NZEUC Transport Special Interest Group

GIS contribution to management of the NZ Railway Network

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Rail's contribution to the NZ economy

Rail benefits New Zealand

Passenger and rail freight both contribute
significantly to the New Zealand economy.

The total economic
value of rail is:

$1.47B-
$1.54B
EVERY YEAR

Total
value is
derived
from:

$1.3B
reduced
congestion

$8.5M
reduced
emissions

$60M
improved
safety
outcomes

$63M
reduced road
maintenance

This value far exceeds
the government's annual
investment in rail

KiwiRail

Who is KiwiRail

A Statutory Corporation and the backbone of NZ's Integrated Transport Network

- 4000 staff across the length of New Zealand
- 198 mainline locomotives
- 3 ferries
- Fuel costs per annum of around $60M

- 18000 hectares of land covering 61? Territorial Local Authorities
- 4000 kms of corridor
- 4023 level crossings
- 145 tunnels
- 1537 rail bridges

- 2955 leases to third parties totalling 4800 hectares
- 433 proposed leases
- Revenue from land sales/lease rentals totalling approximately $45M per annum
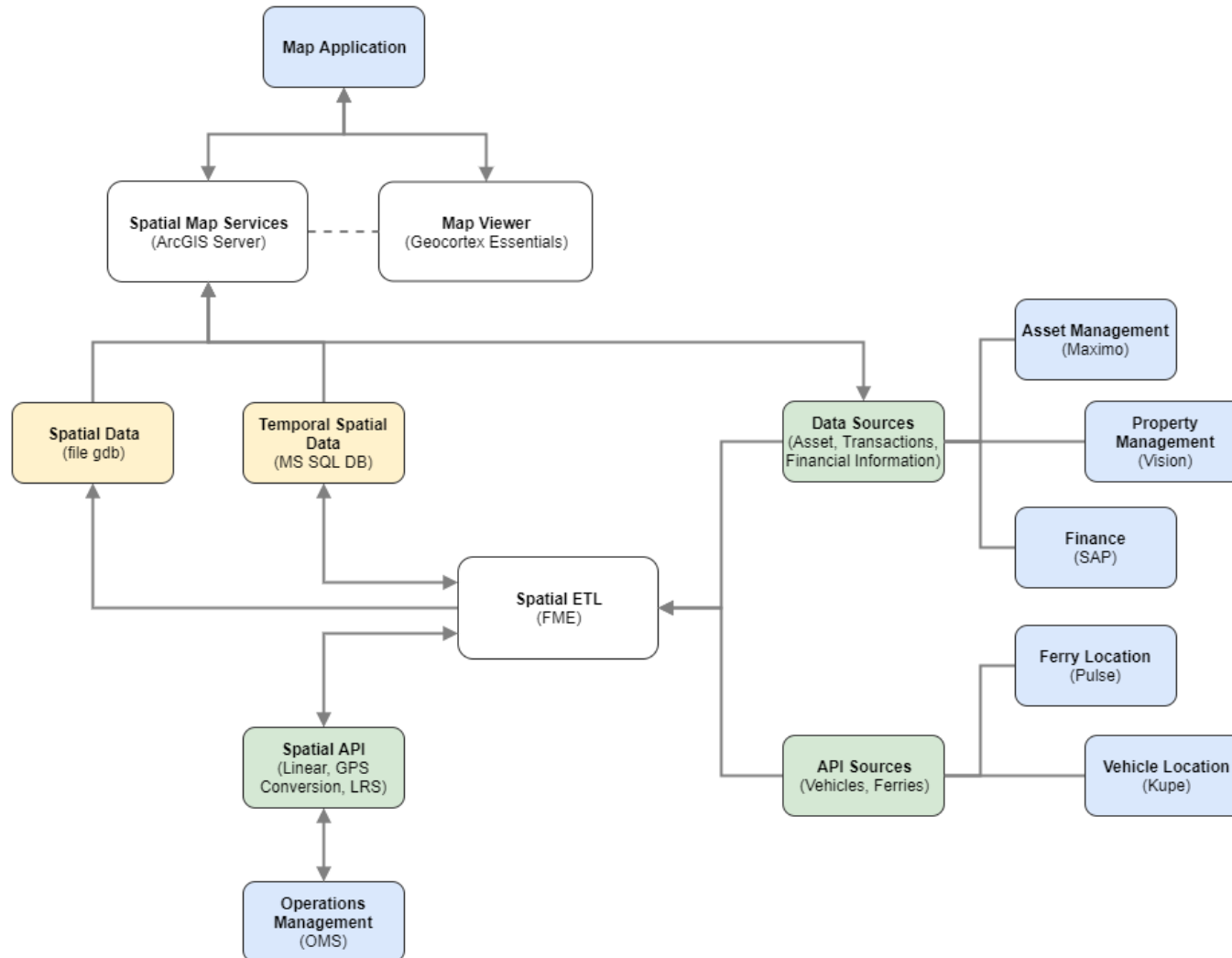
KiwiRail

The GIS team

- Team is split across two separate reporting lines

- Data management sits within Business Intelligence Team
  - Responsible for maintaining datasets, sourcing new data
  - Managed by Kirsten O'Neil with one direct report (David Fowler)

- Application management sits within ICT Team
  - Responsible for maintaining underlying GIS ecosystem, building map services, creating and maintaining map viewers
  - Managed by Paul Shivnan with one direct report (Noel Sevilla)

- In order for the GIS to function successfully the teams must operate as a single unit

KiwiRail

GIS Platform Architecture

Our Applications

- **GeVIS** – Provides Train Control with near real time visibility of our fleet, also a mobile version for our field staff
- **RailView** – Provides an asset rich view that has strong links with our Asset Management system to enhance planning of maintenance activities on the network
- **PropertyView** – Land Management centric view. Major tool for our land and lease managers for revenue generation and for resource management activities
- **DAS** – Driver Advice System – In loco application that advises locomotive engineers on the most efficient way to drive their train. Has resulted in fuel savings since 2015 of 16 million litres at a cost saving of $11M.
- Rail datasets available:
    - http://data-kiwirail.opendata.arcgis.com/datasets
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KiwiRail