CONNECTING TRANSPORT NETWORKS

Enabling Multi-Modal Routing for People and Goods

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Introduction

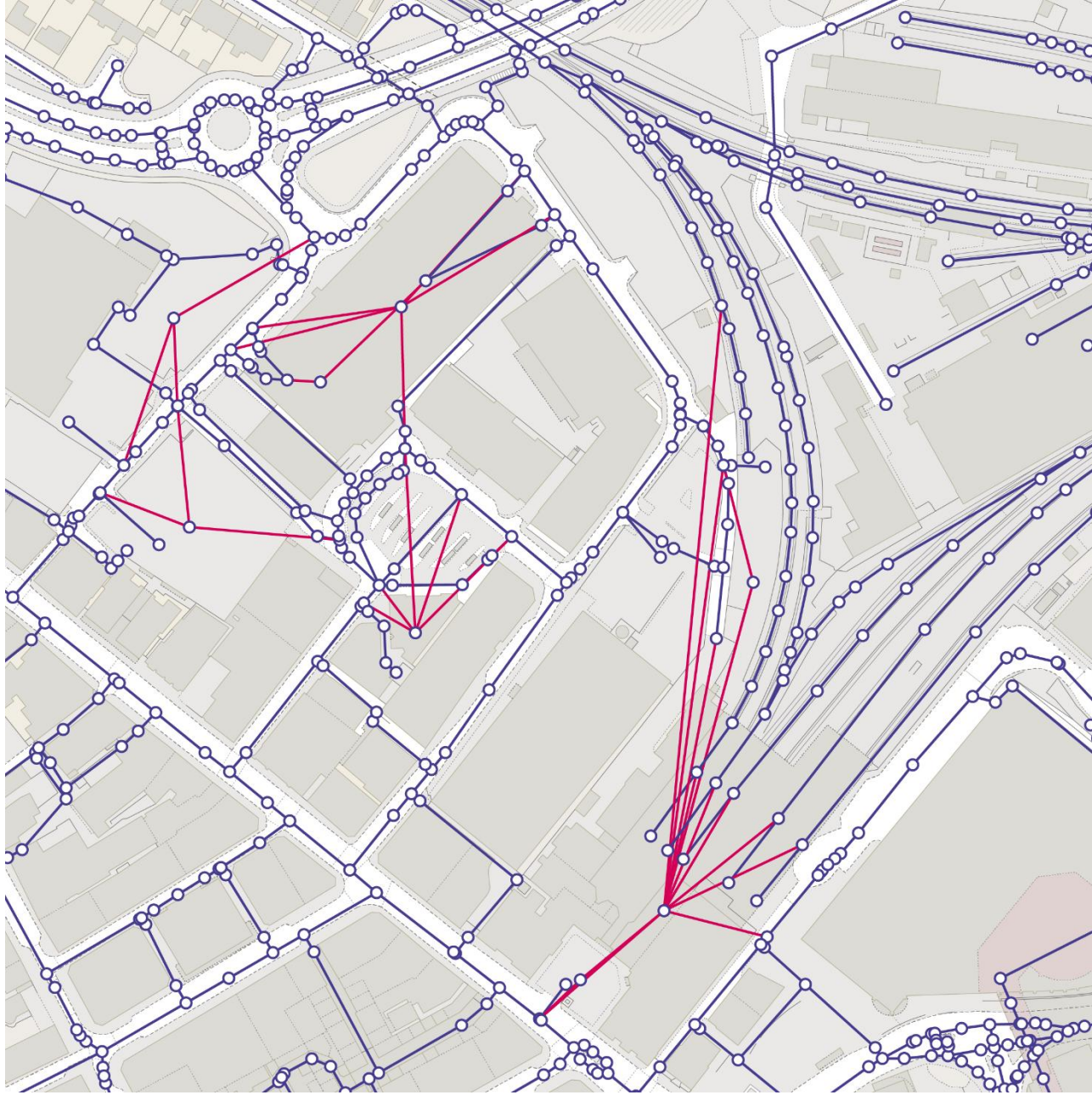
Connected transport networks are becoming increasingly crucial.

- Enabling efficient movement of people and goods
- Reducing congestion
- Promoting greener transport options

Introducing the OS Multi-modal Routing Network

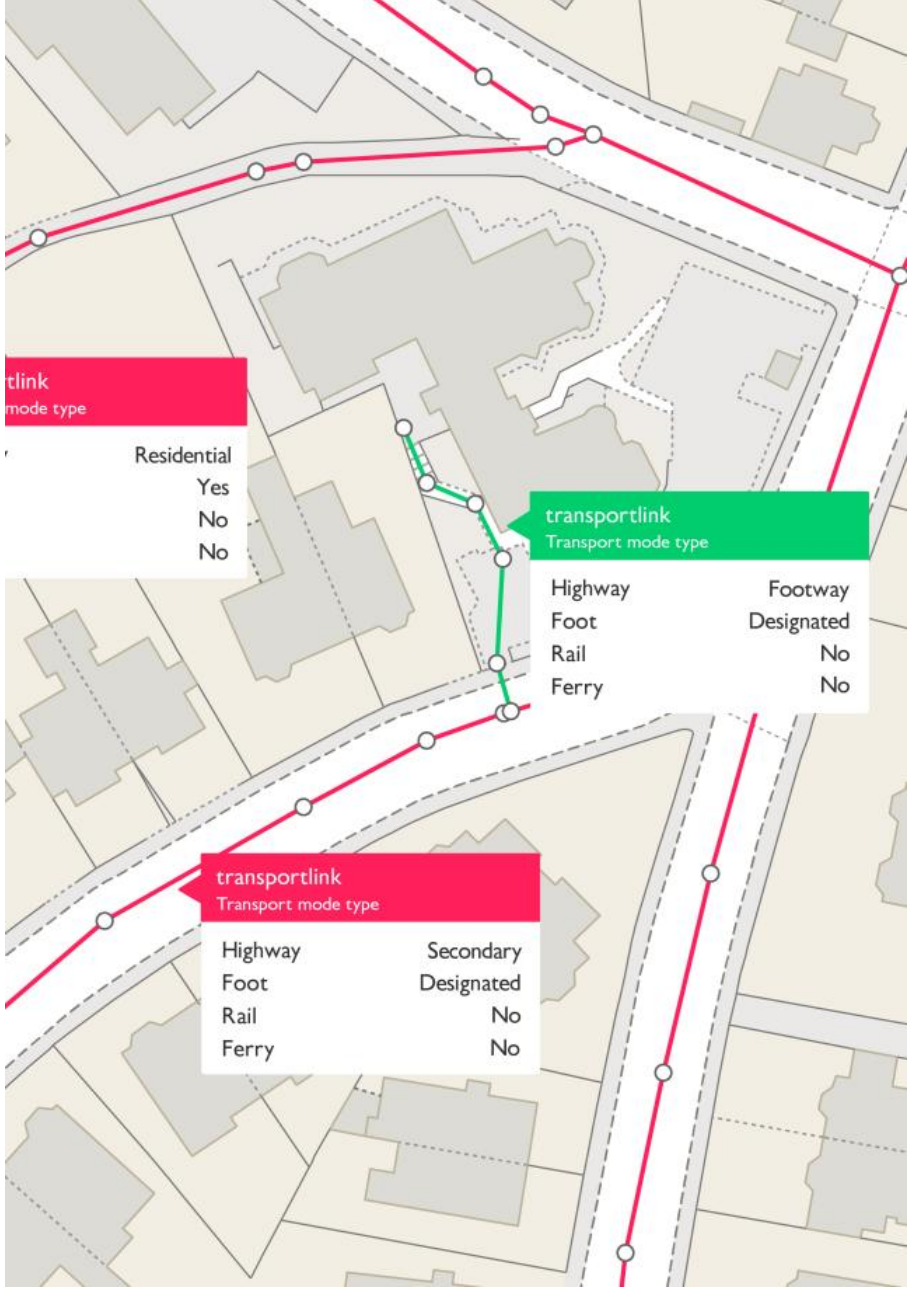
A premium product dedicated for multi-modal routing of people and goods, **designed for use in routing applications**.

Contains **multi-modal** connectivity between Road, Rail, Path, and Ferry networks, using **Modal Change Points** to show where you can transition between them.



Key features of the OS MRN

- A single dataset with full connectivity between different modal networks
- Incorporates road restrictions, vehicle and access restrictions, and speed information
- Modal Change Points – key sites where you can change transport mode
- OpenStreetMap schema



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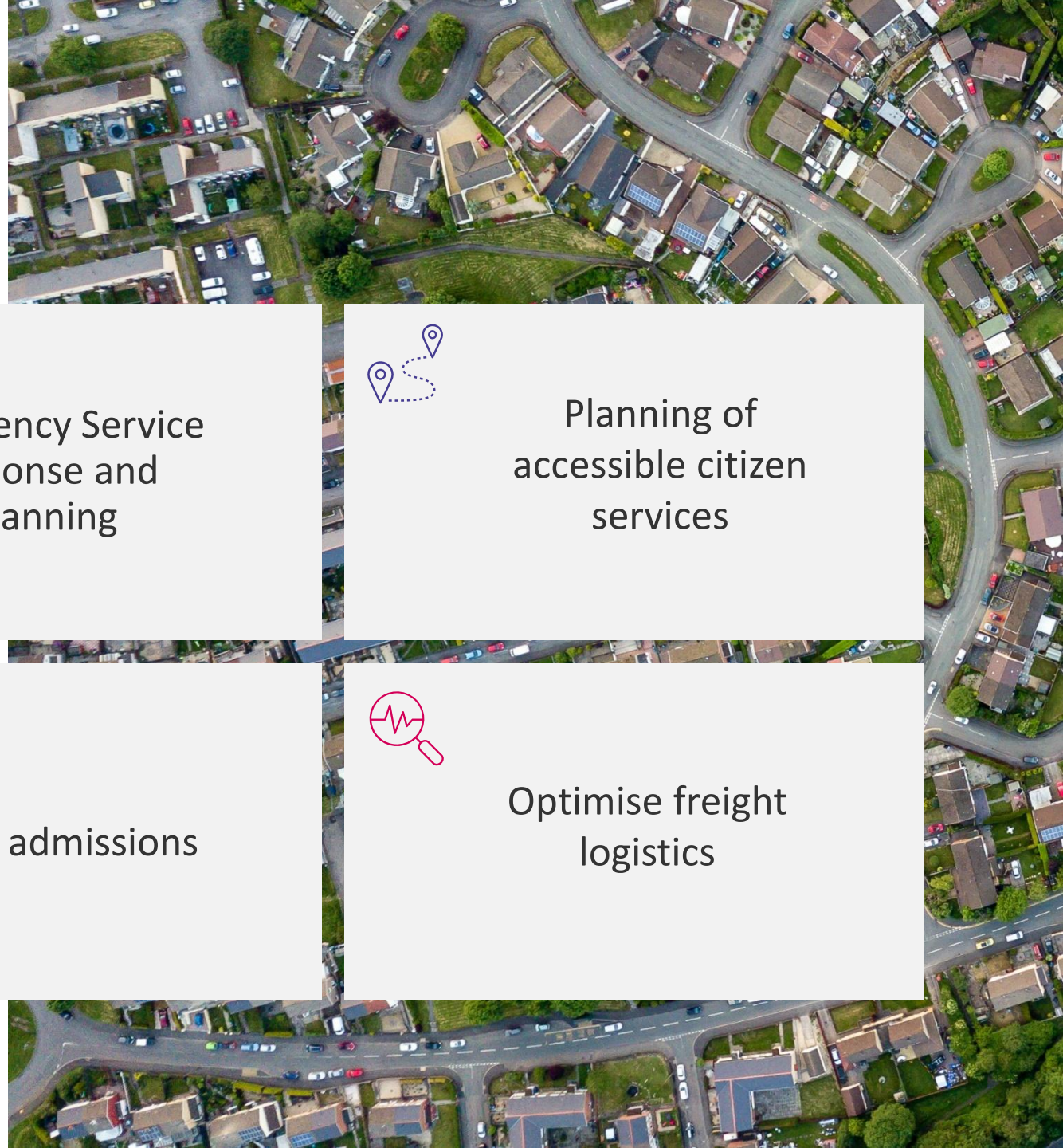
Use Cases



Transport Planning

Emergency Service response and planning

Planning of accessible citizen services

Scheduling and optimising routes for key public services

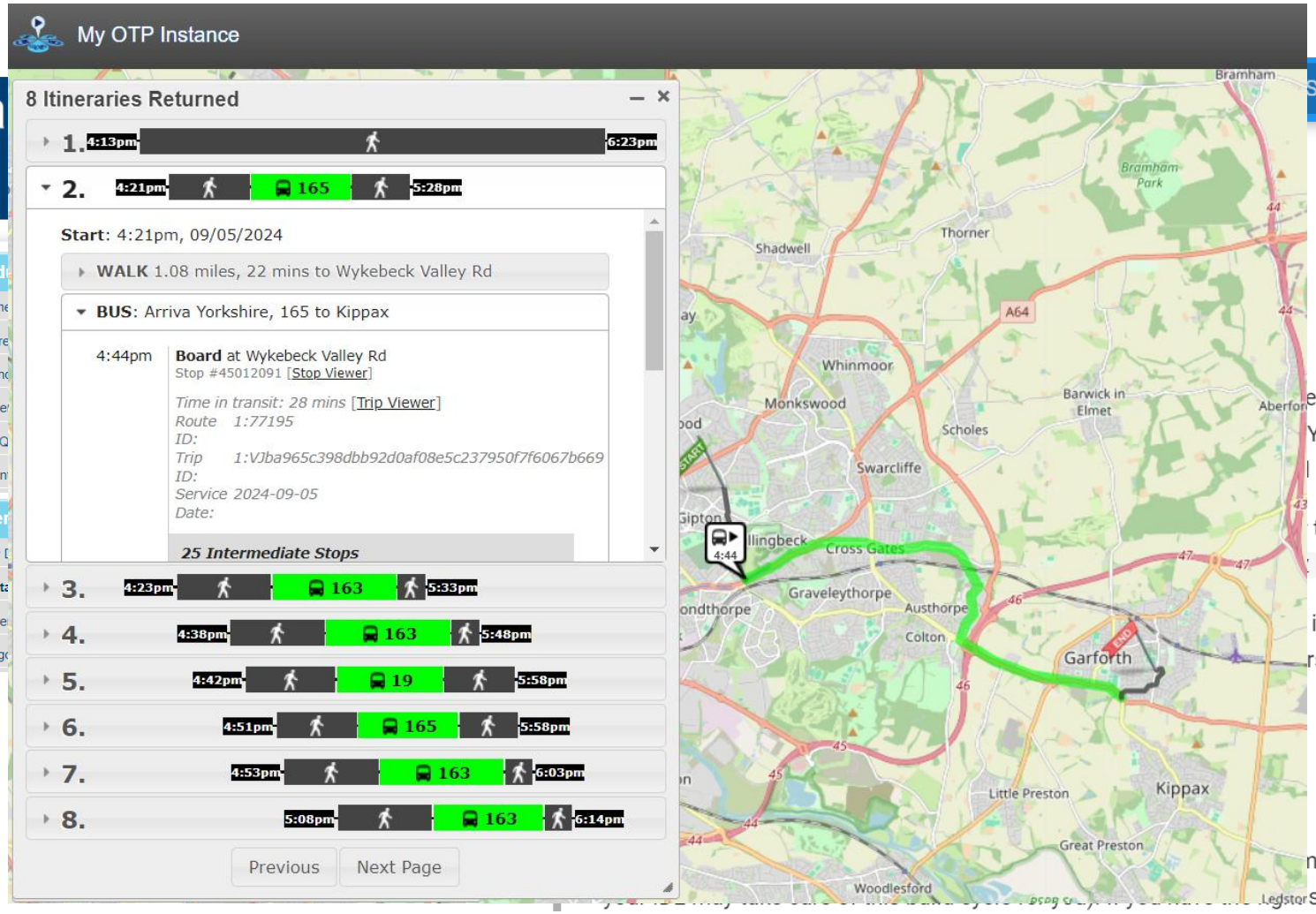
School admissions

Optimise freight logistics

MRN in action

Data

- OS MRN
- Open public transport timetable data



Search

GitHub v2.5.0 2.2k 1k

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You can go to the release pages on GitHub or the OTP
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nodifying OTP you will need to know how to rebuild it (though
software installed, building OTP locally from its source code

CASE STUDIES

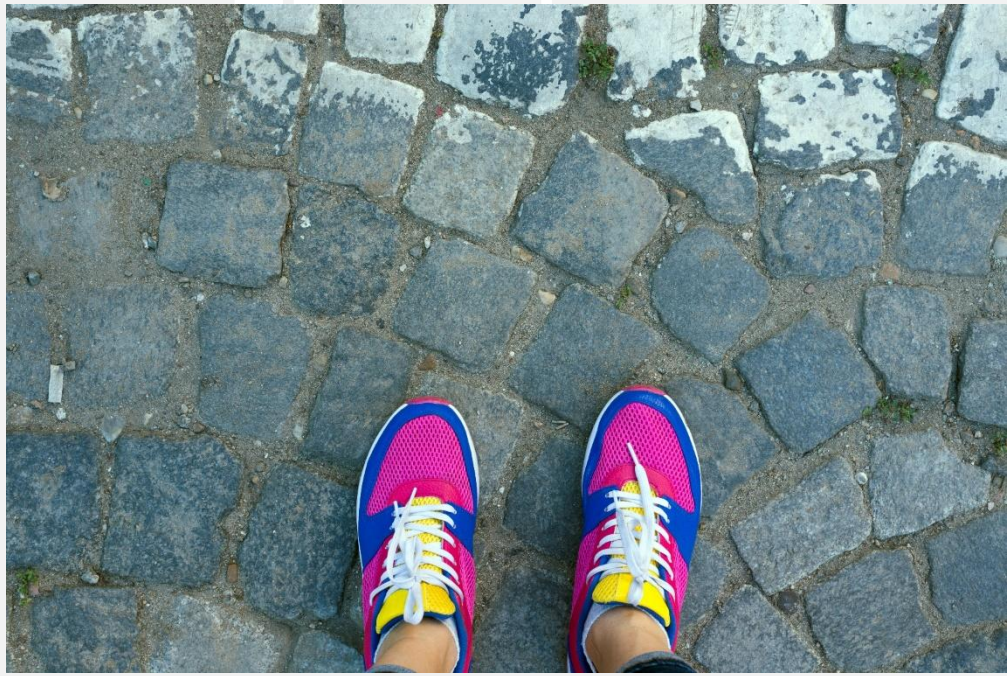
Sport England - Creating sports facility catchment areas

The new MRN will allow users of Active Places Power to calculate drive, walk and cycle catchments from sports facilities.

Using the MRN meant less preprocessing as speed data and the presence of pavements are included in the dataset.

Active Places Power and the catchment area tool guide investment decisions and support strategic planning for sports provision.

> The MRN is invaluable for geospatial analysis, offering excellent accuracy and comprehensive coverage. The reduced processing time and additional attribution, when compared to previous products, allowed the fast development of new tools and will assist greatly in keeping the network inputs up to date in the future – Liz Clarke, Head of GIS, Sport England



active places power

SPORT ENGLAND

AtkinsRéalis

Northumberland County Council – Mobile library service efficiencies

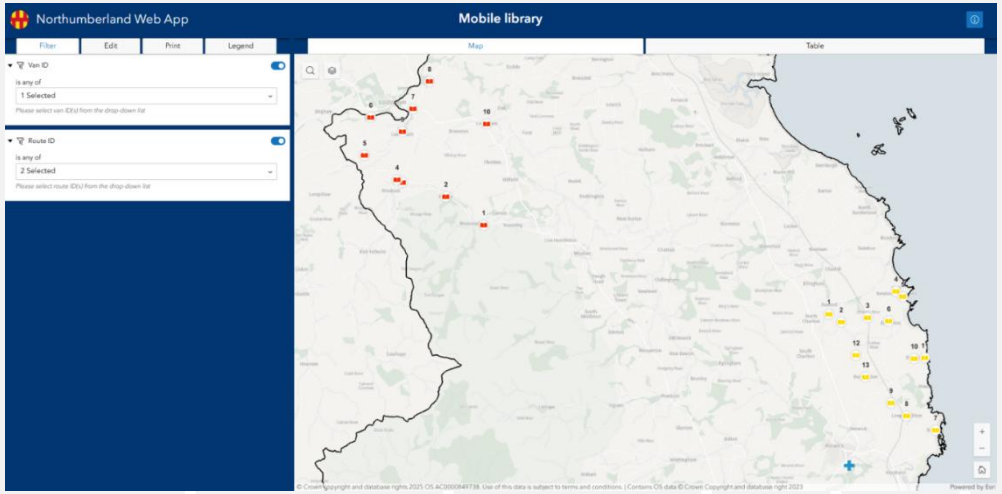
Northumberland County Council's mobile Library Service visits communities across the county to provide books and other library materials.

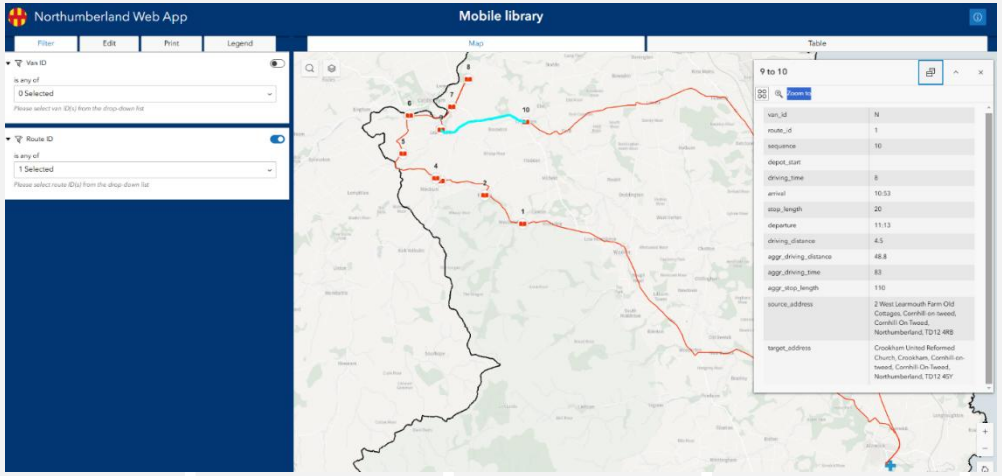
Attributes such as average speed make it possible to carry out time-based routing, looking for the quickest route, instead of the shortest.

Using the OS MRN, the library department were able to modify routes and schedules to support the reduction of their library vehicles from 3 to 2.

The MRN has supported the library service to understand journey distances, driving times, and help manage the working hours of the drivers.

Northumberland will also use MRN in their Education team for future projects around school transport and safe walking routes.

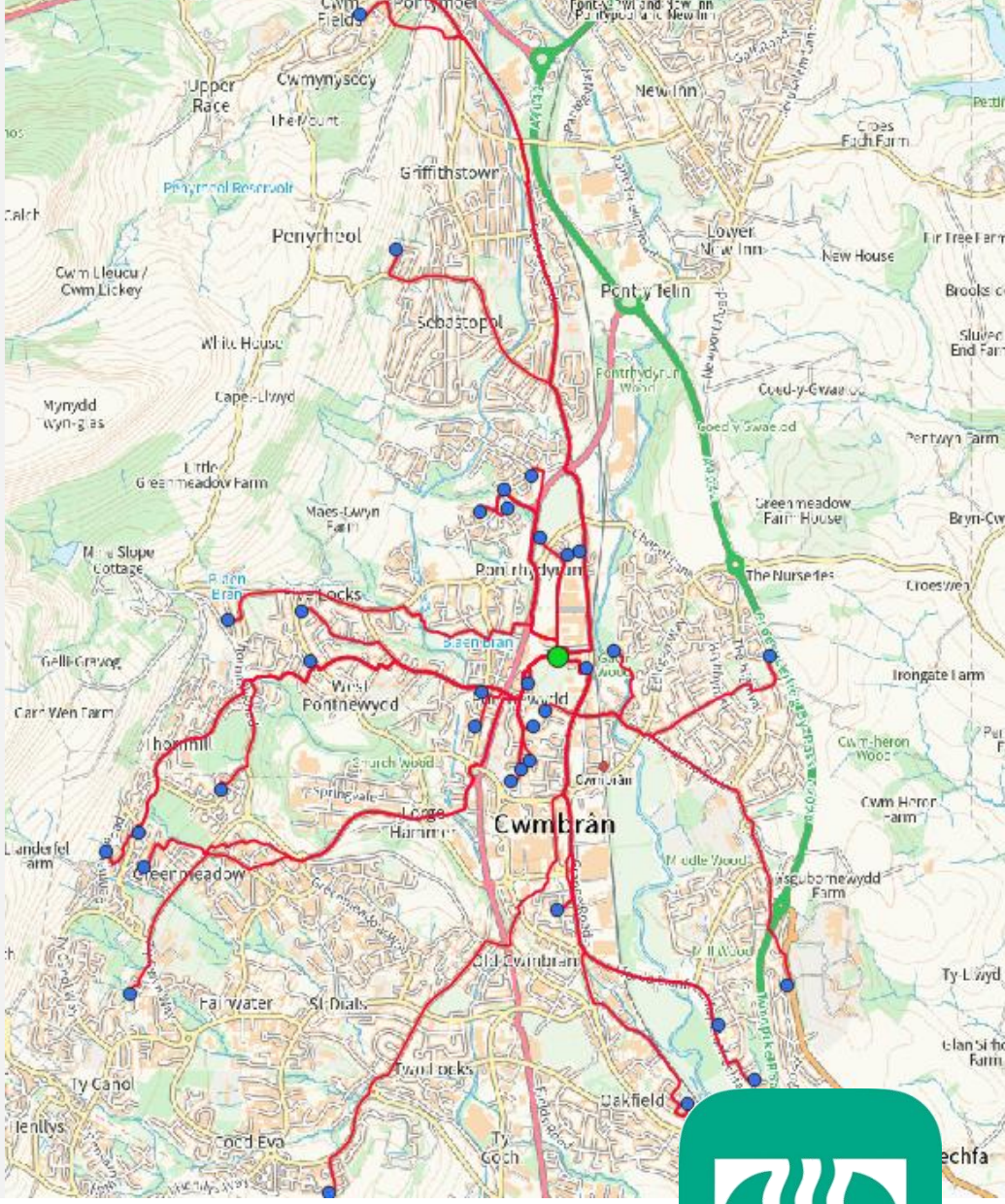




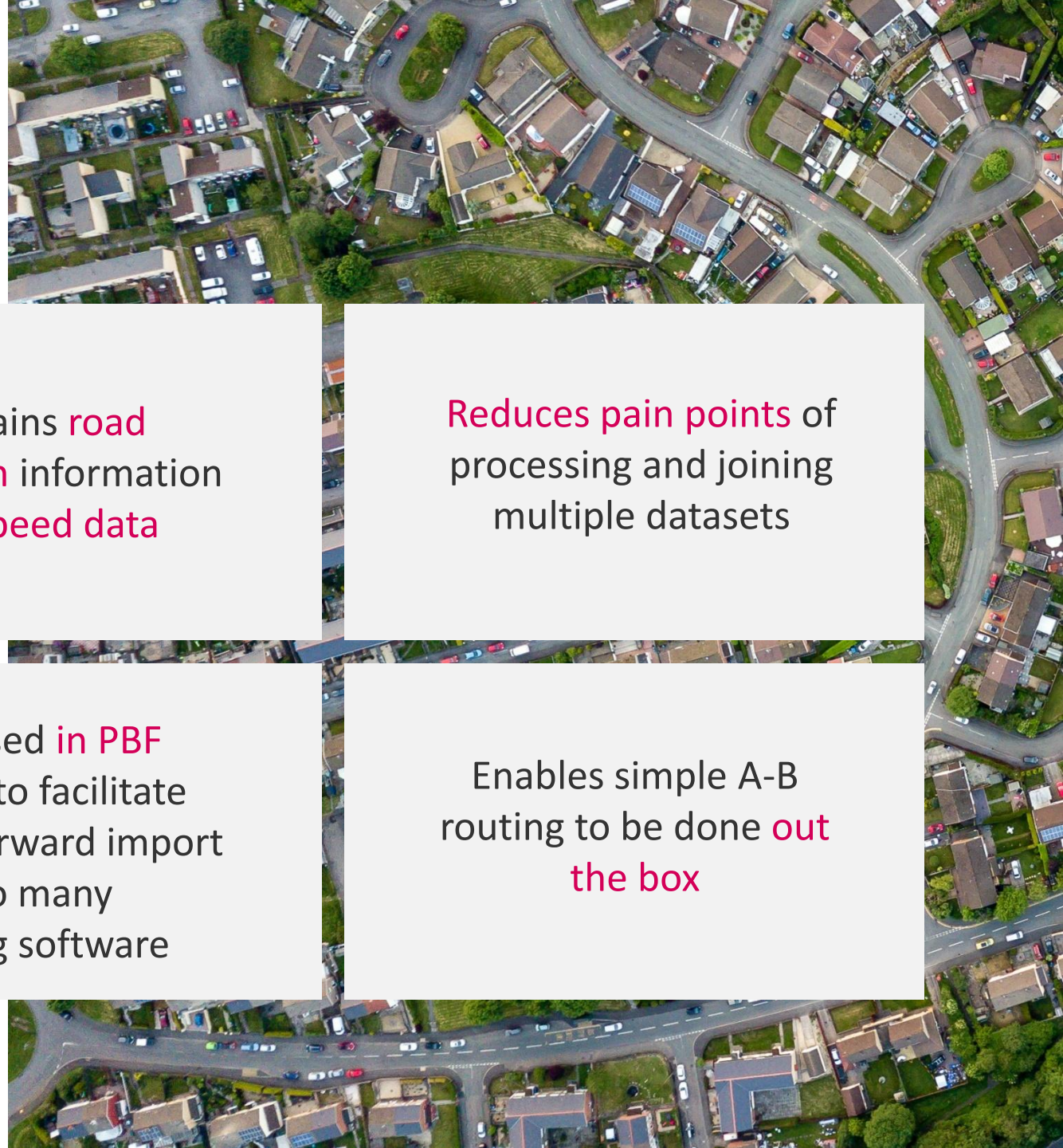
Northumberland County Council

Torfaen County Borough Council - School catchment areas

- Torfaen receive requests from their Education teams to support with school catchments across more than 30 schools.
- The attribute fields in MRN make it really easy to identify routes suitable for pedestrians straight out the box.
- MRN has provided ability to run analysis on school catchments within seconds, rather than spending up to two weeks per school using OSMM Highways.
- Torfaen are also exploring MRN in their ‘Forward Planning’ team to plan sustainable locations for housing developments and employment sites. They are looking to understand the best locations where people can easily travel to shops, schools and places of work. They aim to be able to calculate sustainable journey times to and from potential locations. This work will then look at public transport routes, stops, and hubs in the future.



Benefits of the OS MRN



Provide a fully connected multi-modal network

Contains road restriction information and speed data

Reduces pain points of processing and joining multiple datasets

Designed and built in OpenStreetMap schema

Released in PBF format to facilitate straightforward import into many routing software

Enables simple A-B routing to be done out the box

WHAT'S NEXT?

NGD Transport Delivery Timeline

September 2022

OS NGD launched

March 2023

NGD Road Link improvements

- Average speeds
- Indicative speed limits
- Improved road width calculation and GB coverage

September 2023

New NGD feature type, attribution and data enhancements

- Pavement feature type
- Pavement attribution on Road Links
- Extended Path Network coverage to GB
- Generalised Rail Network

March 2024

New NGD-powered premium product, new feature type and attribution on existing features

- OS Multi-modal Routing Network (MRN) product
- Tram on Road feature type
- Tram attribution on Road Links

2024/25

Improvements to existing NGD data

March 2025

New NGD feature type and attribution on existing features

- Street Light feature type
- Street Light attribution on Road Links and Path Links

September 2025 to March 2026

Sept-25: Two new NGD feature types and attribution on existing features

- Cycle Lane feature type
- Cycle Lane attribution on Road Links and Path Links
- Bus Lane feature type
- Bus Lane attribution on Road Links

Mar-26: Increased coverage and completeness of Cycle Lanes & Bus Lanes

2025/26+

Ongoing NGD improvements (TBC)

- OS MRN: add cycle lanes, bus lanes, street lights, guided busways, public timetables, modal change link flag
- Speed: MPH, default values, 85th percentile
- Street Lights: operational status, building shadow, prioritise road links
- Bridge attribution on road links
- Active Travel: pedestrian routing network
- And more

Ordnance Survey

To access data and for more information

DATA HUB

Documentation

Sample Data

To learn more about our focus in transport, or request additional support, reach out to:
NetworksProductTeam@os.uk