Toitū Te Whenua
Land Information
New Zealand

A step-by-step guide for using the LINZ Data Service (LDS)

Tailored for iwi, hapū and communities with a focus on climate resilience

Te Kāwanatanga o Aotearoa
New Zealand Government

September 2025

Toitū Te Whenua
Land Information
New Zealand

Using the LINZ Data Service for climate resilience

1. Understand the kaupapa

- The purpose is to support marae, hapū, iwi and communities in strengthening climate resilience.
- This aligns with the 4Rs of resilience - Reduction, Readiness, Response, Recovery.

2. Getting started with LDS

1. Go to LINZ Data Service Layers.
2. Use the search bar to find data layers, for example elevation, building outlines.
3. Explore datasets by category, for example select Topographic to view elevation, hydrography, cadastral data, and imagery.
4. Click on a dataset to see:
    - **Description** - what the data shows.
    - **Preview map** - visualise directly online.

3. Key datasets for climate resilience

- **Elevation Models (DEM)** - Bare earth shape of the land, useful for flood risk and slope analysis.
- **Digital Surface Models (DSM)** - Land plus buildings/trees, to see how water interacts with structures.
- **Building Outlines** - Identify marae, homes, and critical infrastructure.
- **Hydrography layers** - Rivers, streams, and catchments important for flood planning.

4. Using the data for the 4Rs

- **Reduction**: Overlay DEM + flood hazard layers to identify vulnerable areas.
- **Readiness**: Combine building outlines with hazard data to plan emergency responses.
- **Response**: Use LDS maps during an event to visualise impacts.
- **Recovery**: Analyse data to prioritise rebuilding and resilience planning.

5. Layering and mapping multiple datasets

LDS allows users to layer different types of datasets on top of each other to build a richer picture of the landscape. You can:

- **Add multiple layers to the map** - for example elevation, rivers, building outlines.
- **Rearrange layers to change which dataset appears on top** - this helps highlight specific features.
- **View overlapping layers to see how different datasets interact** - for example buildings close to rivers.
- **Toggle layers on/off** using the layer control panel in the top right corner of the LDS map viewer. This makes it easy to focus on specific data without clutter.

How to toggle layers on and off in LDS Map Viewer

1. **Open the LDS Map Viewer**:
    - Go to LINZ Data Service Layers and click on any dataset to open its map preview.
2. **Add layers to the map**:
    - Use the search bar to find datasets.
    - Click on a dataset and select Map+ to add it to your map.
3. **Locate the layer control panel**:
    - Look to the top right corner of the map viewer for the layer icon (stacked sheets or list).
4. **Open the layer panel**:
    - Click the icon to open the layer control panel showing all added layers.
5. **Toggle layers on and off**:
    - Use the checkbox next to each layer name to show or hide it.
6. **Reorder layers** (optional):
    - Drag layers up or down to change which one appears on top.
7. **Explore interactions**:
    - Toggle layers to see how different datasets interact, such as buildings within flood zones.

Practical steps in LDS

1. **Preview data online**
    - Click Map+ to explore maps before downloading.
    - Zoom into your rohe for local context.
2. **Download data**
    - Select format (GeoJSON for web tools, File Geodatabase or Shapefile for GIS software, CSV for spreadsheets).
3. **Integrate with Other Tools**
    - Upload datasets into ArcGIS Online, QGIS, or a web dashboard.
    - Use "toggle layers" to switch between hazard, elevation, and infrastructure data.
4. **Apply GIS Functions** (in tools like QGIS/ArcGIS)
    - **Difference**: Show areas not overlapping flood zones.
    - **Intersect**: Identify land and buildings at risk.

6. Building local capability

- **Training**: LINZ can provide tutorials and workshops once iwi have some basic GIS exposure.
- **Partnerships**: Tool development is iwi-led but can involve partners like NIWA, Eagle Technology (Esri), or local consultants.
- **Data Mesh / Dashboards**: Combine datasets into a single marae/community resilience tool, accessible without advanced GIS skills.

7. Your next steps

1. Confirm baseline datasets needed (DEM, DSM, building outlines, hazard layers).
2. Decide platform (e.g., ArcGIS Online dashboard, iwi-hosted tool).
3. Pilot a marae/community resilience data tool for one rohe, then scale wider.
4. Engage hapū/members in workshops to test usability and refine the tool.