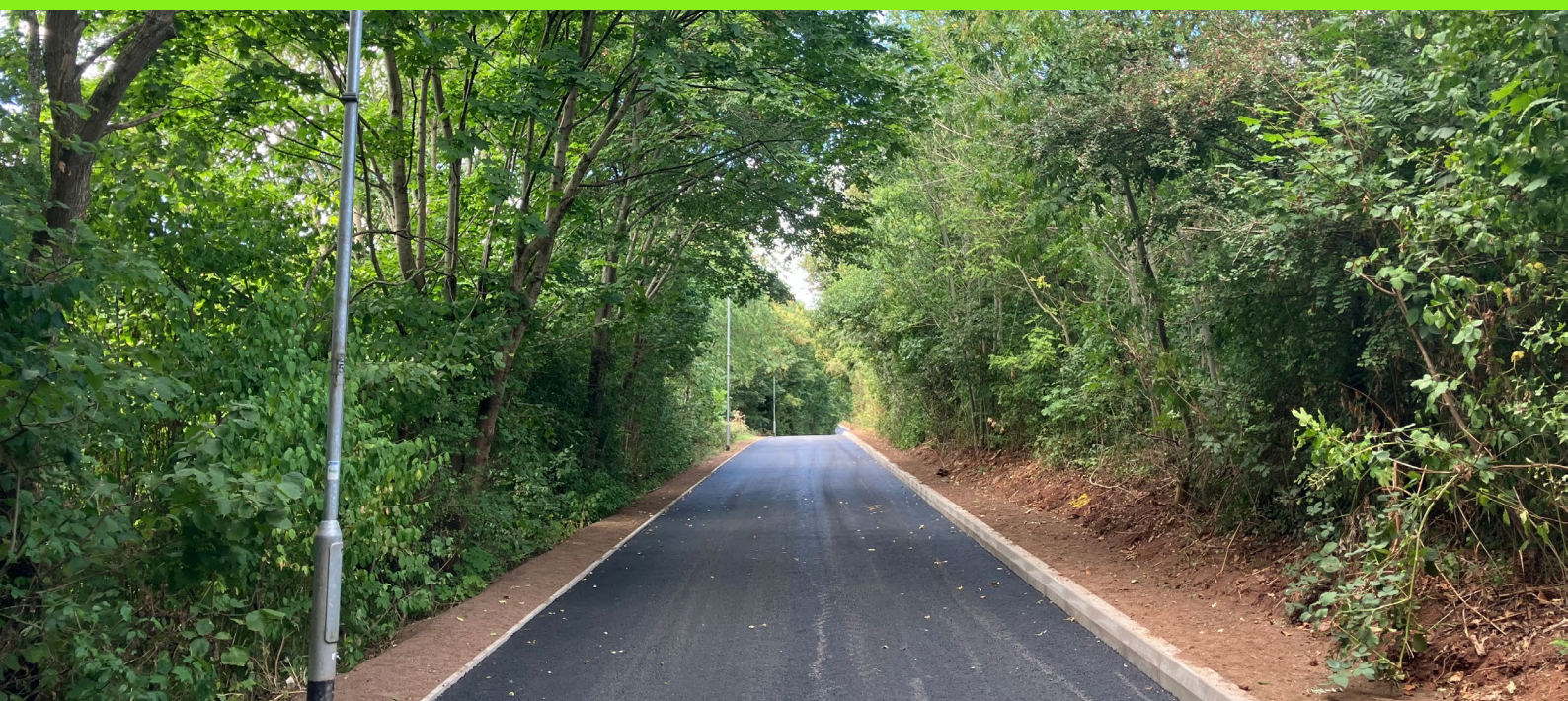




Active
Travel
England

Rural Design Guide



Case Studies

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Case Study

1. Keswick to Threlkeld Trail

Key elements

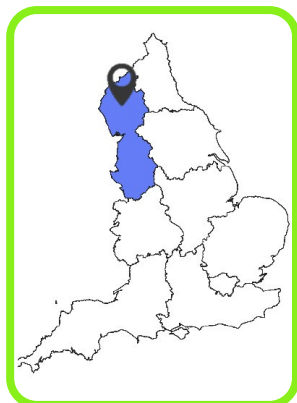
- effective engagement and collaboration with both stakeholders and landowners
- focus on improving the accessibility of the route
- managing high visitor numbers as a key regional attraction

1. Background

1.1 Context

The walking and cycling trail between Keswick and Threlkeld had been a long-standing walking and cycling link, attracting an estimated 110,000 visitors per year and forming part of the Walk Wheel Cycle Trust Sea to Sea (C2C) route.

The Cockermouth Keswick & Penrith Railway was built between 1862 and 1864, connecting the industrial centres of Workington in the west with Durham in the east, primarily serving mineral traffic.



It closed in stages up to 1972. The Lake District National Park Authority acquired the trackbed through the Greta Gorge and created a popular leisure trail.

In 2015 Storm Desmond brought catastrophic flooding. This washed away two of the original Victorian railway bridges that cross the River Greta, damaged another, and washed away around 200m of path. As some of the remaining structures were declared unsafe, the well used route between Keswick and Threlkeld was completely cut off.

Reconnecting the trail became a priority for the communities of Keswick and Threlkeld as well as to visitors and local businesses. With the support of partners and stakeholders, and funding from National Highways, the European Regional Development Fund and the Cumbria Local Enterprise Partnership, the Lake District National Park Authority was able to reconnect the path and improve its resilience against future flooding events. Today the path is popular with local residents and visitors alike.

Figure 1: Active travel bridge.



1.2 Scheme objectives

These were to:

- reconnect the communities of Keswick and Threlkeld with a high-quality walking and cycling route
- support the local economy by attracting visitors and encouraging local spend
- improve the accessibility of the route, with gradients and surfaces designed for all levels of mobility
- provide a sealed surface to ensure the route provides benefits throughout the year in all weathers
- develop a future-proof design that can withstand future flooding events and reduces ongoing maintenance liabilities

1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway	Shared	–	Leisure/utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

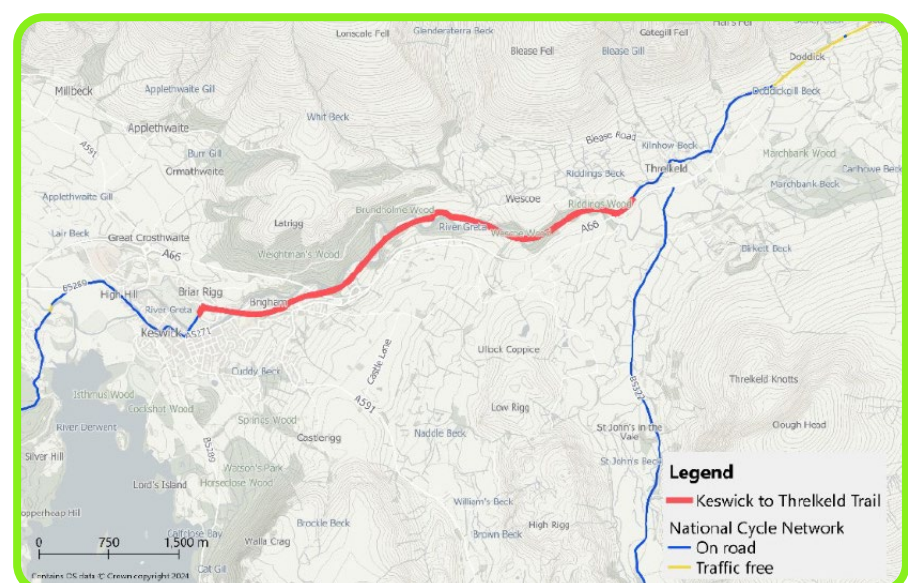
The trail provides the only off-road walking and cycling link between Keswick and Threlkeld, along a direct former railway alignment.

The route forms part of NCN 7 and is part of the popular 137-mile distance C2C route. During the closure of the path following the damage sustained in Storm Desmond, the diversion followed a series of hilly country lanes that bypassed the village of Threlkeld, severing it from Keswick and the wider network.

Future extensions to the route are being consulted on by the Lake District National Park to improve connectivity to Threlkeld, alleviate access issues at the trailhead and connect the route to NCN 6 in the south.

Figure 2: Wider cycle network.

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1.5 Key elements / design features

Length	5.1km (a link in a longer route)
Width	Over 3m
Shared/segregated	Shared
Surfacing material	Asphalt
Lighting	In tunnel only
Wayfinding	Walk Wheel Cycle Trust NCN wayfinding and a local trail identifier
Placemaking	Picnic benches, sitting posts, picnic areas, totem poles
Permitted users	Walking, wheeling, cycling

2. Planning and engagement

2.1 Overview

As the local planning authority and main landowner, the Lake District National Park was well placed to progress the scheme. However, an extensive engagement exercise was planned to ensure community buy-in and shape the design of the proposals.

2.2 Approval process/consents

Most of the land on the route was owned by the Lake District National Park from when the railway was closed, and the original trail was established. However, a small portion of the route required a diversion through private land, where a long-term permissive path agreement was sought. This process required extensive negotiation, with landowners concerned about pressure from significant visitor numbers and the risk to livestock from dog walking. Landowners were also subject to pressure from local residents who had concerns about the scheme.

Working with the Lake District National Park, an agreement was reached to mitigate these pressures through the addition of fencing and underpasses to allow livestock movements, securing an agreement for the long-term future of the path.

Key takeaway: A long-term permissive path agreement can be an alternative to land acquisition. Close engagement to understand the needs and concerns of a landowner is recommended to smooth the process.

As the local planning authority, the Lake District National Park was able to work closely with their planning team to ensure that the proposals met planning requirements and full planning permission for the route could be sought.

The River Greta that runs alongside the trail is a Site of Special Scientific Interest (SSSI). This required close engagement with the Environment Agency and Natural England to ensure both construction and the day-to-day use of the trail would not negatively impact the delicate ecology of the river. The trail also runs through an important red squirrel habitat, and there were concerns that increased footfall could disturb them. The population of red squirrels along the trail has been closely monitored by a local red squirrel volunteer group. Other environmental mitigations included the planting of 35 oak saplings alongside the existing oak woodland, to diversify the mixture of tree ages and help provide valuable habitats and food sources for many insects, birds and other animals, including the iconic red squirrel.

Figure 3: Damage to the Keswick to Threlkeld Trail from Storm Desmond.



2.3 Engagement

In addition to the statutory consultation required as part of a full planning application, an additional consultation exercise was held to demonstrate public support for the proposals. The four preferred route options identified in the Options Appraisal were presented to the public. These included routes that diverted from the former railway line, were partly on highway and had more challenging gradients. All consultees supported the current route.

The main issues raised during the consultation were linked to the surfacing material and the management of visitor numbers. This feedback ultimately shaped the approach the Lake District National Park took to the design, before submitting proposals for full planning permission.

During the construction phase of the project, further engagement took place, with regular focus groups held to gather input on design details from the local community. This included the design of access points, seating areas, rest stops and how best to bring the trail to life without detracting from the natural beauty of the route.

Key takeaway: Ongoing engagement, even once construction has started, can help the community have ownership over a scheme.

The end result was a scheme that had public buy-in and a design that was shaped to meet the needs of the local community.

3. Design

3.1 Overview

Once approved, the final route design included the:

- rebuilding, repairing and resurfacing of 5km of trail
- reopening and extending of the Bobbin Mill Railway tunnel
- construction of two new bridges
- extensive repair/reconstruction of a third bridge
- 200m of new path
- stabilisation of the riverbank and flood resilience measures
- on-site interpretation project and information panels

The design had to be sensitive to the industrial heritage of the area. This included paying homage to the railway line that ran along the trail, retaining key heritage assets and contextualising the landscape with information boards.

3.2 Links

A 3m wide path was provided as a minimum through the entire route, with wider widths provided closest to Keswick where demand is greatest. Although a shared path was chosen, it provided a comfortable width for cyclists to pass pedestrians and other users safely. This combined with a 'Share with care' message has reduced conflict between users since the path reopened.

Key takeaway: Providing a suitable width to cater for anticipated demand is key to reducing conflicts on shared use paths.

Figure 4: Keswick to Threlkeld Trail was designed to be accessible to users of all mobility levels.



Asphalt surfacing was provided along the new route, which was important to ensure the route was usable year-round in all weathers and accessible for all mobility levels. Although concerns were raised during consultation that surfacing the trail would have an urbanising effect on the landscape, given the railway context of the trail (through cuttings and a tunnel), a sealed surface was judged to have a low visual impact on the landscape. Additionally, the use of asphalt reduced the ongoing maintenance liability to Lake District National Park compared to an unsealed surface.

3.3 Flood mitigation

A key objective of the scheme was to improve the resilience of the trail against future weather events. Given the delicate ecology of the river, soft engineering measures were used in addition to raising the height of the trail, to provide natural habitats while reducing flood risk.

Riverbank reinforcements used a geo-mesh made from hessian materials laid on topsoil and seeded to promote vegetation growth, which will stabilise the bank. The brush bundles soften the energy of the river and prevent further bank erosion.

Figure 5: Riverbank protection.



3.4 Accessibility

Inaccessible access controls at trailheads have been avoided. Bollards that are appropriately spaced to allow access by cycles, wheelchairs and pushchairs are instead used to control access to the route.

Other barriers to accessibility have been addressed, such as the approach to tackling steep gradients. Whereas the previous trail descended along a direct path down an embankment from the A66, the reconstruction of the trail offered the opportunity to provide a more accessible routing. A zig-zag path was devised that provided a gradient that met LTN 1/20 and Inclusive Mobility standards and allowed for the planting of trees to help stabilise the alignment. This ensured the entire route could be step-free and wheelchair accessible.

Figure 6: Zig-zag path to reduce steep gradient to A66.



The use of asphalt as a surface material throughout also provided a smooth and level surface that was accessible for walking and wheeling.

Key takeaway: Establishing accessibility as a priority and objective early during scheme development ensured that design decisions aligned with the aspiration for a fully accessible route.

3.5 Lighting

During design, outside the tunnelled sections, lighting was not considered suitable for the route. This aligned with feedback shared during the consultation, that development of the route could have an urbanising impact on the valley.

However, once the route had opened, Keswick Town Council requested that lighting be considered for the section of the route that ran through the town.

This would connect schools located along the route and allow children to travel independently year-round. At the time of writing, provided agreement with the Lake District National Park Authority is reached and the funds are found, then the local council could explore introducing a lighting design sympathetic to wildlife habitat and light pollution.

3.6 Wayfinding

Walk Wheel Cycle Trust wayfinding for the NCN is provided throughout the route, in particular aiding long-distance cyclists on the C2C route.

In addition to this, the trail has developed a distinct local brand, including a logo that features on information panels and way markers along the route. The new logo consists of a native water crowfoot flower and a railway wheel, which blends local flora and fauna, gives a nod to railway engineering and depicts a place where nature and heritage thrive.

Figure 7: Local trail identifier.



3.7 Placemaking

As a leisure route supporting the local tourism industry, it was important the design established the route as a destination in its own right, as well as a key connection between settlements.

Seating was an important way to improve the accessibility of the route to all ages and mobility levels, and to also to make the route welcoming to families. Seating options included benches, sitting posts and picnic areas.

Along the route comprehensive on-site interpretation boards were installed, providing context on the National Park local history and heritage story of the trail, while also giving information on local wildlife, flora and fauna. These boards incorporate the history of the railway and have been popular with visitors and families. Adding interpretation such as this is helpful to establish the route as a destination/ attraction in its own right, and building a strong brand identity for the route.

3.8 Visitor management

Given the popularity of the trail, it attracts visitors across a broad catchment, many of whom arrive by car. At Keswick the trail connects directly to the town centre, and there is a limited amount of on-street pay and display parking to accommodate visitor numbers. At Threlkeld the route connects to a rural lane, where NCN 7 continues towards the village centre. The lack of trailhead facilities at this end has created issues with parking and litter. Future plans to extend the route would allow the trailhead to be sited at a more suitable location and visitor impacts to be managed.

Lessons learnt: Visitor management is key not just to reduce the impact of a scheme, but to secure local consent and buy-in, as impacts from visitor numbers was the main objection from the community consultation and has presented some ongoing issues. Facilities such as parking, toilets, and regular litter collection are all ways visitor numbers can be managed.

4. Delivery

4.1 Partners and roles

The Lake District National Park Authority led the project with support from funding partners that included National Highways, the European Union, Cumbria Local Enterprise Partnership and Lake District Foundation.

Construction was undertaken by Capita and Cubby Construction, who are a local firm in the Lake District. This enabled the scheme to provide lasting economic benefits through local employment and skills opportunities, while reducing some construction costs.

4.2 Funding

Funding partner	Funding (£m)
National Highways	3.8
EU European Regional Development Fund	3.5
Cumbria Local Enterprise Partnership	0.30
Lake District Foundation	0.13
Total	7.90

Almost half of the £7.9 million budget was secured from National Highways. This came from a fund focused on providing environmental, social and economic benefits to the people, communities and businesses who live and work alongside their Strategic Road Network. By reducing the number of pedestrians and cyclists using the busy A66 road which runs parallel to the route, the scheme was also judged to have road safety benefits for the Strategic Road Network.

“As part of our ongoing commitment to giving cyclists and pedestrians a better deal along our major A roads network, including the A66, we were delighted to be able to provide almost half the money needed to restore and enhance the link between Keswick and Threlkeld.”

Bruce Parker, National Highways, Head of Planning and Development North West

Just over £3 million of the budget was secured from the EU European Regional Development Fund, with this funding application focused on the benefits of the scheme on the local economy and facilitating a modal shift in the tourism industry in the Lake District.

Given the value of the route to the local economy, the Cumbria Local Enterprise Partnership, representing businesses across the region, also contributed £300,000 towards construction.

Additionally, the Lake District foundation led a fundraising campaign which was supported by the local community. Businesses, residents, visitors and organisations all played their part in raising money through everything from duck races to online auctions.

“The community fundraising campaign raised an incredible £130,000. We were thrilled to have had so much support from the local community, businesses, residents, visitors and organisations; everyone played their part to make it happen.”

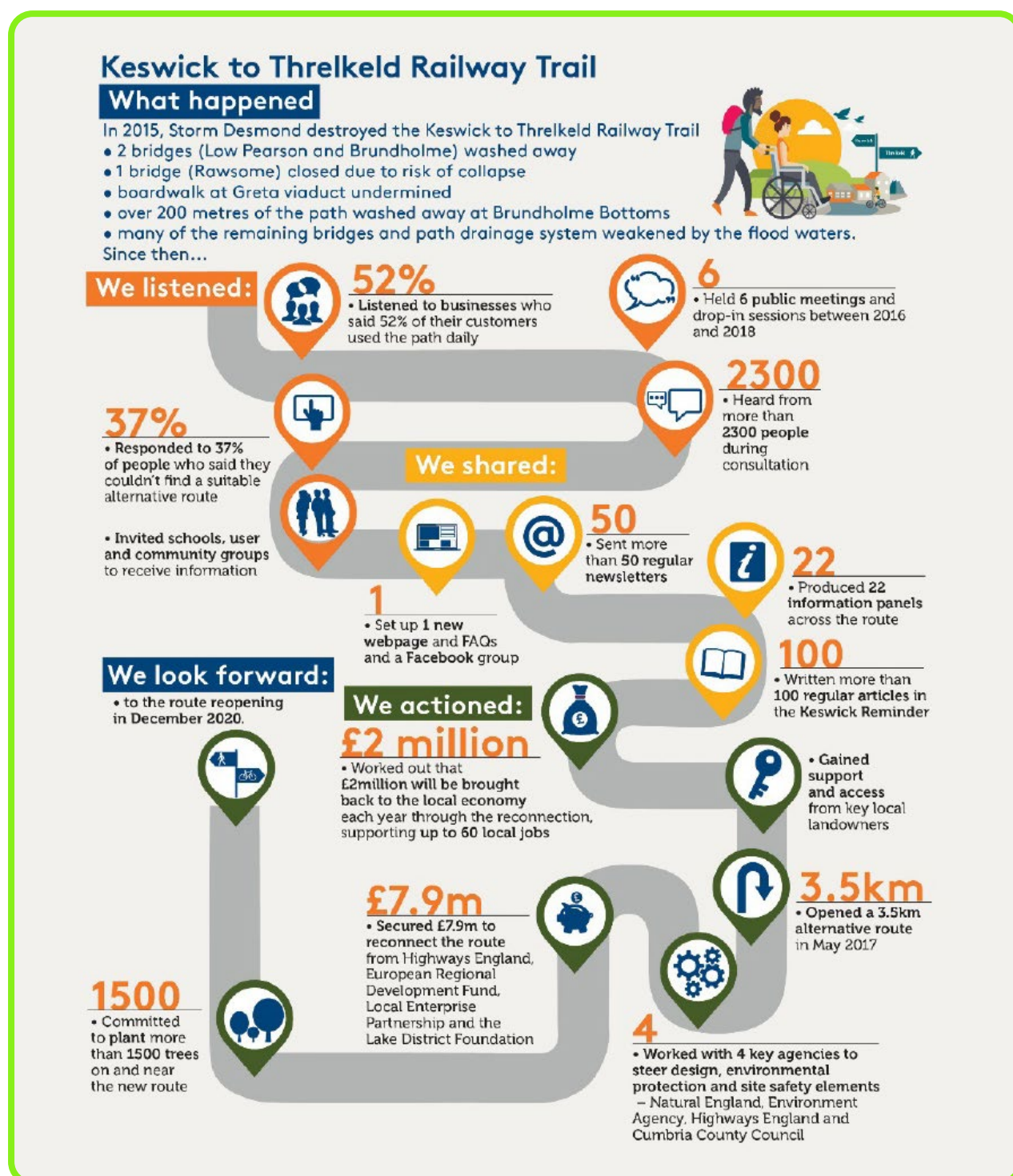
Sarah Swindley, Lake District Foundation CEO

When applying for funding, the large pre-existing tourism and leisure market in the Lake District made building a robust business case for investment easier, with the scheme earning a high benefit cost ratio.

4.3 Delivery timescales/phasing

Following the damage from Storm Desmond in 2015, the route took five years to complete and opened fully to visitors in December 2020. Despite the challenges presented with constructing during Covid-19 social distancing measures, the scheme was opened on time, with the Keswick section opening first.

Figure 8: Project development timeline.



4.4 Maintenance

No funding was set aside for ongoing maintenance as part of the secured capital funding settlement, with ongoing revenue spend met through Lake District National Park maintenance budgets. Given the pressures on these budgets, the design was future-proofed as much as possible to minimise maintenance liability, and long-lasting materials were selected.

The route is swept yearly by contractors working for the Lake District National Park Authority to keep it clear of leaves, vegetation and other obstructions.

In addition to this scheduled maintenance, a local volunteer group meets regularly to support the maintenance of the path by conducting minor works, vegetation clearance, litter picking, and advising and helping visitors.

Although the asphalt surface does suffer from ice/frost on some days in winter months, de-icing is not considered suitable from both a cost perspective and the impact de-icing chemicals/salt would have on the delicate ecology of the River Greta. Given the benefits an asphalt surface has for all-weather access at other times of the year, this is considered to be a suitable trade-off.

5. Outcomes

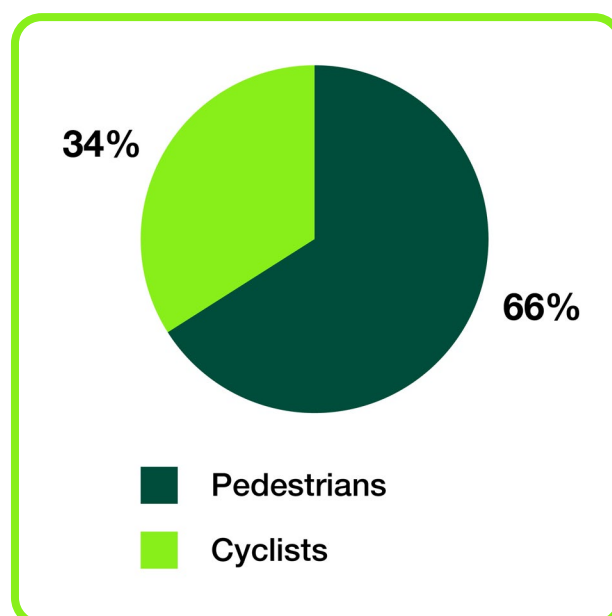
5.1 Overview

The trail is one of the most popular active travel routes in the area, with very high levels of usage from residents and visitors. As a result, the reopening of the trail has had significant economic benefits to the local economy, with high levels of spend from visitors. The trail plays a key role in providing access to the Lake District's natural beauty in a sustainable way, accommodating visitor numbers and managing their impacts.

5.2 User outcomes

In 2022, 537,443 journeys were recorded on the trail. A high proportion of journeys are undertaken by cyclists, with a third of journeys on the trail recorded by bike.

Figure 9: User mix on the Keswick to Threlkeld Trail.



The trail is very popular with visitors, with 78,000 estimated to be visitors staying overnight in the local area. Of visitors interviewed, 90% rated their experience as 'Very Good' and 70% said they would visit the trail again.

The trail has also been successful in encouraging more sustainable tourism, with 12,200 journeys made on the trail that otherwise would have been made by road.

The route is also a popular parkrun course, attracting over 400 runners in the summer months. As a result, it has become an important route for physical exercise and wellbeing, with 97% of users interviewed stating they felt better after using the trail.

The trail has also become an important connection for the local community, particularly within Keswick where it provides a safe active travel route to local schools adjacent to the route. Since the route opened, a ramp has been added to provide a more direct link to one of the schools.

The route is also used by commuters, providing sustainable travel alternatives to those working in the local hospitality and tourism industry. Surveys estimate that 3,244 annual journeys are linked to travel to and from work.

5.3 Strategic narrative

Before the route was reconstructed, it was estimated that the trail had a £2 million value to local economy. Subsequent surveys have shown that day visitors to the trail spend a total £1.9 million a year in the Lake District (£15 per visitor) and staying visitors £10.4 million (£132 per visitor). This means that visitors to the trail have a cumulative spend of £12.3 million a year in the local economy. While not all of this spend can be attributed to the trail, as a key local attraction it provides access to the National Park's natural beauty in a sustainable and managed way.

Much of this spend is concentrated in local businesses, with many trips on the trail towards Threlkeld finishing at the local pub or café. Without the trail, the only way for visitors to access these businesses would be by road.

The sealed asphalt surface ensures that the benefits of the trail are realised all year and reduces the seasonal variation in visitor numbers seen on other trails. This supports a more sustainable and year-round economic model for the local area.



Case Study

2. St Peter's Greenway



Key elements

- effective collaboration with landowners on agreeing a mutually beneficial arrangement
- focus on connecting new developments with destinations
- managing archaeological constraints and mitigating flood risk

1. Background

1.1 Context

The St Peter's Greenway provides a traffic-free active travel route between two new developments (Berryfields and Buckingham Park) on the urban fringe of Aylesbury. These new-build developments are now connected by a year-round active travel route that is resilient against flooding and links them to the wider Aylesbury active travel network.

This has provided a step change in provision, creating an alternative route to the river path to the south which experiences frequent severe flooding events, and a shared-use path to the north, which provided no buffer from the high-speed 50mph road.

Sited in a high flood risk area, the route was designed to be resilient against flooding events, while also being careful to not disturb the archaeological site linked to the ruins of a 13th-century chapel and the former medieval village that the route runs through.

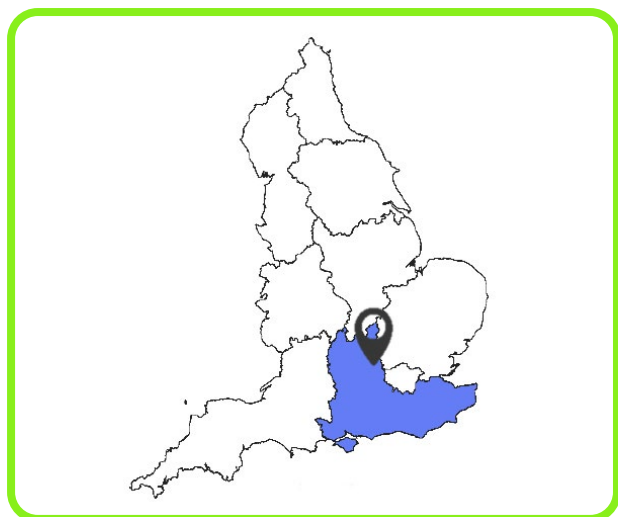


Figure 1: St Peter's Greenway provides a year-round facility for leisure and utility journeys.



1.2 Scheme objectives

The scheme aimed to connect two developments that lacked an attractive, year-round active travel route.

The route was seen as crucial in ensuring that residents of the developments have access to sustainable alternatives to the car, and leisure and recreational routes within walking distance. Other aims were to reduce congestion on main roads into Aylesbury and improve air quality, enhance access to Aylesbury Vale Parkway station, and support longer-term ambitions for an 18km orbital Aylesbury Gardenway.

1.3 Scheme typology

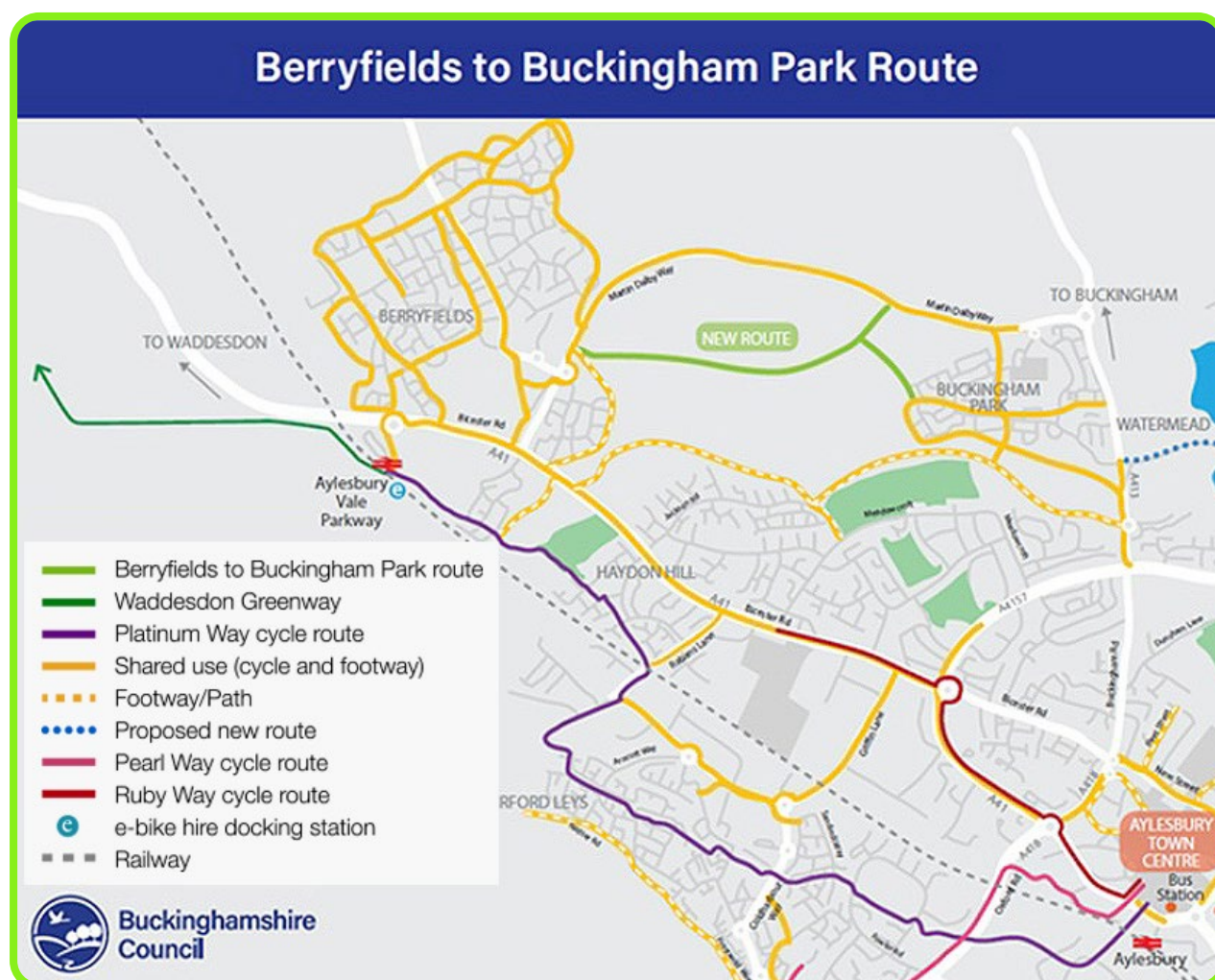
	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	–	–	–	–
Village/market town	–	–	–	–
New development	Off-highway	Shared	–	Leisure/utility
Public transport corridor	–	–	–	–

1.4 Network connectivity

Established as a cycling demonstration town in 2005, Aylesbury already has a well-developed cycle network, mainly centred around radial links into the town centre.

The proposed greenway links the Buckingham Park development to Aylesbury Vale Parkway station, allowing residents to access public transport by walking or cycling. Beyond Aylesbury Vale Parkway, the Waddesdon Greenway provides onward traffic-free routes to Waddesdon and the Manor, with shared-use facilities providing connections into Aylesbury town centre.

Figure 2: Wider cycle network.



1.5 Key elements/design features

Length	1.7km
Width	3m
Shared/segregated	Shared
Surfacing material	Asphalt
Lighting	Solar studs
Wayfinding	Local wayfinding
Placemaking	Picnic benches, planting
Permitted users	Walking, wheeling, cycling

2. Planning and engagement

2.1 Network planning

The Aylesbury Local Cycling & Walking Infrastructure Plan (LCWIP) and Aylesbury Transport Plan set out how new neighbourhoods in the county town, such as Berryfields and Buckingham Park, are to be effectively integrated and connected. It outlines a greenway route between these two developments, to connect with the wider Aylesbury cycle network.

An important Aylesbury Garden Town aspiration is the provision of an 18km orbital park around Aylesbury called the Aylesbury Gardenway. This will provide a green corridor and accessible radial walking, cycling and wheeling connections around Aylesbury, allowing for the sustainable growth of the town.

Figure 3: Aylesbury Gardenway shown in the Aylesbury Garden Town Masterplan.



2.2 Approval process/consents

Much of the land the route runs through is owned by Buckinghamshire Conservation Trust. An agreement with the Trust was reached to use their land for the route, with the land licensed from the Trust and established as a formal PRow to secure its long-term future. In addition to the PRow designation, Buckinghamshire Council secured a permissive agreement with the Trust to allow cyclists to use the path.

Although most of the route was owned by the Trust, the land was leased by a tenant farmer, who used the fields for livestock grazing. Working with the farmer, the Council made changes to the route design to facilitate livestock movements between fields and to install boundary fencing, while providing a barrier-free route for walking and cycling. The end result was a design that provided benefits to all parties and ensured that concerns were addressed before formal consultation.

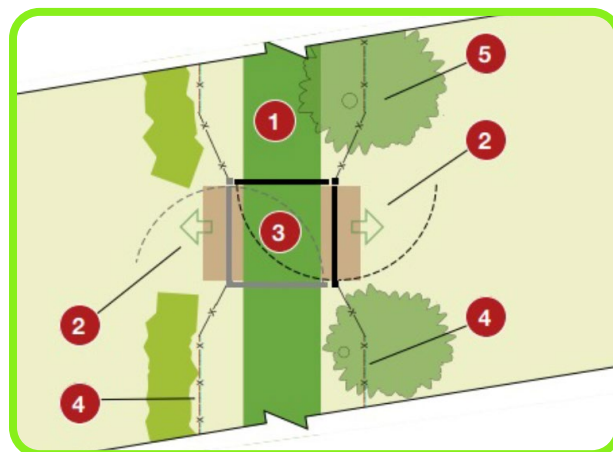
“The Trust involved its farmer and together with Greenways and Cycleways we planned how a cycleway could be constructed through the middle of a site with diverse interests and how when completed the site would be protected enabling grazing to continue unimpeded whilst allowing the free flow of pedestrians and cyclists.”

“The Trust feels that this was achieved and by the use of gates we are able to close the cycleway whilst driving sheep through in safety.”

Michael Woods,
CEO Buckinghamshire
Conservation Trust

Key takeaway: Working collaboratively with tenants/landowners to ensure a design works for them, can reduce opposition to a scheme without compromising the benefits of a route.

Figure 4: Design of one of the gates used to maintain livestock access to grazing fields.



One major challenge the scheme faced was securing the approval of the Environment Agency (EA) during the planning phase. The route passes through a high flood risk area, which meant the EA needed assurances that the scheme would not worsen local flooding or reduce the efficacy of the flood plain. Alterations were made to drop the level of the path from the height planned in original designs. Although this increased vulnerability to flooding events, it minimised impacts to the project programme that would have breached timescales required to access funding. The path remains resilient against all but exceptional flooding events.

Lesson learnt: Early engagement with planning authorities can identify risks to the project programme, allowing these to be managed and considered at an early stage of the project.

Figure 5: Flooding in Buckingham Park.



In addition to approval from the EA, a Natural England wildlife licence was also required for the scheme, to manage impacts on local wildlife.

2.3 Engagement

A statutory consultation was undertaken as part of the planning process. However, informal consultation with parish councils and local members ensured that concerns were addressed in the designs, and no major objections were raised as part of this informal process.

3. Design

3.1 Overview

The path was mostly built through fields, with a small section utilising an existing path. However, for the majority of the route a new sealed surface was constructed.

The route is direct, and is the shortest walking and cycling route between the two developments. Sufficient width to avoid conflict between users is provided throughout, with a number of resting points provided.

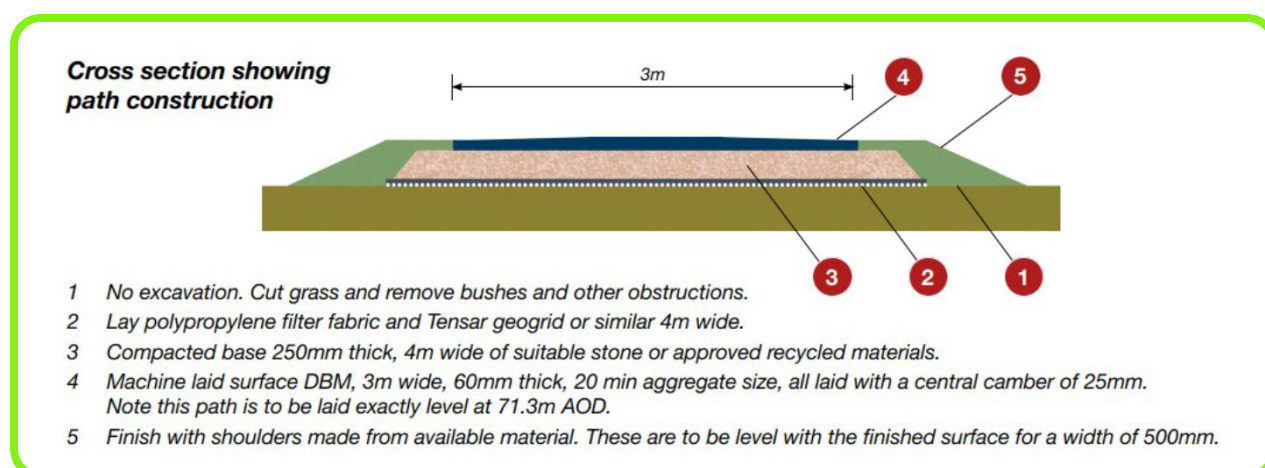
The design included:

- 3m shared-use path, raised where possible above the flood plain
- boundary fencing
- gates to provide livestock access to fields
- solar stud lighting
- nested picnic benches
- information panels

3.2 Links

The path was constructed with a machine-laid dense bitumen macadam (DBM) sealed surface, to provide a year-round weatherproof route. A 3m-wide path was designed to accommodate the anticipated demand and reduce conflict between users.

Figure 6: Cross section of path subsurface and construction methodology.



Archaeologists were consulted to provide input into the construction methodology, given the route passes through the ruins of a medieval settlement. Combined with an oil pipeline that also dissects the route, a non-invasive construction methodology was developed to minimise disruption to the ruins or the pipeline.

Figure 7: St Peter's Chapel ruins.



3.3 Junctions and crossings

Although traffic free, the route interfaces with a high-speed road (Martin Dalby Way), which has to be crossed to access the Berryfields development. This is currently achieved with an uncontrolled crossing with dropped kerbs, although the council are considering the merits of a controlled crossing to improve safety for path users as part of a future project.

3.4 Flood mitigation

A key objective of the scheme was to improve the resilience of the trail against future weather events, given the susceptibility of the alternative river path to flooding. The alignment was chosen as it was sited at the high watermark of major flooding events. By also constructing the path up to 300mm above existing ground level, the council could ensure that the path remains dry in almost all circumstances and construction will not interfere with any archaeology.

The volume occupied by the raised path was partly balanced by a shallow scrape lowering the ground by 300-400mm further to the north in Avenue Field, to avoid the path reducing the capacity of the flood plain to absorb flooding events. The material excavated was used to fashion a low planted bank higher up along the path near the hedge to Paddock Field.

3.5 Accessibility

Inaccessible access controls at the path entrances have been avoided, with a single bollard placed at the centre of the path instead used to control access to the route. This ensures there is sufficient space either side of the bollard for wheelchairs, pushchairs and non-standard cycles to use the route.

3.6 Lighting

Due to the rural context, the path was not lit with conventional street lighting but was instead set with 158 central solar-powered LED lighting units. The shared-use path on the highway provides an alternative route, should users prefer to avoid the greenway in darkness.

Figure 8: Solar stud lighting on St Peter's Greenway at dusk.



3.7 Wayfinding

Directional signing follows Gardenway standards, to ensure the route is cohesive as further sections of the Gardenway are developed. Information boards have been erected at the start and end of the path, and a third board is located near the St Peter's Chapel ruins to provide historical and local context to users.

3.8 Placemaking

Some seating has been provided at locations where there is a viewpoint, or where users would be expected to stop. These have been designed as nested benches, successfully used by Buckinghamshire Council on the Waddesdon Greenway.

Key takeaway: Creative seating solutions such as nested benches can be an important placemaking feature on a route, while also being functional and accessible to all users.

Figure 9: Nested picnic bench on the St Peter's Greenway.



4. Delivery

4.1 Partners and roles

The project was led by Buckinghamshire Council, working in partnership with Greenways & Cyclerroutes, a charity with experience delivering new active travel routes across the country. The principal contractor for the construction of the project was Hazell & Jefferies Ltd, who are based close to the route. Buckinghamshire Council also worked closely with the Buckinghamshire Conservation Trust, the landowner of most of the route, and with their tenants to ensure the design worked for them.

4.2 Funding

Funding partner	Funding (£000s)
Developer Section 106 contributions	285
Cycle rail fund	72
Aylesbury Land Use and Transportation Strategy funding	40
Total	397

Most funding for the scheme came from Section 106 contributions from the developers of the Berryfields and Buckingham Park developments. This funding had been secured some time ago and had been set aside for the purposes of delivering the greenway.

In addition to developer funding, Chiltern Railways helped to secure further cycle rail funding from the Department for Transport. This required a robust case as part of the application process. The funding bid focused on how the route would improve access to Aylesbury Vale Parkway Station, particularly from areas of Aylesbury with higher levels of deprivation.

The Council also contributed some additional funding from a funding pot dedicated to the delivery of the Aylesbury Land Use and Transportation funding.

Feedback from Buckinghamshire Council officers is that they have struggled in accessing funding pots which rely upon a demand-led business case, as anticipated demand levels tend to be low in many of the areas where greenways are being considered.

Therefore, developer contributions and other funding sources are an important way for them to fund the delivery of their greenway network.

4.3 Delivery timescales/phasing

The project was constructed in just six weeks, opening ahead of schedule in October 2022. It was opened as one phase, with minor works such as signing of the route and planting of hedges and trees taking place after opening.

4.4 Maintenance

The path is constructed to a high standard with a sealed surface and it is not expected to require significant maintenance in the medium term. The principal maintenance effort will be to manage the grass verges either side of the path to care for the hedges and trees as they get established. The ongoing management of these will adopt the Council and the Conservation Trust's policies. This work is undertaken by the Parks Department at the Council, as an integral part of their management of the green and open spaces across the whole town.

New dog waste bins have been placed at either end of the path and are emptied by the Council's contractors.

As far as possible, the Council hopes that a network of volunteers fostered by the Conservation Trust will be encouraged to take over the stewardship of the greenway, and to help support with litter and minor obstructions such as brambles encroaching.

Key takeaway: The use of volunteer groups can be an alternative way to manage a route, allowing the community to take ownership of a path and support the council with minor maintenance tasks.

Figure 10: Planting on St Peter's Greenway.



5. Outcomes

5.1 Overview

The finished route has become a well-loved active travel link, connecting the two communities and acting as a key leisure asset, improving access to the medieval landscape and church ruins. Looking forward, it will one day form part of an 18km orbital Gardenway route, connecting new developments on the outskirts of Aylesbury.

5.2 User outcomes

The route has been well-received locally and has established itself as a key link in Aylesbury's cycle network. In the first full year following opening, 53,436 people were recorded using the route, with average daily use of 145 users. Use is higher at weekends, which reflects the recreational nature of the route.

The route also forms a key connection to both Buckingham Park School and the Aylesbury Vale Academy, which are sited at either end of the route. The new greenway has provided a safe active travel link for residents in both developments to travel to school. To help promote the route and encourage its use on the school run, a competition is being held for students at Buckingham Park School to chalk a design on the greenway. This allows the local community to take ownership of the route and capture the local identity in the designs.

5.3 Strategic narrative

The greenway extends the value of already completed paths in Buckingham Park and Berryfields, by opening them up to longer trips with many popular and everyday destinations. The path provides access to Aylesbury Vale Parkway Station which, in addition to serving London Marylebone, will soon provide passenger services to Milton Keynes. The route connects to other completed greenways, making it possible to walk and wheel through to Waddesdon, Calvert and Steeple Claydon to create a range of opportunities for car-free leisure trips to the north of Aylesbury.

The route has also embedded sustainable transport as a viable alternative to the car, by providing a step change in provision between the two developments.

“Before the opening of this Greenway, you only had the choice of using the shared path running next to Martin Dalby Way – which is a busy road – or using a path by the River Thame which was prone to flooding. Now this wide path with its hard standing and gentle gradient is a much more attractive and accessible proposition for walking, cycling, and wheeling.”

Steve Broadbent, Leader of Buckinghamshire Council

Although the path has proved popular with local residents, a lack of baseline monitoring data means it is not possible to calculate an uplift in trips attributable to the path. This is data that Buckinghamshire Council officers have said they would look to collect for future schemes.

Lesson learnt: Baseline data would have been helpful to demonstrate the uplift attributable to the construction of the greenway. This would be useful evidence to include in funding applications for future routes. One way this could have been collected is by requiring developers to conduct surveys upon occupation of their development.

Case Study

3. A27 East of Lewes

Key elements

- accelerated process from inception to delivery and use of compulsory purchase powers
- incorporating active travel infrastructure as part of a wider road capacity upgrade
- innovative approach to quantifying route benefits

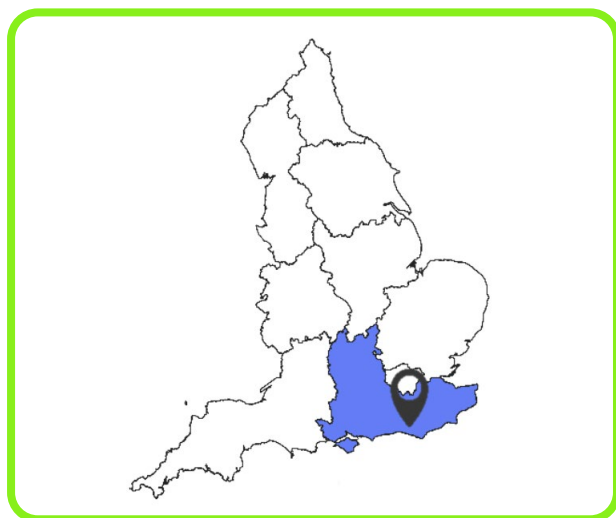
1. Background

1.1 Context

The A27 to the east of Lewes suffered from long-standing issues of congestion due to a narrow carriageway and low capacity at junctions. There were limited overtaking opportunities, meaning that traffic regularly queued behind cyclists and other slow-moving vehicles.

In 2020, National Highways began construction on a package of interventions to improve journeys for everyone, including walkers, cyclists, and horse riders. One of the schemes selected as part of this programme was a new off-highway walking and cycling route that is protected from traffic.

The new 13km (9 mile) shared-use footway/cycleway is set behind the tree and hedge line, providing a buffer from traffic noise and pollution, while enhancing access to the South Downs National Park (SDNP) by sustainable means. Coupled with crossing improvements and junction upgrades, the programme looks to reduce collision risks, whilst addressing severance through the SDNP.



1.2 Scheme objectives

The objectives of the scheme were set out in the initial consultation in 2016. These objectives were targeted at addressing the issues identified with the A27 in early feasibility studies, and were to:

- smooth the flow of traffic by improving journey time reliability and reduce the average delay on the section of the A27 east of Lewes through small-scale interventions
- support modes of travel and behaviours that minimise traffic and congestion. Support sustainable travel routes promoted by South Downs National Park Authority and East Sussex County Council
- reduce annual collision frequency and severity ratio. Improve the safety and personal security of travellers along the section of A27 East of Lewes for all and provide safer roads that are resilient to delay
- reduce severance for local communities, provide better access to services and facilities, and improve access for businesses along the corridor. Provide opportunities for improved accessibility for all users into the SDNP
- deliver a high standard of design for any improvement that reflects the character of the route and its setting alongside the SDNP, which is a nationally designated landscape of the highest quality. Minimise impact on natural environment of new construction and optimise environmental opportunities and mitigation

1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Highway adjacent	Shared	–	Leisure/utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

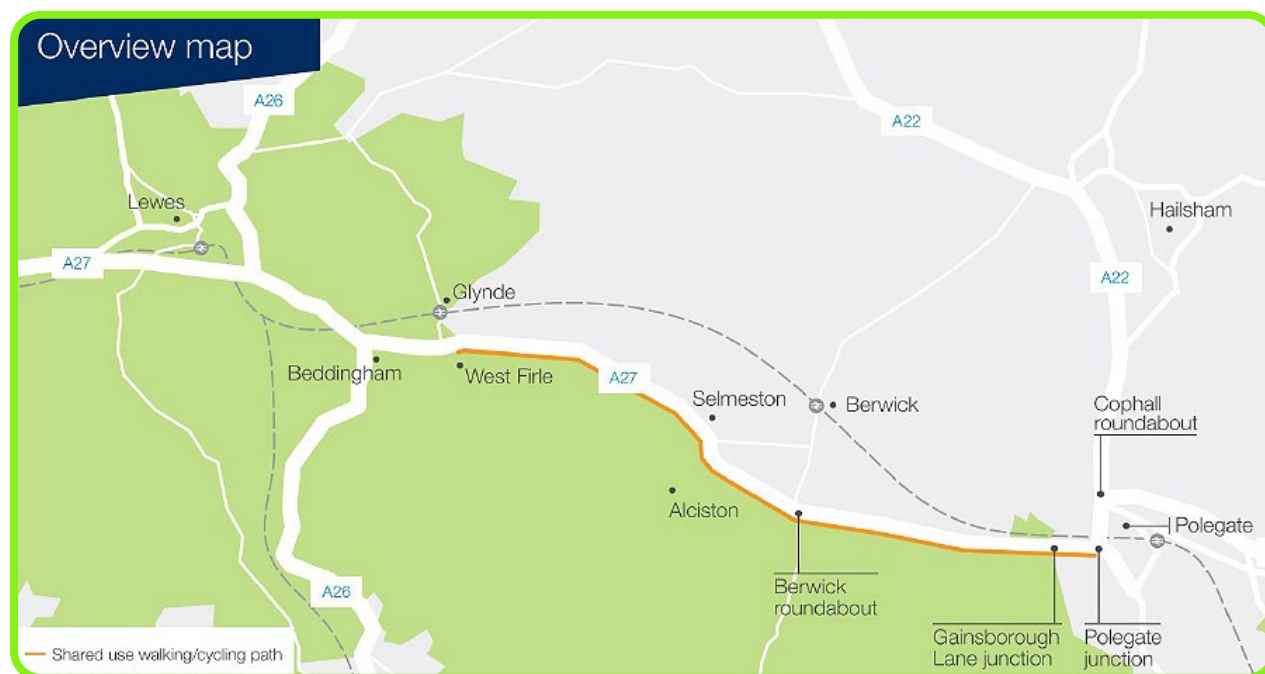
1.4 Network connectivity

The A27 is the main east-west spine through the SDNP, connecting Lewes and Polegate. With no alternative east-west routes, the A27 represents the only vehicle, cycle and pedestrian route between Lewes and Polegate.

The scheme connects to the existing cycle network at West Firle, where the cycle route follows rural lanes and existing shared-use paths towards Lewes.

The route also crosses (and for a time parallels) NCN 2, which forms part of the Avenue Verte London–Paris cycle route. The A27 pedestrian and cycle path provides a year-round sealed surface and a direct alternative to NCN 2, which uses an unsurfaced track for long sections of its route.

Figure 1: Walking and cycling route alignment.



1.5 Key elements/design features

Length	13km
Width	3m
Shared/segregated	Shared
Surfacing material	Asphalt
Lighting	At junctions and crossings
Wayfinding	Local cycle wayfinding signage
Placemaking	None
Permitted users	Walking, wheeling, cycling, equestrians

2. Planning and engagement

2.1 Overview

The process of planning and developing the A27 pedestrian and cycle path was distinct from the process normally followed by local highway authorities to deliver active travel improvements. As a national body, National Highways was accountable to central government for the delivery of improvements to the Strategic Road Network, which helped to accelerate the planning process from inception to delivery.

2.2 Network planning

The A27 was identified and prioritised for improvements as part of the DfT's Road Investment Strategy 1 (RIS1), which funded 100 major highway projects across the UK and established National Highways (formerly Highways England) as a government-owned company.

While the scheme did address gaps in the local cycle network, the reasons for selection and prioritisation were instead linked to the government's vision to modernise the strategic road network.

2.3 Approval process/consents

The selected route required significant land acquisition, with the pedestrian and cycle path routed behind the hedgerows within fields adjacent to the A27. Compulsory Purchase Order powers, conferred to National Highways by the Infrastructure Act 2015 from the Highways Act 1980, were used to acquire the land needed. Although requiring Secretary of State approval, as the project had the support of central government through RIS1, this helped to streamline the compulsory purchase process.

The new path was established as a bridleway to allow cyclists and horse riders to use the route and contribute to the wider PRow network through the SDNP.

2.4 Engagement

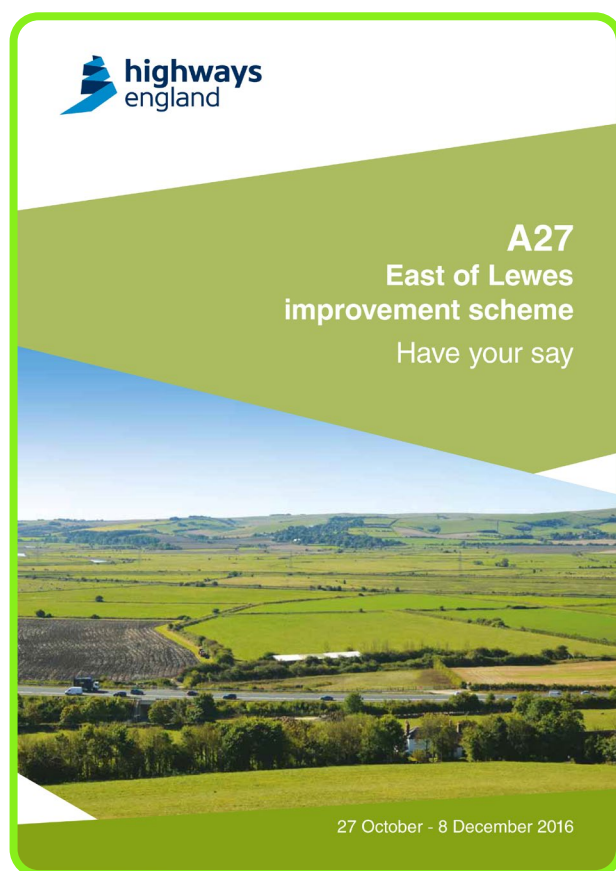
A six-week public consultation on the full package of A27 improvements was held in October 2016. This included 10 in-person events attended by the public and other stakeholders including local authorities, landowners and businesses. Around 80,000 letters of invitation to the exhibitions were sent to households nearby.

Information about the scheme was also published on the National Highways website, and brochures and questionnaires were available from libraries and information points in the area.

Figure 2: Stakeholder engagement on the scheme.

Stakeholder activity	Groups included	Purpose
Objective setting workshop	- local authorities - local enterprise partnerships - Natural England - Sustrans - Sussex Safer Roads Partnerships - large employers and land owners	- agree the corridor problems - agree a set of objectives for the scheme
Early options consultation	All stakeholders, MPs and the public	- input on options - option priority - stakeholder and public buy-in
Combines cycle group workshop	- Sustrans - Cycle Lewes - Cycle Seahaven	- design input - stakeholder buy-in
South Downs National Park Engagement	South Downs National Park Authority	understanding SDNP design requirements

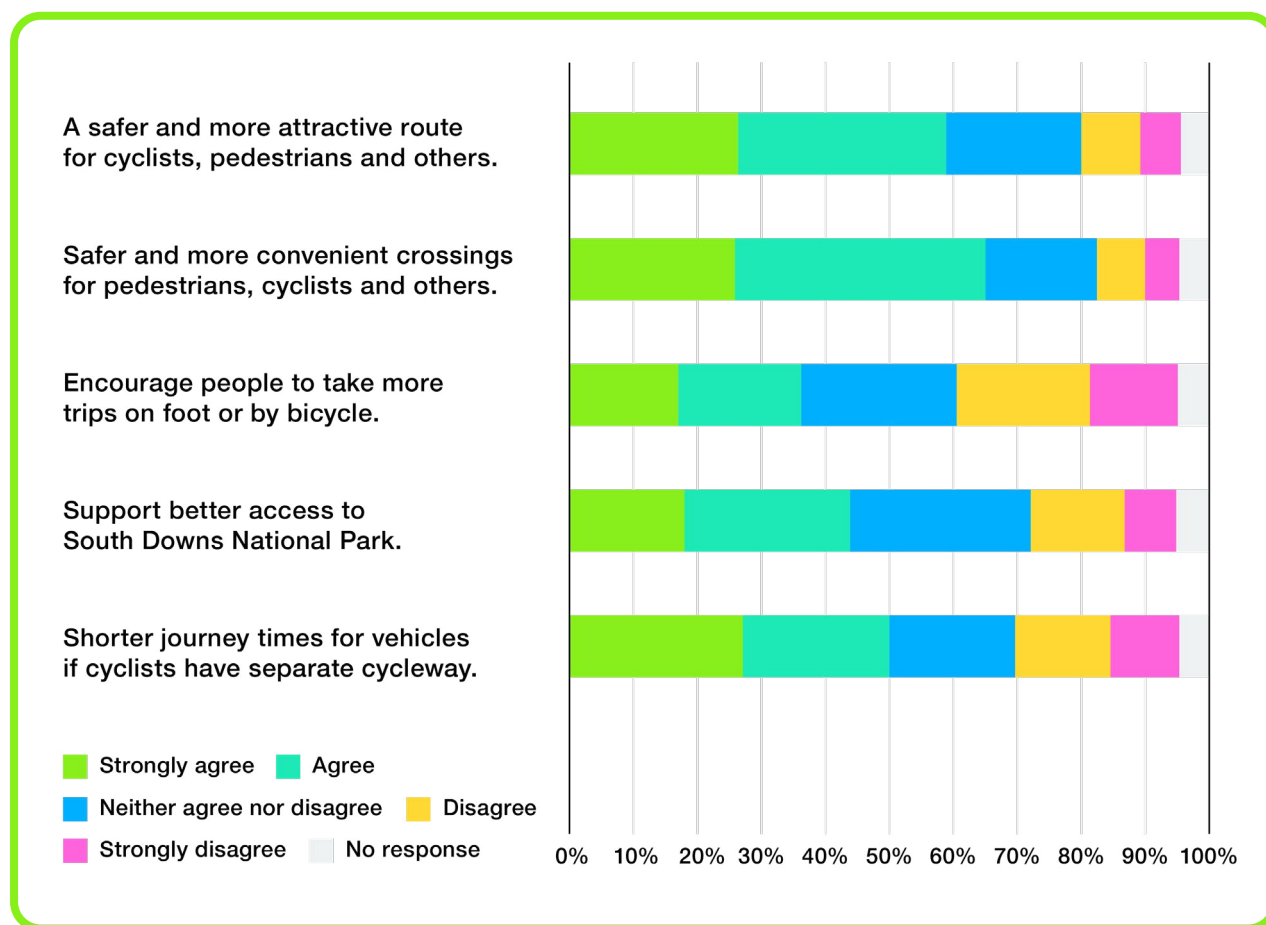
Figure 3: Consultation promotional material.



In the consultation, respondents either agreed or strongly agreed that the corridor walking and cycling route would provide a safer and more attractive/convenient route (59%) and crossing facilities (64%). Additionally, 38% agreed or strongly agreed that the scheme would encourage more people to make trips on foot or by cycle.

Although stakeholder responses to the consultation were mixed, the SDNP expressed support for the walking and cycling element of the scheme.

Figure 4: Feedback from public consultation (A27 East of Lewes – report on public consultation).



3. Design

3.1 Overview

The path was mostly built through fields, behind the hedgerow from the existing highway. A new sealed surface was constructed to enable year-round and all-weather use.

The route is direct and is the shortest walking and cycling route between the two towns, paralleling the A27 highway. Three metre width is provided throughout to accommodate the anticipated demand.

The design included:

- 3m-wide asphalt shared-use walking and cycling path set back from the highway
- pegasus and toucan crossings
- upgrades to large junctions (Wilmington, Berwick roundabout)
- pedestrian/cycle bridge over the River Cuckmere
- boardwalks across drainage ditches

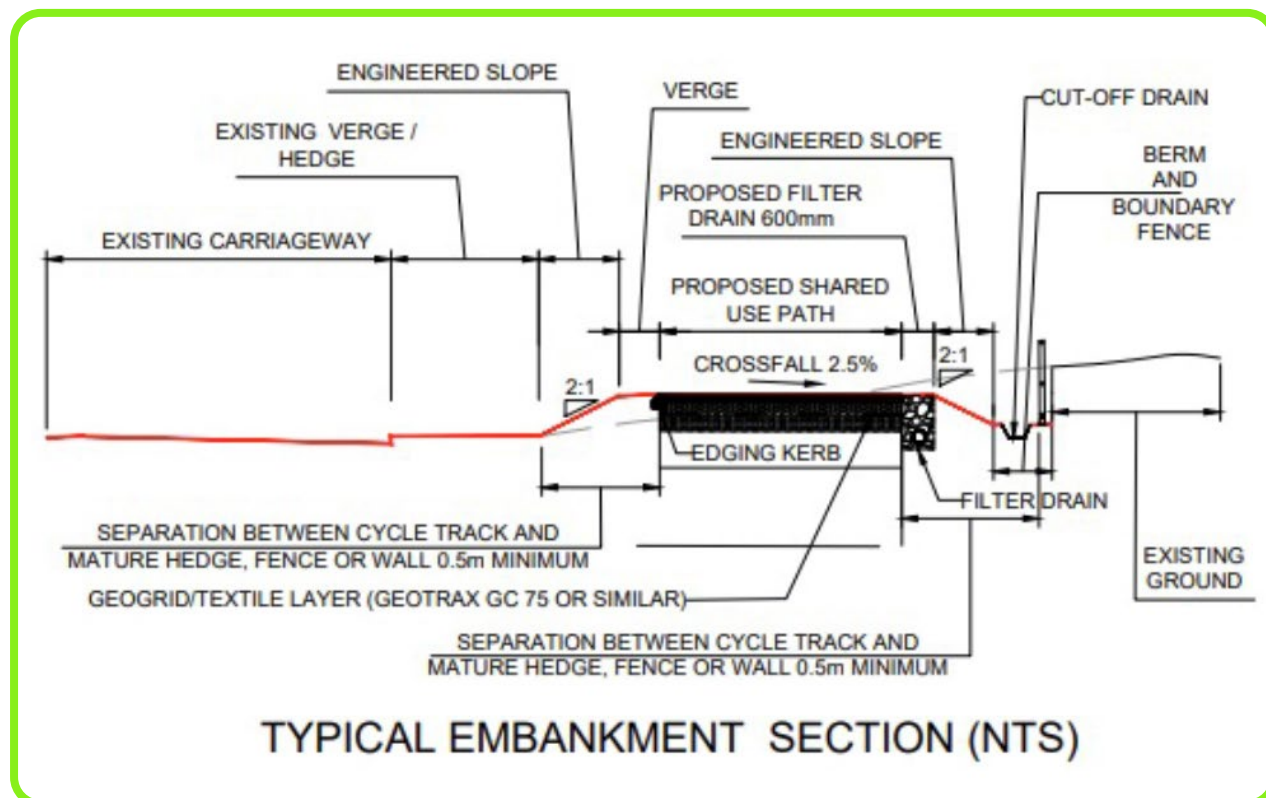
Figure 5: New bridge structures were required to enable the route.



3.2 Links

The route was constructed to provide a smooth sealed surface for year-round use. In sections where flood risk was high, the path was constructed on an embankment, with drainage provided to remove surface run-off. Path construction was designed to reduce ongoing maintenance liability for the maintaining authority.

Figure 6: Cross-section detailing the typical sub-surface of the path.



A new bridge for pedestrians and cyclists was provided over the River Cuckmere. The bridge was constructed at a height to account for flood events and improve resilience against a changing climate.

Figure 7: Tree planting along the route.

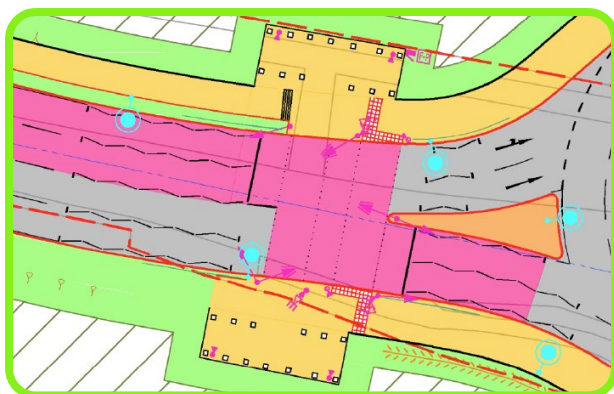


Given the route resulted in removal of existing trees and additional hard landscaping, a programme of environmental mitigation was also linked to the project. A total of 3,025 new trees and 32,000 plants were added along the route, and three new ponds have been created to reduce flood risk and provide new habitats for wildlife.

3.3 Junctions and crossings

Speed limits were reduced on the approach to crossings (40mph), which coupled with traffic calming measures was expected to improve safety for users on the crossing. Crossings across major junctions and the main A27 carriageway were controlled, as either pegasus or toucan crossings.

Figure 8: Design drawings showing the pegasus crossing introduced at a major junction on the route.



Where horse riders were expected to be using the route, and to connect existing PRow, pegasus crossings were introduced to provide connectivity for horse riders, cyclists and pedestrians. These crossings sought to address severance issues identified in the planning stage and to enable continuation of the route. The pegasus crossings include holding pens, designed according to standards set out in the [Design Manual for Roads and Bridges CD 143 – Designing for walking, cycling and horse riding](#).

Key takeaway: Accommodating horse riding through dedicated crossing facilities improved equestrian access to the SDNP and connected to existing horse-riding routes. Equestrian improvements such as this can often be integrated into a scheme without compromising benefits for active travel users.

3.4 Access

The existing route stops short of Polegate town centre, with cyclists rejoining the carriageway on local routes to start/finish their journey. As these roads fell outside the strategic road network, they were not included in the scope of this project, but are intended to be improved as part of a future scheme.

At the entrances/access points of paths, bollards spaced 1.2m apart were used to restrict access to unauthorised vehicles, while avoiding inaccessible access controls that could present a barrier to users.

3.5 Lighting

Lighting was upgraded at major junctions and crossings but was avoided for the remainder of the route. This was to ensure the scheme contributed towards the dark sky policy of the SDNP.

3.6 Wayfinding

Traditional cycle wayfinding was used to highlight destinations accessible using the cycle path. Additional signs indicating where existing PRow intersected the new path were also included. A wayfinding and signage schedule was included as part of the preliminary design stage.

Figure 9: Extract from the signage schedule for the route.



4. Delivery

4.1 Partners and roles

The DfT provided the funding for the scheme through RIS1.

All design work was managed by National Highways (formerly Highways England).

National Highways worked closely with the SDNP to ensure the proposals had due regard to the unique natural landscape.

4.2 Funding

Funding partner	Funding (£m)
RIS1	75
Total	75

The funding provided from RIS1 is inclusive of junction and capacity improvements in addition to the shared-use path.

4.3 Delivery timescales/phasing

Construction started in 2020 and the scheme was formally completed in June 2023, with the walking and cycling path open for use from April 2023.

There were some delays to the project due to the Covid-19 pandemic.

Figure 10: The new bridge was installed across the River Cuckmere in 2022 ahead of schedule.



4.4 Maintenance

National Highways has taken on maintenance responsibility for the route, which will be managed out of existing revenue budgets.

5. Outcomes

5.1 Overview

The finished route has become a key active travel link connecting the communities of Lewes and Polegate, while also enhancing access to the SDNP.

The scheme has realised improvements to congestion and journey times without costly dualling or bypass construction.

Figure 11: The route is popular amongst local residents and visitors.



5.2 Strategic narrative

The project has been successful in reducing severance and improving access to the SDNP, particularly with the introduction of new toucan and pegasus crossings and with connections to existing PRow.

Prior to construction, it was estimated that the introduction of the shared-use path route would reduce pedestrian and cyclist casualties on the A27, with a scheme contribution of 30 collisions saved and 14 killed or seriously injured (KSI) incidents saved.

5.3 Quantified benefits

The benefit-cost ratio for the whole scheme, inclusive of the junction improvements, was 7.26, indicating the scheme represented good value for money.

More specifically, the benefits of the shared-use path were also assessed using the Highways England cycling, safety and integration (CSI) scheme assessment report (SAR) spreadsheet. This applies the principles of the WebTAG Active Modes toolkit to estimate the impacts of increased cycling and walking.

The spreadsheet estimates safety impacts, and the health and economic impacts associated with improved physical activity, including reduced mortality and reduced absenteeism. More minor impacts include improved journey quality resulting from improved facilities for walking and cycling. Also included are decongestion benefits from assumed reduction in highway vehicle kilometres as people switch to walking and cycling, covering reduced delay for remaining car users and reduced emissions.

Key takeaway: Alternative approaches to appraising benefits of walking and cycling schemes, that quantify benefits not captured using traditional benefit/cost analysis, can help build an economic case for a scheme. This could include health and wellbeing effects of increased physical activity, or decongestion impacts from mode shift and the re-routing of cyclists away from the carriageway. Quantifying these benefits from decongestion could come from valuing the reduction in journey times or estimating the reduced emissions from fewer/smooth car journeys.

This assessment estimated the number and length of walking and cycling journeys likely to be undertaken with the path in place.

- current cycling levels along the corridor were assumed to be approximately 50 trips per day across the year, based on nearby DfT counts of pedal cyclists, supported by estimates of seasonal patterns of activity
- cycling with the scheme in place was assumed to reach an average of 115 trips per day (130% increase) based on the levels of cycling seen on other comparable routes in the area (most notably the A22 and the recent segregated Lewes Ringmer cycle lane, where a 132% increase in cycling was observed)

Lesson learnt: Baseline data would have been helpful to demonstrate the uplift attributable to the construction of the new route, as only limited data from DfT counts was available.

The assessment of the shared-use path taken from the Highways England CSI SAR showed that the scheme was likely to generate benefits of £8.4 million. Of this total, £4.6 million, or over 60%, relates to collision benefits, whereby 85% of current cyclists would switch to use the new segregated shared-use path rather than the live carriageway.

The second most important contributor to benefits was the fitness impact of increased physical activity, followed by the benefits of decongestion due to mode switch and journey quality improvements associated with the improved environment.



Case Study

4. Exeter Green Lanes



Key elements

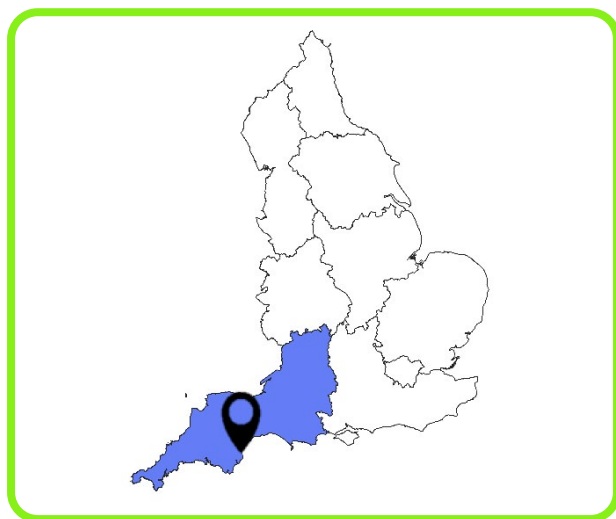
- innovative approach on creating low-traffic rural routes using modal filters
- using modal filters as a tool to mitigate the impacts of/enable new development
- successful use of Experimental Traffic Regulation Orders

1. Background

1.1 Context

Devon County Council (DCC) has rolled out several schemes under the banner of 'Green Lanes' in and around the rural / urban fringe of Exeter. These schemes introduce modal filters on narrow rural lanes that close a route to through motor traffic while maintaining access for residents and those walking, wheeling, and cycling. These point closures redirect through traffic to roads more suited to carrying high traffic volumes whilst creating a network of low-traffic lanes for active travel.

The term 'Green Lanes' has no legal meaning but is used by DCC as a physical description of lanes that are unsurfaced or enclosed by hedges and are poorly suited to carrying high traffic volumes. A 'Green Lane' might be a footpath, bridleway, restricted byway, byway or road.



1.2 Scheme objectives

DCC has identified Green Lanes as a solution to address several transport challenges in the Exeter rural/urban fringe. These schemes help to:

- support the delivery of the DCC Exeter LCWIP by facilitating strategic cycle routes
- support the Council's wider objectives on carbon reduction, making a 'child-friendly Devon', improving health and wellbeing, and helping communities be safe, connected and resilient
- improve road safety by redirecting vehicles to roads more suited to accommodating vehicle movements
- reduce impacts of through traffic on rural communities
- mitigate against impacts of growing development pressures on the Exeter rural/urban fringe and reduce the impact of traffic on rural communities

Figure 1: Ludwell Lane modal filter.



1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	On-highway	–	Mixed traffic	Leisure/utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

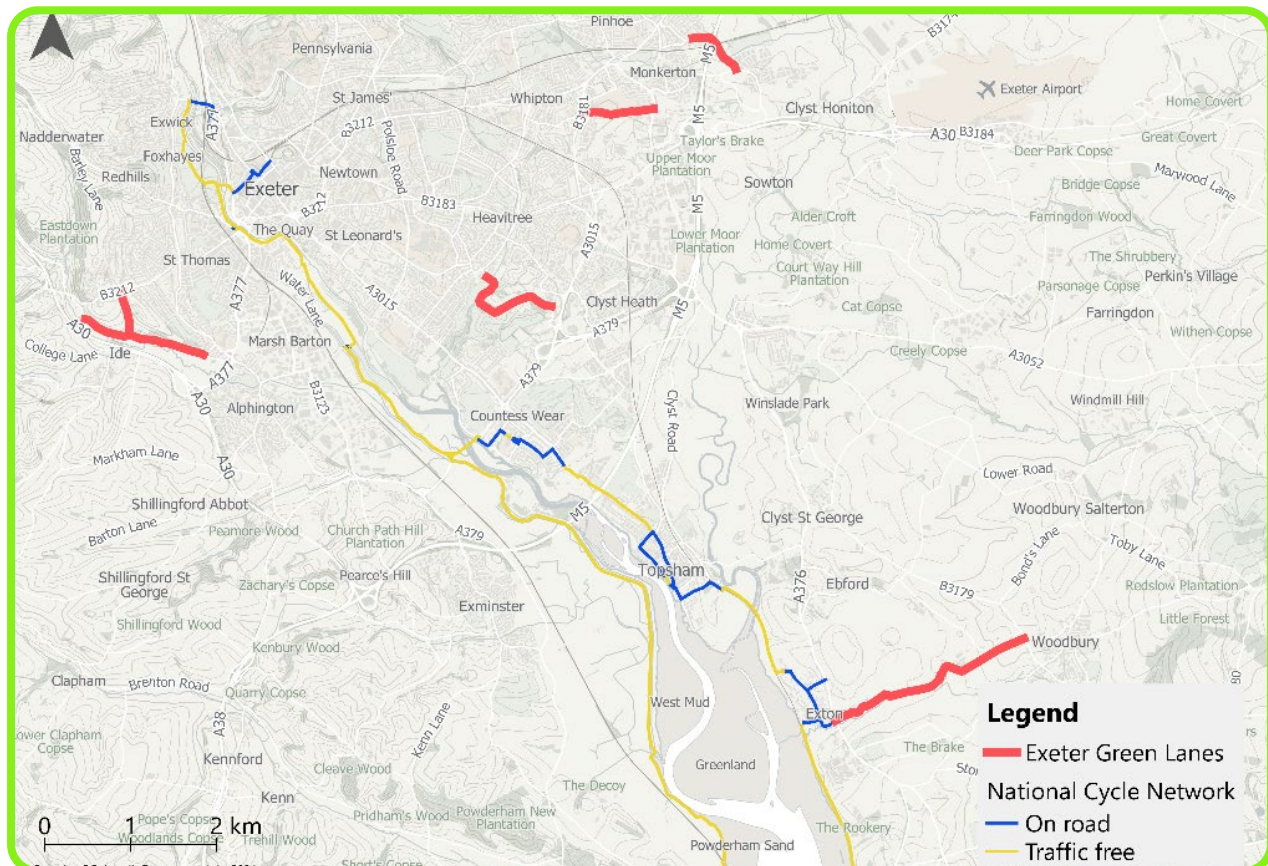
1.4 Network connectivity

Since 2018, DCC has introduced five Green Lanes in and around Exeter, adding to a growing network of low-traffic rural lanes. These schemes include:

- Langaton Lane
- Rydon Lane
- Doctor's Walk/Balls Farm Road
- Ludwell Lane
- Hollow Lane

These schemes either connect to the existing cycle network (for example, Rydon Lane connecting to the popular Exe Estuary Trail) or form an integral part of the planned Exeter cycle network in the Exeter LCWIP (e.g. Hollow Lane forming a key part of the proposed E3 cycle route or Ludwell Lane forming part of the proposed E9 cycle route).

Figure 2: Green Lane schemes. © Crown copyright 2025 OS AC0000861361.



1.5 Key elements/design features

Length	Varies
Width	Varies
Shared/segregated	Mixed traffic
Surfacing material	Asphalt
Lighting	None
Wayfinding	Local wayfinding
Placemaking	None
Permitted users	Walking, wheeling, cycling, equestrians

2. Planning and engagement

2.1 Network planning

Each of the Green Lane schemes came as a result of different local pressures and took varying routes from inception to delivery.

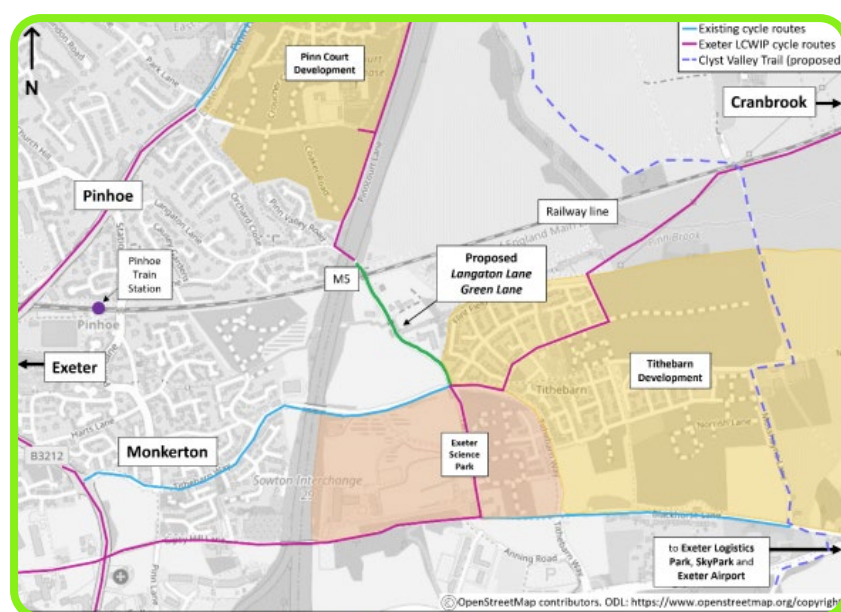
Langaton Lane

The M5 motorway and the West of England mainline have been longstanding sources of severance in the Pinhoe area. Langaton Lane is one of the few roads to cross these transport arteries in the area. Therefore, despite being narrow and poorly suited to carrying motor traffic, the road was heavily used and as such was unsafe and unattractive to walk or cycle on.

Plans to widen the road were explored but dismissed on the basis of cost and the extensive land acquisition required. A road closure/modal filter was identified in the Pinhoe access strategy as a solution to the growing traffic pressures the lane faced.

With extensive development underway across the area, energy company E.ON needed to conduct utility works on the lane to provide an electricity connection to this future development. These works necessitated closing the road for a long period of time, during which time traffic volumes adjusted to diversionary routes.

Figure 3: Map of site context around Langaton Lane.



Following completion of the works, residents requested the closure be made permanent, which was when the Council explored conversion of the route to a Green Lane.

Rydon Lane

The route on Rydon Lane links the settlement of Woodbury to Exton Station and the Exe Estuary Trail, a major cycle link to Exeter City Centre. However, the existing road was unsurfaced and during winter months was difficult to cycle or drive along.

To improve links for walking, wheeling and cycling, enable sustainable commuting and provide access to leisure routes, surfacing improvements were proposed.

However, the Council was concerned that the lane would see an increase in traffic following the conclusion of the surfacing improvements. Therefore, a stretch of the road was closed to motor traffic, to create a traffic-free lane.

Figure 4: Rydon Lane diversionary vehicular route.



Doctor's Walk/Balls Farm Road

This road is a long-established through route for motor traffic. It has long-standing issues with road safety and traffic impacts on the narrow rural lane, which has limited passing places. The road is also a key walking/cycling link to a large secondary school, which is located at the eastern end of Doctor's Walk. As such it is also identified in Exeter's LCWIP as part of the future E12 cycle route.

The road has a historic traffic regulation order (TRO), restricting access to through traffic at the Doctor's Walk/Balls Farm Road junction during the AM peak. However, as there was no enforcement, traffic surveys showed that the restriction was having no impact on traffic volumes on the route.

Therefore, the Council proposed a physical restriction which would operate 24/7, as a more effective measure to reduce the impacts of through traffic.

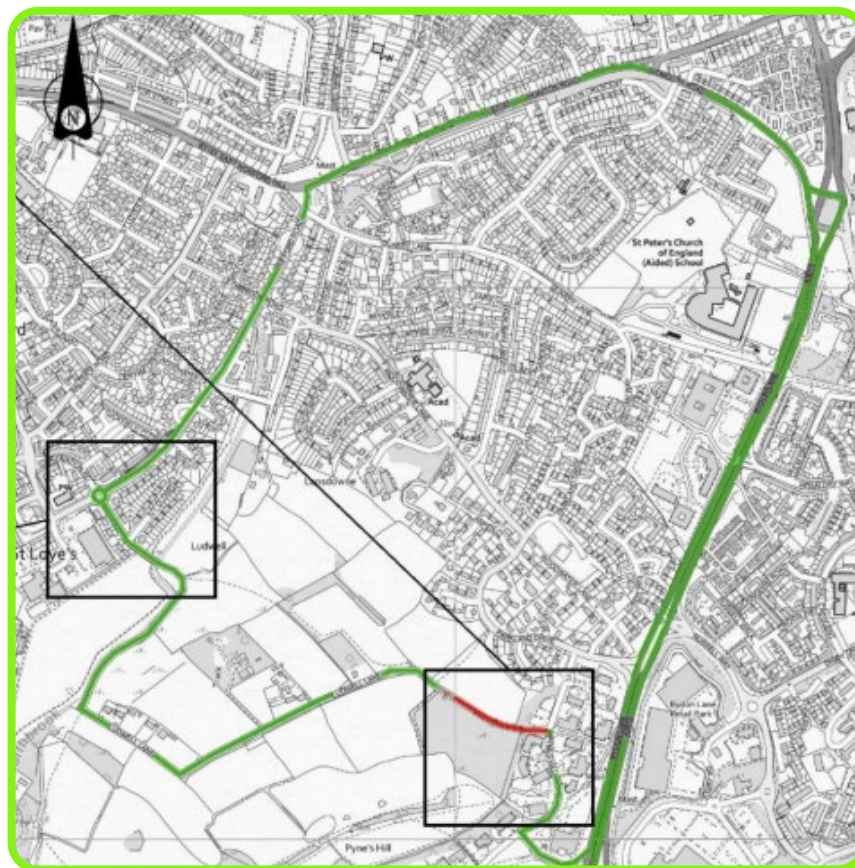
Lessons learnt: Restrictions on traffic movements that rely on signage alone are unlikely to have the desired effect on traffic volumes. Instead, restrictions should be enforced through cameras or be self-enforcing through physical measures.

Ludwell Lane

Ludwell Lane formed part of the proposed E9 cycle route identified in the Exeter LCWIP. The existing road was very narrow and did not allow for cars to safely overtake cycles. The route was a strategic link between new development and the Royal Devon and Exeter Hospital and to the city centre.

The LCWIP identified that to improve conditions for cycling so the route would be suitable for inclusion in the Exeter cycle network, a modal filter would be required to reduce traffic volumes to the level that reduces conflict for people cycling.

Figure 5: Ludwell Lane closure and diversionary vehicular route.



Hollow Lane

Hollow Lane is proposed to form a key element of the wider E3 strategic cycle route between Cranbrook and Exeter City Centre. The E3 cycle route is identified as part of the future Exeter Cycle Network in Exeter's LCWIP. As the city has grown, the previously rural lane had become subsumed by development, and was carrying high volumes of through traffic. This was despite it being a narrow lane with no opportunities to safely pass pedestrians and cyclists.

To enable the cycle route, and to address the growing impacts of through traffic on this narrow route, the Council explored a point closure to motor traffic.

2.2 Approval process/consents

DCC introduced some Green Lanes initially using an experimental traffic regulation order (ETRO). This allowed the Council to introduce the changes as an 18-month trial, so feedback could be collected and impacts monitored and assessed. Following conclusion of the trial, changes can be made to the scheme before being made permanent.

Key takeaway: An ETRO can be a useful mechanism to trial changes to road layouts, while retaining the flexibility to make alterations to the scheme as impacts are monitored.

2.3 Engagement

Each of the schemes followed a statutory consultation process as part of the ETRO/TRO, with informal consultation with members/stakeholders taking place before.

DCC has found that individual point closures on lanes can garner more support as a localised intervention rather than a broader area-wide scheme, which can attract opposition across a wider region.

On the Ludwell Lane scheme, engagement with emergency services proved particularly vital. During the experimental scheme a police vehicle was seen to get stuck, attracting negative press attention.

Following this, the Council engaged with emergency services and amended the ETRO to relocate the closure point to a better location.

Lesson learnt: Engagement with key stakeholders such as emergency services can lead to improvements in scheme design. The ETRO process allows for amendments to be made as scheme impacts become clear.

3. Design

3.1 Overview

The main feature common across the Green Lanes delivered by DCC are point closures for motor traffic, enforced using physical restrictions such as bollards or blocks. However, additional improvements have been included as part of the scheme to improve the attractiveness of the routes for walking, wheeling and cycling. These are:

- vehicle turning heads
- lighting improvements
- surfacing improvements
- wayfinding/signage improvements

3.2 Links

The introduction of modal filters on the Green Lane routes lowered traffic volumes to levels where mixed traffic cycling was suitable along the lanes, negating the need for protected cycling facilities or costly land acquisition.

However, some of the routes such as Rydon Lane needed surfacing improvements before they could provide a suitable year-round cycling route. Improvements also included providing a bridge across a ford to prevent flooding of the route.

Figure 6: Rydon Lane before and after resurfacing.



3.3 Lighting

Most of the routes are unlit or involved no changes to the existing highway lighting arrangements.

On Langaton Lane, lighting was required under the railway/motorway bridges to facilitate year-round use and illuminate dark spots during daylight hours. However, planned E.ON electricity works in the area prevented the installation of traditional lighting.

Instead, the Council is introducing an innovative solution of low-power motion sensor lighting. These lights provide a low level of light constantly but are activated to further illuminate the space when a user approaches, minimising the environmental impact to wildlife and light pollution.

3.4 Servicing/access

Vehicle turning heads need to be considered when introducing a point closure, particularly to allow larger vehicles space to safely turn around. These have been accommodated by siting closure points at junctions, or near building accesses where DCC has been able to agree a layout with landowners through negotiation.

However, some Green Lanes include land uses that have unique servicing/access requirements. On Hollow Lane, a Special Educational Needs school has high volumes of vehicular drop off/pick up, particularly by taxi.

Accommodating high volumes through a turning head would be impractical and cause congestion during drop-off/pick-up times, particularly as Hollow Lane would struggle to accommodate two-way traffic. Instead, the school has installed an innovative barrier system that allows vehicles to pass through after accessing the site, while restricting access to general traffic.



3.5 Wayfinding

Changes to vehicle signage to inform drivers of new routes were included as part of the scheme. The 'E' cycle routes will be signed upon delivery of the routes as outlined in the Exeter LCWIP.

Figure 7: Rydon Lane point closure.



4. Delivery

4.1 Partners and roles

All the schemes were delivered by DCC's highways department, which worked closely with local developers and consulted with local communities.

4.2 Funding

Scheme	Cost (£ 000s)
Rydon Lane	152
Doctor's Walk/Balls Farm Road	28
Ludwell Lane	144
Hollow Lane	75
Langaton Lane	105

Most of the funding for the schemes came from the various tranches of the Active Travel Fund administered by ATE and the DfT in the wake of the Covid-19 pandemic. Funding linked to the delivery of Devon's Local Transport Plan (LTP) was also drawn upon (PRoW maintenance grant and integrated block funding). Where the Green Lanes have enabled development, or mitigated against adverse transport impacts, Section 106 contributions were obtained from developers.

4.3 Delivery timescales/phasing

Scheme	Permanent scheme completion date
Rydon Lane	Sep 2024
Doctor's Walk/Balls Farm Road	Sep 2022
Ludwell Lane	Mar 2022
Hollow Lane	Feb 2018
Langaton Lane	Sep 2023

Most of the schemes were delivered in a single phase, with some implemented initially as an ETRO, before a permanent TRO was introduced.

4.4 Maintenance

The Green Lanes remain a public highway, and any ongoing maintenance is met using highway maintenance funding. Noting the need to reduce ongoing maintenance costs, concrete blocks were chosen for the closure point on Langaton Lane rather than wooden planters traditionally used for modal filters, particularly as the isolated location would make detecting vandalism challenging. On other Green Lanes, closure points relied on bollards.



5. Outcomes

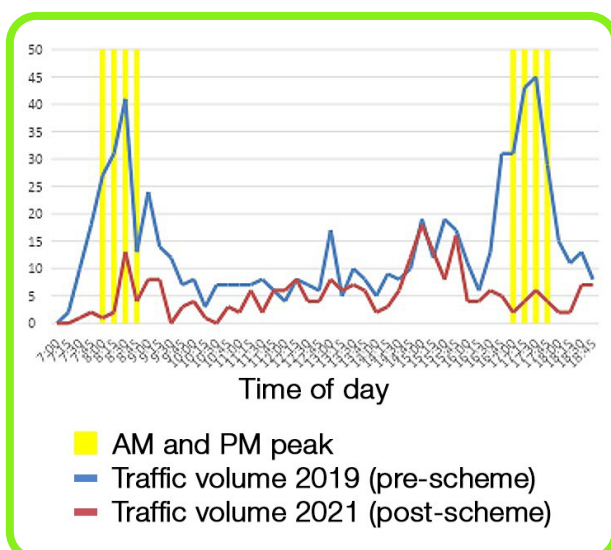
5.1 Overview

The growing number of Green Lanes on the fringe of Exeter have played an important role in the expansion of its active travel network. They have supported the city in dealing with growing development pressures on constrained rural roads. To that end, monitoring and evaluation data shows substantial reductions in traffic volumes have enabled growth in the number of people walking, wheeling and cycling.

5.2 User outcomes

One of the main objectives of the scheme was to reduce traffic volumes to levels that would reduce negative impacts from traffic and support uptake of sustainable modes. The modal filters have proven highly effective at reducing traffic volumes. Some of the schemes created completely traffic-free environments (Ludwell Lane, Rydon Lane), whereas others removed through traffic while retaining vehicular access (Langaton Lane, Doctor's Walk, Hollow Lane).

Figure 8: Total motor vehicle traffic along the length of Balls Farm Road west of Little John's Cross Hill.



Where vehicular access has been retained, traffic volumes have reduced significantly. On Doctor's Walk, traffic volumes have reduced from 672 to 216 vehicles per day, a reduction of 68%. Most of this reduction has been realised during peak hours, where the route was used as a rat run. Traffic volumes during the PM peak have dropped by 89%, with only local traffic now using the route.

This reduction in traffic volumes has been well received locally, with residents highlighting how the roads feel safer for families with young children. Equally, equestrians have highlighted that the lower traffic volumes make riding safer for them, creating a safe environment for young equestrians or those new to horse riding.

"I just thought I'd express my pleasure at not having the cars racing through Balls Farm Road at present. Both my 14yrolld daughter and 2yrolld son ride horses along these roads and it's been lovely to not have to worry about cars coming through at speed especially when my daughter rides out with her friends."

Consultation response

Key takeaway: Low-traffic volumes benefit a range of users including those walking, wheeling, cycling or horse riding. Planning a network of low-traffic streets is an effective way to realise benefits for a wide group of people.

The schemes have been successful at realising benefits for those walking, wheeling and cycling on the Green Lanes. The lower traffic volumes have enabled a significant increase in the number of pedestrians and cyclists. Across sites where monitoring was undertaken, all saw increases in the number of pedestrians (ranging from a 24% to 117% increase), and two saw increases in the number of cyclists (with one site registering no change).

Scheme	Change in pedestrians (from introduction to 2024)	Change in cyclists (from introduction to 2024)
Doctor's Walk/Balls Farm Road	+24%	No change
Ludwell Lane	+109%	+58%
Langaton Lane	+117%	+44%

"I am a new cyclist who now uses the Ball's Farm Road route on a regular basis. This road has become invaluable as a traffic-free route for cyclists between Exeter and Ide. Prior to the closure traffic made the route dangerous for cyclists as the road is narrow."

Consultation response

5.3 Strategic narrative

When applying value-for-money tests against the schemes as part of applications for Active Travel Fund funding, DCC found that packaging the interventions together as part of a longer cycle route maximised the benefits. While the quantifiable benefits of a single point closure can be limited, capturing the benefits of low-traffic volumes along a longer cycle route performs stronger in these tests, improving success in funding applications.

A key reason for developing Green Lanes is to address the growing development pressures seen on the Exeter rural-urban fringe. By creating traffic-free routes on constrained highways that would have struggled to meet traffic demand, DCC is ensuring that sustainable travel choices are available to future residents. Given the Green Lanes form a key part of the required highway mitigation for new development, Section 106 funding was also used to deliver the schemes.

Lesson learnt: To maximise the quantifiable benefits of a scheme, packaging point closures with other improvements along a longer cycle route can see a bigger uplift in users when applying value-for-money tools.

Key takeaway: Where a scheme is required to mitigate against development pressures, working closely with planning colleagues can leverage additional funding.

Case Study

5. Castleford to Wakefield Greenway

Key elements

- filling gaps in an existing cycle network by addressing key barriers can open up a huge range of opportunities to access a wider active travel network

1. Background

1.1 Context

A complete Castleford to Wakefield Greenway had long been an ambition of local authorities and campaigners. Key missing links included the crossing across the River Calder and the railway, preventing the conversion of the historic Methley railway alignment into a continuous route between the two destinations. Bringing together stakeholders such as Leeds City Council, Wakefield Council, West Yorkshire Combined Authority and the Walk Wheel Cycle Trust, the route was constructed in phases, with the final missing link bridged in 2021.

The complete 16km route has been a popular leisure destination while also connecting Wakefield with Castleford. Previously, a cycling journey between Castleford and Wakefield involved heavily trafficked roads which were not safe for cyclists. The new route connects seamlessly with the existing cycle network, forming part of the long-distance cycle route between Leeds and Sheffield.



1.2 Scheme objectives

City Connect is an arm of the West Yorkshire Combined Authority who supported the delivery of the scheme. They were established to deliver high-quality cycle infrastructure across the city region. Objectives of the scheme included to:

- make cycling a natural and popular choice for short journeys
- make cycling accessible to everyone
- improve access to employment, skills and education
- reduce CO₂ and improve local air quality
- create a safe environment for walking and cycling

Figure 1: Cyclists on the newly opened Castleford to Wakefield Greenway.



1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway (sections of on-highway)	Shared	Sections of mixed traffic	Leisure/utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

The route also forms part of the central spur of the Trans Pennine Trail towards Leeds, connecting Wakefield and Leeds to the Coast 2 Coast route. The greenway also intersects with local cycle routes along the River Calder, forming a central spine in the Castleford cycle network.

2. Planning and engagement

2.1 Network planning

The route was established to fill missing links in the existing cycle network, with Castleford severed from the network by the crossing of the Hallam Line. This had prevented the conversion of the historic Methley railway alignment to a shared-use walking and cycling path, with the previous unsurfaced trail only accessible on foot up to the railway.

Figure 3: Former railway alignment prior to the construction of the greenway.



2.2 Approval process/consents

No land acquisition was required for the route, with ownership of the land residing with Railway Paths, the nationwide charity that owns and maintains historic railway alignments and structures for the purposes of walking and cycling. Working in collaboration with the Walk Wheel Cycle Trust, a permissive path agreement was struck between local authorities and Railway Paths to allow use of the cycle route.

A permissive path agreement was also struck with land owners along the riverside section, to allow for long-term use of the path.

Key takeaway: Working with Railway Paths can unlock routes that follow historic railway alignments without the need for land acquisition.

2.3 Engagement

Before each phase, an informal consultation was held to gauge support for the scheme, ahead of statutory consultation as part of planning permission. The consultation material included plans illustrating the improvements, a video animation of the route, and public drop-in sessions to answer questions on the scheme. No significant objections to the route were raised during engagement, with some modifications made where the route passes houses to maintain privacy.

Previous plans for signalisation and narrowing of the A639 to widen pavements on the on-road section towards Wakefield were removed from the project after initial engagement and discussion with stakeholders.

Improvements to this on-road section remain an ambition of local authorities subject to funding and further engagement.

Figure 4: Example of consultation material produced to explain the improvements.



3. Design

3.1 Overview

Once completed, the final route design involved the construction of:

- a new walking and cycling bridge across the Hallam Line
- refurbishment of the bridge across the River Calder, including railings on the bridge parapets
- 3m-wide asphalt surfacing
- embankments
- seating
- signage

3.2 Links

The cycleway runs along the trackbed of the disused Methley to Pontefract railway line, which was closed in 1981. The path offers a width of 3m throughout to accommodate the anticipated demand, achieved through the clearance of a 5m corridor along the former railway alignment. The route was surfaced with asphalt to provide a year-round sealed surface that was resilient to adverse weather conditions.

The design had to carefully consider how to bridge the River Calder and the railway towards Leeds. The original bridge across the railway was removed in 1984, leaving the historic stone abutments in place. The challenge was to leave them in place without actually using them structurally in the new design.

Instead, a new 35m-long steel bridge is supported on reinforced concrete seats with no reliance on the existing abutments. The new bridge was designed to have a minimum working life of at least 120 years.

The design had to overcome a number of challenges including flood risks along the riverside path, construction of a new bridge on top of existing abutments, drainage issues, and clearance of a 5m corridor to allow for the construction of a 3m-wide path.

Figure 5: Newly constructed bridge across the railway.



The existing bridge across the River Calder was refurbished to make it safe for people to cycle across, with railings added to make the parapets safe.

Figure 6: Refurbished bridge across the River Calder.



3.3 Lighting

The section of the route that passes through Castleford is lit, to allow local journeys at all times of day and through the year.

3.4 Accessibility

The route was designed to be accessible to all abilities and users, with suitable widths and a sealed surface provided. Access to the greenway is controlled by bollards spaced a minimum of 1.2m apart to enable access to wheelchairs and adapted cycles.

3.5 Wayfinding

Signage is provided following traditional Walk Wheel Cycle Trust wayfinding standards. This includes signing NCN 67 and the Trans Pennine Trail. The route is identified on signs as the Castleford to Wakefield greenway, to provide the route with a local identity.

Figure 7: Example of wayfinding on the route.



3.6 Placemaking

Some budgetary allowance was made for placemaking, including the installation of a sign in a traditional railway style to recognise the route's heritage. Additionally, benches have been provided at regular intervals, with the Council exploring the addition of picnic sites at the riverside stretch.

Figure 8: Castleford to Wakefield Greenway signage.



3.7 Future considerations

The greenway currently finishes at Stanley on the outskirts of Wakefield. To get to the centre of Wakefield, cyclists can use the existing NCN 67 route which follows a mixture of on-road and traffic-free sections. A short section of this route follows the high-traffic A642. A more direct riverside alternative that avoids roads does exist (and is signed for pedestrians) but is currently not cyclable. This link has been identified in Wakefield's LCWIP and is being considered for further development. Additionally, subject to funding and engagement with stakeholders, improvements to the on-road route could be considered to enhance the connection to Wakefield city centre.

4. Delivery

4.1 Partners and roles

The work on the Castleford to Wakefield Greenway required the efforts of numerous stakeholders and partners, due to the route crossing the boundary between Leeds City Council and Wakefield Council. West Yorkshire Combined Authority spans the two councils.

The Walk Wheel Cycle Trust and Railway Paths were also important partners due to their ownership of the route and its inclusion in the NCN. They also shared their expertise in the design of greenway cycle routes through the design process.

4.2 Funding and timescales

Phase 2 of the scheme which extended the greenway over the Hallam Line through a new bridge cost £850,000 (£500,000 of which was for the construction of the bridge) and was completed in December 2019.

Phase 3, completed in 2020, runs from Castleford to Methley Junction and cost £730,000. It was delivered as part of West Yorkshire Combined Authority's City Connect programme.

Phase 4, linking Methley Junction to the existing NCN 67 greenway, was completed in 2021 and cost £370,000, which was funded through Leeds City Region Enterprise Partnership (LEP), delivered in partnership with the West Yorkshire Combined Authority, through the Leeds City Region Growth Deal. This is a £1 billion package of government investment to accelerate growth and create jobs across Leeds City Region.

4.3 Delivery timescales/ phasing

The first section of the greenway – a 2km stretch between Fairies Hill Lock and Methley Bridge in Castleford – opened in March 2018. This pre-dates the £1.95 million phase 2-4 section described in this case study.

Extending NCN Route 69 over a new bridge across the Hallam Line was opened as Phase 2 in December 2019.

This was followed by Phase 3 between Castleford and Methley Junction over the River Calder in 2020.

Phase 4 (1.3km) starts south of Methley Village and links the existing NCN route 67 with Methley Junction, with the full route completed in 2021.

4.4 Maintenance

The greenway is maintained by local authorities and the Walk Wheel Cycle Trust out of existing PRow and highways budgets. The design was developed using hard-wearing materials to reduce ongoing maintenance costs.

After the initial section was opened, some issues with tree root incursion were encountered, with localised instances where the surface had been damaged. These were addressed in conjunction with the Wakefield Council PRow team, with localised resurfacing. Tree roots were considered carefully in subsequent phases to ensure a smooth and level surface was provided throughout.

Lesson learnt: Working closely with PRow experts specialising in the maintenance of the existing walking and cycling network can improve the longevity and resilience of the design.

5. Outcomes

5.1 Overview

The route opens up a huge range of journey opportunities across West Yorkshire and links Castleford to the wider cycle network for the first time.

The route has played an important role in improving access to the outdoors for all ages and abilities, by providing a fully accessible traffic-free link.

5.2 User outcomes

As the route was not passable by cycles previously, no previous counts of usage were available. However, since monitoring began in 2022, 94,577 cyclists have been recorded on the greenway.

“The greenway has seen a significant growth in usage since the start of the pandemic and we hope to see even more people taking advantage of it long into the future.”

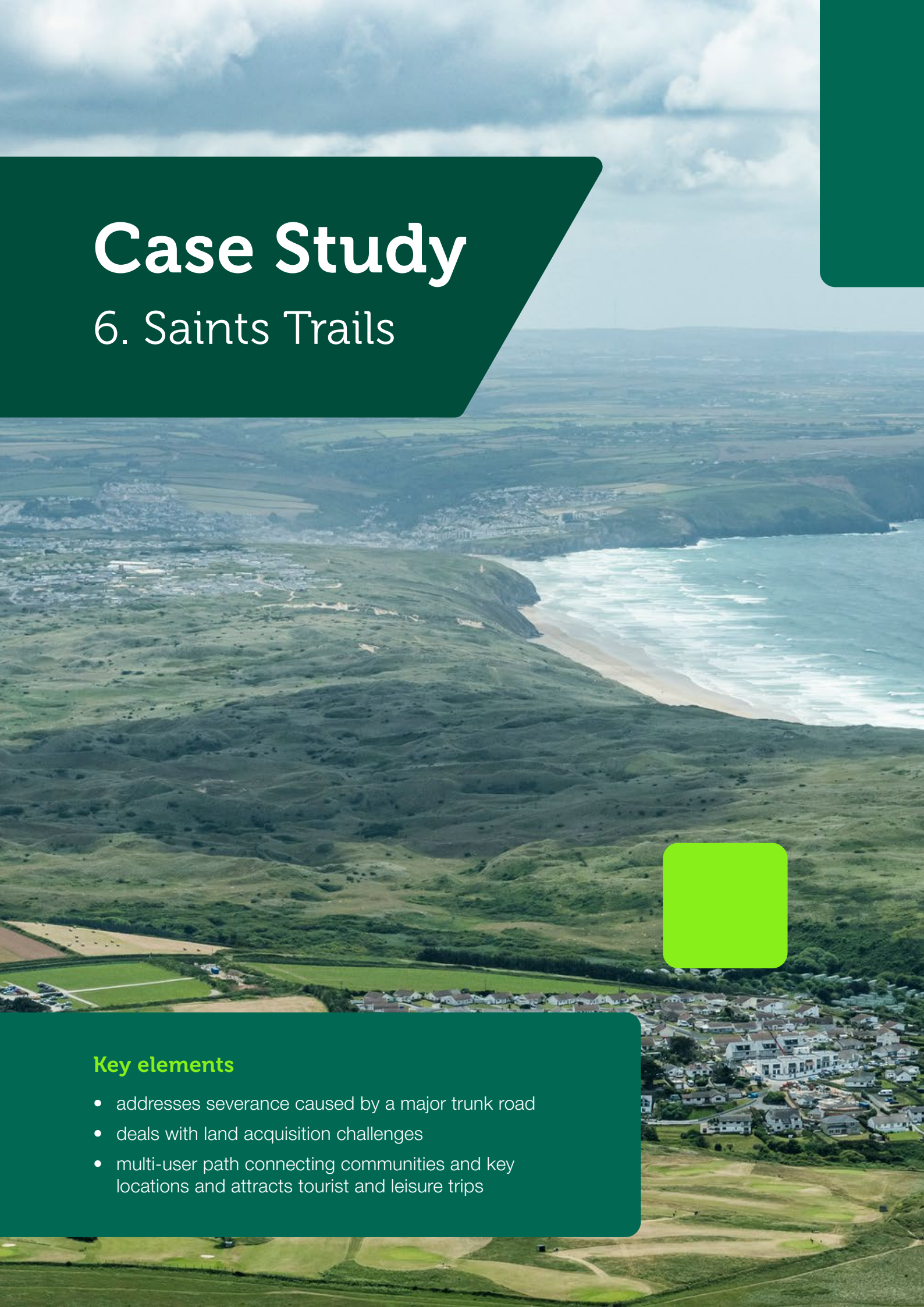
Cllr Manisha Kaushik, the West Yorkshire Combined Authority’s Transport Committee Lead Member for Active Travel

“The completed Greenway will open up access to a traffic-free path for more people of all abilities to walk and cycle, including people on mobility scooters or adapted bicycles. It will be a fantastic example of what we aim to achieve long term across the network as part of our work throughout the UK.”

Rosslyn Colderley, Director for Walk Wheel Cycle Trust in the North of England

Key takeaway: Where no route currently exists, there is likely suppressed latent demand for cycle travel between destinations, which should be considered when developing a route.

Key takeaway: Provision of traffic-free routes can open up destinations and leisure opportunities for young people and disabled people, who otherwise would not use an on-road route. Inviting these people to opening / activation events can be a great way to publicise these benefits.



Case Study

6. Saints Trails

Key elements

- addresses severance caused by a major trunk road
- deals with land acquisition challenges
- multi-user path connecting communities and key locations and attracts tourist and leisure trips

1. Background

1.1 Context

Cornwall Council has developed two multi-user trails linking St Agnes to Threemilestone, and Perranporth to Goonhavern. These trails have been designed for people walking, wheeling, cycling and horse riding to help address a key severance issue with the A30 trunk road.

At 13km in length, the routes are predominantly off road. However, some sections use existing infrastructure where an off-road alternative is not possible. To enable a safe active travel connection between St Agnes and Truro, a new bridge over the A30, known as Chiverton Bridge, has been constructed as part of this scheme – see Figure 1. The Saints Trails initiative has been enabled by National Highways' Designated Funding programme, and represents one of the largest cycling infrastructure investments in the South West.

1.2 Scheme objectives

The objectives of the Saints Trails complement Cornwall Council's wider goals to reduce congestion, promote environmental sustainability and improve public health.

The trails provide much-needed active travel provision for both residents and visitors by:

- addressing severance issues caused by the existing network, supporting a modal shift to active travel
- providing a safe, mainly off-road route that is accessible to all users, including families, the elderly and people with disabilities

- connecting communities and key locations such as workplaces and schools, enabling more residents to undertake utility trips by active modes
- attracting tourists and leisure trips, contributing to the region's wider tourism industry

Figure 1: Chiverton Bridge, providing an active travel link over the A30.



1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway (sections of on-highway)	Shared	–	Leisure/utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

The development phase of the Saints Trails began in February 2019, with preliminary design and public consultations. The construction of the trails started in January 2020, and various sections have been progressively opened since then.

The trails provide connections between:

- Perranporth and Goonhavern (via Bolingey and Cocks)
- St Agnes to West Langarth Park and Ride (via Goonbell and Chiverton, connecting to Truro)

As of early 2025, walking and horse riding for the St Agnes to Truro route terminates at Penstraze due to the ongoing Northern Access Road works. However, once complete this will provide a connection into Threemilestone and West Langarth Park and Ride – see Figure 2.

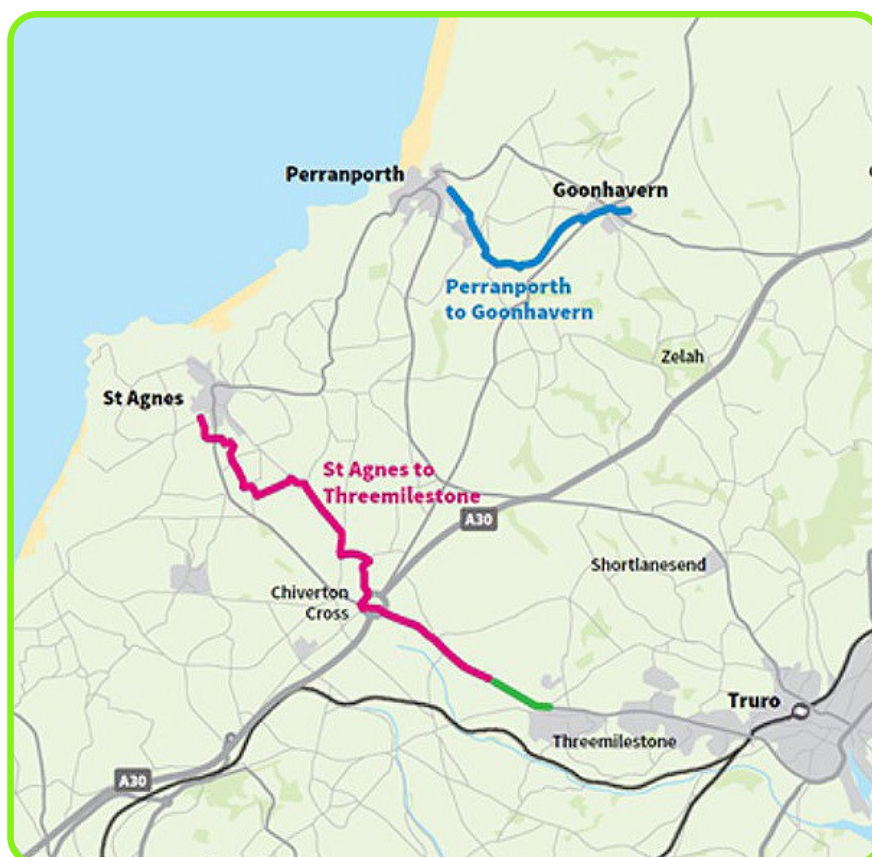
In some cases, where the off-road trails intersect with settlements, new shared-use paths have been constructed, enabling users to safely rejoin the trail while minimising interaction with motor vehicles.

For example, a new shared-use path has been constructed next to Bone Mill Road, providing a connection through Cocks and rejoining the trail at Cocks Hill.

The design of the trails also looked at upgrading existing infrastructure. For example, the trail connecting Perranporth to Goonhavern utilises the former Perranporth to Chacewater railway line, and the St Agnes to West Langarth Park and Ride utilises Quiet Lanes between Goonbell and Three Burrows.

The Northern Access Road works, a major spine road providing an east-west connection to the new Langarth Garden Village, will also deliver a new shared-use path next to the new road, completing the Saints Trails network between St Agnes and Threemilestone.

Figure 2: Saints Trails between Perranporth and Goonhavern, and St Agnes and West Langarth Park and Ride.



1.5 Key elements/design features

Length	Perranporth to Goonhavern 4.5km St Agnes to West Langarth Park and Ride 8km
Width	3m+
Shared/segregated	Shared use path, off road
Surfacing material	Varies (Unsealed surface and tarmac)
Lighting	None
Wayfinding	Local wayfinding
Placemaking	Rest points and signs
Permitted users	Cycling, equestrians

2. Planning and engagement

2.1 Network planning

Cornwall Council worked with a planning consultant to identify 10 potential routes. Four were taken forward, which included St Agnes to Truro, Perranporth to Newquay, St Newlyn East to Idless Woodland, and St Erme to Idless Woodland.

These routes were selected based on a primarily data-led assessment matrix, which looked at factors such as propensity to cycle and value for money.

Lesson learnt: Cornwall Council noted that this approach tends to overlook the practical feasibility of routes on the ground. It highlights the need for complementary on-site audits to better understand the usability, challenges and opportunities of routes selected.

Of the four routes, two have been taken forward: Perranporth to Goonhavern, and St Agnes to West Langarth Park and Ride.

2.2 Approval process/consents

Land acquisition was one of the biggest challenges faced by Cornwall Council when developing the trails. The Council was required to come to agreements with 40 landowners and acquire 150 parcels of land to develop the trails.

With a tight delivery timeframe imposed by National Highways funding terms, this proved a complex and resource-intensive task and highlighted the importance of forward planning and a longer-term programme for route planning and land acquisition.

Figure 3: The Saints Trail to Goonhavern utilises a disused railway line.



2.3 Engagement

Engaging with stakeholders, such as landowners, parishes and community groups was essential to gaining the necessary approvals and consents needed to develop the trails, particularly with regards to land ownership as discussed above.

Despite Cornwall's aspiration to undertake a more comprehensive programme of engagement, National Highways' funding requirement to deliver the trails within a two-year period limited the scope for wider public consultations and instead, led to a more streamlined approach to engagement.

Despite this, Cornwall Council continued an open line of communication with key stakeholders, including town councils, parishes, landowners and community network panels. Early engagement efforts were generally positive and feedback from landowners and local communities was used to shape the project.

Key takeaway: Cornwall Council recommends communicating the need for longer funding windows to funding bodies. This allows local authorities to undertake a more comprehensive programme of engagement and consultation.

3. Design

3.1 Overview

The design of the trails was planned to cater for the needs of a variety of users, including pedestrians, cyclists and equestrians. Multiple designs were developed based on a gold, silver and bronze standard, each with varying costs and level of intervention, particularly with regards to the type of separation used to delineate the trails.

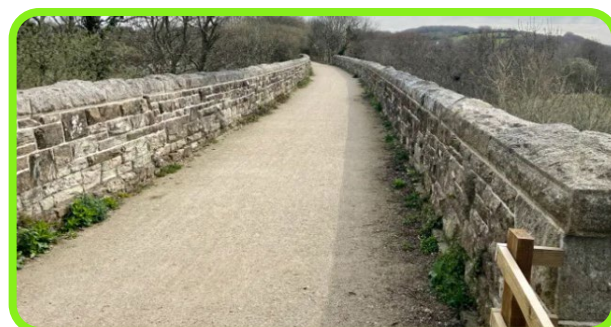
Given the rurality of the routes, ecological considerations were paramount, with significant re-planting required to address the tree loss associated with integrating the old railway line into the Perranporth to Goonhavern route. Across all trails, a key design consideration was the assurance of a 10% biodiversity net gain, which involved close engagement with the Cornwall Wildlife Trust to help manage reserves and enhance the ecological outcomes associated with the works.

The width and surfacing of the Saints Trails vary depending on the section and its intended use.

Generally, the trails are designed to accommodate a range of users, therefore the paths are wide enough to ensure safety and comfort for all.

The off-road sections of the trails have a minimum width of 3m. Where land was acquired to deliver the trails, width restrictions were less of an issue when compared to other active travel route projects. The trails feature a mix of tarmac and an unsealed surface such as compacted gravel – as shown in Figure 4.

Figure 4: Unsealed surface used on former railway line between Perranporth and Goonhavern.



3.2 Links

The Saints Trails aim to provide seamless connectivity between key locations, enhancing accessibility and promoting active travel.

The routes were designed to connect coastal communities to nearby towns and provide sustainable access to key services. For instance, the Chiverton Bridge, a 48m 'Vierendeel' steel truss bridge, formed a significant part of the trails project. It facilitates safe passage over the A30 and improves connectivity between St Agnes and Truro – see Figure 5. The bridge has been landscaped to coordinate with the wider A30 Chiverton to Carland Cross project and provides a smooth transition between the rural and built environment.

Figure 5: Chiverton Bridge, providing an inclusive connection for all users.



Across the trails, Cornwall Council ensured routes were continuous and flat, with bridges installed over side roads to ensure the trails were accessible to all users.

Figure 6 illustrates a key example of this, where a new bridge has been built where the route intersects with a side road, allowing for a seamless transition over the road at Reen.

Figure 6: New bridge built between Goonhavern and Cocks Village.



3.3 Lighting

Lighting was a critical consideration in the design of the Saints Trails, particularly in balancing personal safety and ecological impact.

Cornwall Council opted not to install lighting in rural sections outside of villages to minimise disruption to wildlife and to avoid over-urbanisation.

Instead, lighting was provided where routes interacted with key locations and villages. This approach ensured that the trails remained safe for users during low-light conditions while also protecting the ecological integrity of the surrounding areas.

3.4 Wayfinding and Placemaking

Wayfinding and placemaking were integral components of the Saints Trails design, aimed at enhancing user experience and creating a sense of place.

Clear, user-friendly signage was provided to enable users to easily and confidently navigate the routes. Placemaking elements, such as benches and stopping points, were incorporated to provide rest areas.

Natural materials, such as log piles, which were reclaimed from the tree clearance required to create the trails, were used to create seating areas. Taking this approach meant that Cornwall Council avoided unnecessary urbanisation of the countryside while also contributing to the biodiversity net gain target of 10%.

Engagement with organisations like the Walk Wheel Cycle Trust helped to facilitate these elements and integrate them into the design.

4. Delivery

4.1 Partners and roles

Primary partners included:

- Cornwall Council, which took on the delivery of the Saints Trails to address severance issues caused by the A30 works
- National Highways provided substantial funding and implementation support
- the European Regional Development Fund (ERDF) also contributed significant funding, particularly for sections like the St Agnes to Threemilestone trail

Funding was also secured from the Local Transport Plans (LTP). In addition to the above, organisations such as the Walk Wheel Cycle Trust and Cornwall Wildlife Trust were engaged to provide expertise in design, ecological planning, and community engagement.

4.2 Funding

A total budget of £20.35 million was secured to deliver the trails. The funding source was split as follows:

Funding	Cost (£ m)
National Highways	11.9
ERDF	5.16
Cornwall Council	2
LTPs	1.29

4.3 Delivery timescales/phasing

The project officially started in February 2019 with the preliminary design and public consultation phases. Land negotiations and acquisition, a critical and challenging component of the project, took place between February 2019 to December 2022, and the design development phase spanned from November 2019 to June 2022.

Construction was divided into multiple phases, with Phase 1 beginning in January 2020 and continuing through to June 2020. Unfortunately, the Covid-19 pandemic caused significant disruptions in the delivery of the routes, with national lockdowns impacting progress between March 2020 to April 2021.

Despite these challenges, the project managed to stay on track, with key milestones such as the opening of the Chiverton Bridge (April 2024) meeting the original programme delivery. The final sections of the trails, including the link to Threemilestone and the West Langarth Park and Ride, are scheduled to be completed in 2025.

4.4 Maintenance

The maintenance of the Saints Trails is a critical aspect of ensuring their long-term usability and sustainability. Given the length and nature of the routes, which are primarily off road, regular maintenance is key to keeping the paths safe and accessible.

The project highlighted the importance of identifying maintenance responsibilities and securing funding for ongoing upkeep during the early stages of the project.

Lesson learnt: Cornwall Council recognised that maintenance needs to be built into the funding agreements, as local authorities often struggle to allocate sufficient funding for ongoing maintenance of such schemes.

Additionally, using an unsealed, gravel surface, while balancing the need to avoid urbanising the countryside, presents specific maintenance challenges, such as ensuring the paths remain smooth and free of debris.

5. Outcomes

5.1 Overview

Cornwall has successfully developed two multi-user trails providing largely off-road routes where pedestrians, cyclists and equestrians have priority.

One of the key outcomes of the trails has been addressing the severance caused by the A30 trunk road. This enables those walking, wheeling, cycling and horse riding to seamlessly and safely pass over the A30 and provides a connection from St Agnes to Truro.

5.2 User outcomes

Quantitative data on flows and usage has not been collected by Cornwall Council. However, the Council reports that the trails are well used by pedestrians, cyclists and dog walkers.

These routes provide valuable space for leisure and recreation, as well as enhanced active travel connectivity between local communities. In addition, the trails offer significant tourism benefits, attracting walkers and cyclists and boosting business for local cafés, shops, pubs and more.

5.3 Strategic narrative

Cornwall Council expressed its interest in providing similar routes across the county. It emphasised the importance of longer-term strategies for land acquisition to help expand such routes.

As one of the biggest cycling infrastructure investments in the South West, the Saints Trails successfully illustrate how well thought out active travel infrastructure can tackle key issues posed in the rural context, particularly around land ownership and severance.

Figure 8: Saints Trail (Perranporth).



Case Study

7. Kennington Meadows



Key elements

- successful balance of ecological and landowner sensitivities with a high-quality, accessible design
- new drainage system addressing issues with flooding

1. Background

1.1 Context

Kennington Meadows is a 1.8km path providing an off-road connection from Kennington, a small village just south of Oxford, into Oxford city centre. The path was originally built in 1999 and forms part of NCN 5. Due to its popularity, Kennington Meadows required an upgrade to secure its continued use as a key off-road link for pedestrians and cyclists.

Due to its location within the Thames floodplain, its age and narrow width, the path suffered from flooding and poor drainage. This reduced its usability due to muddy and slippery conditions, particularly for cyclists and wheelchair users. The Walk Wheel Cycle Trust recognised that in order to support current and future demand and to ensure the path is accessible for all, upgrades were essential.

As part of a wider review of the NCN, the Walk Wheel Cycle Trust identified various maintenance needs and upgrade opportunities along the cycle route from Didcot to Oxford, which Kennington Meadows forms part of.

This review took place in 2017 and 2018 as part of the Walk Wheel Cycle Trust's Paths for Everyone review, and the path was subsequently upgraded in 2020 to ensure NCN 5 provides a high-quality, continuous route.

1.2 Scheme objectives

The key objectives of the scheme were:

- improved accessibility: the path was widened and resurfaced to provide increased accessibility, including those with adapted cycles, mobility aids, wheelchairs and pushchairs. The increased width also allows the path to accommodate existing usage and future demand, and ensures there is adequate space for shared-use
- increased usability: the new drainage system addresses issues of flooding and poor drainage, ensuring the path can be used year-round
- encouraging active travel: the improvements provide a high-quality, traffic-free route, encouraging residents and visitors to opt for active modes over car-use, reducing congestion in and out of Oxford
- supporting local ecology: the upgrade was carried out with sensitivity to the natural environment by including design measures to protect local wildlife and enhance biodiversity

Figure 1: Kennington Meadows, following the path.



1.3 Scheme typology

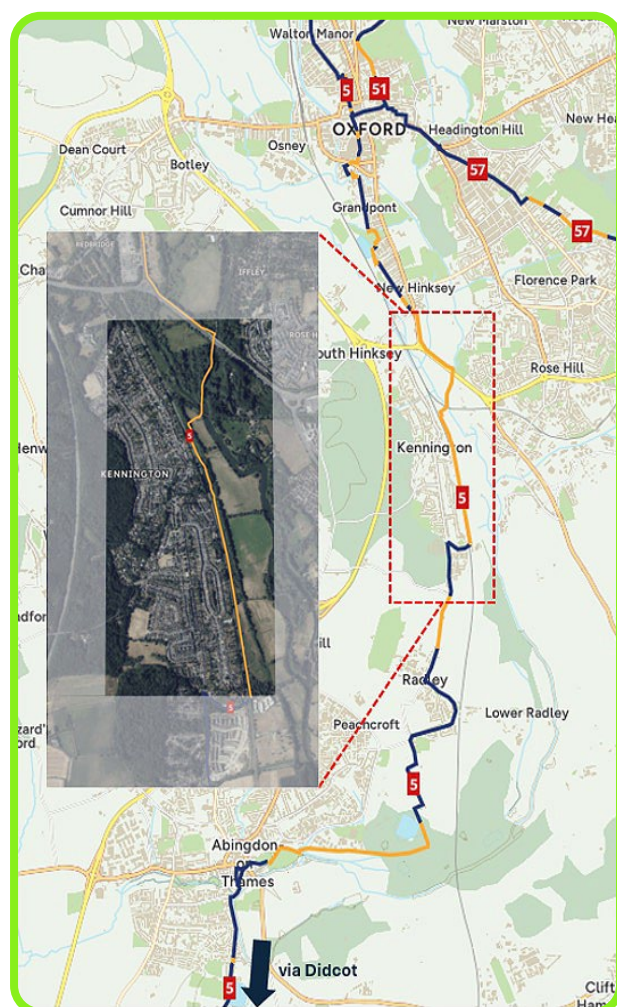
	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway	Shared	–	Leisure/utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

The Kennington Meadows path forms an integral part of NCN 5, which stretches from Reading to Holyhead.

The upgrades have helped maintain a high-quality, traffic-free link between Kennington and Oxford, making it easier for people to walk and cycle for their everyday journeys.

Figure 2: Kennington Meadows Path, forming part of NCN 5.

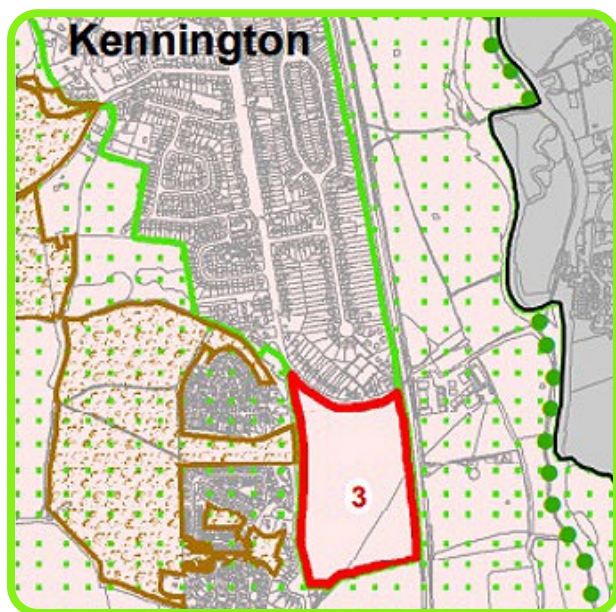


As shown in Figure 2, Kennington Meadows plays a key role in connecting the settlements south of Oxford to the city centre and beyond, including Kennington, Radley, Abingdon and Didcot.

Without this off-road section, pedestrians and cyclists would have to use alternative routes such as Kennington Road and Oxford Road, which due to motor vehicle volumes and speeds are unlikely to be suitable for on-carriageway cycling. South of the meadow, NCN 5 runs on/adjacent to the highway, connecting Abingdon via Radley Lakes.

Further to this, LCWIPs have been developed for Oxford, Abingdon and Didcot, identifying a network of priority routes for improved walking and cycling provision. Recognising the importance of continuous and direct routes, the three authorities worked together to ensure their respective LCWIPs supported improved connectivity between Oxford, Abingdon and Didcot. The Kennington Meadows path forms a crucial part of this north-south link and will help to encourage modal shift away from car use for those travelling to and from Oxford city centre and the surrounding settlements.

Figure 3: Extract from Local Plan site allocation for housing.



The strategic importance of the path upgrade was further highlighted in the Vale of White Horse District Local Plan (2019), whereby a site allocation for 270 dwellings (Figure 3) was identified south of Kennington. The development, which is now completed, feeds directly into the path via Sandford Lane, encouraging residents of the new site to travel to and from Oxford city centre via active modes.

1.5 Key elements/design features

Length	1.8km
Width	3m
Shared/segregated	Off-road, shared-use
Surfacing material	Machine-laid DBM surface
Lighting	None
Wayfinding	Local wayfinding
Placemaking	Signs and planters
Permitted users	Walking, wheeling, cycling

2. Planning and engagement

2.1 Network planning

The path was originally identified in 1999 as part of the Walk Wheel Cycle Trust and local volunteers' efforts to enhance the NCN. Kennington Meadows was recognised for its potential to provide a vital walking and cycling link, especially given its proximity to the Thames Path, and due to its strategic location in connecting Kennington with Oxford and other surrounding areas.

2.2 Approval process/consents

The upgrade needed to address the varying requirements of key stakeholders, including the landowner, tenant farmer, and users of the path. Both the Oxford Preservation Trust, which owns the meadow, and the tenant farmer wanted the upgrade to enhance public access while maintaining cattle grazing on the site.

The original surface, composed of two layers of tar and chip laid on stone, had deteriorated, becoming uneven and cracked. Over time, the top layer eroded, leaving the stone core as the main path, which was unsuitable for cyclists and those with mobility impairments.

To prevent similar issues in the future and extend the path's lifespan, a machine-laid DBM surface was laid. The Oxford Preservation Society requested and agreed to a surface dressing to minimise the visual impact of the new path. It was agreed that the path would be 3m wide to meet LTN 1/20 standards and the demands of users. Since opening, the path has proved more popular than anticipated, and may have benefitted from being slightly wider.

The width and surface dressing specification aligns with the recently upgraded riverside path by Oxfordshire County Council, which extends to the meadow's entrance.

Figure 4 and 5 provide a before and after view following the new surfacing, drainage system and bridge.

2.3 Engagement

The Walk Wheel Cycle Trust worked with the Oxford Preservation Trust to ensure that there was no damage associated with path upgrades on the wider meadow. This involved ongoing engagement where designs were shared and modified if required. This engagement resulted in the building of a section of path to allow construction machinery to access the path while minimising any unnecessary impact. In addition to the landowner, the Walk Wheel Cycle Trust also engaged with volunteers and supporters of the path. This involved delivering volunteer days to enhance the biodiversity of the meadow, including building bug hotels and planting wildflowers.

The Walk Wheel Cycle Trust also worked with the tenant farmer of the meadow to ensure the grazing activities of the farmer's stock was considered in the upgrade. Collaborative consultation between the farmer and landowner led to four out of the seven original cattle grids being retained. The design of the grids was also modified to enable safe passage for small mammals.

Key takeaway: The Kennington Meadows upgrade highlights how effective engagement can shape the design and outcome of a scheme. By engaging with the varied stakeholders, the Walk Wheel Cycle Trust was able to deliver a high-quality path while minimising the environmental and ecological impact on the land and farming practices.

3. Design

3.1 Overview

The 1.8km path has been widened to 3m and resurfaced to accommodate a diverse range of users, year-round.

The key elements of the upgrade included:

- 3-metre-wide machine laid DBM surface
- innovative flood management design
- refurbishment of the dilapidated bridge
- upgrading the entry point at Sandown Lane, creating a permeable gateway

Figures 4 and 5 show the renewed surface, widening and improved access along the path.

Figure 4: Before and after – new surfacing and drainage system.



3.2 Flood mitigation

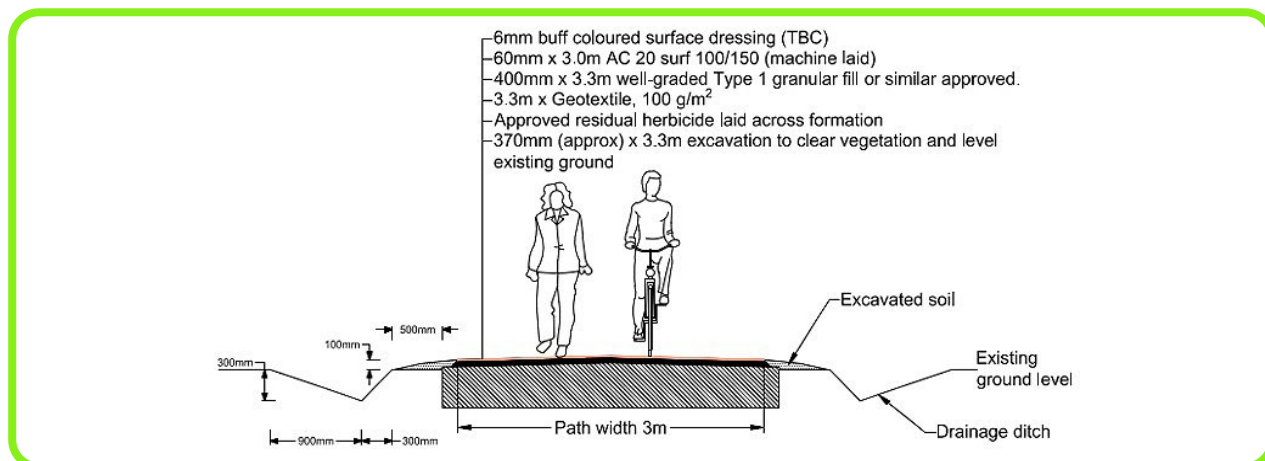
The surface was upgraded using a durable, weather-resistant material and a new drainage system was installed to prevent waterlogging and maintain the path's integrity. This was a crucial element of the design given the area's propensity to flooding.

This new system helps to channel water away from the path, reducing pooling and waterlogging whilst also minimising erosion and prolonging the lifespan of the new surface – see Figure 4.

Figure 5: Before and after showing renewed bridge.



Figure 6: Cross section showing drainage system.



This involved an innovative approach whereby pipes were laid under the meadow to take water into the ditches to be retained either side of the path. This innovation required clearance and approval from the Environment Agency.

3.3 Accessibility

Restrictive barriers were removed or modified to further enhance accessibility. This included a new gateway feature where the path meets Sandford Lane, where old barriers and gates were removed and replaced with a single bollard, give way lines and a planter, creating a more permeable and attractive entrance – see Figure 7.

Figure 7: Before and after showing improved access at Sandford Lane.



As shown in Figure 5, the old bridge was also renewed with new barriers, resurfacing and removal of the gate and cattle grid. This provided more seamless access, particularly for cyclists and those with mobility aids.

The Walk Wheel Cycle Trust also worked with the Oxford Preservation Trust to upgrade the gateway at the northern end of the path while minimising the impact on the existing decorative design, known locally as the ‘Fishes Gate’.

Figure 8 shows a before and after of the gate, where the path has been widened and resurfaced, barriers removed, and the decorative gate retained.

Figure 8: Before and after showing improved access whilst retaining the ‘Fishes Gate’.



3.4 Ecological sensitivity and sustainability

Ecological sensitivity was a key consideration for the Walk Wheel Cycle Trust when planning and designing the upgrade. Subsequently, surveys were conducted to identify measures to protect local wildlife, including great-crested newts and glow worms.

This review led to the installation of a winter shelter for hibernating animals and a series of log piles for the great-crested newts. The glow worms were successfully relocated and have since been spotted back in the area.

In addition to this, measures were taken to ensure that birds, reptiles, otters, and water voles were undisturbed during construction.

To further support biodiversity, native wildflowers were planted along the route, and bird and bat boxes were installed. These additions provide habitats for local wildlife and enhance the natural beauty of the area. The project also included the distribution of wildflower seeds by volunteers, encouraging community involvement in maintaining the ecological health of the meadows.

Key takeaway: The Walk Wheel Cycle Trust recommends that in locations like this, ecology should be at the core of a project or programme. This ensures that the right measures and design considerations are in place to protect and enhance ecology from the outset.

3.5 Lighting

Lighting was not installed during the upgrade in order to minimise disruption to wildlife and preserve the rurality of the path. Providing lamp columns within the meadow would also have been difficult logistically.

4. Delivery

4.1 Partners and roles

Primary partners included:

- the Walk Wheel Cycle Trust, which led the project and was responsible for the improvements to NCN 5
- Highways England, the European Agricultural Fund for Rural Development and the Oxfordshire LEADER programme, who funded the upgrade
- The Oxford Preservation Trust and the tenant farmer, who collaborated on the project as key stakeholders

4.2 Funding

A total budget of £342,833 was secured to deliver the path upgrades. The funding was split as follows:

Scheme	Cost (£ 000s)
National Highways	282
ERDF	59

4.3 Delivery timescales/phasing

As previously mentioned, the project commenced following the Walk Wheel Cycle Trust's 2018 Paths for Everyone review.

Once the engagement had been undertaken and design options drawn up, construction began, and the upgrades were completed in 2020.

4.4 Maintenance

The improved widths afforded by the upgrade are only effective if vegetation is maintained and cleared. Maintenance, including vegetation clearance, is currently funded and managed by the Walk Wheel Cycle Trust with charitable donations, as they hold a lease for the path. The Trust also works with the Oxford Preservation Trust to ensure the path remains in good condition.

While the sealed surface is a durable alternative to other surfaces commonly used in rural contexts, continued monitoring of any potential wear should also be considered as part of the path's longer-term maintenance plan.

An unplanned maintenance cost has been associated with replacing the fixtures on one of the gates into the meadow. This has been managed and funded by the Walk Wheel Cycle Trust.

5. Outcomes

5.1 Overview

The upgrade of the Kennington Meadows path has balanced ecological and landowner sensitivities with a high-quality, accessible design, enabling people in Kennington and the surrounding areas to enjoy 1.8km of improved shared path all year round.

In 2021, the upgrades to the meadows won an Oxford Preservation Trust Award in the 'Landscape and Public Realm' category, confirming the success of the improvements – see Figure 9.

Figure 9: Award-winning scheme – Kennington Meadows Path.



5.2 User outcomes

The path upgrades have received an overwhelmingly positive response from residents, visitors and other key stakeholders including the landowners.

Mike, a local resident who uses the route daily to get to work in Oxford, said:

“Having cycled this route on my daily commute from Abingdon to Oxford for over 10 years, it’s great to see the investment made by the Walk Wheel Cycle Trust to improve this path.

“Some sections of the path were very difficult to cycle due to the poor surface, particularly through the dark winter months, so as a regular path user the upgrade now offers a much safer alternative to cycling on the road into Oxford.”

This account highlights the importance of such improvements in encouraging modal shift away from car use from towns and settlements into cities and employment hubs.

An anonymous note was left along the path reading:

“A massive thank you to all the team that have been working on upgrading the cycle track. You are doing an amazing job. The work that you have done has greatly improved our use of this route, my commute into work every day is so much nicer.... Well done and thank you.”

5.3 Strategic narrative

The strategic importance of this short section of route and recent upgrade should not be underestimated.

Delivering this upgrade meets the key aims of the Connect Oxfordshire: Local Transport Plan (2015–2031), to “make cycling a safe, simple and accessible option for people of all ages”. This particular section of NCN 5 meets “the need to enable non-users to become confident about travelling by bike” by providing an off-road and accessible environment for people of all abilities to cycle.

The upgrades also build on recent investment from Oxford’s Growth Fund, extending the improvements from Iffley to the entrance to Kennington Meadows, and will serve the new housing developments at South Kennington and on the north side of Ridley.

Debbie Dance, Oxford Preservation Trusts Director, said:

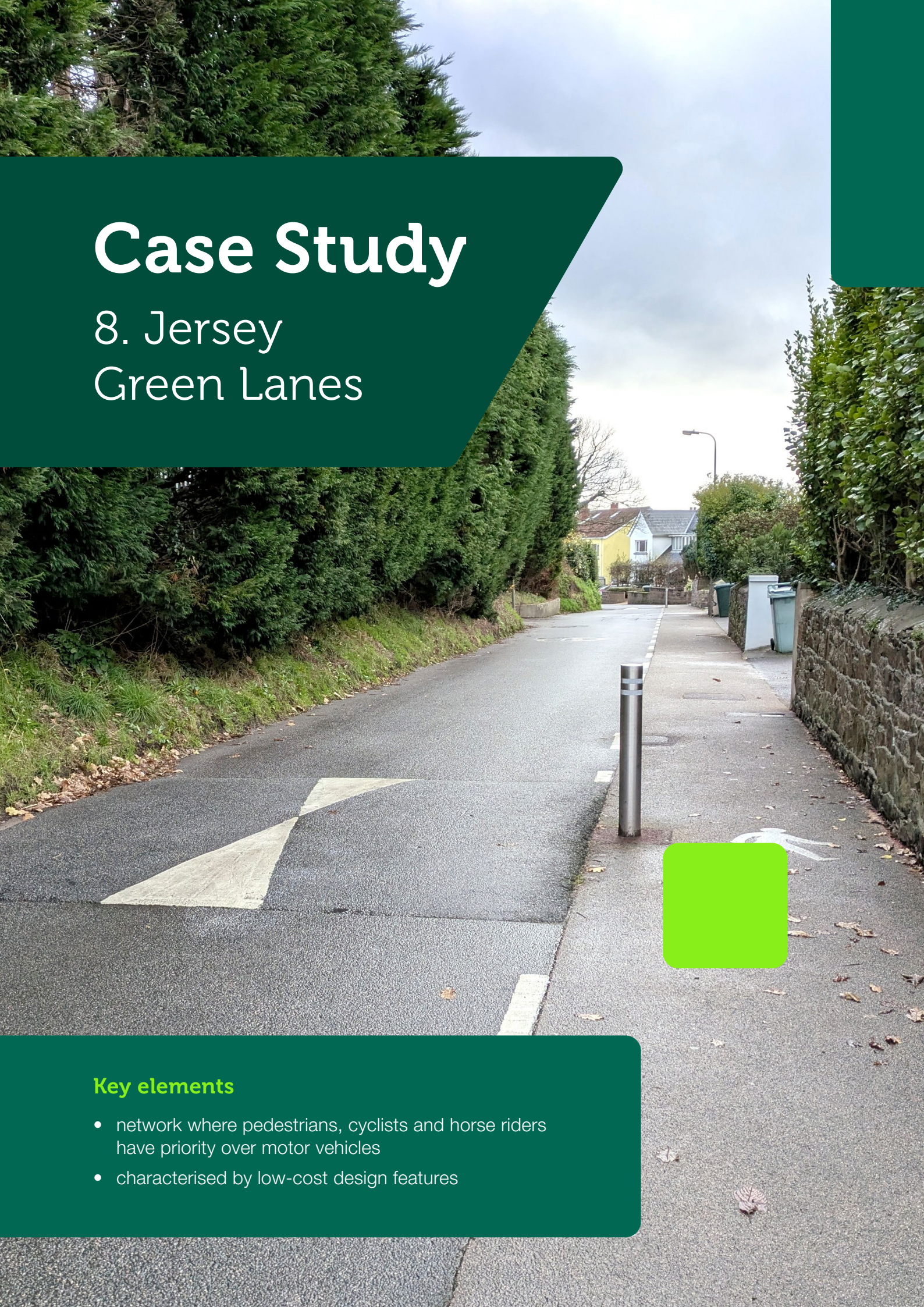
“The improvements support our climate change vision and further develop accessibility to our valuable green spaces. Our commitment is to conserve Oxford’s green setting sharing its beautiful flora and fauna with all encouraging positive health and well-being. Comments from local residents and cyclists from further afield highlight how these improvements have had a positive impact.”

Figure 10: Improved access for all.



Case Study

8. Jersey Green Lanes



Key elements

- network where pedestrians, cyclists and horse riders have priority over motor vehicles
- characterised by low-cost design features

1. Background

1.1 Context

Jersey's Green Lanes were first proposed by the Constable of the Parish of St. Peter to the Government of Jersey (GoJ) in 1994, and have since expanded to cover over 100km of the island's roads. They were originally developed to connect villages to beaches and other points of interest, particularly for walkers and horse riders, but have since expanded to provide safer routes for cyclists in mixed traffic conditions.

Characterised by their required low speed limit of 15mph, pedestrians, cyclists and horse riders have priority over motor vehicles through Jersey's Highway Code.

The Green Lanes are complemented by a national speed limit of 40mph across the island and with many rural lanes outside of the Green Lane network signed at 30mph.

Quiet Lanes are minor rural roads designated by authorities under the Transport Act 2002 to prioritise active travel and improve road safety for vulnerable road users.

Green Lanes, however, are unique to Jersey and cannot be designated in England. The Quiet Lanes and Home Zones (England) Regulations 2006 state that Quiet Lanes should have less than 1,000 motor vehicles per day and have an 85th percentile speed of less than 35mph. Unlike Green Lanes, it is not a requirement for Quiet Lanes to have low speed limits.

The Jersey Highway Code advises motorists to avoid Green Lanes except for access and sightseeing, with the aim of creating a better environment for pedestrians, cyclists and horse riders. However, only the speed limit is enforceable.

Due to their speed limit and priority for pedestrians, cyclists, and horses, Green Lanes may encourage more considerate driving behaviour and provide greater benefits for active travel users than Quiet Lanes.

Complementary design features such as virtual footways encourage safe driving, and reinforce pedestrian and cycle priority on Green Lanes with a wider highway.

Figure 1: Jersey Green Lane with virtual footway.



1.2 Scheme objectives

The objectives of the Green Lanes are to provide a network of roads on the island where pedestrians, cyclists and horse riders have priority over motor vehicles.

While people living on the island will benefit, Jersey is also a popular tourist spot. Creating safer leisure routes will help everyone, including visiting families and children, to enjoy the area more safely.

Figure 2: Green Lane signage and virtual footway.



The key objectives of the Green Lanes include to:

- encourage active travel among residents by providing safer, lower traffic routes and connections between towns, villages and points of interest
- promote leisure and recreation, supporting tourism and encouraging those visiting the island to explore by active modes
- encourage motor vehicles to use the main road network, reducing through traffic and limiting motor vehicles largely to those requiring access to properties and amenities along the network

Figure 3: Extract from Jersey Highway Code.



1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	On-highway	–	Mixed traffic	Leisure and utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

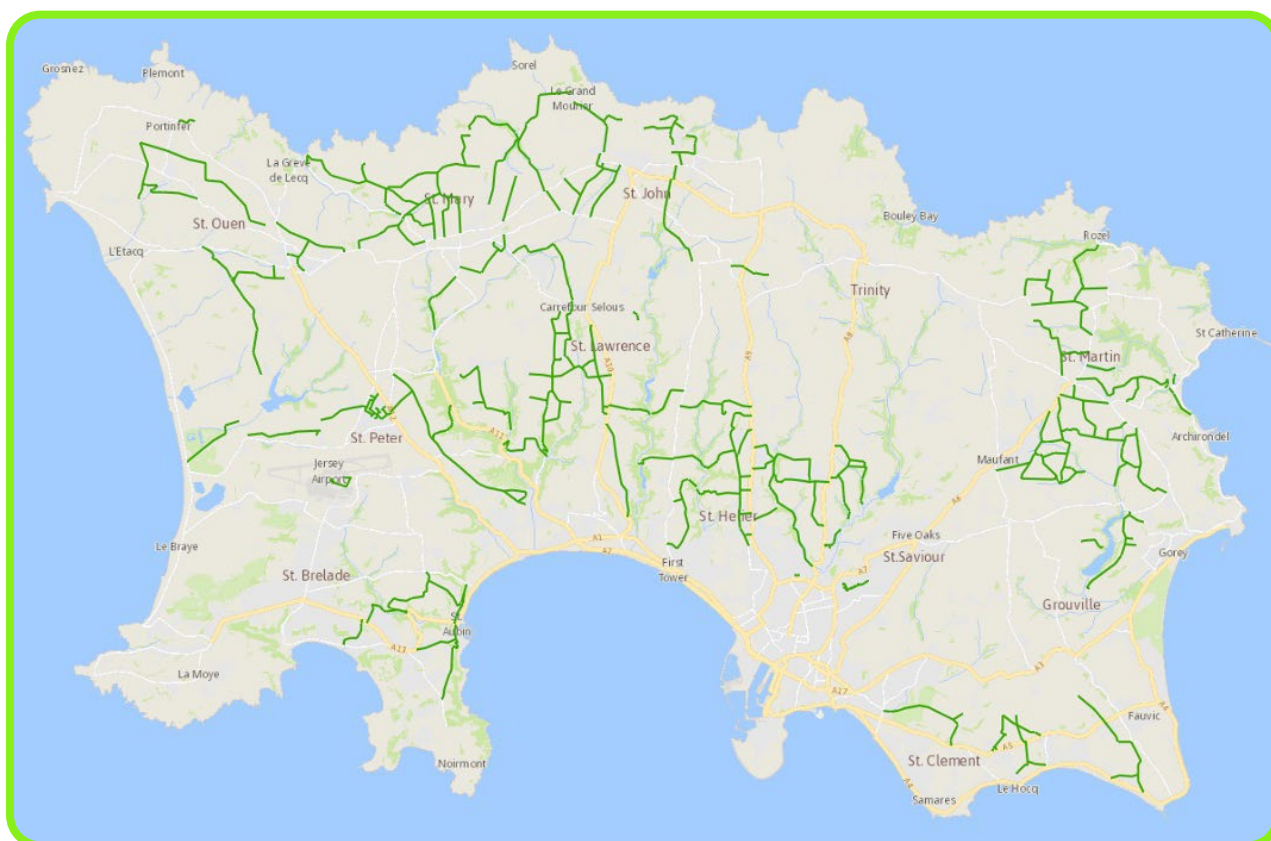
The extent of the existing network is shown in Figure 4.

The Green Lanes feature in 10 of Jersey's 12 parishes and cover over 100km of road network. The GoJ, with the help of the parishes, is working to integrate the Green Lanes into Jersey's wider active travel network, providing connections to key towns, points of interest and amenities.

A key consideration for future Green Lane development will be providing a safe integration into the strategic cycle network, particularly at major crossing points. As the highway authority, the GoJ will work closely with the parishes to ensure this integration aligns with parish priorities as well as the GoJ's design standards.

Key takeaway: In Jersey, Green Lanes can play a key role in reducing the dominance of motor vehicles and positively influence driver behaviour, while requiring minimal physical intervention on the ground. Subsequently, the GoJ has been able to support a large network of active travel priority routes on rural roads at a low cost and with minimal impact on the natural environment.

Figure 4: Existing Green Lane network in Jersey.



1.5 Key elements/design features

Length	108km
Width	Varied
Shared/segregated	Mixed traffic
Surfacing material	Asphalt
Lighting	No
Wayfinding	Local wayfinding
Placemaking	No
Permitted users	Walking, cycling, equestrians

2. Planning, engagement and delivery

2.1 Network planning

The existing network has evolved over time, but in 2023 the GoJ published the [Sustainable Transport Policy: Next Steps](#), which set out strategic corridors for cycling across the island. These corridors will connect with existing links to create a comprehensive island-wide network for utility and leisure trips. The evidence base and proposals will inform the development of future cycling and walking delivery plans.

2.2 Approval process/consents

The parishes of Jersey are the highway authority for the network of minor roads within which the Green Lanes are located. Parishes consult on proposals to create Green Lanes and, if supported, request approval from the GoJ to amend the speed limit order to 15mph.

Much of Jersey's road network is parish owned. Therefore, primary jurisdiction over which roads are selected and the design features Green Lanes should contain lies with the individual parishes. This ensures that the routes are designed with the needs of key local stakeholders in mind, while aligning with the GoJ's strategic network objectives. Coordination between parishes and with the GoJ regarding network planning and delivery for Green Lanes is important. This mitigates the risk that Green Lanes will be developed in isolation without cross-boundary connectivity, which would undermine the usability of the network across Jersey as a whole.



3. Design

3.1 Overview

Jersey's Green Lanes are generally located on narrow, rural roads characterised by low traffic volumes and speeds. They require Green Lane terminal signs, and other design features commonly used include:

- 15mph roundels
- virtual footways
- traffic-calming measures such as speed humps (used sparingly given the rural context)

Virtual footways are used where footfall is higher, often when Green Lanes pass through settlements or near trip attractors. Virtual footways are provided on one side of the road and typically use context-sensitive natural coloured surfacing and bollards to signify pedestrian priority, and to prevent vehicles from encroaching on the virtual footway.

There is a line marking to reinforce this, and a priority direction system operates in which vehicles can use the space to pass each other. They are often used on roads where the width does not allow for two-way traffic and a raised footway. They are space-efficient and are a cost-effective way of providing space for pedestrians, albeit with less protection, and can help to reduce vehicle speed.

3.2 Signs and wayfinding

All of Jersey's Green Lanes have entry and exit signs (Figure 6) to indicate their status and reiterate the associated pedestrian, cyclist and equestrian priority.

Unlike Quiet Lane signage, Green Lane signs are not regulated. This means there is a degree of variation across the network regarding their format and/or application.

Figure 5: Green Lanes with virtual footways.



15mph speed limit signs are often displayed alongside Green Lanes signs and, where applicable, are co-located with wayfinding to enable users to navigate the signposted cycle network.

Figure 6: Green Lane signs with 15mph roundel and wayfinding.



3.3 Junctions and crossings

When Green Lanes meet or end at busy roads without traffic controls, and sometimes continue on the other side, there are no clear safety features to help people walking, cycling, or using wheelchairs cross safely. However, as part of the Sustainable Transport Policy: Next Steps, the GoJ is considering ways to improve safety and priority where Green Lanes meet and cross main roads.

3.4 Accessibility

Green Lanes provide a level of user accessibility due to their low-speed/low-volume nature, scale and permeability across the island. Where pedestrian activity is higher, virtual footways provide a degree of protection that improves accessibility for some users.

3.5 Lighting

Green Lanes are primarily located on roads outside settlements where there is no requirement for street lighting, and where the rural context and environmental sensitivities mean it cannot be used. Lighting exists in certain places where there is higher activity, notably where Green Lanes pass through settlements.

4. Outcomes

4.1 Overview

Jersey's Green Lanes are well established and well used by residents and tourists. They offer a safer network of active travel routes on corridors with space constraints and relatively low demand, where there is not a need to provide segregated facilities.

As a low-cost intervention, Green Lanes play a key role in improving connectivity to the strategic cycle network to create a more permeable and dense network of routes across the island.

4.2 User outcomes

While quantitative data on flows and usage has not been collected, informal feedback has been positive. Users commend the active travel priority, clear signage and well-maintained routes provided by the Green Lane network. The reduced speed limits and priority given to non-motorised users creates a safer and more attractive environment which is atypical of most rural lanes, including those in the UK.

As with Quiet Lanes, Green Lanes rely on considerate driver behaviour to create the conditions for mixed-use space to be successful. With Green Lanes, this is behaviour more commonly exhibited, largely due to the 15mph speed limit and Jersey Highway Code advice on active mode priority.

4.3 Strategic narrative

By prioritising active travel, Jersey's Green Lanes help to reduce the dominance of vehicular traffic and the associated environmental impacts, fostering a cleaner and quieter rural environment.

The Green Lanes network also offers scenic and safe routes for leisure activities, thereby enhancing the islands' appeal as a tourist destination and contributing to the local economy. The lanes play a crucial role in preserving the island's natural environment and heritage, aligning with the GoJ's broader goals of conservation and sustainable development.

Overall, Jersey's Green Lanes are a vital asset in creating a more sustainable, accessible, and enjoyable road network for all.

Case Study

9. Lias Line Greenway



Key elements

- unique and innovative approach to ecology to secure approval
- filling gaps in the network to connect settlements
- collaborative working with stakeholders

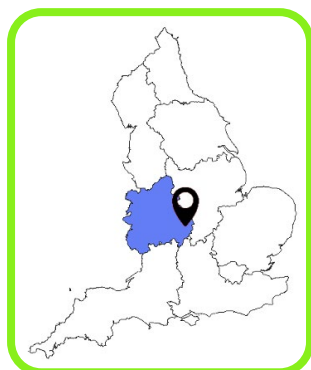
1. Background

1.1 Context

The Lias Line is a disused railway connecting Leamington Spa to Rugby and Daventry, which is being transformed into a high-quality walking, wheeling, and cycling greenway by the Walk Wheel Cycle Trust.

The existing NCN follows winding roads, some of which carry high speed and volume motor traffic. These on-road routes were identified as unsafe and indirect in a review of the NCN in 2018. This review also found the condition of the off-road segments on the railway alignment to be very poor, with overgrown vegetation and a sub-standard surface.

The existing route was also planned to be severed by the construction of Phase 1 of HS2. This set the backdrop for the



development of a greenway route that could provide a safe and direct alternative to the existing on-road route, connecting the communities of Rugby and Leamington Spa.

1.2 Scheme objectives

The aim of the project is to re-route a section of NCN 41, taking it off road onto a completely new purpose-built greenway. The genesis for this investment was the Paths for Everyone review conducted by the Walk Wheel Cycle Trust in 2018, which reviewed the condition of the NCN across the UK.

This review set out a vision for the NCN, which outlines a network that:

- is UK-wide, connecting communities in cities, towns and rural areas
- is safe, traffic-free, and can be used by a sensible 12-year-old travelling alone
- is accessible and open to everyone
- provides for all users, not only for those cycling. In particular, for those with mobility challenges or who are less physically active

The Lias Line scheme seeks to fulfil this vision for a safe, accessible, traffic-free NCN, and has been designed to a high standard, to ensure the greenway remains safe and accessible for many years to come.

Figure 1: Newly constructed bridge over the A423 at Marton.



1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway	Shared	–	Leisure and utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

When complete, the Lias Line will form part of a network of approximately 15km of high-quality and fully accessible traffic-free greenways for walking, wheeling and cycling between Leamington Spa and Rugby/Long Itchington.

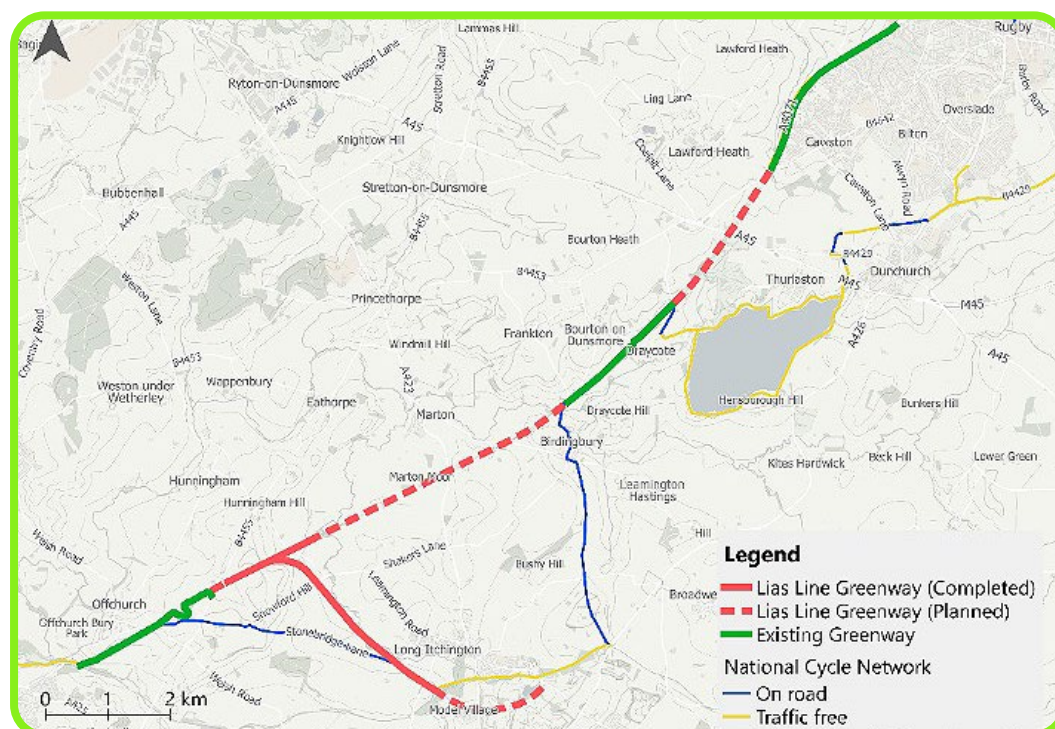
Phase 1 of the project has already been delivered, seeing the construction of a 4.5km path on the ‘branch line’ taking the route south from Hunningham to Long Itchington. Phase 2 of the route covering 2.5km of the ‘main line’ east from Hunningham is currently under construction. The scope of future phases will depend on the funding available.

It is expected that HS2 will commence work constructing a new bridge over the Fosse Way in 2025, connecting the Lias Line with the Offchurch Greenway and closing a 120m gap in the network. When this and work on Phase 2 is complete, the NCN can be formally re-routed onto the new off-road section, significantly improving the safety and accessibility of the route.

Future phases of the project, which are dependent on securing additional funding, aim to improve the route east towards Birdingbury, and towards Stockton Reservoir in the south. These final stages will help realise the vision of a high-quality, traffic-free link connecting Rugby and Leamington Spa, offering both a practical commuting route and a scenic path for leisure.

Figure 2: Lias Line Greenway.

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1.5 Key elements/design features

Length	15.5km (7.5km complete)
Width	3m
Shared/segregated	Shared
Surfacing material	Asphalt
Lighting	None
Wayfinding	Walk Wheel Cycle Trust wayfinding
Placemaking	Benches, picnic areas, wayfinding incorporating railway heritage, statues of local celebrities
Permitted users	Walking, wheeling, cycling, equestrians

2. Planning and engagement

2.1 Network planning

The route alignment takes the most direct possible routing between Rugby and Leamington Spa, following the former railway line. The route was prioritised by the Walk Wheel Cycle Trust following the Paths for Everyone review. The route is also identified as a priority in Warwickshire's LCWIP.

Figure 3: Lias Line route before construction.



2.2 Approval process/consents

Limited land acquisition was required for the route, with ownership of most of the land residing with Railway Paths.

The route spans three planning authorities, with permission required from Rugby Borough Council, Warwick District Council, and Stratford-on-Avon District Council. Working with these authorities, the Walk Wheel Cycle Trust was able to secure three consents with identical conditions.

The main conditions associated with the works were related to ecology, with the Trust adopting an innovative approach to enhancing biodiversity in their designs. The way this approach shaped the design of the route is detailed in subsequent sections below.

Key takeaway: Where a route crosses multiple planning authorities, it is important to work closely with the county, district, and parish councils to smooth the process of obtaining consent for the works.

2.3 Engagement

The Trust took a targeted engagement approach to developing the route, working with local residents, landowners and user groups to shape the design and enable construction of the scheme.

One of the key partnerships developed during this engagement phase was with the British Horse Society, with the area home to a number of stables and equestrian groups. Working with the Trust, the British Horse Society helped to identify where access for equestrians was required, and what was needed to enable use of the route by horses. For most of the length, a trotting strip is provided next to the path, allowing for horses to benefit from a softer surface.

At historic structures or constrained sections where equestrian access could not be provided, mounting blocks are provided, or alternative horse-riding routes signed.

“From the very beginning, we’ve worked closely with the local community and that’s reflected in the outcome. What we have is a path for everyone – it’s for the walkers, the cyclists, the horse riders and for nature too.”

Clare Maltby, Director for the Walk Wheel Cycle Trust in the Midlands and East

Lesson learnt:

Working collaboratively with equestrian user groups to identify improvements that enable equestrian use to a route can help build support for that route. Where equestrian access must be restricted, working in partnership to identify alternatives/ infrastructure required is a great model to follow.

To enable construction, access agreements needed to be struck with local farmers and landowners. These were mainly required for access to construction sites and for PRow diversions. Rather than financial compensation, working with landowners to identify infrastructure that helps with the operation of their farm such as gates can be a good alternative. These relationships were built early, ahead of funding, to ensure any financial implications to the project were captured.

Key takeaway: Consider what construction access arrangements will be needed at an early phase of the project and engage with these landowners to identify improvements that can be provided to the route to benefit them.

3. Design

3.1 Overview

The scheme has already delivered 7.5km of traffic-free paths and, once completed, will form a 15km network of greenway. The final route design will include:

- a continuous asphalt traffic-free path
- construction of two new bridges
- seating and placemaking improvements
- biodiversity/ecology improvements
- an equestrian trotting strip

The main challenges associated with designing the route were linked to biodiversity and ecology, with consent for the route predicated upon providing Biodiversity Net Gain and enhancing habitats for endangered species.

3.2 Links

The path was designed with a surfaced width of 3m to reduce conflict between users. The asphalt surface was constructed using asphalt (AC20) to provide a robust all-weather surface. On historic bridges/structures, a fine aggregate was used with drainage down parapets to either end of the bridges.

Initially, a sharp sand binding was provided either side of the path as a trotting strip. However, working with the British Horse Society, some users provided negative feedback on this surface type. Future phases of the route will use a wildflower meadow/rough soil as a trotting strip, which will be softer underfoot for horses.

Lesson learnt: Work closely with user groups on material choice and be prepared to make changes in response to feedback as phases open.

Figure 4: Newly installed asphalt on the Lias Line, with trotting strip provided either side.



An innovative approach was taken to securing embankments, with Terramesh used instead of gabions. This steel wire and hessian mesh is pinned into the soil, allowing for steeper embankments and faster construction. This was particularly crucial on the former railway alignment and its many historic embankments.

3.3 Lighting

While lighting the route was investigated, the significant costs of doing so (installation, providing a new electrical supply, and ongoing maintenance) were not considered justified in the context of low levels of use outside of daylight hours. Additionally, ecological impacts from lighting would have needed managing, and lighting the route would have made it more challenging to achieve planning consent.

3.4 Accessibility

The route was designed to be accessible to all abilities and users, with generous widths and a sealed surface provided. Access to the greenway is controlled by bollards spaced a minimum of 1.2m apart to enable access to wheelchairs and adapted cycles, and existing inaccessible barriers to the greenway were removed. The route is accessible to all users to meet the vision of the Walk Wheel Cycle Trust's Paths for Everyone programme.

3.5 Wayfinding

Signage is provided, following traditional Walk Wheel Cycle Trust wayfinding standards, and highlights connections to the NCN.

3.6 Placemaking

Benches are provided at regular intervals along the route, some of which were constructed using former railway sleepers as a nod to the railway heritage of the route.

Location signage was also designed to highlight this heritage, mirroring the way station names were designed in the past.

Additionally, the Lias Line benefitted from the Walk Wheel Cycle Trust Portrait Benches project, to mark the passing of Queen Elizabeth II. Residents voted on who they believed to have made a positive impact on their local community over the last seven decades. Laser-cut silhouette figures of David Moorcroft (Parkrun Chair and former Olympian) and Eileen Sheridan (British road cyclist) were installed at the junction with the former Long Itchington branch line.

Figure 5: Portrait benches project on the Lias Line.



Credit: Walk Wheel Cycle Trust.

3.7 Ecology

Ecology was one of the greatest challenges when designing this route. Left abandoned, the former railway line had been reclaimed by nature and had become an important habitat for numerous endangered and protected species. In Phase 1 alone there were five badger setts, two significant newt habitats, bat roosts in four brick bridges, reptiles and invasive species.

A habitat management plan was developed to identify where habitats could be created to home existing wildlife and satisfy Biodiversity Net Gain (BNG) requirements.

Pools that had formed in tyre tracks along the route were home to great-crested newts. To preserve this habitat, £500,000 was spent on a permeable decked boardwalk, allowing water ingress to habitats below, while protecting the route above from flooding. In total, four amphibian/reptile ponds were created as part of the works.

Where bat surveys identified roosting in railway structures set for demolition, cavities had to be stopped up in advance of the demolition work to avoid disturbance to the bats. Bat boxes were created to provide a new enhanced habitat for the species.

Figure 6: Boardwalk installed on the Lias Line to protect habitats below.

Credit: Walk Wheel Cycle Trust.



Where badger setts were found, a live dig approach was taken in accordance with the conditions of a badger licence. This approach can take longer than exclusion and destruction of the setts but can be programmed (as there can be significant programme impacts if badgers return under the exclude/destroy approach). New setts were created, and crossing points across the path provided. The subsurface of the path was also geo-engineered to prevent badgers undermining the path. This approach to badger habitat management did require that construction took place in November, which brought additional challenges related to construction during winter months.

The route crosses the River Itchen three times and also the Grand Union Canal, requiring the protection of two otter sites and consideration of the impacts to aquatic biodiversity.

Additionally, the Walk Wheel Cycle Trust worked closely with the Warwickshire Butterfly Conservation group to improve the habitat for the common blue butterfly.

Figure 7: Habitat creation on the Lias Line.



Construction methodology was also adapted to protect the delicate ecology of the route. This included:

- isolating ecologically sensitive areas with fencing and newt barriers
- limiting plant sizes to reduce impact on badger setts

Safe storage of plant fuel and construction materials to prevent pollution of watercourses or the general environment.

4. Delivery

4.1 Partners and roles

The Walk Wheel Cycle Trust was the scheme sponsor, and took a lead role in developing the route.

The route spans three planning authorities, with permission required from Rugby Borough Council, Warwick District Council, and Stratford-on-Avon District Council. The Trust worked with these councils, alongside parish councils, on the design to help secure consent for the scheme.

Additionally, Warwickshire County Council has been instrumental in the delivery of the scheme, submitting the successful Active Travel Fund 4 funding application to enable the construction of Phase 2 of the route.

The British Horse Society has played an active role in supporting the design development of equestrian elements, and supplied funding for barrier removals on the route.

HS2 is leading on the delivery of the Fosse Way bridge that will cross the new railway, and ultimately connect the greenway to the NCN and the Offchurch Greenway.

4.2 Funding

Section	Funding source	Cost (£ m)
Phase 1 (4.5km)	Walk Wheel Cycle Trust Paths for Everyone funding	5.44
NCN 41 towpath link (700m)	Walk Wheel Cycle Trust Paths for Everyone funding	0.29
'Missing link' Fosse Way (785m)	HS2/DfT	0.85
Phase 2 (2.5km)	Active Travel Fund 4 (via Warwickshire County Council)	2.5

Additional funds were also provided by Warwick District Council (£75,000) and the British Horse Society (£25,000).

Warwickshire County Council has included the route as a priority within their transport strategy and LCWIP. This has allowed Section 106 funds to be secured from developers to help support the delivery of future phases. Further avenues for funding are still being explored for the delivery of future phases.

4.3 Delivery timescales/phasing

Throughout the project, the Walk Wheel Cycle Trust has developed designs ahead of funding, so that the scheme is shovel ready when funding sources are identified. This has resulted in a phased approach to the construction of the route.

2018	The Paths for Everyone review of the National Cycle Network found the route in poor condition
2020	Planning permission submitted by the Walk Wheel Cycle Trust to improve the Lias Line
2021	Work started on Phase 1, a 4.5km stretch on the 'branch line' taking the route south from Hunningham to Long Itchington
2022	Phase 1 completed
2023/4	Construction started on Phase 2, covering 2.5km of the 'main line' east from Hunningham
2025	HS2 is scheduled to begin works on the bridge over Fosse Way connecting the route to the Offchurch Greenway and NCN 41

The scope of future phases will depend on the funding identified, with the ambition to connect missing links to create a continuous 15km network of greenways.

Figure 8: Installation of machine-laid asphalt on the Lias Line.



5. Outcomes

5.1 Overview

While quantifying outcomes at an early stage after a route is open is challenging, anecdotal feedback has indicated that the route has been well received by the community and users. This success is clear in the high quality of the finished greenway, which once connected to the wider network is expected to generate further benefits.

5.2 User outcomes

As the majority of the route was not passable by cycles previously, no previous counts of usage were available. Once Phase 2 has opened, monitoring activities will take place to establish the level of usage.

As the route is not fully constructed, usage is currently predominantly leisure oriented, with utility trips enabled once the greenway network is complete.

Upon opening, the Walk Wheel Cycle Trust held a number of activation events focused on the ecological elements of the scheme. This included wildlife activities with volunteers, wildflower seeding and ongoing vegetation management, with capital funding used to buy the volunteers tools as part of the legal commitment to Biodiversity Net Gain.

Key takeaway: Capital funding can be a more viable avenue to use for equipping volunteers when linked with Biodiversity Net Gain.

Figure 9: Users on the Lias Line.



5.3 Strategic narrative

The strategic narrative rested upon the poor condition of the existing route and the unsafe on-road alternative. Improving the route to align with the Paths for Everyone vision was therefore a key strategic priority for the Trust and aligns with their core purpose of enhancing the NCN.

As part of the Active Travel 4 funding application, a value for money assessment was conducted to quantify the benefits of the completed route. This identified a benefit cost ratio of 3.44, indicating the investment represented good value for money. This was based on a 40-year scheme lifespan, which given the high quality of materials used and the rural context was considered acceptable.

Most of the benefits will be realised once the full route is completed, connecting the towns of Rugby and Leamington Spa. This will allow the route to enable commuting and utility trips, as well as providing access to the Warwickshire landscape.

"It will complete a long-held community aspiration to develop the entirety of the Lias Line so that it becomes a path for all, enabling local people and visitors alike to get outdoors and experience some beautiful parts of Warwickshire."

**Jeremy Wright MP,
Kenilworth and Southam**

Figure 10: Completed section of the Lias Line.



Case Study

10. Strawberry Line

Key elements

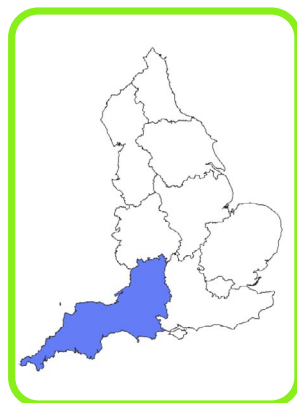
- volunteer driven improvements with community involvement enabling a pragmatic approach to design and delivery
- incremental approach to completing the full alignment
- leveraging funding opportunities from varied sources to enable delivery of sections of the route

1. Background

1.1 Context

The Strawberry Line is a project to establish a continuous greenway between Clevedon and Shepton Mallet. Community groups have been leading the delivery of new stretches of route. The route follows the former Cheddar Valley Line, a branch of the Bristol & Exeter Railway that became known as the 'Strawberry Line' because of the volume of locally grown strawberries it carried to London and Birmingham markets. The line closed to passengers in 1963, and community groups have been working since to reopen the line for walking, wheeling, cycling and horse riding.

Most of the path from Yatton to Cheddar was put in place before 2000, after which



progress towards developing a continuous route further east stalled. The Strawberry Line Society was formed as a charity with the objective of driving progress on providing a path along the entire line.

In the last five years, the society has been supported by the charity Greenways & Cycleroutes (G&CR) and 6.1km of new and complex sections of path have been constructed, repurposing old railway structures in and around Shepton Mallet. Both charities are staffed by committed local volunteers. Somerset Council has supported the delivery of the most recent sections of route.

In 2023, sections at Easton and in West Shepton were delivered for around £130,000 per km. These examples demonstrate the pivotal role that charities can play in constructing greenways between rural communities at affordable prices. In this case, the expert design and delivery approach of G&CR was instrumental in driving forward pragmatic approaches to design and delivery.

Figure 1: Aerial view of the Strawberry Line at Westbury-sub-Mendip – opened December 2022



1.2 Scheme objectives

The key objective of the project is to provide a continuous off-highway route connecting towns and villages along or adjacent to the Strawberry Line alignment. This will enable the public to travel in an active and sustainable way and improve access to the Somerset countryside.

1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway	Shared	Sections through towns or where route incomplete	Leisure and utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

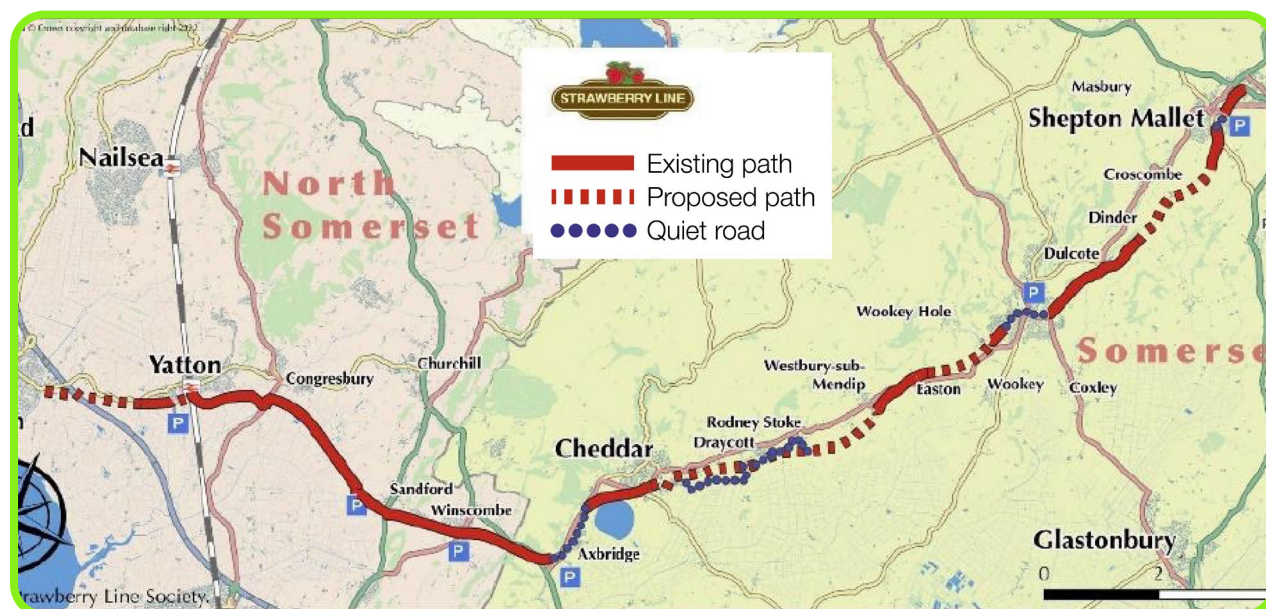
1.4 Network connectivity

The northern section of the route between Yatton and Cheddar is signed as NCN 26, whilst the central section forms part of NCN 3 and Eurovelo 1. The completed sections are the primary walking and cycling connections between settlements, providing an attractive and traffic-free alternative to busier rural roads.

With route development ongoing, some sections are yet to be connected to the wider network and are yet to realise their full potential as a spine in the Somerset cycle network.

Yet within a year of opening, several sections have attracted over 100,000 users per year and are already important corridors for commuting and school journeys. Upon completion of the full route, all the sections will be connected, enabling local utility journeys between towns and villages in addition to leisure trips.

Figure 2: Map showing the completed sections of the Strawberry Line, with proposed sections to follow.



1.5 Key elements/design features

Length	35km (24km complete)
Width	3m (varies)
Shared/segregated	Shared
Surfacing material	Varied (asphalt, limestone dust, compacted stone/gravel)
Lighting	None (except for 165m of tunnel)
Wayfinding	Local wayfinding
Placemaking	Viewpoints and picnic areas, planting, benches and railway heritage features
Permitted users	Walking, wheeling, cycling, equestrians

2. Planning and engagement

2.1 Network planning

The Strawberry Line forms part of the Somerset Circle, a 122km, traffic-free cycle network. This is an ambitious project which covers the county, and includes the Bristol and Bath Railway Path, Two Tunnels Greenway and the River Avon Trail.

Old rail corridors, with their easy gradients, provide much of the potential circular route in this challenging terrain. They offer direct, safe, continuous links between settlements with the potential for satellite links into neighbouring settlements to deepen footfall.

Figure 3: Proposed Somerset Circle cycle network.



In this context there is car dependency in communities along the route and high-volume, fast traffic on the most direct links between villages. Repurposing old infrastructure for new off-highway links is not, therefore, starting with a blank slate, setting out options to appraise and then choosing one. Instead, it is about assessing the viability of what can be repurposed, developing alternative solutions for where the old alignment has been lost, and securing the ecological, planning and landowner consents needed to build a new path.

As of 2025, this wider route is currently two-thirds complete, with the latest additions to the Strawberry Line bringing the project closer to completion.

2.2 Approval process/consents

The Strawberry Line Society and other community groups have driven forward progress on completing the line. This bottom-up approach has seen the project take a unique path from inception to delivery.

Unlike projects promoted by a highway authority, the Strawberry Line has been community driven. As a result, it has been able to bypass normal council and highways bureaucracy. Prior to becoming a unitary authority, the former planning authority (Mendip District Council) supported G&CR in constructing routes as permitted development. G&CR carried out ecological surveys and mitigation and local consultation that would normally be required by the planning process, but delays were minimised.

The community undertook many of the tasks associated with developing a scheme. The council provided support in terms of, for example, funding, a land agent and support for technical approvals.

In the early 2000s, the previous authority stated that a compulsory bridleway order would be used to secure public access along the old railway's land that was sold off after the railway closed. This initiative was not carried through and there was some reticence from landowners to engage in discussions about voluntary agreements for permissive access, with the net effect being to delay progress.

Key takeaway: While a path creation order may be appropriate, it can alienate key landowners.

In recent years, the community has negotiated with landowners directly to obtain 'permissive access' for the path. This is where the landowner voluntarily allows public access to their property.

In some cases, this can include diverting an existing PRow, which is then fenced off. This can help to both formalise and improve the route, while also reducing the inconvenience of access for landowners. Obtaining permissive access allows for a more streamlined process and has enabled sections of the route to be developed much more quickly and at a significantly lower cost.

In addition to sections where permissive access has been negotiated, both the Strawberry Line Society and G&CR also own and lease sections of the route, ensuring its longevity.

Landowners have generally been receptive to being approached by the community, which has offered improvements such as support with construction of land improvements, access arrangements and other measures as payment-in-kind for permissive access. As more sections of the Strawberry Line are completed, landowners can see the benefits of the project and are more willing to get involved.

Key takeaway: Often a trusted and well-networked member of the community is best placed to lead land access negotiations, as they can have closer relationships with landowners and are in a better position to negotiate than a council. A track record of successfully delivering similar schemes can also provide landowners with confidence on what will be delivered.

Many of the old railway structures such as viaducts, tunnels and bridges on the Somerset Circle are owned by the Secretary of State for Transport and managed by the Historic Rail Estate (HRE), which is part of National Highways. In recent years the HRE has been supportive in facilitating the use of structures and their repair work by volunteers repointing parapets, protecting them from further water erosion, and laying a new path across them.

Figure 4: Hamwood viaduct, Somerset Circle.



Credit: G&CR.

However, there are still challenges in unblocking filled bridges and ensuring suitable ecological mitigation is kept in place, while designing a new grade-separated route using a part of the old railway bridge to carry the path under a rural road.

Somerset Council is developing a toolkit for parishes and community groups to help them understand the requirements for delivering similar schemes. This toolkit is based on the experience gained from working with the Strawberry Line project.

2.3 Engagement

Unlike for typical active travel routes promoted by the Council, given that the Strawberry Line was community driven and used permissive rights, it was possible to opt for informal consultation instead of lengthy formal consultation routes.

Typically, consultation is undertaken by local community groups with the neighbours or those affected by the proposed schemes. This more localised approach has tended to help to provide a more local narrative and to sell the benefits of the proposed schemes, with a more personal touch than a local authority may otherwise provide.

3. Design

3.1 Overview

As a project delivered piecemeal over many years, the design elements along the route vary throughout. However, common design elements include:

- a continuous traffic-free path (generally 3m minimum in width)
- a surface suitable for walking, wheeling and cycling
- maximum gradient of 1:20
- placemaking features highlighting railway heritage
- significant civil engineering to reinstate route sections, such as replacing a lost bridge and building a farm accommodation bridge

Led by G&CR, working with experienced local contractors, the approach taken for design and delivery resulted in significant cost savings compared with standard contracting methods. The approach enabled a more flexible approach to delivery, where the route could be walked through and the sketch-based designs adjusted based on feedback from the contractor, ecologist and landowner – without needing to go through a complex and expensive change control process. This saves cost and enables design changes that are responsive to rapid feedback from those on site who are often best placed to come up with design solutions.

3.2 Links

Generally, the path is built to 3m wide to minimise conflicts between users, but does narrow at more constrained sections.

As a long route developed over many years, the surface type varies. A mixture of asphalt, limestone dust, compacted stone/gravel are provided.

Some of the latest sections have been completed using asphalt to provide an all-weather surface, particularly where flooding or drainage issues are present.

The British Horse Society has secured agreement from Somerset Council that equestrians should be able to share the surface of all multi-user paths. This has presented a number of challenges, including the appropriate type of surfacing to use. Limestone dust, which is the preferred rural low-cost surface, can be damaged by extensive horse riding – see Figure 5. A tarmac finish is substantially more expensive to build and to maintain and this means trade-offs between the length of new path delivered and accessibility for leisure users.

Figure 5: Damage caused to limestone dust surface by horse riders.



The route also reuses many historic railway assets, such as bridges, viaducts and tunnels, to bypass topographical constraints. As a former railway line, gradients are generally gentle, reducing the need for significant earthworks.

Some sections include the construction of new bridges, such as the bridge installed in 2024 over the B3136 at Shepton Mallet, and plans for a bridge over the Cheddar Yeo, where a prefabricated bridge is expected to be installed in 2025.

Figure 6: The Strawberry Line path passing through a former railway platform.



3.3 Lighting

No lighting is provided on the route, as lighting has high associated capital and revenue costs, and would also impact the route's ecology and rural nature.

However, the 165m tunnel under Shute Shelve Hill is lit with specially designed low-level LED lighting posts. The design had to be conscious of the visiting bats that live in the nearby caves. As a result, the lighting is not activated during night-time hours, and is designed to minimise upward reflection of light into the tunnel canopy where bats roost.

Figure 7: Shute Shelve Hill Tunnel.



3.4 Accessibility

As a route developed primarily by volunteer organisations, there are some departures from design guidance traditionally followed by highway authorities, in an effort to make the project more affordable and deliverable. One example is where the path meets Dulcote Hill, where the path gradient reaches 1:15, exceeding the maximum gradient of 1:20 usually found in guidance. Space constraints meant that alternative options were infeasible or unaffordable, so a decision was taken that a continuous route at 1:15 was better than no route at all. This community-led approach allows for more flexible and cost-effective solutions compared to conventional projects, and enables the community to find innovative ways to address challenges.

Figure 8: A section of The Strawberry Line at Dulcote Hill with a steeper than usual gradient.



3.5 Wayfinding

Bespoke wayfinding and signage is deployed along the route, giving the route a distinct identity and promoting its use. These signposts highlight connections to the NCN, as well as to town centres and points of interest. Signage has been retained or restored at many of the former railway stations, to orientate users but also to nod to the railway heritage of the route.

Figure 9: Example of wayfinding on the Strawberry Line.



3.6 Ecology

Sections of the route are designated as a local nature reserve, providing habitats for a diversity of wildlife. The rhynes (or drainage ditches) at the Yatton end of the line are designated as a site of special scientific interest due to the national importance of the aquatic plant communities they support.

Ecology surveys are undertaken in advance of any works, and in instances where planning permission has not been sought, the appropriate environmental approvals are sought (for example, a hedge licence). The local community has tended to benefit from a number of the volunteers having the skills to provide the professional environmental input and seek improvements to biodiversity and the local environment.

3.7 Placemaking

Most of the placemaking features on the route draw from the railway heritage in the area. This includes installations from local artists, such as a large steel artwork depicting a steam engine and the retention of heritage features such as railway platforms, signage and sleepers. A heritage trail has also been designed for the route and is detailed through on-site interpretation/information boards. At various points throughout the route benches are installed, particularly at vistas overlooking the Somerset landscape.

4. Delivery

4.1 Partners and roles

The route has chiefly been promoted by the Strawberry Line Society. Working in partnership with the support of multiple parties has made the delivery of the scheme more effective.

The community has been supported closely by G&CR, a local charity that specialises in the design and construction of greenway cycle paths. G&CR negotiated all the permissions, managed the construction contracts, held the land agreements, and secured an additional £175,000 funding for the new Somerset Circle works at Shepton Mallet.

Somerset Council (and formerly Mendip District Council) has supported with navigating bureaucratic obstacles, finalising permissive path agreements with landowners, and supplying much of the funding for the scheme. As a community-driven project aligning with the Council's strategic objectives, it has become a political priority to support the completion of the line in full.

The reliance on community groups and volunteers has helped to reduce design and construction costs substantially. This includes Greenways work camps, where in 2024 over 300 volunteers helped with fencing, construction and a range of tasks along the route. This has enabled the Strawberry Line Society to deliver the route at a lower cost per mile (typically £100,000 to 150,000 per km) than other comparable schemes in the county.

A specific example of cost savings is the replacement of a missing bridge over the B3134 – see Figure 10. The total cost was £120,000. This included raising the abutments and the immediate approach ramps, and took approximately 150 days of volunteer labour.

Key takeaway: Harnessing community support and volunteers can be a good way to reduce project costs, allowing for the delivery of more route mileage.

Figure 10: New bridge over the B3134 at Shepton Mallet.



Credit: G&CR.

4.2 Funding

The project has primarily been funded by Somerset Council, which has identified funds from various sources to complete sections as and when designs are ready.

The community has also been skilled in identifying funding partners from other sources, including:

- National Grid, which funded a section of the route as part of their Hinkley Point connection project
- National Highways, which supported the renovation of historic structures held in their Historic Railways Estate
- Bristol Water, which funded lighting improvements in the Shute Shelve Hill Tunnel as part of major utility works in the area
- local businesses such as Charlie Bigham's, which provided land free of charge to continue the route past their factory

The ability for the community to be agile in seeking funding from unconventional sources has helped to drive the project forward and build momentum in recent years.

Lesson learnt: A variety of sources can be used to top up local authority scheme funding, or fund specific elements of a project.

4.3 Delivery timescales/phasing

The entire route is being delivered in phases, with new sections proposed when funding is available and where land can be secured. Delivery has focused on providing route sections that link to existing highways, so each new section forms part of a route rather than a dead end.

The community has built momentum over recent years, with the delivery of 6.1km of route in the last five years. Where there are gaps, on-road alternatives are suggested, but some of these involve mixing with high-speed/volume traffic. It is hoped that continued progress will plug the gaps in the network, creating a continuous traffic-free walking/cycling spine through Somerset.

Figure 11: Fencing being installed by Strawberry Line volunteers.



4.4 Maintenance

Local branches of the Strawberry Line Society take on responsibility for maintenance, working throughout the year to keep the path wide and clear, and to maintain the delicate ecology and habitats along the green corridor. From vegetation clearance, verge mowing, tree planting, wildflower sowing to sweeping leaf litter off the path, the community works to keep the path in good condition.

Key takeaway: Harnessing community support and volunteers gives a community ownership of a route and keeps a path well maintained and used. It makes it quicker and easier to identify and address problems and makes for good relationships with landowners.

Figure 12: Volunteers clearing vegetation from the Strawberry Line.



5. Outcomes

5.1 Overview

Although not yet complete, the various sections of the full route are already realising benefits for users thanks to the efforts of the community in accelerating progress. It is expected that linking the various disparate sections will unlock further benefits.

5.2 User outcomes

As each new section opens, users are able to divert away from busy high-speed rural roads that previously acted as the main active travel link between towns. In addition to attracting existing users, these traffic-free links unlock new demand for a wide range of users.

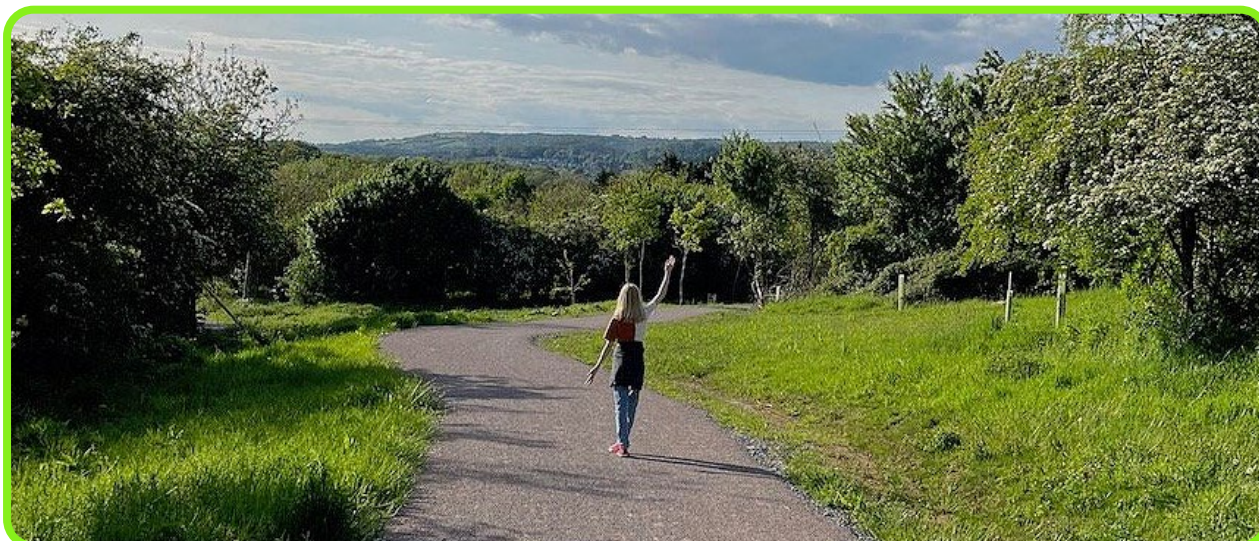
A recent section opened in Shepton Mallet is already recording over 100,000 trips each year. In the first year, the 1.5km path between Westbury-sub-Mendip and Easton had over 50,000 users. Based on a cost of £200,000 for the path gives a reverse benefit cost ratio of more than 8. Even recognising that G&CR expertise cannot easily be replicated, and assuming double the cost, would suggest very high value for money for a new link between two villages each with a population of around 1,500 residents. This case study counters the common narrative that it is difficult to make the business case for routes between small rural settlements stack up.

Once a continuous route is completed, there will be a parallel traffic-free alternative route to the busy A371 between Cheddar and Shepton Mallet. Promoters anticipate a step change in demand when the missing links are completed, with a mix of utility and leisure journeys between towns and villages along the route providing a viable alternative to the car for short trips and longer cycle tourism.

“A huge thank you to our community groups and volunteers for progressing work. Your efforts have transformed the disused railway into a vibrant pathway for everyone to use. We have been honoured to support you in making the Strawberry Line a success”

Cllr. Richard Wilkins, Somerset Council's Portfolio holder for transport and waste services

Figure 13: The Strawberry Line.



5.3 Strategic narrative

As it is not a traditional scheme, there has been no requirement for the community to conduct value for money assessments. Instead, the narrative is driven by community and political drive for completion.

However, the route is already attracting tourists seeking to take in the beauty of the Somerset countryside. This helps to support local businesses with tourism spend, generating economic benefits. Charitable organisations have sprung up to serve the tourist market on the route, such as the Strawberry Line Café/cycle hire, which offer people with learning difficulties meaningful work and vocational training opportunities.

Increased housing growth in the Mendips provides a need to increase active travel alternatives to the car. The route provides an opportunity to address concerns linked to traffic growth by enabling sustainable travel to new development and existing communities along the route.

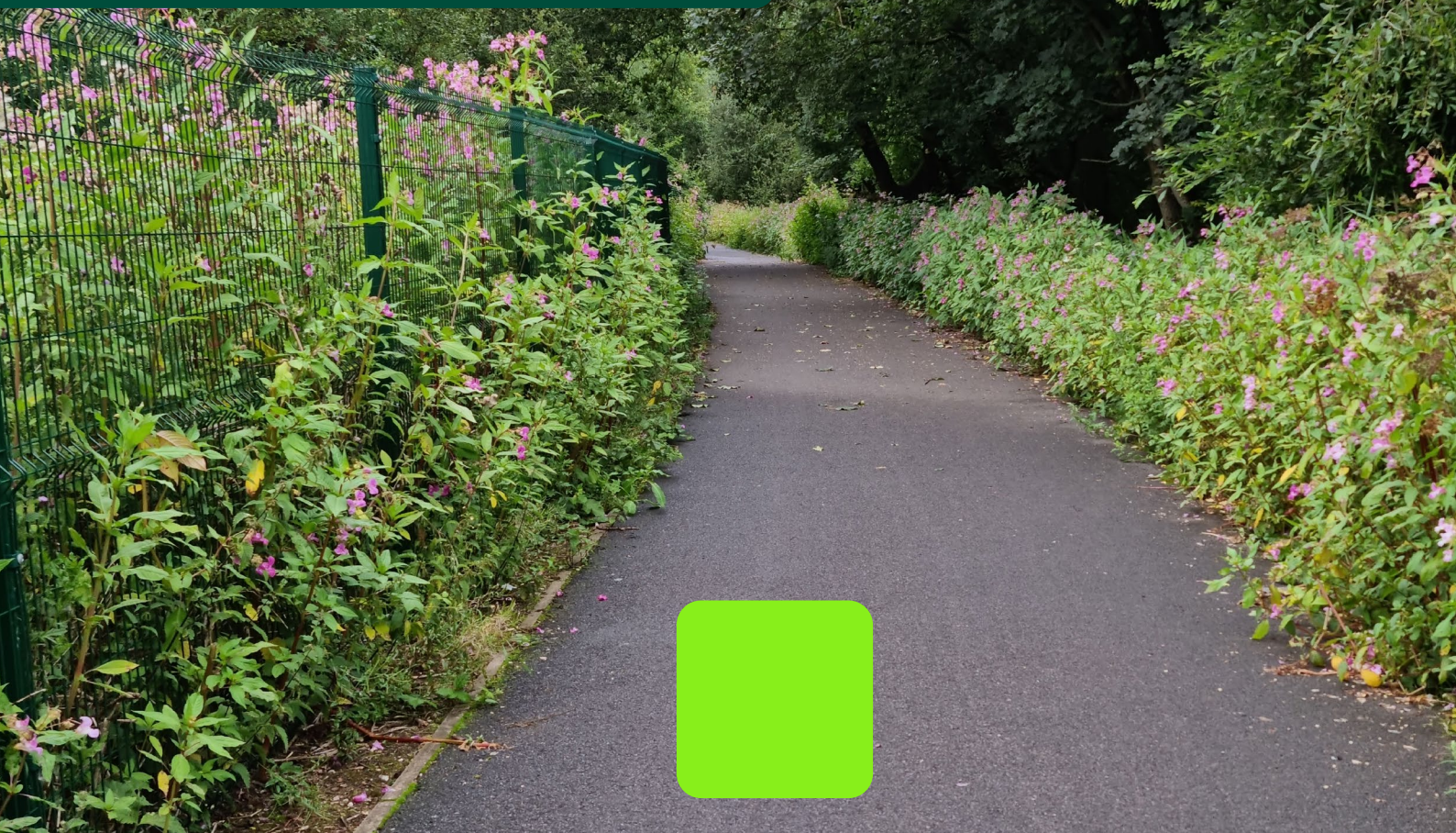
An additional attractor could be from a traffic-free route from railway stations at Yatton, Bristol and Bath to the Glastonbury festival site at Pilton.

Figure 14: Bench overlooking the Somerset countryside on the Strawberry Line.



Case Study

11. Trans Pennine Trail Warrington

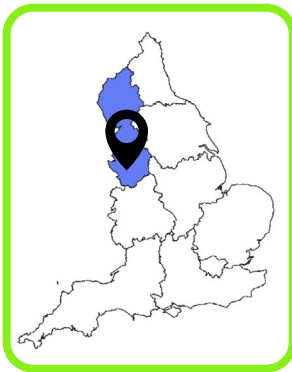


Key elements

- innovative use of novel surface materials to deal with a localised constraint
- use of accessible access controls
- improved year-round accessibility of the route with a sealed surface

1. Background

1.1 Context



The Trans Pennine Trail is a long-distance coast-to-coast route for people walking, wheeling, cycling and horse riding, linking the North and Irish seas – passing through the Pennine

uplands. At Lymm to the east of Warrington, the Trans Pennine Trail follows the former Warrington to Altrincham Railway, which closed to passengers in 1962.

The route was converted to a walking and cycling route in the late 1980s, when a red shale path was constructed. Over the years the surface deteriorated, becoming muddy and waterlogged following rain, which along with overgrown vegetation made it impassable for most users. A-frame barriers restricted the use of the trail for many people, who were unable to get through them.

Warrington Borough Council delivered an upgrade to the route that provided a year-round all-weather surface and made the route accessible to all users.

Figure 1: Aerial view of the Trans Pennine Trail at Lymm.



1.2 Scheme objectives

The main objective of the Trans Pennine Trail upgrade was to improve the accessibility of the route, through providing a sealed multi-user surface and removing restrictive access controls. Warrington Borough Council partnered with the Walk Wheel Cycle Trust as part of the Paths for Everyone project to deliver these improvements.

1.3 Scheme typology

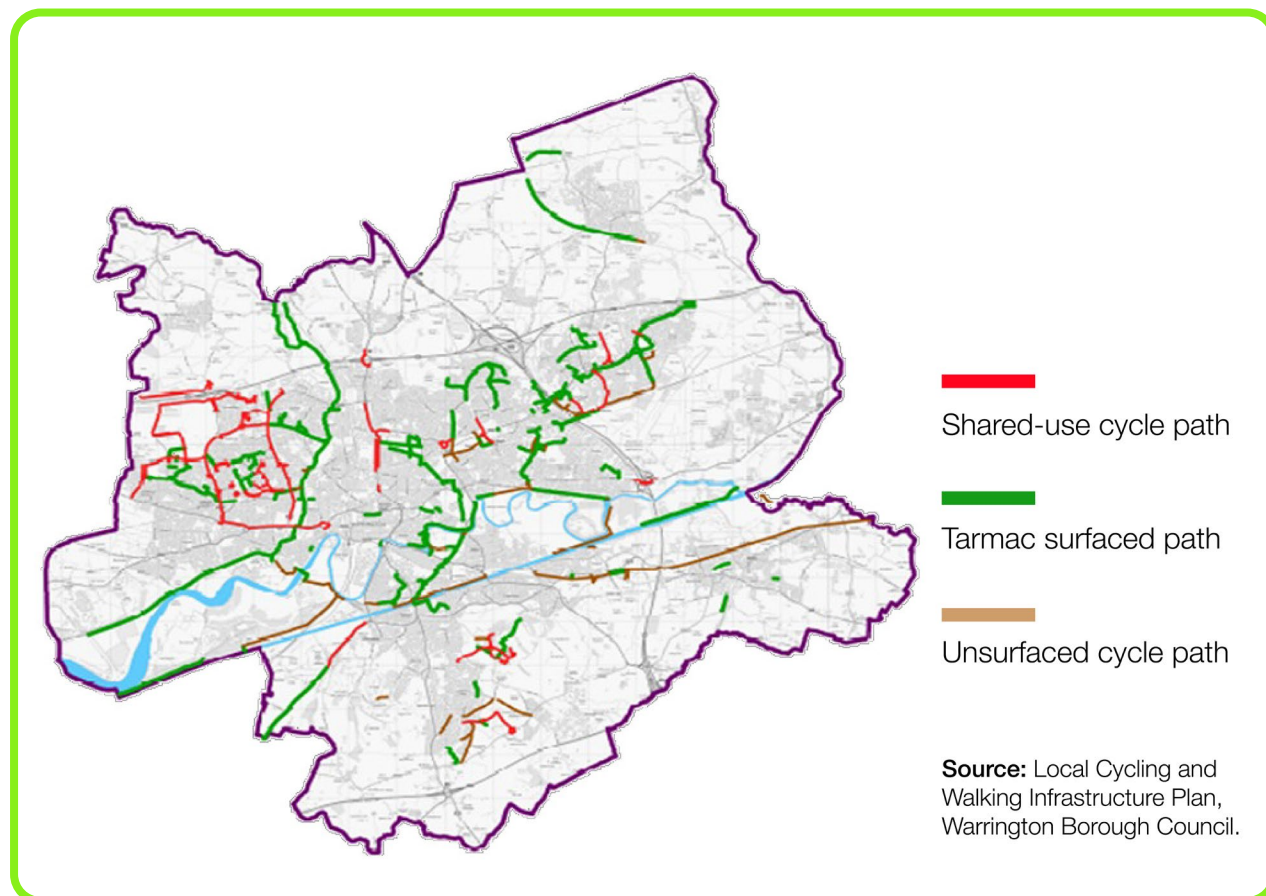
	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway	Shared	–	Leisure and utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

The Trans Pennine Trail links Southport and Hornsea and is 385km long. The route largely follows traffic-free paths with short on-road sections.

The upgraded route forms the main walking and cycling spine through Lymm, providing the sole connection to the wider network in Warrington to the west and Manchester in the east. The route is signed as NCN 62.

Figure 2: Warrington's cycle network with the Trans Pennine Trail upgrade highlighted.



1.5 Key elements/design features

Length	3.65km (1.8km complete)
Width	3m
Shared/segregated	Shared
Surfacing material	Flexipave
Lighting	None
Wayfinding	Walk Wheel Cycle Trust wayfinding
Placemaking	None
Permitted users	Walking, wheeling, cycling, equestrians

Figure 3: Trans Pennine Trail before the upgrade.



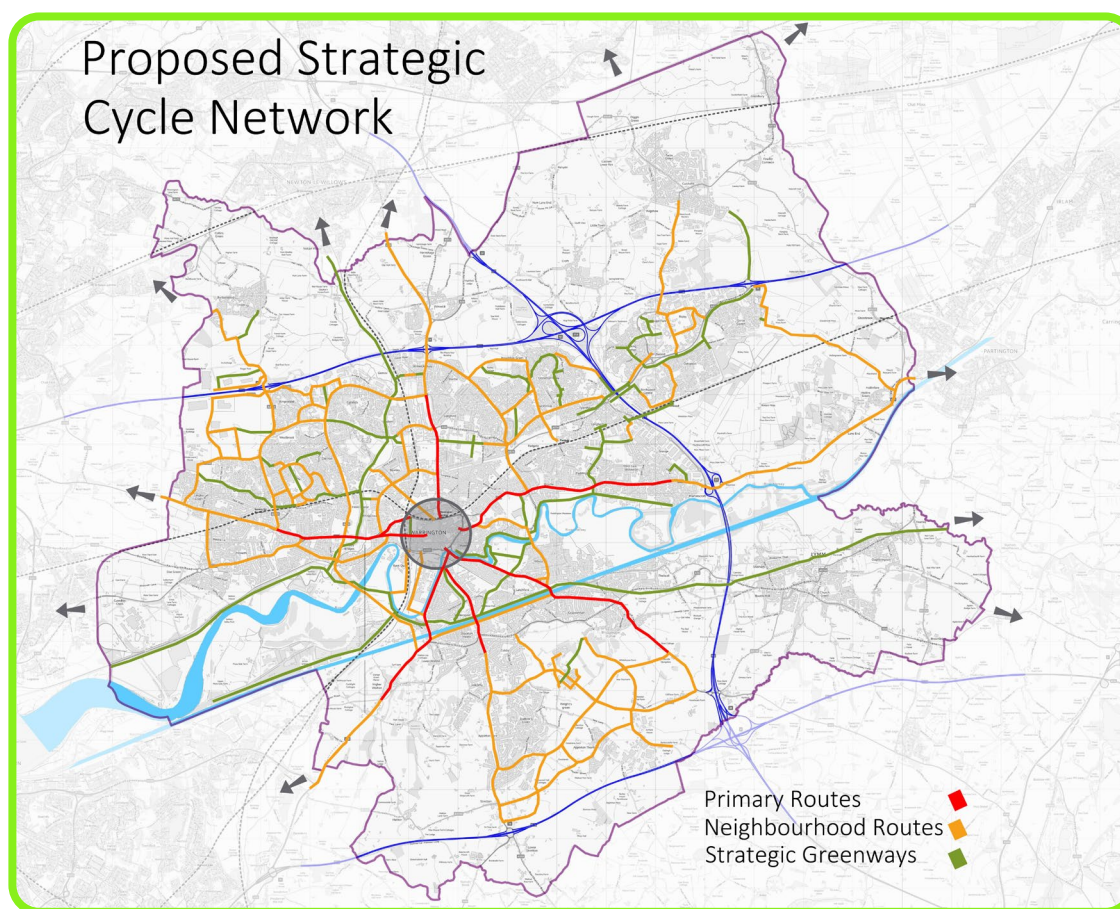
2. Planning and engagement

2.1 Network planning

Improvements to the route were identified in Warrington's LCWIP as a priority, and form part of a wider greenway network across the borough.

Following the LCWIP process ensures that the route is well connected to the wider network, with limited resources invested in the routes that have the greatest potential to contribute to the Council's objectives.

Figure 4: Proposed cycling network in Warrington's LCWIP, with the Trans Pennine Trail upgrade highlighted.



2.2 Approval process/consents

The land for the route was already in the possession of the Council, and no further land acquisition was needed for the works.

A Natural England licence was obtained for the works, to enable the construction of the route around two badger setts. This delayed progress on a portion of the route, with construction starting in this area only after the licence had been obtained and a construction methodology agreed.

Lesson learnt: Identifying ecology risks early can minimise impacts to a project programme by allowing time to secure the relevant licences and permissions.

2.3 Engagement

The Council undertook informal engagement ahead of the construction of the route, with well-attended in-person events at the village hall and an online consultation. The main objections raised by residents were linked to surfacing materials, vegetation clearance and the removal of mature trees, with concerns raised on the environmental impact and on visibility into residents' gardens.

However, after delivery of the initial phase, consultation on subsequent phases saw fewer objections, as people could see the success of the sections already delivered.

Key takeaway: A track record of successfully delivering similar schemes can reduce opposition during engagement phases.

3. Design

3.1 Overview

The improvements focused on bringing the existing route up to modern standards, and making it accessible to all users year round. These improvements included:

- surfacing improvements
- access improvements
- vegetation clearance

3.2 Links

A 3m-wide path is provided throughout, with a year-round sealed surface provided. The surface used is flexipave, a mix of recycled rubber from vehicle tyres and natural stone aggregate that forms a hard-wearing surface. The Trans Pennine Trail upgrade used the equivalent of over 10,000 recycled car tyres in its surface.

Flexipave has a softer surface which can be better for pedestrians, runners, dog walkers and horse riders. This gentle flex also helps the surface adjust to different temperatures and conditions without cracking. The other benefit of flexipave is that it is porous, allowing water to drain to the surface below. It was hoped this surfacing solution would address the drainage issues faced by the route previously.

The surface also has a shallower construction depth, with no need for concrete edgings. This reduced the need to remove trees to protect against root damage.

However, flexipave does come with additional maintenance considerations, with pressure cleaners, road sweepers, and heavy equipment unable to be used on the surface. Light vehicles can only be used on the surface when care is taken to avoid static turning of the wheels, as this can cause damage. The installation cost is also significantly greater than asphalt, limiting the ability for it to be deployed on a large scale. The Council is monitoring the performance of the surface and will review the benefits before considering it elsewhere.

Lesson learnt: Innovative materials can be tested and considered where they address specific challenges associated with a route.

Figure 5: Newly installed flexipave surface on the Trans Pennine Trail.



3.3 Lighting

No lighting is provided as the route primarily serves a leisure function. Lighting also has high associated capital and revenue costs and impacts the ecology and rural nature of the route.

3.4 Access

Six A-frame barriers and gates within the scheme were removed and replaced by access controls that retain access for authorised maintenance vehicles while being compliant with accessibility standards.

3.5 Wayfinding

Signage is provided following traditional Walk Wheel Cycle Trust wayfinding standards, and highlights connections to the NCN.

Waste bins and other street furniture display the Trans Pennine Trail logo to give the route a clear distinct identity.

3.6 Ecology

A Natural England licence was obtained to enable the construction of the route around two badger setts, where badgers could be disturbed by the construction activity. Licences are not normally issued during the breeding season, which is between 30 November and 1 July, with the licence for the Trans Pennine Trail valid from August to November.

Figure 6: Access controls on the Trans Pennine Trail upgrade.



4. Delivery

4.1 Partners and roles

The scheme sponsor (Warrington Borough Council) developed the designs and procured contractors to help them deliver the project. The Walk Wheel Cycle Trust provided the funding through its Paths for Everyone programme, enabling the delivery of 3.65km of greenway, and provided design advice throughout the project.

4.2 Funding

Funding	Cost (£ m)
Walk Wheel Cycle Trust Paths for Everyone (Phase 1–2)	1.1

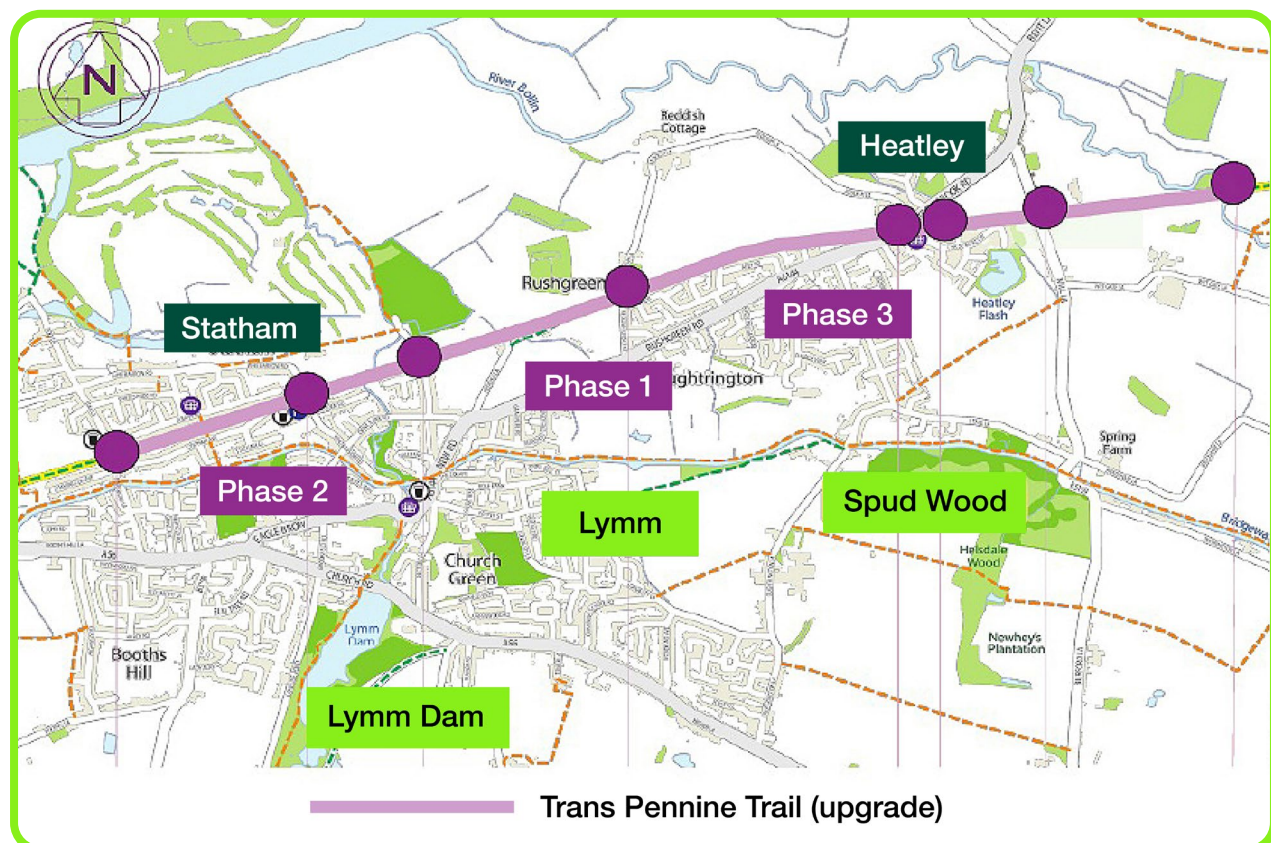
4.3 Delivery timescales/phasing

The first phase of work between Whitbarrow Road and Reddish Crescent was completed in 2022, with a section of this phase opening a few months later once Natural England licensed the works.

The second phase of work opened a year later in 2023, extending the route west towards the M6 motorway.

Construction of the final phase of resurfacing works is scheduled to take place in early 2025 and is funded separately by the Council.

Figure 7: Phasing on the Trans Pennine Trail upgrade.



5. Outcomes

5.1 Overview

The route has been well received by the residents of Lymm, acting as an east-west spine in the walking and cycling network in the area. The final phase of the route was completed in 2025, with users benefitting from a continuous traffic-free sealed surface across Lymm.

5.2 User outcomes

The route has proven a popular link, with a count commissioned as part of Local Transport Plan monitoring recording over 1,000 daily users on the trail. This included 291 cyclists and 710 pedestrians and wheelers. No baseline data was collected pre-implementation, so it is not possible to attribute an uplift to the scheme.

However, the removal of inaccessible access controls and introduction of a sealed surface has opened the route to a much wider group of users, to whom the route was impassible before. Anecdotally the route is hugely popular, providing access to the Cheshire countryside.

Lesson learnt: Baseline data would have been helpful to demonstrate the uplift attributable to the construction of the greenway. This would be useful evidence to include in funding applications for future routes.

Figure 8: Users on the Trans Pennine Trail.



5.3 Strategic narrative

As the objective of the upgrade was to improve the route's accessibility, a detailed appraisal of the benefits and value for money of the upgrade was not undertaken.

However, as a long-distance route the Trans Pennine Trail drives tourism, attracting visitors from across the UK attempting a coast-to-coast challenge. Providing a smooth year-round sealed surface enables out-of-season tourist visits, spreading economic benefits across the region. This, combined with local usage as an important connection to Warrington, Trafford and Manchester, makes a compelling strategic case for investment.

As an accessible route, all users can now benefit from the improved access to the countryside, as well as to destinations further afield.

"It's great news that the upgrade to this section of the Trans Pennine Trail is now complete. It was previously in poor condition and inaccessible for people in wheelchairs or mobility scooters, particularly in poor weather. Now, thanks to these improvements, it will be accessible for everyone, all year round."

Cllr. Hans Mundry, Warrington Borough Council's Cabinet Member for transportation, highways and public realm

Figure 9: Completed section of the Trans Pennine Trail.



Case Study

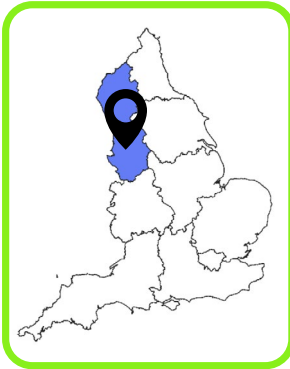
12. M55 to Heyhouses Link Road

Key elements

- incorporating active travel infrastructure as part of wider road capacity upgrades
- unlocking strategic housing and employment growth through improved connectivity
- collaborative delivery model involving public and private stakeholders

1. Background

1.1 Context



The M55 to Heyhouses Link Road is a new two-lane carriageway in Lancashire designed to improve connectivity between the M55 motorway and the Lytham St Annes area.

The new Link Road replaces Wild Lane and North Houses Lane which have been repurposed as a shared-use path for people walking, wheeling, cycling and horse riding. To provide a continuous active travel corridor from the M55 all the way to Lytham St Annes, a new shared path has been constructed feeding into the repurposed Wild Lane and North Houses Lane path – see Figure 1.

The need for the new Link Road has been highlighted by Lancashire County Council (LCC) in key local planning documents for several years. The Council considered it crucial for reducing congestion between the motorway network and Lytham St Annes, as well as supporting the commercial viability of local housing sites and existing employment and business sites.

Completed in June 2024, the new 2.5km Link Road and associated active travel improvements significantly improves access to and from Lytham, both by motor vehicle and active modes.

Figure 1: New shared path adjacent to Link Road.



1.2 Scheme objectives

As outlined in the business case produced by the Lancashire Enterprise Partnership (LEP), the key objectives of the Link Road and supporting infrastructure include:

- improved connectivity between Lytham St Annes and the M55 motorway, reducing reliance on smaller, local roads
- increased road capacity and more reliable journey times by replacing the single-track road with a two-way Link Road
- enhanced active travel provision for existing and prospective residents, reducing reliance on motor vehicles and providing off-road connection to key settlements. The new active travel corridor also provides connections to existing bridleways, improving wider connectivity
- economic supported growth by enhancing access to local housing and business development sites, supporting commercial viability and local economic growth. The Link Road and active travel infrastructure also provides improved access to employment areas in Lytham St Annes
- a tourism boost by providing improved links to the coast, supporting the Blackpool Airport Enterprise Zone and local leisure and tourism industry

1.3 Scheme typology

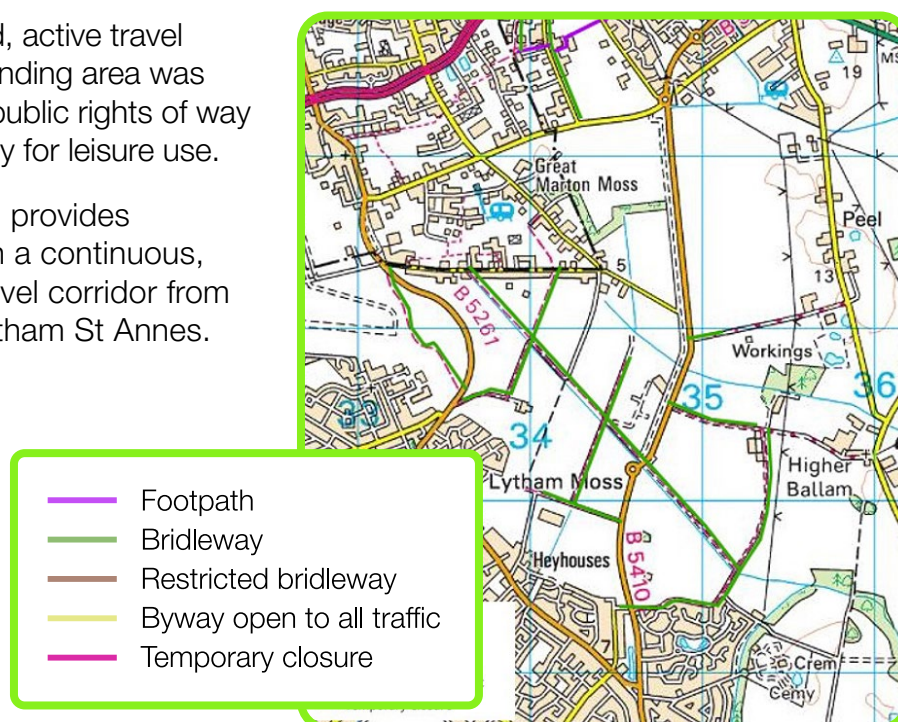
	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway	Shared	–	Leisure and utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

Prior to the new Link Road, active travel infrastructure in the surrounding area was limited to bridleways and public rights of way (PRoW), which are primarily for leisure use.

The new shared-use path provides residents and visitors with a continuous, fully segregated active travel corridor from the M55 all the way to Lytham St Annes.

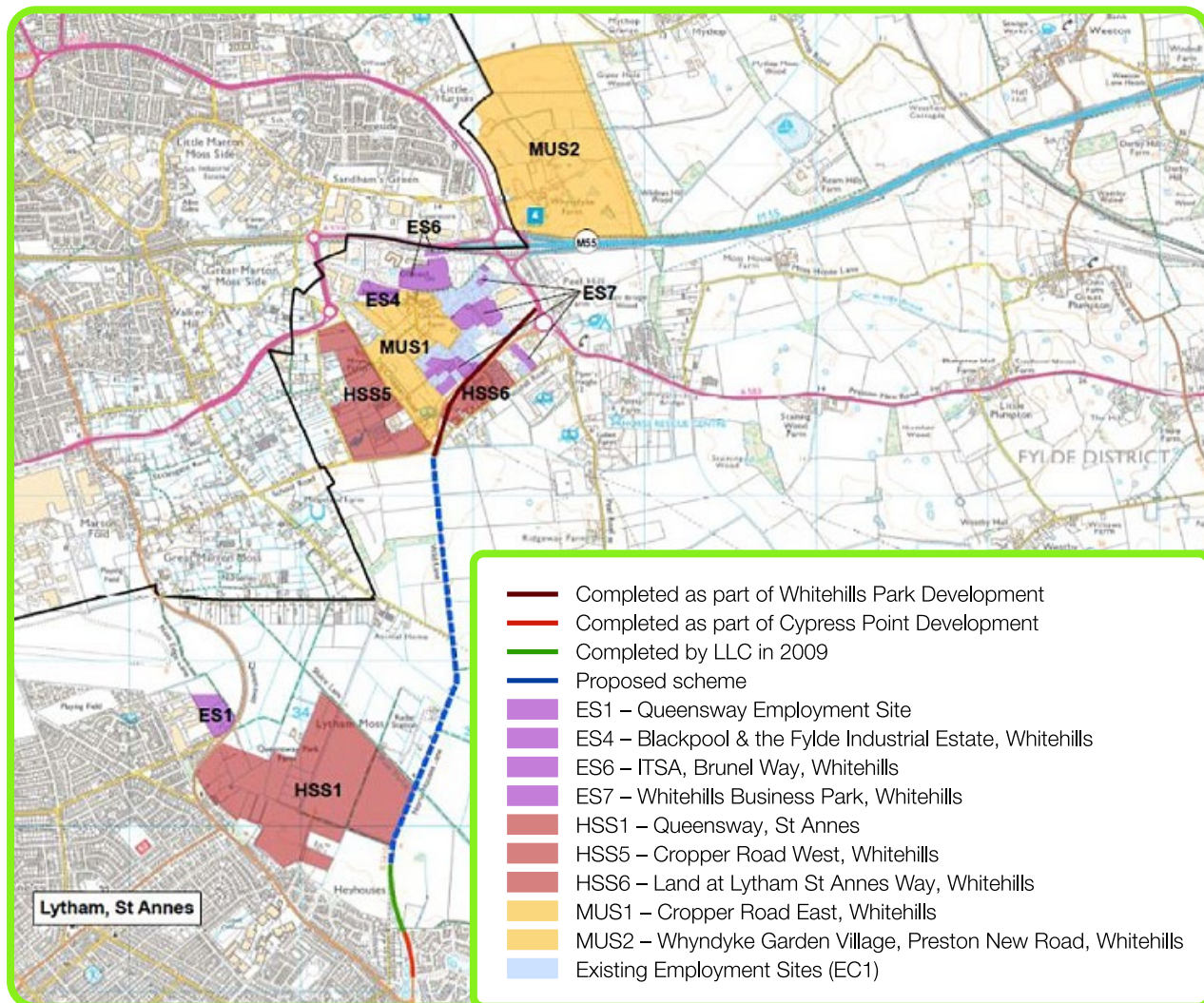
Figure 2: Bridleway network.



This new active travel link has been well designed to connect to the existing bridleway network, providing connections to Lytham Moss, Higher Ballam and Great Marton Moss. Figure 2 illustrates how the new Link Road, also known as B5410, links to nearby bridleways.

The strategic importance of the Link Road was outlined in the business case, stating that the delivery of the road is crucial to providing additional highway capacity and unlocking access to planned, significant development sites outlined in the LEP's Strategic Economic Plan and Fylde Borough Council's Local Plans – see Figure 3.

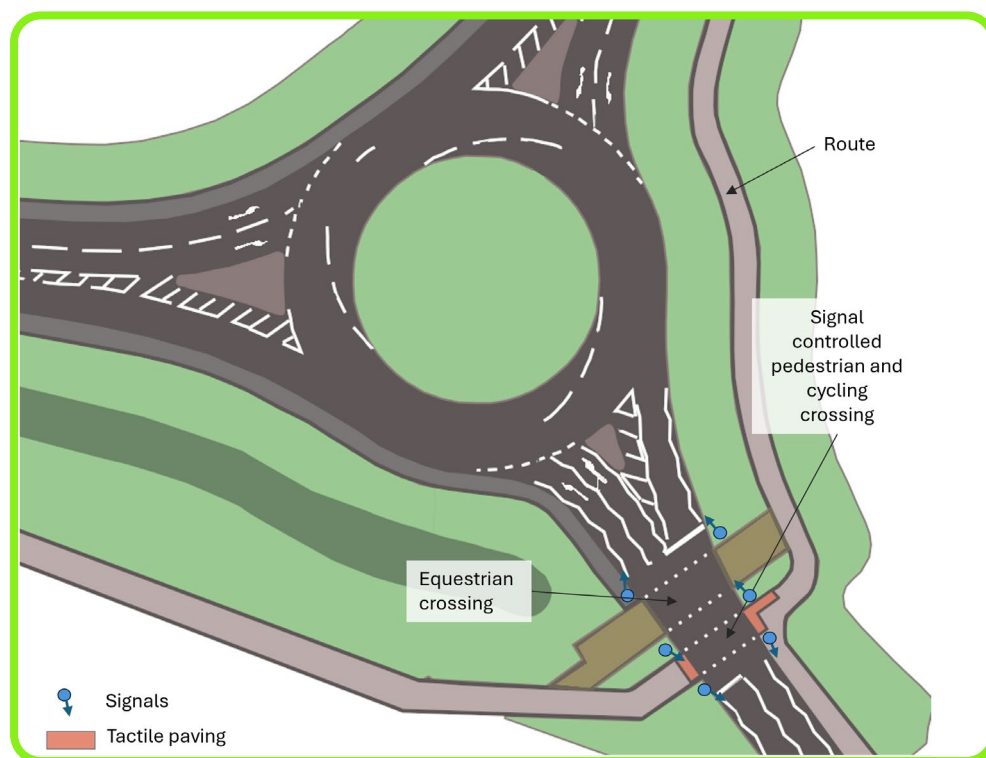
Figure 3: Land allocations.



Fylde Borough Council's emerging Local Plan to 2032 states that the Queensway Development (HSS1), which is due to deliver 1,047 homes, was dependent on the new Link Road going ahead, while also supporting the viability of the adjacent employment site (ES1).

As shown in Figure 4, a new roundabout has been built north of Heyhouses Lane which will connect the Link Road to the B5261 Queensway Road and provide access to the Queensway development (1,047 homes) and employment site. Figure 4 shows how the new Link Road and active travel corridor interact at this roundabout.

Figure 4: New roundabout with integrated active travel provision.



The new Link Road and associated active travel corridor also provide a key link to the Cypress Point/Madison Heights development, located to the east of the Link Road.

Figure 3 highlights the strategic importance of the Link Road and active travel corridor in connecting existing and new housing developments and employment sites in the area.

1.5 Key elements/design features

Length	2.5km
Width	3m
Shared/segregated	Shared-use path, off-road
Surfacing material	Tarmac
Lighting	Yes (along southern section only, as well as at controlled crossings and roundabouts)
Wayfinding	Local wayfinding
Placemaking	N/A
Permitted users	Walking, wheeling, cycling, equestrians

2. Planning and Engagement

2.1 Network planning

The preferred route option was born from the need to provide a high-quality Link Road to significantly improve the connection from Junction 4 of the M55 to Lytham St Annes. Without the upgrade, the existing network would prove insufficient to accommodate the additional demand from the proposed residential and commercial development sites in the area. Options to upgrade the existing carriageway were also explored, but these would have required extensive works and the removal of the adjoining hedges and ditches, leading to ecological damage.

Subsequently, the decision was made to go ahead with a new two-lane single carriageway road parallel to the existing B5410 (Wild Lane). Providing a new carriageway therefore allowed the existing road to be designated as a segregated active travel corridor for pedestrians, cyclists and equestrians.

2.2 Approval process/consents

The approval process for the Link Road and supporting active travel corridor was comprehensive and multifaceted. It began with securing planning permission, which was granted following a public inquiry in 2012.

The inquiry was crucial as it allowed for a thorough examination of the project's impacts and benefits, ensuring that all stakeholders, including residents and environmental groups, had the opportunity to voice their concerns and support. The project was also included in Fylde Borough Council's Local Plan and the Fylde Coast Transport Masterplan, highlighting its strategic importance.

In addition to the inquiry, the project required various consents for environmental impacts, which included assessments and mitigation measures to protect local wildlife and habitats.

The purchasing of land was facilitated through compulsory purchase orders, ensuring that the necessary land for the construction of the Link Road was acquired without delay.

Kensington Developments played a pivotal role in the project by acquiring the central section of the land needed for the Link Road and contributing funding for the construction of the road itself through Section 106 funding. Their involvement, along with contributions from the DfT, Highways England, the LEP, LCC, and Fylde Borough Council, ensured that the project had the necessary financial backing and land resources to deliver the scheme.

Key takeaway: This collaborative effort between stakeholders was essential in securing all the legal and environmental consents, as well as financial contributions required to proceed with the construction of the Link Road and active travel corridor.

2.3 Engagement

The engagement process for the Link Road included several key activities to ensure community involvement and transparency from the outset. Public consultations formed a significant part of this process, with multiple sessions held to gather feedback from residents, businesses, and stakeholders.

These consultations provided opportunities for the community to voice their opinions and concerns about the new road and supporting active travel corridor. Formal public consultations enabled local communities to have their say on the planning application proposal, ensuring that their input was considered in the decision-making process.

Regular briefings with cabinet members, local members, Fylde Borough Council, and Highways England were undertaken. Community engagement events were also planned to share final scheme details prior to construction. This approach ensured that key stakeholders were kept informed about the project's progress and could address any issues prior to final approval and construction.

The communications strategy included press releases issued to promote engagement events and the appointment of contractors. Regular updates on key milestones and construction updates were shared on the LEP website and via social media. Direct communication was maintained through letters and leaflets sent to residents and businesses, informing them of the construction start dates and who to contact for queries.

Site notice boards were installed to provide regular updates and key information on the progress and work on the scheme.

The engagement process significantly influenced the design of the Link Road. Feedback from public consultations and surveys helped shape specific aspects of the project, such as traffic management and environmental impact.

For example, concerns raised by residents about potential traffic congestion led to the incorporation of additional traffic management measures. Similarly, input from environmental groups resulted in the inclusion of features to mitigate the project's environmental impact, such as wildlife crossings and enhanced landscaping. This collaborative approach ensured that the final design met the needs and expectations of the local community, making the project more effective and sustainable.

3. Design

3.1 Overview

The new Link Road presented several technical challenges including poor ground conditions, environmental and ecological constraints, an extensive flood plain, two main river crossings, the presence of strategic utilities and constrained land availability.

Despite these challenges, LCC was able to deliver a high-quality Link Road and active travel corridor while minimising the environmental and ecological impact.

Although a byproduct of the Link Road itself, the Council wanted to provide a continuous and fully segregated route for pedestrians, cyclists and equestrians. This involved repurposing Wild Lane and North Houses Road and creating a new shared path adjacent to the new road. The design, including resurfacing, junctions and crossings, lighting, flood mitigation and environmental considerations, are discussed below.

Figure 5: New shared path with speed humps and bollards.



3.2 Surface

LCC worked with a consultant to evaluate the existing conditions of North Houses Lane and Wild Lane, recommending suitable surfacing to upgrade these roads into an inclusive active travel route. The consultant was keen to make sure the surfacing used was in keeping with the rural character of the area.

Site visits were undertaken, which revealed that the surface for Wild Lane and North Houses Lane was in a fair condition, with some surface cracking, edge deterioration and depressions as signs of settlement and vegetation overgrowth. Some sections of Wild Lane, as shown in Figure 6, were in very poor condition, with ‘alligator cracking’, rutting, large longitudinal cracking, severe edge deterioration, utility patching and vegetation overgrowth.

Three options were assessed for re-surfacing and remediation, based on suitability, inclusivity, constructability, maintenance and cost. These options included a bound surfacing, a semi-bound surfacing and unbound surfacing.

Figure 6: Poor surfacing on Wild Lane prior to upgrade.



A semi-bound surface was deemed appropriate for most of Wild Lane and North Houses Lane, where the existing road required some upgrade but did not require full reconstruction. Semi-bound surfaces are durable and suited for all weather use. They provide a cost-effective and more context-suitable alternative to bound surfaces, which are often used in more urban contexts.

However, the northern section of Wild Lane, which was deemed to be in a state of disrepair (see Figures 6 and 7), required full-depth reconstruction prior to relaying a semi-bound surface.

Figure 7: Wild Lane prior to resurfacing and upgrade.



Full-depth construction was required to provide the new shared-use path, and a semi-bound surface was used to be in keeping with the rest of the route.

3.3 Junctions and crossings

Careful consideration was given to how pedestrians, cyclists and horse riders access and navigate the shared-use path.

The newly constructed shared-use path feeds into North Houses Lane, which has been designated as shared use. Utilising North Houses Lane as a shared-use route means that pedestrians, cyclists and horse riders can avoid the Link Road junction with Moss Hall Lane, providing a safer, lower traffic route into Ansdell and Lytham – see Figure 1.

New pegasus crossings have been installed to allow those travelling by active modes to safely cross the Link Road, without having to traverse the new roundabout – see Figure 8. Crossings have been designed to separate pedestrians and cyclists from equestrians using wooden fences. A grass waiting area with two sets of push buttons, one at a standard pedestrian height, and one higher up for horse riders, have also been incorporated.

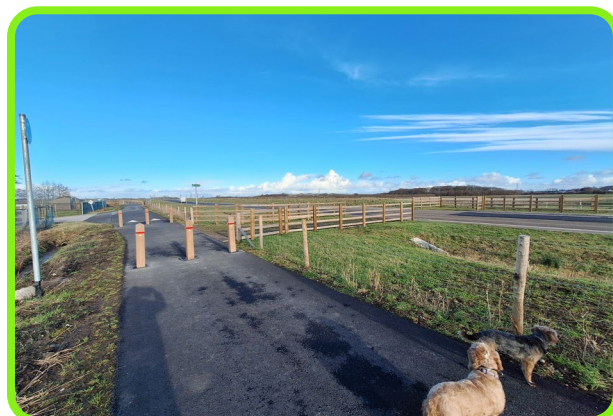
Several uncontrolled crossing points are also provided along the length of the Link Road, enabling pedestrians, cyclists and equestrians to access the wider network of PRowS and bridleways.

An example of an uncontrolled crossing is shown in Figure 9. Wooden bollards and fences have been used to slow pedestrians, cyclists and equestrians down on approach to the crossing point.

Figure 8: Pegasus crossing over the new Link Road.



Figure 9: Uncontrolled crossing point with bollards, fence and wayfinding.



Wayfinding and shared-use path signs have also been installed. Figure 10 shows how the path integrates with an existing bridleway.

Where access roads intersect the shared-use path, speed cushions and bollards have been installed to alert drivers, pedestrians, cyclists and equestrians that this is a shared space with the occasional vehicle requiring access – see Figure 5.

Figure 10: Shared-use path connecting to existing bridleway.



3.4 Flood Mitigation

Due to its location on an extensive flood plain, flood mitigation was integral to the design of the Link Road and active travel corridor. A dedicated flood mitigation area was constructed to handle excess water and prevent flooding in surrounding areas.

This area included flood compensation measures, ensuring that any displaced water was adequately managed by creating additional storage areas. The design also addressed various environmental and ecological constraints, such as poor ground conditions and the presence of an extensive flood plain.

Revised flood risk proposals and assessments were submitted during the planning stages to address emerging issues and ensure the effectiveness of the flood mitigation measures. Additionally, the project included sustainable features like wildlife crossings and enhanced landscaping to mitigate environmental impacts.

These comprehensive measures ensured that the Link Road and the active travel corridor were designed with a strong focus on environmental protection and sustainability.

3.5 Ecology and greening

The Link Road project prioritised ecological design to minimise environmental impacts and promote sustainability. Key goals included preserving existing habitats and minimising disruption to wildlife through extensive ecological surveys.

The project also focused on maintaining and enhancing green corridors to provide safe passage for wildlife and promote biodiversity. River crossings were carefully designed to protect aquatic habitats.

Additionally, the project considered the nearby farmland conservation area, aiming to preserve its ecological and historical value. Efforts were made to integrate the road design with the surrounding landscape, with 10,000 trees and 50,000 hedges planted.

3.6 Lighting

Lighting columns have been installed on the southern section of the new shared path and Link Road, including the new roundabout which will connect to the Queensway development. Lighting columns have also been provided at the pegasus crossings and on approach to Whitehills Roundabout.

North of the new roundabout, the decision was made not to install lighting. The main reason for this decision was due to the Link Road's proximity to Blackpool Airport and the geometry of the road, limiting viable lighting options.

4. Delivery

4.1 Partners and roles

Primary partners include:

- LCC, which was the lead authority responsible for the overall management and delivery of the project
- Fylde Borough Council, which provided financial support and facilitated local planning and development to enable the Link Road construction
- the LEP, which contributed funding through the Growth Deal and provided support in the delivery of the scheme
- Highways England, which provided significant funding and technical expertise, ensuring the road met national design standards
- DfT, which offered funding through the National Productivity Investment Fund to support the infrastructure improvements
- local developers who contributed financially to the project, particularly those involved in the housing developments that the new road would support

4.2 Funding

A total budget of £27.18 million was secured to deliver the Link Road and accompanying sustainable travel corridor. The funding source was split as follows.

Funding	Cost (£ m)
Growth Deal	1.98
Highways England GHF	4.78
Fylde Borough Council	1
LCC	1.7
Developer contributions	7
DfT National Productivity Investment Fund	5
Housing Infrastructure Fund	3.81
Risk Coverage (LCC)	1.91

4.3 Delivery timescales/phasing

The delivery of the Link Road and the supporting active travel corridor was carefully phased. The project began in 2017, which included preparing the site and relocating essential utilities such as communications cabling and electricity networks. This preparatory phase was crucial for setting the groundwork for the main construction activities.

The main construction phase commenced in June 2021, starting with 18 months of earthworks to prepare the ground for the new road. This phase involved significant excavation and groundwork to ensure a stable foundation for the road.

Following the earthworks, the construction of the road itself was undertaken by LCC's in-house team. This phase included laying the road surface, installing drainage systems, and implementing flood mitigation measures to protect the surrounding areas.

The final phase of construction focused on completing the road and the active travel corridor, which includes shared paths for pedestrians, cyclists and equestrians. This phase also involved landscaping and installing street lighting to enhance safety and usability. Despite some delays due to prolonged wet weather in 2023, the road was officially opened in June 2024.

Throughout the project, continuous engagement with the community and stakeholders ensured that issues were addressed promptly, and the project remained on track. The phased approach allowed for efficient management of resources and minimised disruption to the local area.

4.4 Maintenance

The maintenance of the Link Road and the associated active travel infrastructure is primarily undertaken by LCC. It is responsible for ensuring that the road and shared-use path are kept in good, usable condition.

5. Outcomes

5.1 Overview

The new Link Road and supporting active travel corridor significantly improve access to Lytham St Annes for both motorised and non-motorised users.

5.2 User outcomes

Quantitative data on flows and usage have not yet been collected by LCC, although it reports that the active travel corridor is well used by people walking, wheeling, cycling, equestrians and dog walkers – see Figure 11.

Figure 11: Shared-use path being used by cyclists and pedestrians.



5.3 Strategic narrative

Bruce Parker, Head of Planning and Development at National Highways, summarises the strategic importance of the new Link Road and associated active travel improvements:

“We are delighted to have supported the delivery of this new road scheme which has been a great example of partnership working across many organisations.

“The benefits of the project are already being felt economically, helping to unlock the development of new homes and the creation of new jobs.

“We are also delighted to have been able to support a project that is reducing congestion locally, improving access and providing better facilities for pedestrians and cyclists.”

In summary, the M55 Link Road project showcases how active travel infrastructure can be successfully integrated into complex road construction projects. It delivers improvements for both motorised and non-motorised users, while tackling key congestion issues and unlocking significant economic opportunities.

Case Study

13. Mere Way (Waterbeach New Town)



Key elements

- delivery of a safe, off-road route for walking, cycling and horse riding
- connects new development to key destinations
- enables active travel for local trips and reduce traffic impact on the surrounding network

1. Background

1.1 Context

Waterbeach New Town is an 11,000-dwelling development located 9km north-east of Cambridge city centre. The development is situated on brownfield land formerly used as Waterbeach Barracks.



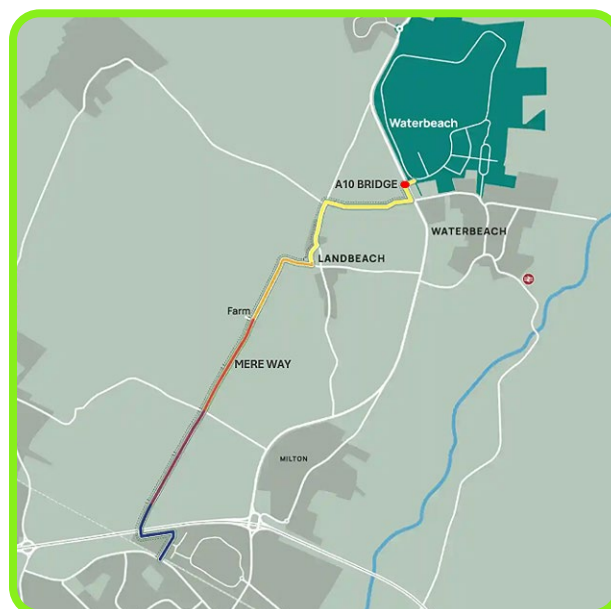
In addition to new housing, the development includes five primary schools, two secondary schools, a sixth-form college, an employment and retail hub, community facilities, a sustainable travel

hub and a comprehensive network of walking and cycling facilities.

Waterbeach New Town was allocated for development in the South Cambridgeshire Local Plan in 2018 and will be developed in two key phases. To support the additional trip generation associated with the development, the masterplan includes an extensive network of transport infrastructure improvements, with a specific focus on active travel to ensure residents choose walking and cycling for local journeys. This includes almost 40km of new and improved cycle connections.

This case study provides insight into one key improvement: the Mere Way cycle route and new A10 bridge – see Figure 1. This will provide a new active travel connection for the development at Waterbeach, over the A10 and connecting to the Science Park, surrounding local villages, and into Cambridge city centre.

Figure 1: Mere Way active travel route alignment and A10 bridge.



The works will be completed in two phases. The first phase of the route to Green End in Landbeach has been completed. The second phase of the route which connects to Waterbeach will begin in 2025, with the bridge over the A10 due to open in spring 2026.

1.2 Scheme objectives

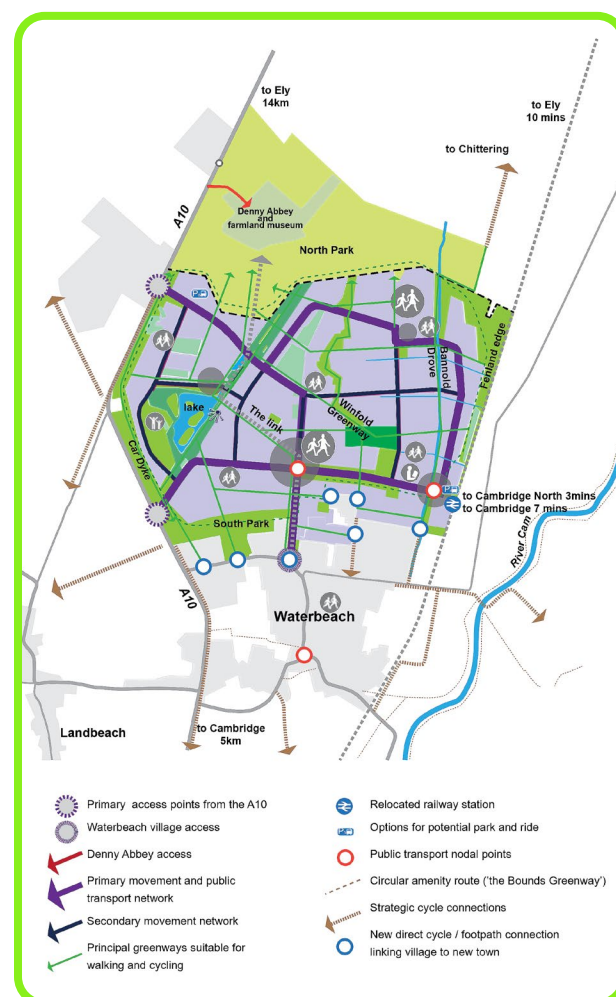
Mere Way forms a key part of the Waterbeach masterplan to provide a high-quality active travel corridor to support the development and surrounding area. The key objectives are to:

- create a safe and accessible route by providing a predominantly off-road pathway for people walking, wheeling, cycling and horse riding, ensuring safety and accessibility for all
- enhance connectivity through the provision of the new bridge over the A10, connecting the development to the upgraded Mere Way, facilitating better access to Cambridge Science Park, Cambridge Regional College, and onward connections across the city for new residents
- provide a direct, safe, continuous and attractive route so that residents can choose to walk, wheel and cycle for local journeys, and to limit the impact of traffic growth on the A10 resulting from the new development

As shown in Figure 2, the route will enhance options for cyclists and pedestrians in and around Waterbeach, connecting residents into a comprehensive network of greenway routes within the development itself.

The route will also provide access to surrounding existing routes, including national cycle networks. Once the Waterbeach Greenway route is completed, it will provide a circular cycle loop between Waterbeach and the city centre.

Figure 2: Primary movement and access framework for Waterbeach.



1.3 Scheme typology

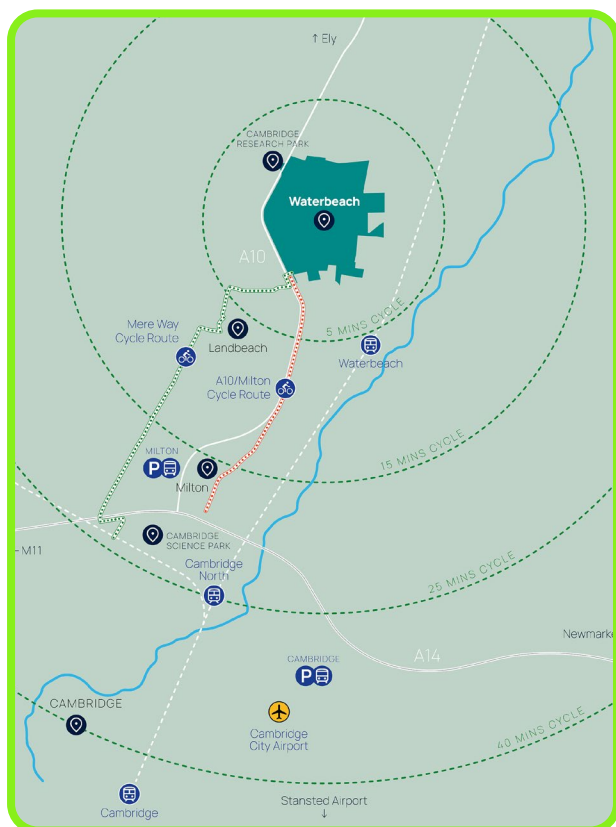
	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	—	—	—	—
Village/market town	—	—	—	—
New development	Off-highway	Shared	—	Utility and leisure
Public transport corridor	—	—	—	—

1.4 Network connectivity

The route alignment follows the existing Mere Way, which is a historic byway and part of the Roman road Akeman Street. Starting in Cambridge city centre, much of the route runs parallel to the A10 as it heads towards the villages north of the city.

To the south of the route, Mere Way provides a link into Cambridge via an underpass, enabling users to bypass the A14. Here it meets NCN 51, which provides onward connections to Cambridge North station and into the city centre, and out towards the towns of Impington, Histon and Oakington.

Figure 3: Mere Way cycle route showing journey time by bicycle.



As the route moves north out of Cambridge, there are multiple field access points, and appropriate crossing points are provided at the Milton Road/Butt Lane junction and through Landbeach, providing those walking, wheeling and cycling with a safe, continuous route up to Waterbeach.

To provide a seamless connection into Waterbeach, a pedestrian, cycle and equestrian bridge will be built over the A10 to provide users with a step-free bypass over the A10 – see Figure 4 below.

Figure 4: Pedestrian, cycle and equestrian bridge over the A10.



At this point, the Mere Way cycle route meets the A10 active travel improvements which will provide a continuous segregated footway/cycle track alongside the A10 from Denny End Road to Ely Road, Milton. As discussed above, once the Waterbeach Greenway route is completed, Mere Lane and the greenway will provide a circular cycle loop between Waterbeach and the city centre.

The Mere Way upgrades form part of a wider network of active and sustainable travel improvements associated with the Waterbeach development and demonstrates how they will complement the LCWIP in the area.

The wider improvements both within and connecting to the development include:

- A10 improvements, which involve widening the existing shared-use path along the A10 to provide an upgraded footway/cycle track adjacent to the road
- a 5.5km greenway, starting on Cambridge Road in Waterbeach and using a new, off-road path adjacent to Car Dyke Road, and a new, off-road bridleway through to Milton Village. To enable a safe connection into Cambridge, the route will use Jane Coston Bridge over the A14 and join a new segregated cycle track and separate footway along Cowley Road
- Waterbeach Busway, which will provide fast, frequent and reliable journeys between the development and Cambridge via Landbeach village. A new walking and cycling route will be provided alongside the busway, providing a link to other routes and transport hubs in the area – see Figure 5 below
- a complementary sustainable travel hub, to be built at the gateway to the Waterbeach development to encourage residents to choose sustainable modes to travel to Cambridge and nearby destinations, reducing the impact on the A10. The hub will include a shuttle bus to Waterbeach rail station, bicycle hire, e-bikes and scooters, and electric car charge and carpool options
- a comprehensive network of active travel routes within the development itself, encouraging walking, wheeling and cycling as the mode of choice and supporting connections to the wider network – see Figure 8

Figure 5: Cross-section of Waterbeach busway with active travel provision.

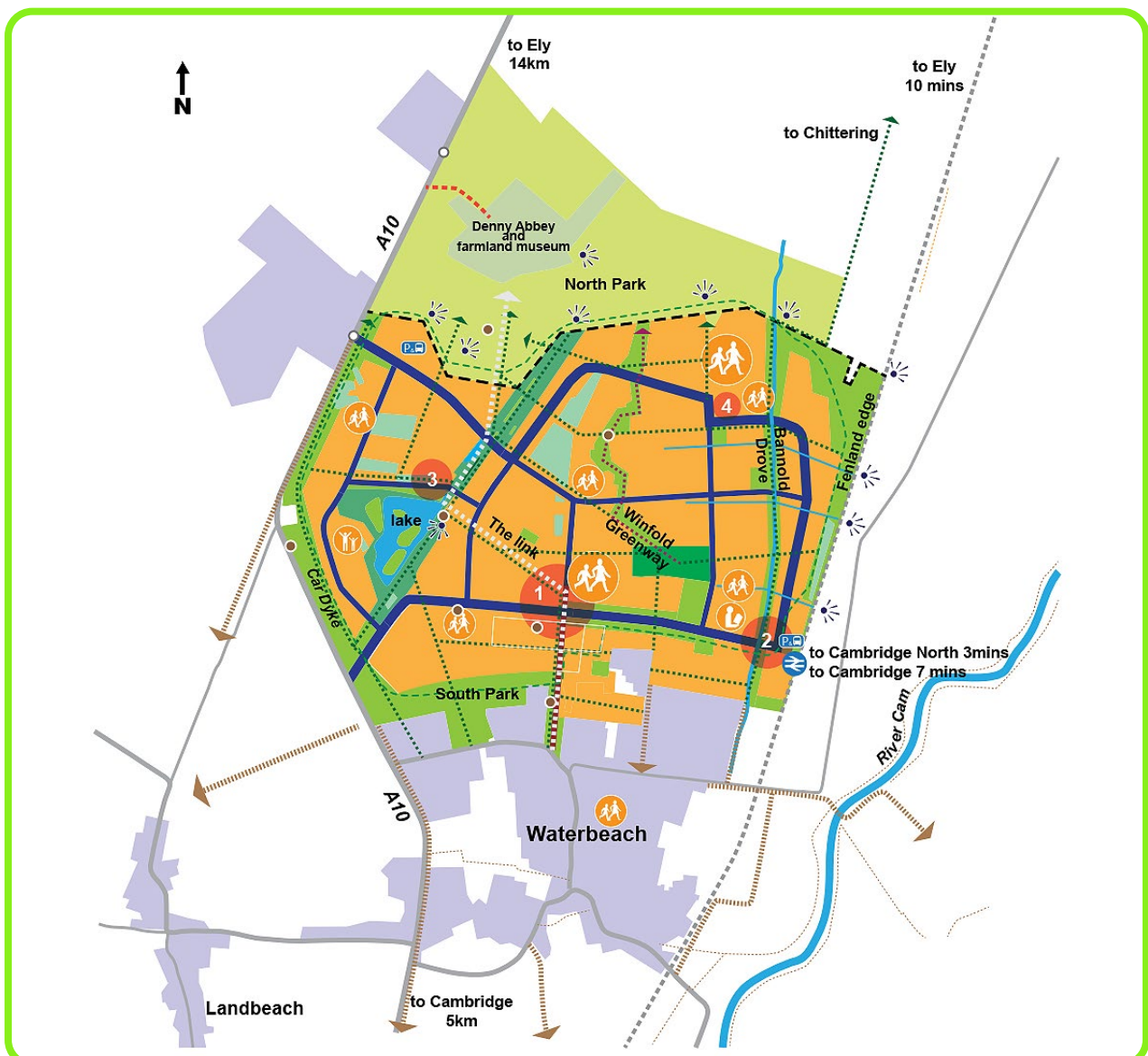


Figure 6: A completed section of Waterbeach with active travel provision.



While these improvements are all being delivered as part of the development, Mere Way is being delivered by the developer itself, Urban&Civic, and other improvements such as the Waterbeach Greenway and Waterbeach to Cambridge Busway are being delivered by the Greater Cambridge Partnership.

Figure 7: Network of active travel routes within Waterbeach development.



1.5 Key elements/design features

Length	6.5km
Width	3–4m
Shared/segregated	Shared
Surfacing material	Asphalt
Lighting	At junctions and crossings
Wayfinding	Local wayfinding
Placemaking	No
Permitted users	Walking, wheeling, cycling, equestrians

2. Planning and Engagement

2.1 Network planning

The principles of the route were set out and approved in the Outline Application for the development of the former barracks and airfield at Waterbeach. This was approved in 2019, and was then subject to extensive consultation before the plans were finalised and submitted for formal technical approval to the County Council Highways Team. The final plans were approved through the Section 278 process.

2.2 Approval planning/consent

The approval, planning, and consent process for the Mere Way Cycleway and A10 Bridge involved extensive collaboration between Urban&Civic, Cambridgeshire County Council, local partners and the community.

Planning applications were submitted following consultations with residents, stakeholders, and various user groups, including Waterbeach and Landbeach Parish Councils, district councillors, the Local Access Forum, and representatives from walking, cycling and equestrian groups.

The feedback gathered helped shape the design to balance the needs of different users while respecting the heritage and ecology of the route. The land for the project is owned by various stakeholders, including local farmers and the County Council, which will ultimately adopt and manage the route as it is a public highway.

One of the main challenges was addressing the diverse requirements of various user groups and ensuring the design met safety and technical standards.

Navigating issues related to the historic nature of the route, including working around trees and hedgerows and protecting the Roman road, was one of the key challenges. The design also had to accommodate future improvements, such as the potential dualling of the A10. The plans underwent rigorous technical and safety reviews by the County Council Highways Team and further discussions with user groups before receiving final approval.

The developer had to ensure the improvements deliver a safe, accessible, and sustainable route that serves the needs of the community and future residents, while minimising the impact on the existing landscape and ecology.

2.3 Engagement

The design and delivery of the upgraded Mere Way route prioritised heritage, ecology, and various user needs. Key stakeholders and partners have worked together to balance the sometimes differing needs of various users.

Consultation was carried out from summer 2020 to spring 2022 during which over 30 meetings, events, walks and webinars were held with different stakeholder groups. Residents and wider users could also share their views and provide feedback in the online consultation from June to September 2021.

A wide range of views were received, particularly around the need to resurface the route and the type of materials. In response to this, the design team incorporated the needs of diverse user groups where possible, while balancing the ecology and heritage of this important historic route.

Due to its historic nature and the trees and hedges along the route, Urban&Civic worked closely with heritage and ecology partners to devise a design and approach that minimised the impact on the existing route. This included surveys of the habitats and species found along the route to protect and enhance them.

Urban&Civic has committed to ongoing engagement with key stakeholders and representatives of user groups as the route continues to be delivered.

Figure 8: Local wayfinding.



3. Design

3.1 Overview

Urban&Civic has collaborated with Cambridgeshire County Council, local partners and communities to upgrade the Roman road for greater use by those walking, wheeling and cycling, while still maintaining a grass pathway for equestrians. The route has been designed to complement the landscape along the existing historic path.

The works involve repaving the existing route to create a 3 to 4.1m hard surface pathway alongside a 2 to 3m-wide grass verge along the Akeman Street and Mere Way byways. This will provide a predominantly off-road route for pedestrians, cyclists and equestrians into Cambridge and surrounding settlements, and to Waterbeach New Town by a new bridge over the A10 – see Figure 12.

Figure 9: Completed resurfacing on Mere Way.



3.2 Surface

During consultation, stakeholders such as CamCycle and the British Horse Society expressed concerns over urbanising the countryside through the use of a dark asphalt material to surface the path, as shown in Figure 10.

Prior to the upgrade, the existing route was deemed unsuitable for use by utility cyclists as well as those wheeling or using pushchairs – see Figure 11.

Feedback during the consultation showed that while many wanted a hard surface, other users wanted grass. The current design has a grass strip running along the full length of the route alongside the hard surface, which should enable walkers, cyclists and equestrians to use the surface they prefer, as well as ensuring greater accessibility for wheelchairs and pushchairs.

The grass verge is 3m wide across most of the route, mirroring the hard surface. These changes have widened the route from the original plans. The hard surface also expands in some locations to just over 4m to support agricultural uses. The technical and survey work set out the appropriate width and surface to ensure the works support the weight and width of all users appropriately.

Figure 10: Former surfacing on Mere Way.



Following consultation and discussions with Cambridgeshire County Council, the type of surfacing was finalised in line with the County Council specification and cycle/equestrian guidance.

The approved surfacing is a dark tarmac with a 10mm aggregate stone size, which improves the amount of grip for horses while also providing a smooth surface for those walking, wheeling, and cycling.

3.3 Junctions and crossings

Mere Way is intersected by the Butt Lane/Milton Lane junction and the A10, and is a key node in the connection through Landbeach village.

Figure 11: Mere Way intersection with Butt Lane/Milton Road.



A crossing point has been provided over Milton Road/Butt Lane for people walking, wheeling, cycling and horse riding. This is complemented by a u-shaped post and rail fencing as per British Horse Society details, and upgraded heavy duty, box steel gates.

A 1.5m gap between the gates has been maintained to enable pedestrians and cyclists to navigate through the gate while also preventing motor vehicles from using the byway. The upgraded junction and access is shown in Figure 11 overleaf.

A new bridge over the A10 will enable pedestrians, cyclists and equestrians to access Waterbeach New Town, which would otherwise be severed by the A10. An artist's impression of the bridge is shown in Figure 12, providing level access from the route into the town.

Through Landbeach, a separated footway/cycle track will be provided, along with traffic calming and junction improvements to enable users to navigate through the village safely.

Figure 12: Active travel bridge over A10.



3.4 Lighting

Lighting options for the route were discussed at length, which led to a variety of different views. Some users seek safety and support for cyclists using the route, particularly during hours of darkness. Others expressed concerns about urbanising a rural route and the impact this can have on local species.

Following these discussions, an agreement was made to light the route where it meets key junctions, such as where it crosses Butt Lane.

However, provision across the wider route was rejected due to the significant impact on ecology.

Reflective stud lighting mounted on posts has been added along the full length of the route to light the way ahead for cyclists.

Solar studs were not used due to ecology concerns, and because trees and vegetation shading would mean that they may not work well. However, they have recently been used in shaded locations and will be explored further as they can mark the route well in darkness.

4. Delivery

4.1 Partners and roles

Primary partners include:

- Urban&Civic – leading the design and delivery of the project, ensuring the integration of feedback from local communities and stakeholders, and balancing the needs of various user groups
- Cambridgeshire County Council – collaborating on planning and technical reviews, and will ultimately adopt and manage the route as it is a public highway
- local partners and communities – providing input through extensive consultations, including Waterbeach and Landbeach parish councils, district councillors, the Local Access Forum, and representatives from walking, cycling, and equestrian groups
- Combined Authority and Greater Cambridge Partnership – engaging in discussions to future-proof the A10 bridge and accommodate potential improvements to the A10
- heritage and ecology partners – working closely to minimise the impact on the historic route and protect the Roman road, trees, and hedgerows along the path

These partners continue to work together to ensure the project meets safety and technical standards, respects the heritage and ecology of the area, and serves the needs of the community and future residents.

4.2 Funding

The Mere Way Cycleway and A10 Bridge project is estimated to cost around £10 million. The funding is being provided by Urban&Civic, as part of the Section 278 developer commitments, in collaboration with Cambridgeshire County Council and other local partners.

4.3 Delivery timescales/phasing

The planning applications for the project were submitted in November 2021, following extensive consultations with residents and stakeholders.

The route upgrade will be delivered in phases. The first phase (to Green End in Landbeach) is complete, and the second phase (connecting to Waterbeach) is expected to begin in 2025. The construction of the new A10 Bridge is expected to be completed in spring 2026, which is crucial for unlocking the next phase of housing development.

4.4 Maintenance

Cambridgeshire County Council will adopt the cycle route and will therefore be responsible for ongoing maintenance of the route.

5. Outcomes

5.1 Overview

While the works are yet to be completed, the Mere Way upgrades and new A10 bridge are important in offsetting congestion on the A10 resulting from the new development, and in enabling residents to undertake local journeys by active modes.

This is echoed by Paul Mumford, Project Director at Urban&Civic for the Waterbeach scheme, who said:

“The new A10 bridge is an important piece in the jigsaw of our sustainable transport strategy, making sustainable travel between Waterbeach, the Science Park and Cambridge City Centre a viable option for people living and working in the area — now and in the future.”

Case Study

14. Leigh Guided Busway



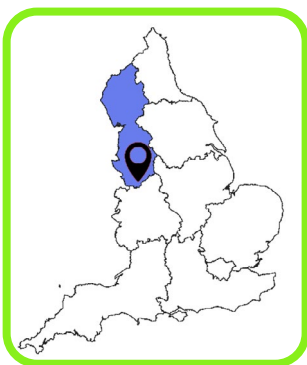
Key elements

- providing an off-road path to reduce reliance on motor vehicles and to encourage active travel for shorter journeys
- integration with busway, enabling easy transition between active and bus travel

1. Background

1.1 Context

Leigh is one of the largest towns in the UK without a railway station, following the closure of Tyldesley Loopline in 1969. As such, it suffered from poor transport connections to surrounding towns and settlements. Subsequently, a proposal was made to reuse the railway line, which had since been repurposed as a linear park, to improve access to Manchester city centre from Leigh, Tyldesley and Ellenbrook. This will subsequently regenerate the areas which formerly made up the Lancashire Coalfield.



By offering an alternative to private car use, the busway sought to alleviate congestion on the radial routes in and out of Manchester city centre.

Forming part of Transport for Greater Manchester's (TfGM) 'bus priority package', the Leigh guided busway opened in 2016 and is part of a wider 21km corridor of segregated bus measures. Of this, 7.4km, between Leigh and Ellenbrook, is a kerb guided busway, with the remaining route on highway. A multi-user path was integrated into the design which runs alongside the guided section. The path is 4.5m wide and provides a shared-use facility for pedestrians, cyclists and equestrians, with enhanced crossing facilities along the length of the corridor to connect users to surrounding settlements.

1.2 Scheme objectives

The key objectives of the multi-user path are:

- provision of an off-road path between Leigh and Ellenbrook for people walking, wheeling and cycling, reducing reliance on motor vehicles and encouraging active travel for shorter, local journeys. The busway can also be used recreationally for walking, jogging, cycling and horse riding
- integration with the existing walking and cycling network adjacent to the guided busway, providing connections to surrounding settlements including Tyldesley, Atherton, Higher Folds, Astley and Mosley Common. These links also enable people walking, wheeling, cycling and horse riding to cross over the guided busway, reducing severance
- integration with the busway, enabling easy transition between active travel and bus travel

Figure 1: Multi-use path running adjacent to Leigh guided busway.



1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway	Shared	–	Leisure and utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

The multi-user path significantly enhances network connectivity by linking several key settlements located to the west of Manchester city centre. The path connects Leigh, Atherton, Tyldesley, and Ellenbrook, providing a continuous 7.4km route for people walking, wheeling, cycling and horse riding.

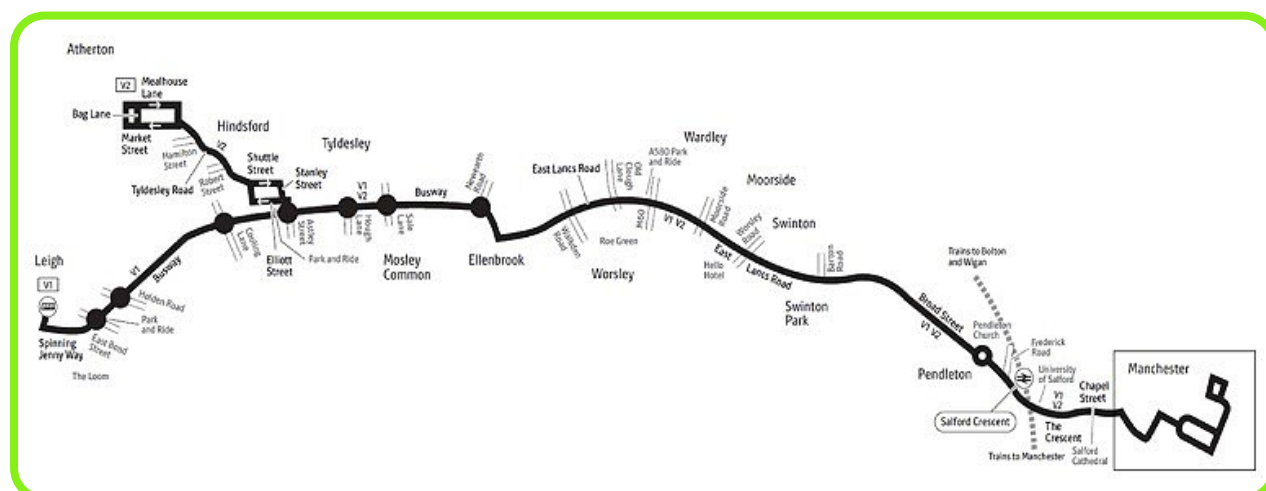
The busway and multi-user path follow the route of a disused railway line. The integration of the multi-user path with the guided busway ensures seamless transitions between different modes of transport, facilitating easy access to local amenities and public transport options.

As shown in Figure 3, the path is also part of NCN Route 55, which runs from Ironbridge to Preston, passing through towns such as Telford, Newport, Stafford, Macclesfield, Stockport, and Wigan.

This route includes several traffic-free sections, such as the Middlewood Way and Biddulph Valley Way, which are former railway lines. NCN Route 55 enhances the utility of the multi-user path by providing extended connectivity for cyclists, making it easier to travel longer distances safely and efficiently.

The guided busway and multi-user path begins in Leigh, just north of the town centre. Along this section, the path runs on the southern side of the busway and is located adjacent to East Bond Street, enabling those travelling east to choose alternative sustainable modes to private car travel.

Figure 2: Map of busway from Leigh to Manchester.



The guided busway is intersected by various roads along the route, including at Well Street, where there is a toucan crossing – see Figure 3. Controlled crossings are also provided at the junctions with Holden Road, Astley Street, High Lane, Sale Lane, New City Road and Newearth Road. To the east, the path moves to the northern side of the busway. Moving out of Leigh towards Tyldesley, the path is intersected by uncontrolled crossing points, providing connections to smaller settlements along the route.

Figure 3: Controlled crossing at Well Street junction with busway.



1.5 Key elements/design features

Length	7.5km
Width	3m minimum between East Bond Street and Holden Road, and 4.5m minimum width between Holden Road and Newearth Road (accommodating a bridleway)
Shared/segregated	Multi-user path, off-road
Surfacing material	Fibredec
Lighting	At crossing points
Wayfinding	Local wayfinding
Placemaking	N/A
Permitted users	Walking, wheeling, cycling, equestrians

Figure 4: Fibredec used for multi-user path.



2. Planning and engagement

2.1 Network planning

The Leigh-Salford-Manchester Corridor had long suffered from poor public transport connectivity. Subsequently, the preferred route option was born from the need to provide a sustainable alternative to car travel into Manchester from Leigh and the surrounding settlements.

Without the busway and multi-user path, car usage may have continued to grow, increasing congestion and air quality issues. This would also have added pressure to the key corridors in and out of Manchester city centre.

To mitigate these issues, the opportunity to repurpose the former railway line was pursued. Proposals to integrate a multi-user path along the guided section were taken forward.

2.2 Approval process/consents

The approval processes and consents required to build the Leigh guided busway and the multi-user path involved multiple stages and coordination among various stakeholders.

When initially proposed, the busway was controversial and faced opposition. However, TfGM presented a strong economic case for the scheme, highlighting its cost-effectiveness compared to other alternatives such as rail. Despite this, a long legal process preceded the busway's construction, including a public inquiry in 2002. The decision of the public inquiry was delayed because great crested newts occupied a site on the route.

DfT granted powers to build the busway in 2005 and it was projected to be built by 2009, but preliminary work commenced later than planned in 2012. Powers to build it were set out in the Greater Manchester (Leigh Busway) Order 2005 in the Transport and Works Act.

The project was led by TfGM and required planning permissions from local authorities, including Wigan Council and Salford City Council. Environmental impact assessments were conducted to ensure the project met sustainability and ecological standards, particularly given the path's route along a disused railway line. Public consultations were held to gather feedback from local communities and address any concerns regarding the construction and operation of the busway and multi-user path.

Additionally, the project needed to comply with national transportation and infrastructure regulations, which included obtaining consents for road and highway modifications. The construction phase also required coordination with utility companies to manage and relocate existing infrastructure. Overall, the approval process was comprehensive, ensuring that the project met all legal, environmental, and community requirements.

2.3 Engagement

The engagement process for the Leigh guided busway and multi-user path was extensive and undertaken in various stages.

Engagement was led by TfGM and began during the planning phase. They engaged with local authorities, including Wigan Council and Salford City Council as well as key stakeholders such as local businesses, residents, community groups, and local MPs and councillors.

Public consultations were held to gather feedback and inform the community about the project's objectives and benefits.

TfGM utilised various methods to engage with the community, including public events, joint newsletters in collaboration with the contractor, social media, stakeholder briefings and online surveys. These platforms allowed key stakeholders to voice their opinions, ask questions, and raise concerns.

Key issues raised during the engagement process included potential disruptions during construction, environmental impacts, and the need for safe and accessible routes for all users.

Figure 5: Signalised junction enabling easy access for pedestrians and cyclists.



As part of this, TfGM undertook extensive engagement over the type of surfacing used on the multi-user path to accommodate all users, including people walking, wheeling, cycling and horse riding. Fibredec was used to balance the needs of the different users.

TfGM addressed these concerns by incorporating feedback into the project design, such as enhanced crossing facilities (as shown in Figure 6), choosing a surface material which met the needs of various users, and ensuring the path was accessible for all.

The outcomes of the engagement process were positive, with significant community support for the project. The feedback helped shape the final design, ensuring it met the needs of the local communities. The multi-user path was well received for promoting active travel connectivity and providing a safe, scenic route for walking, cycling and horse riding.

3. Design

3.1 Overview

The multi-user path has been designed to ensure safety, accessibility and usability for all users. At 4.5m wide, the path is more than adequate to accommodate the shared-use demand. The path is separated from the busway by a physical barrier, ensuring safety of users and preventing accidental encroachment onto the busway.

The multi-user path is well integrated into crossing points along the length of the corridor, as well as bus stops. The bus stops provide shelter, seating and cycle parking facilities, enabling multi-modal journeys.

Figure 6: Cyclist using multi-user path, featuring bus stop and wayfinding.



3.2 Junctions and crossings

There are several junctions and crossings along the length of the multi-user path that have been carefully designed to provide a continuous off-road link for people walking, wheeling, cycling and horse riding, while also enabling users to join and leave the path at various points – see Figure 8. This design approach is particularly important in enabling wider connectivity beyond the east-west link to Salford and Manchester city centre and supporting more local journeys, as well as allowing users to join and leave the path at regular intervals, enhancing personal safety. To prevent non-authorized motor vehicles turning into the guided busway and accessing the path, bollards and signs are placed on the approaches.

Figure 7: Signalised junction with controlled crossings on each arm.



Where the guided busway ends at the junction with the B5232 (see Figure 8), an onward connection via the Woodland Trail (part of the N55 route) provides an off-road route for pedestrians and cyclists all the way into Manchester city centre. The trail is also a bridleway, permitting horse riders. Controlled crossing points have been provided over the B5232 to enable users to safely transition over the road.

Figure 8: Onward connection at B5232 junction, where guided busway ends.

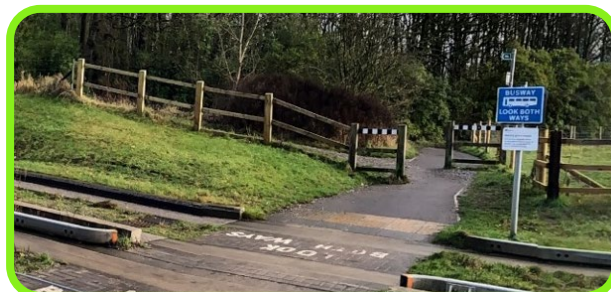


Multiple uncontrolled crossing points feature along the length of the guided busway enabling people walking, wheeling, cycling and horse riding to join the busway via existing bridleways and other off-road routes.

As shown in Figure 9, fencing and carefully placed signage is used to alert users to the intersection with the busway and to encourage those walking, wheeling, cycling and horse riding to slow down on approach.

Raised sections are provided across the busway tracks to enable level access. Tactile paving and wayfinding signs are also provided.

Figure 9: Uncontrolled crossing over busway.



3.3 Signage

Clear and informative wayfinding signs are installed along the path to provide directions for onward journeys and information regarding nearby amenities and points of interest.

Figure 10 provides an example of typical wayfinding signs found along the path and an information board illustrating the wider route and connectivity.

Figure 10: Signs and information board along the route.



3.4 Ecology and greening

The Leigh guided busway and multi-user path project incorporated extensive ecology considerations and greening efforts to protect and enhance the local environment. One of the primary ecological concerns was the protection of great crested newts, a protected species found along the route. To safeguard these amphibians, TfGM commissioned a company to install amphibian fencing and pitfall traps.

These measures allowed ecologists to capture and relocate the newts to designated habitats, ensuring minimal disturbance during construction. Additionally, the project involved careful vegetation management, using techniques like high strim/low strim to encourage wildlife to move away from construction areas with minimal disruption. The project also focused on creating new habitats and enhancing existing ones. The route of the busway and path followed parts of a disused railway line, which had naturally regenerated into a rich mosaic of habitats, including woodland and meadow areas.

To further support biodiversity, the project included the creation of a community woodland in collaboration with the Forestry Commission – see Figure 11.

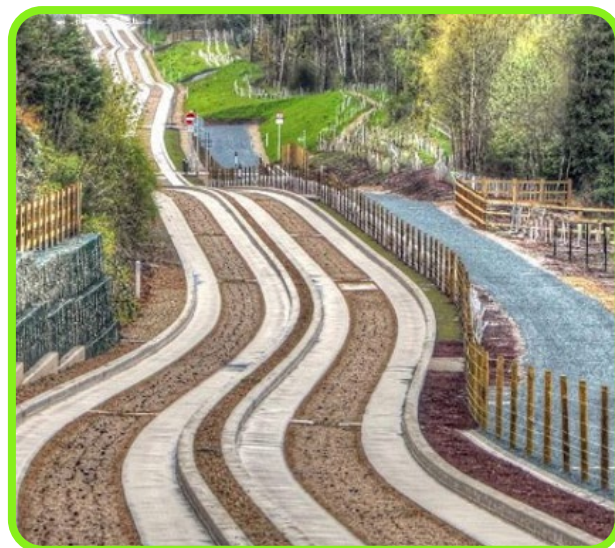
Figure 11: Planting of the community forest at Higher Folds.



This involved planting native tree species and creating habitats that would benefit a variety of wildlife, including birds, insects, and small mammals. The use of sustainable materials and construction practices, such as reusing excavated soil for landscaping, helped minimise the environmental impact and promote ecological sustainability.

Where the felling of trees took place to accommodate the busway and multi-user path, TfGM ensured these were made into furniture and donated to local schools. Greening was integrated along the route, not only to improve the aesthetic appeal but also to enhance ecological impact.

Figure 12: Busway and multi-user path lined with greening and natural materials.



3.5 Lighting

Lighting columns have been provided at the bus stops along the guided busway as well as at key junctions. This ensures all road users are aware of the integration of modes, can safely cross at junctions and board and alight the buses at the various bus stops.

The decision was made not to install lighting along the rest of the route to minimise the environmental impact associated with light pollution, particularly along the section between Tyldesley and Leigh, which is lined predominately by woodland and farmland.

4. Delivery

4.1 Partners and roles

Primary partners include:

- TfGM, which was the governing body responsible for transport and therefore led the project, overseeing planning, coordination, and implementation
- Wigan Council, Salford City Council, and Manchester City Council, which provided essential support and approvals, ensuring the project met regional planning and regulatory requirements
- BRE Group, which played a key role in ensuring the project met sustainability standards, contributing to its CEEQUAL Excellent rating
- contractors and construction firms, which were involved in the construction phase, including those specialising in earthworks, concrete slipforming, and infrastructure development

4.2 Funding

The Leigh guided busway and the multi-user path were funded as part of the Greater Manchester Bus Priority Package, which had a total investment of £122 million. £68 million of this investment was used to deliver the guided busway, associated highway improvements and multi-user path.

4.3 Delivery timescales/phasing

The delivery and phasing of the scheme was meticulously planned and executed over several years. Advanced works began in 2012 with construction beginning in July 2013.

The construction phase involved significant earthworks to deliver an at-grade solution, as the busway was built on a disused railway line. A cut and fill exercise identified approximately 131,335 square metres of material which needed to be used or disposed of. Around 69,000 square meters was reused in construction, and 53,000 square meters used to create a community woodland on an adjacent Forestry Commission site.

The first passenger service on the guided busway started in April 2016, marking the completion of the construction phase. The busway includes seven pairs of high-quality stops and two Park and Ride sites, enhancing accessibility and convenience for users. Shortly after opening, both the busway and multi-user path became popular for both commuting and recreational use.

4.4 Maintenance

TfGM is responsible for the upkeep and management of the path, ensuring it remains safe, clean, and accessible for all users. Regular maintenance activities include surface repairs, vegetation management, litter collection, and ensuring that signage and lighting are in good condition. The path has been designed to allow both emergency vehicle access and maintenance vehicle access when required.

5. Outcomes

5.1 Overview

The Leigh guided busway has not only improved public transport but also significantly enhanced walking and cycling infrastructure and connectivity in the area. The multi-user path provides a safe and accessible route for all users.

The path has quickly become a popular choice for residents, with 84% of users reporting that the path has encouraged them to lead a more active lifestyle. The integration of the path with the busway ensures seamless connectivity, making it easier for people to combine walking, cycling, and bus travel in their daily commutes.

The project's CEEQUAL excellence award demonstrates its commitment to environmental excellence and sustainability.

5.2 User outcomes

Since its introduction, users of the multi-user path have experienced numerous benefits. The path offers a continuous, traffic-free route that connects key settlements such as Leigh, Atherton, Tyldesley and Ellenbrook. This has made it easier for residents to access local amenities and public transport options.

The path's design prioritises safety and accessibility, with features such as enhanced crossing facilities and clear signage. Additionally, the path's scenic route along a former railway line provides a pleasant environment for recreational activities like walking, jogging, cycling and horse riding.

Not long after opening, the busway quickly became popular with over 900,000 passengers in its first six months. This success has continued with annual ridership of the busway totalling 2.7 million in 2023/24. Surveys indicate that around 378,000 trips are made annually on the multi-user path, including 290,000 by foot and 88,000 by cycle. In turn, this has removed 500,000 car trips off the road each year.

5.3 Strategic narrative

The multi-user path is a crucial component of TfGM's strategy to promote sustainable travel and reduce congestion.

By providing a high-quality, safe, and accessible route for non-motorised transport, the path encourages more people to walk and cycle.

The path also supports economic growth by enhancing connectivity between key settlements and facilitating access to employment and commercial opportunities.



Case Study

15. Beryl Burton Cycleway



Key elements

- restored a key active travel link between through resurfacing and drainage upgrades
- maintained a low-traffic environment with modal filters and shared access
- delivered cost-effective improvements via council funding and resident contributions

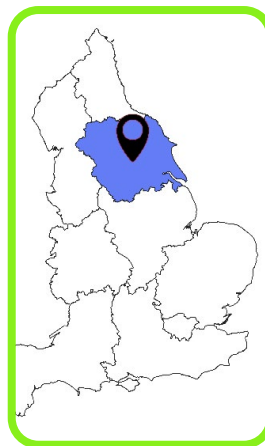
1. Background

1.1 Context

The Beryl Burton Cycleway is a route following a mixture of traffic-free paths and low-traffic roads, connecting Bilton (north of Harrogate) with Knaresborough. It was originally constructed in 1995 as part of the development of the NCN, established to enable walking and cycling throughout the UK. The cycleway offers an alternative to the busy A59 and is an attractive traffic-free alternative passing through fields and woodland.

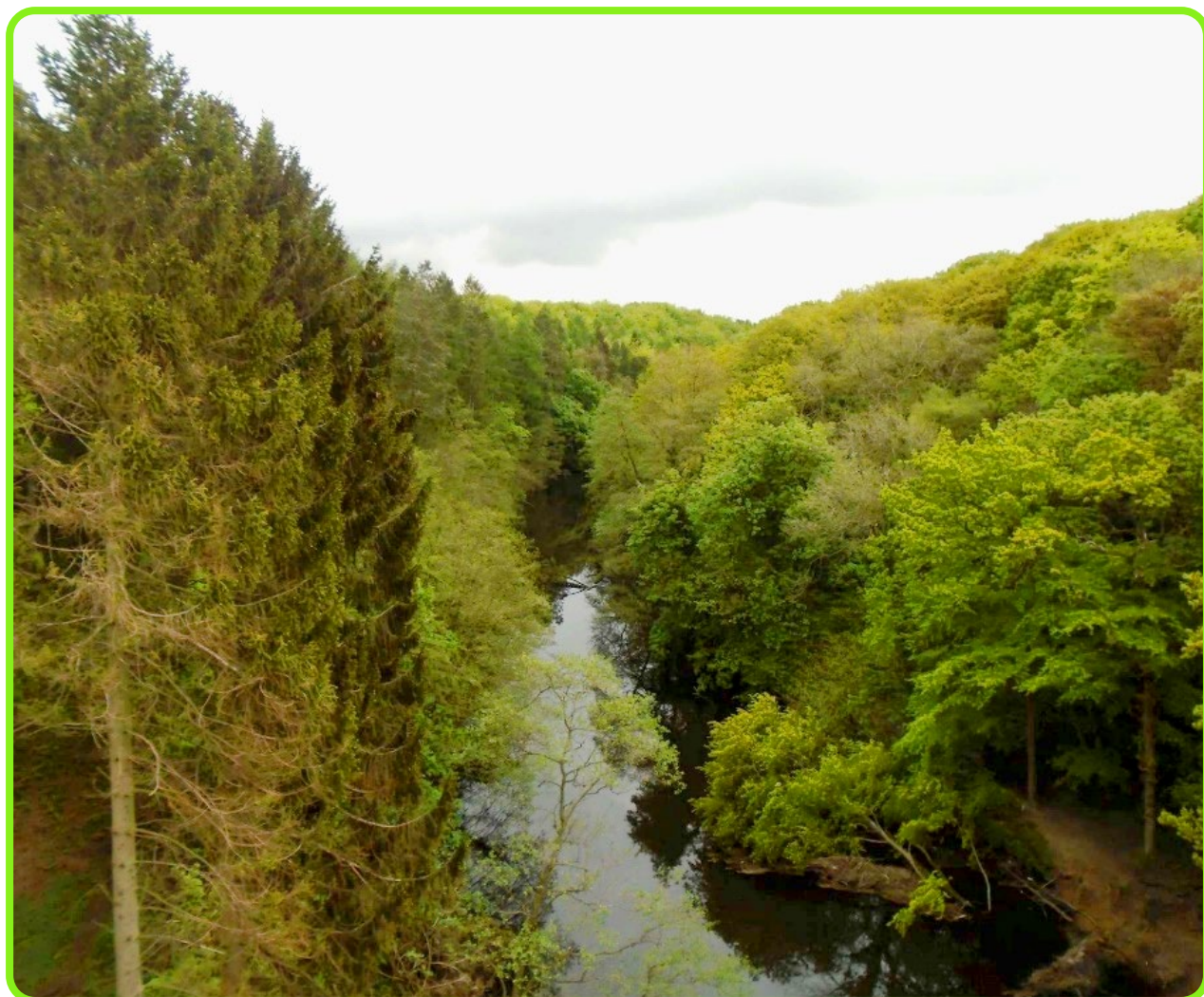
The cycleway is named after the seven-time World Champion cyclist Beryl Burton, who raced for Knaresborough Cycling Club. Burton was a well-known figure in the field of women's cycling in the 1950s and '60s.

After 20 years of use, the cycleway surface had deteriorated, so North Yorkshire County Council embarked on an upgrade project.



The upgrade is an example of how simple, low-cost improvements can enhance an unattractive and increasingly inaccessible route, which would have otherwise created a gap in a wider walking and cycling network.

Figure 1: View from the Beryl Burton Cycleway.



1.2 Scheme objectives

The scheme sought to once again enable walking and cycling trips, both for leisure and utility, along the cycleway.

1.3 Scheme typology

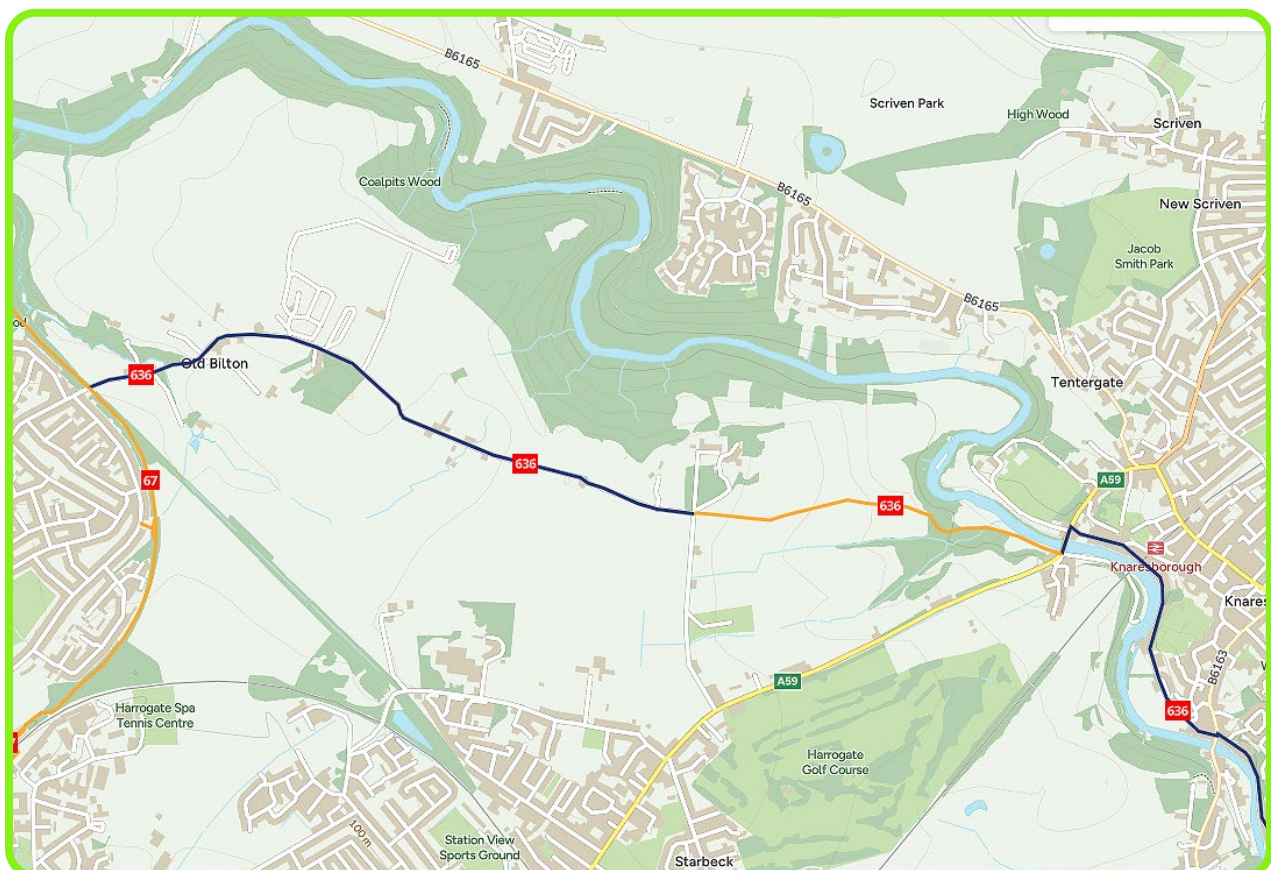
	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Sections on highway	Shared	Sections of mixed traffic	Leisure and utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

The route is signed as NCN 636, which connects Knaresborough and Bilton, a 6.4km route in total.

At Bilton the route connects to National Route 67, a section known as the Nidderdale Greenway, providing a traffic-free path all the way to Ripley in the north, and Harrogate to the south. As a result, the route is the main connection between Harrogate and Knaresborough.

Figure 2: Map of the Beryl Burton Cycleway (NCN 636).



1.5 Key elements/design features

Length	3.3km (1.1km traffic-free)
Width	2m (traffic-free section), 4–5m (carriageway section)
Shared/segregated	Shared
Surfacing material	Asphalt
Lighting	None
Wayfinding	Walk Wheel Cycle Trust wayfinding
Placemaking	Benches
Permitted users	Walking, wheeling, cycling

2. Planning and engagement

2.1 Network planning

When the Council were considering upgrading the route, it was already well established as a much-loved active travel link, although it had deteriorated. As it avoids busy roads, it is the natural direct connection between Harrogate and Knaresborough.

Figure 3: Condition of the path prior to resurfacing.



2.2 Approval process/consents

The initial resurfacing project in 2013 was conducted as part of North Yorkshire County Council's highway maintenance processes, and no additional approvals were required. This off-road section is designated as a cycle track, and no engagement with other parties was necessary.

The resurfacing of Bilton Lane in 2016 was planned in coordination with local residents, who share responsibility for the access road with the Council. A letter was sent to affected residents, requesting a monetary contribution towards the works, which were then approved under North Yorkshire County Council's highway maintenance processes.

Figure 4: Poor quality of the carriageway surface prior to resurfacing.



3. Design

3.1 Overview

The upgrade project looked to address the deterioration of the quality of the route over the years, to establish a resilient link that could provide a connection for many years into the future. These improvements focused on:

- resurfacing the path with a new asphalt surface
- vegetation clearance
- drainage improvements

3.2 Links

The traffic-free path has a surfaced width of 2m. Although this can accommodate the current level of demand, it predates LTN 1/20 which recommends a minimum path width of 3m. The portion of the route that is on-carriageway varies between 4 and 5m. The entire route was resurfaced with asphalt to provide a smooth all-weather surface that can be used year round.

The eastern section of Bilton Lane is not part of the public highway and is used as an access road for local residents, as well as being designated a cycle track. Access to the lane is restricted with a modal filter to keep traffic levels low. Residents maintain a gate within this filter which is locked to control vehicular access to residents only, removing most through traffic from the entire road. Next to the gate is an access for pedestrians and cyclists, to allow them to use the route.

This creates a low-traffic environment suitable for people walking, wheeling and cycling, particularly given the rural nature of the carriageway, which lacks formal footways and is narrow in places. This low traffic-link comprises 2.2km of the 3.3km route.

Figure 5: Signage highlighting the modal filter.



3.3 Lighting

No lighting is provided on the route, as it primarily serves a leisure function. Lighting has high associated capital and revenue costs and would also impact the ecology and rural nature of the route. Adding lighting was not considered as part of the upgrade, which focused primarily on surfacing improvements.

3.4 Accessibility

The pedestrian and cycle access on Bilton Lane adjacent to the gate in the modal filter is maintained by residents and is currently controlled by an A-frame barrier. While this allows access for many pedestrians and cyclists, it also excludes many legitimate users who are unable to negotiate the barrier or dismount. The Walk Wheel Cycle Trust is working with partners across NCN to remove these barriers as part of their Paths for Everyone review.

Figure 6: Gate managed by residents controlling access to Bilton Lane.



3.5 Wayfinding

The route is signed using standard Sustrans wayfinding, highlighting connections to destinations, public transport, and other NCN cycle routes. Some of this signage was refreshed as part of the upgrade.

In advance of the modal filter on Bilton Lane, highway signage is also provided to alert drivers of the presence of this restriction.

Figure 7: Wayfinding on the Beryl Burton cycleway.



4. Delivery

4.1 Partners and roles

North Yorkshire County Council is the scheme promoter, and led on scheme design, delivery and financing. They were supported by Harrogate Borough Council, who also provided some funding for the scheme.

Residents were important partners for the resurfacing on Bilton Lane, contributing to the financing of the scheme, as well as the upkeep and maintenance of the gate. The Walk Wheel Cycle Trust also supported the scheme, being the driver of the development of the original route in 1995.

4.2 Funding

Project	Location	Cost (£ 000s)
Cycle path resurfacing	North Yorkshire County Council	60
Bilton Lane resurfacing	North Yorkshire County Council	49
	Harrogate Borough Council	14
	Resident contributions	9

The initial cycle path resurfacing project was funded using North Yorkshire County Council's annual maintenance budget.

The resurfacing of Bilton Lane involved additional funding partners. A letter was sent to residents who share maintenance responsibility for the access road, asking for contributions towards the carriageway resurfacing. This was successful in providing £9,000 towards the cost of the project. The remaining financing was provided by North Yorkshire County Council and Harrogate Borough Council.

Key takeaway: Exploring wider options to fund projects, such as through resident contributions where appropriate, can help unlock projects where there are funding shortfalls.

4.3 Delivery timescales/phasing

The upgrade project was delivered in two phases. These were:

- 2013 – resurfacing of the traffic-free cycle path from Bilton Lane to Knaresborough
- 2016 – resurfacing of Bilton Lane carriageway

During the resurfacing of Bilton Lane, a diversionary access route was provided for local residents.

4.4 Maintenance

Hardwearing materials such as asphalt were used to ensure the longevity of the path and reduce maintenance demands. Any future maintenance will be met using annual budgets where appropriate.

5. Outcomes

5.1 Overview

The renewal of the cycle path and carriageway has once again unlocked this well-loved route connecting two key destinations. The traffic-free/low-traffic connection allows for use by families and less confident cyclists. As a result, it is a popular leisure route as well as serving as the main connection between Knaresborough and Harrogate.

5.2 User outcomes

The route provides a much safer alternative to the busy A59, improving road safety for existing cyclists and encouraging cycling amongst those who would otherwise have safety concerns with cycling with traffic.

Had the Council not taken action, the path would have been increasingly inaccessible to users, creating a connectivity gap in the walking and cycling network, and forcing people to use the much busier A59.

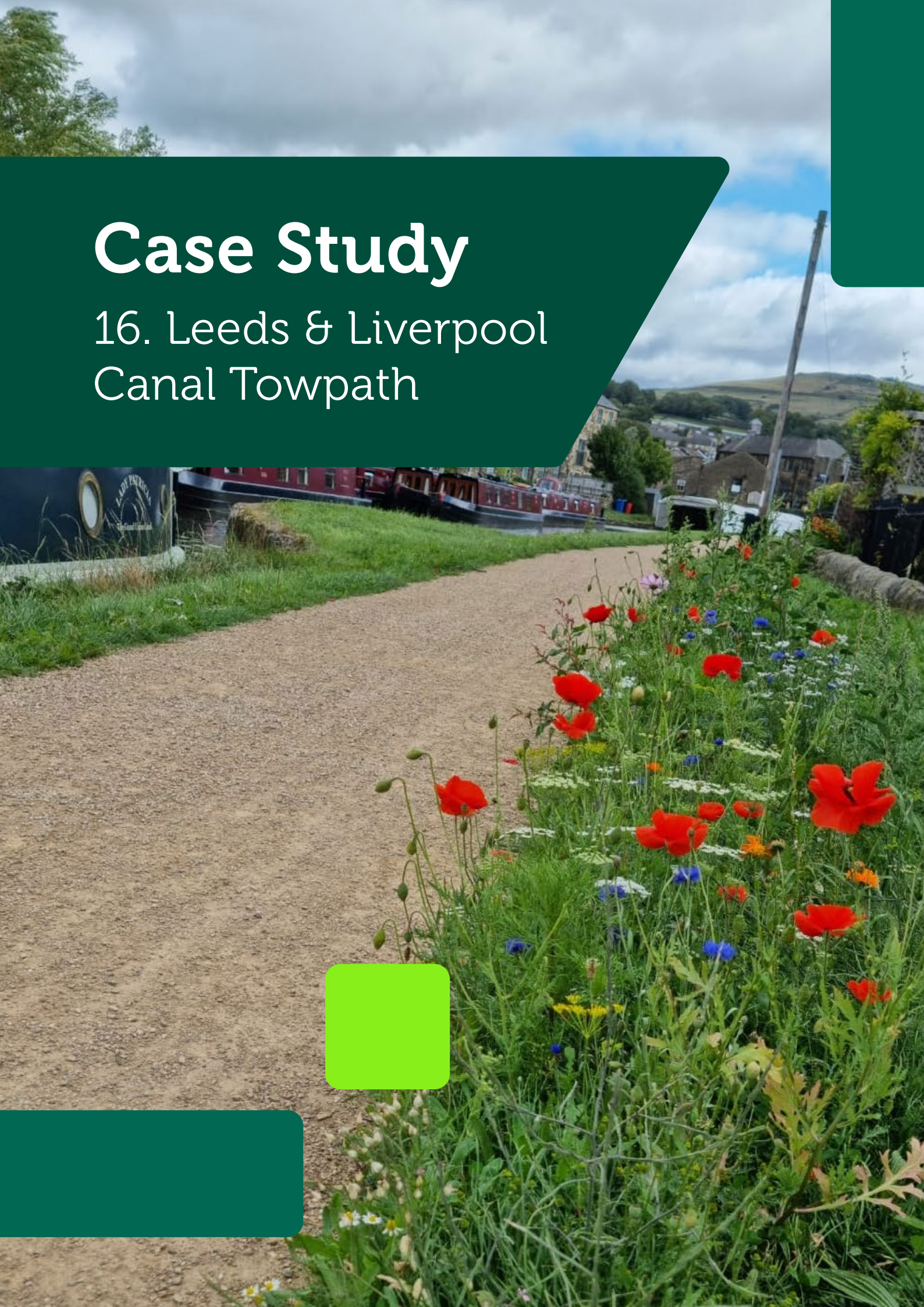
The path maintenance scheme also addressed any safety concerns with the uneven, bumpy surface. The smooth asphalt surface is resilient against flooding and provides a smooth and safe ride.

Figure 8: Users on the Beryl Burton cycleway.



Case Study

16. Leeds & Liverpool Canal Towpath

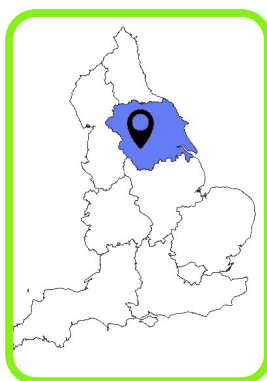


1. Background

1.1 Context

What was a muddy, uneven, and sometimes impassible route along the Leeds & Liverpool Canal towpath, is now a direct, level and traffic-free surfaced access between Silsden and Kildwick, following an upgrade undertaken in summer 2025, which provided a self-binding, 2m wide surface suitable for all users.

Kildwick is a village in the York and North Yorkshire Combined Authority, whose residents use many of the shops and services in Silsden, a town in the Bradford District of West Yorkshire, 3km away.



The on-road alternatives to the towpath require use of a busy dual carriageway or a steep climb up a narrow country lane.

As well as this local connectivity, the towpath provides long-distance access all the way from Leeds city centre to the Yorkshire Dales, passing through numerous settlements in the Aire Valley along the way, giving the route additional tourism and leisure importance.

The towpath between Silsden and Kildwick was the last section of the Leeds & Liverpool towpath to be surfaced on the Yorkshire side of the canal. Delays to upgrading this section of towpath were due to the fact that it crosses the boundary of two Combined Authorities, bringing funding complications.



1.2 Scheme objectives

The objectives of the project were to provide the local connection between the two settlements along the Leeds & Liverpool Canal, which acts as a long-distance leisure and tourism route. It also resulted in investment in the historic canal infrastructure that will ensure the longevity of the towpath as an active travel route. The project aimed to:

- provide a surfaced path that can be used all year round by people walking, wheeling and cycling, that is appropriate for the rural landscape in which it is set
- encourage sustainable travel between Kildwick and Silsden, but also other nearby settlements in the Aire Valley that are served by the towpath
- facilitate longer distance leisure opportunities that link the settlements in the Aire Valley to the Yorkshire Dales
- alleviate congestion on the surrounding road network
- repair canal walls that support the towpath, which also help to maintain and protect the canal itself
- use construction methods that protect trees growing alongside the towpath

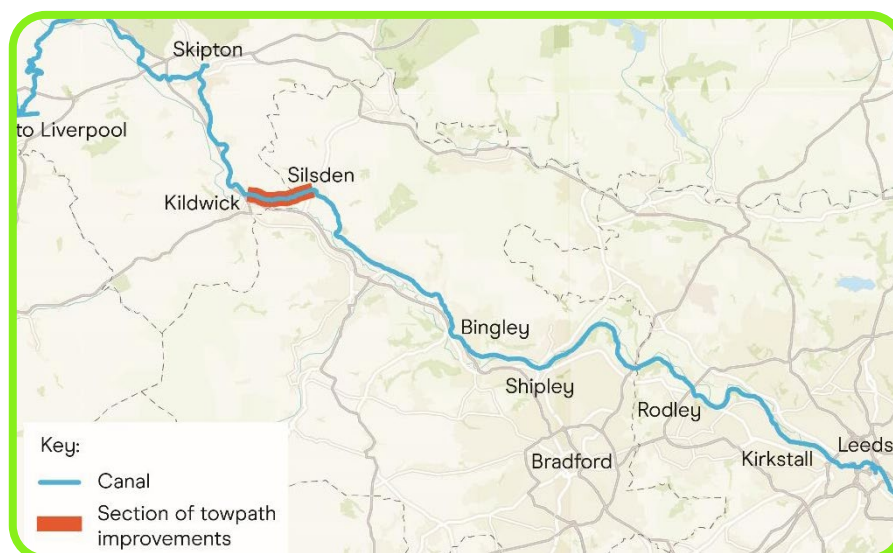
1.3 Scheme typology

	On-highway/ off-highway	Segregated/ shared	Mixed traffic	Leisure/ utility use
Inter-settlement	Off-highway	Shared	–	Leisure and utility
Village/market town	–	–	–	–
New development	–	–	–	–
Public transport corridor	–	–	–	–

1.4 Network connectivity

To the East of Silsden, the towpath extends to Bingley, Riddlesden, Shipley and Leeds. To the West of Kildwick, it extends to Skipton, Gargrave and a number of Dales villages. Towpath surfacing upgrades have been provided on these sections over the past 15 years, with this section being the ‘missing link’. The towpath also connects with quiet roads within Silsden and Kildwick – linking to shops, workplaces and other destinations, meaning that the route provides for both leisure and utility journeys.

Figure 1: Location of Silsden to Kildwick towpath improvements.



1.5 Key elements / design features

Length	3.2km
Width	2m (with exception of bridge holes)
Shared/segregated	Shared
Surfacing material	Self-binding aggregate
Lighting	No
Wayfinding	Yes
Placemaking	Benches, wildflower planting, restoration of historic mileposts
Permitted users	Walking, wheeling, cycling

2. Planning and engagement

2.1 Approval process/consents

The project had the advantage that the land was solely in the ownership of the Canal & River Trust and the works fell within their Permitted Development rights. This was key to delivering the works in the required timescales of both funders.

Sections of the towpath have public footpaths either running along it or crossing it. The Trust worked with the Public Rights of Way (PROW) teams from both public authorities to produce agreed designs and to manage public passage while works were taking place.

The contractors implemented a system of rolling site compounds, minimising disruption as much as possible whilst still maintaining site safety. This allowed the public to use the towpath unimpeded until they reached live works. Here they could alert a banksman, who would then stop works and escort people through the site. This prevented the need for PROW closures and led to positive feedback from the public during the construction phase.

All equipment and closures were removed from the towpath at evenings and weekends, so that local people and local businesses, who relied on income from towpath users, had the negative effects of construction works minimised.

This way of working was implemented due to learnings from previous projects where towpath closures had led to ill-feeling from towpath users and, in some cases, vandalism of signs and fencing.

Key takeaway: Working with experienced contractors who understand the issues faced on previous projects can help in developing a delivery approach which minimises disruption to route users.

2.2 Engagement

A thorough consultation process was undertaken, led by the Canal & River Trust, in partnership with the district and combined authorities. This involved:

- the creation of a detailed website, complete with scheme description, drawings, FAQs and a link to a survey form
- a social media campaign
- a drop-in session at Silsden Town Hall, with poster promotion along the route
- a leaflet drop and press release alerting the public to the drop-in and availability of online information

This led to 632 survey responses. Public opinion was very strongly in favour of the scheme, with 92% saying the improvements would encourage them to use the towpath more often and 97% supporting proposals (86% in full and 11% in part).

Concerns raised towards the scheme focused on the proposed removal of an area used for parking in Kildwick and worries about speeding cyclists.

In response to this feedback, it was agreed that the project would retain an area of parking in Kildwick and to facilitate it by providing tarmac hardstanding (which was previously poorly surfaced and potholed). Signs were also installed along the route, to remind towpath users to adhere to the Canal & River Trust Towpath Code.

Figure 2: Canal & River Trust – Towpath Code.



3. Design

3.1 Overview

The design was required to provide a surfaced route suitable for accessible shared-use between people walking, wheeling and cycling, while maintaining the historic and rural nature of the towpath corridor.

The design included:

- provision of a shared-use towpath, at least 2m wide (with exceptions at narrower historic bridge holes)
- retention of grass verges on both sides of the surfaced path (to provide important spaces for all towpath and canal users as well as to maintain the rural canal character)
- repairs to canal wash walls to protect the towpath and canal from erosion
- repairs to areas of historic stone setts
- provision of benches
- provision of a hardstanding area for parking to be retained

3.2 Links

Surfacing

Original proposals included the provision of a tar, spray and chip surface, specified for its robustness and longevity. Discussions with the PRow and planning officers at the local authorities led to the decision that this was not an appropriate surface for the rural setting.

A previous phase of towpath upgrade from Kildwick westward had used a self-binding aggregate surface that was popular and durable, so was agreed as the surfacing choice. The self-binding aggregate has a natural stone look and its limestone constituents bind together to become waterproof.

The canal corridor between Kildwick and Silsden is constructed on a hillside with land falling away steeply on the towpath side, restricting any widening proposals. These physical restrictions of the canal corridor and the desire to retain a grass verge led to provision of a 2m surfaced towpath. While LTN 1/20 advises for shared-use paths, section 8.2.2* acknowledges towpaths as exceptions. As the towpath represents the only flat and direct route between the two settlements, it was considered a valuable active travel asset and therefore worth providing.

*LTN1/20, section 8.2.2: *“Providing sufficient width for the anticipated levels of use will help minimise the risk of conflict between different user groups. Existing heritage features such as canal towpaths should not be excluded from a network solely due to width or headroom restrictions unless there are serious safety concerns.”*

Key takeaway: Taking a pragmatic approach to assessing the benefits of a scheme is recommended for cases where the desired minimum standards cannot be achieved, but the benefits outweigh the ‘do-nothing’ alternative.

Figure 3: View of towpath before and after improvement works.



Towpath widening

Building up the rear of the towpath was key to achieving the desired towpath width, which was sloping away from the canal. This required a large quantity of additional aggregate to sit on top of a retaining wall. An aggregate specification that was lighter than normal was used to reduce loading.

Canal wall repair

The canal walls that retain the towpath were in poor condition in places, with erosion taking place that could have threatened the lifespan of the towpath. To reduce this, contractors were instructed to make repairs to ensure the longevity of the new towpath surfacing and help preserve the fabric of the canal itself.

Verges

The front and rear verges are a key part of the characteristics of the canal. They have a number of practical roles, which include:

- providing a soft verge that enables boaters to peg in and tie up their boats where no mooring rings or posts are present
- offering a safety buffer between the towpath and the canal water, discouraging people walking, wheeling and cycling from passing too close to the edge



- offering space for wildlife. In this case, the verges have been planted with wildflower seeds to help increase the biodiversity of the corridor
- verges, which allow for a soft transition between the towpath and coping stones at the top of the canal wash wall. This means the historic coping stones can remain undisturbed, saving a lot of work and expense

Historic stone setts

Stone setts are a feature of many canals and provide character and context. However, they can be difficult to cross by cycles, wheelchairs and pushchairs, especially those with small castor wheels.

At Silsden, there was a length of stone setts approaching a bridge. Discussion with contractors and heritage colleagues at the Trust led to a methodology where setts were taken up and re-laid. Where setts were flat, they were re-bedded in the same orientation. Where setts had an eroded and rounded top, they were turned around so a flat side was facing up.

Pointing was then applied flush to the top of the setts, achieving an almost smooth surface on the towpath while retaining the historic stone setts.

Figure 4: Stone setts before improvements.



Tree protection

As a key part of the design process, the Trust's ecologists visited the site and identified a number of trees that were deemed important to the ecology of the area and which could be potentially damaged by the towpath surfacing works, due to the disturbance of laying surfacing on top of their roots. A construction methodology was agreed that would allow the towpath to be upgraded while safeguarding the roots.

Figure 5: 'Before' example of tree roots safeguarded through surface construction method.



3.3 Lighting

Lighting was not deemed appropriate for the towpath by all parties because of its rural nature and the distance, of parts of it, from inhabited areas. This was also a recommendation from ecologists who advised on the detrimental impacts that lighting could have on bats, known to use the canal corridor.

3.4 Wayfinding

Wayfinding is provided in the form of fingerposts located at access points to roads in Kildwick and Silsden. Further wayfinding was not required as there are no other points of public access in between these locations.

3.5 Placemaking

The towpath scheme incorporated placemaking improvements that included new benches, wildflower seed planting and the restoration of historic mileposts. The enhancements provide health and wellbeing benefits for leisure and utility users by encouraging people to connect with nature and celebrate local heritage.

4. Delivery

4.1 Partners and roles

The project was led by the Canal & River Trust in partnership with York and North Yorkshire Combined Authority, City of Bradford Metropolitan District Council and West Yorkshire Combined Authority.

Because the project included works on both sides of a combined authority boundary, two different funding streams were required to be in place at the same time. Historically, this had led to funding complications which resulted in delays to upgrading this ‘missing link’ section of towpath.

The main contractor was JN Bentley Ltd, one of the Trust’s four framework delivery partners. All similar works are tendered to the four companies who provide competitive returns, assuring value for money.

4.2 Funding

In 2024, following extensive partner engagement the funding opportunities aligned and the project could be taken forward.

The North Yorkshire section was funded with £570,000 from York and North Yorkshire Combined Authority’s Net Zero Fund, which comes from the UK Government. The Fund supports the region’s ambition to become net zero by 2034.

In West Yorkshire, £330,000 of funding came from the Active Travel Fund 4 (ATF 4+), grant funding provided by Active Travel England (ATE) through the West Yorkshire Combined Authority to support local transport authorities with creating and improving cycling and walking infrastructure.

The final cost for the works was £900,000.

Business cases were produced for both funds. Both authorities recognised the value that a flat, direct and safe route between the two settlements would provide towards:

- sustainable development – reducing the impact of housing growth on the road network
- climate change – reducing transport-related emissions
- the local economy – through tourism
- green infrastructure – through management and protection of greenery on the canal corridor
- the historic environment – by repairing the historic fabric of the canal network
- communities – by improving access to jobs and services and an important leisure opportunity
- health – by providing communities with a leisure resource that is free and on their doorstep

The West Yorkshire Business Justification Case achieved a BCR of 2.65, representing high value for money.

Key takeaway: Continued close collaboration and communication between potential funding partners provides opportunities to align funding as it becomes available to deliver identified improvement projects.

Funding partner	Funding (£ m)
York and North Yorkshire Combined Authority (Net Zero Fund)	0.57
West Yorkshire Combined Authority (ATE Active Travel Fund)	0.33
Total	0.9

4.3 Delivery timescales/ phasing

Both funding sources had their own delivery timetable, and the overlap between the end date of one fund and the approval of the other was three months. Hard work and good communication between the Trust, Council and combined authority officers and contractors ensured that works were completed within the required timescale.

Regular progress meetings ensured all stakeholders were kept up to date, and all approvals and site preparations were progressed as far as possible before the final 'go ahead' was given. In particular, the contractors were praised for their commitment to the project.

4.4 Maintenance

Maintenance of the towpath will fall under the Trust's overall maintenance routine. This includes regular inspections and repair where needed. There is a vegetation management contract in place that ensures regular cutting of verges and trees and shrubs to the rear of the towpath. The Trust also runs local volunteer events, which helps to tackle vegetation and any issues with littering.

5. Outcomes

5.1 Overview

The Kildwick to Silsden towpath improvement scheme has completed the 'missing link' in the Yorkshire section of the Leeds & Liverpool Canal, transforming a sometimes impassible link into an all-weather, accessible route. This enables users to avoid busy on-road alternatives, enjoy the natural beauty of the local area and safeguards the canal's rich heritage.



5.2 User outcomes

Twelve months' worth of monitoring data was obtained for a section of the towpath in Kildwick, as below.

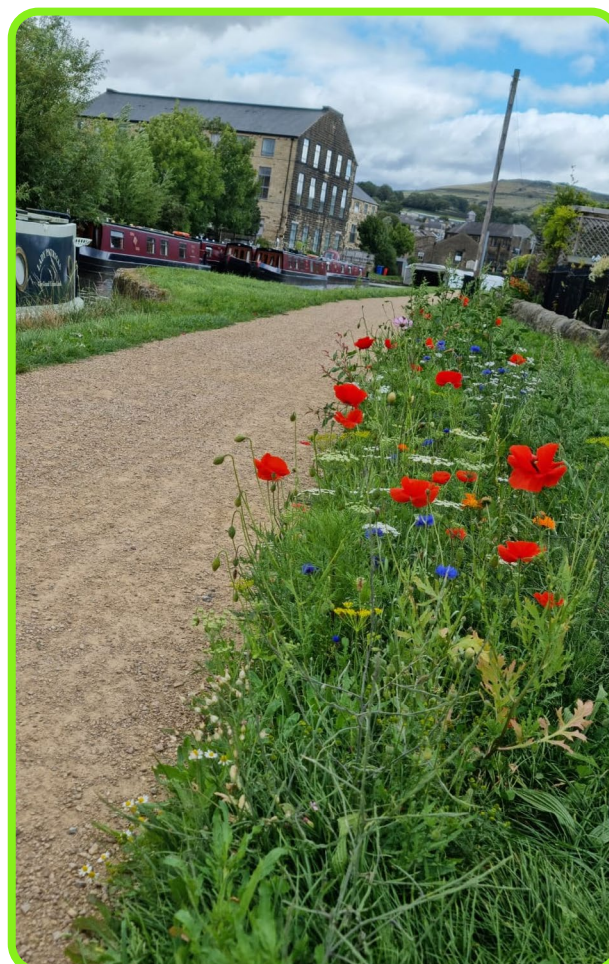
August 2024 – before works	August 2025 – after works
- total pedestrian trips: 2,820 - average pedestrian trips per day: 403 - total cyclist trips: 541 - average cyclist trips per day: 77	- total pedestrian trips: 4,289 - average pedestrian trips per day: 613 - total cyclist trips: 1,234 - average cyclist trips per day: 176
Total: 3,361 active travel trips per week average: 480 trips/day	Total: 5,523 active travel trips per week average: 789 trips/day

The camera was installed in August 2024 and will be in place for five years, until August 2029. Observations from site visits show a dramatic change from a muddy track to a thriving surfaced route, heavily used by people walking, wheeling and cycling. A new café constructed in a farm field adjacent to the towpath has reported economic benefits.

5.3 Strategic narrative

The towpath improvement scheme demonstrates how long-term planning and investment can improve connectivity, not only providing local benefits but also unlocking wider opportunities for active travel. Upgrading this remaining section of the towpath marked the end of a 20-year project by the Canal & River Trust. It enables long-distance, traffic-free access all the way from Leeds city centre to the Yorkshire Dales, passing through numerous settlements along the way and giving the route additional tourism and leisure importance. The scheme has helped to improve accessibility to Silsden's shops and services for residents of Kildwick, and the increased route demand is boosting the associated local economic benefits.

The scheme has also highlighted the benefits of strong partnership relationships and effective collaboration in securing funding and leading to successful project delivery.



Case Study

17. Re-designing Rural Corridors for People, Nature and Net Zero



Key elements

- reframing streetlighting assumptions to create inclusive and year-round active travel connectivity that best serves rural communities
- reduce dependence on carbonintensive streetlighting using innovative techniques while increasing safety and decreas annual costs
- protecting nature by habitatsensitive design and biodiversity-positive infrastructure

1. Background

1.1 Context

Rural England faces a persistent challenge: how to create safe, attractive and low-carbon environments for walking, wheeling and cycling in places historically dominated by fast-moving traffic and conventional streetlighting. Active Travel England's Rural Design Guide emphasises the need for safe, integrated routes, speed reduction, habitat-sensitive design, and community-led rural connectivity. Yet many rural authorities struggle with the legacy of lighting standards designed for motorists, not people, and with the high carbon and financial costs of maintaining traditional lighting infrastructure.

The Decarbonising Streetlighting Live Labs 2 project represents a major national effort to rethink how the UK designs and manages its highway lighting infrastructure.

Led by East Riding of Yorkshire Council with nine partner authorities, this £4.6 million programme set out to demonstrate that highways can remain safe, inclusive and cost-effective while significantly reducing dependence on carbon-intensive streetlighting. Rather than focusing solely on improving the efficiency of existing systems, the project challenged the long-held assumption that conventional lighting is always required at conflict zones and on high-speed routes. It instead developed a sustainable, design-led approach centred on intuitive visual guidance through high-reflectivity materials, solar-powered road studs and carefully targeted pedestrian lighting.

The project included the following participating authorities:

- East Riding of Yorkshire Council (Lead)
- Aberdeenshire Council
- Northern Ireland Highways
- Lancashire County Council
- Hull City Council
- Derbyshire County Council
- Cambridgeshire County Council
- Oxfordshire County Council
- Westminster City Council

A comprehensive, data-driven methodology underpinned the work across national test beds, including the development of an AI-enabled thermal imaging system to monitor driver behaviour and safety performance in real time. Alongside the safety monitoring, a robust carbon and cost modelling framework was established with the University of Leeds, resulting in a decision support tool that allows local authorities to compare traditional lighting renewals with alternative visual designs over different asset lifecycles.

Legal and risk assurance were integrated throughout the programme with support from insurers and specialist solicitors, ensuring that all proposals were safe, defensible and compliant.

Biodiversity monitoring formed a further strand of the project, assessing impacts on bats and birds through audio sensors and direct community engagement. Sustainability can be achieved at the same time, offering a path for authorities to improve their lighting policies and support national net-zero ambitions.

1.2 Scheme objectives

Reframing rural lighting: from vehicle-centric to people-centric

Traditional rural lighting standards assume that lighting is required primarily for motor traffic. The Live Labs 2 programme looked at which other users need light in rural settings.

The project found that in many rural locations, lighting is not required for drivers – but targeted, low-level lighting is an essential for people walking, wheeling and cycling, especially where footways or crossing points exist.

This represents a fundamental shift in rural design philosophy: lighting becomes a tool for active travel and users' perception of safety, as well as a road safety measure for drivers.

2. Engagement

2.1 Co-design process

Co-design in Hayton, a village and civil parish in the East Riding of Yorkshire, shows how rural communities can directly shape active travel environments. Engagement went beyond consultation: residents took part in nature walks, VR workshops, drop-ins, biodiversity surveys and route assessments, helping refine the low-level lighting approach and the wider corridor design.

The biodiversity study created a strong platform for participation. The community contributed to bat walks, moth trapping, bird-spotting sessions and app-based reporting, building local awareness of ecological impacts and strengthening ownership of nature recovery.

Residents have reported improved sleep, reduced glare and quieter nights, with strong support for maintaining darker conditions.

Engagement was structured to be inclusive. Councillors, parish groups, accessibility advocates, schools, youth groups and local nature organisations were involved early and consistently through webinars, newsletters and steering group activity. This ensured decisions reflected lived experience and the needs of people walking, wheeling and cycling.

Hayton demonstrates how rural design can be shaped with, not just for, the community.

3. Design

3.1 Low-level pedestrian lighting

The project developed and tested a new lighting typology:

- 3-metre pedestrian-scale columns
- 80% recycled aluminium
- optics designed to avoid carriageway spill
- uniform footway illumination
- passive infrared (PIR)-activated crossing lighting
- minimal ecological impact

This iterative approach – testing, listening, adapting – underpins for the importance of community engagement and inclusive design.

Figure 1: Example of lighting only on the crossing point, Hayton.



3.2 Speed reduction through visual design, not illumination

Speed reduction is essential where walking and cycling routes interact with rural traffic. The Live Labs 2 project showed that lighting is not the only, or even the best, tool for this.

- Instead, the project used:
- high retro-reflectivity road markings
- category 3 sign materials
- solar-powered road studs
- vehicle-activated signs
- simplified, intuitive layouts
- AI-enabled monitoring to verify outcomes

3.3 AI-enabled safety assurance

A major barrier to innovation in rural lighting is the need for robust safety evidence. The project addressed this through a world-first application of thermal-imaging AI, developed with Transoft Solutions and supported by the University of Sheffield.

The system monitored:

- vehicle speeds
- lane positioning
- near-miss events
- pedestrian movements
- 24/7 behaviour in both lit and unlit conditions

This allowed the team to compare before-and-after performance with scientific rigour.

The Road Safety Foundation provided additional scrutiny, ensuring that the methodology aligned with national safety frameworks and that results were credible for future policy.

3.4 Habitat preservation and dark-sky protection

Rural lighting must balance safety with ecological protection. The project embedded biodiversity monitoring from the outset, using:

- audio sensors for bats and birds
- camera traps
- community wildlife surveys
- ecological assessments of lighting impacts

3.5 Supporting rural connectivity

The project directly supports rural connectivity in several ways:

- safe, integrated routes
- pedestrian lighting installed only where needed
- crossing points made intuitive through lighting and visual cues
- behavioural evidence showing safer, more predictable movements

Figure 2: Camera traps set up along site monitored a variety of different species including foxes, rabbits and otters.



4. Outcomes

4.1 Overview

Across the network:

- 75% of sites recorded speed reductions
- motorcyclists saw reductions of over 10%
- even where speeds rose slightly, they remained within limits

This is critical for rural active travel: slower traffic can create safer, more comfortable conditions for walking, wheeling and cycling, even where full segregation separation is not feasible.

4.2 Shaping standards: Institute of Lighting Professionals

The project's findings have already begun influencing national practice.

The Institute of Lighting Professionals (ILP) has been deeply involved throughout, reviewing evidence and preparing new technical guidance based on the project's outcomes. This includes:

- new approaches to rural pedestrian lighting
- guidance on lighting as a last resort
- integration of ecological considerations
- use of high-visibility materials instead of illumination

4.3 Shaping national standards: British Standards Proposals

The British Standards Committee is now exploring how to incorporate the project's principles into future updates. This includes:

- allowing low-level pedestrian lighting as a compliant rural solution
- recognising visual design as a safety tool
- reducing reliance on mandatory illumination at conflict points
- integrating ecological and carbon considerations into lighting design

This is a major step toward modernising rural lighting standards to support active travel.

Figure 3: Current highway standard lighting visible in background, with project lighting visible lower, and illuminating the footway more than the carriageway.



4.4 Safety and behaviour change

As noted in chapter 14 of the Rural Design Guide, lighting plays a critical role in perceptions of safety, particularly for user groups including women and girls and disabled users. This is the first ever case of dedicated lighting for pedestrians, and supports wider governmental measures towards tackling violence against women and girls.

The impact on pedestrian behaviour was profound. At Hayton, where a new low-level lit crossing was installed, there were:

- clearer and more consistent pedestrian movements
- improved legibility of the crossing point
- behavioural changes even in daylight, because the design created an intuitive, predictable environment

AI cameras showed that random crossing before became centred on this single crossing location. This would have been expected at night (given lighting changes), but to see this repeated during the daytime was an added benefit.

This demonstrates that lighting can shape safe behaviour, even in daylight, by creating intuitive, legible rural environments.

Across all sites (not just Hayton) vehicle speeds, lane positioning, near miss events, pedestrian movements were measured before and after installation.

The results included:

- 75% of sites recorded speed reductions
- motorcyclists saw reductions of over 10%
- night-time collision rates fell relative to the wider network

Behaviour change was noted in both drivers and pedestrians across all sites.

As an added series of benefits, residents along the sites reported:

- improved sleep
- reduced glare
- quieter nights
- support for maintaining darker conditions

4.5 Habitat preservation and dark-sky protection

The findings included:

- removing high-mast lighting reduced skyglow
- low-level pedestrian lighting avoided upward spill (light polluting upwards)
- bat activity continued along corridors
- wildlife previously unrecorded was identified, including otters

4.6 Carbon and cost benefits: a rural decarbonisation model

Over 10 years, the project demonstrated:

- 25% carbon reduction (36% with value engineering)
- £1.24 million savings
- reduced maintenance costs
- lower embodied carbon in materials
- reduced operational energy use

For rural authorities, this provides a compelling case for adopting people-focused, low-carbon design.

The outcomes of the programme demonstrate that significant carbon and financial savings can be achieved without compromising road safety. Over a 10-year period, the alternative visual designs delivered a 25% reduction in carbon emissions compared to replacing traditional streetlighting, rising to 36% with value-engineered designs.

The project has already begun influencing national sector practice. The ILP is preparing new technical guidance, and the British Standards Committee is exploring future inclusion of the project's principles in upcoming standards updates.

East Riding of Yorkshire Council and the Hull and East Yorkshire Combined Authority have invested an additional £4.5 million to scale the approach locally, with an estimated £6 million in long-term savings

The project provides a credible, evidence-based methodology capable of transforming how local authorities approach lighting on the highway network, and demonstrates carbon reduction, financial sustainability and public safety.

"It is by far and away one of the most galvanising projects in the region. Its visible benefit to motorists and pedestrians is clear for all to see."

"There are repeated requests for similar schemes to LiveLabs2 to be implemented across the region"

Cllr Paul West

**East Riding of Yorkshire Ward
Councillor and Cabinet Member
for Highways**

4.7 Conclusion

The Decarbonising Streetlighting Live Labs 2 programme provides one of the most comprehensive, evidence-based models for transforming rural corridors in the UK. It demonstrates that:

- lighting can and should be designed for people, not motor vehicles
- vehicle speeds can be reduced through visual design
- habitats can be protected while improving safety
- carbon and cost savings are substantial
- national standards can evolve to support active travel

This case study offers a blueprint for rural authorities seeking to create safe, inclusive, low-carbon rural environments that support walking, wheeling and cycling.



Active
Travel
England