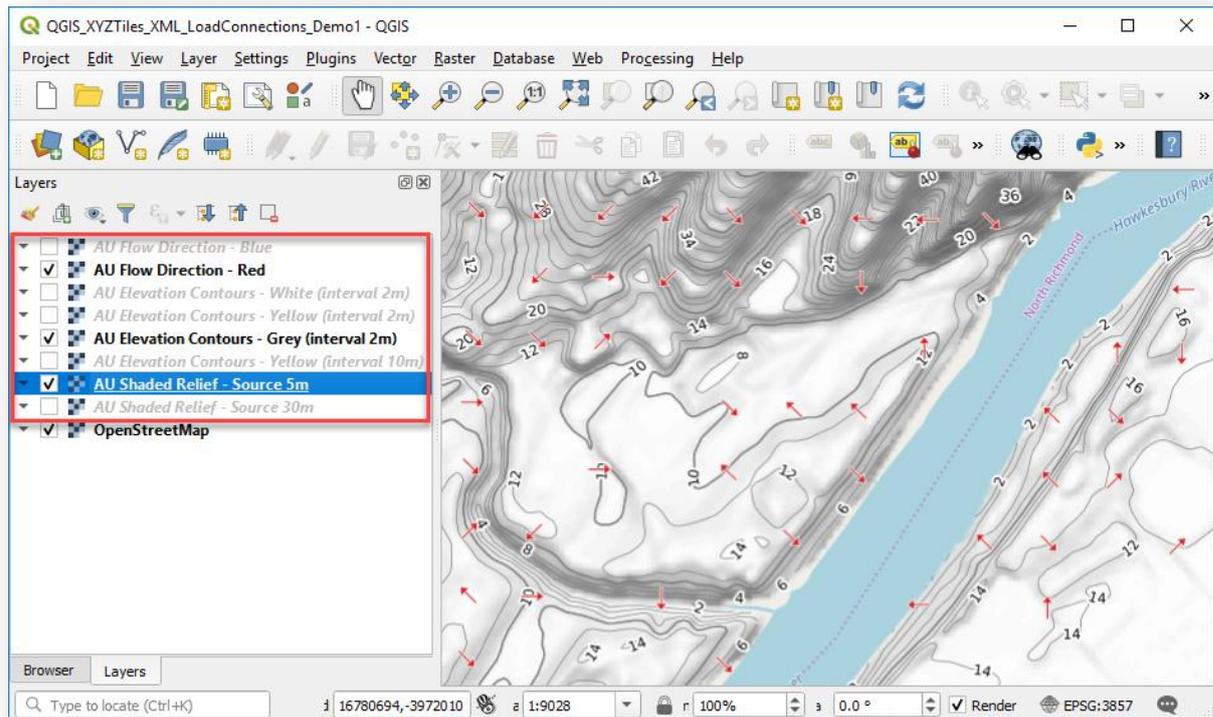
#### Australia, New Zealand, Japan, the U.S. etc.

- New Tile Maps on Terrain and Hydrology: Part 1 (Enriching Google Maps) [Blog link](#)
- New Tile Maps on Terrain and Hydrology: Part 2 (Extending Coverage) [Blog link](#)
- New Tile Maps on Terrain and Hydrology: Part 3 (Increasing Details) [Blog link](#)

## 4. Case Studies – Tile Maps for Desktop GIS Mapping

The above examples show the application of tile maps for web / online mapping, which is increasingly easy and popular.

The same set of tile maps can also be used for desktop GIS mapping, and it is straightforward too. For example, in QGIS, a user just needs to pass on a file folder path or a URL to “New Connection” after clicking “XYZ Tiles” button; a new tile map will be accessible serving as an additional GIS layer, as illustrated in the figure below.



## 5. Cloud-based Geospatial Processing Services

We offer unique and efficient cloud-based processing services. For this case, **the only input from you is the elevation data** that will be transformed into versatile tile maps.

<b>Inputs (from you)</b>	Digital Elevation Models, LiDAR point clouds, etc. of any file sizes
<b>Our processing</b>	<p>High-resolution tile maps on terrain and hydrology can include:</p> <ul style="list-style-type: none"> <li>• Contours</li> <li>• Modelled surface water flow directions</li> <li>• Shaded relief</li> <li>• ...</li> </ul> <p>Summary of processing components shown in this <a href="#">blog</a></p>
<b>Outputs (for you)</b>	<p>Produced tile maps can be delivered or accessed via a number of methods for web &amp; desktop GIS mapping:</p> <ul style="list-style-type: none"> <li>• You can download the entire set of tile maps and store it on local disks or your local networks</li> <li>• You can put all tile maps on private or public cloud storage for remote access</li> <li>• We also offer hosting services and you can have access to all map tiles securely via Web APIs (with unique URLs)</li> </ul> <p>Tile maps can be used by desktop GIS software and easily integrated with web or mobile mapping apps (those using Google Maps APIs, Leaflet APIs, OpenLayers APIs, Mapbox APIs, etc.), by updating file folder paths or related URLs. It is straightforward. If it's unclear along the way, we will show you how.</p> <p>You'd be amazed by how much the usual DEM data can be transformed into and effectively visualised.</p>
<b>Delivery time</b>	Days, weeks or months, up to the processing task involved
<b>Cost</b>	Specific to individual projects
<b>Other web services also on offer</b>	<p>We are also able to process any vector- or raster-based geospatial datasets and prepare beautiful, scalable tile maps ready for your efficient web &amp; desktop GIS mapping. This can be at a regional, state or national level.</p> <p>We offer integrated cloud computing services with Web API, Web App and Web Mapping.</p>

If you wish to find out more information or are interested in any live demos, please feel free to contact us at [info@BigDataEarth.com](mailto:info@BigDataEarth.com)

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