WORKING WEEK 2025
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Collaboration, Innovation and Resilience: Championing a Digital Generation
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Map Manager: Enrichment of Community-Generated Open Data to Drive Location Intelligence

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Agenda

What is Map Manager?

OpenStreetMap Overview

Context within our organisation

Overview of Workflow

Map Manager: Interactive application for map matching,editing, versioning and publishing

- Linking internal and external data sources into a common base network and introduces consistency across applications to deliver integrated transport data.
- A key dependency for Map Manager, is the underlying base network, which is based on an extract of OpenStreetMap (OSM).
- Map Manager will align OSM with our authoritative VicMap spatial network data set across multiple networks and nodes

Open Street Map (OSM)

Map Manager uses **OpenStreetMap** which is a collaborative, freely accessible mapping project that provides a high-quality, user-generated map of the world

Open Source

- OSM provides map data that is free to use and edit.

High coverage and structured data

- Over 90% Australian roads are registered in OSM

9M+ registered users

- Over 9M registered users as of September 2022.

Map centralisation, versioning and extracting

- Users are free to download OSM data, extract any version of the public map, add/edit map features to meet their needs, and save extracted version for use.

OpenStreetMap-The same answer was coming from different areas

- ✓ Active Transport
  - "Having conducted analysis with our Data team, it became apparent that there was a clear gap in the level of granularity (visual) between TR_ROAD and OSM data."

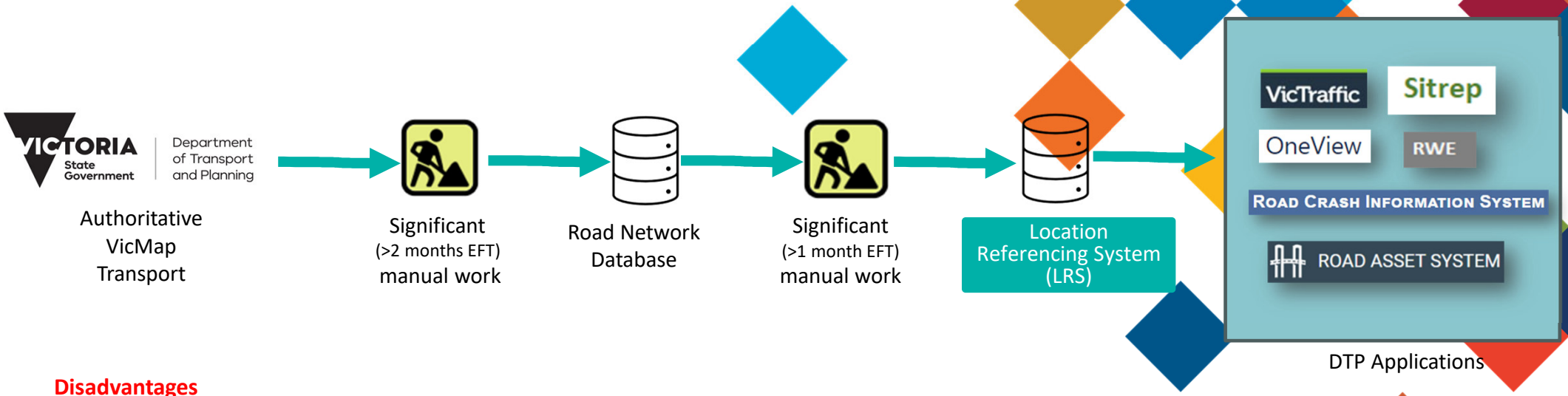
- ✓ National Heavy Vehicle Regulator
  - Journey Planning, Update frequency, consistent national coverage

- ✓ Public Transport
  - Timetabling product integrates with OSM

- ✓ Situational Awareness – Optimal Reality
  - Department's investment in a congestion management platform

CURRENT

Road Network Data Update Process

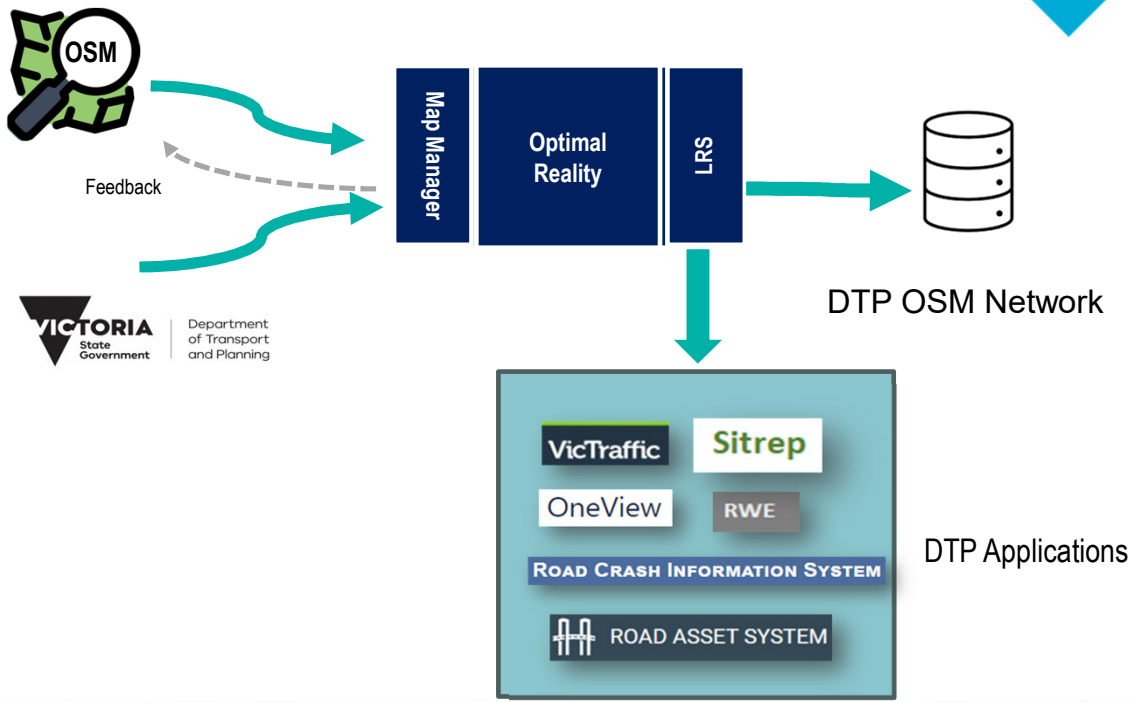


Disadvantages

1. High Degree of inefficiency
2. Manual and lengthy process
3. Road Network is not current, complete and granular enough for downstream applications

FUTURE

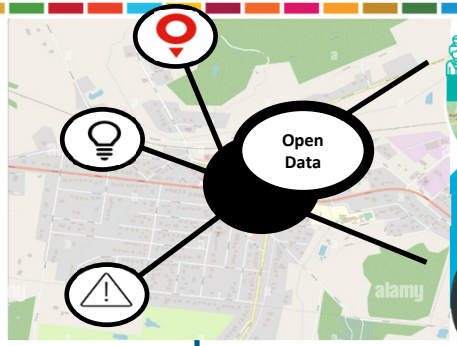
Optimising Road Network Data Update Process

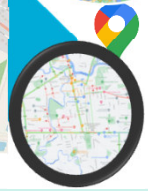


Advantages

1. Automated
   - Extraction
   - Integrity checking
   - Exception reporting
2. High update frequency
3. More granular spatial data
4. Routable road network

Unplanned Disruptions





Integrated Transport Data Program

Open Street Maps

Open Data Platform

Transport Reporting Platform

Transport Spatial Platform

Transport Data Platform

Data Ingestion Platform

Data Governance Platform

Unplanned Disruptions

Optimal Reality

Map Manager

Location Referencing Services

Situational Awareness

Emergency Road Closure (RID)

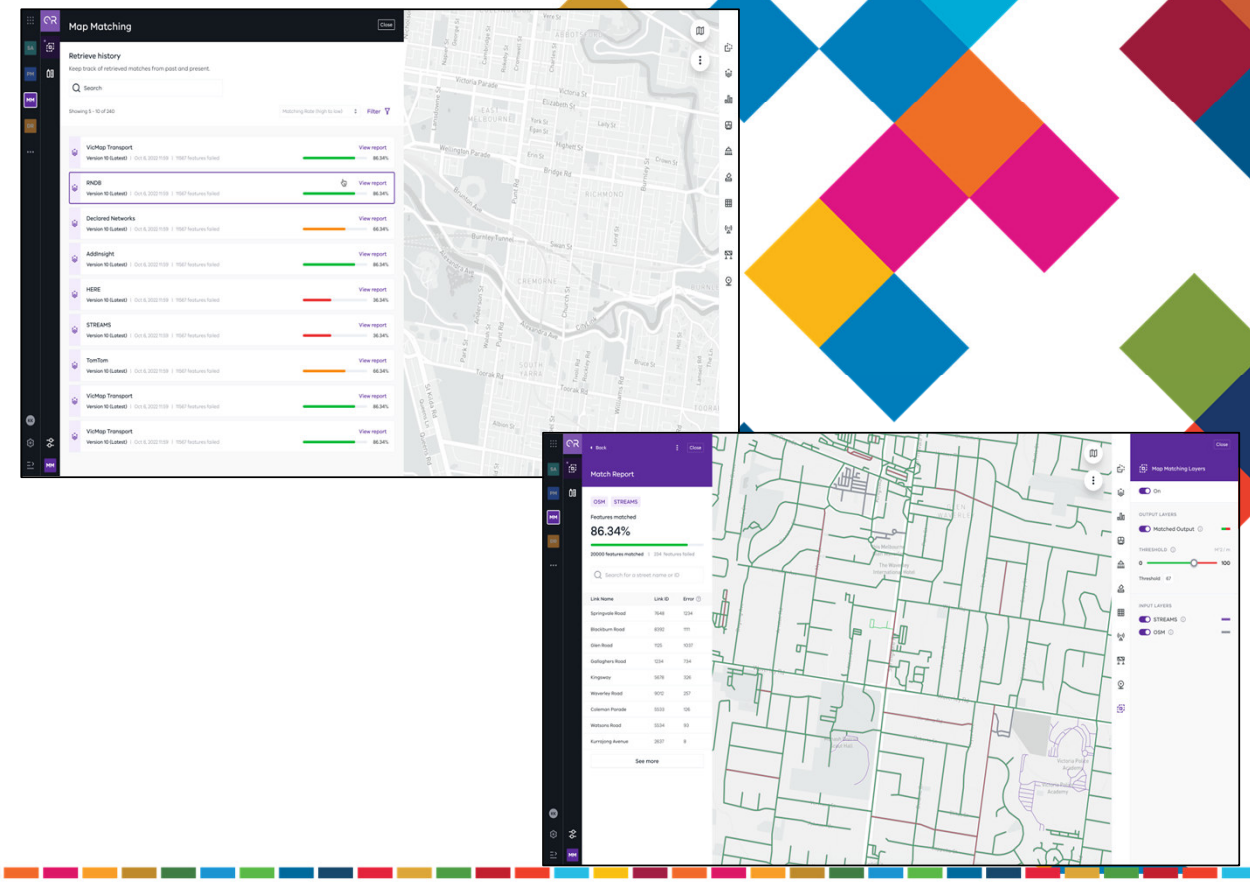
Map Manager - Map Matching Engine

Map Matching is the ability to "snap" geographic coordinates to a base network. The tool is critical to link internal and external data sources into a common base network.

The Map Matching engine is an automated process running on a proprietary algorithm supported by manual processes to manage errors, edits and approval.

The Map Matching tool is equipped with a summary of accuracy metrics to give users confidence on the matched results.

The automated process is complemented with a manual edit workflow to ensure errors are corrected by editors.

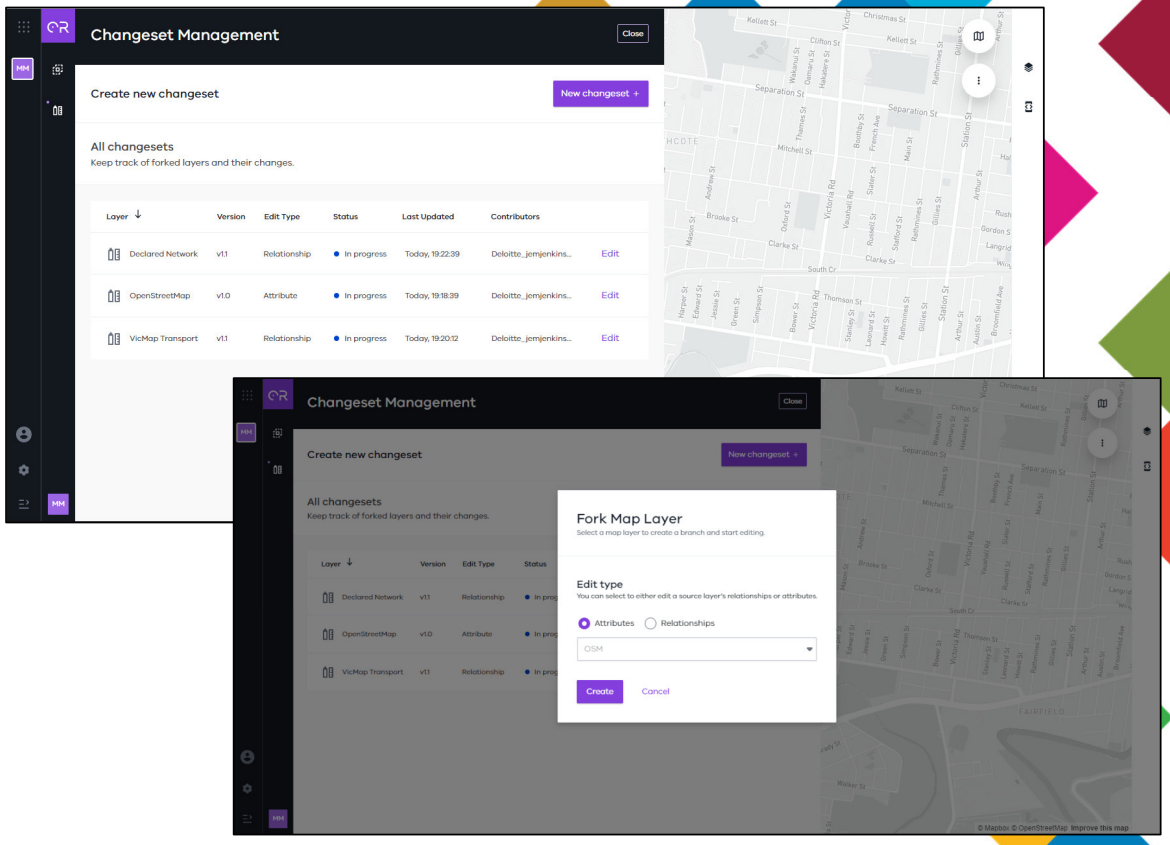


Map Manager – Changeset Management

In order to manage updates to the Map Manager data, a ‘changeset’ is created that becomes the working copy.

This copy allows review and control of external updates (e.g. OSM and Vicmaps) as well as edits within Map Manager (by the DTP team).

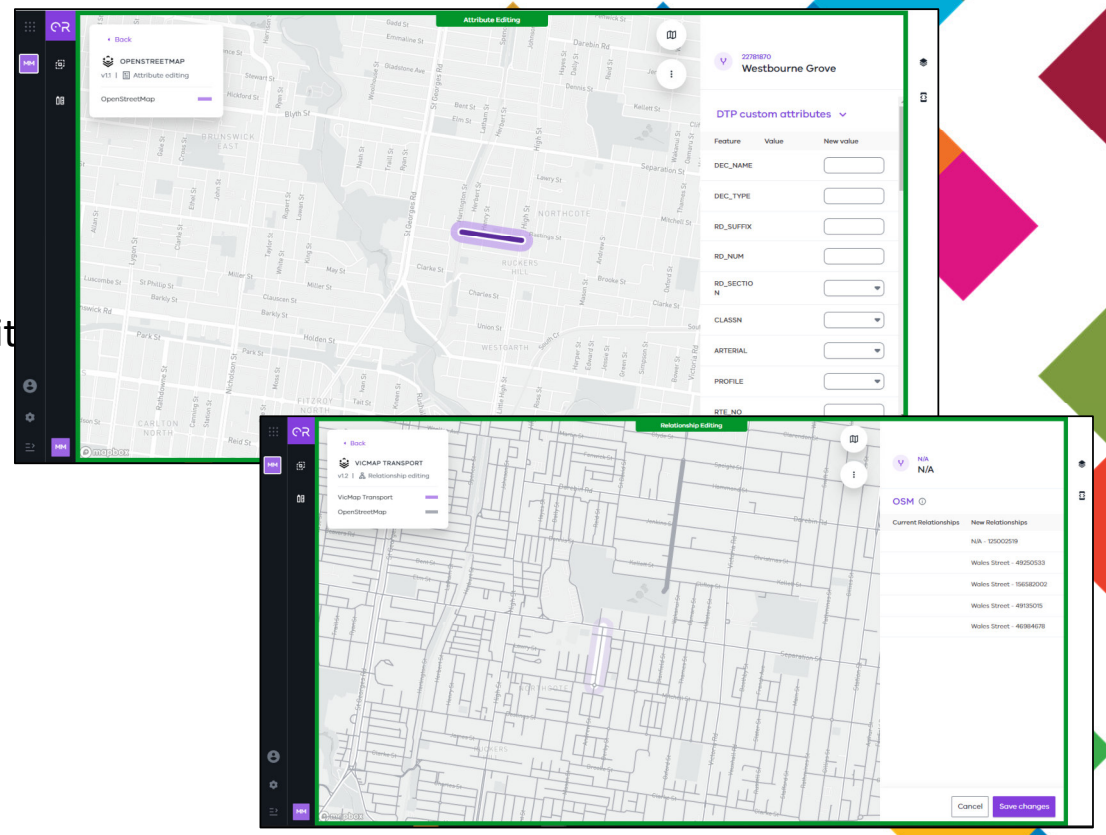
The changesets enable version control and traceability within the Map Manager application.



Map Manager – Editing

Within the Map Manager application, the DTP users are able to edit ‘Relationships’ and ‘Attributes’ to improve the integrity of network data.

After creating a changeset, the user selects the desired edit type and then can commence incorporating their edits.



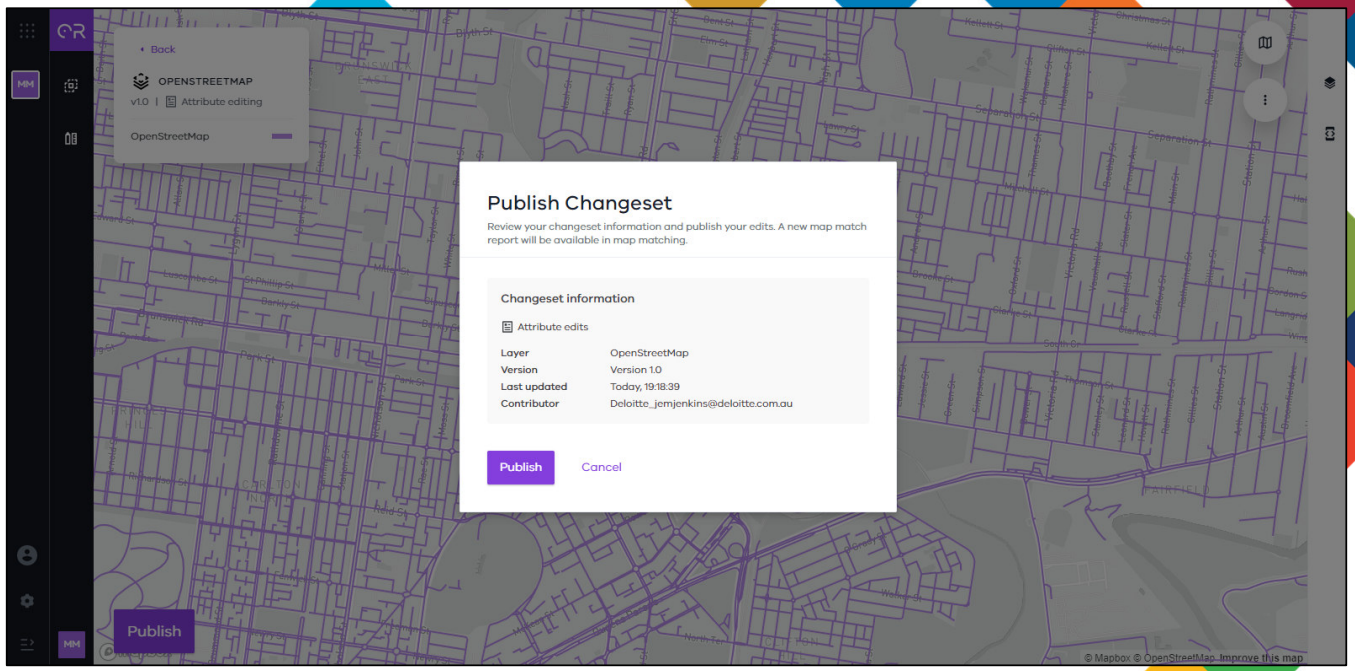
Map Manager – Publishing

When the edits to the data set are complete, those changes can be 'Published'.

This means that the changes will be committed to the source layer and become part of the Map Manager network.

Some edits will trigger back-end processes; e.g. re-running the Map Matching algorithm.

The Map Manager data base will be updated so that the Published and Approved information can be made available to other systems.



The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG

2nd relevant SDG

3rd relevant SDG

SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

STEP 1: SELECT HERE THE THREE MOST RELEVANT SDGs
STEP 2: COPY THE SDG INTO PREVIOUS SLIDE