Stage 3 Network planning for cycling

Core design outcomes

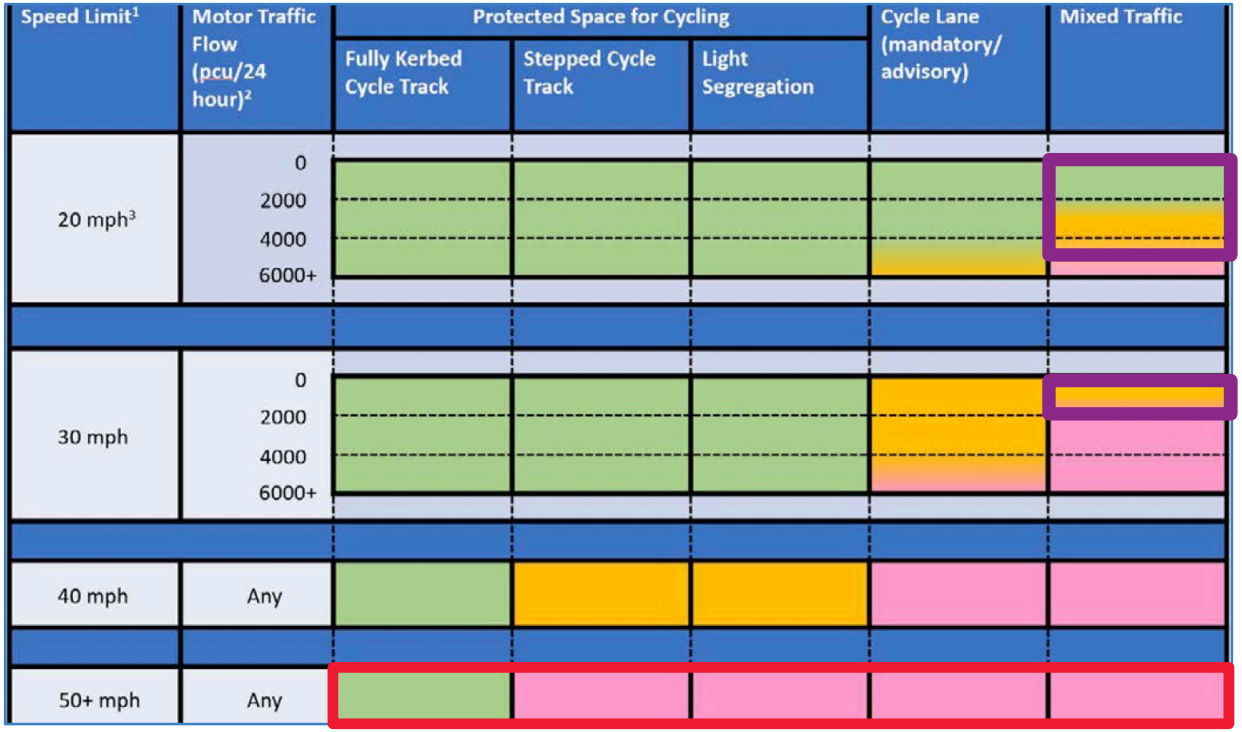
Local Transport Note 1/20 is the Government's published guidance setting out design expectations for fundable infrastructure for walking and cycling. Table figure 6 shows the circumstances in which cyclists should be separated from other traffic and where mixing is appropriate. Minor changes across parts of the existing road network would bring all the islands' roads up to a standard where safe and comfortable mixing is possible in low-traffic conditions, in accordance with LTN1/20.

Segregation of cycles from pedestrians will be considered where the existing off-road "Dump Path" is currently shared between pedestrians and cycles despite multiple inadequacies. This, together with the renewal and extension of roadside footways and improvement of selected unsurfaced paths and tracks will be the main investment in new infrastructure on the islands.

Network desire lines

A survey of residents was undertaken to identify key desire lines for cycling and the main trip origins and destinations. This shows the intensity of use of the various available routes on the island, helping to prioritise investment should there be a funding shortfall.

Route selection was not undertaken due to the small size of the cycling network and because very little investment is proposed for cycling specific infrastructure compared with walking across most of the islands.



Suitable for most people to cycle

Not suitable for many people and may exclude some who might otherwise consider cycling.

Not suitable for most people considering cycling

Indicates the current position with Island roads: without a 20mph speed limit or design speed, much more segregation would be needed.

Indicates the LCWIP's aim to make the island's roads safe and comfortable for sharing between drivers, pedestrians and cyclists without costly infrastructure.

Figure 6: Local Transport Note 1/20 Table 4.1 sets out traffic conditions dictating expected types of infrastructure provision.

Figure 7: Utility cycling network St Mary's Island

Cycling desire lines and trip generators have been established via an island-wide residents' questionnaire in which people were asked about their utility journeys on foot and by pedal-cycle. They were asked to identify a typical journey from home. The outputs show straight-line desire lines to specific locations and multiple destinations grouped together.

Identifying the routes people take will give a better idea of where to direct investment in the event of funding being insufficient to deliver the entire LCWIP programme.

Cyclists' network

Map figure 7 shows the extent of the cyclists' network on St Mary's. Only St Mary's has a Highway authority road network, which comprises a mix of surfaced and unsurfaced roads. The other islands typically have just one narrow, single-track concrete road each, typically traversing the length of each island with some spurs and loops. The narrow, single track roads are shared between all road users with passing places. These roadways are all privately owned by the Duchy of Cornwall (The Duchy).

Whilst private Duchy roads are not funded by the DfT, improvements to them have been highlighted in the LCWIP to assist the Duchy in making their own case for investment to improve their accessibility and safety.

Mesh density

An assessment of network mesh density and route selection was not undertaken because the network is very small with no candidate alternative routes except for two – a potential new link that connects Rocky Hill and Maypole, bypassing the steep gradients of Holy Vale on St Mary's and the narrow A3110 High Lane, and a new footway (and cycleway) 'behind the hedges' connecting Buzza Hill and Five Islands Academy. Assessing, designing and implementing these alternative routes would be subject to agreement from the landowner (most likely the Duchy of Cornwall) and / or their tenants.

Cycle network auditing: overall context

The auditing criteria set out below should be taken in context: the Scilly Islands has generally low volumes of motor-traffic, well below those experienced on equivalent mainland classified 'A' and 'B' roads and more like levels found on the mainland's unclassified local distributor and local access networks.

In general, with reference to LTN1/20, no special facilities are needed to assist cycles aside from localised measures to reduce vehicle speeds where the criteria for successful sharing are breached. Across the network it is not generally possible for drivers to exceed 20-30mph except on the A3110 to Telegraph and in a few other places where subtle physical interventions would be able to reduce traffic speeds by introducing 'friction'.

Furthermore, people tend to know each other: if someone causes a crash it is likely that the whole community will find out about it, and the victim may well be known to the injuring party. There is clearly a significant deterrent to bad driving – although, according to the Police there are, still, a few known bad drivers whose behaviour has resulted in cautions being issued.

Our assessment is based on the presence of traffic and existing features that encourage or enable cycling. The urban-oriented route selection appraisals suggested in the LCWIP technical guidance are not really appropriate to the islands' rural situation of low traffic levels and limited alternative routes.

The following scoring criteria have therefore been used and are drawn from a thorough inspection of the existing road network on St Mary's and the off-islands. The scores are represented on the maps to show where potential investment could improve conditions for cycling. More detailed appraisal was not considered necessary due to the small size of the island and low motor traffic levels overall.

Note: as there are no traffic counts, 'volumes' are subjective. There are areas that are clearly busier than others, and the network survey has been carried out at various times of day with different traffic levels. The confluence of roads also provides an indication of where volumes may be higher. A more accurate appraisal will be carried out at the concept bidding and more detailed feasibility design stages.

Within each band there is a three-point score (1-3, 4-6, 7-9) representing the low, medium or high end of the broad and subjective 'best / middling / low' criteria from which subtractions can be made to account for specific other considerations, including an outright 'fail' if there are overwhelming safety or other justifications.

Subjective scoring was undertaken by an experienced lifetime utility pedestrian and cyclist with over 20 years' experience as a planner and transport planner with an extensive understanding of infrastructure design, stakeholder engagement and Bikeability levels.

All links score the highest in the range for 'best', 'middling' or 'poor' with subtractions made for 'other considerations'. The scores are represented as lines on the map at figure 8.

Best (score 7-9)

Existing link has either:

- Existing suitability for cycles to share the carriageway with motors due to a low volume of motor traffic (for the islands) and estimated higher speeds of 20mph* or below (coloured green in LTN1/20 table 4.1), or
- Dedicated cycle track with separate carriageway and footway (not necessarily designed in accordance with LTN1/20), or
- Motor traffic speeds and volumes on highest volume roads is sufficiently low that pedestrians appear reasonably content to walk in the carriageway.

Middling (score 4-6)

Existing link has:

- Subjectively medium volume of motor traffic (for the islands) and / or estimated higher speeds of 30mph or below, and either:
- No dedicated cycle track – cycles share the carriageway with motor traffic, or
- Shared use path adjacent to the carriageway (not necessarily designed to LTN1/20).
- Where a dedicated track cannot be provided due to space constraints, speeds and traffic conditions are judged generally suitable for riders with Bikeability Level 2 off peak, due to low volume of motor traffic, and Level 3 during the peak.

Poor (1-3):

Existing link has:

- Estimated higher speeds exceeding 30mph, and / or
- The route is considered suitable only for cyclists withLevel 3 skills during peak and off-peak periods, or
- Route experiences significant conflict, eg between cycles, pedestrians and / or HGVs at peak times.
- Wholly inadequate shared use path.

Other considerations (noting subjectivity):

- Long, gradual gradient requiring lower gears, with a few steeper sections (subtract 1)
- Steep, short gradient requiring lowest gears (subtract 2)
- Blind summit or corner (subtract 2)
- Hazardous corners or sections where there are conflicts with oncoming traffic (eg narrowings) (subtract 2)
- Narrow / single lane carriageway with motor traffic capable of exceeding 20mph (subtract 2)
- Hazards from parked vehicles alongside kerb (subtract 1)
- Obscured junctions with a risk of drivers pulling out into path of cyclists (subtract 1).

Junctions

All junctions initially score the highest in the range for 'best', 'middling' or 'poor' with subtractions made for other considerations.

Best (7-9)

Junction:

- Provides full protection for cyclists making all turns (usually a signalised junction or a priority / mini-roundabout junction with a zebra crossing on all arms); or
- Has a continuous footway incorporating the cycle track; and
- Is tightly-defined and raised or otherwise designed to minimise turning speeds and give priority to people crossing in accordance with the new Highway Code.

Middling (4-6)

Junction:

- Is reasonably tightly defined, although it does not include a continuous footway. Any footway, cycle track, or cycle lane running across the junction bellmouth is made safer by the tighter geometry, and
- Is small and slow-speed enough that cyclists with Bikeability Level 2 skills can make safe manoeuvres through it in any direction.

Poor (1-3)

Junction:

- Has a wide bellmouth which enables fast turns, and / or
- Has poor visibility due to obstructions such as walls, hedges and parked vehicles, and / or
- Has no dedicated infrastructure to assist cyclists to use the junction without protection.
- Right turns and any other identified higher risk manoeuvres require skills at Level 3 Bikeability or above.

Other considerations:

- Cyclists are not assisted with making right turns by a turning pocket or similar (subtract 1)
- There is no facility enabling cyclists to turn right from the cycle track (subtract 1)
- There are identified risks associated with cyclists making right turns without protection (subtract 2)

Off-road network

Best (7-9)

- Existing route has:
- Hard, smooth or grippy surface (asphalt or concrete).
- Sufficient width to allow shared use (low peak demand); or
- Segregated provision for cycles and pedestrians (high peak demand).

Middling (4-6)

Existing route has:

- Variable but consistent hard macadam (compacted hoggin) or loose gravel surfacing quality to a reasonable standard.
- Insufficient space to allow segregated use but this is acceptable at times of low demand.
- Good sight lines with no tight corners.

Poor (1-3)

Existing route has:

- Undulating, poor surface throughout with trip hazards (rocks poking through, etc)
- Narrow, bendy alignment.
- Conflict points including tight, narrow corners.
- Poor sight lines.
- Non busy sections, no segregation of cycles and pedestrians.

An appraisal map has been produced as Figure 9.