Lower Thames Crossing

7.4 Project Design Report

Part E: Design for Walkers, Cyclists and Horse Riders

APFP Regulation 5(2)(q)

Infrastructure Planning

(Applications: Prescribed Forms and Procedure)

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Part 7

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Project Design Report Part E: Design for walkers, cyclists and horse riders

Contents

1. Project Design Report – introduction

1.1. Document structure

1.1.1. This Project Design Report (PDR) covers the design for walkers, cyclists and horse riders (WCH) across the whole Project. This covers the following areas:

a. South

   I. A2/M2 Corridor

   II. M2/A2/A122 Lower Thames Crossing Junction

   III. Gravesend Link and South Portal

b. North

   I. Tilbury Marshes and North Portal

   II. Chadwell Link

   III. A13 Junction

   IV. Ockendon Link

   V. M25 Junctions

1.1.2. For each area, the existing and proposed routes for walkers, cyclists and horse riders is explored in detail.

1.2. Navigation

1.2.1. This document, Project Design Report Part E: Design for Walkers, Cyclists and Horse Riders, is one of 10 parts that cover the preliminary design aspects of the Project.

1.2.2. Each part has been assigned a colour, as outlined below, to assist with navigation between documents and for further information on other preliminary design aspects of the Project.

Part A: Introduction and Project Background

Part B: Policy Context and Project Design Process

Part C: Design Rationale

Part D: General Design South of the River

Part D: General Design North of the River - Tilbury to the A13 Junction

Part D: General Design North of the River - North of the A13 Junction to the M25

Part E: Design for Walkers, Cyclists and Horse Riders

Part F: Structures and Architecture

Part G: Design Evolution

Part H: References and Glossary

2. Overview

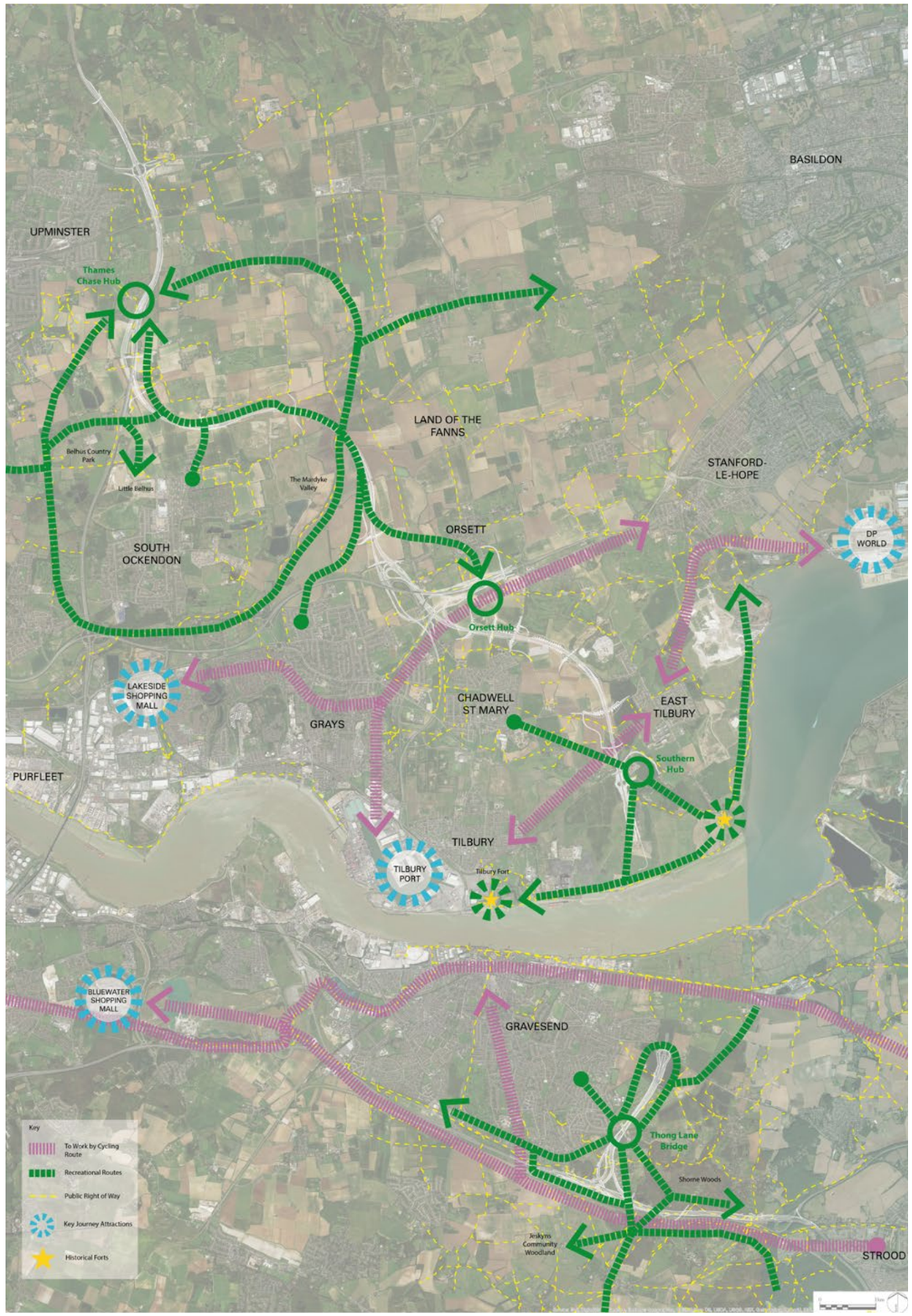
2.1. Background

2.1.1. To create a new road such as the Project, it is inevitable that the existing Public Right of Way (PRoW) network will be impacted with routes severed. An initial WCH strategy was developed for Statutory Consultation, which focussed only on repairing the severance to the PRoW network caused by the Project alone and did not consider the impacts of historical severance or potential improvements. Consequently the Project's position was that where PRoWs were to be severed by the Project they would be diverted or re-connected by provision of a bridge as close to the existing alignment as practicable.

2.1.2. In parallel with the development of the Statutory Consultation design, and in accordance with Design Manual for Roads and Bridges (DMRB) HD 42/17 a Walking, Cycling and Horse Riding Assessment (WCHAR) was carried out. This explored the existing PRoW network, national and local policies, local demographics and consultation feedback to determine where there might be strategic opportunities.

2.1.3. The assessment found that in the south inter-urban distances foster a high level of containment in urban areas and exclude regular walking trips and most cycling trips, and that access to the countryside is the main factor to non-motorised trip generations with country parks providing a draw. Exceptions to this were access to areas of employment such as Bluewater and central Gravesend via east-west routes National Cycle Route (NCR)177 and the A226 Gravesend Road, though the A2/M2 – High Speed 1 (HS1) corridor was seen as a barrier to north-south connectivity.

2.1.4. North of the Thames the report found the main urban areas of Thurrock, Tilbury and Grays were framed by the A1089 and A13 separating them from a predominantly rural zone containing a number of villages and that consequently for non-motorised users employment and retail are very accessible within the urban area. There are high levels of containment in urban areas with those in the rural areas generally older and more reliant on car ownership. A latent demand to walk and cycle in the Tilbury area was theorised. Key inter-urban connectivity along Muckingford Road, the A1013 and Stifford Clays Road was highlighted with Lakeside and Tilbury Docks seen as major trip attractors but north of the A13, in a similar manor to south of the



WCH opportunity strategy presented to National Highways Design Review Panel (March 2019)

Thames the inter-urban distances generally make regular walking trips prohibitive and restrict cycling to leisure use, the M25, A127 and A13 provide further impediments to people accessing the countryside.

2.1.5. The assessment went on to suggest a series of changes to the PRoW network including:

a. Increased connectivity for horse riders across the A2

b. A new WCH connection south of the A2/HS1 linking Halfpence Lane, Henhurst Road and Wrotham Road

c. Improvements to cycle provision along the A226

d. A new cycle route between East Tilbury and Tilbury

e. Improved WCH connectivity through the A13 junction

f. Improved cycle accessibility to North Road and Dennis Road

g. Improved connectivity across the M25 and A127

2.1.6. Through further exploration of the existing PRoW network, dialogue with stakeholders and examination of the strategic opportunities outlined in the WCHAR assessment by the design team, a series of 15 specific proposals were examined in relation to journey time improvement, cost and were subsequently the topic of a multi-disciplinary workshop. Some of these proposals were specific to a particular objective while others worked in unison with others to dramatically improve wider PRoW connectivity and respond to the regional scale objectives of local authority and stakeholder objectives such as Thurrock Council's Greengrid (Thurrock Council, 2006) and Thames Chase's Forest Circle (The Thames Chase Plan, 2014).

2.1.7. Through further stakeholder consultation, continued dialogue with the design team and review by the National Highways Design Review Panel (NHDRP), these enhancements were refined to form part of the proposals presented at Supplementary Consultation in early 2020.

2.1.8. This refinement process reduced the number of opportunities to eight. They were:

a. National Cycle Route (NCR) 177 realignment: To provide a permanently realigned east-west route south of HS1 minimising the need for over and underpasses across the Project route, HS1 and the A2/M2 Corridor.

b. Recreational loops: To provide links between key open areas and country parks surrounding the A2 junction and South Portal.

c. Muckingford Road: To provide better links from Linford and East Tilbury to Chadwell St Mary, anticipating future development and mitigating the severance caused by the Project.

d. Stifford Clays Road: Incremental improvements to extend cycle routes between Orsett and William Edwards School – the nearest school.

e. A1013 and Rectory Road: To re-provide and improve commuter cycle routes along A1013 between Stanford-le-Hope, Orsett and Little Thurrock and provide equestrian-standard link across the A13.

f. Fenland access: To provide better WCH access to the fenland and Mardyke by connecting existing PRoWs and upgrading them to new shared-use tracks.

g. North Road: To mitigate the severance of informal off-road routes between North and South Ockendon anticipating future development of the area and improved connections between North and South Ockendon.

h. Addressing severance of the M25: To counter historical severance caused by the M25 and to provide better recreational access to the fenland landscape from Thames Chase.

2.1.9. The WCH design at Statutory Consultation was a significant departure from the previous WCH strategy and a great deal of positive feedback was received. However, there were concerns pertaining notably to the M25 and A127 junction and from landowners concerned about increased access.

2.1.10. The WCH design was updated to include a new bridge as well as other changes prior to Design Refinement Consultation in the summer of 2020, after which a WCH webinar was given to specifically explain the impact on the PRoW network and WCH connectivity to stakeholder groups and members of the public.

2.1.11. In July 2021 the Community Impacts Consultation provided more detail of both the construction phase and operational phase impacts on, and changes to, the PRoW network. Feedback was analysed and changes made to the strategy including a further bridge over the A127 as a response to comments by a local cycle group and from the London Borough of Havering. Further connectivity to the eastern A127 bridge was added in response to comments from the British Horse Society (BHS) relating to conflict with heavy goods vehicles (HGVs) using an existing bridge shared with a bridleway. Changes were also made to equestrian access in the south near to the A2 and near to the A226 at the request of the BHS.

2.1.12. A public WCH campaign was launched in early 2022, as part of Stakeholder Engagement, which also included new routes through the re-configured Tilbury Fields Country Park and routes connecting heritage assets in East Tilbury in response to comments by Thurrock Council. The proposed new A127 WCH bridge west and changes to the A127 WCH bridge east were well received by cycle groups, the BHS and local authorities. Following this, campaign proposals near the Mardyke were amended as a response to landowner concerns. This and other small changes were presented at the Local Refinement Consultation in summer of 2022. Further changes to the designation or routes were made through Thames Chase Forest Centre, Jeskyns Community Woodland and Ashenbank Wood at the request of Forestry England and the Woodland Trust.

2.1.13. Further detail on the WCH routes can be found in Rights of Way and Access Plans (Application Document 2.7).

2.1.14. The designs and images shown in this document are preliminary, which are illustrative proposals of one possible design outcome. Proposals shown may be developed differently during detail design to comply with the Project requirements.

3. South of the river

3.1. Existing routes for WCHs

3.1.1. The region comprises two main urban areas, Gravesend and Rochester/Strood, separated by a rural divide. Routes are constrained to the north by the River Thames and to the south they are severed by the A2/M2 and HS1 mainline. Inter-urban distances preclude regular walking trips and most cycling trips. Access to the countryside is a main factor to non-motorised trip generation. Other potential attractors include major retail areas such as Bluewater.

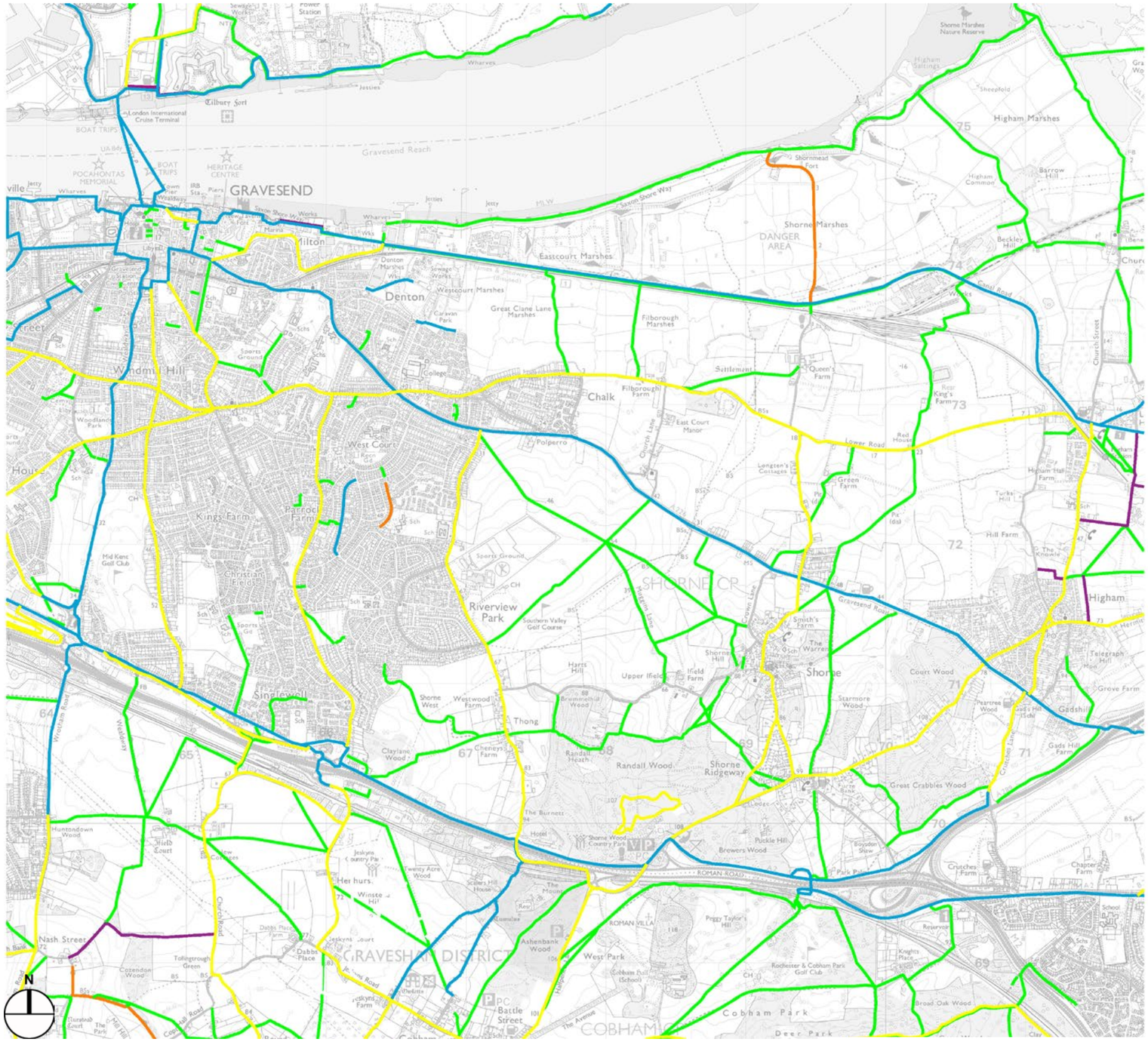
3.1.2. In general, the urban areas are high density, have higher levels of ethnic diversity and have a younger population with higher deprivation. However, they have higher containment and greater accessibility to services and employment. The demographic in rural areas is generally older, white and with higher car ownership but lower accessibility.

3.1.3. The potential for walking and cycling between the larger urban areas such as Gravesend and Rochester is predominantly for leisure. Some major employment and retail areas may attract some walking and cycling trips however it is likely to be low. In the rural areas, walking and cycling is constrained to leisure trips to the country park and weekend rambles/cycle trips. Horse riding routes are concentrated to the bridleways in the rural areas.

3.1.4. Most of the trip attractors in the south are concentrated in the urban areas. Commuting via transport interchanges attracts a significant number of trips as do the leisure destinations such as Shorne Woods Country Park, Jeskyns Community Woodland and the countryside generally. National statistics show most people walk a maximum of 0.7 miles (1.1km) hence these types of trips are typically contained within urban areas.

3.1.5. Routes in the south are predominantly aligned east-west with key cycling routes along the A2 corridor – NCR 177, A226 (Gravesend Road) and NCR1. Thong Lane and Brewers Road provide the main north-south link. The rural minor road network is used by WCHs to connect PRoWs. There is evidence that footpath NG7 and routes connecting it are well used for leisure trips.

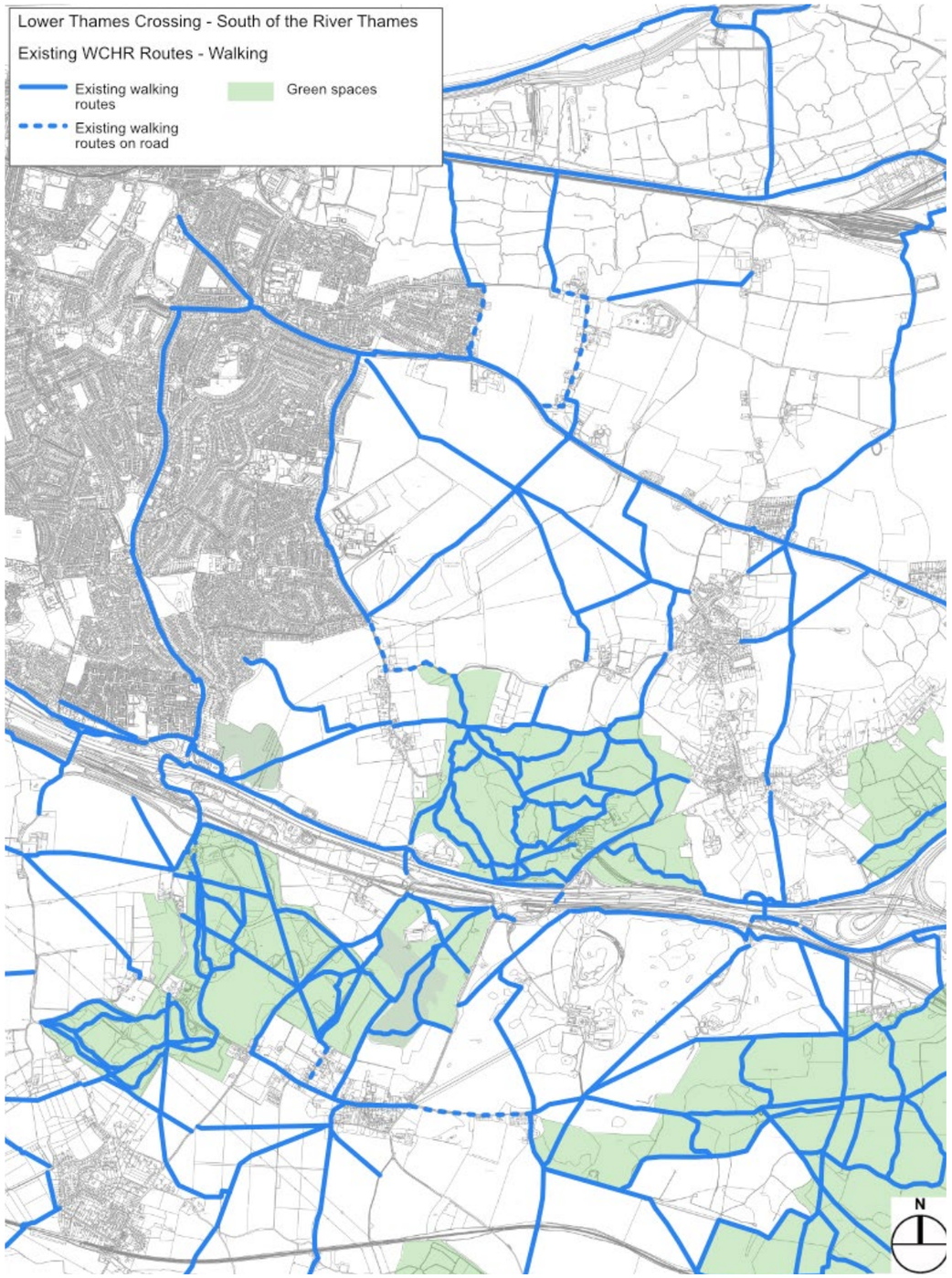
3.1.6. Generally, the volume of trips across the WCH network is low. The ferry between Gravesend and Tilbury, NCR177, A226 and NCR1 show the highest levels of use.



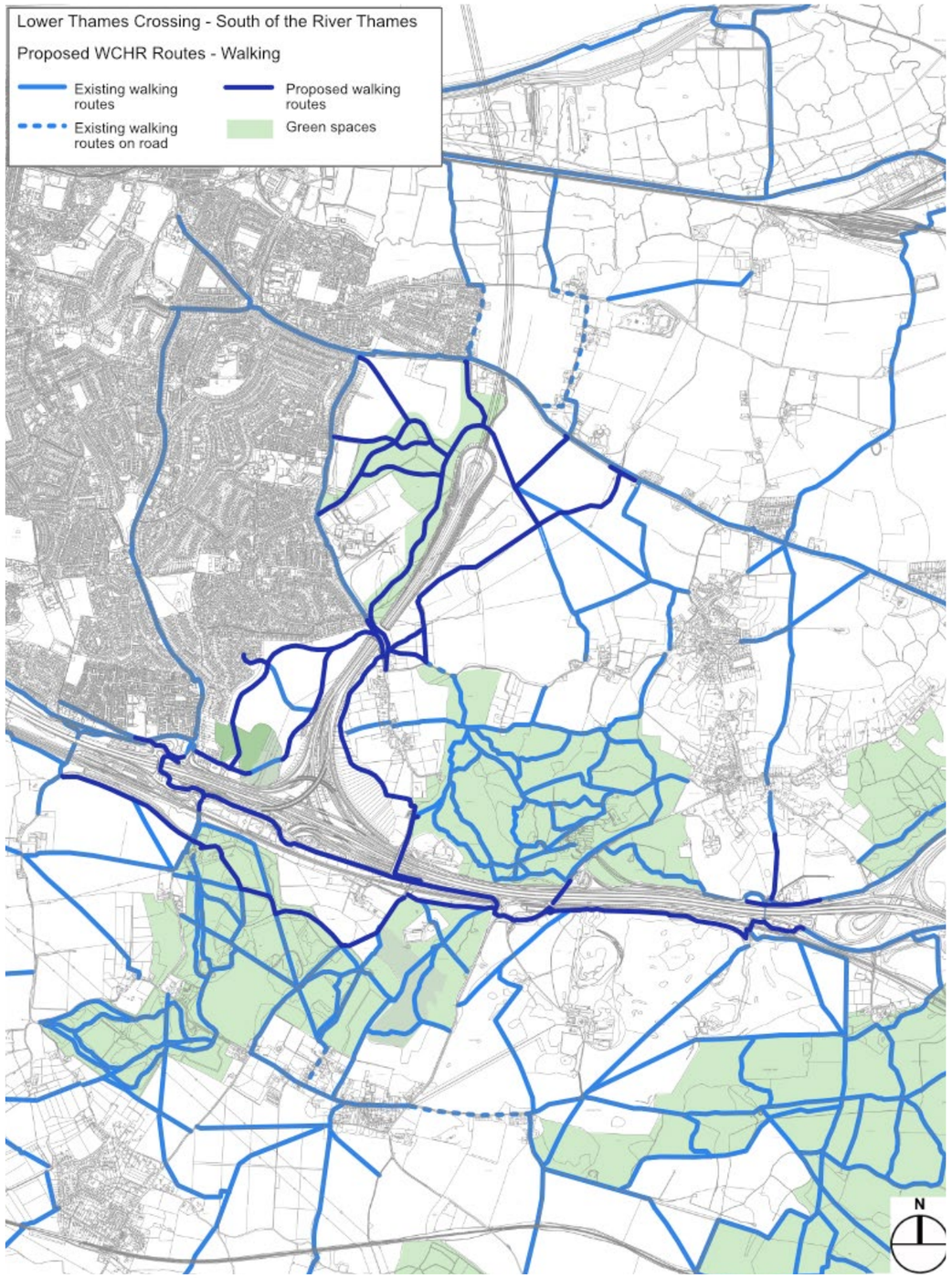
Existing footpaths, cycle paths and bridleways

3.2. Preliminary regional routes for WCHs

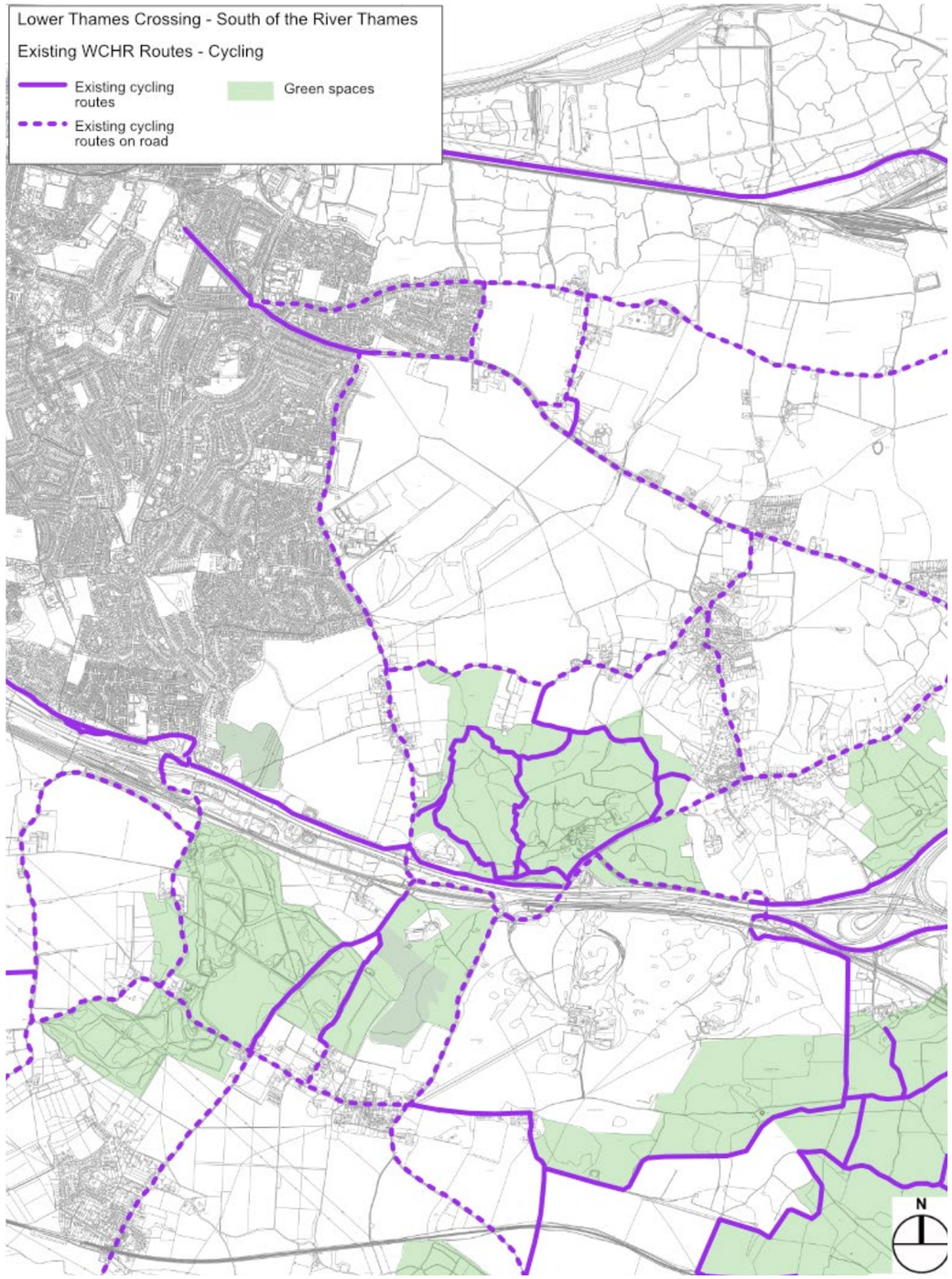
3.2.1. The following diagrams show the existing and preliminary design of routes for walkers, cyclists and horse riders across the region, used during the consultation process and as presented at the WCH Campaign event in early 2022.



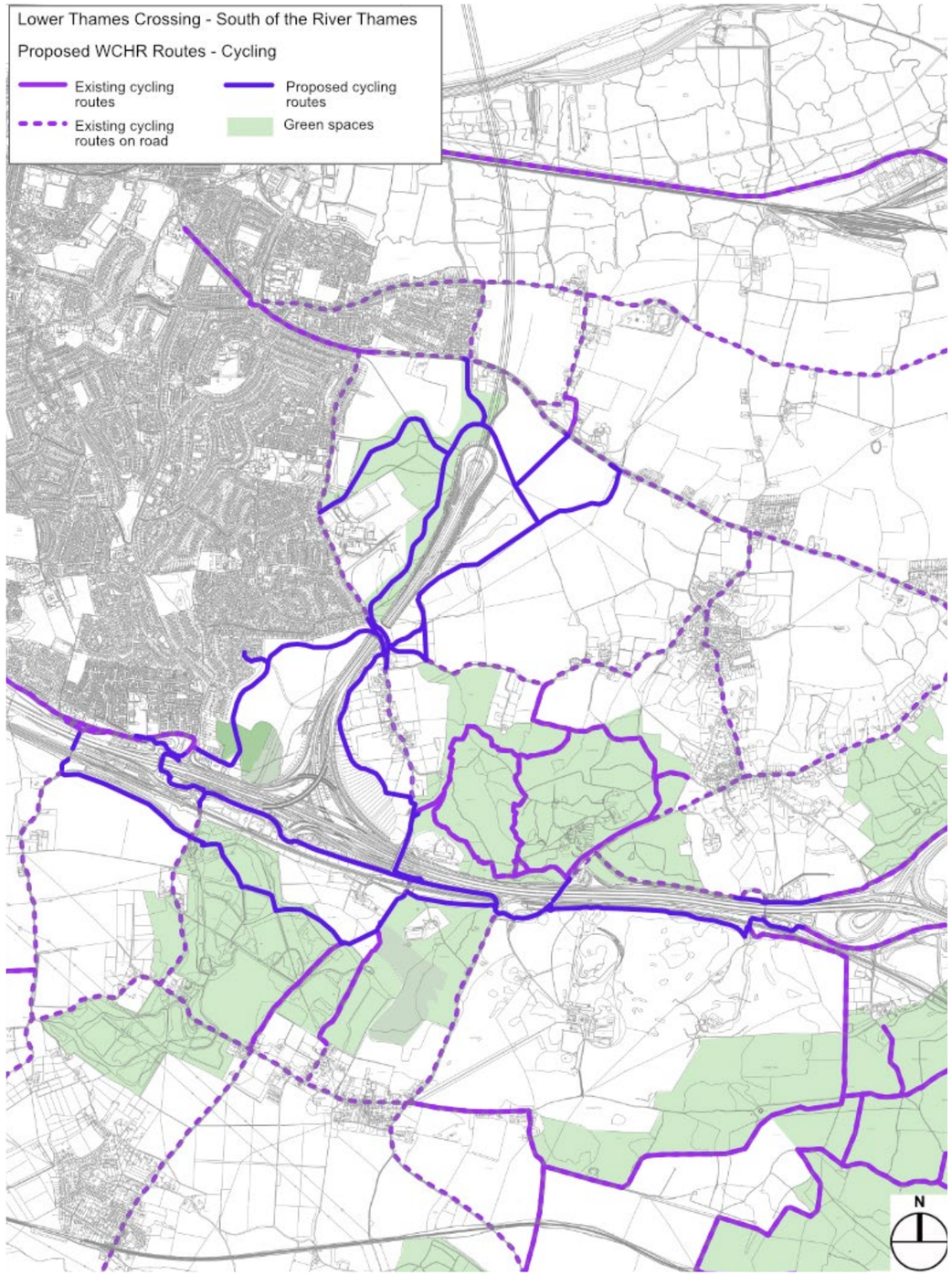
Existing walking routes



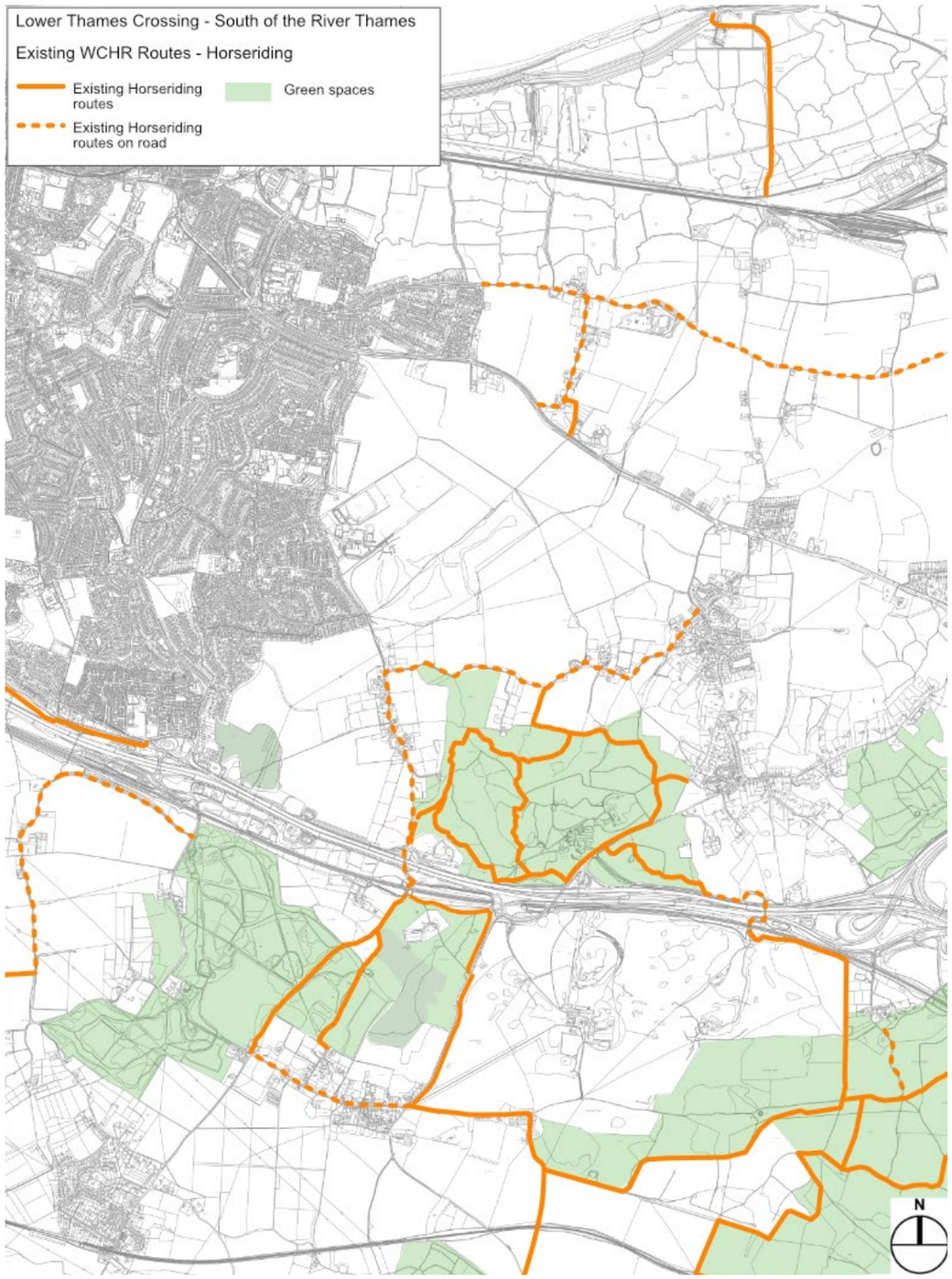
Preliminary design for walking routes



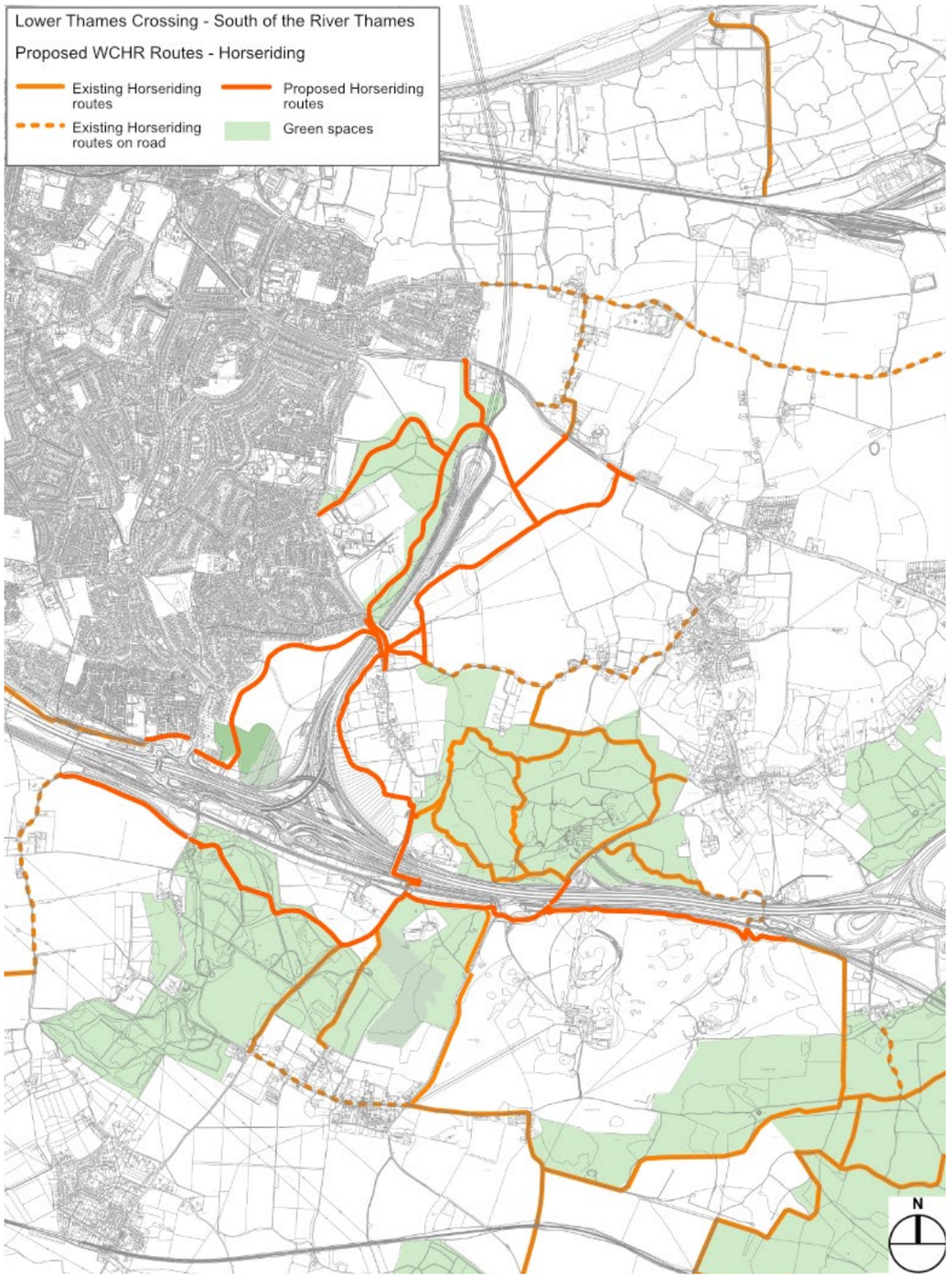
Existing cycling routes



Preliminary design for cycling routes



Existing horse riding routes



Preliminary design for horse riding routes

3.3. Preliminary Design: WCH routes in the A2/M2 Corridor

3.3.1. To the north of the A2/M2 Corridor lies Shorne Woods Country Park, while Jeskyns Community Woodland lies to the south of the corridor. Both offer a significant number of routes for WCH users. Both of these facilities are relatively contained and offer visitor parking and there are also distance walks such as the Darnley Trail and the Luddesdown Trek, that span the A2 and connect them to one another, and to the surrounding area. Further wooded areas such as Ashenbank Woods, Claylane Wood and Brummelhill Woods are to be found along this corridor making this a popular area with both recreational WCH users who live locally and those who travel to the area by car.

3.3.2. CycloPark, a road bike, mountain bike and BMX facility, is located 4km further west along this corridor and directly adjacent to NCR177.

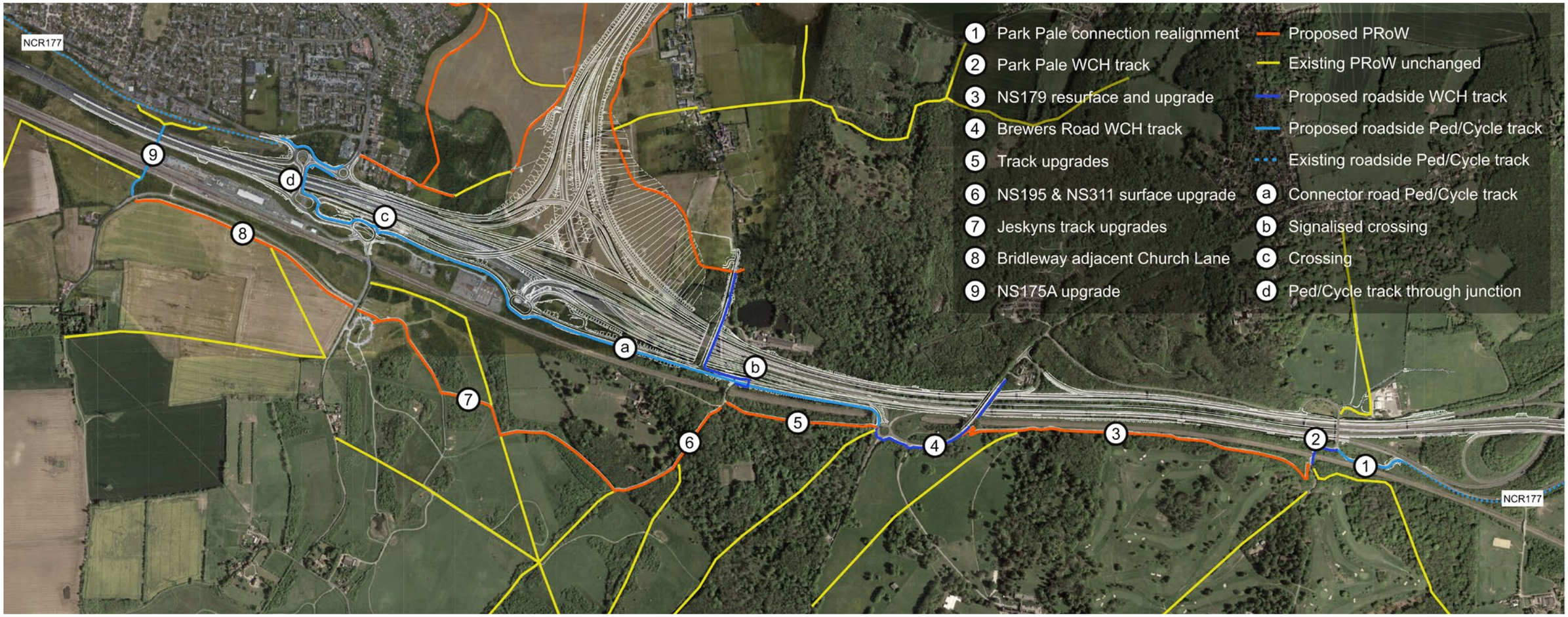
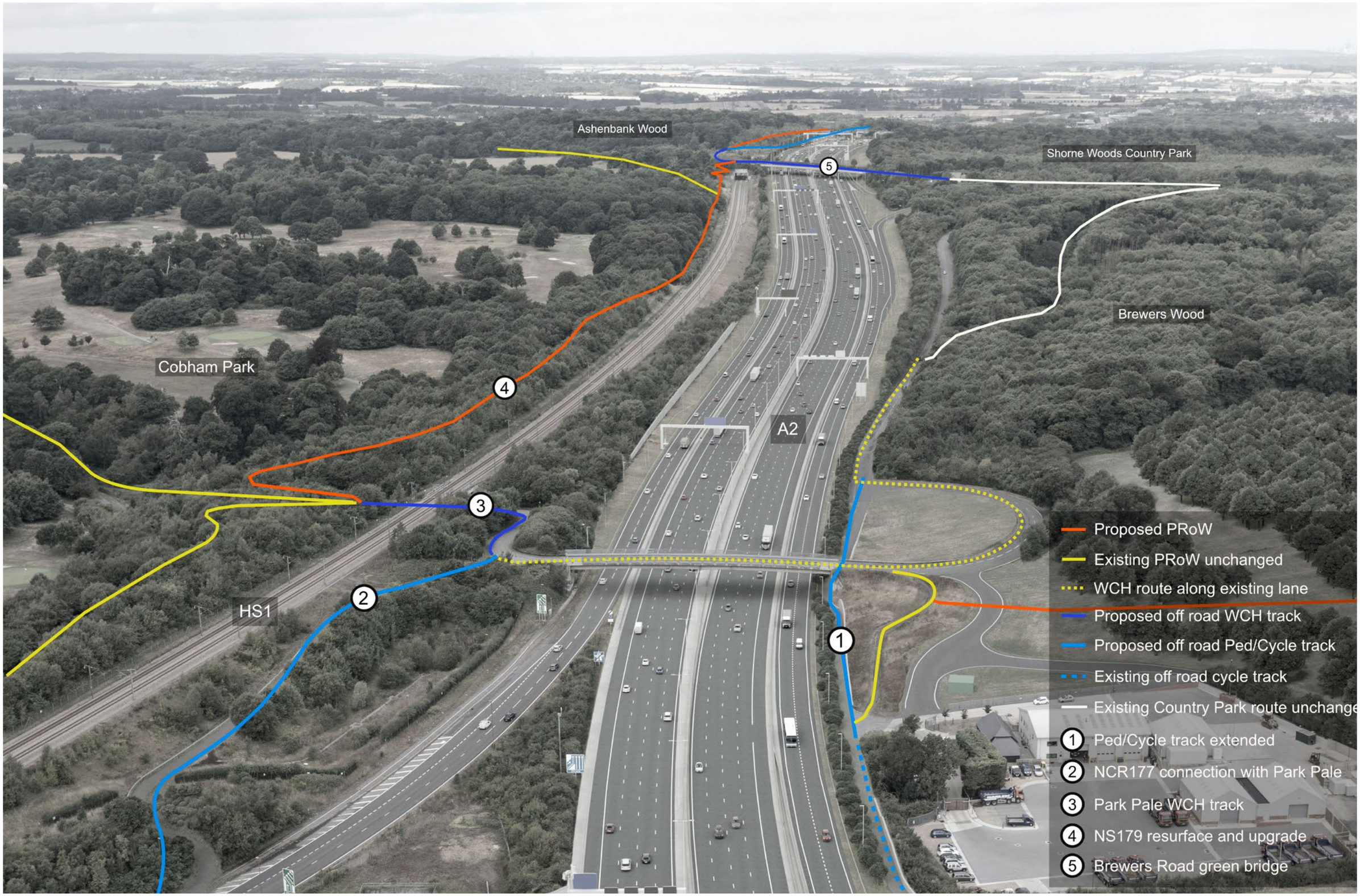


Diagram showing WCH routes along the A2/M2 Corridor



Aerial image showing WCH routes along the A2/M2 Corridor

NCR177

3.3.3. Sustrans route NCR177 is a well-used commuter route parallel to the A2, connecting Rochester in the east to Gravesend and Ebbsfleet and with NCR1 to Bluewater in the west.

3.3.4. In most of the area impacted by works to create the M2/A2/A122 Lower Thames Crossing Junction, NCR177 is close to the northern edge of the A2, only crossing at Park Pale. The proposed works to create the junction will sever the existing alignment of this route. Consequently, it is proposed that prior to construction of the junction a replacement route be created south of HS1 that is suitable for road bikes. This will be achieved largely by surfacing improvements to existing undesignated/permissive routes, and by re-designation of existing footpaths to bridleway status. This replacement route will then be supplemented by a more direct roadside route, available once works are complete. This more direct route will assume the NCR177 designation with some aspects of this initial replacement route removed at landowners request.

3.3.5. From east to west the proposal for the new alignment of NCR177 comprises the following:

a. From the M2/A289 junction, NCR177 remains south of the A2/M2 and it is diverted away from the A2 slip road on to Park Pale directly to the south of the bridge rather than looping beneath the bridge. This change is a consequence of restricted space beneath Park Pale bridge due to the proposed works to the slip road.

b. NCR177 is diverted beneath HS1 via the existing underbridge as far as footpaths NS179 and NS161 (part of the Darnley Trail), rather than north over Park Pale bridge. This route is created on the existing verge adjacent to the southern and eastern edge of Park Pale.

c. The length of NS179 that runs parallel to HS1 is upgraded to bridleway status and the surface made appropriate for cycle use. A new connection is formed to link NS197 to Brewers Road immediately to the south of the bridge over HS1. There are several veteran trees in this location and the alignment of this route has been designed to be sensitive to these and the topography here.

Preliminary Design of NCR177, along Church Road to the west of Jeskyns Community Woodland

d. From the point this new connection meets Brewers Road a new roadside shared pedestrian-cycle-equestrian track continues west to meet the existing shared pedestrian-cycle provision along Brewers Road. This is to be improved and re-designated to include equestrian use through to Halfpence Lane roundabout.

e. To the west of the Halfpence Lane roundabout the existing track along the northern edge of Ashenbank Woods will have its surface made suitable for cyclists through to the connection with the southern side of the existing green bridge over HS1. This section through Woodland Trust land is part of the Darnley Trail and includes permissive use for walkers, cyclists and horse riders, the designation of this track will remain unchanged. Once the new roadside alignment of NCR177 is available improvements to the surface will be removed at the request of the landowner.

f. NCR177 remains south of HS1 with a length of the surface of byways NS195 and NS311 improved to bring the route south of Chambers Hill Wood and into Jeskyns Community Woodland. Due to the increased cycle traffic for the duration of the works, access for motor vehicles will be prohibited on these byways. Following the opening of the alternative roadside route, restrictions will be lifted.

g. There is an existing network of routes through Jeskyns Community Woodland with a variety of permitted users and surface types, including a dedicated horse riding trail close to the northern boundary, this connects NS311 to the western part of the site. An existing unmade track from NS311 through the eastern part of the site will be surfaced and made available to pedestrians and cyclists as a permissive track, horse riders will continue to use the existing horse riding trail. The new pedestrian-cycle track will terminate at footpath NS177, a small part of this will be made available to cyclists. There is an existing pedestrian track linking NS177 to the site car park, cyclists will be given permissive use of this track. The existing horse riding trail crosses this track east of the car park. The section of this track west of this point will also permit equestrian use and will connect this horse riding trail with Henhurst Road close to the junction with Church Road. The proximity of this route to the car park and cafe offers both an opportunity for recreational cyclists to join NCR177 at Jeskyns and for NCR177 users travelling through Jeskyns to purchase refreshments.

h. A Pegasus crossing on Henhurst Road will allow NCR177 users to cross to the western side of Henhurst Road, here the field to the south of Church Lane will be used for environmental mitigation purposes. A bridleway along the northern fringe of this mitigation area provides an off-road route parallel to Church Road from the Pegasus crossing as far as footpath NS175A.

3.3.6. NS175A connects Church Lane south of HS1 to the existing alignment of NCR177 north of the A2, it crosses both HS1 and the A2 via bridges. The surface of footpath NS175A to the south of the HS1 bridge is improved to make it suitable for cycles, this footbridge does not meet requirements for a cycle bridge so cyclists will be asked to dismount to cross the bridge. Between the two bridges the surface of the footpath will be improved to allow cycle use while the bridge over the A2, known as Hares bridge will allow cycle use. North of Hares bridge NS175A connects to the existing alignment of NCR177.

3.3.7. The Preliminary Design has been developed such that the realigned NCR177 connects across the A2 and into Shorne Woods Country Park by way of shared pedestrian-cycle-equestrian tracks on the new green bridges at Brewers Road and Thong Lane. This is a less direct connection from NCR177 into Shorne Woods Country Park than the existing but is a more pleasant route as the existing NCR177 alignment is directly adjacent to the A2. The creation of a WCH route accessible to all along the southern edge of the A2/HS1 corridor, and that connects crossing points is something that featured in consultation feedback.

3.3.8. The Preliminary Design has recognised that directness of route is important, especially to commuter cyclists. Therefore, in the Preliminary Design, the route outlined above is supplemented with a more direct connection parallel to a link road between Halfpence Lane roundabout and Gravesend East junction. From east to west, the sections of the route are described as follows:

a. An off road, shared cycle and pedestrian track from Halfpence Lane roundabout on the south side of the new link road as far as the new roundabout on Henhurst road.

b. This passes the southern end of Thong Lane green bridge south; a Pegasus crossing is provided to afford WCH users a crossing point close to the bridge and improve connections across the A2.

c. Immediately to the east of the new Henhurst roundabout there is a crossing point to allow pedestrians and cyclists to cross to the north of the roundabout in order to minimise the number of crossings required at the roundabout.

d. To the west of Henhurst roundabout the shared track continues to the reconfigured Gravesend East junction. There is a crossing point at the top of the westbound A2 slip. The shared track crosses the A2 on the eastern side of the existing bridge. To the north of the junction a crossing of Hever Court Road and a new length of shared track are provided. These connect the shared track into the existing NCR177 alignment parallel to Hever Court Road.

3.3.9. These form a roadside alternative to the western part of the NCR177 diversion, however Park Pale, Park Pale bridge and Brewers Road green bridge will be available to cyclists. When combined with the routes described above a user of NCR177 would have an on road or roadside route from Park Pale to Gravesend East meaning those who wish not to cycle through a wooded environment have an alternative.

3.3.10. This more direct route described above has been designed to be alongside a new road alignment and consequently only available for use once works to the A2/M2 Corridor are complete.

3.3.11. The length of existing NCR177 that is to be diverted is approximately 4.7km; the length of diversion to be provided as part of the more direct route is approximately 4.6km meaning the replacement route is marginally more direct than the existing. The length of the route formed as part of the initial works is approximately 5.6km, a replacement for 5.2km of existing NCR177. This is an increase on the existing route but provides an improved user experience.

Existing NCR177

Existing NCR177 showing unpleasant roadside nature of route

3.4. Preliminary Design: WCH routes in the M2/A2/A122 Lower Thames Crossing Junction

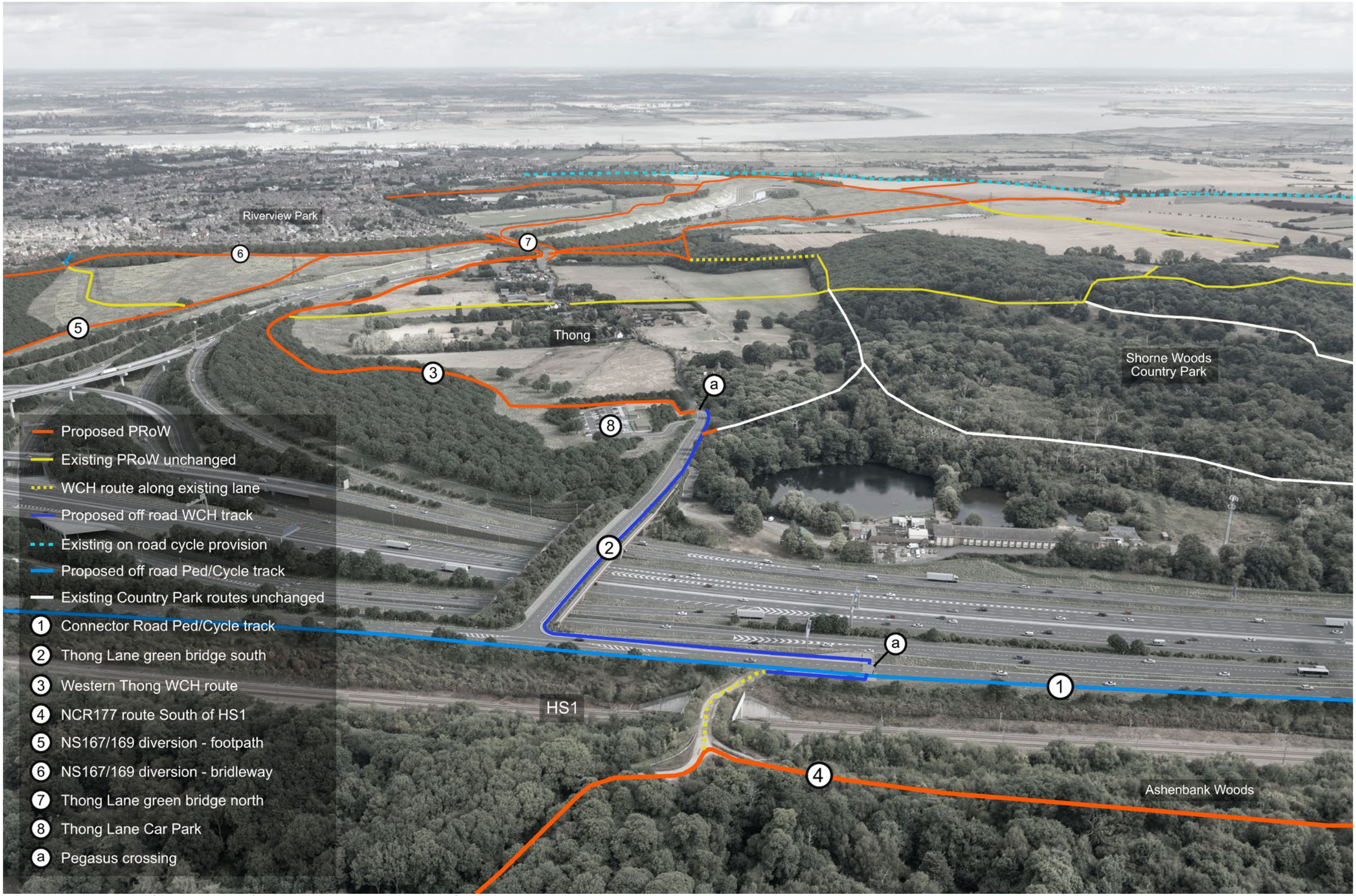
3.4.1. The proposed M2/A2/A122 Lower Thames Crossing Junction is located in open arable farmland between the village of Thong and the eastern fringe of Gravesend. There are numerous PRoWs that cross the area, notably footpaths NS167 and NS69 that are severed by the creation of the junction. NS169 is well used by residents of Riverview Park for dog walking and NS167 provides a link from eastern Gravesend to the village of Thong and to Shorne Woods Country Park beyond.

3.4.2. A WCH strategy has been developed in this area in conjunction with a landscape strategy that seeks to provide alternative routes between Gravesend and Thong while also forming north to south connections identified at consultation. While a more direct reconnection was presented at Statutory Consultation this proposal recognises that where recreational use is the priority there is often more value in a restorative route than a direct route.

3.4.3. There are three distinct WCH interventions that make up the proposal for the area around the junction. These are:

- NS167/169 diversion
- Thong Lane green bridge north
- Thong western loop

Diagram showing WCH routes in the M2/A2/A122 Lower Thames Crossing Junction



Aerial image showing WCH routes east of the M2/A2/A122 Lower Thames Crossing Junction

Aerial image showing WCH routes in the M2/A2/A122 Lower Thames Crossing Junction

NS167/169 diversion

3.4.4. The proposed M2/A2/A122 Lower Thames Crossing Junction severs two public footpaths, NS167 and NS169, which connect Claylane Wood and Michael Gardens respectively with the village of Thong and Shorne Woods Country Park beyond. At Statutory Consultation a strategy to route these through the junction via a series of bridges, underpasses and ramps was proposed. Having reviewed the quality of this route and in developing the landscape strategy the Project does not propose to re-connect these footpaths through the junction as it is considered to worsen the experience for WCH. Instead it is proposed to form two new links, from footpaths NG17 and NS174 in the south, through a newly landscaped setting to the west of the junction. These routes reach as far north as Thong Lane where the more than 80m wide Thong Lane green bridge north allows WCH tracks, landscape planting and Thong Lane to cross over the Project route. Part of NS167 to the east of the new junction and part of NS169 to the west of the junction will be retained to form connections between these new routes and increase the number of small scale looping walks.

3.4.5. The first of these north to south routes diverges from the alignment of NG17, which presently runs east from Valley Drive, then turns south to connect with the A2. This would be realigned to instead turn north passing through Claylane Wood and emerging to the west of the open area north of the wood. In order to minimise disruption within Claylane Wood the southern part of this route follows the alignment of an existing path. The route continues north and has been positioned towards the western edge of this newly landscaped open space away from road noise and along the fringe of new tree planting. The route crosses the alignment of NS169 which provides a pedestrian and cycle connection to Michael Gardens before continuing north to Thong Lane. This route has been designed to have bridleway status and be open to all WCH users with NG17 also upgraded to bridleway providing a WCH link from Valley Drive through to the new Thong Lane green bridge north. To the west of Valley Drive an existing pedestrian-cycle track would be made bridleway to form a link between these works and the permissive bridleway alongside NCR177.

3.4.6. The second of these routes has been designed to utilise some of the existing NS174 through Claylane Wood before turning north to an alignment roughly parallel with the Project route, eventually merging with the first route described above just south of Thong Lane. This offers an alternative route but also provides the opportunity for short looping walks from Riverview Park. This is intended as a less formal track remaining unsurfaced and with footpath status.

3.4.7. Between these two new routes NS169 is retained and keeps its footpath designation providing further pedestrian connectivity. The western part of NS169 linking Michael Gardens to the new bridleway route will be upgraded to pedestrian-cycle track to allow cyclists to enter the PRoW network at this location.

3.4.8. The expectation is that leisure will exceed commuter use with existing routes in this area well used by dog walkers and those on longer walks between Shorne Woods Country Park and the eastern edge of Gravesend. Consequently, a deliberate decision was made to lengthen the east-west connection between residential areas to the west of the junction and Thong village in order to retain a rural character to the route while at the same time creating north-south links.

Existing NS167

Existing NS169

Thong Lane green bridge north

3.4.9. Thong Lane green bridge north has been designed to become a focal point of WCH provision in the southern part of the Project. In addition to an environmental and ecological connection, this bridge forms the point of intersection between two proposed looping routes, one around the tunnel portal to the north and one around the junction to the south. As a consequence this bridge become the centre of a figure of eight recreational loop, part of the new north-south link between the A2 and A226 and part of the realigned east-west route between East Gravesend and Shorne Woods Country Park.

3.4.10. The Preliminary Design includes a WCH route on both the southern and northern sides of the bridge, set away from Thong Lane and with designated crossing points connecting them. In order to maintain the rural character of both loops it is important that the surface finish of the WCH route across the bridge is considered further at detailed design and is appropriate to the context and user requirements.

Further details on the preliminary design for Thong Lane green bridge north can be found in Project Design Report Part F: Structures and Architecture

Existing view from Thong towards Gravesend

Illustrative view from Thong towards Thong Lane green bridge north

Illustrative view from Riverview Park towards Thong Lane green bridge north

Thong western loop

3.4.11. At present those using NS167 to connect between Gravesend and Shorne Woods Country Park can cross through the centre of Thong village without having to walk along Thong Lane which has no footway. By routing WCH users to Thong Lane green bridge north, people wishing to use NS167 to gain access to either Thong village or Shorne Woods Country Park would need to walk along Thong Lane. The historical character of the village and narrowness of the road make WCH provision difficult to accommodate through Thong village. As an alternative the Preliminary Design includes a new bridleway that diverges from Thong Lane at the southern corner of the Thong Lane north green bridge and arcs around the western edge of Thong village. This route re-connects with Thong Lane to the north of the Inn on the Lake. Connection is made to the retained part of NS167 allowing users to reach the centre of Thong and continue on to Shorne Woods Country Park as they do now.

3.4.12. Where this new bridleway connects with Thong Lane, new parking facilities are proposed on the site of a construction compound, located to the West of Thong Lane and will provide horsebox parking and amenities. Parking here offers WCH users the opportunity to access both the northern and southern recreational loops that the Project is creating in this area as well as providing convenient access to the Darnley Trail on the opposite side of Thong Lane via a Pegasus crossing. Provision of parking in this location also offers visitors to Shorne Woods Country Park alternative facilities to the well-used car park off Brewers Road and ultimately aids the Country Park in its ambition to expand into this area.

3.4.13. Once this route has re-joined Thong Lane south of the village of Thong it continues further south on the eastern side of Thong Lane over Thong Lane green bridge south and connects via a Pegasus crossing to the existing green bridge over HS1. This has been designed to provide a traffic free WCH route from Riverview Park, around Thong to Ashenbank Woods and Jeskyns Community Woodland for those not wishing to walk or ride along Thong Lane.

3.4.14. In order to maintain the rural character of the area west of Thong, and when considering that recreation usage is anticipated to be higher than commuter usage it is important that surface finishes appropriate to context and meeting the requirements of expected users are considered during detailed design.

3.4.15. The combined benefit of these three interventions when considered alongside existing and new routes to the south of HS1 is to create a recreation loop that can include Shorne Woods Country Park, Ashenbank Woods, Jeskyns Community Woodland, Claylane Wood and newly landscaped areas between Thong and Gravesend.

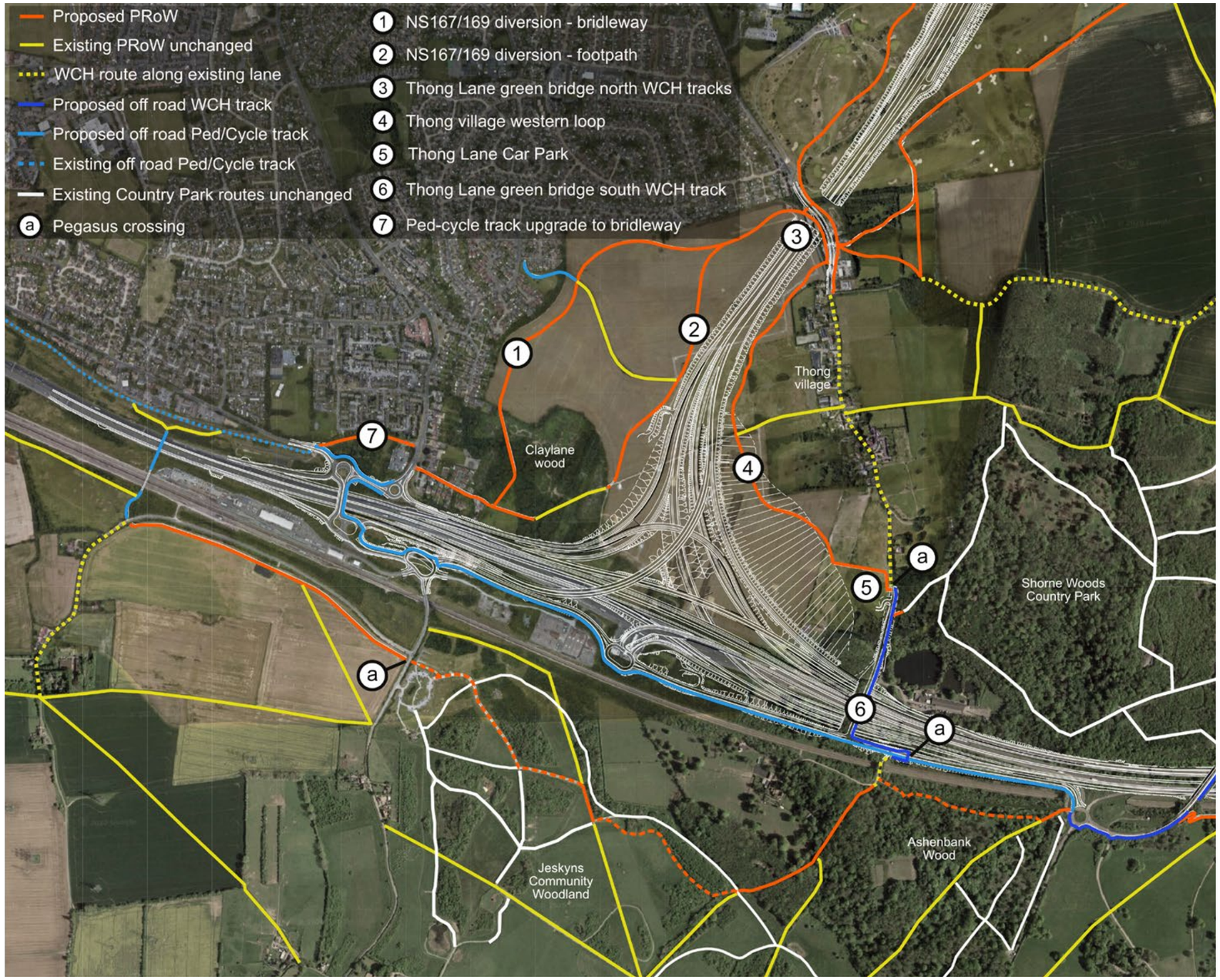


Diagram showing Thong western loop

3.5. Preliminary Design: WCH routes in the Gravesend Link and South Portal

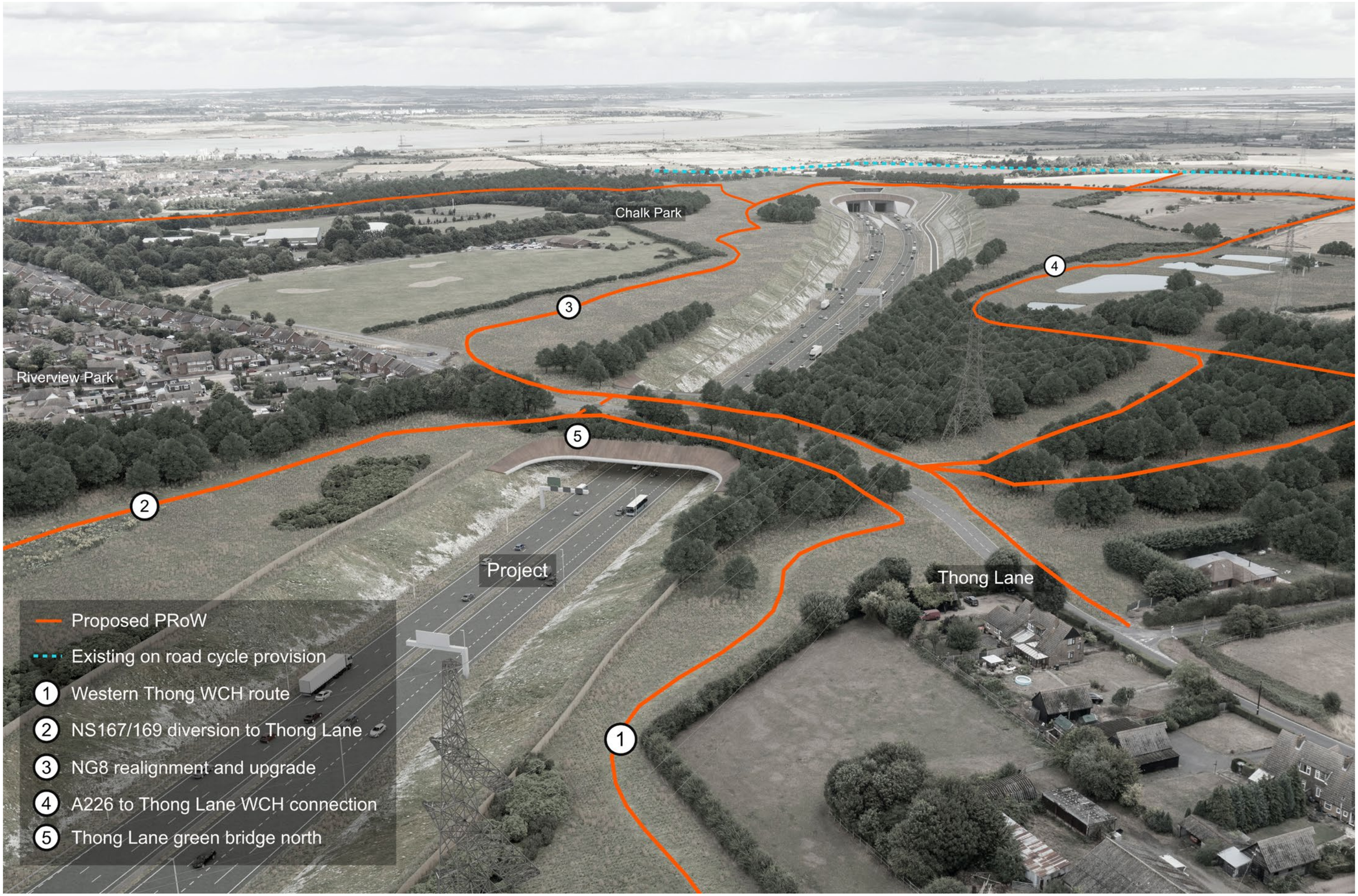
3.5.1. There are numerous PRoWs that cross the area. Notably two are severed by the Gravesend Link. NG7 and NG8 are both footpaths, crossing the area roughly perpendicular to one another. NG7 provides a link between Chalk and the village of Shorne while NG8 provides a link between Riverview Park and the A226 close to Chalk Church.

3.5.2. A WCH strategy has been developed in this area in conjunction with a landscape strategy that creates a recreational looping route, minimises diversions to existing routes, provides full WCH connectivity between Thong Lane and Gravesend Road and also offers users an opportunity to walk or ride through the newly created Chalk Park.

3.5.3. There are four distinct WCH interventions that make up the proposal for the area around the South Portal. These are:

- NG8 realignment
- New eastern link
- Chalk Park routes
- NG7 connection

Diagram showing WCH routes in the Gravesend Link and South Portal



Aerial image showing WCH routes towards the South Portal

NG8 realignment

3.5.4. North of Thong Lane, the South Portal approach cutting severs the existing alignments of both footpaths NG8 and NG7. NG8 runs in a straight line through Southern Valley Golf Club, from Thong Lane in the south-west to the A226 in the north-east. The existing alignment of NG8 crosses the proposed alignment of the Project at an acute angle at the southern end of NG8.

3.5.5. Therefore, in the Preliminary Design, the alignment of the southern and central sections of NG8 are rotated anticlockwise to avoid a clash with the road cutting. This realigned route is located within a landscaped grassland area in what is presently part of Southern Valley Golf Club. The middle part passes along the eastern edge of Chalk Park where new routes and two connections to Thong Lane are provided. Unlike the existing straight alignment the replacement route will curve gently around landscape features, adding interest but not significant length.

3.5.6. The northern section of the new NG8 alignment curves around to the north of the South Portal before splitting. One route continues north to meet the A226 adjacent to the junction with Castle Lane where a signalised crossing will be provided. This will facilitate better access to the PRoW network for people in eastern Chalk. The other route turns to the south around the tunnel portal to bring users to the eastern side of the portal and connects with the existing alignments of NG7, NG8 and NG9. All of the realigned NG8 and the new connection to Castle Lane will be given bridleway status.

3.5.7. North of this PRoW junction the existing alignment of NG8 is retained but it will be upgraded to bridleway. This creates WCH connectivity between Thong Lane green bridge north and the A226 at Castle Lane and St Mary's Church, Chalk. When combined with improvement further south, it will connect the A226 to NCR177 and the permissive bridleway alongside it.

3.5.8. A Pegasus crossing of the A226 will be created at the northern end of NG8 that will provide access to a traffic-free route around the eastern side of the church. This then connects to Church Lane which provides a lightly trafficked connection to Lower Higham Road. Lower Higham Road provides a relatively quiet east-west route compared to the A226, which will especially appeal to horse riders.

Existing NG8

Existing NG8

New eastern link

3.5.9. In order to further improve north-south connectivity and to allow looping routes (when combined with NG8), an additional bridleway will connect the A226 to Thong Lane on the eastern side of the alignment. The northern end of this link will be located between two existing crossing points on the A226 with a new footway linking them. These crossings are between Thamesview Crematorium and a row of houses to the east. As this bridleway comes south it will rise up the hill alongside an existing hedgerow and cross the alignment of footpath NG7/NS164 before continuing south-west to cross NG9/NS165. NG9 will be upgraded from footpath to bridleway to connect WCH users to NG8. The new bridleway route will continue south-west and pass between the western edge of a series of infiltration basins and an existing hedgerow. This route will then extend through an area of woodland planting before reaching Thong Lane to the south of Thong Lane north green bridge.

3.5.10. When combined with the WCH routes across this bridge, the realigned NG8 and the upgraded NG9 this forms a looping route around the South Portal available to all WCH users. This loop can also be combined with the recreational loop created around the junction to form a figure of eight route with Thong Lane north green bridge in the centre.

3.5.11. In addition to this loop, new bridleway connections will be formed through the area of woodland planting linking this new route with Shorne Ifield Road and Thong Lane to Shorne Ifield Road. Using Shorne Ifield Road walkers, cyclists and horse riders will then be able to reach Brummelhill Woods where there is existing PRoW access to Shorne Woods Country Park.

Diagram showing location of new eastern link

Chalk Park routes

3.5.12. Chalk Park is a new area of public open space to the west of the South Portal, it has been designed to reflect the character of local wooded hilltops and will provide much needed amenity for those living in Riverview and Westcourt as well as providing access to the new PRoW routes around the South Portal.

3.5.13. In order to link Chalk Park with these residential areas to the west, new routes will be formed to the north of the athletics track and a new footpath will connect Thong Lane to the highest point of Chalk Park and down again towards NG8.

3.5.14. North of Cascades, a new bridleway connection will rise gently across the gradient to provide a shallower ascent for all WCH users before merging with the new footpath described above and then connecting with the realigned NG8. Another new footpath will form a connection south of the new wooded hilltop between a new bridleway and NG8 offering users alternative or looping routes.

New WCH routes proposed through Chalk Park

NG7 connection

3.5.15. Footpath NG7 forms an historic and well used pedestrian connection between Chalk and Shorne. The western end is at the junction of Thong Lane with the A226 and in the east it connects via NS164 to Shorne village. The existing alignment of NG7 is severed by the portal approach cutting. NG7 crosses the alignment of the Project roughly perpendicular to the new road. At Statutory Consultation, a footbridge across the portal was proposed in order to maintain NG7 on an alignment similar to the existing and prevent a large diversion. Through Statutory Consultation feedback, and through stakeholder engagement, concerns were raised over the safety of this bridge. The suggestion was made that the Project should either divert the route around the north of the portal or move the portal south and retain the NG7 alignment.

3.5.16. Through technical development of the tunnel design it became possible to move the portal to the south, although not far enough to retain NG7 on the existing alignment. In order to provide users with a safe and pleasant route the western end of NG7 will remain on its existing horizontal alignment although the gradient will be increased as it rises up to Chalk Park. Within Chalk Park NG7 will merge with a new bridleway connecting Thong Lane, near Cascades, to NG8. Walkers travelling between Chalk and Shorne will then be able to use NG8 to cross around the north of the portal before either joining the retained eastern end of NG7 or using NG9 to continue east towards Shorne.

3.5.17. The benefit is the removal from the design of a long, high bridge over the tunnel approach. Despite the relocation of the portal, this lengthens the route between Chalk and Shorne, however, this is appropriate in light of the user safety and quality of user experience considerations.

3.5.18. A significant number of realigned footpaths are proposed to be re-designated as bridleways. When the gradient along the retained part of NG7 was considered in conjunction with other WCH routes provided, it was decided that retained parts of NG7 should remain as footpath only.

Existing view from NG7 towards the edge of Gravesend and the Thames estuary

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4. North of the river – Tilbury to the A13 Junction

4.1. Existing routes for WCHs

4.1.1. The initial WCH assessment reveals a different picture from the south of the River Thames. In Thurrock, the main urban areas of Tilbury and Grays, are framed by the A1089 and the A13 which separates them from a predominantly rural zone. This rural zone contains a number of small villages, some of which skirt the fringes of the urban area, e.g. Chadwell St Mary and Orsett. For non-motorised use employment and retail are very accessible within the urban area. The River Thames is a natural break to the south which can be crossed using the Dartford Crossing and Ferry.

4.1.2. There is a real drive to encourage more walking and cycling in this area. The assessment highlights the key policies. Essex County Council and Thurrock Council wish to promote healthier choices and double the amount of cycling trips. Within Thurrock, this is reflected in the Council's aspirations, which seek high-quality off-road routes, to establish active travel behaviours, through a network of walking and cycling routes.

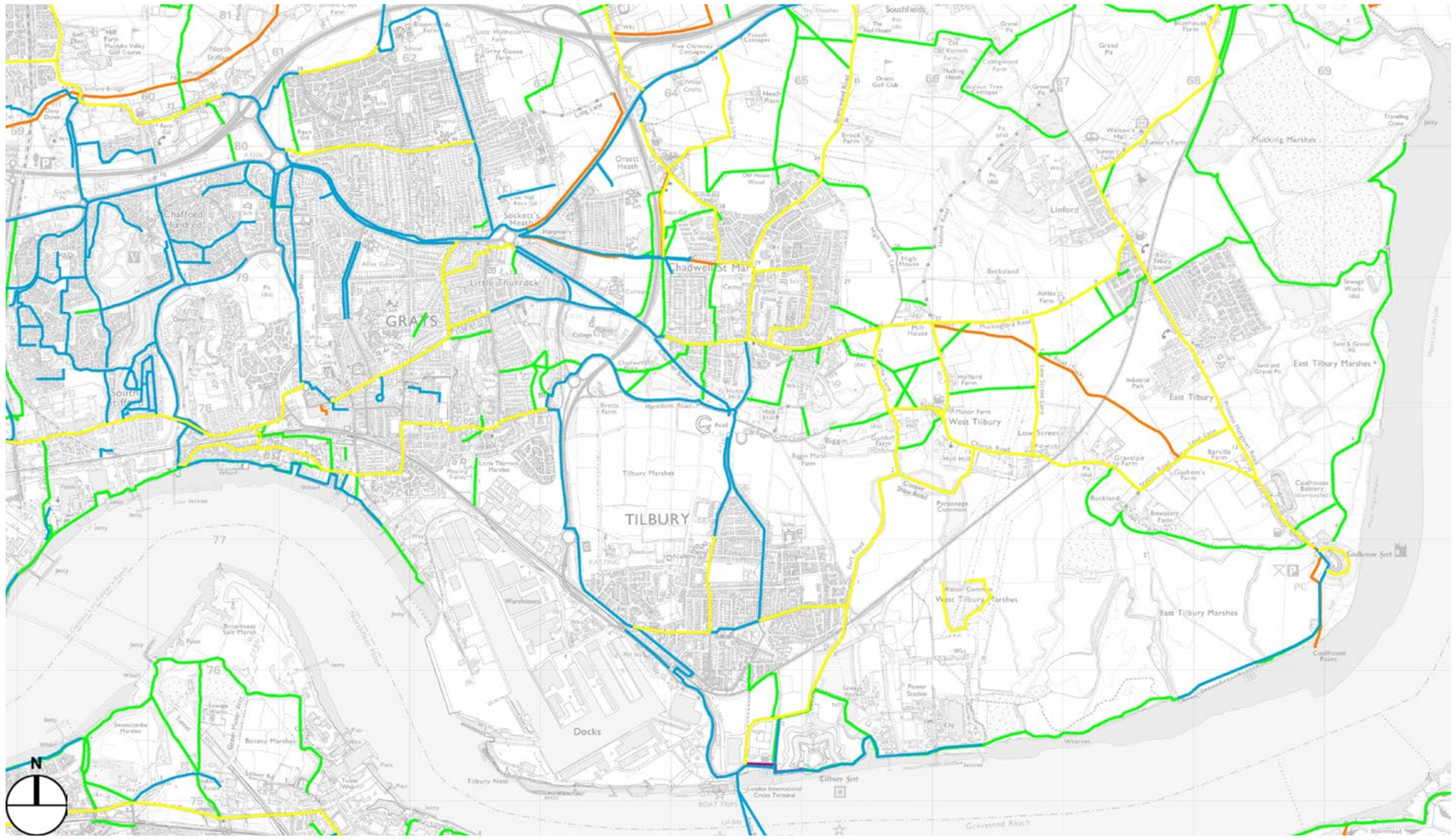
4.1.3. The demographic profile of Tilbury is similar to that to the south of the Thames albeit more exaggerated. There are areas of very high population density with high levels of containment and deprivation in the urban areas. Parts of Tilbury fall within the 10% most deprived areas in the UK. There is very good accessibility to jobs and retail. The rural composition is generally older, of lower ethnic diversity, with less access to services and high car ownership. There are good transport links to London.

4.1.4. Overall use of WCH routes is low, however a few routes are seen as busy. The network is quite extensive and concentrated in the Orsett, Grays and Tilbury Areas. Key routes include the Muckingford Road, the A1013 and Stifford Clays Road.

4.1.5. There is significant industrial development planned for Tilbury and Tilbury East. Feedback from Thurrock Council pointed to the 'Grays banana' a large residential development planned for the north of South Ockendon. There are also other smaller developments at Chadwell St Mary and East Tilbury that are within walking and cycling distances from employment and retail areas in Tilbury.

4.1.6. Consultation was carried out with user representatives and local authorities. There are strong desires from some to convert all PRoW's to bridleways to encourage multimodal use. Sustrans has strong ambitions to connect all the links along NCR13 from Purfleet to East Tilbury. Thurrock Council has strong aspirations for a comprehensive walking and cycling network. Horse riding is mainly focused on key bridleways (i.e. junction 29 A127, Bridleway (BR)219 on the Mardyke, around the A13 and BR58). These are considered important and require preservation/ upgrades. Thurrock Council focused on the proposed expansion of the area and the need for an extensive network of walking and cycling routes. Thurrock Council also stated that the Project should provide a shared use track along both sides of the Project route to enable linkages and circular routes. There is concern about the impact of closing level crossings and the importance of Hoford Road and Stifford Clays Road to cyclists was emphasised. London Borough of Havering wants to maintain good access to the countryside including the Mardyke and Thames Chase.

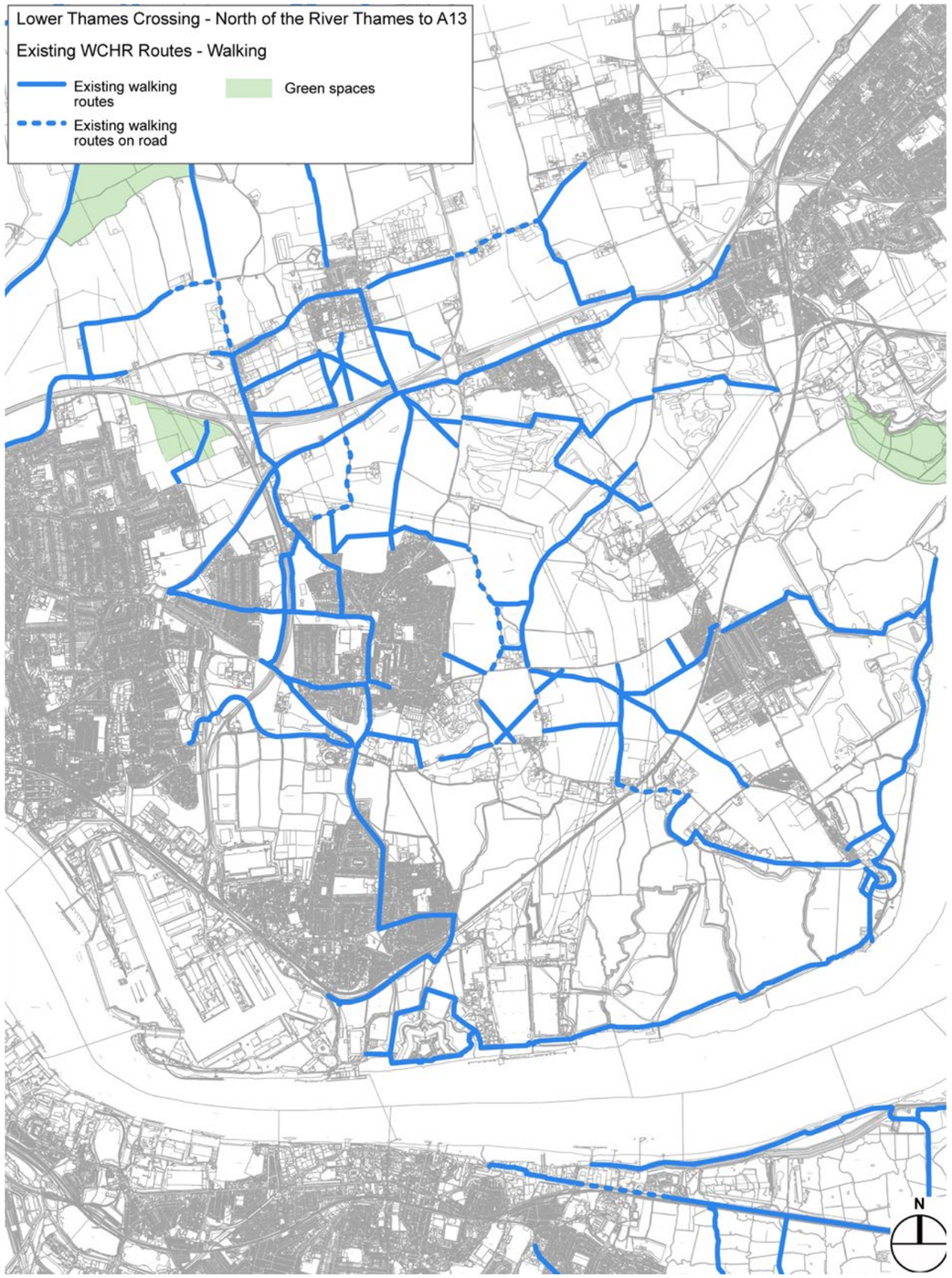
4.1.7. The assessment found that the primary desire lines were the NCR13/FP146, Muckingford Road corridor, Brentwood Road, the A1013, Bakers Street and Stifford Clays Road.



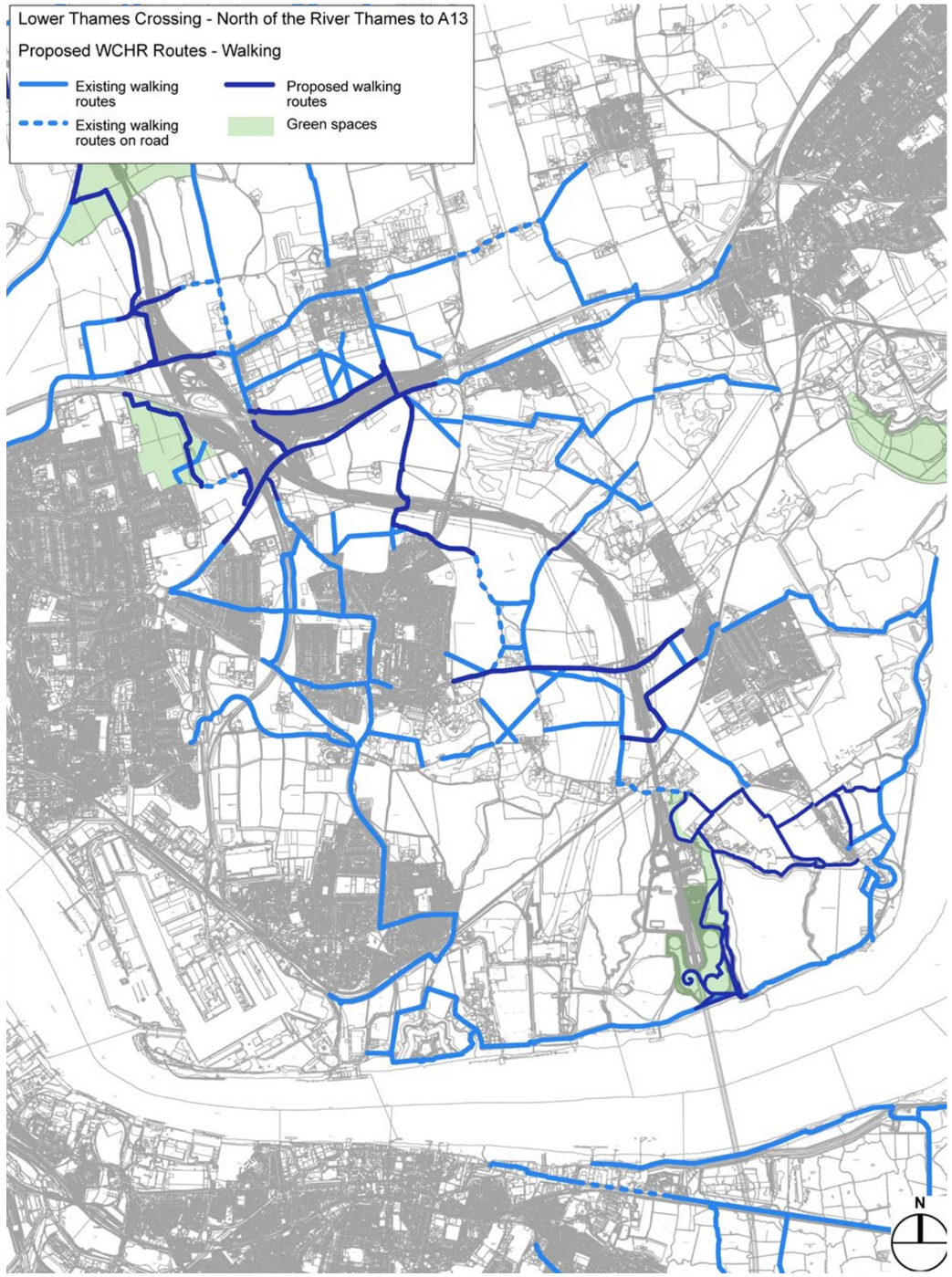
Existing footpaths, cycle paths and bridleways

4.2. Preliminary regional routes for WCHs

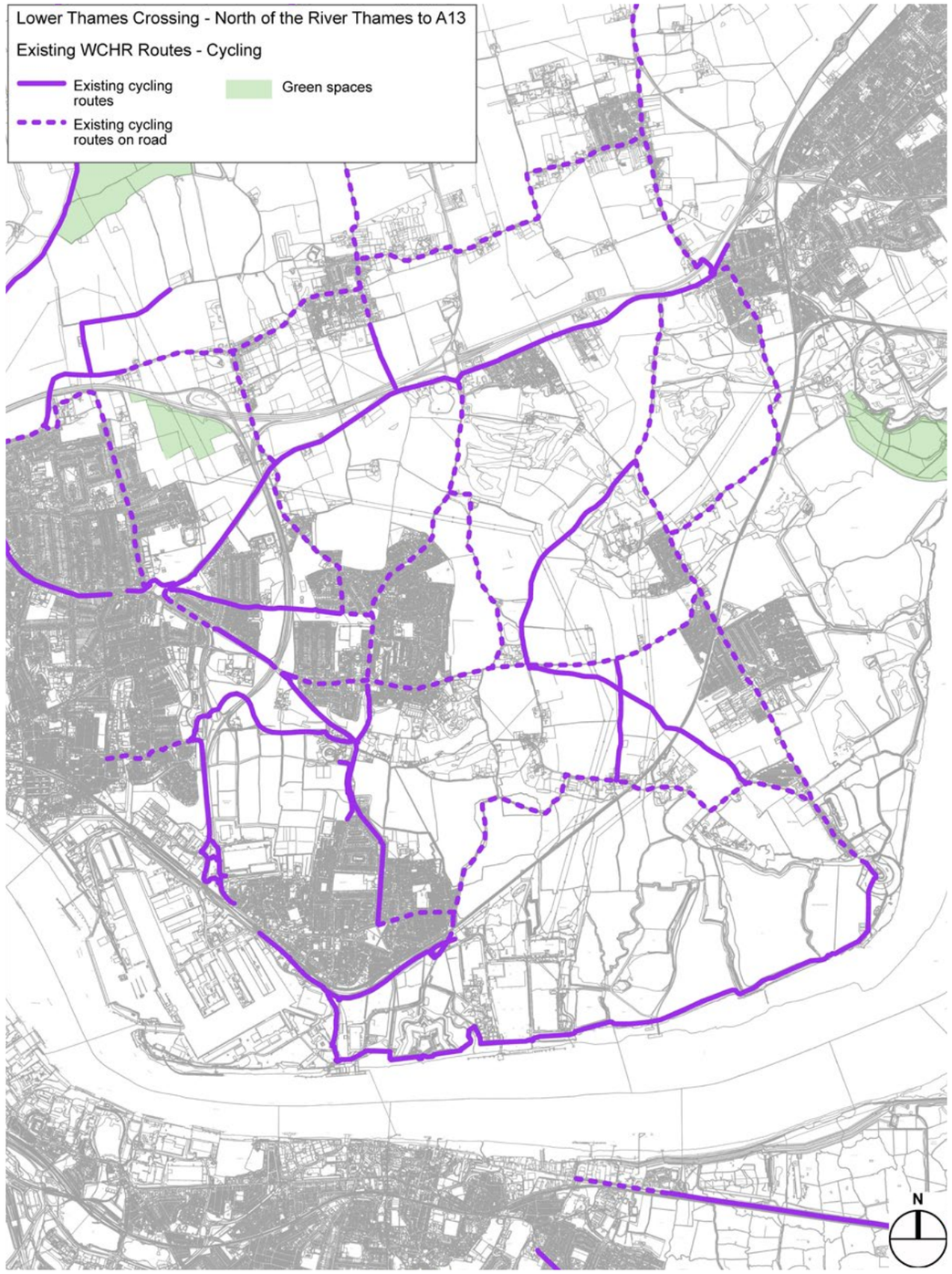
4.2.1. The following diagrams show the existing and preliminary design of routes for walkers, cyclists and horse riders across the region, used during the consultation process and as presented at the WCH Campaign event in early 2022.



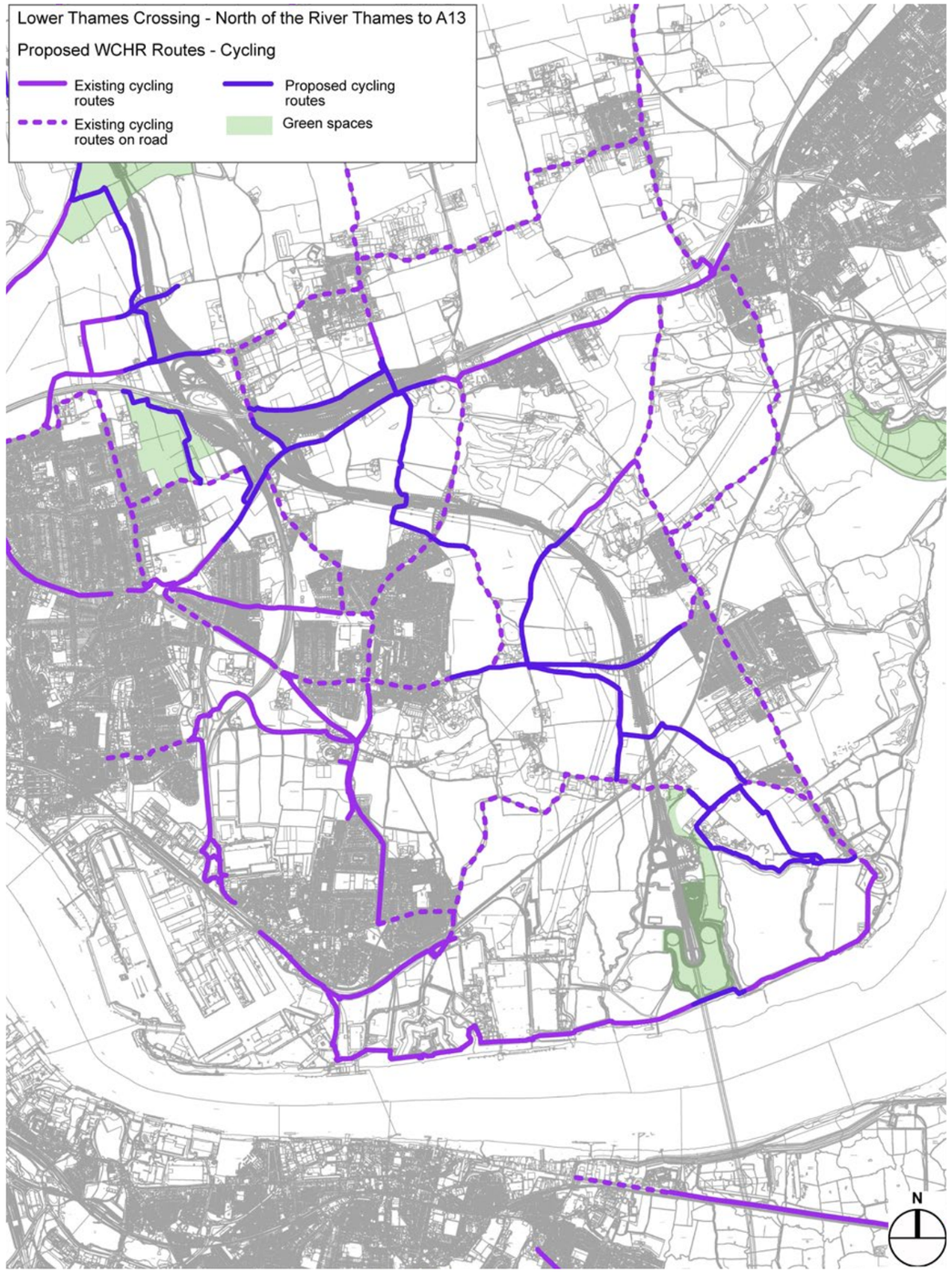
Existing walking routes



Preliminary design for walking routes

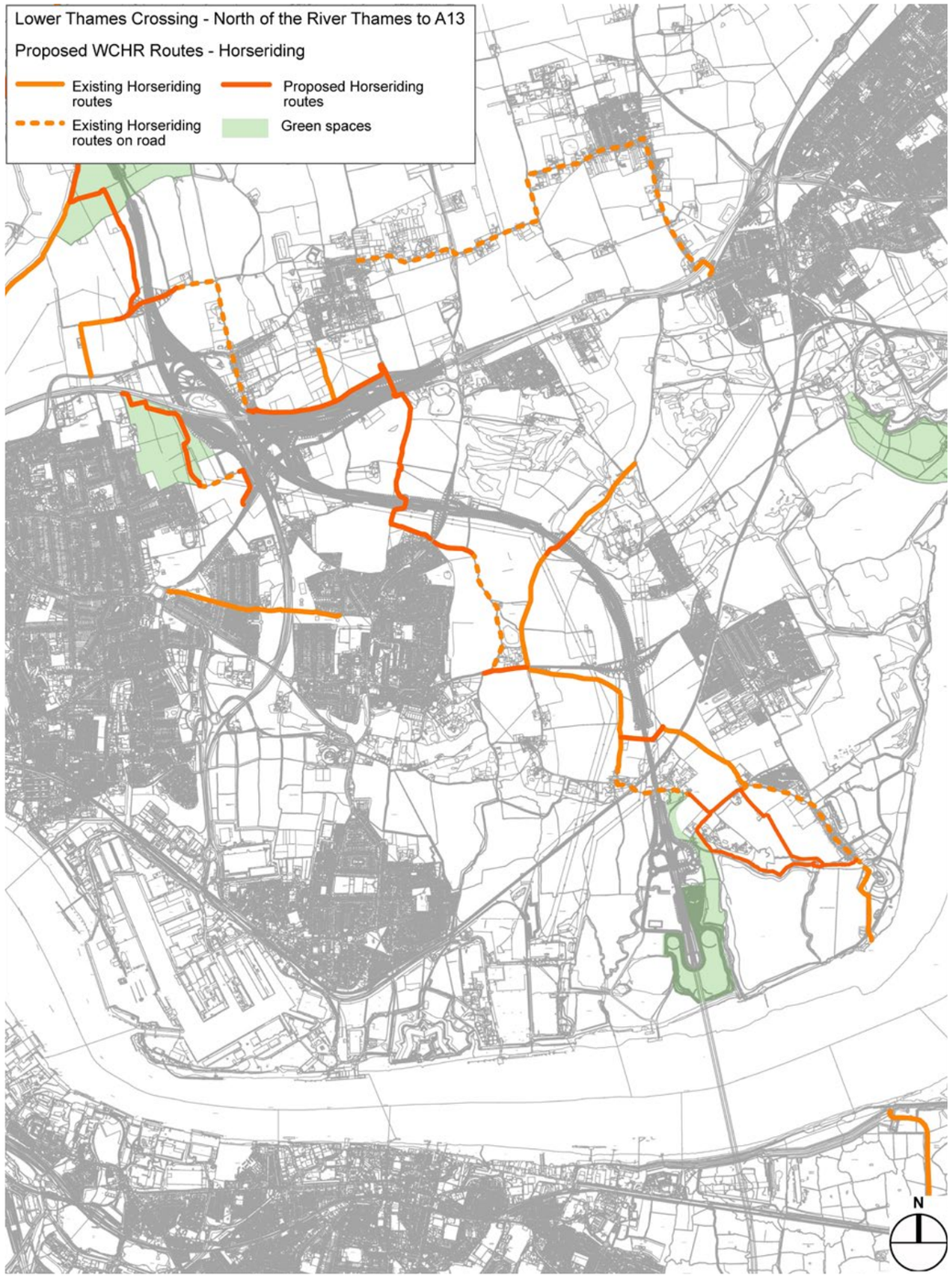


Existing cycling routes



Preliminary design for cycling routes

Existing horse riding routes



Preliminary design for horse riding routes

4.3. Preliminary Design: WCH routes in Tilbury Marshes and North Portal

4.3.1. The existing PRoW context in this area is primarily focused upon recreation walks: footpath FP146 (Two Forts Way) connects Coalhouse Fort to Tilbury Fort along the north shore of the Thames and is part of Sustrans route NCR13. The sea wall near Coalhouse Fort is in a poor state of repair and this route has been diverted inland towards footpath FP200. The coastal route continues north of Coalhouse Fort towards Mucking Marshes. Improvements to Two Forts Way has been a recurring request of Thurrock Council so that access to Coalhouse Fort may be enhanced.

4.3.2. Footpath FP200 links Coalhouse Fort to Station Road near the level crossing to the Tilbury Loop railway line. Station Road is linked to Muckingford Road by the former Coal Road, now bridleway BR58 east of Low Street Lane and BR63 to the west of Low Street Lane. BR58 crosses the Tilbury Loop Line and provides a potentially important but seemingly poorly used WCH crossing of the railway line. Footpath FP61 links East Tilbury to BR58 and Low Street Lane. There is no off-road WCH connection between BR58 and FP200. This is a missing link in the connection between Muckingford Road and Coalhouse Fort.

4.3.3. Proposed WCH routes in this area aim to link Two Forts Way and the new country park at Tilbury Fields to the PRoW network further north, and to create walks that link the heritage assets in areas such as Coalhouse Fort, East Tilbury Battery and Bowater Battery.

4.3.4. WCH proposed components in the Tilbury Marshes area are:

- Tilbury Fields routes
- Heritage trail
- Goshems Link
- Station road WCH track
- FP200 south
- FP200 north
- BR58 diversion
- FP61 diversion

Diagram showing WCH routes in Tilbury Marshes and North Portal

Aerial image showing WCH routes in Tilbury Marshes and around the North Portal

Tilbury Fields routes

4.3.5. Survey data collected indicates that the most frequently used WCH route in this area is footpath FP146 – the Two Forts Way, between Coalhouse Fort and Tilbury Fort. This footpath is largely isolated from other PRoWs in the area by existing infrastructure such as the Port of Tilbury and the Tilbury Loop railway line, historic landfill sites and the remaining marshes. Forming these connections is a priority of Thurrock Council as they aim to improve public access to the shore and to Coalhouse Fort.

4.3.6. The Project will create a new country park directly to the south and east of the tunnel approach and portal. It will span from the River Thames in the south to footpath FP200 in the north. Called Tilbury Fields, this park will be the site of new earthworks creating viewing points over the river and towards historic assets; this is discussed below.

4.3.7. In order to provide public access through this area, the proposal includes two north-south routes connecting FP200 to Two Forts Way. The western of these routes will be designated as a permissive footpath and will follow the newly created topography to bring users to these new viewing points. The eastern route will follow an historic watercourse through the marshes and will therefore provide a relatively level connection; this will be designated as a footpath. There will be two permissive paths linking these primary north-south paths.

4.3.8. Tilbury Fields will extend south to the shore of the River Thames. As a section of Two Forts Way will run through this new Country Park, it will have its surface improved, be widened and be designated as pedestrian-cycle track in readiness for similar future improvements (by others) to the west and east.

4.3.9. An additional permissive footpath will rise up a new circular landform in a spiral to allow walkers to reach these views over and across the Thames towards the South Portal.

4.3.10. The detailed design of these footpaths has not been undertaken. Further design of the route will ensure the surface is appropriate to the setting whilst providing a suitable robust surface.

Illustrative view of Tilbury Fields

Illustrative view of Two Forts Way

Heritage trail

4.3.11. In order to improve access and awareness of historic assets in this area a series of permissive footpaths will be formed that, along with FP200 and a new bridleway, will link Coalhouse Fort, Bowaters Farm Battery and East Tilbury Battery to each other and to the existing PRoW network.

4.3.12. From footpath FP147 in the east there will be a new permissive footpath connecting to Princess Margaret Road, this will increase access to the coastal footpath from East Tilbury village. There will be a second permissive footpath connecting this first route to footpath FP51 in the south. This path will run parallel to Princess Margaret Road and adjacent to East Tilbury Battery and information boards will be located at this point.

4.3.13. To the west of Princess Margaret Road there will be a third permissive footpath perpendicular to the road and coinciding with the western end of the first permissive path. This will cross a field before terminating at a new bridleway link between Station Road and FP200. Together these will provide access to Bowaters Farm Battery and a route back to Princess Margaret Road near Coalhouse Fort.

4.3.14. Together with new and existing PRoWs, these permissive routes will link together these three heritage assets, providing a better connection for the residents of East Tilbury and the users and the coastal path.

Goshems Link

4.3.15. BR58 terminates at Station Road with no further PRoW connectivity towards Coalhouse Fort.

4.3.16. To provide this connectivity, a new bridleway is proposed to link Station Road to footpath FP200 (to be upgraded to bridleway) from which Coalhouse Fort can be accessed. The new bridleway will meet Station Road close to BR58 and will pass east of Goshems Farm along a field boundary before joining with FP200.

Tilbury Fort

Coalhouse Fort

East Tilbury Battery

Bowaters Farm Battery

Station Road WCH track

4.3.17. Station Road extends from East Tilbury to Low Street Lane at Condovers Scout Activity Centre. It links the northern end of FP200 to the southern end of BR58, as well as the new Goshems Link. Station Road is narrow with tall established hedgerows up to the road, and has a 50 mph speed limit; notably there is a blind bend opposite the access to the Ingreborne Valley site.

4.3.18. In order to provide safe WCH access between these PRoWs there will be a WCH route behind the existing hedgerow on the northern side of Station Road.

FP200 south

4.3.19. Footpath FP200 can be thought of as two distinct paths. The northern section runs from Station Road, along the edge of a field to the access track for Ingrebourne Valley site at East Tilbury Marshes. The southern part of FP200 runs from this same access track, loosely along a watercourse to Princess Margaret Road just north of Coalhouse Fort. The trodden route of this southern section of FP200 does not appear to follow that shown in the local authority mapping as vegetation has grown over the designated route.

4.3.20. With the introduction of north-south routes through Tilbury Fields and Two Forts Way this route will form part of a triangular recreational route, but will also form part of a link to Muckingford Road. This southern part of FP200 will therefore be surfaced and re-designated as bridleway. These improvements will follow the trodden alignment as this follows the desire line and would require less vegetation clearance.

4.3.21. The access track from Station Road appears to be a private road with public access. This will be given bridleway status to formalise this access.

Further details on the proposed preliminary landscape designs for Tilbury Fields can be found in Project Design Report Part D: General Design North of the River – Tilbury to the A13 Junction

Existing northern section of FP200 near the Ingrebourne Valley site facing north-east

Existing FP200 where vegetation has grown over the designated route

Existing eastern end of FP200 accessed from Princess Margaret Road, East Tilbury

FP200 north

4.3.22. Footpath FP200 connects Station Road to Princess Margaret Road close to Coalhouse Fort. The northern section of this footpath skirts a field edge before turning and passing through an area of common land to reach an access track for Ingrebourne Valley site at East Tilbury Marshes.

4.3.23. The embankment south of Tilbury Viaduct conflicts with the existing alignment of FP200 where it passes through this common land. The length of FP200 impacted will be realigned further east so that it is positioned between the edge of earthworks/boundary fence and field edge.

4.3.24. This part of the existing FP200 is an unmade track and will be re-provided as such.

4.3.25. The proposed route is less than 0.1km shorter than the existing route. Notwithstanding the total area of common land will be no less in area, see the Planning Statement (Application Document 7.2) and the Statement of Reasons (Application Document 4.1) for further details.

BR58 diversion

4.3.26. Bridleway BR58, also known as Coal Road is part of a proposed north-west to south-east WCH link between Coalhouse Fort and Muckingford Road. When combined with Muckingford Road shared track this will allow access to Coalhouse Fort from Chadwell St Mary. However, the Project route will sever the existing alignment of BR58.

4.3.27. The northern section of the bridleway will be diverted in an east-west orientation to pass beneath Tilbury Viaduct to then connect in the west with Low Street Lane. Low Street Lane is closed to motor vehicles and will provide a connection from BR58 to FP67 and BR63.

4.3.28. This realignment will extend the connection between BR63 and BR58 by approximately 0.3km.

FP61 diversion

4.3.29. Footpath FP61 connects Low Street Lane with East Tilbury and its existing alignment will be severed by the Project route; consequently FP61 will be diverted to the south to connect to BR58 which passes beneath Tilbury Viaduct and from which High House Lane can be accessed.

4.3.30. This diversion will result in additional length of route; the connection between East Tilbury and BR63 will be extended by approximately 0.9km and between East Tilbury and FP67 by approximately 0.4km. Users wishing to get to Hoford Road or High House Lane have the option of using the Muckingford Road shared route rather than taking a longer diversion.

4.4. Preliminary Design: WCH routes in the Chadwell Link

4.4.1. The Chadwell Link in located predominantly within the arable farmland that skirts around the urban edge of Chadwell St Mary, this farmland divides the urban area from Linford, East Tilbury and Southfields in the east and north.

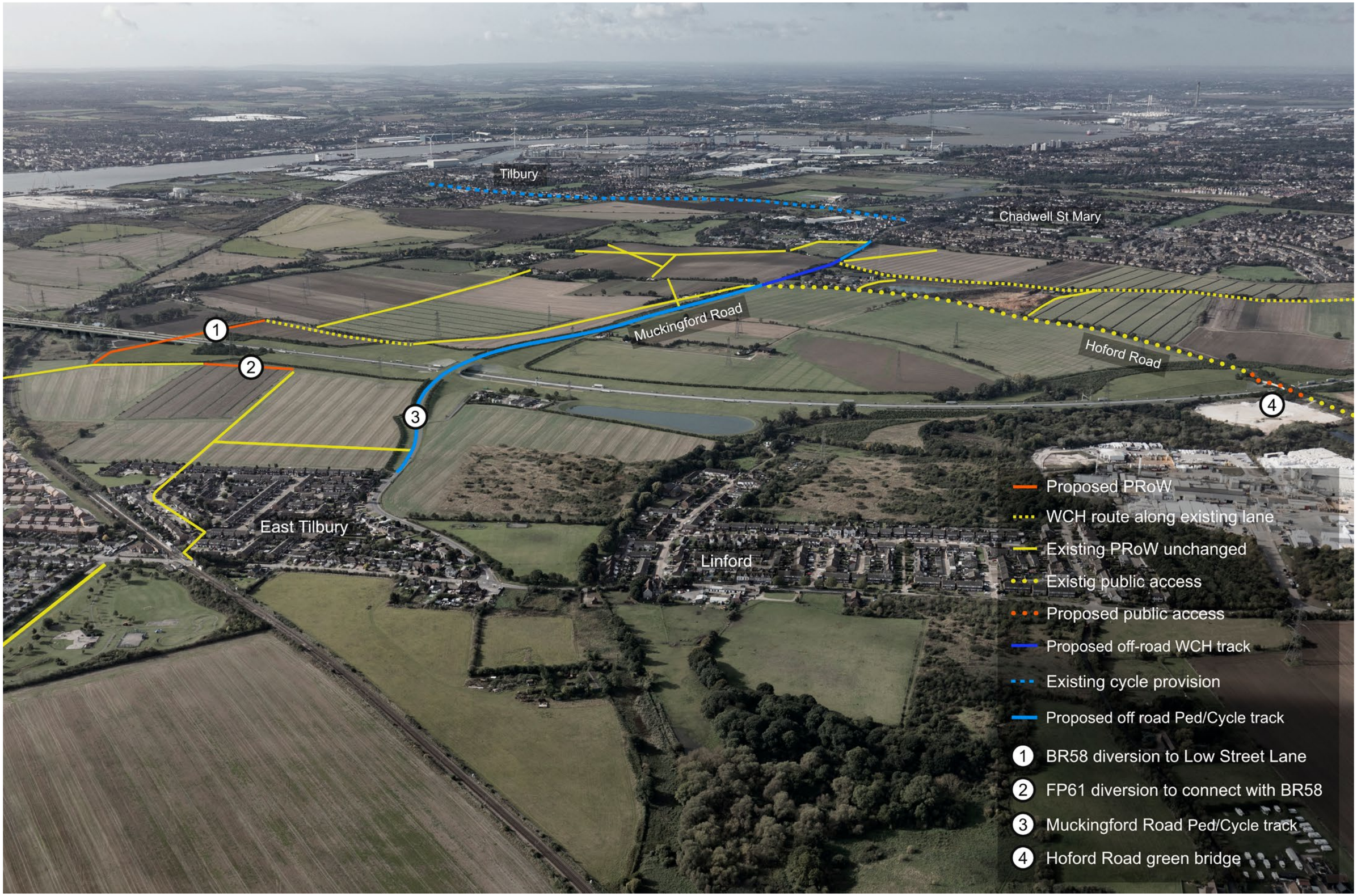
4.4.2. The initial WCHAR assessment highlighted the isolation of Linford and East Tilbury from areas of employment and services in the west with potential improvement to existing routes highlighted.

4.4.3. There are relatively few PRoWs in this area. However, there are now PRoWs through High House Lane and Hoford Road which form crucial WCH connections in this area, linking the few PRoWs that do exist.

4.4.4. The proposed WCH components in the Chadwell Link are set out below:

- Muckingford Road shared track
- FP78 diversion
- Hoford Road green bridge

Diagram showing WCH routes in the Chadwell Link



Aerial image showing WCH routes in Tilbury Marshes and around the North Portal

Muckingford Road shared track

4.4.5. Muckingford Road is the only direct cycle route between East Tilbury/Linford and the main employment, education and service centres to the west. It is a narrow road with no footway, and from Beechcroft Road on the edge of East Tilbury to the edge of Chadwell St Mary (where it becomes Linford Road) it has a 50 mph speed limit. These factors combined make it an unappealing route for cyclists, despite a lack of direct alternative route and cycle numbers are low. The WCHAR assessment described a relatively young population with a high propensity to cycle, for this reason it is expected there is latent demand to cycle and for a cycling path between East Tilbury/Linford and Chadwell St Mary/ Tilbury.

4.4.6. A shared pedestrian-cycle track will be provided parallel to Muckingford Road and Linford Road; this track has been designed to extend from the edge of East Tilbury to Atherton Gardens so that it includes the length of route with a 50 mph speed limit. Between the junctions with Turnpike Lane and Blue Anchor Lane equestrian use will also be permitted to allow connection between existing equestrian facilities, High House Lane, Hoford Road and BR63. This track has been located to the south of Muckingford Road. In areas where Muckingford Road has been realigned, this track has been designed to be adjacent to the road. To the west of Blue Anchor Lane where the road has not been realigned and existing hedgerows are tight to the road this route has been designed to be located along the field edge behind the hedgerow in order to preserve the character of the road and provide a route that is more relaxing.

4.4.7. Some realignment of Muckingford Road has been required in front of the houses to the east of the Muckingford Road/Blue Anchor Lane junction. The verge here is not wide enough to accommodate a pedestrian-cycle track, so the proposals have the road moved north to accommodate the track. An alternative route to the south of these houses was explored but the length of diversion made it less attractive to users who value directness.

Proposed view along Muckingford Road

FP78 diversion

4.4.8. The only existing PRoW directly impacted by the Project in the Chadwell Link is FP78. This currently connects High House Lane to Brentwood Road and when combined with FP95 and FP79 forms a pedestrian link between Muckingford Road and Rectory Road.

4.4.9. The Project crosses the existing alignment of High House Lane. Rather than provide a bridge, a diversion of High House Lane has been designed to bring it along the existing alignment of FP78 and connect to Brentwood Road south of the Project alignment. There will be a Pegasus crossing over Brentwood Road to connect FP78 with FP95. Consequently, a footway alongside the realigned section of High House Lane has been provided in order to retain this connection. Given the quiet nature of High House Lane, cyclists and horse riders will be expected to use the carriageway.

Hoford Road green bridge

4.4.10. Hoford Road is not an existing PRoW although it is an important part of the WCH network. A deliberate decision was made to interfere as little as reasonably practicable with the character of this lane, by resisting requests for widening and surface improvements.

4.4.11. A green bridge has been designed to be used where Hoford Road crosses the Project route to further protect the character of the lane.

Further details on the preliminary landscape design around Hoford Road can be found in Project Design Report Part D: General Design North of the River – Tilbury to the A13 Junction

Further details on the preliminary design for Hoford Road green bridge can be found in Project Design Report Part F: Structures and Architecture

Existing view of Hoford Road

Illustrative view of Hoford Road looking towards Hoford Road green bridge

4.5. Preliminary Design: WCH routes at the A13 Junction

4.5.1. The WCH components in the A13 Junction area have been largely designed to improve east-west commuter connections and to increase the opportunity for WCH to cross the A13. The individual elements are described below, however these should be considered as an interconnected network of improvements;

- FP79 and FP95
- A1013 shared track and Rectory Road bridge upgrade
- Baker Street cycle track
- BR206 extension
- Blackshots bridleway
- BR223 realignment
- Stifford Clays Road cycle track extension
- Stifford Clays Road to Green Lane connection
- Green Lane realignment

Diagram showing WCH routes at the A13 Junction

Aerial image showing WCH routes at the A13 Junction

FP79 and FP95

4.5.2. FP79 and FP95 are part of a chain of footpaths and quiet lanes that connect the A1013, near Rectory Road, to Muckingford Road, from where BR63 and BR58 provide a route towards Coalhouse Fort and the new Tilbury Fields. Thurrock Council have stated their aim to increase public access to Coalhouse Fort as well as asking that footpaths be upgraded to bridleways.

4.5.3. FP79 and the part of FP95 that connect it to Brentwood Road will therefore be upgraded to bridleway status with the surface improved in line with usage requirements and a new controlled crossing on Brentwood Road. An equestrian track in the verge to the A1013 will connect the northern end of FP79 to a new crossing of the A1013 at the southern end of Rectory Road bridge. These improvements will connect the new WCH provision across Rectory Road bridge to High House Lane and from there to BR63.

4.5.4. With the exception of where FP79 is diverted on the approach to the bridge over the Project route, the upgraded surface has been designed to follow the alignment of the existing footpath to respect field boundaries and maintain hedgerows.

Existing view from Brentwood Road to the north of Chadwell St Mary

Illustrative view from Brentwood Road to the north of Chadwell St Mary

A1013 shared track and Rectory Road bridge upgrade

4.5.5. The existing shared pedestrian-cycle track on the southern side of the A1013 is an important east-west commuter route linking Stanford-le-Hope to Grays. A significant length of the A1013 is to be realigned to create the junction and where this is the case, a shared pedestrian-cycle track meeting current standards will be provided. This improved provision exceeds the length of A1013 realignment at approximately 2.4km long.

4.5.6. The works to improve this cycle route may allow NCR137 to be extended to Orsett Cock roundabout. If so, it would include connections to Rectory Road and to Baker Street cycle routes.

4.5.7. Rectory Road connects Orsett to the A1013 with Rectory Road bridge spanning the A13. This bridge will be replaced as part of the works. It is apparent from stakeholder engagement and consultation feedback that this is an important WCH crossing of the A13. The replacement bridge has therefore been designed to include a shared pedestrian-cycle track and a separate equestrian track. This equestrian track is proposed to connect to a new Pegasus crossing of the A1013 in the south and to the extended bridleway BR206 in the north. The proposed pedestrian-cycle track will connect the existing shared footway along Rectory Road to the north of the bridge with the new crossing of the A1013 and the shared pedestrian-cycle track on the south side of the A1013.

4.5.8. The A1013 route connects the northern end of footpath FP79, which as discussed in 4.5.3 has been designated as bridleway, to the Pegasus crossing at the southern end of Rectory Road. In order to improve connectivity for horse riders crossing the A13 it is proposed to link these two points with an equestrian track adjacent the A1013 pedestrian-cycle track. This will provide access between Orsett Showground and other bridleway improvements to the north of the A13 to new bridleway connections to Coalhouse Fort and Tilbury Fields in the south.

Shared track on the upgraded Rectory Road Bridge

Baker Street cycle track

4.5.9. As part of highway works, Baker Street has been re-aligned between the A1013 and the existing A13 underpass. Baker Street, along with Rectory Road is a well used cycle crossing of the A13. Consequently, this 400m realigned length of Baker Street will have a shared pedestrian-cycle track adjacent to the eastern side of the road. A crossing point on the A1013 will coincide with the southern end of this track linking it with the A1013 shared pedestrian-cycle track. This will better connect the residents of Baker Street with Little Thurrock and NCR137.

BR206 extension

4.5.10. BR206 extends south from Orsett along Mill Lane where it turns west at the A13 to eventually connect with Baker Street to the north of the A13 underpass. This is an important link in the local equestrian network and is close to a number of stables and riding schools. The widening of the A13 to form the slip roads clashes with this existing east-west section of BR206.

4.5.11. This section of BR206 bridleway will be replaced with new provision slightly further north following the bottom of the new A13 embankment.

Existing Baker Street cycle track

4.5.12. In order to improve equestrian connectivity the proposals include an extension of this bridleway to the east as far as the northern end of the new Rectory Road equestrian track. This will complete an equestrian link from the stables on Baker Street to Rectory Road, and using the bridge over the A1013, to the improved network to the south.

Blackshots bridleway

4.5.13. In order to improve access within Blackshots and to form part of a link between the A1013 and Stifford Clays Road, Thurrock Council have requested that the Project creates a bridleway through Blackshots from Long Lane in the south to an access track adjacent to the A13 in the north. The central part of this link will be formed as part of these works with the northern and southern sections completed by others. Once complete, these works will form a link between the A1013 and Stifford Clays Road.

Existing view across Blackshots

BR223 realignment

4.5.14. BR223 runs along Gammonfields Way parallel to the A1089. This previously connected to a permissive bridleway parallel to the A1013 forming a WCH connection between Daneholes roundabout and Long Lane. This permissive path appears to no longer be in place leaving BR223 isolated from the PRoW network.

4.5.15. The works that create the A1089 to the Project route slip road clash with Gammonfields Way and BR223. Consequently BR223 will follow the realigned Gammonfields Way in order to maintain a route between the A1013 and Long Lane/Blackshots.

Stifford Clays Road cycle track extension

4.5.16. Stifford Clays Road links the northern urban edge of Grays under the A13 to Baker Street and on to the village of Orsett. This road is used by both commuters and recreational cyclists but also links Baker Street to William Edwards Secondary School and other services and jobs in Grays. There is an existing shared pedestrian-cycle track parallel to the south side of Stifford Clays Road. This terminates approximately 0.9km west of Baker Street with no further off-road provision for cyclists or pedestrians.

4.5.17. The proposed realignment of Stifford Clays Road as part of the works to create the junction present the opportunity to extend this to the Baker Street area and in doing so form a more complete pedestrian-cycle link to William Edwards Academy and to areas of employment in Grays and Chafford Hundred.

4.5.18. From the end of the existing shared track at the Springfield Cattery, this track will be extended to the east as far as the houses opposite Wayside Cottage. The extension of this track will be designed to meet current standards on width and separation from the road.

Existing shared pedestrian-cycle track along Stifford Clays Road, stopping abruptly with no further off-road provision

Existing shared pedestrian-cycle track along Stifford Clays Road, stopping abruptly with no further off-road provision

Stifford Clays Road to Green Lane connection

4.5.19. A pedestrian-cycle track parallel to the Project route has been designed to connect Stifford Clays Road to Green Lane (BR161) and beyond this to a new WCH link to the Mardyke.

4.5.20. At the request of the landowner this route is proposed to be against the boundary at the bottom of the earthworks.

4.5.21. Combined with the extension of Stifford Clays Road shared track this offers improved access to the Mardyke area for people on foot or cycle from Baker Street. Green Lane is a bridleway and can already be accessed by equestrians via Fen Lane.

Green Lane realignment

4.5.22. Green Lane is a farm track from Fen Lane to Stifford Clays Road and additionally it has bridleway status. It crosses the Project route and as a consequence, a new bridge has been designed to maintain the connection for both farm vehicles and PRoW users. This proposed bridge is on a different alignment to the existing Green Lane for reasons of constructability. The PRoW has therefore been moved to this new alignment.

Access control along Green Lane

Existing Green Lane

5. North of the river – North of the A13 Junction to the M25

5.1. Existing routes for WCHs

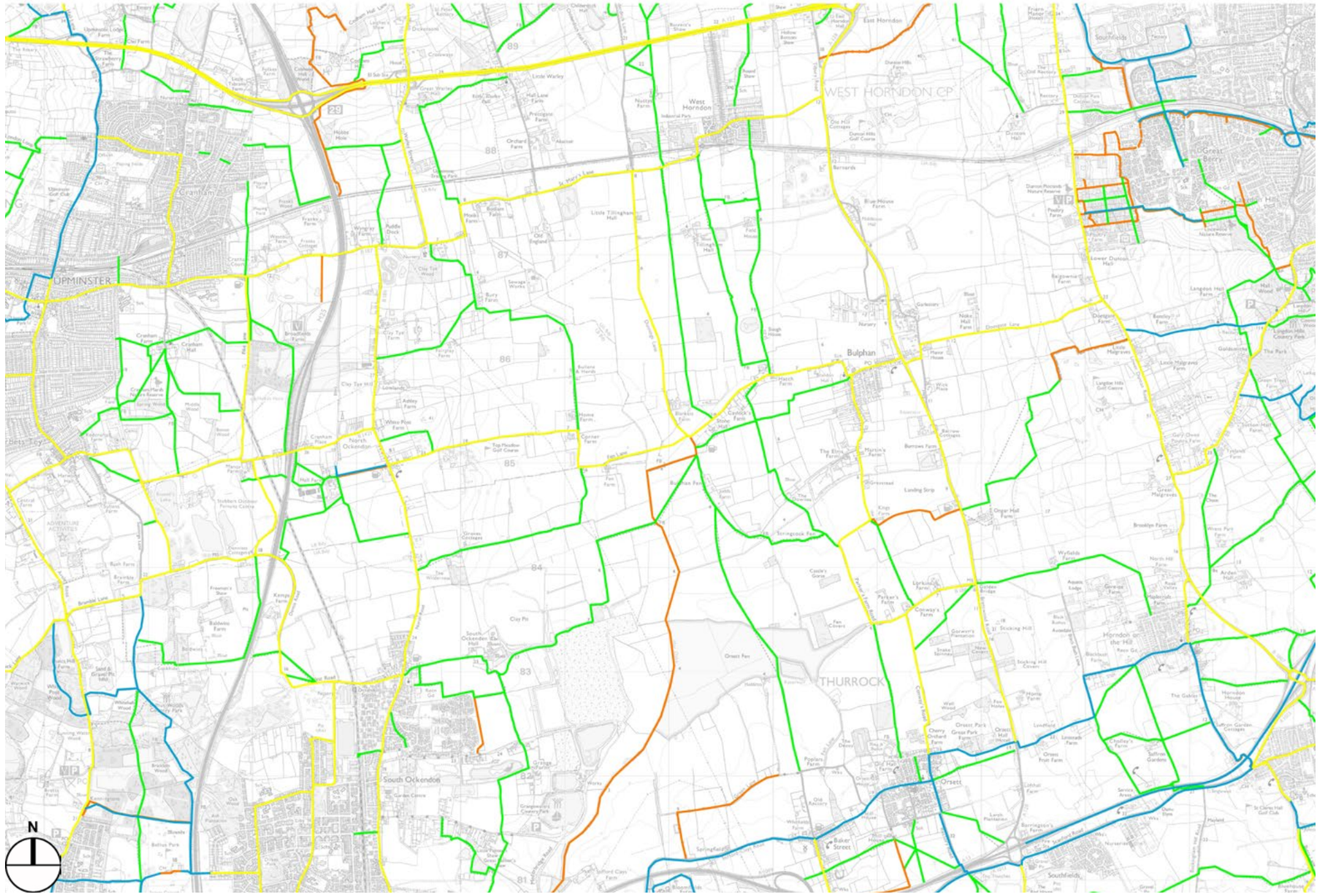
5.1.1. The demographic profile of Ockendon reflects that of Thurrock generally, albeit with a predominantly rural and older population, with low accessibility and high car ownership. As a result, their 'capability' to walk or cycle tends towards the medium and low end of the spectrum.

5.1.2. The initial WCH assessment describes a predominantly rural area which is framed by the A13, M25 and the A127. Basildon lies to the east approximately 10km away. This area contains North and South Ockendon, Orsett, Thames Chase and the Mardyke. Inter-urban distances make regular walking trips prohibitive and cycling largely restricted to leisure use.

5.1.3. The main trip attractors in this area are town based which due to the inter-urban distances limits the amount of non-motorised use. The Mardyke and Thames Chase Country Park areas do attract people using all non-motorised modes. The National Trip End Model (NTEM) work attraction figures show that Tilbury and Brentwood are the main attractors with the rural areas in between scoring lowest.

5.1.4. The PRoW network in this area can be classified as low use which was supported through an initial visual conditions survey. Notably there is historic severance in the PRoW network caused by the M25, the A127 and to a lesser extent the A13. These form a barrier to those in residential areas within the M25 accessing areas of open countryside for recreational purposes. Data shows that those roads that cross the M25 such as Ockendon Road and St Mary's Lane have high cycle usage although use by foot is low. North Road has relatively high level of cycle use as it forms a north-south commuter route to Lakeside shopping centre and Grays, and should therefore be considered one of the major corridors in the area. In the Ockendon Link area there were four collisions involving cyclists over a five-year period. Two occurred on North Road.

5.1.5. Increased vehicle use on roads that connect footpaths have made the use of these as links between footpaths less attractive which has further fragmented the PRoW network.



Existing footpaths, cycle paths and bridleways

5.1.6. The London Borough of Havering identified a number of key aims that inform walking and cycling use, namely to maintain and enhance connections to rural routes, create circular route options and also to link with transport interchanges and to contribute to north/south cycle provision in Romford.

5.1.7. The preferred WCH routes were identified: these are North Road, Dennis Road, Ockendon Road and Pea Lane. They reflect the importance of routing between North and South Ockendon and links across the M25 to Upminster and Romford, and across the A127 to Warley and Brentwood.

5.1.8. Thurrock Council has a Greengrid Strategy, (Thurrock Council, 2006) that aims to create a sustainable network of multi-functional green spaces within the local towns and countryside. Methods to achieve this include the promotion of footpath and cycle path networks and the linking of urban and countryside areas through a network of green spaces and access improvements.

5.1.9. The Thames Chase Plan (2014) sets out a strategy for landscape regeneration through enhanced connected woodland and green space. This includes improved access through enhancements to the ‘forest circle’ and creation of interconnected ‘Greenway’ routes through and around the Thames Chase area. During consultation Thames Chase expressed a desire to improve connectivity from their Forest Centre to areas of open countryside to the east and to both Little Belhus Park in South Ockendon and Thorndon Country Park.

5.1.10. In additional to existing country parks, Hole Farm will be a significant new community woodland that will be delivered, in partnership with Forestry England, to the north-east of the junction of the M25 and A127. The connection of this to residential areas west of the M25 and south of the A127 will have a significant beneficial impact on those visiting on foot, by cycle or on horseback.

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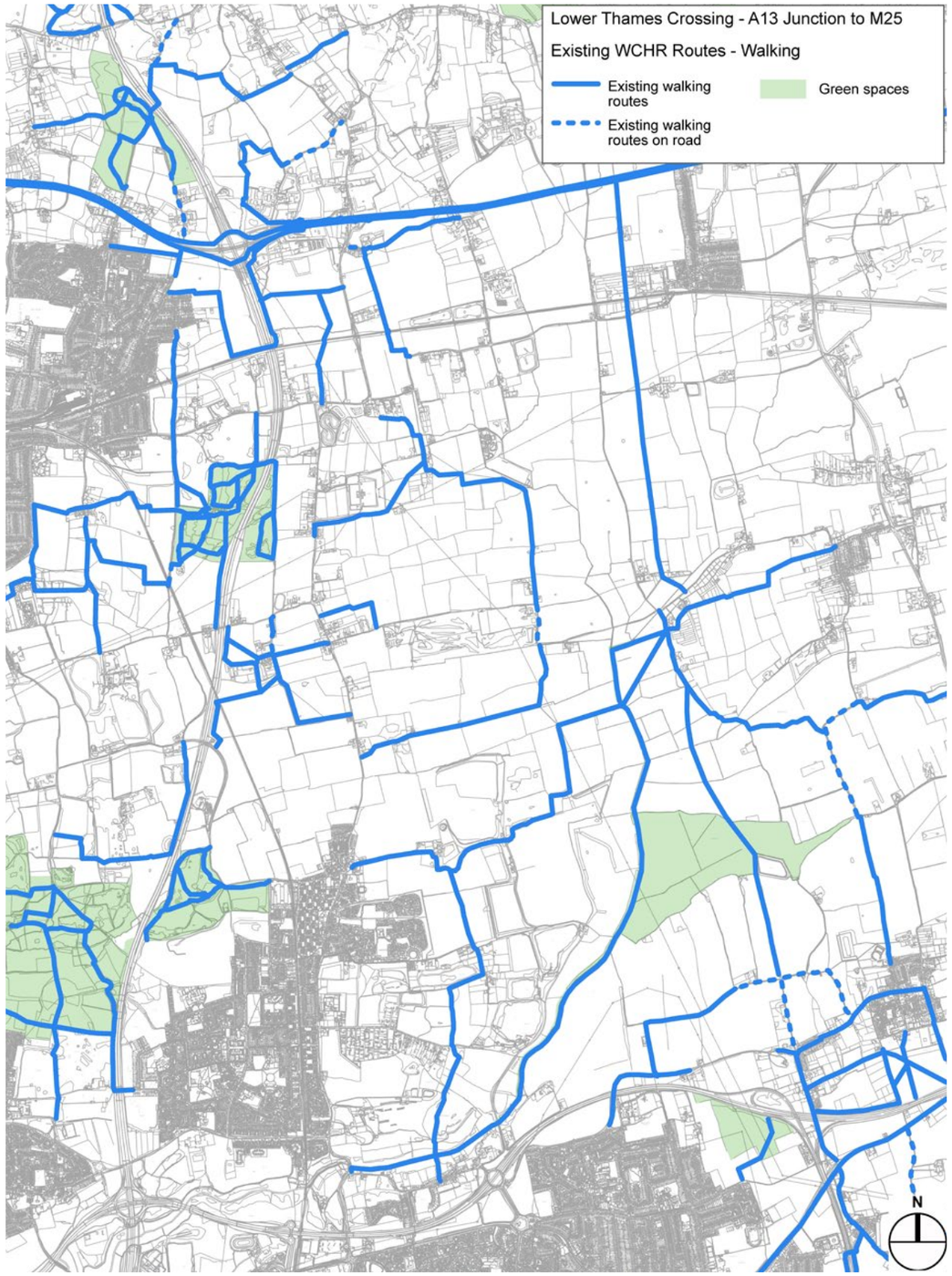
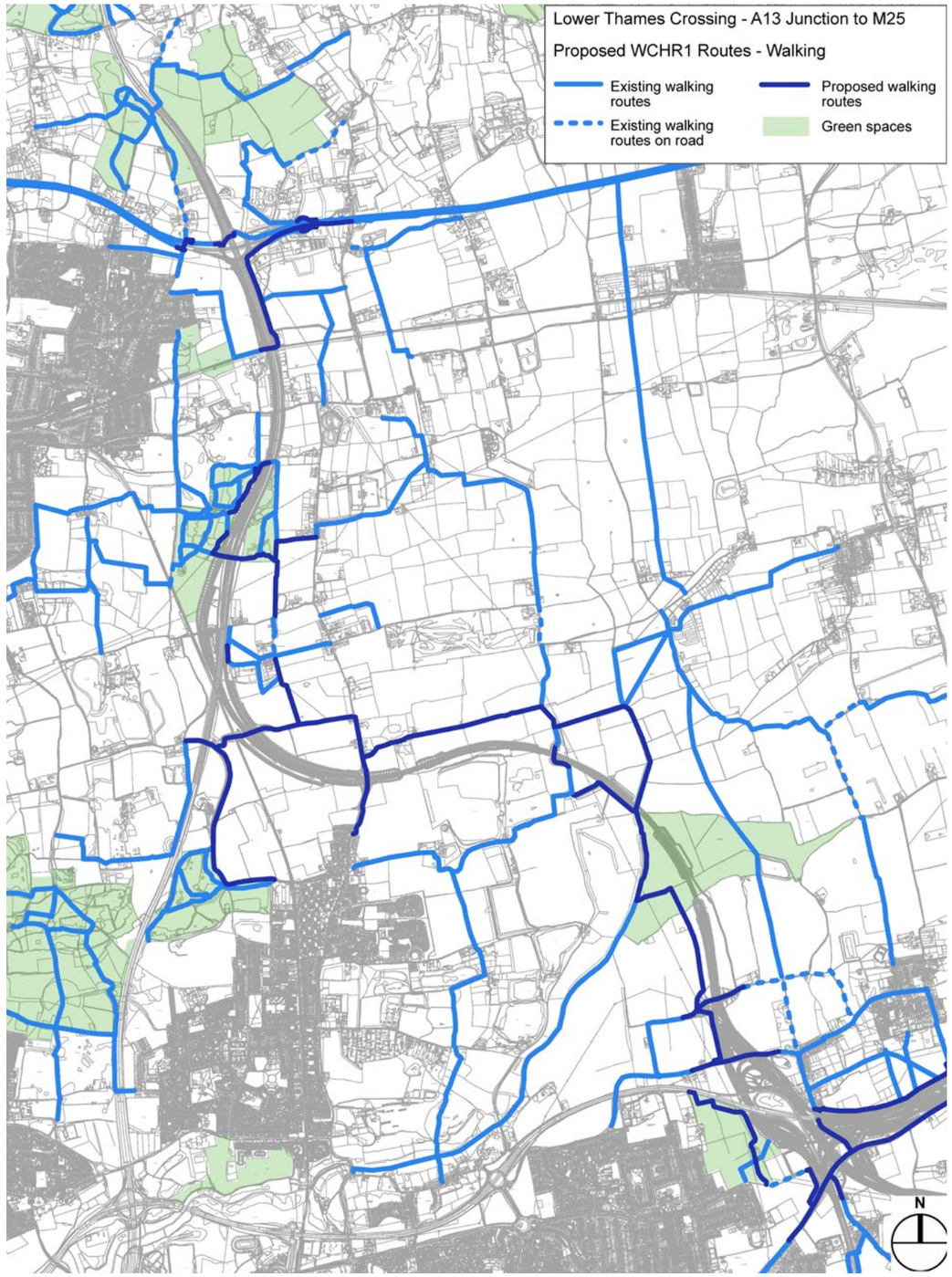
5.2. Preliminary regional routes for WCHs

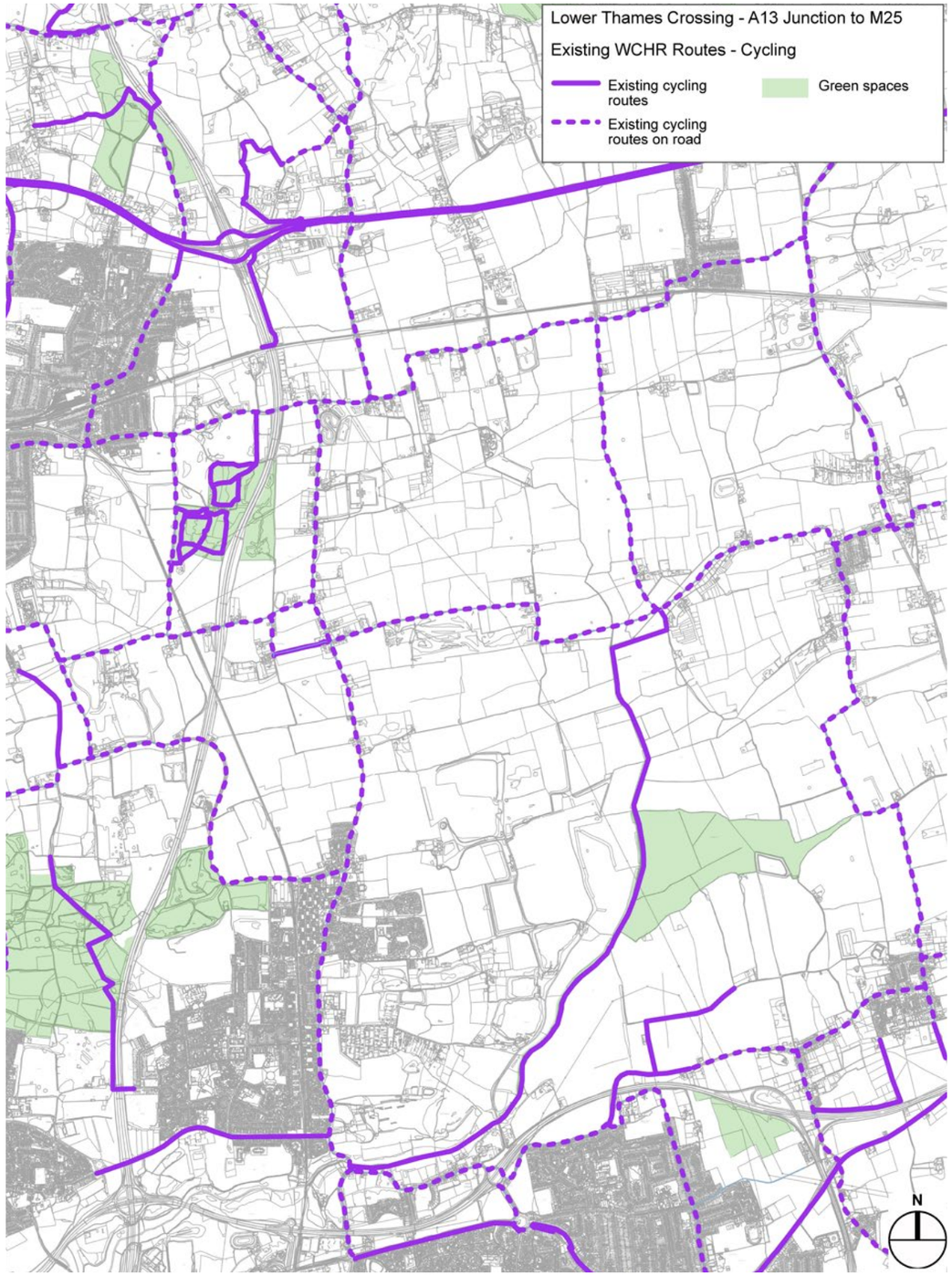
5.2.1. The following diagrams show the existing and preliminary design of routes for walkers, cyclists and horse riders across the region, used during the consultation process and as presented at the WCH Campaign event in early 2022.



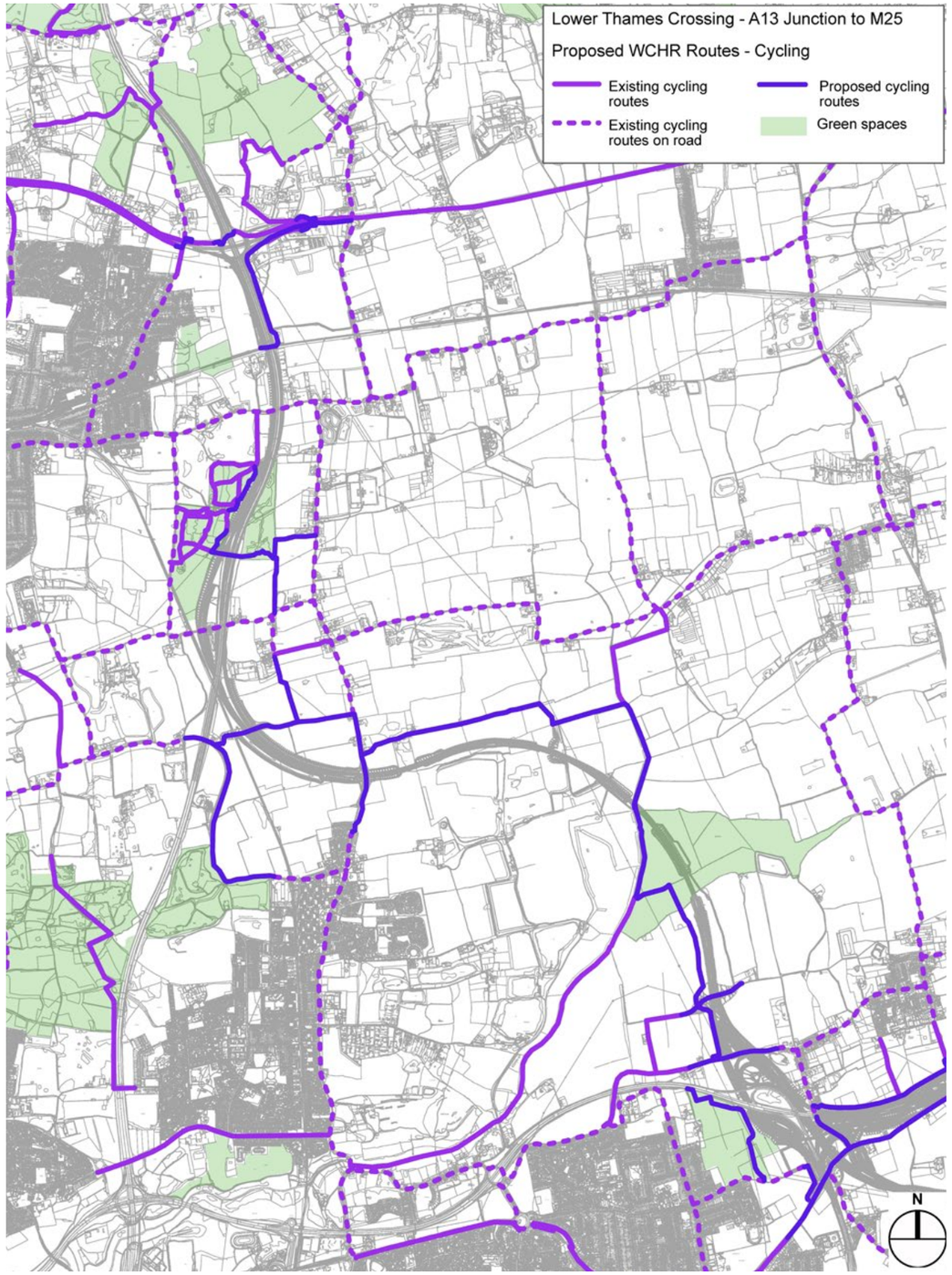
Existing walking routes



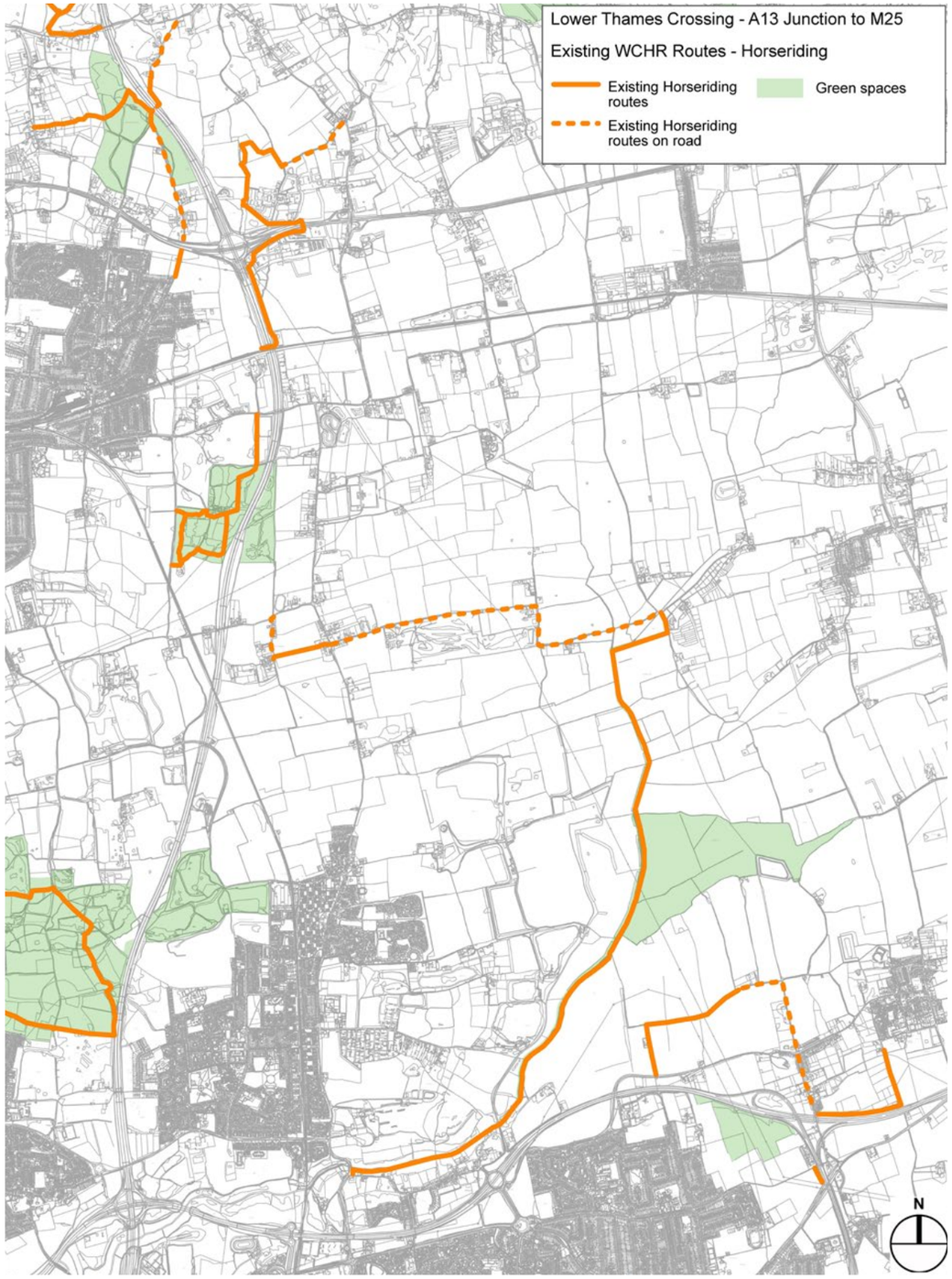
Preliminary design for walking routes



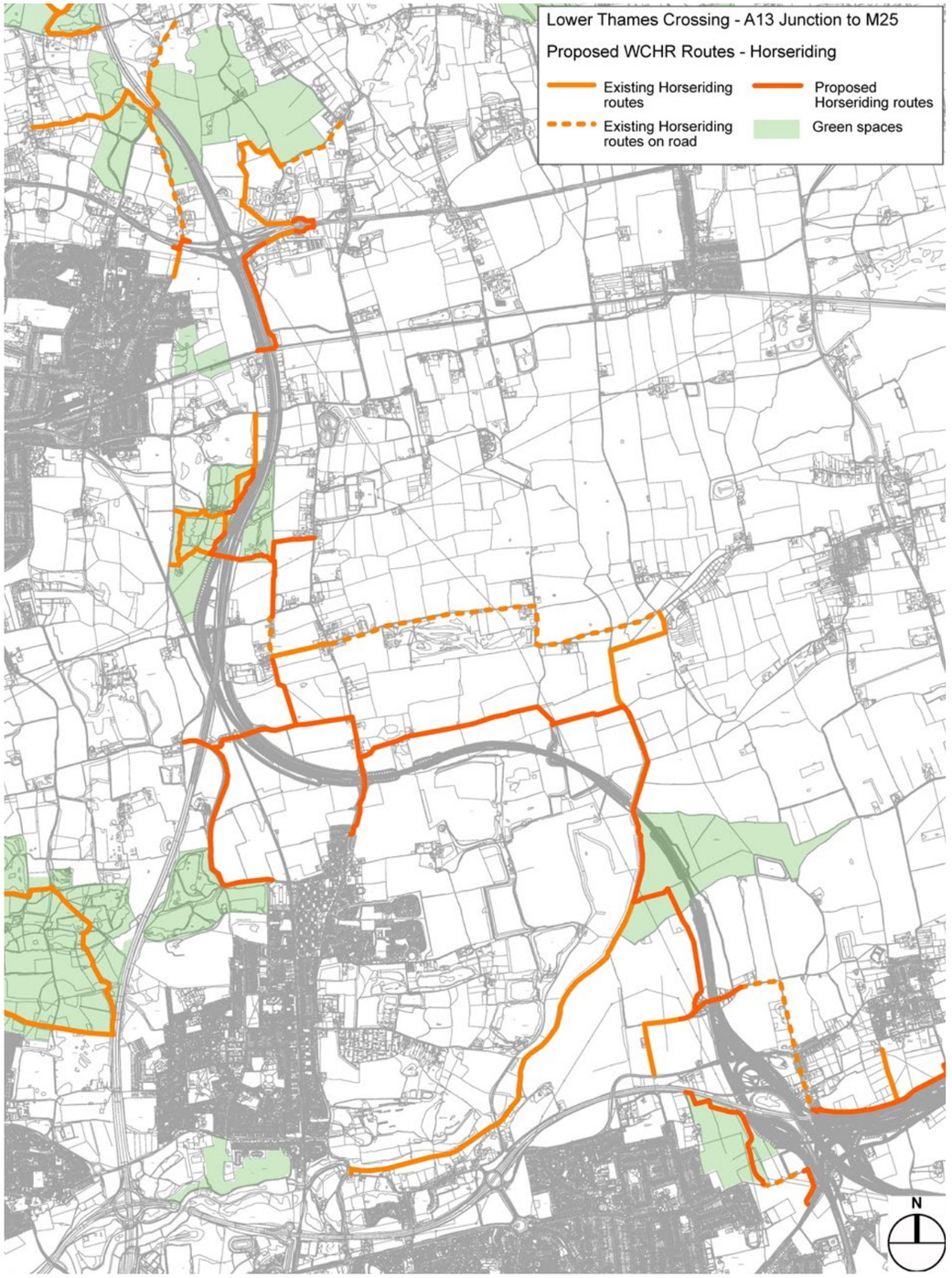
Existing cycling routes



Preliminary design for cycling routes



Existing horse riding routes



Preliminary design for horse riding routes

5.3. Preliminary Design: WCH routes in the Ockendon Link

5.3.1. The area through which the proposed Ockendon Link passes is characterised by flat, open farmland. This is a pleasant location to walk, cycle or ride. There are existing footpaths through the area although connection between them is limited making their use as a network limited. The bridleway along the Mardyke is the only bridleway through the area. These gaps in the existing PRoW provision form a barrier to satisfactory access by all WCH users, which is something recognised by Thurrock Council as well as user groups.

5.3.2. The WCH strategy across this area has been designed to improve and widen access to this fenland landscape from both the southern and western ends of the Ockendon Link.

5.3.3. From south to north the proposed strategy includes:

- Green Lane to Mardyke connection
- Mardyke trail surface upgrades
- Mardyke bridges, FP136 upgrade and new link
- FP136 realignment
- FP136 to FP135 connection
- FP135 surface improvements
- North Road WCH track

Diagram showing WCH routes in the Ockendon Link

Aerial image showing WCH routes in the Ockendon Link

Green Lane to Mardyke connection

5.3.4. This is a bridleway connection to the west of the Project route between the only two existing bridleways in the area, Green Lane BR161 and the Mardyke bridleway BR219. The southern end of this bridleway link will begin where the shared pedestrian-cycle track from Stifford Clays Road terminates on Green Lane.

5.3.5. The southern part of this bridleway will be parallel to the Project route and will pass the drainage retention ponds to the north of Green Lane. In order to reduce the level of intervention in the landscape the access from Green Lane to these ponds for maintenance and inspection will be along the bridleway.

5.3.6. To the north of the drainage retention ponds the route has been designed to be integrated into the landscape strategy. The proposed route passes beside a newly formed area of proposed wet carr woodland before emerging into Orsett Fen. Here it has been designed to traverse an area of open mosaic habitat before crossing a ditch and turning to an east-west orientation to connect with the Mardyke bridleway BR219. Here the proposed route has the existing vegetation along the ditch to the south and open views across the newly recreated wetland and water vole habitat mitigation area to the north.

5.3.7. This new link has been located beside field boundaries and hedgerows in order to cause the least disruption to the landowner and to respect the existing landscape.

Mardyke trail surface upgrades

5.3.8. The Mardyke trail is a bridleway that follows the Mardyke from close to Bulphan in the north to Pilgrims Lane near the A13 in the south. Beyond Pilgrims Lane the route continues, no longer as bridleway but as part of NCR137. The Mardyke trail is a significant WCH asset to the area, although limited connections to it, and poor surface restrict its benefit. Improved access along the Mardyke is an important part in the completion of Thames Chase's Forest Circle strategy (The Thames Chase Plan, 2014) as well as being a strategic route in Thurrock Councils' Greengrid Strategy (Thurrock Council, 2006).

5.3.9. In this part of Orsett Fen, the existing BR219 Mardyke trail is an unsurfaced track along the eastern bank of the Mardyke. The trail is poorly defined and merges with the field edge. When the weather is wet it becomes muddy and use by horses causes the surface to become uneven and unsuitable for use by most cyclists.

5.3.10. Further to the south, where this route is part of NCR137, the surface is loose gravel. Here, open source data suggests much greater usage.

5.3.11. From the point at which the new bridleway from Green Lane BR161, described above, terminates at the Mardyke, BR219 will have its surface improved to make it suitable for all WCH users up to the existing crossing of the Mardyke at the eastern end of FP136. There will be a new bridge linking BR219 to a new footpath and a replacement bridge where FP136 crosses the Mardyke.

Existing Mardyke Trail

Mardyke bridges, FP136 upgrade and new link

5.3.12. In order to form a WCH link from the Mardyke bridleway BR219 to areas to the west, part of the existing footpath FP136 directly west of the Mardyke will be resurfaced and redesignated as bridleway. The existing footbridge over the Mardyke will be replaced with a bridge suitable for all three user types. It is proposed that this new bridge is constructed from timber to ensure it is in keeping with the existing rural character. The upgrade of FP136 will link the Mardyke for all WCH users to a new connection between footpaths FP136 and FP135 allowing onward connection to North Road.

5.3.13. The alignment of this new WCH link was previously proposed to the south of the Project alignment. Following landowner feedback concerning access control and anti-social behaviour, the proposed bridleway connection was moved north.

5.3.14. This change has no disbenefit in connectivity for those using FP135 but would constitute a significant additional distance for those using footpath FP136 to link between South Ockendon and the Mardyke. Consequently, the previously proposed connection will be retained but as footpath only with suitable access restrictions.

5.3.15. This new footpath link will start at a new footbridge crossing of the Mardyke to the south of the Mardyke Viaduct. The eastern end of this link will follow the bottom of the Project embankment in order to minimise impact on agricultural land, before turning along a field boundary to meet the existing alignment of FP136. The footpath will also function as vehicular access to the Viaduct structure in order to reduce the number of interventions in the landscape.

5.3.16. The combined benefit of these proposals will be to significantly increase PRoW access to the Mardyke from North Road and South Ockendon.

Existing FP136 bridge

Existing FP136 to be upgraded to bridleway

FP136 realignment

5.3.17. FP136 is an existing footpath and farm track that connects the green in South Ockendon with the Mardyke and with FP160 to Bulphan. It will be severed by the Project route and therefore a new bridge will be constructed to maintain connectivity.

5.3.18. The alignment of FP136 has been changed to accommodate the earthworks required to provide a new bridge over the Project route without unnecessarily negatively impacting the landscape. The new alignment has been designed to allow the earthworks to be kept close to the Project route so not to spread into the landscape.

5.3.19. To the north of the Project the alignment of FP136 has also been changed to allow space for the bridge earthworks so they do not interfere with a gas valve compound beside the existing FP136 route.

5.3.20. In order to prevent unauthorised vehicles accessing routes to the south of the Project alignment access control will be needed to the north of the bridge.

Existing FP136

FP136 to FP135 connection

5.3.21. Footpaths FP135 and FP136 are two routes that run from North Road in the west to Fen Lane in the east. Despite these two footpaths coming close to one another there is no PRoW link between them. In the analysis of the existing PRoW network it was apparent that there was an opportunity to form a connection between FP136 and FP135. This connection would link FP135 to the Mardyke and in conjunction with North Road works would form a recreational loop. This is something that Thurrock Council also requested in Statutory Consultation feedback.

5.3.22. There is an existing farm track that connects these two footpaths. This will be designated as bridleway to allow access for all WCH users, it will also be used by farm vehicles and infrequently by maintenance vehicles.

Existing FP136 to FP135 connection

FP135 surface improvements

5.3.23. FP135 is an existing footpath and farm track that connects North Road in the west to Fen Lane in the east. It provides access from North Road to farm buildings and cottages. Here the surface is machine laid and the condition is good. Further east, closer to the proposed connection with FP136 the surface is a mix of parallel strips of bare earth and gravel with vegetation between. This surface gets muddy and rutted by farm vehicle use. It is not appropriate for cycle use.

5.3.24. The surface to the east of these farm buildings will be improved and made suitable for all WCH users as well as the farm vehicles that will continue to use it. This will be the final piece in linking the Mardyke to the new North Road WCH track.

Existing FP135

North Road WCH track

5.3.25. North Road is used by people travelling between Brentwood and areas of employment and services in Lakeside and Grays. It is also used by recreation cyclists. Between North Ockendon and South Ockendon the existing road is narrow and busy making it an unpleasant experience for cyclists. Accident data includes two incidents on this stretch of North Road. The verge is very narrow, uneven and overgrown, and is a significant impediment for people walking. These factors limit WCH use of North Road and isolate North Ockendon from South Ockendon.

5.3.26. The Project route will sever North Road between North and South Ockendon. A new green bridge has been designed on a changed alignment and this will provide continuity of route but also of landscape and will preserve animal connectivity across the Project. As part of works to form the approaches to the new bridge North Road will be realigned for 520m between Townfield Cottages and The Grove, just to the north of the western end of footpath FP135.

5.3.27. A new shared WCH track will be installed on the eastern side of this realigned length of North Road crossing the new green bridge. South of Townfield Cottages this WCH will extend beyond the road realignment; this section will be constructed away from North Road behind an existing line of trees. These trees provide screening of the landfill site at South Ockendon Hall for houses on North Road. The WCH route has been designed to join North Road at the junction with Wilsman Road in South Ockendon. From the Grove the WCH track will also continue beyond the road realignment; here this new route has been designed to use the existing verge as far north as FP151 where a new Pegasus crossing will be provided to allow connection.

5.3.28. This WCH route creates a new connection between South Ockendon, FP135 and FP151. In doing so, it helps to facilitate improved east-west connections as well as providing a safe route for cyclists using North Road. Additionally it allows people to walk or ride from South Ockendon to FP151 and from there use other PRoW improvements to access Thames Chase Forest Centre, or to loop back into South Ockendon via FP136.

5.3.29. The surface of this route, where it is adjacent to the road, behind the treeline and in a more rural setting, will be appropriate to its context and users.

Existing North Road

Existing North Road, north of South Ockendon

North Road, north of South Ockendon with WCH route

5.4. Preliminary Design: WCH routes at the M25 Junctions

5.4.1. The existing WCH provision around the M25 junction is heavily impacted by the M25 and the severance it has caused to the PRoW network. A web of PRoWs radiates out from St Mary Magdalene Church in North Ockendon. These connect to North Road to the east, but those that formerly connected St Mary Magdalene to Manor Farm, Ockendon Road and Pea Lane west of the M25 now reach the M25 and follow the M25 alignment before meeting road crossings at Ockendon Road to the north and Dennis Road to the south. Neither of these crossing points provide adequate WCH provision.

5.4.2. To the west of the M25 Ockendon Road also crosses the Upminster and Grays branch railway. The bridge over the M25 is narrow, has no footway and steep approaches making it highly unsuitable for WCH use.

5.4.3. Other severed WCH routes include footpath FP210 that formerly connected Dennis Road to what is now Belhus Country Park, and FP230 which crossed formerly the M25 alignment diagonally but was realigned to follow the western edge meeting Ockendon Road between the rail and M25 bridges.

5.4.4. Consequently, the M25 can be viewed as a significant barrier to those in the residential areas to the west of the M25, and those using Thames Chase Forest Centre accessing the countryside and PRoW network to the east.

5.4.5. Further north at the junction between the M25 and the A127 the creation of new free-flowing slip roads on the southern side of the junction sever an existing route along the southern A127 footway used by both pedestrians and cyclists. New bridges over the A127 to the east and west of the M25 allow this east-west connectivity to be retained but also offer the opportunity to resolve both historic severance caused by the A127 and a conflict between HGVs and equestrian users of an existing bridge. Furthermore, for the residents of Cranham these bridges will significantly improve access to the new country park being created on the site of Hole Farm located to the north-east of the junction.

5.4.6. The WCH strategy in this area is designed to rectify some of the historical severance caused by the M25 and A127, to increase access between Thames Chase and existing PRoWs east of the M25 and form WCH connections to existing open green spaces such as Little Belhus Park and the Mardyke. The strategy will also help to link Hole Farm to residential areas allowing people to visit by foot, cycle or horse rather than car.

5.4.7. The individual interventions that form this strategy are as follows;

- Thames Chase Community Forest
- Dennis Road WCH route
- FP252 realignment
- FP151 upgrade
- FP254 upgrade
- FP251 diversion
- FP230 realignment
- BR289 connection
- Clay Tye Road connection
- A127 footway reconnection

Historic severance of footpaths across the M25

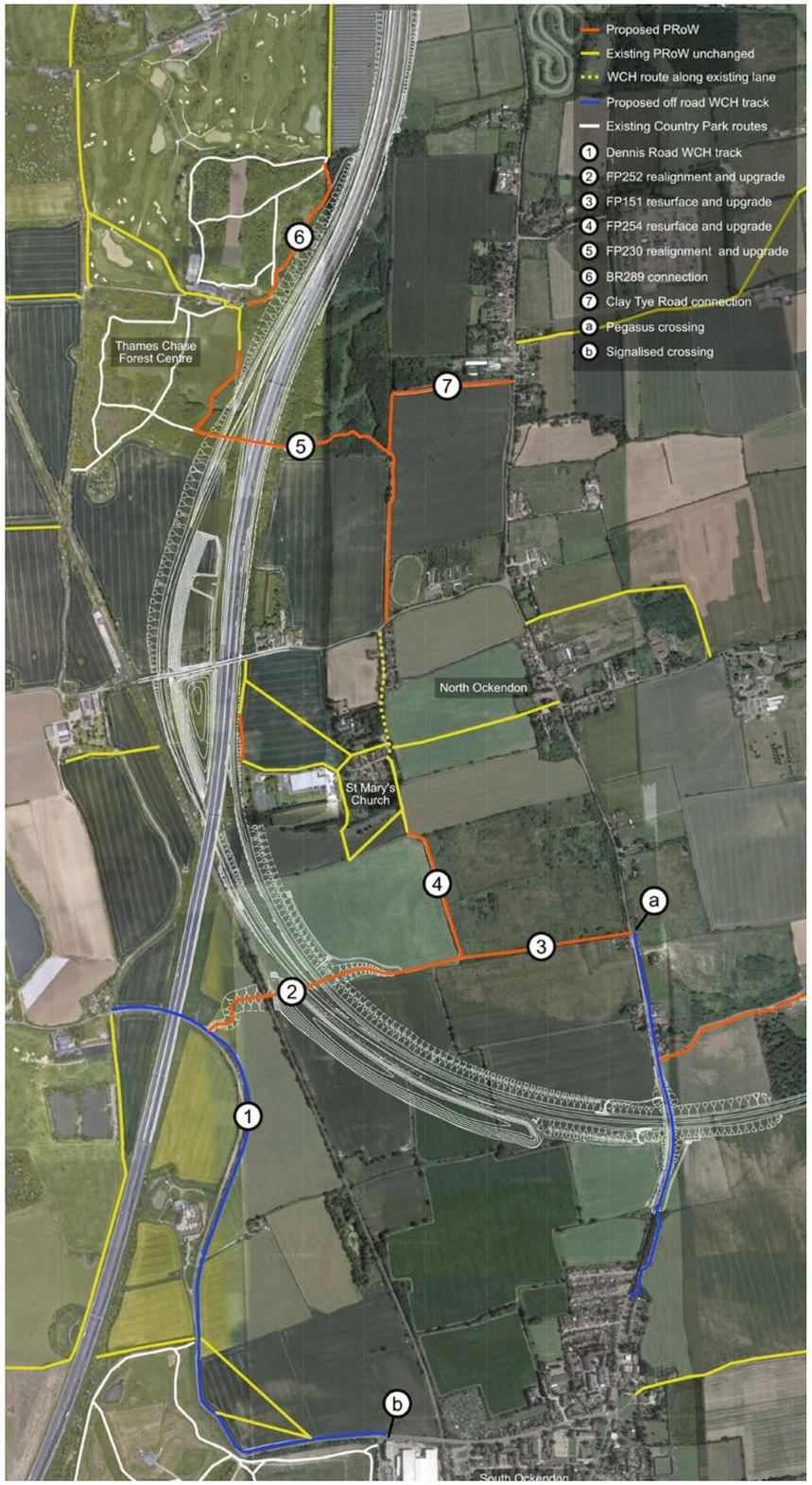


Diagram showing WCH routes where the Project joins the M25

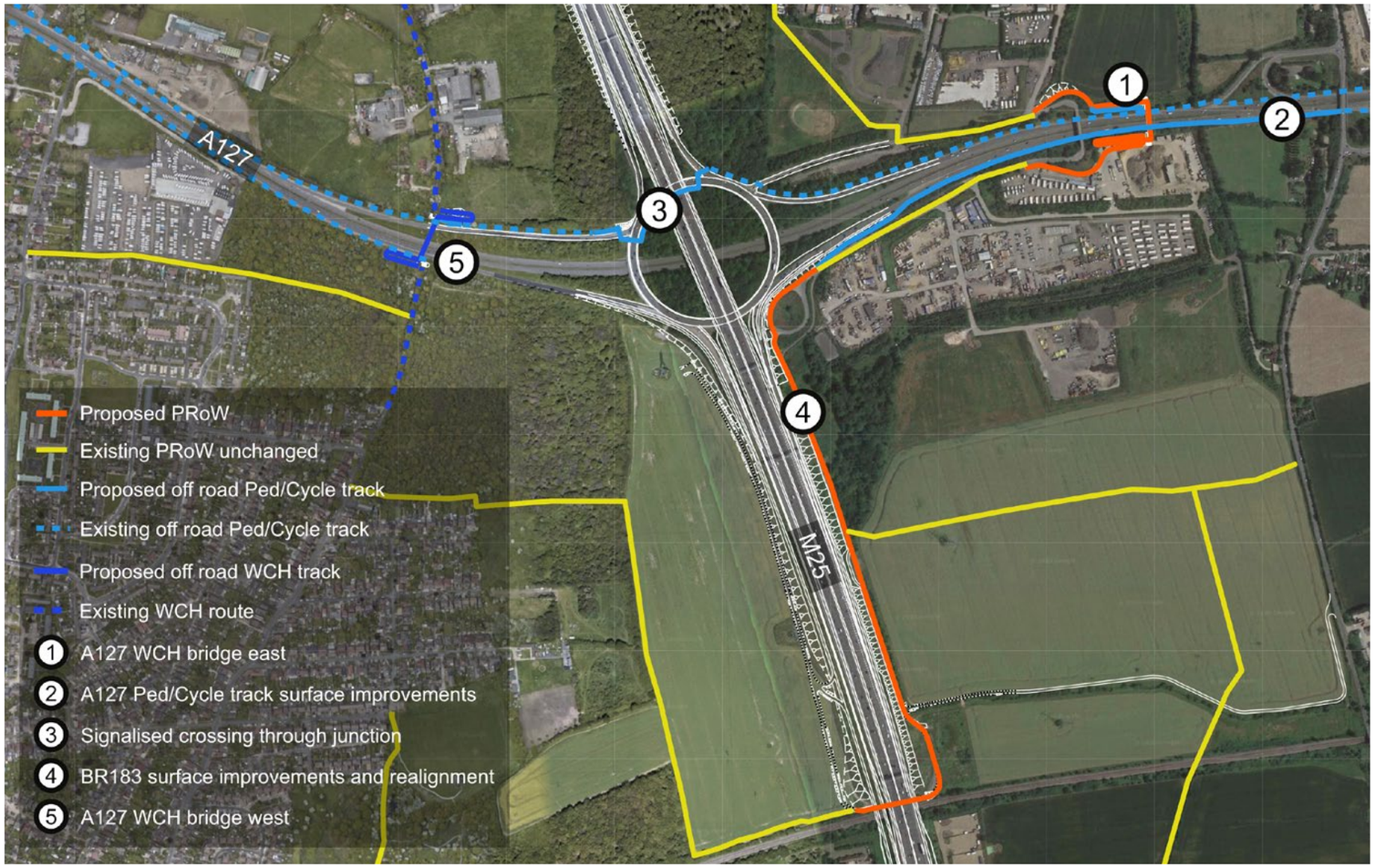


Diagram showing WCH routes around M25 junction 29

Aerial image showing WCH routes at the M25 Junction

Thames Chase Community Forest

5.4.8. Thames Chase Community Forest is an initiative to create areas of community forest, landscape restoration and improved public access across south-west Essex and east London. Thames Chase Trust are involved at many sites close to the Project but their primary site is the Thames Chase Forest Centre. Set up on the former site of Broadfields Farm and owned by Forestry England, the site is at the heart of the proposed region-wide strategy of landscape and access improvements, but is currently divided by the M25.

5.4.9. The western half contains the centre buildings, including café and educational spaces, playground, parking and has a network of trails. It also has PRoW connections to Upminster and Cranham.

5.4.10. Access to the eastern side of the Forest Centre site is via a culvert beneath the M25. This is dark, with low headroom, is prone to flooding and has steep access to the eastern side especially. This culvert is a large impediment to the 120,000 annual visitors using the eastern half of the site.

5.4.11. Thames Chase Trust expressed a desire to increase the access between the two parts of their site so that they might release the potential of the eastern half and potentially expand further east. As part of works to form the junction additional lanes are being constructed, which has the impact of lengthening the existing culvert, consequently access improvements here are not feasible. Thames Chase Trust therefore asked that a bridge over the M25 be provided. As a result of extensive dialogue with Thames Chase Trust improving the connectivity of this site forms a defining aspect of the WCH provision in the area around the junction.

5.4.12. Thames Chase is well connected to the PRoW network to the north and south with bridleway BR289 providing access from St Mary's Lane and FP230 from Ockendon Road. Of all the PRoWs surveyed across the Project route, FP230 was the most well used by a significant margin. There are bus stops on both St Mary's Lane and Ockendon Road making the Forest Centre easily accessible by public transport. In addition to the existing PRoWs, there are a series of permissive routes through the site including some that include cycle and horse riding use.

Existing FP230 through Thames Chase Community Forest

Existing FP230 through a culvert at Thames Chase Community Forest

Dennis Road WCH route

5.4.13. Dennis Road, becoming West Road to the south, connects South Ockendon with a crossing point of the M25 to the east of Stubbers Adventure Centre. It is a frequently used cycle route but has no footway. Dennis Road provides access to Little Belhus Country Park. This is a new country park being created between the M25 and Dennis Road, to the north-west of South Ockendon. West of the M25, FP259 connects Dennises Lane, as it becomes to the west of the M25, to Belhus Country Park.

5.4.14. The design proposal includes a new WCH route parallel to Dennis Road, West Road and Dennises Lane from South Ockendon to the junction with Pea Lane and FP259. This proposal involves the conversion of parts of the existing verge and where this is not practicable, the route will be positioned along the field edge on the opposite side of the hedge.

5.4.15. This has been designed to allow connectivity between the two country parks as well as WCH connection to footpath FP252 which provides access to North Ockendon, and via other improvements to Thames Chase Forest Centre. This WCH route alongside Dennis Road is something that Thames Chase Trust have requested to better link the Forest Centre Site with Little Belhus Park.

Existing Dennises Lane

FP252 realignment

5.4.16. FP252 connects Dennis Road to the site of North Ockendon Hall. Historically it connected to Pea Lane, west of the M25 alignment, rather than Dennis Road, but this appears to have been moved to be entirely east of the M25 with the construction of the motorway. From North Ockendon Hall the existing alignment runs east-west along a field edge before meeting the M25 and turning south to run parallel with it until joining Dennis Road. The route includes an at-grade crossing of the Upminster to Grays branch railway line.

5.4.17. The Project alignment will bisect FP252 to the east of the rail crossing. FP252 will be diverted away from its existing alignment to an east-west orientation south of the existing alignment before connecting with footpaths FP151 and FP254. This realignment is to allow space for the embankment and ramps up to two new bridges, one over the railway and one over the Project. Both of these bridges will allow full WCH crossing of these two pieces of infrastructure and will increase safety by removing the level crossing. This diversion of FP252 will not extend the route from Dennis Road to North Ockendon. From the eastern end of FP252, FP254 allows travel north to North Ockendon Hall and St Mary Magdalene Church. A combination of footpaths FP252 and FP151 will provide a more direct route to North Road aiding east-west connectivity.

FP151 upgrade

5.4.18. The existing alignment of footpath FP151 runs to the north of a field boundary in an east-west orientation. It connects the southern end of FP254 to North Road. It will also connect the realigned FP252 to North Road.

5.4.19. To improve the east-west connections for all WCH users this footpath will be upgraded to bridleway status and will have a suitable surface. This route does not show signs of frequent use, possibly as a result of the poor WCH connectivity along North Road. The field through which this footpath runs appears not to have been used for agriculture for some time and has trees and shrubs growing on the existing footpath alignment. Consequently, the alignment has been slightly altered from existing to prevent the unnecessary clearance of trees and other established vegetation.

Existing FP252 at the level crossing

Existing FP252 connection to Dennis Road

Existing FP252 and its proximity to the M25

FP254 upgrade

5.4.20. Footpath FP254 connects the point at which FP252 and FP151 will meet to the site of North Ockendon Hall and St Mary Magdalene Church. This footpath will be converted to bridleway in order to form a WCH connection between North Ockendon, Little Belhus Park and the North Road WCH track.

5.4.21. Church Lane connects St Mary Magdelene with Ockendon Road and the new bridleway into the southeast corner of Thames Chase Forest Centre. There is very little traffic on this lane so no changes have been proposed.

FP251 diversion

5.4.22. Historically footpath FP251 connected St Mary's Church to Manor Farm. This connection was severed by the M25 and FP251 was diverted north alongside the top of the M25 cutting towards Ockendon Road. From here, pedestrians would have to use the bridge over the M25 and the bridge over the railway line which is narrow and has no footway. This does not appear to be a well-used footpath, perhaps due to this historic severance,

5.4.23. This cutting will be widened to allow the construction of a new slip road with the footpath diverted to follow the top of the amended cutting. These changes will have no lasting negative impact on connectivity.

Existing overgrown state of FP254

FP230 realignment

5.4.24. The existing alignment of footpath FP230 connects Pike Lane to Ockendon Road. It passes the car park, café and educational buildings at Thames Chase Forest Centre. South of these buildings, it crosses open grassland before entering woodland where it then runs along the top of the M25 cutting. It terminates at Ockendon Road directly to the west of Ockendon Road bridge over the motorway. Although FP230 is designated as a footpath, the part through the southern section of Thames Chase Forest Centre site forms part of a permissive cycle and horse riding route through the site.

5.4.25. Survey data collected on many PRoWs impacted by the Project show that this was the most-used PRoW of all those surveyed. There are bus stops on Ockendon Road close to the southern end of FP230 but a combination of both the railway bridge and the lack of footways along Ockendon Road limit WCH access from the west and east.

5.4.26. The creation of the slip roads between the M25 and the Project will require the existing M25 cutting to be widened to the west. This heavily impacts the existing FP230 alignment. At Statutory Consultation FP230 was moved to the west so that it would remain along the top of the cutting.

5.4.27. During the design process that followed Statutory Consultation, informed by dialogue with Thames Chase Trust, it was decided that FP230 should be realigned across the M25 via a new bridge. The realigned route will retain the existing permissive access arrangements, consequently this new bridge will be appropriate for cycle and horse rider use. FP230, inclusive of permissive cycle and horse rider use, will continue along the southern edge of the eastern parcel of the Forest Centre to the south east corner of the site. From here an existing maintenance track that extends south to Ockendon Road will be designated as bridleway completing the connection between Thames Chase Forest Centre and Ockendon Road for WCHs. This decision was based on the following factors:

a. The request by Thames Chase to better connect the two parts of Thames Chase and supplement the existing culvert crossing of the M25.

b. It was in line with the strategy of trying to increase WCH connectivity across the M25.

c. The historical connection between FP230 with Ockendon Road was by Cranham Place on the east of the M25.

Existing FP230 through Thames Chase Community Forest

d. The junction of the maintenance track with Ockendon Road is just 30m from the northern end of Church Lane. This provides a quick link for those travelling between Thames Chase and either Little Belhus Park or the North Road WCH track to South Ockendon.

5.4.28. There are four aspects to achieving this realignment:

a. The designation as bridleway of the maintenance track linking Ockendon Road to the south-east corner of Thames Chase. The surface is in good condition so physical works will be limited to the appropriate installation of gates and signage.

b. A new surfaced route through the southern part of the east side of Thames Chase that will follow existing gaps between tree planting in order to cause as little disruption to trees as reasonably practicable.

c. The new Thames Chase WCH bridge over the M25 and slip roads towards the south of the Thames Chase Forest Centre site. This has been designed to be appropriate for all three user classes. It has been positioned to make the most of the cutting height so that any earthworks can be kept to a minimum and therefore require little, if any additional tree clearance. Alternative locations for a bridge were explored where the cutting was narrower but the geometry of the slip roads and the topography to either side of the M25 would have resulted in significant ramp and stair structures that would have been out of keeping with the setting and would have required extensive tree clearance. This bridge offers an alternative to the existing informal crossing at the north of the site where a culvert is utilised. This existing crossing is low, has poor access to it and is prone to flooding. This situation will be exacerbated by the widening of the M25 so a new bridge is advantageous to Thames Chase Trust's intention to make better use of their eastern land parcel.

d. The widening of the cutting has required approximately 0.2km of FP230 to be realigned between the Forest Centre and the new bridge.

Further details on the preliminary design for Thames Chase WCH bridge can be found in Project Design Report Part F: Structures and Architecture

Illustrative image of the preliminary design of the Thames Chase WCH bridge

BR289 connection

5.4.29. There is an existing track from the buildings at the Thames Chase Forest Centre that runs in a north-south orientation to connect with BR289 at the northern edge of the site. The alignment of the track will be impacted by new earthworks beside the M25 associated with noise mitigation. In discussion with Thames Chase Trust it was decided that this track should be realigned to the west of these earthworks in order to maintain this connection.

5.4.30. To maximise connectivity this track will be include permissive use by cyclists and horse riders. When combined with changes to FP230, this will allow WCH users to travel from St Mary's Lane to Ockendon Road.

5.4.31. To maintain access to the existing culvert a permissive footpath will connect this new permissive WCH track to the western end of the culvert.

Clay Tye Road connection

5.4.32. Directly to the east of the Thames Chase Forest Centre there is a group of houses on Clay Tye Road. These houses have PRoW access to the east via footpath FP232 but their access to Thames Chase is via the road network. A new bridleway connection along a field edge and a permissive WCH route through the eastern part of the Thames Chase Forest Centre will link the realigned FP230 to Clay Tye Road. This new bridleway will join Clay Tye Road approximately 100m from the western end of footpath FP232. There is an existing footway linking these two points. This will allow residents to easily access Thames Chase but also allow those starting a walk at Thames Chase to access FP232 and FP233.

5.4.33. Along with other access improvements to North Road, this will create a circular route through North Ockendon back to Thames Chase and the existing PRoW network.

Existing bridleway connection BR289

A127 footway reconnection

5.4.34. At present there is a footway along both the north and south sides of the A127. These footways cross the slip roads at the junction with the M25 allowing east-west pedestrian access through both north and south sides of the junction.

5.4.35. The creation of free-flowing slips between the A127 and the M25 on the south side of the junction will interrupt the southern footway. For reasons of safety it is not possible to re-establish this footway link across these slips.

5.4.36. A number of options were considered to allow people using the southern footway to cross the junction.

5.4.37. The proposal creates two new bridges, one to the east of the M25 junction 29 and one to the west. Both bridges include ramps and steps to allow a crossing between the southern footway and the north of the A127. For example, WCHs looking to go east-west across the M25 junction can cross from the southern footway to the north, via one of these bridges. Then continue through the junction via a new route (with signalised crossings), before crossing back over to the southern footway using the bridge on the opposite side of the junction, as shown in Plate 5.4.1.

5.4.38. There is additional benefit to both of these bridges. The bridge located east of the M25 is adjacent to an existing access bridge over the A127. This existing bridge is not accessed from the A127 but instead from Codham Hall Road north of the A127. It provides HGV access to storage yards and compounds located south of the A127, however it is narrow and has no footways. Bridleway BR183 crosses the A127 using this bridge and the British Horse Society have reported regular conflict here. As a result of this, stakeholders requested that the new bridge should connect to BR183 and following consultation, these links have been added to the proposals to allow horse riders to cross the A127 without conflict.

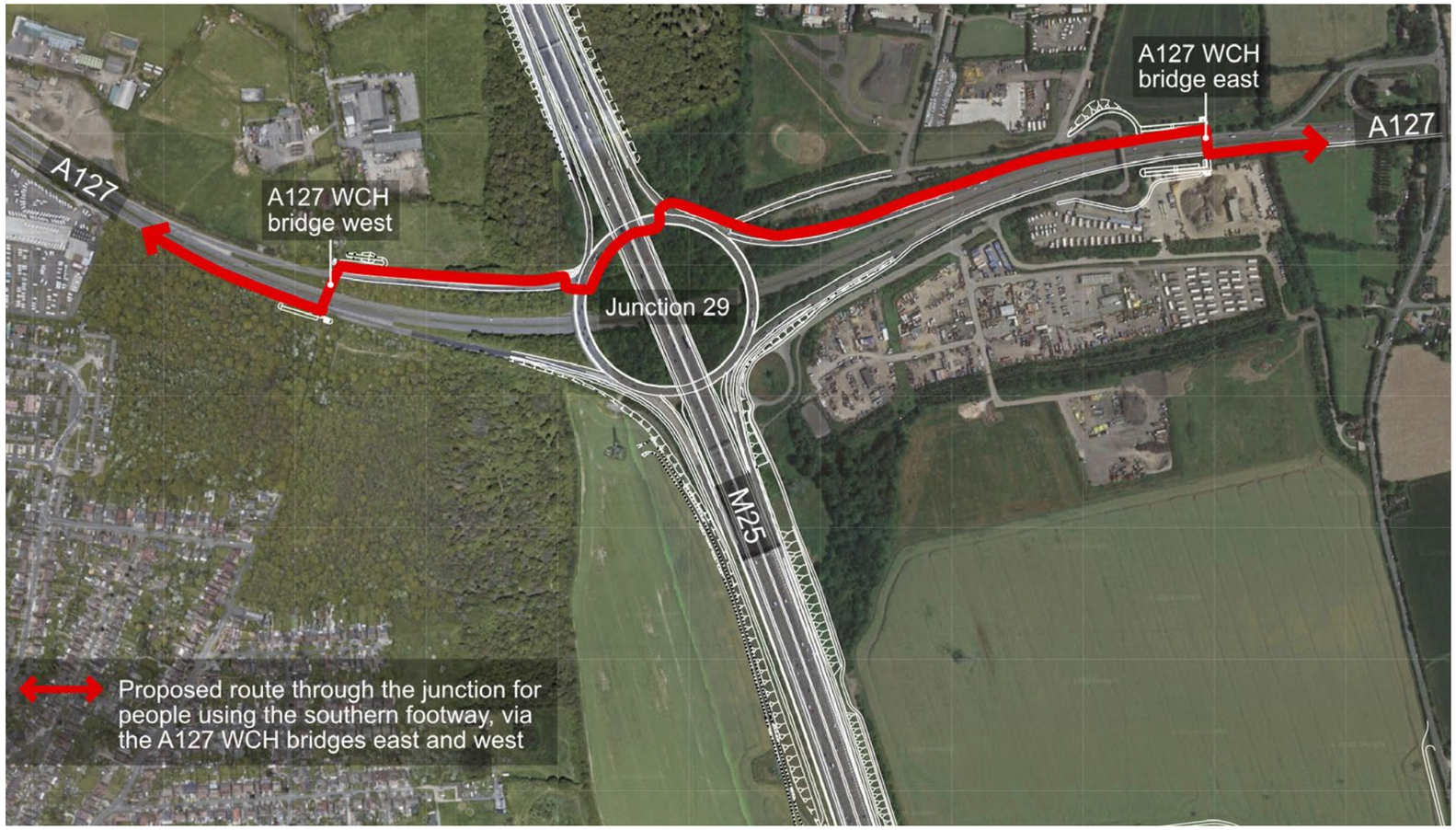


Plate 5.4.1 - Proposed route for people crossing east-west through the M25 Junction 29

Existing footpath along the south of the A127

Illustrative view of the existing footpath along the south of the A127 with the proposed A127 WCH bridge west

5.4.39. In addition to connecting footways the new bridge to the west of the M25 also performs the function of reducing historic severance and connecting Cranham to the new Forestry England site at Hole Farm. Cranham and Great Warley were previously connected by a series of routes accessible to pedestrians, cyclists and horse riders, but due to the creation of the A127 and laterly the M25, these links have been removed. Historically Moor Lane extended north to the now demolished Beredens before joining with Front Lane and continuing to Great Warley. With the A127 and M25, the northern parts of Front Lane and Moor Lane became isolated and were combined to become Folkes Lane. Folkes Lane is isolated from Cranham by the A127 and to a lesser extent from Great Warley by the M25; there is a footbridge connecting Folkes Lane to Beredens Lane over the M25. The new bridge over the A127 on the alignment of Moor Lane and Folkes Lane will re-establish the southern part of this historic link. Alongside the Project, National Highways are undertaking feasibility studies to consider works to the existing M25 footbridge to upgrade this to equestrian standard meaning that the northern part of this link will be re-established. Hole Farm will be a new publicly accessible forest to the north-east of M25 junction 29 and directly east of the existing bridge over the M25. The new bridge and upgraded bridge over the M25 will form a link for WCHs from Cranham to Hole Farm.

5.4.40. The combined benefit of these improvements has created a route between Thames Chase Forest Centre and Stifford Clays Road that is open to WCHs.

Further details on the preliminary design for the A127 WCH bridges east and west can be found in Project Design Report Part F: Structures and Architecture

Illustrative image of the preliminary design for the A127 WCH bridge west

6. Preliminary Design Response to the 10 Principles of Good Design

6.1.1. Rather than simply rectifying severance caused by the Project to the existing PRoW network, this WCH strategy was developed through extensive consultation. It aims to enhance the PRoW network through upgrades to existing PRoWs, forming new links within the PRoW network and addressing historic severance. It also increases access for local residents to both recreational green spaces and areas of employment and services.

6.1.2. This strategy will fill gaps in the existing PRoW network to allow long or short walks and rides across the Project area that are not currently available to residents.

6.1.3. Some examples of how the WCH strategy responds to the 10 Principles of Good Design are described below:

Makes roads safe and useful

6.1.4. The WCH strategy forms many off road routes, removing cyclists, pedestrians and horse riders from busy, narrow roads by providing them with a wide, appropriately surfaced alternative. Where appropriate, signalised crossings will be provided to help safely link WCH routes across the local road network.

6.1.5. This strategy will also help people get to work, local shops, school or go for a weekend walk or ride by active travel. It will help to link together new and existing country parks and green spaces in accordance with local authority and stakeholder group objectives.

6.1.6. By providing these safe routes, active travel and the associated health benefits are encouraged.

Is inclusive

6.1.7. By providing a safe off-road alternative people who are less confident walking or riding along a road will be provided with a more suitable and better connected route.

Makes roads understandable

6.1.8. The proposed improvements and formalisation of many WCH routes will make them more recognisable and encourage their use.

Fits in context

6.1.9. The WCH strategy faces a range of contextual challenges: in places new routes will be formed alongside A roads while in others routes will be alongside field edges or through woodland. In all type of location both the landscape context and the types of user will be paramount in defining the types of surfaces to be used at detailed design stage. This is secured in the Project Design Principles (see Application Document 7.5).

Is restrained

6.1.10. The Preliminary Design recognises the existing and potential use, in addition to the existing landscape character, of WCH routes and promotes a sympathetic approach rather than the application of a standard approach that may not be appropriate (i.e. a 3m asphalt path everywhere).

Is environmentally friendly

6.1.11. By safely and conveniently connecting people to green spaces and areas of employment, education and services the WCH strategy encourages people to use active transport. It was developed to provide an active alternative to taking their car to work or driving to their local country park.

Is thorough

6.1.12. This strategy has been developed through extensive dialogue with local users groups, local authorities and land owners and in conjunction with an overarching landscape strategy to form a cohesive network of routes that responds to the aspirations of walkers, cyclists and horse riders while addressing the concerns of others.

6.1.13. Where practicable, these new WCH routes are combined with maintenance and access tracks in order to reduce the number of interventions in the landscape.

Is collaborative

6.1.14. Throughout the design process there have been public information events and webinars to explain the WCH strategy to local residents. Feedback from this engagement has helped to refine, and in places extend, the strategy so that it better meets the aspirations of those who will use it.

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