

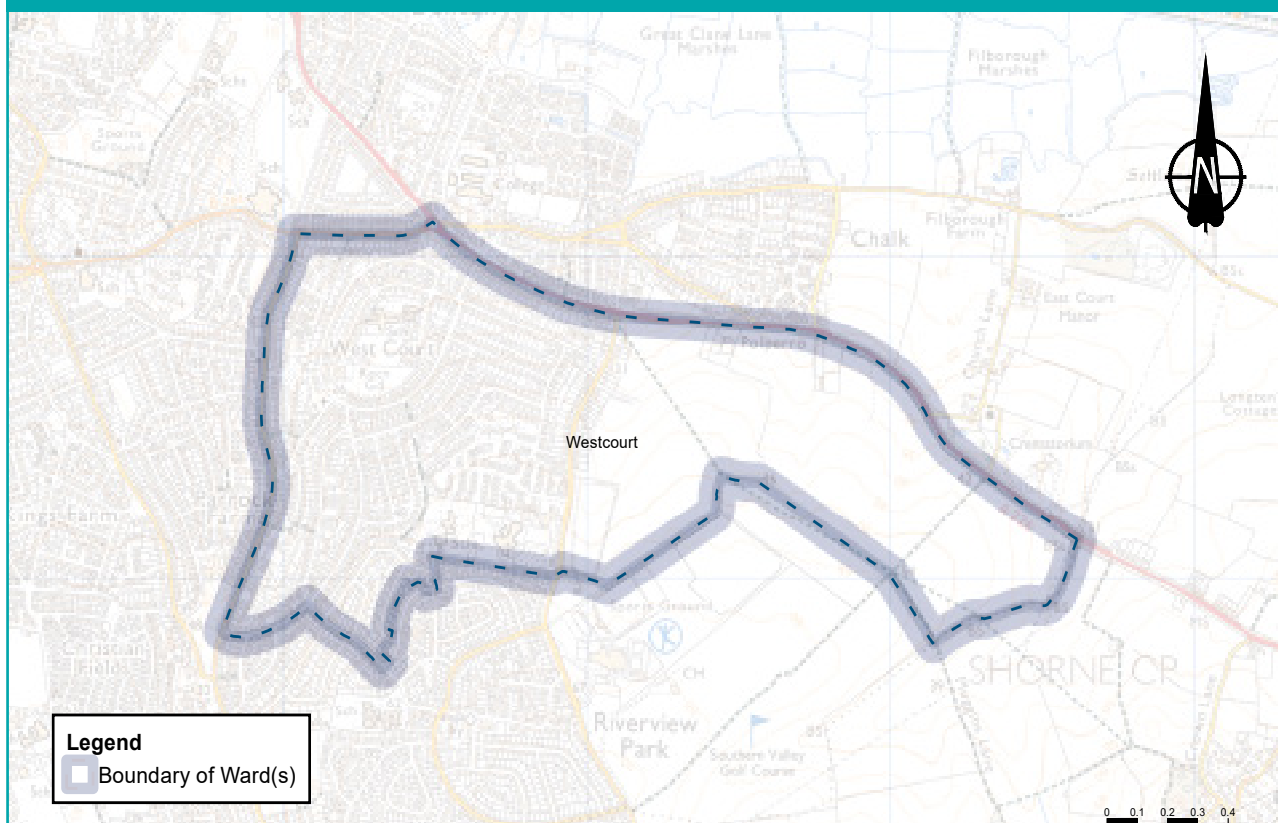
# 6

## Chapter 6: Westcourt ward

This chapter summarises the activities in Westcourt ward relating to the project's construction and its operational phase (when the new road is open). It also explains the measures intended to reduce the project's impacts on local communities. For more information about the assessments in this chapter and other information available during this consultation, see chapter 1, which also includes a map showing all the wards described in this document.

Within this document, we sometimes advise where additional information can be found in other consultation documents, including the Construction update, Operations update, You said, we did, Register of Environmental Actions and Commitments (REAC), Code of Construction Practice (CoCP), Outline Traffic Management Plan for Construction (OTMPfC) and the Design principles. To find out more about these documents, see chapter 1. References to these documents provide an indication as to how our proposals to reduce the project's impacts will be secured within our application for development consent.

Figure 6.1: Ward boundary map for Westcourt ward



## 6.1 Overview

### 6.1.1. About this ward

Westcourt ward is located to the south of the River Thames in the borough of Gravesham. It lies north of Riverview ward, south of Chalk ward, and to the west of Shorne, Cobham and Luddesdown ward. Westcourt ward has an area of around 2km<sup>2</sup> and an estimated population of 7,039<sup>1</sup>. The ward consists of a residential area to the east of Valley Drive, and there is also an area of agricultural land to the east of Thong Lane. There are footpaths that pass through the agricultural land to the east of the ward.

<sup>1</sup> Office for National Statistics, 2018 ward-level population estimate.

## 6.1.2 Summary of impacts

**Table 6.1: Summary of impacts during the project's construction and operation**

Topic	Construction	Operations
<p><b>Traffic</b></p>	<p><b>Impacts</b></p> <p>Construction traffic accessing the compounds would use the A226 (Higham Road), leading to slower journey times along the A226. Temporary lane closures would also lead to slower journey times along the A226 for short periods.</p> <p><b>Mitigation</b></p> <p>The impact of the construction process would be mitigated in several ways, including: by reducing the volume of HGV journeys needed for construction; avoiding the long-term closure of the A2/M2; and avoiding the use of local roads for construction vehicles with the exception of the A226 Gravesend Road. For details of all the mitigation measures for Westcourt ward, see the Traffic section of this report.</p>	<p><b>Impacts</b></p> <p>There would be only very slight changes predicted in traffic levels on roads within the Westcourt ward following the opening of the project. To see maps showing the changes in traffic flows within the ward, see the Traffic section of this chapter.</p> <p><b>Mitigation</b></p> <p>During the design refinement process, a proposed new junction between the A226 and the project was removed due to the negative impact that it would have had on the local area, including Westcourt. Further information on the mitigation to reduce the impacts of the project once it is operational is in the Traffic section of the chapter.</p>
<p><b>Public transport</b></p>	<p><b>Buses</b></p> <p>Due to the impacts on journey times along the A226, bus services along the A226 Higham Road may experience delays during the construction period.</p> <p><b>Rail</b></p> <p>Access to Gravesend station from Westcourt ward would not be affected during construction, nor would rail services from that station.</p>	<p><b>Bus</b></p> <p>No route changes are required once the project is operational and no discernible changes to journey times are predicted.</p> <p><b>Rail</b></p> <p>There would be no impacts on services at Gravesend station and there are no predicted changes to access times to the station.</p>

Topic	Construction	Operations
<p><b>Footpaths, bridleways and cycle routes</b></p>	<p><b>Impacts</b></p> <p>Two footpaths would be affected by construction of the new road and the southern tunnel entrance during construction and would need to be closed for five-and-a-half years.</p> <p><b>Mitigation</b></p> <p>Closure of the footpaths would be kept as short as possible to reduce the impact on the local public right of way network. There is no mitigation proposed for the construction phase. New routes would be implemented once the Southern Tunnel Entrance Compound is no longer required.</p>	<p><b>Impact</b></p> <p>Existing alignment of two footpaths would be divided by the new connecting road.</p> <p><b>Mitigation</b></p> <p>New alignments would connect to the existing public right of way network in the area, including through the new Chalk Park recreational area.</p>
<p><b>Visual</b></p>	<p><b>Impacts</b></p> <p>Views towards construction activities and the Southern Tunnel Entrance Compound would be limited to the eastern part of the Westcourt ward, from homes and the sports field on Thong Lane, and footpaths in the east.</p> <p><b>Mitigation</b></p> <p>A temporary earth bank on the boundary of the Southern Tunnel Entrance Compound would screen views on Thong Lane and Rochester Road. Taller compound facilities would be located as far away as possible from homes within the compound.</p>	<p><b>Impacts</b></p> <p>Once the project is complete and in operation, the main changes in views would include the edge of the southern tunnel entrance set within the new Chalk Park and of a new sub-station near Rochester Road.</p> <p><b>Mitigation</b></p> <p>Views of the new road and traffic would be hidden by planting and within the tunnel or tunnel approach cutting.</p> <p>There would be new planting and the creation of Chalk Park, which would soften views and integrate the new road into the surrounding landscape.</p>

Topic	Construction	Operations
<p><b>Noise and vibration</b></p>	<p><b>Impacts</b></p> <p>The construction activity associated with the southern tunnel, main alignment and utilities work is expected to create noise and vibration in this ward. There would also be 24-hour, 7-day construction working. There would be negligible changes in noise from road traffic for a majority of roads within this ward during the construction period, except along St Aidan's Way, Hampton Crescent and Brown Road where minor increases in noise levels have been predicted.</p> <p><b>Mitigation</b></p> <p>Construction noise levels would be controlled through the mitigation measures set out in the REAC. There are also measures presented in the CoCP.</p>	<p><b>Impacts</b></p> <p>Residents of Westcourt are likely to experience increased levels of noise as a result of the new road near to the southern tunnel entrance in the east of the ward. Noise levels would also increase from existing roads due to the changes in traffic flow, speed and vehicle type.</p> <p><b>Mitigation</b></p> <p>Low-noise road surfaces would be installed on all new and affected roads. Acoustic screening (noise barriers) has been incorporated into the design where necessary.</p> <p>The design of the new road and tunnel entrance/exit has been kept low in the environment (this controls the noise).</p>

Topic	Construction	Operations
<p><b>Air quality</b></p>	<p><b>Impacts</b></p> <p>There is likely to be dust and emissions from construction equipment and traffic during the construction phase. Our analysis of the construction traffic predicts that there would be a minor temporary worsening in air quality on a section of the B261 Old Road East between 2026 and 2027, and a minor temporary improvement in air quality on Valley Drive during 2024 as a result of traffic flow changes.</p> <p><b>Mitigation</b></p> <p>The contractor would follow good practice construction measures to minimise the dust, which are presented in the CoCP and REAC. Construction vehicles would need to comply with emission standards. An Air Quality Management Plan would be designed in consultation with the relevant local authorities. The plan would include details of monitoring, which would ensure measures are effectively controlling dust and exhaust emissions.</p>	<p><b>Impacts</b></p> <p>There are no predicted exceedances of NO<sub>2</sub> or PM<sub>10</sub>.</p> <p><b>Mitigation</b></p> <p>No essential mitigation is required.</p>

Topic	Construction	Operations
<p><b>Health</b></p>	<p><b>Impacts</b></p> <p>The construction phase of the project would present opportunities to access work and training.</p> <p>There are likely to be changes in the area that may result in negative impacts on health, including mental health and wellbeing. These include changes in accessibility of local resources and amenities as a result of road and footpath closures.</p> <p><b>Mitigation</b></p> <p>The negative impacts would be mitigated through the good practice construction measures presented in the CoCP and REAC relating to dust emissions, working hours and visual screening, traffic management measures and community engagement. This includes establishing Community Liaison Groups.</p>	<p><b>Impacts</b></p> <p>The project would improve access to work and training, and access to open space and accessibility of local resources and amenities. Chalk Park would provide a new recreational resource and encourage physical activity.</p> <p>There may be impacts on mental health and wellbeing as a result of the project, such as anxiety around perceived changes to air quality or as a result of changes to the noise environment.</p> <p><b>Mitigation</b></p> <p>No essential mitigation is required for health other than those measures described in the noise mitigation section.</p>

Topic	Construction	Operations
<p><b>Biodiversity</b></p>	<p><b>Impacts</b></p> <p>The construction of the project would involve the removal of areas of habitat, both temporarily and permanently for the new road. It would cause some habitats to become fragmented.</p> <p><b>Mitigation</b></p> <p>Vegetation clearance would be carried out in winter to avoid impacting breeding birds. Protected species would be relocated, carried out under a Natural England licence.</p>	<p><b>Impacts</b></p> <p>There would be some minor noise disturbance on ecological features from the operation of the project within this ward.</p> <p><b>Mitigation</b></p> <p>The land used for the Southern Tunnel Entrance Compound would be returned to agricultural use. Chalk Park would be created which would include areas of woodland and species rich grassland, a more diverse habitat than returning to farmland. The new road would be in a cutting north of the A2/M2, which would reduce the noise impacts.</p>
<p><b>Built heritage</b></p>	<p><b>Impacts</b></p> <p>There would be visible construction activity with noise and lighting in the vicinity of built heritage assets.</p> <p><b>Mitigation</b></p> <p>The design and layout of the Southern Tunnel Entrance Compound would take into account the setting of heritage assets (the surroundings in which a heritage asset is 'experienced'), and avoid light glare, light spill and light pollution during night-time construction (Design Principle S326).</p>	<p><b>Impacts</b></p> <p>The built project would change the setting of an undesignated heritage asset known as 'Polperro', which has a low heritage value. The new road is unlikely to change the setting of any heritage assets in this ward.</p> <p><b>Mitigation</b></p> <p>The Southern Tunnel Entrance Compound would be reinstated after construction to reflect existing field patterns and the surrounding landscape character as outlined under Design principle S3.05.</p>



Topic	Construction	Operations
<p><b>Contamination</b></p>	<p><b>Impacts</b></p> <p>There is a risk of accidental spills of oils, cement and fuels from the movement of construction traffic and the storage of materials. There is also the possibility for existing contamination from mobilised ground.</p> <p><b>Mitigation</b></p> <p>To reduce risk, the contractor would follow good practice construction measures. Where contamination is identified during ground investigation work, site-specific remediation would be carried out following consultation with the local authority.</p>	<p><b>Impacts</b></p> <p>None identified.</p> <p><b>Mitigation</b></p> <p>If during operation any incident were to occur which resulted in localised contamination, soils which had become significantly affected would be assessed and, if necessary, removed to reduce the risk of contamination migrating across a wider area or entering controlled waters.</p>

## 6.2 Project description

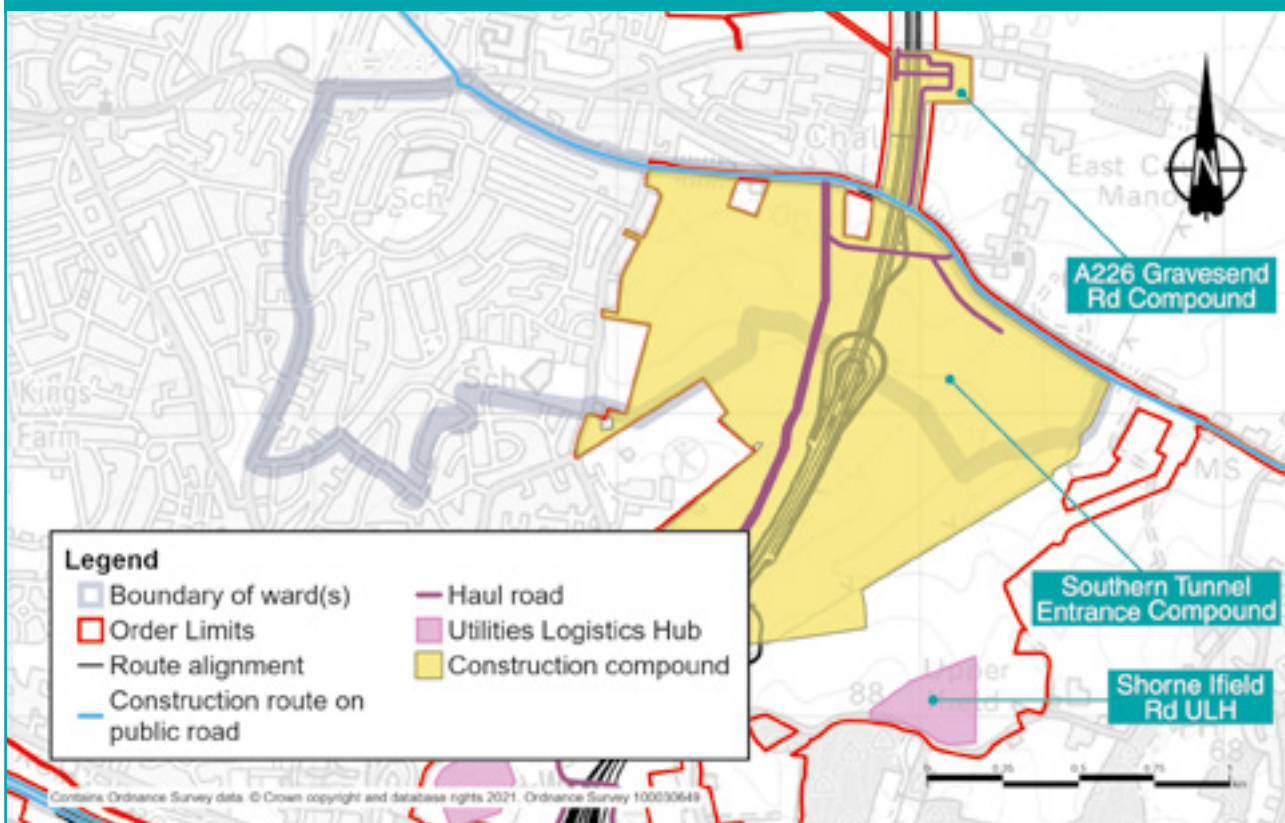
### 6.2.1 Construction

#### Construction activities

Works within Westcourt ward would largely relate to the construction of the southern tunnel entrance, as well as receiving the tunnel boring machines at the completion of the tunnel bores.

More information about how the area would look during construction, including visualisations, can be found in the Construction update. You can also view a video fly-through of the project during construction by visiting our consultation website.

Figure 6.2: Main construction areas in Westcourt ward



## **Construction compounds**

Construction compounds are fenced-off areas, accessible to construction traffic, which provide the facilities for our project to be built efficiently. For example, compounds would provide parking, storage for machinery and materials, offices, welfare facilities, refuelling, and vehicle and wheel-washing facilities to make sure vehicles leaving the compound do not dirty local roads.

Much of the non-residential eastern part of Westcourt ward is within the Order Limits (the area of land required to construct and operate the project, also known as the development boundary) and this area of land would be inaccessible for most of the construction period. The land would be used to accommodate the Southern Tunnel Entrance Compound and a haul road. The entrance/exit to the Southern Tunnel Entrance Compound would be on the A226 on the northern boundary of the Westcourt ward, between Castle Lane and Church Lane. The haul road is a temporary road within the construction site, used for moving machinery and materials. The haul road would allow construction vehicles to travel off the public road network where possible.

The Southern Tunnel Entrance Compound would include offices, parking and areas to store equipment and materials. Building the compound would involve ground works, laying tarmac and the installation of perimeter fencing. The compound would be used to provide worker welfare and site support at the southern tunnel entrance location. This compound would be in place for the duration of the construction to help construct the two main tunnels and their approach. The tunnel entrance and its approach would involve massive earthworks, as well as the construction of major structures. Both this compound and the haul road would be decommissioned once construction is complete.

The vehicles going to the Southern Tunnel Entrance Compound and most of the vehicles going to the A226 Gravesend Road Compound and the Milton Compound would also use the A226 along the northern boundary of the Westcourt ward. Construction compounds outside the ward boundaries are shown in chapter 3 of the Construction update, and in the adjacent Ward impact summaries. The number of vehicles going to these three compounds is shown in table 6.2. These are the number of vehicles going to each compound and there would be the same number of vehicles, on an average weekday, leaving each compound.

**Table 6.2: Average daily vehicle numbers going to compounds in or near Westcourt ward**

Time period	Southern Tunnel Entrance Compound		A226 Gravesend Road Compound		Milton Compound	
	HGVs	Cars	HGVs	Cars	HGVs	Cars
January to August 2024	30	77	13	21	10	10
September 2024 to February 2025	36	201	13	40	4	9
March to May 2025	39	201	11	40	2	6
June to October 2025	39	281	9	30	2	6
November 2025 to March 2026	39	335	4	14	1	6
April to August 2026	39	317	6	14	5	6
September 2026 to March 2027	39	358	5	20	5	6
April to November 2027	39	378	0	0	0	0
December 2027 to March 2028	39	310	0	0	0	0
April to July 2028	30	209	0	0	0	0
August 2028 to December 2029	8	25	0	0	0	0

Access to the A226 Gravesend Road Compound and the Milton Compound for HGVs would also be via the A226. Many of the staff cars to all three compounds would use the A226.

## Utilities

There would be no Utility Logistics Hubs within Westcourt ward. Three sets of utility works would take place within the ward's north-east section and these are listed below. For more information about proposed utility works, see chapter 3 of the Construction update. Chapter 2 of the Operations update also describes the project's impacts on utilities, including a map showing the utilities that would be repositioned to accommodate the new road.

- Diversion of a high-pressure gas main, around 2.7km in length, with the new alignment running from south of Riverview Park to the A226 Gravesend Road.
- Realignment of 400kV overhead power lines, around 1.8km in length, from south of the A2/M2 to the A226, requiring the removal and replacement of four pylons.
- Construction of a new primary substation and switchgear equipment south of the A226, and associated electricity cable networks. Temporary supplies to the compound would be required, plus permanent diversions and installations around the A226 and the south tunnel entrance.

## Construction routes on public roads

The haul road within this ward would be reached via the A226 Gravesend Road, which runs along the northern boundary of Westcourt ward, and via the A2/M2 to the south. This construction route would be in use throughout the construction period from 2024 to 2029. Two compounds in neighbouring Chalk ward would also take deliveries from the A226, with vehicles arriving from the east before travelling along Lower Higham Road or using a proposed haul road through private land north of the A226.

## **Construction schedule**

Construction of the whole project is scheduled to last for six years from 2024 to 2029. To deliver the construction programme efficiently, activities would be divided into packages of work and delivered in a coordinated way. Maps and programmes for the work to build the tunnel can be found in chapter 4 of the Construction update. Expected to start in early 2024, the main tunnelling works would continue until 2029. Construction of the tunnels would use two tunnel boring machines (TBMs), and would involve additional tunnel fit-out, earthworks and landscaping. The main road construction works would be carried out between early 2024 and early 2028. The works would also involve construction of the southern tunnel entrance and the deep cutting for the approach road. The busiest period of construction in Westcourt ward is expected to be from mid-to-late 2027 to mid-to-late 2028 for works on the approaches and structures, tunnelling works, tunnel fit-out and earthworks and landscaping.

## **Construction working hours**

Tunnelling activities would be carried out 24/7 to improve safety and speed up the project's completion overall. Within the ward, above-ground tunnelling activities taking place 24/7 would include the breakthrough of the TBM into the southern tunnel entrance and the removal of the TBM. Most of the remaining works at the Southern Tunnel Entrance Compound would be during core hours from 7am to 7pm weekdays and 7am to 4pm on Saturdays, with additional repair and maintenance periods (if needed) from 8am to 5pm on Sundays. There are some circumstances, such as concrete-pouring work, where core construction hours may be extended. More information about working hours is set out in the Noise and vibration section below and in the CoCP.

## Traffic management

The main traffic management measures within Westcourt ward are listed below.

**Table 6.3: Main traffic management measures in Westcourt ward**

Road(s) affected	Proposed traffic management	Purpose	Duration
<b>A226 Gravesend Road</b>	Lane closure and traffic lights	To facilitate the construction of access to the Southern Tunnel Entrance and the A226 Gravesend Road Compounds	9 months between September 2024 and May 2025
<b>A226 Gravesend Road</b>	Lane closure and traffic lights	To facilitate construction access and modifications to local utilities	4 weeks between January 2024 and August 2024

Lane closures would be required on the A226 to construct the access to the Southern Tunnel Entrance Compound and the A226 Gravesend Road Compounds, and for carrying out modifications to the local utility networks. This is expected to take around nine months early in the construction period. The affected stretch of road is 1.3km but the contraflow would operate over much shorter sections at a time. During the lane closures, a short section of road would be closed on one side, while the other side remains open. Access to the open side of the road from each direction would be controlled by temporary traffic signals.

While the compounds are in use, the access points to the compounds may require traffic signals to allow public traffic to be managed while construction traffic enters and leaves the compounds. It is proposed that the access into the Southern Tunnel Entrance Compound for HGVs would be off the A226 from the east via a left turn and only a right turn be allowed out of the site onto the A226 eastbound.

A ban on HGVs delivering materials and moving excavated material for the project would be in place on Thong Lane from the A226 to Vigilant Way. This would not affect other HGVs using these roads.

There would be traffic management measures outside Westcourt ward that would impact on traffic on the road network within the ward. We have sought to minimise traffic management measures wherever practical, but these would be necessary in some locations to allow construction traffic and local communities to move around safely while providing construction workers with sufficient space to operate. An overview of the traffic management required across the project can be found in the Outline Traffic Management Plan for Construction. All traffic management measures are based on an indicative construction programme, which would be finalised by the appointed contractor. The contractor's final traffic management plans would be subject to final approval by the Secretary of State for Transport, following consultation with the local highways authority.

## **6.2.2 Operations**

### **The completed project**

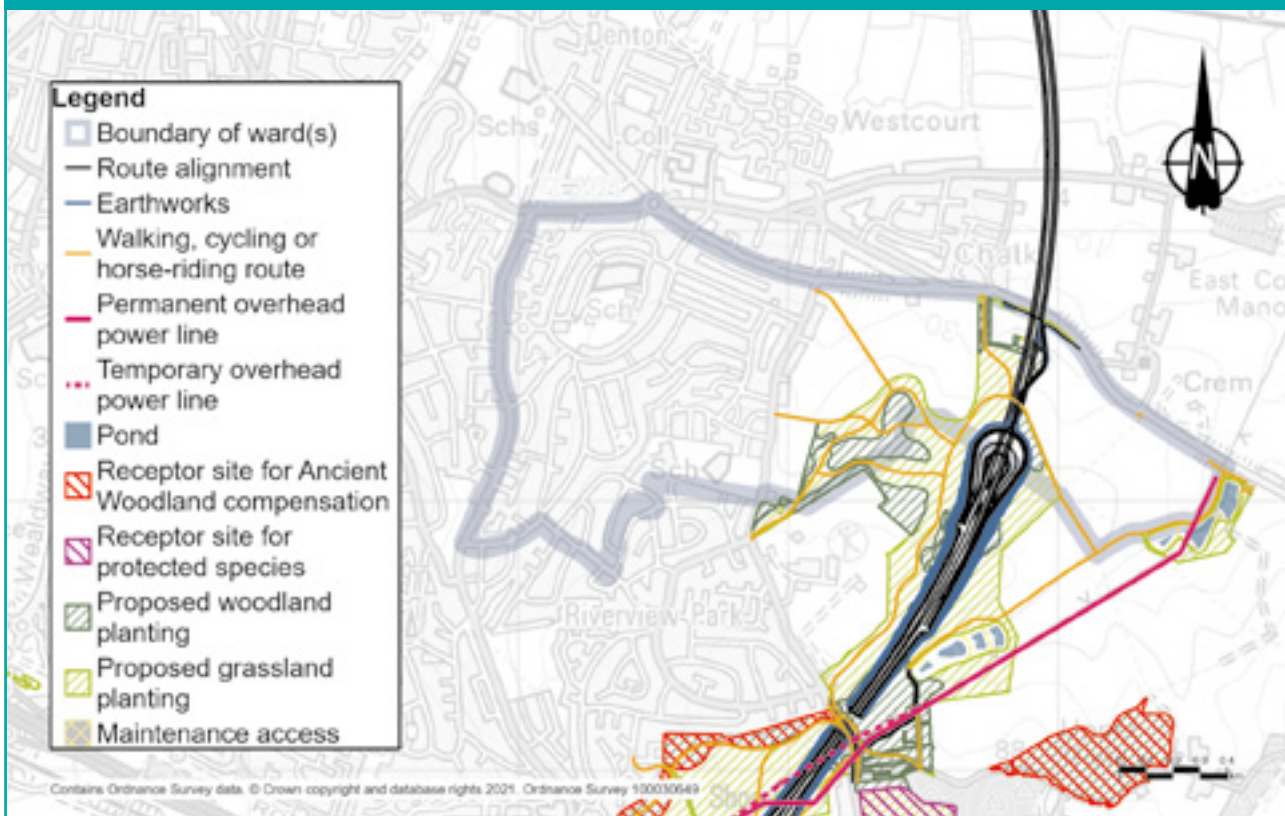
For more information about the completed project, see the Operations update, as well as the figures in Map Book 1: General Arrangements. These are the elements of the completed project within this ward:

- The southern entrance of the tunnel would be to the north-east of the current site of the Southern Valley Golf Club on land permanently acquired for the project and be served by a road in a deep cutting linking to the A2/M2. All the road north of the tunnel entrance would be underground. The southern entrance of the tunnel has been moved further south in response to stakeholder and community feedback. The tunnel was extended 600 metres southwards before our statutory consultation and by a further 350 metres after supplementary consultation. These changes lengthen the tunnel by 950 metres. This would reduce the visual and noise impact in Westcourt ward, with only part of the tunnel entrance now within the ward boundaries.



- New alignments would connect to the existing public right of way network in the area, including through the new Chalk Park recreational area.
- An access road would link the two carriageways by forming a loop over the tunnel to the north of the southern tunnel entrance. There would also be an operations building near the entrance, screened by new planting. An access road would connect to the A226 to the north. These roads would provide access for emergency services and maintenance vehicles only, allowing for quicker response times and reducing the impact of congestion should there be an incident in or near the tunnel entrance.

**Figure 6.3: Main features of the completed project in Westcourt ward**



## **Changes to the project since our design refinement consultation**

As part of our ongoing design development, including discussions with utility companies, we have made several changes to the project and its Order Limits since our design refinement consultation in July 2020. However, there are no such changes in Westcourt ward. More information about any proposed changes can be found in chapter 3 of the Operations update.

## **Impacts on open space land**

The nearby Thamesview School playing fields would not be directly affected and would remain in use by the school. While private agricultural land above the proposed tunnel would be permanently acquired for the project, a new recreational area, Chalk Park, would fall partially within Westcourt ward and be accessible to local residents when the project is completed. Covering 37 hectares, Chalk Park would feature woodland planting with views to the Areas of Outstanding Natural Beauty and the River Thames. Additional open space north of Claylane Wood and east of the southern tunnel entrance would also be accessible to local people. There would be a total of around 37.5 ha of open space land south of the river provided as part of the project. A map showing Chalk Park and other open space can be found in chapter 3 of the Operations update

Within Westcourt ward, there are no changes to our proposals to remove or replace open space land. More information about our proposals for compensating for impacts on open space land (which includes special category and recreational land), including proposals we have consulted on previously, can be found in chapter 3 of our Operations update.

## 6.3 Traffic

We carried out traffic assessments to understand how roads in the vicinity of the project would be affected during the project construction and once it is operational. Information about how we carried out these assessments can be found in chapter 1.

### 6.3.1 Construction

Journey times along the A226 would increase during the construction period, partly because of the increased number of HVGs using the road but also due to the lane closures, when these are in place, and the traffic signals at the compound access points.

There would also be some additional car traffic on A226 Rochester Road and at the Lion roundabout junction with Old Road East and Lower Higham Road.

Some night or weekend closures on the southern section of Thong Lane between the A2 and Vigilant Way may cause traffic to re-route to use the northern section of Thong Lane. Similarly, the contraflow traffic management on the southern section of Thong Lane between the A2 and Vigilant Way may cause traffic to re-route to use the northern section of Thong Lane.

#### **Measures to reduce construction traffic impacts**

Our approach to construction has been refined after further investigations and feedback received from the public and stakeholders. A summary of the proposed measures to reduce the volume of construction materials transported in and out by road can be found in chapter 2 of the Construction update. In addition to reducing the volume of HGV journeys needed for the project's construction, we would avoid the long-term closure of the A2/M2 during the construction period to reduce the impacts on local communities and the wider road network. Instead, we would only close the road overnight or at weekends when it is less busy in order to carry out required works on the A2/M2.

Our proposed measures to reduce construction traffic impacts include:

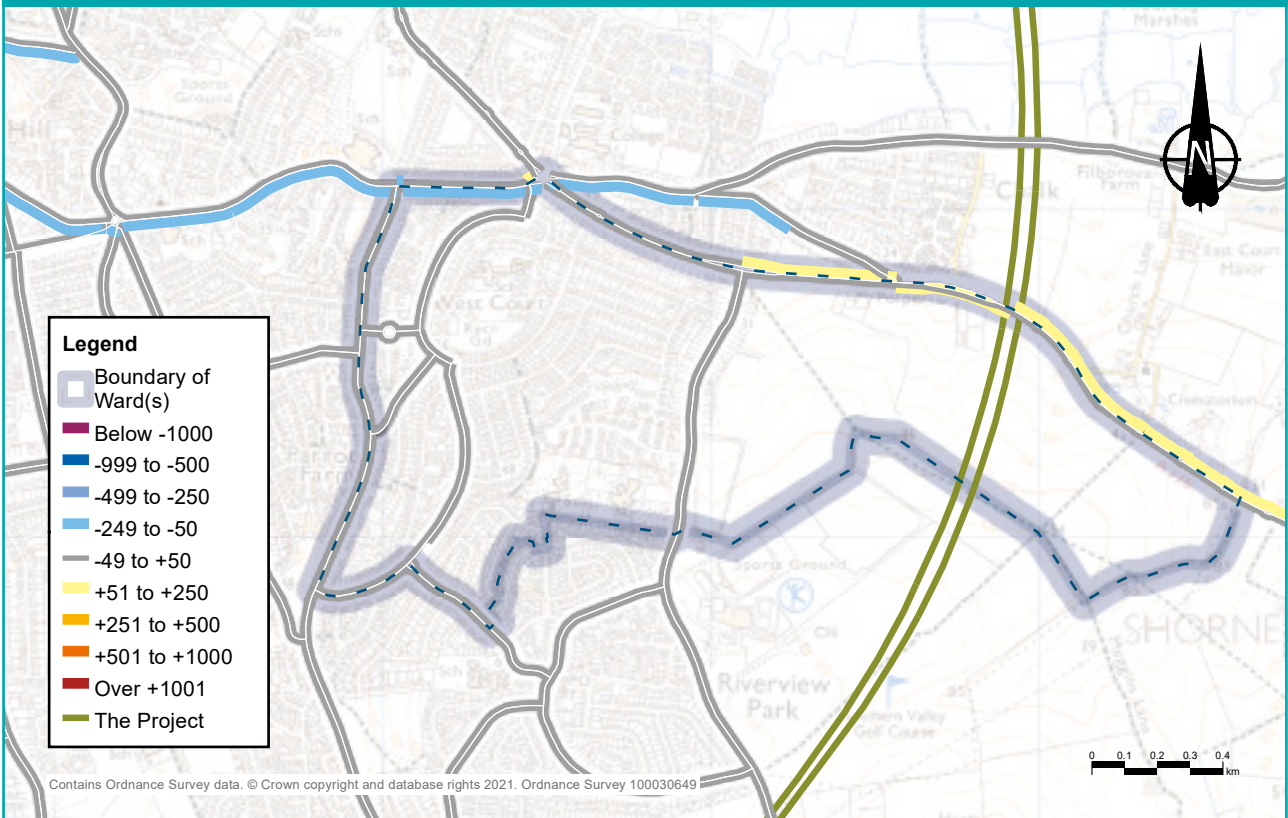
- No local roads within Westcourt ward apart from the A226 Gravesend Road would be used for construction traffic.
- We would minimise use of the local road network as far as reasonably practical through construction of temporary offline haul roads directly off the A2 eastbound.
- The A226 Gravesend Road construction route would be used for works north of Thong Lane, which involve significant excavation works. Our proposals allow for re-use of excavated materials, and would substantially reduce the need to dispose of excavated material via the road network, thereby reducing the number of HGV movements on the A226 Gravesend Road. For more information about HGV movements, see the Construction update.
- After discussion with stakeholders, we are proposing to ban HGV traffic from some local roads. Proposed HGV road bans for construction vehicles (with the exception of very specific works which include limited utility works and connecting to existing roads) include Thong Lane between the A2 Compound access off Thong lane and the A226. For more information, see the Outline Traffic Management Plan for Construction.
- HGV vehicles turning out of the Southern Tunnel Entrance Compound would only be allowed to turn right on to the A226, unless they are going either to the nearby A226 Gravesend Road or Milton Compounds.

### **6.3.2 Operational traffic impacts**

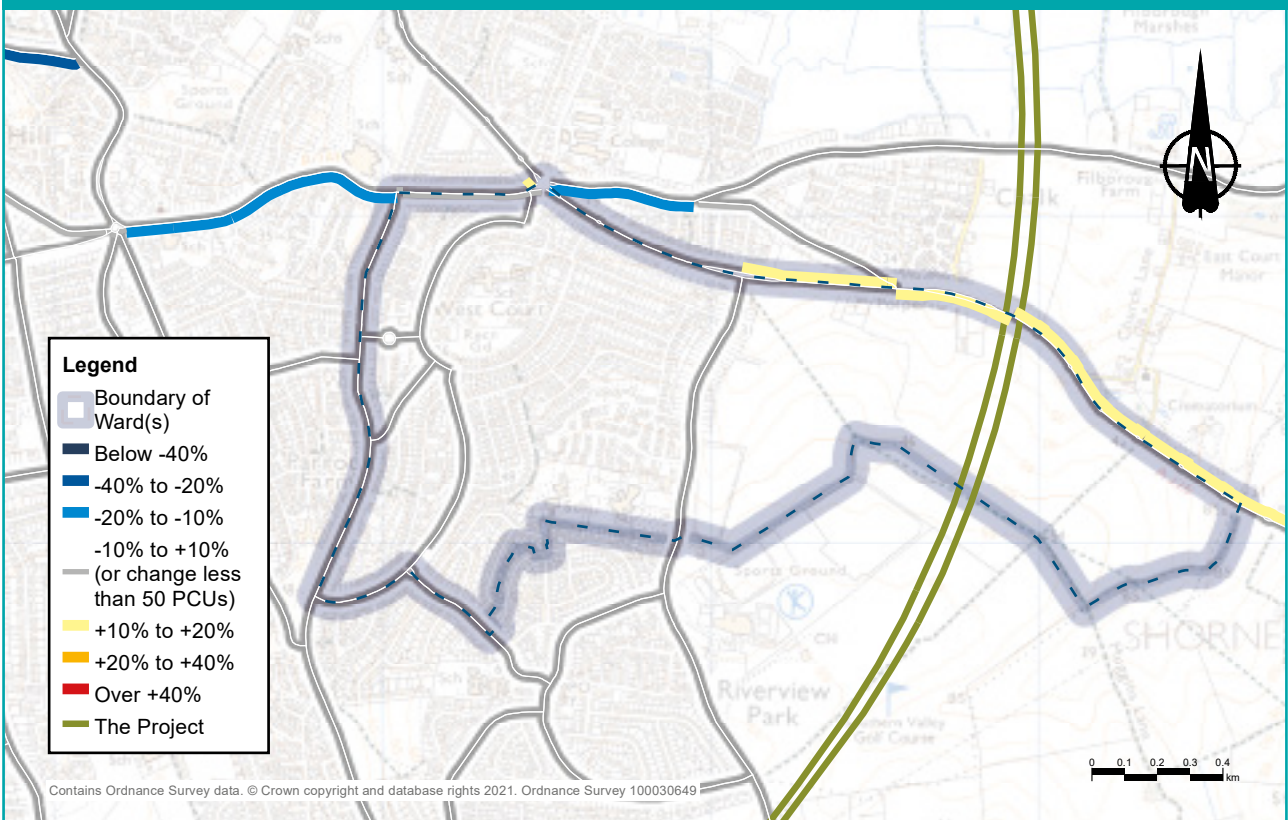
Figures 6.4, 6.6 and 6.8 show the predicted changes in traffic in the morning peak (7am to 8am), interpeak (an average hour between 9am and 3pm) and evening peak (5pm to 6pm) measured in Passenger Car Units (PCUs per hour), where 1 PCU is equivalent to a car, and 2.5 PCUs is equivalent to an HGV. Figures 6.5, 6.7 and 6.9 below show the predicted percentage changes in traffic flow during the morning, interpeak and evening peak. For information about how we assessed operational traffic impacts, see chapter 1. For more information about how we carried out our traffic modelling, see chapter 4 of the Operations update.

There would be only very slight changes predicted in traffic levels on roads within the Westcourt ward following the opening of the project.

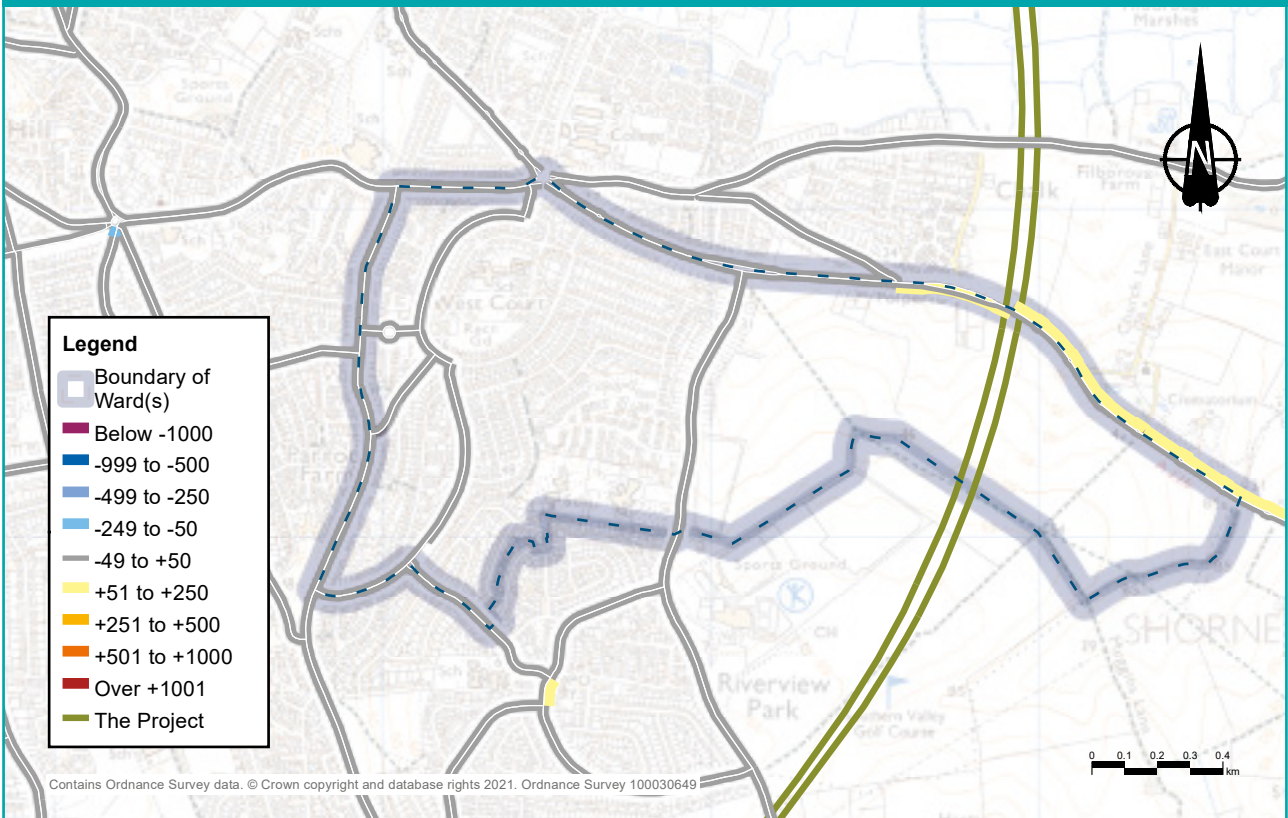
**Figure 6.4: Predicted change in traffic flows (PCUs) with the project during the morning peak in 2029**



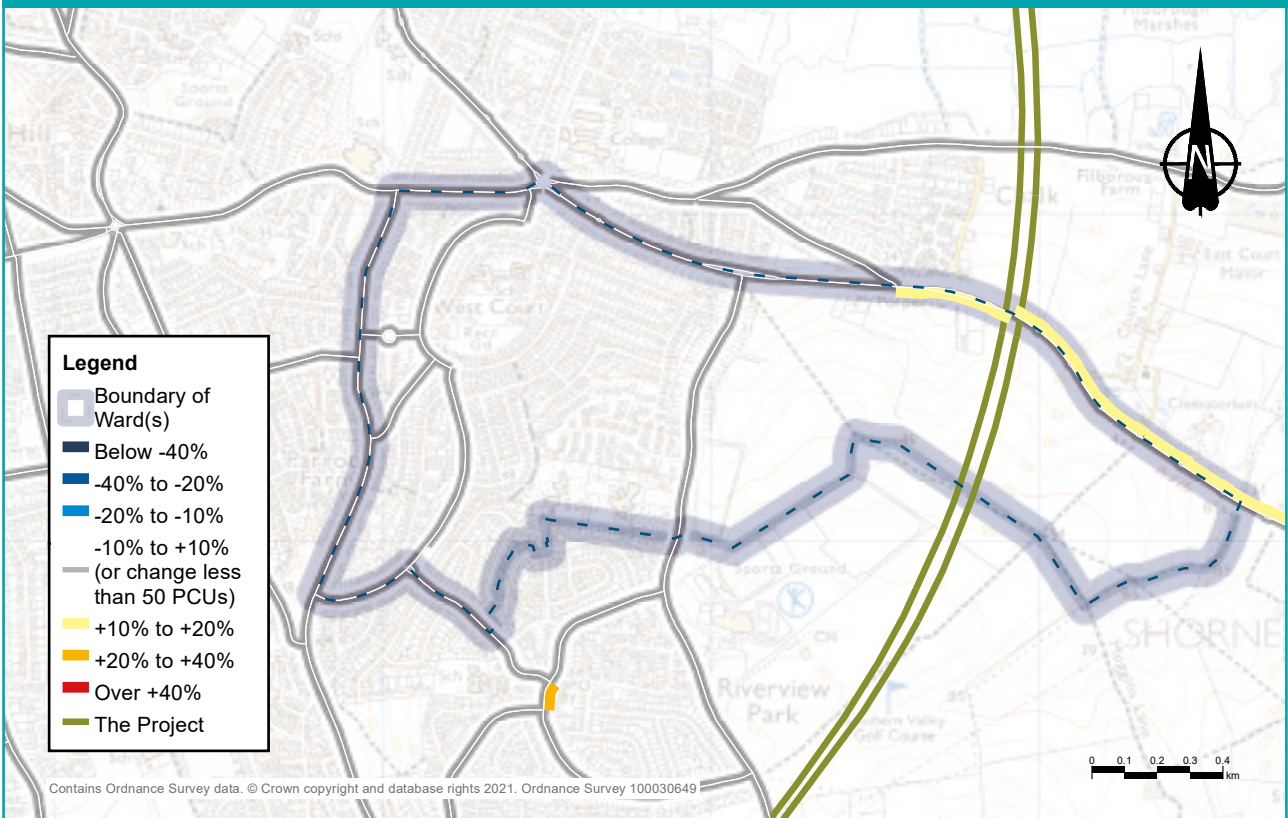
**Figure 6.5: Predicted percentage change in traffic flows during the morning peak in 2029**



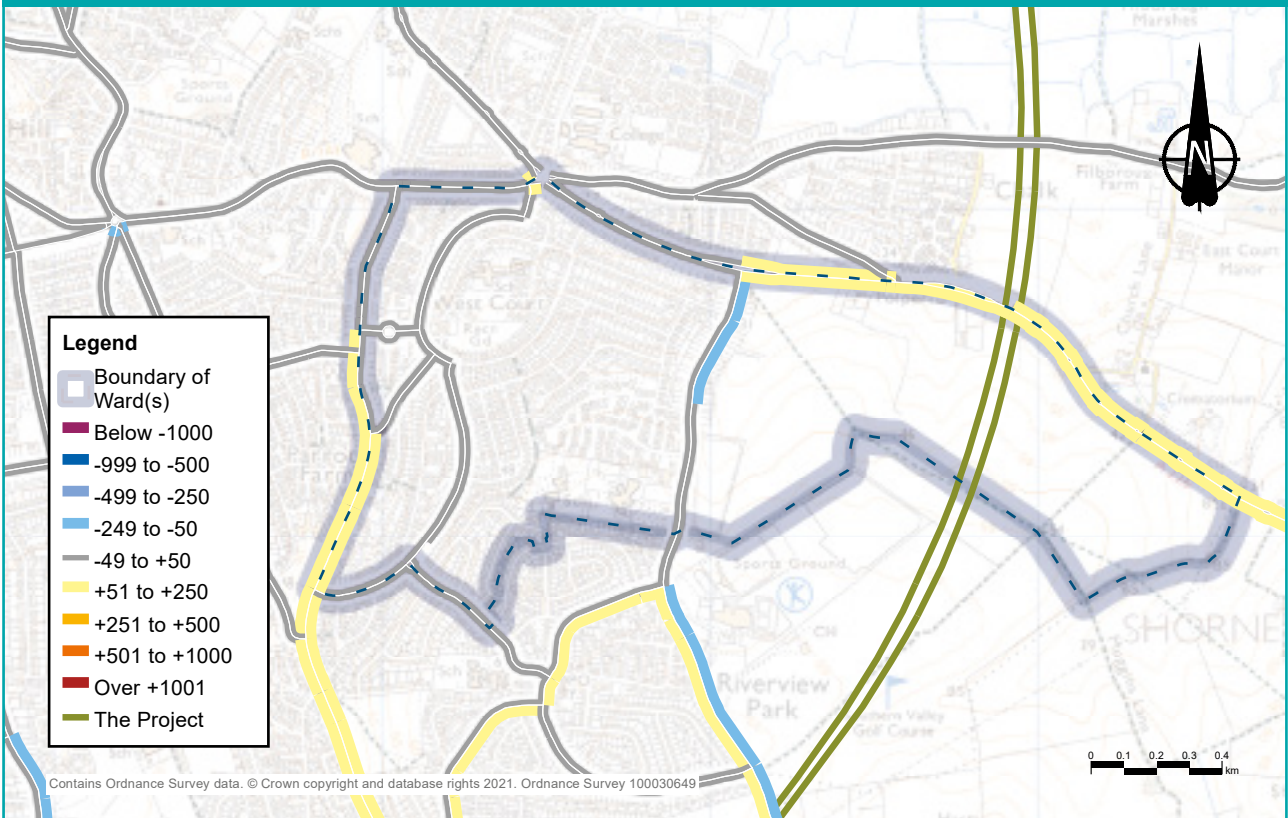
**Figure 6.6: Predicted change in traffic flows (PCUs) with the project during the interpeak peak in 2029**



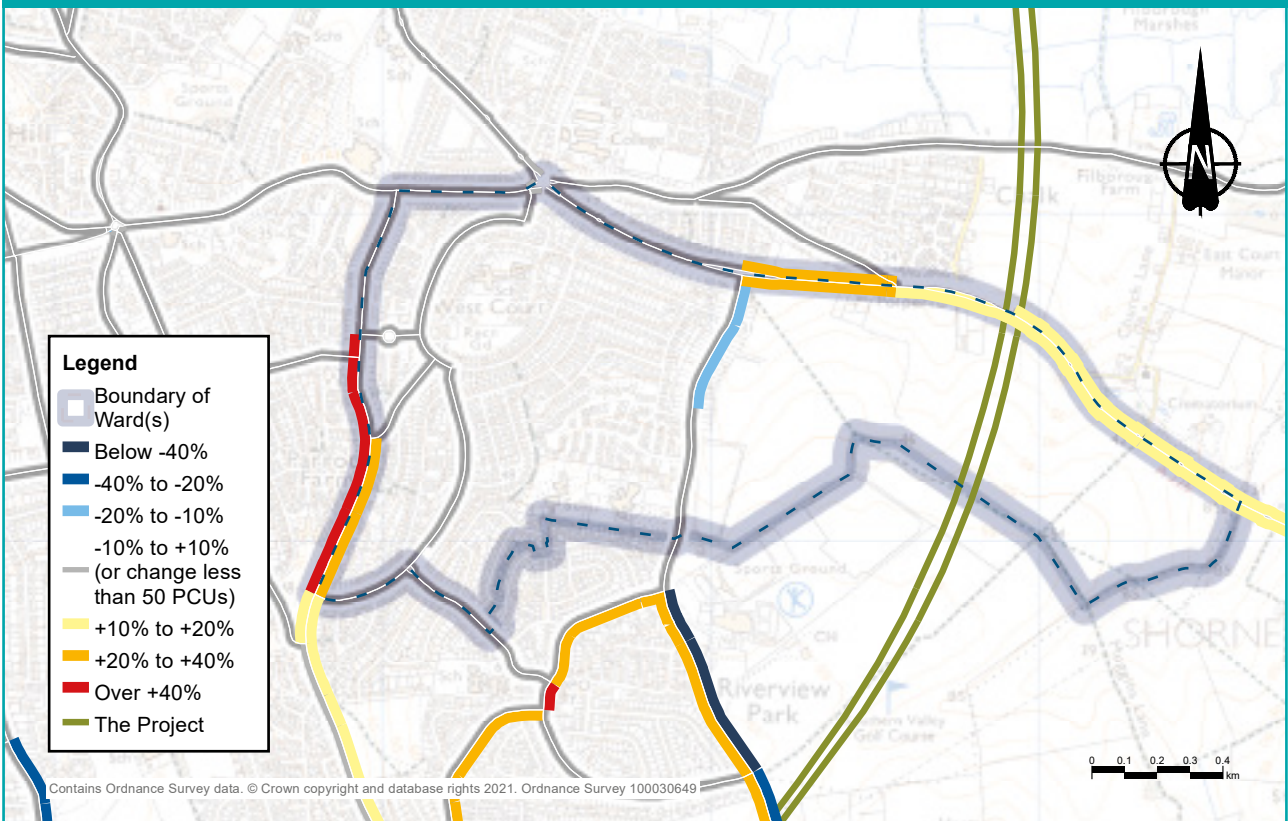
**Figure 6.7: Predicted percentage change in traffic flows during the interpeak period in 2029**



**Figure 6.8: Predicted change in traffic flows (PCUs) with the project during the evening peak in 2029**



**Figure 6.9: Predicted changes to the percentage traffic flows during the evening peak in 2029**



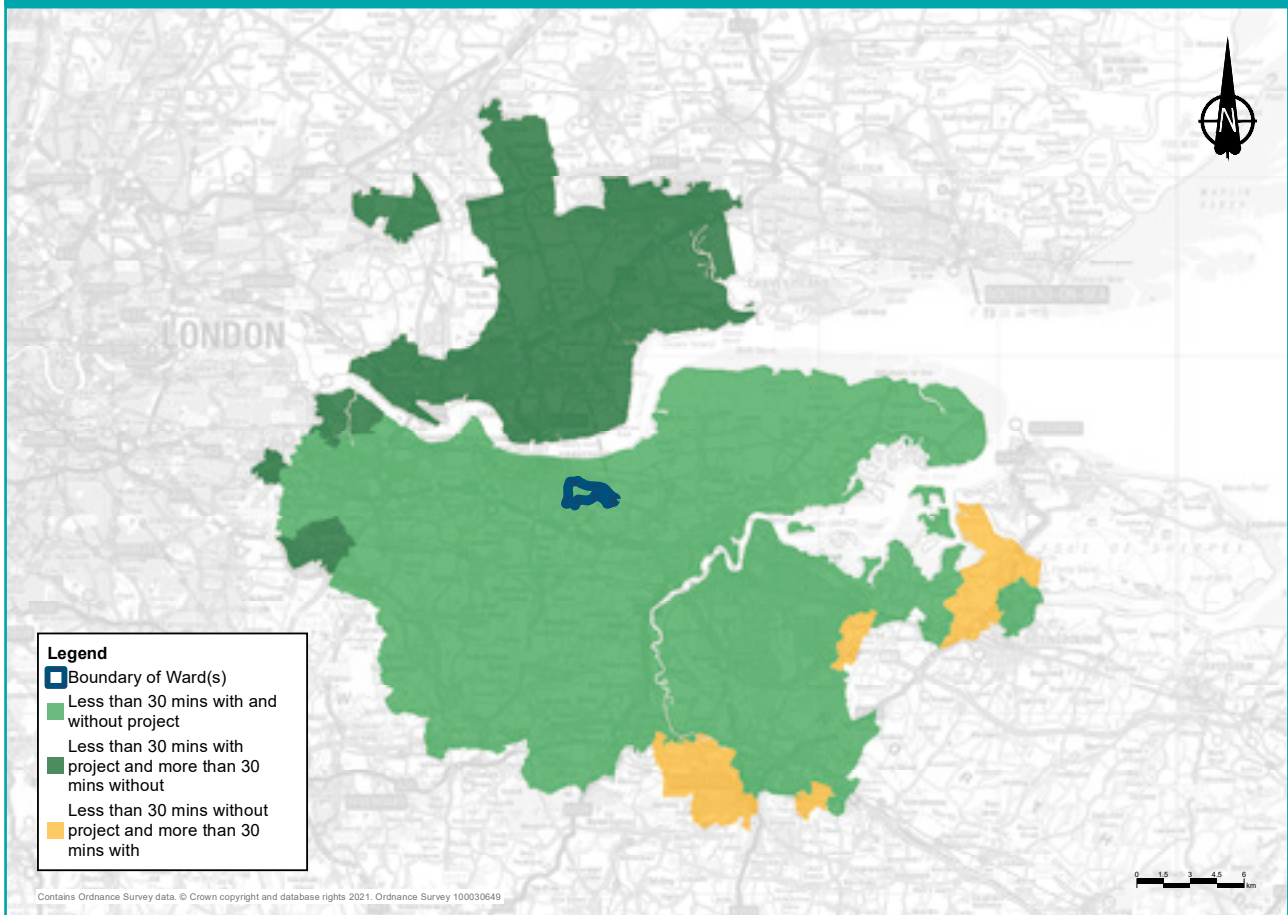


## Changes to journey times

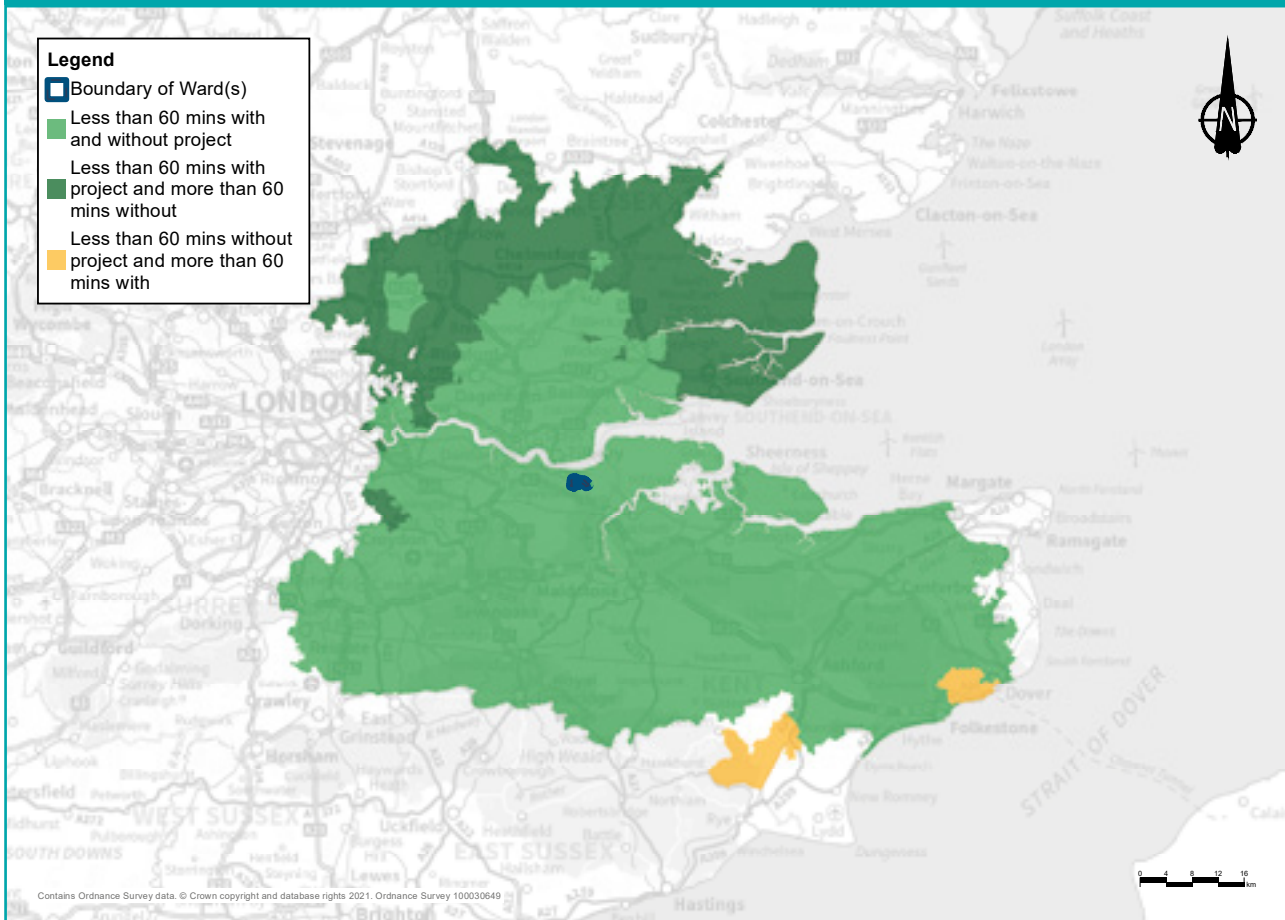
Figure 6.10 shows the change in the area that can be reached within a 30-minute drive from the centre of the ward both without the project and with the project. Figure 6.11 shows the change in areas that could be reached within a 60-minute drive. The areas have been calculated for the morning peak hour (7am-8am) for journeys. The number of jobs within a 30-minute drive with the project in place increases by 28%, which would mean access to an additional 94,400 jobs. Within a 60-minute drive, the number increases by 35%, which would mean access to an additional 730,000 jobs.

Despite the project providing a substantial net gain in access for motorists within the wards, there are areas (shown in orange in the accompanying maps) that would no longer be accessible by car within 30 or 60 minutes because of changes to traffic flows on the wider road network.

**Figure 6.10: Change in area that people could drive to within 30 minutes from Westcourt ward**



**Figure 6.11: Change in area that people could drive to within 60 minutes from Westcourt ward**



### Measures to improve traffic flow during operation

To reduce the traffic impacts of the project in Westcourt ward, we removed the previously proposed junction with the A226, which could have negatively affected Westcourt by encouraging traffic from Gravesend to short-cut through the ward using local roads. More information about this and other changes we made following feedback from stakeholders and local communities can be found in the You said, we did consultation document.

Once the project is operational, traffic impacts on the affected road network would be monitored, including local roads. Where appropriate, we would work with the relevant highway authority to seek funding from the Department for Transport for further interventions.

## 6.4 Public transport

### Existing situation

There are no railway lines or stations in Westcourt ward but the ward is serviced by Gravesend station which is used by Southeastern and Thameslink Services to run journeys from Kent through to London Charing Cross.

Bus services pass through this ward, including services along the A226 Higham Road.

### 6.4.1 Construction

#### Rail

Access to Gravesend station for the residents of Westcourt ward would not be affected during construction.

#### Buses

Due to the impacts on journey times along the A226, bus services along the A226 Higham Road may experience delays.

### 6.4.2 Operation

#### Rail

As there are no railway lines or stations in Westcourt ward there would be no construction or operational impacts on rail services. In addition, there would be no discernible change in local access times to Gravesend station and no change to the rail services at the station.

#### Buses

There would be no changes required to bus routes through the ward once the project opens and there would be no discernible predicted changes to bus journey times.

## 6.5 Footpaths, bridleways and cycle routes

### Existing situation

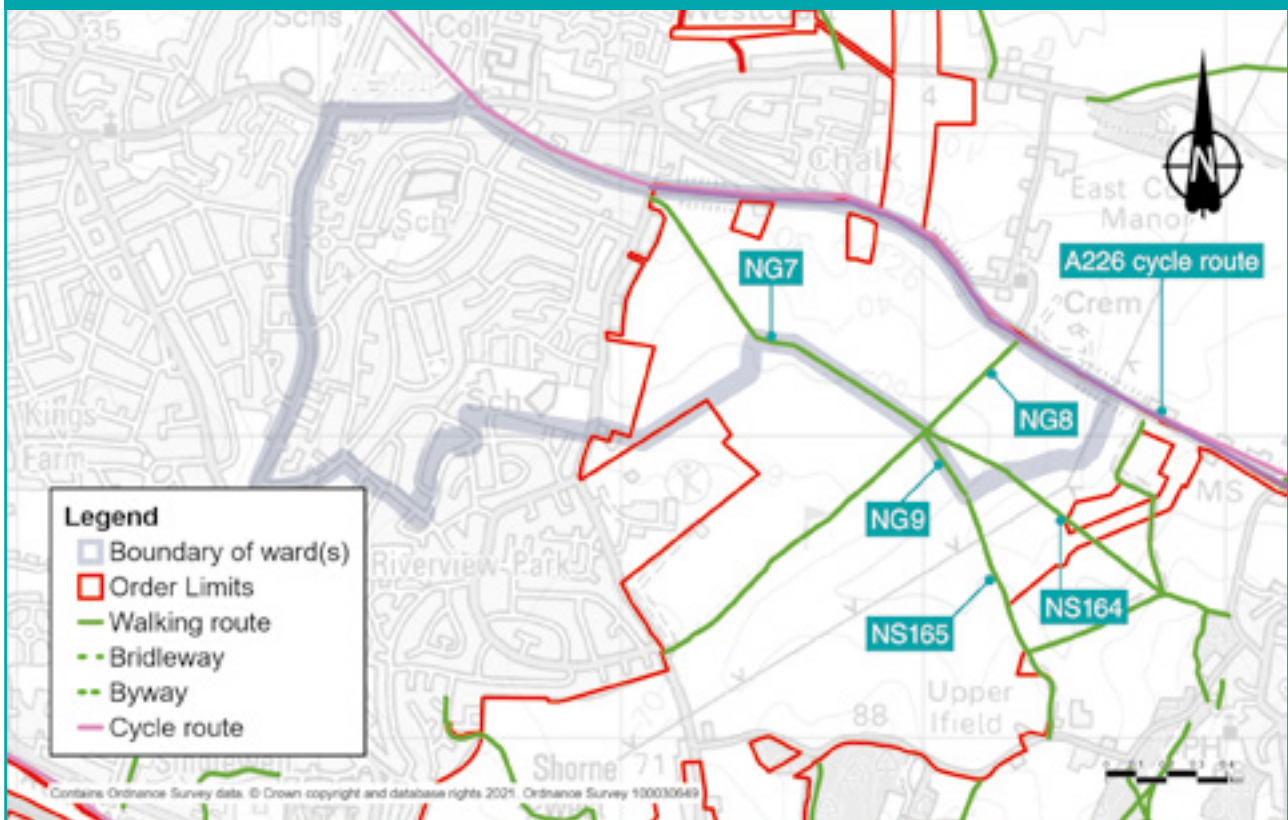
Westcourt ward is made up of a residential area in the west and a rural area to the east. The ward has seven footpaths and one bridleway, although two of these would be closed or diverted during construction. For other potential impacts, see the other sections in this chapter, such as Visual and Noise and vibration.

### 6.5.1 Construction

#### Construction impacts

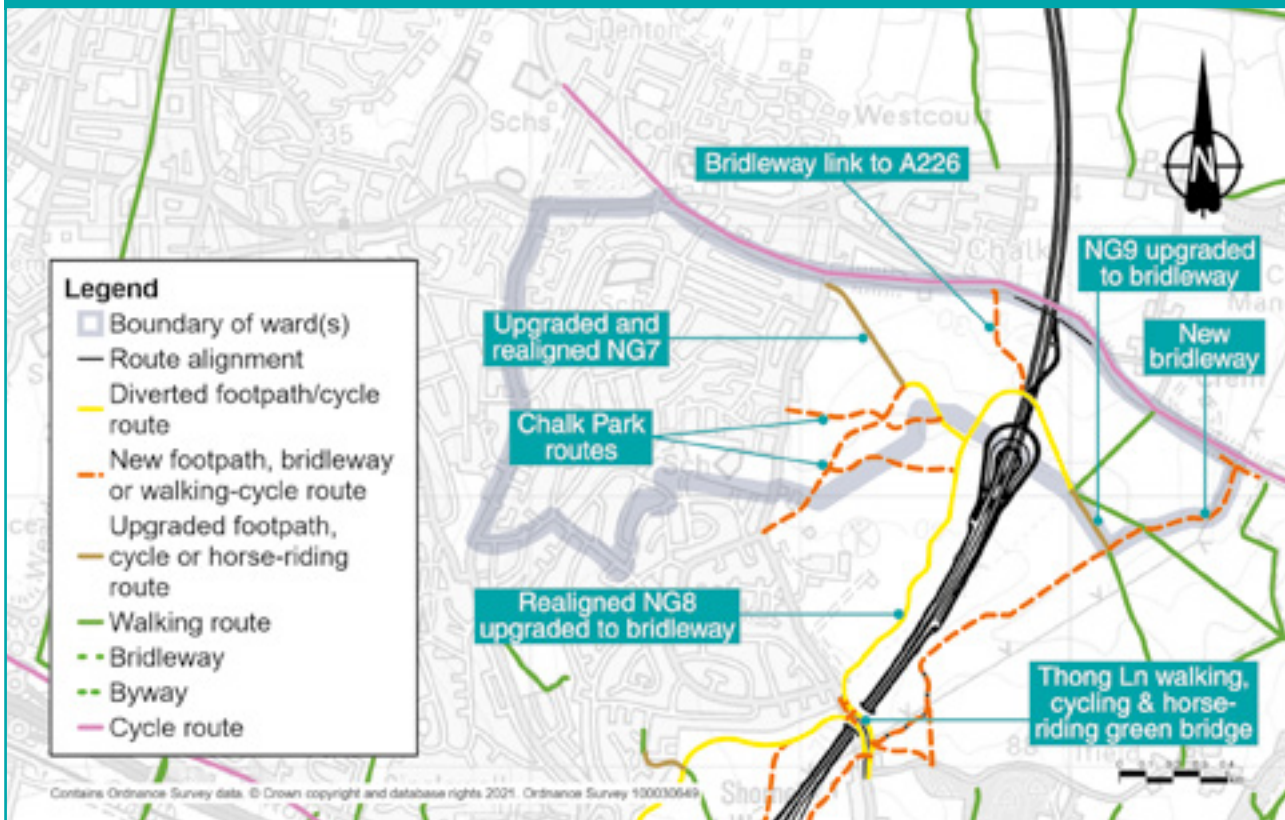
Due to the construction of the southern tunnel entrance, the new road, and construction activities in the neighbouring ward of Shorne, Cobham and Luddesdown, there would be a small number of closures in Westcourt ward during construction.

**Figure 6.12: Footpaths, bridleways and cycle routes in the vicinity of the project in Westcourt ward**



- Footpath NG7 would be closed for five and a half years, until the realignment through the new Chalk Park recreational area is complete.
- Footpaths NG8 and NG9 would be closed for five and a half years while the new road is built.
- The cycle lanes along the A226 would be impacted during the first year of construction while access to work compounds are constructed. During this period, the A226 would be subject to lane closures and traffic lights.

Figure 6.13: Proposed footpaths, bridleways and cycle routes in Westcourt ward



## 6.5.2 Operations

The project's proposals include more than 46km of new, extended, diverted or upgraded footpaths, bridleways and cycleways. We developed the proposals after consultation with local communities and stakeholders that included walking, cycling and horse-riding groups. For information about changes to footpaths and bridleways across the project, see chapter 2 of the Operations update.

- NG7 would open with a new alignment through the new Chalk Park recreational area. It would link with the newly aligned and upgraded NG8 bridleway, which links the new Thong Lane green bridge with routes north and east of the Southern Tunnel Entrance.
- Footpath NG8 would reopen as a bridleway with a new alignment from the Thong Lane green bridge to north around the south tunnel entrance, including connections to the new network of Chalk Park routes. There would also be a new bridleway connection from this route to the A226 Gravesend Road.

A map showing Chalk Park and other proposed open space in Westcourt ward can be found in chapter 3 of the Operations update.

## 6.6 Visual

### Existing situation

Views towards the land on which the project would be built from the main populated areas are mostly limited to the eastern part of Westcourt ward, from homes and the sports field on Thong Lane and from the local footpath network to the east. Current views towards the project from Westcourt ward are typically glimpsed views over rural agricultural land or the adjacent sports field, interrupted by garden boundary vegetation, garages or vegetation surrounding the sports field.

At the intersection of footpaths NG7, NG8 and NG9, there are enclosed views to the south and distant views over the Thames Estuary to the north, characterised by arable landscape backed by surrounding landform, vegetation and homes.

### 6.6.1 Construction

#### Construction impacts

More information about how the area would look during construction, including visualisations, can be found in the Construction update. You can also view a video fly-through of the project during construction by visiting our consultation website.

The main construction activities likely to be seen from this ward are:

- construction of the Southern Tunnel Entrance Compound and deep cutting for the main alignment of the project
- establishment and operation of the Southern Tunnel Entrance Compound
- earthworks and landscaping to create Chalk Park and open space east of the southern tunnel entrance
- construction of a new substation
- completion of other utility works

How construction activities may affect views in Westcourt ward can also be found in the Project description section above, with additional information in chapter 3 of the Construction update.

Views of construction would be mainly limited to the eastern part of the ward, where activity is likely to be visible from adjacent homes and the sports field on Thong Lane, partially screened by boundary vegetation or other garden features.

Much of the local footpath network east of the urban area would be temporarily closed during construction. Therefore, views of construction from footpaths are likely to be minimal. Further information on the effects on public rights of way is given above.

### **Measures to reduce visual impacts during construction**

A number of measures would include forming a temporary earth bank on the boundary of Southern Tunnel Entrance Compound, to help screen the homes on Thong Lane and Rochester Road. The taller compound facilities would be located as far as possible away from residential areas adjoining Thong Lane and Thamesview School.

The visual impacts of the project would be controlled through the range of good practice measures set out in the CoCP and the REAC.

## **6.6.2 Operation**

### **Operational impacts**

When the road opens, the main visible features would include the edge of the southern tunnel entrance and the newly created Chalk Park and other nearby open space. More information about the completed project can be found in the Project description section above.

The main visual impacts from the eastern part of the urban area are likely to be views over restored agricultural land, towards the newly created Chalk Park. Views of the new road and associated traffic would be concealed in the tunnel, in the cutting containing the project's main highway as it approaches the tunnel, and by new planting in Chalk Park.

From the newly diverted public rights of way network, the works for the new road would alter the recognised land pattern, which would be slightly visible. However, this would not alter the visual focus of the Thames Estuary to the north.

### **Measures to reduce visual impacts during operations**

Proposed planting, the creation of Chalk Park and the return of the wider landscape to its former agricultural state would help integrate the new route into the surrounding landscape. The planting would screen views of the new substation near Rochester Road.



## 6.7 Noise and vibration

We have carried out noise and vibration assessments for both the construction and operational phases of the project. As explained in chapter 1, some of the assessments set out below are based on earlier versions of the project. The information provided still presents a reasonable representation of the likely effects from the proposals presented during this consultation.

### Existing situation

The existing noise environment in Westcourt ward is mainly characterised by traffic noise coupled with noise from agriculture and people. The main sources of road traffic noise within the ward are from the A226 and the B261, and other local roads.

As part of our environmental assessment process, we carried out surveys of existing background noise in the ward. The level monitored at this location recorded average existing noise level in the range of 51dB(A)<sup>2</sup> during the daytime.

To understand how noise levels would vary with and without the project, we use noise modelling to predict what noise levels would be like in the project's proposed opening year if the project was not built. We model this because we cannot assume that noise levels when the project opens would be the same as they are now. For example, our assessment of the opening year noise levels accounts for predicted changes in traffic levels.

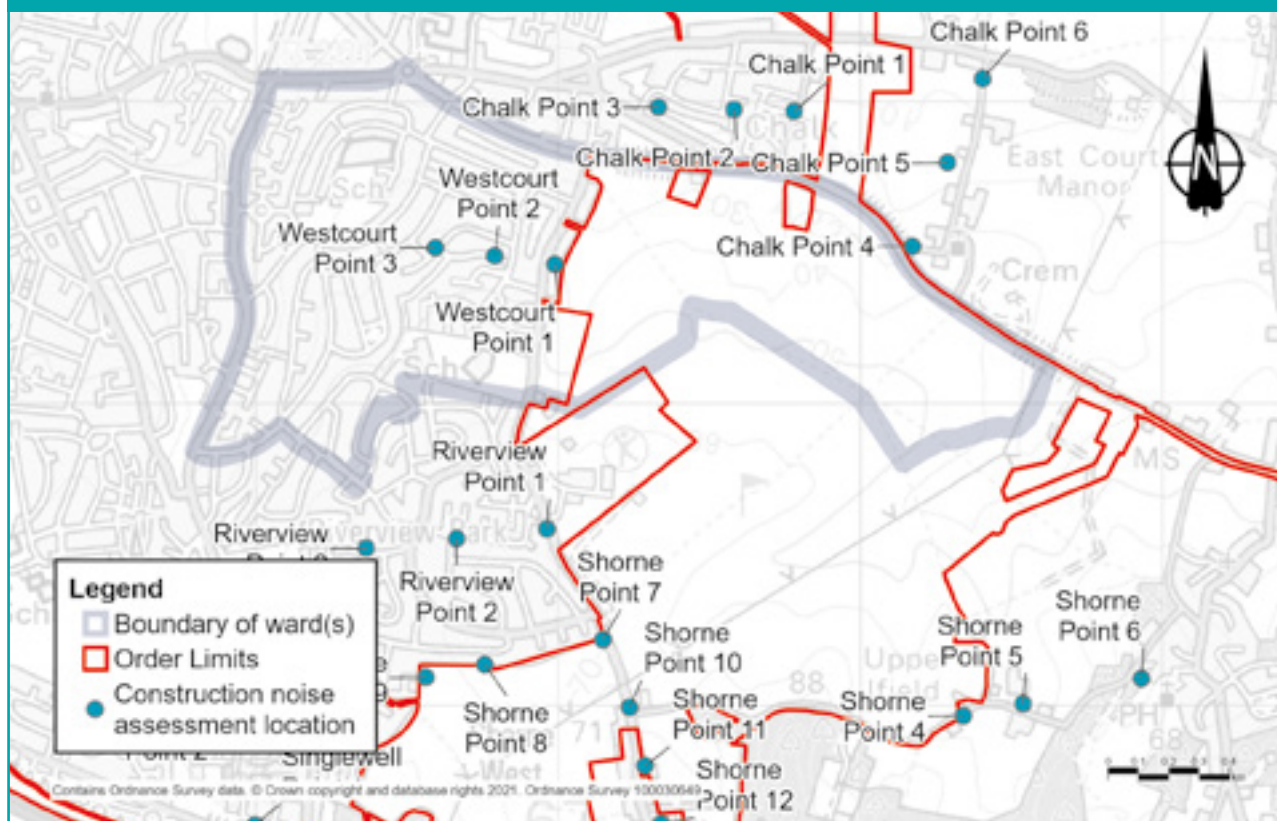
We also model the predicted noise levels for the opening year with the project in place. This provides a useful comparison as to how the project would change the noise levels in the project's opening year if it were implemented.

In the opening year, noise levels without the project are predicted to range, on average, from 40 to 73 dB(A) during the day and from 29 to 59 dB(A) during the night at identified locations within this ward. As such, our noise assessments predict that by opening year, noise levels will increase compared with the existing situation even if the road is not built. Information about noise levels with the project, during its construction and operation, are presented below.

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2 Decibel (dB) is the unit used to measure noise levels, with dB(A) being a standardised way of averaging noise levels that accounts for how humans hear sounds. The typical level of sounds in the environment ranges from 30 dB(A), which is a quiet night-time level in a bedroom, to 90 dB(A), which is how it would sound by a busy road. See chapter 1 for more information about what decibel levels mean.

Figure 6.14: Construction noise assessment locations in Westcourt ward



## 6.7.1 Construction

### Daytime construction noise impacts

The main daytime construction activities that are expected to give rise to noise and vibration impacts in this ward are those associated with southern tunnel construction, main alignment and utilities works.

Within Westcourt, a main works compound would be located within the ward boundary. There are no Utility Logistics Hubs currently proposed to be located within the ward.

Although not located within the ward, the A226 Gravesend Road Compound (see chapter 9) may contribute to the noise impacts experienced within this ward due to how close it is to the ward boundary.

There would also be project haul roads built and used during the construction period, these are shown in the Project description.

Within the ward, there is one proposed structure expected to be constructed using vibratory or percussive piling, but potential vibration impacts of these structures would be less than 10 days.

Construction noise levels have been predicted at three locations across this ward, chosen to provide a representation of the level of noise communities are expected to experience during construction. For more information about the methodology, see chapter 1.

Noise levels are shown using standard units for road projects, dB LAeq (12-hour), which represents the average noise level for the assessed 12-hour daytime period. While there might be short-term noises that are louder noises than the noise level shown during the assessed period, the averaged figure provides a fair representation of what the overall noise impacts would be.

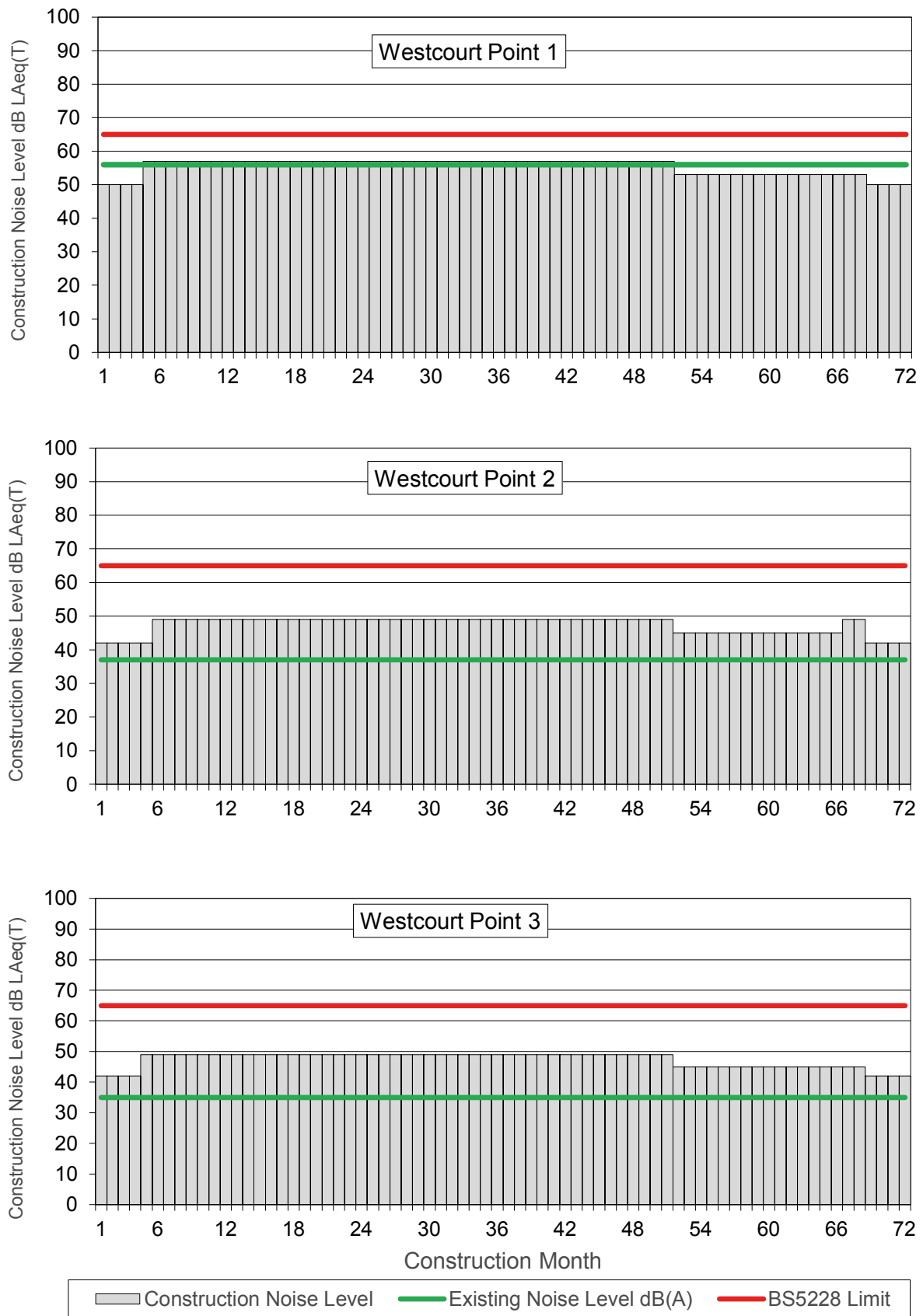
Each vertical bar in figure 6.15 shows the predicted noise levels for that month of the construction period (from months 1-72). The horizontal green line in each chart represents the existing background noise level at each assessment point without the project. The horizontal red line shows the level at which construction noise would exceed acceptable thresholds (see chapter 1 for more information about these thresholds). If noise is predicted to exceed acceptable levels, then specific mitigation measures would be implemented to reduce the noise.

The predicted noise levels show that higher construction noise levels and disturbance would be experienced closer to construction activity. Levels gradually diminish as a result of increased distance and additional buildings and other features screening the noise from more distant residential areas.

With reference to figure 6.15, the following summarises the noise level changes over the construction period for points 1 to 3:

- At point 1, construction noise levels are predicted to range from 50 to 57dB LAeq (12-hour) during the six-year construction programme. Construction noise levels would exceed the existing background daytime noise level for approximately 47 months. However, they would not breach the defined threshold.
- At point 2, construction noise levels are predicted to range from 42 to 49dB LAeq (12-hour) during the six-year construction programme. Construction noise levels would exceed the existing background daytime noise level for approximately 72 months. However, they would not breach the defined threshold.
- At point 3, construction noise levels are predicted to range from 42 to 49dB LAeq (12-hour) during the six-year construction programme. Construction noise levels would exceed the existing background daytime noise level for approximately 72 months. However, they would not breach the defined threshold.

Figure 6.15: Construction noise by month for points 1, 2 and 3 in Westcourt ward



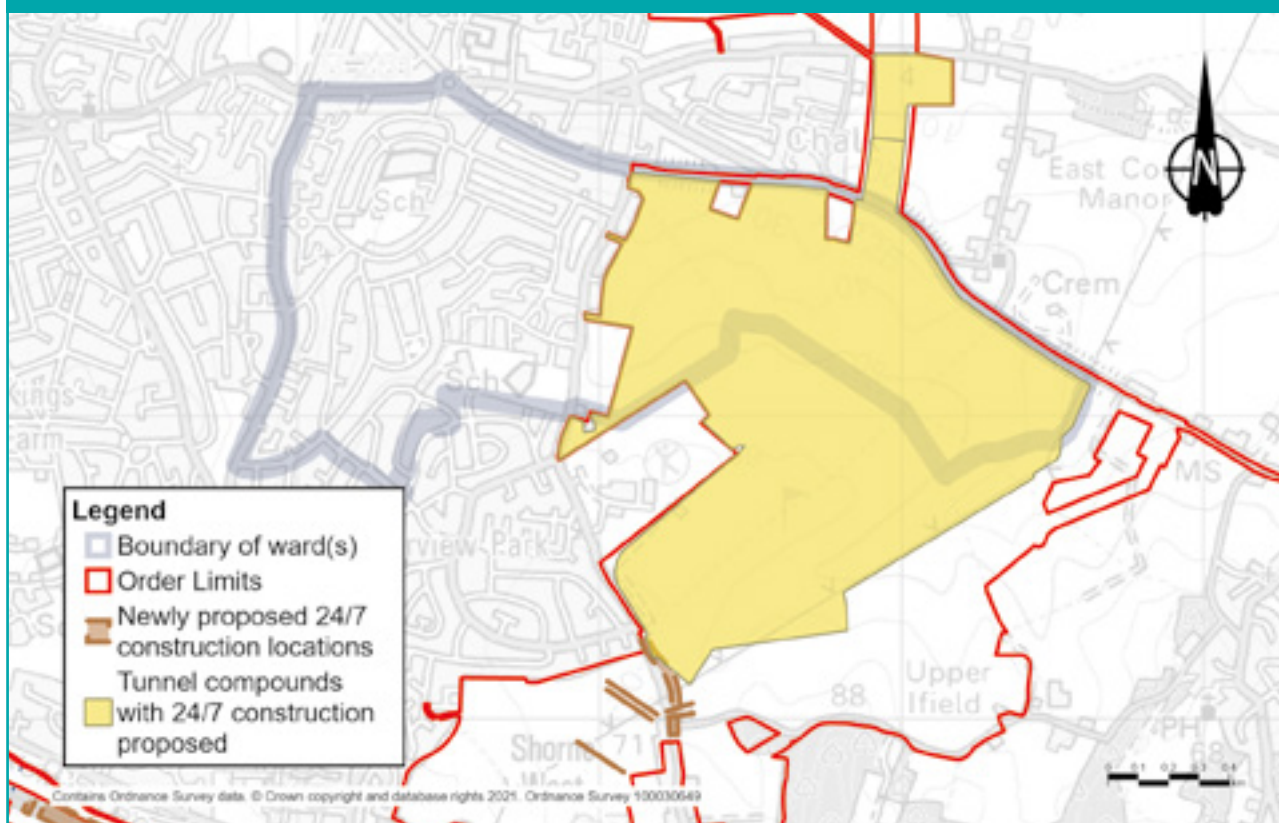
### 24/7 construction working

In addition to the changes to the daytime noise impacts reported in the section above, 24-hour, seven-day construction working is proposed at the locations shown in figure 6.16 below. The previously proposed 24/7 construction locations referred to in the figure are those 24-hour tunnelling activities that we have outlined during previous consultations and that remain part of our current proposals.

These works have been identified as they may need to be carried out at night to maintain safety and reduce disruption to road and utility networks. Construction activities requiring 24/7 operations would be within the Southern Tunnel Entrance Compound.

These works could have an impact on local communities and we would work with the local authority to manage these impacts.

Figure 6.16: Newly proposed and tunnel 24/7 working locations in Westcourt ward



## Construction traffic noise impacts

Maps showing the predicted change in road traffic noise within this ward during each year of construction can be found in chapter 7 of the Construction update. Based on the currently available traffic data (which offers a representative picture of what receptors within the ward likely to experience), during the construction period there would be negligible changes in road traffic noise (less than 1dB change in noise levels) during all construction years, except along the following roads where minor increases have been predicted. For more information about how we define noise impacts (negligible, minor, moderate and major), see chapter 1.

**Table 6.4: Construction traffic noise in Westcourt ward**

Roads affected	Predicted noise impact	Construction years
St Aidan's Way, Hampton Crescent, Brown Road	Minor increase in noise levels	3 and 4

## Measures to reduce construction noise levels

Construction noise levels would be controlled primarily through the implementation of Best Available Techniques (BAT), with specific measures used at certain locations such as:

- installing and maintaining hoarding around the construction compounds
- installing temporary acoustic screening around the construction areas likely to generate noise
- keeping site access routes in good condition with condition assessments onsite to inspect for defects such as potholes
- turning off plant and machinery when not in use
- maintaining all vehicles and mobile plant so loose body fittings or exhausts do not rattle or vibrate
- using silenced equipment where available, in particular silenced power generators and pumps
- no music or radios would be played for entertainment purposes outdoors onsite
- site layout would be planned so that reversing is kept to a practicable minimum. Required reversing manoeuvres would be managed by a trained banksman/vehicle marshal to ensure they are conducted safely and concluded quickly to reduce the noise from vehicle reversing warnings
- non-percussive demolition techniques would be adopted where reasonably practicable to reduce noise and vibration impact

- careful consideration of the location and layout of compounds to separate noise-generating equipment from sensitive receptors, and the use of mains electricity as opposed to generators, where possible
- minimising construction vehicle traffic by, where practicable, selecting local suppliers along the project route, using local workforce and by minimising material transportation for earthworks construction along the project

All control measures, including those above, fall under the principles of BAT and are secured in the REAC. For more information, see REAC sections NV001 to NV010, which set out how we would work under the supervision of the relevant local authorities to implement noise-reduction measures where appropriate.

The CoCP sets out additional measures that would be implemented to reduce noise and vibration during the construction phase.

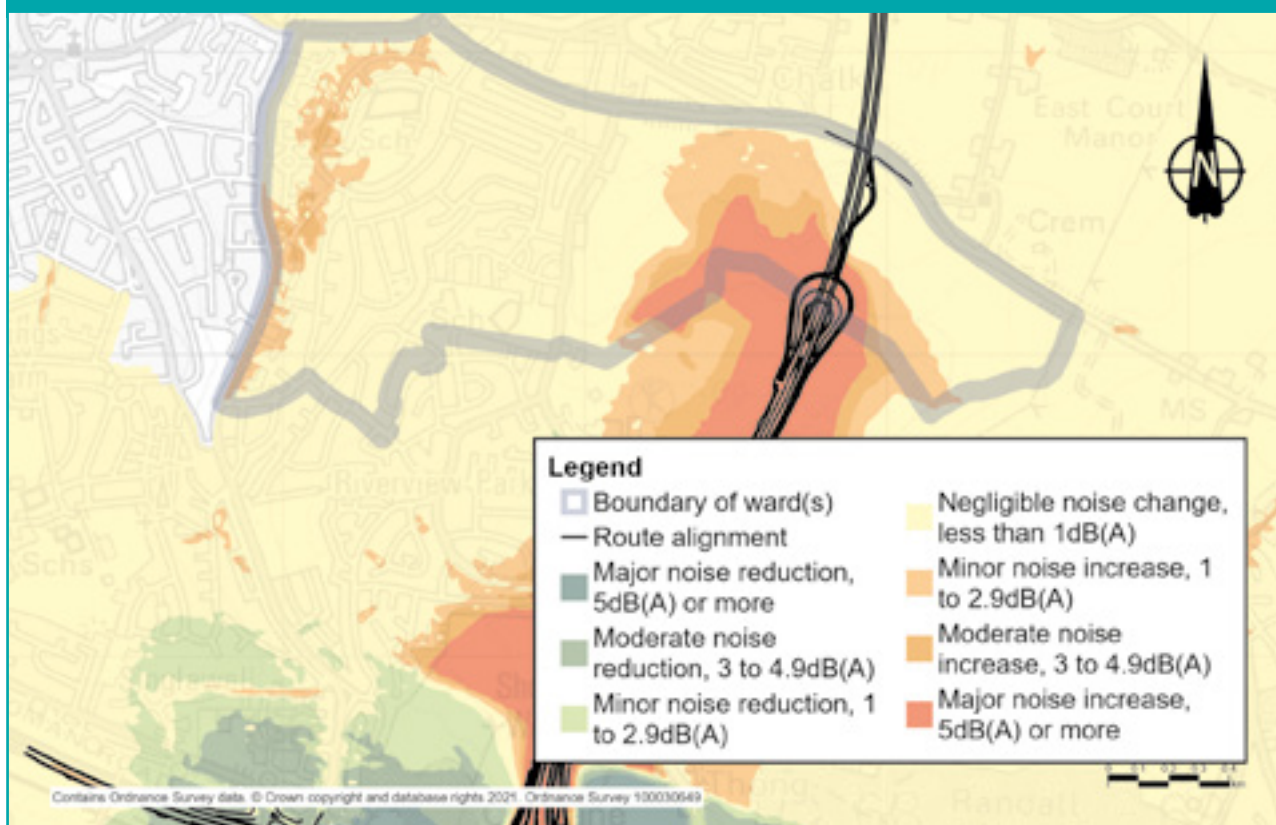
## **6.7.2 Operations**

### **Operational impacts**

The southern tunnel entrance is located towards the east of Westcourt ward. There would also be indirect noise impact as a result of changes in traffic flow, the number of HGVs, and traffic speed on the existing road network within the ward.

Figure 6.17 shows the predicted changes in operational road traffic noise in the opening year of the project. Within the ward, changes in road traffic noise at identified noise-sensitive receptors (such as nearby properties) are predicted to range from negligible reductions in noise levels of less than 1dB to a moderate increase in noise levels of between 3.0 and 4.9dB. For more information about how we define noise impacts, for example negligible, minor, moderate and major, see chapter 1.

**Figure 6.17 Noise impacts during operation in Westcourt ward**



### **Measures to reduce noise and vibration impacts of operations**

The main method of controlling noise would be, where practicable, to design the road within landscaped features such as cuttings and bunds (walls of earth). However, where noise impacts are greatest, we would install noise barriers (typically, wooden fences) in addition to these earthworks features. While no noise barriers are proposed within Westcourt ward, there are noise barriers proposed that would mitigate impacts in the ward, which are shown in chapter 5 of the Operations update. The use of low-noise surfacing would also reduce the traffic noise once the road is in use.

For more information about the proposed measures to reduce operational noise, see the REAC (including references NV011 and NV013).



## 6.8 Air quality

We have carried out air quality assessments for both the construction and operational phases of the project. As explained in chapter 1, some of the assessments set out here are based on earlier versions of the project. The information provided here still presents a reasonable representation of the likely effects from the proposals presented during this consultation.

### Existing situation

Westcourt ward is not located within an Air Quality Management Area (AQMA). AQMAs are areas that have been identified by local authorities as areas of poor air quality that require additional monitoring and controls.

### 6.8.1 Construction

#### Construction impacts

Construction activities have the potential to affect nearby air quality through the release of dust and emissions from construction equipment and traffic. The areas most likely to be affected are those close to haul roads, compounds and soil storage areas.

Properties more than 200 metres from the worksite, which is the majority of properties within this ward, are outside the area likely to be affected by construction dust or emissions from the worksite. In this ward, there are only a few properties within 200 metres of the worksite, including along Gravesend Road. Air quality impacts on these properties during construction would be temporary and we would put in place measures to minimise the dust impacts (see below). The proposed measures to reduce dust and emissions are ones that have been proven to be effective when used on similar construction projects in the past. The change in air quality during the construction phase would be negligible, and there would be no discernible effect on health.

Our analysis of the construction traffic predicts that a short section of the B261 Old Road East between Lion roundabout and St John's Catholic Comprehensive School is expected to experience small increases in traffic between 2026 and 2027, this would lead to a minor temporary worsening in air quality. Also, there is expected to be a decrease in traffic flows on Valley Drive during 2024, which may result in a minor temporary improvement in air quality. More information about construction traffic impacts on air quality can be found in chapter 7 of the Construction update.

## Measures to reduce air quality impacts during construction

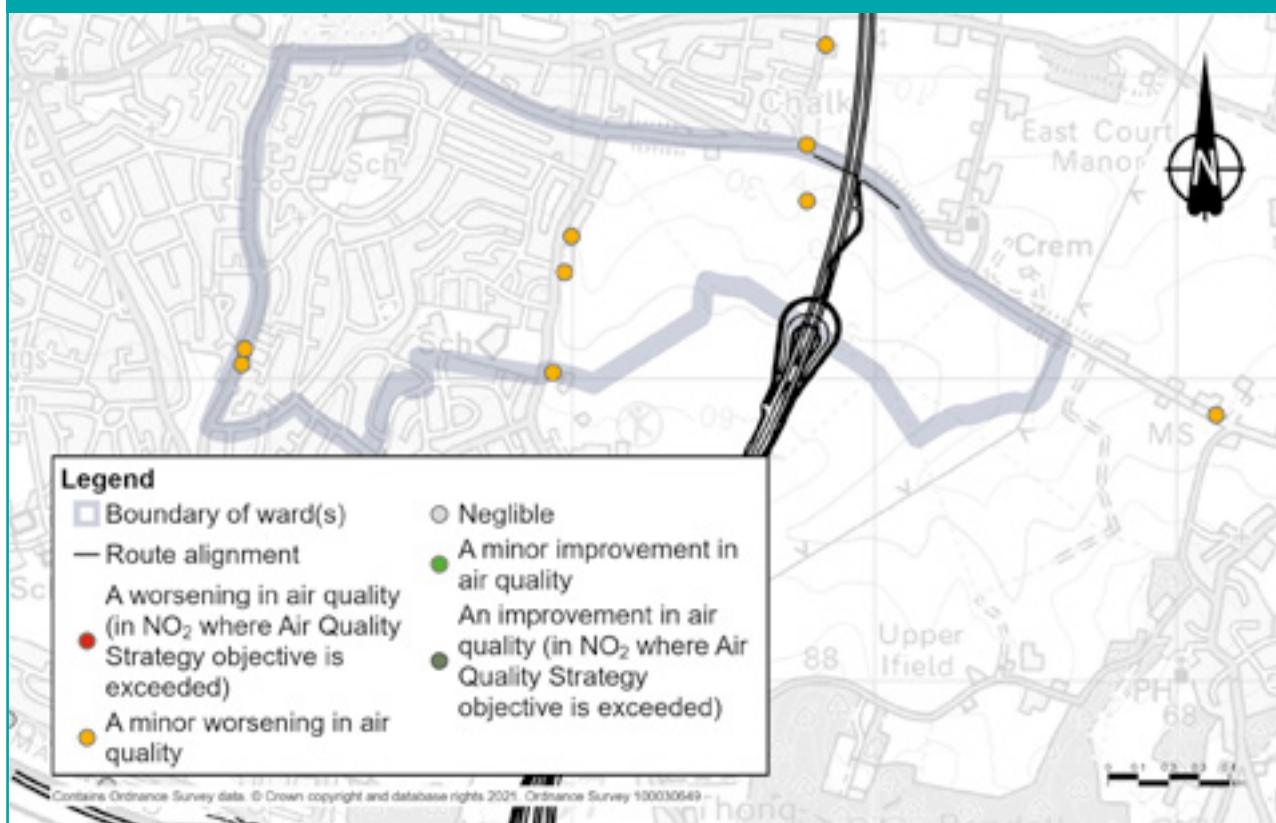
The impact of construction machinery and traffic on air quality would be controlled through the range of good practice measures set out in the CoCP and the REAC. For example, there would be measures to suppress dust, such as damping down dry haul roads and spoil heaps, as well as the use of low-emission machinery and vehicles. We would put in place an Air Quality Management Plan to ensure the measures set out in the CoCP and the REAC would effectively monitor and control dust and exhaust emissions. The location and type of monitoring would be submitted in advance to Gravesham Borough Council for consultation (see REAC entry AQ006).

## 6.8.2 Operations

### Operational impacts

We have carried out an assessment of the operational impacts of the new road on air quality. The assessment area includes a 200-metre buffer within the affected road network, with this area being the most likely to experience changes to air quality as a result of the new road. More information about air quality impacts once the road is open can be found in chapter 5 of the Operations update.

**Figure 6.18: Predicted changes in NO<sub>2</sub> levels within Westcourt ward once the new road is open**



There are no predicted exceedances of air quality thresholds within Westcourt ward. There are receptors (properties or habitats that are sensitive to changes in air quality) within the ward along the eastern edges of Thong Lane and Rochester Road that are predicted to experience a minor worsening in the air quality for nitrogen dioxide (NO<sub>2</sub>), the main traffic-related pollutant<sup>3</sup>. The highest modelled yearly average NO<sub>2</sub> concentration within this ward is 22.9µg/m<sup>3</sup> (along the eastern edges of Thong Lane), which is below the yearly average threshold of 40µg/m<sup>3</sup>. Our assessment is based on our opening year model, which represents a worst-case scenario, without accounting for the increase in less-polluting vehicles on our roads over time.

Furthermore, local air quality data shows an overall downward trend in NO<sub>2</sub> over recent years, which means that future air quality improvements at this location are likely (for example, through increased adoption of electric vehicles meaning a reduction in exhaust emissions).

In addition to our assessment of NO<sub>2</sub>, our assessment predicts that PM<sub>10</sub> levels (small particles of dust, mainly from vehicle exhausts and brakes) are unlikely to exceed threshold levels across the assessed area.

### **Measures to reduce air quality impacts during operation**

The assessed air quality impacts in this area as a result of the project would not trigger the need for additional monitoring or other mitigation measures once the road is open.

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<sup>3</sup> NO<sub>2</sub> levels are measured in 'micrograms per cubic metre', or µg/m<sup>3</sup>, where a microgram is one millionth of a gram.

## 6.9 Health

### Existing situation

A range of personal, social, economic and environmental factors influence our health. Different groups within the population may be more sensitive to these factors than others – for example, children, older people or those with pre-existing health conditions.

Westcourt is characterised by a younger population profile than is the case for Gravesham as a whole and nationally, with a higher proportion of children aged under 16 (27.3% compared with 22.4% for Gravesham and 20.3% for England). Parts of Westcourt ward are within the top 10% deprived areas in England. Economic activity is lower and the number of people claiming benefits is higher than for other Gravesham wards and nationally.

The Westcourt population exhibits high rates of long-term health problems including high rates of self-reported bad or very bad health, and lower life expectancies. There are high rates of emergency hospital admissions for chronic obstructive pulmonary disease (COPD).

### 6.9.1 Construction

#### Construction impacts

Construction activities affecting Westcourt ward residents are presented in the Project description section above and relate to construction of the southern tunnel entrance and its approach, establishment and operation of the Southern Tunnel Entrance and A226 Gravesend Road Compounds, earthworks and landscaping to create Chalk Park, and the construction of a new substation. Elements of all these activities have the potential to impact on human health through noise associated with construction activities or construction traffic, air quality (as a result of dust emissions), severance caused by construction traffic, road or footpath closures, or through impacts on mental health and wellbeing.

There are both positive and negative potential impacts on people's health and wellbeing as a result of the construction stage. With good communication and engagement, mental health and wellbeing impacts associated with stress and anxiety related to the construction of the project would be reduced. Equally, some residents would see health and wellbeing benefits from improved access to work and training opportunities presented by construction activities (see the Traffic impacts section).

As highlighted at the start of this section, different groups of people within the population may be more sensitive to factors which potentially affect their health than others. Some of the changes identified as a result of construction activities may therefore only affect a small proportion of the population. For example:

- Changes in accessibility. Those who are more dependent on public transport and have less choice about method and route travelled may be negatively affected (see the Public transport section above).
- Severance. Road and footpath closures may affect some people's ability to access services or facilities.
- Changes in access to open space. Much of the local footpath network to the east of the urban area would be temporarily closed during construction. People without access to private cars may not be able to access alternatives within a reasonable travel time.

### **Measures to reduce construction health impacts**

Proposed measures relating to health and wellbeing (including good practice for dust emissions, hours of working and visual screening) are described in this chapter in section 6.6 (Visual impacts), section 6.7 (Noise and vibration impacts) and section 6.8 (Air quality impacts). Further information relating to mitigation measures for these areas is set out in the Code of Construction Practice (CoCP), the Register of Environmental Actions and Commitments (REAC) and the package of traffic management plans. The commitments in the REAC include items such as adhering to Best Practicable Means (BPM) to reduce noise impacts (see NV007 in the REAC) and dust-management good practice (see AQ005 in the REAC). For more information about these documents, see chapter 1 of the Construction update.

Engagement and effective two-way communication with communities both before and during construction is important in order to reduce mental health and wellbeing impacts associated with uncertainty, stress and anxiety. The CoCP sets out proposals for community engagement, including how we would make sure communities, stakeholders and any affected parties are kept informed of the construction works, their progress and associated programme. This includes setting up Community Liaison Groups.

## **6.9.2 Operations**

### **Operational impacts**

Information about the ward once the new road is open is provided in the Project description section above. The assessments carried out for noise and air quality have shown that no adverse impacts are anticipated as a result of the project for people in Westcourt ward. However, a proportion of residents may experience anxiety or stress associated with perceptions of environmental change as a result of a major road project. As with the construction stage, different groups in the Westcourt population may be more susceptible to anxiety and stress than others.

A proportion of residents may also experience positive health benefits through accessibility improvements, better access to jobs and training, and to open spaces, including new recreational areas outside Westcourt, such as Chalk Park, near Gravesend. A map showing Chalk Park and other open space proposed as part of the project can be found in chapter 3 of the Operations update.

### **Measures to reduce health impacts during operation**

No essential measures to address health outcomes have been identified within this ward other than those described in the sections on noise and vibration impacts and impacts on air quality. In addition, with mitigation measures implemented, potential impacts on mental health are likely to be minimal.

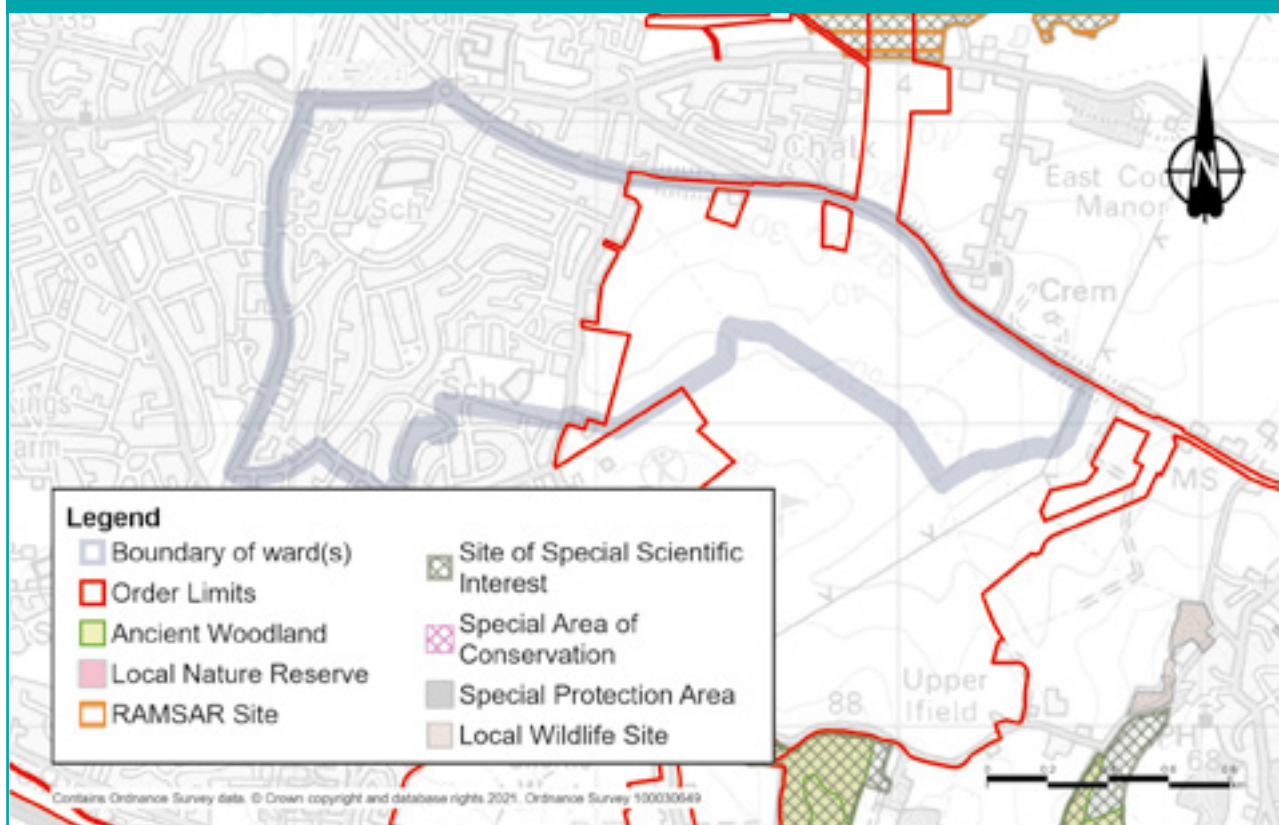
## 6.10 Biodiversity

### Existing situation

The main habitat within the Order Limits in the Westcourt ward is arable fields, with some scattered trees, scrub and defunct hedgerow. Consistent with this habitat, there are few notable or protected species within the Order Limits. The ward does not contain any designated sites such as Sites of Special Scientific Interest (SSSI), locally designated sites such as Local Wildlife Sites (LWS), or Ancient Woodland.

We carried out surveys across the project to set a baseline for assessment, and these identified the presence of a range of protected and notable species. Badger outlier setts were identified within the hedgerow habitats, as well as common reptile and amphibian species.

Figure 6.19: Biodiversity designated and non-designated sites in Westcourt ward



## **6.10.1 Construction**

### **Construction impacts**

Construction activities within this ward are summarised in the Project description section above. Construction would require the removal of areas of habitat, both temporarily and permanently from the route alignment. This habitat consists of areas of arable fields and hedgerows. It supports protected and notable species that would be impacted by construction in terms of direct habitat loss (the loss of badger setts, reptile and amphibian habitat); fragmentation of habitat (loss of hedgerows, particularly a minor bat commuting route); and disturbance to retained habitat.

### **Measures to reduce biodiversity impacts of construction**

Vegetation clearance would be carried out during the winter where possible to avoid the impact on breeding birds. Where this is not possible, clearance would be supervised by an ecological clerk of works to ensure that no nests are disturbed or destroyed. Any protected species would be moved away from the site prior to any construction activities either through habitat manipulation (for example, strimming to reduce the height of vegetation and displace reptiles), or translocation. Where required, works affecting protected species would be carried out under a Natural England licence.

The impact of construction on biodiversity would be controlled through the range of good practice measures set out in the project's CoCP and the REAC. See chapter 1 of the Construction update for more information about this and the project's other control documents.



## **6.10.2 Operations**

### **Operational impacts**

There would be some minor noise disturbance on ecological features from the operation of the project within Westcourt ward, but otherwise the project would have minimal operational impacts on flora and fauna. It is anticipated that with the creation of Chalk Park, which includes areas of woodland and species-rich grassland, a more diverse habitat would be provided than the existing arable farmland. A map showing Chalk Park and other nearby open space can be found in chapter 3 of the Operations update.

### **Measures to reduce biodiversity impacts of the project during operation**

The land used to accommodate the Southern Tunnel Entrance Compound and a haul road would be returned to agricultural use on completion of the construction works. The only exception would be Chalk Park, a recreational area to the west of the southern tunnel entrance, part of which falls within the Westcourt ward. This area would include a mix of grassland, woodland planting, hedges and hedgerows with trees, providing habitat suitable for a number of species and increasing the value for terrestrial biodiversity in this area. Newly created habitat would be managed to ensure that they provide high quality habitat to support a broad range of different plant and animal species. To mitigate disturbance from traffic, the new road would be in a cutting north of the A2/M2, reducing noise impacts.

The impact of the project on biodiversity would be controlled through the range of good practice measures set out in the project's CoCP and the REAC. See chapter 1 of the Construction update for more information about this and the project's other control documents.

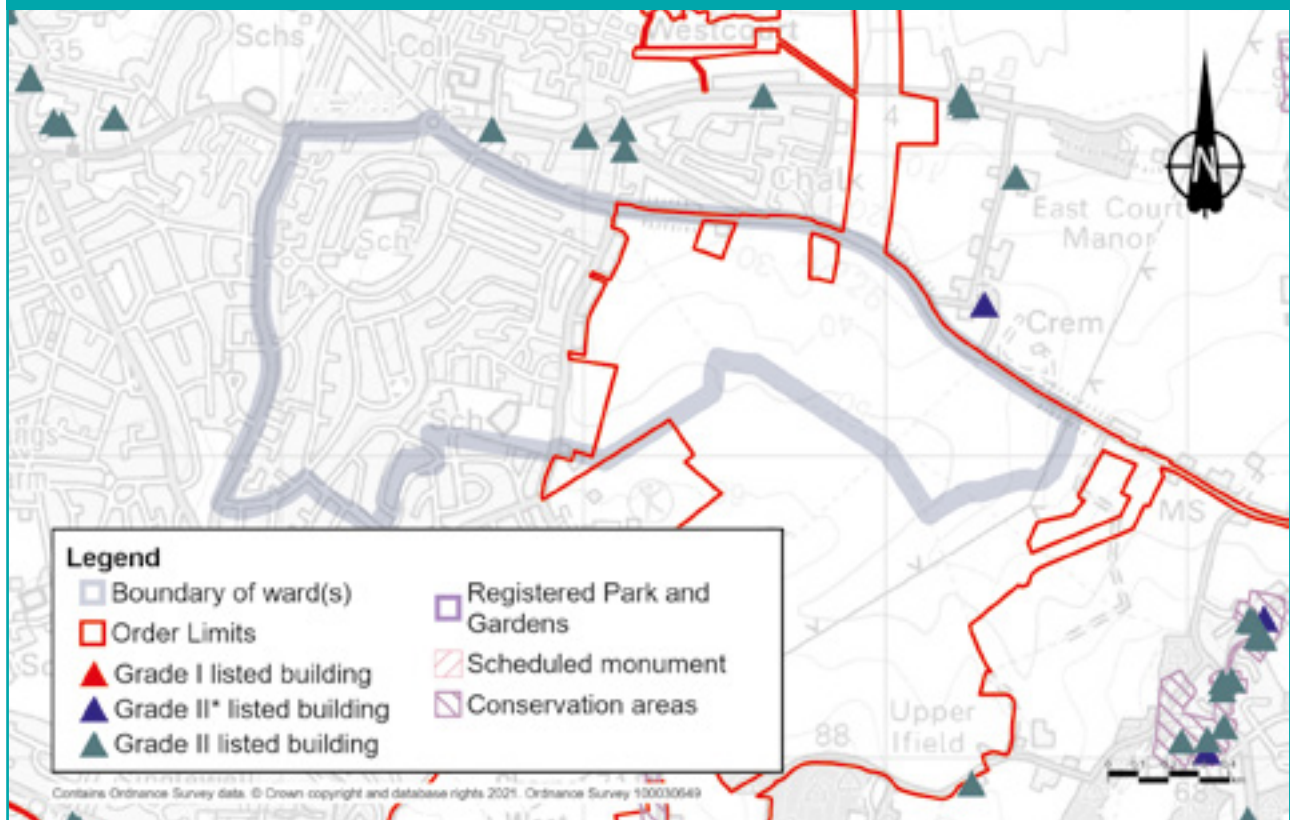
## 6.11 Built heritage

### Existing situation

There is one building of historical relevance (not a listed building) that has been identified within Westcourt ward:

- Polperro World War II anti-aircraft headquarters is a historical building of low heritage value. It is situated south of the A226 Rochester Road, 25 metres from the project and has historical value due to the role it played during the war and its association with several former anti-aircraft defence locations in the landscape. The building is a private property.

Figure 6.20: Built heritage locations in Westcourt ward



## **6.11.1 Construction**

### **Construction impacts**

The design and layout of the Southern Tunnel Entrance Compound would take in to account the setting of heritage assets (the surroundings in which a heritage asset is 'set'), and avoid light glare, light spill and light pollution during night-time construction. More information can be found in the Design principles (section S326). The Southern Tunnel Entrance Compound would be appropriately screened as set out in section 5.7 of the CoCP. Dust and noise reduction measures are also relevant in mitigating the impact to areas of heritage assets. Please refer to Air quality, Noise and vibration and Cultural heritage sections of the REAC.

Construction activity along the new route of the A122 Lower Thames Crossing would temporarily introduce additional noise, lighting and visible construction activity and machinery to the setting of Polperro, resulting in a negligible adverse impact.

### **Measures to reduce construction impacts**

No specific construction mitigation is required for Polperro because impacts are non-physical. There would, however, be an indirect effect to the setting of the building as a result of the construction and operation of the project.

## **6.11.2 Operations**

### **Operational impact**

Polperro would experience a negligible adverse impact due to change in setting caused by the project. The engineering and landscape design for the project seeks to avoid or reduce negative impacts on non-designated heritage assets resulting from changes to surroundings that would negatively affect the site's significance.

### **Measures to reduce operational impacts**

To preserve the rural and historic character of the landscape, road lighting would be minimised where it is safe and practical to do so, but remain in accordance with relevant standards (Design principles LST.02 and LST.03).

## 6.12 Contamination

### Existing situation

From the review of desk-based sources (historical maps and environmental data), potential sources of contamination have been identified based on land uses. Within this ward, the following have been identified:

- Former Gravesend Airport (a former civilian and military airfield). Former land uses are known or suspected to include aviation fuel storage and dispensing; firefighting; blast pens; aircraft service, manufacture and breaking; deep made ground; and an aluminium smelter.

The overall impact from these contamination sources is considered to be low, given the mitigation proposed.

### 6.12.1 Construction

#### Construction impacts

Construction activities in this ward would include topsoil stripping, earthworks movements and excavations, which could cause the mobilisation of contamination (if present). The area is part of the main construction compound, where stockpiling of soils would occur as well as the storage of materials and chemicals.

During construction, there is the possibility for existing contamination within the ground to become mobilised. There is also a potential risk of accidental oil, cement and fuel spills from construction traffic and the storage of materials.

### **Measures to reduce contamination risk**

To reduce the impact to an acceptable level, good practice measures include appropriate storing of equipment and clear soil handling. Storage of chemicals and reuse guidance would be used during construction to reduce the risk of spreading contamination and spillage or pollution.

To reduce the risk of accidental spillages, procedures would be in place such as designated areas to re-fuel plant, tanks would be bunded, spill kits would be available and incidents would be recorded and managed, with impacted soils being assessed and removed if necessary.

Essential mitigation, such as the development of site-specific remediation, where contamination has been identified during ground investigation work, would be carried out following consultation with the local authority. During the earthworks, workers would remain vigilant and any suspected contamination would be recorded and assessed accordingly via a watching brief protocol.

Contamination would be controlled through the range of good practice measures set out in the project's CoCP and the REAC. See chapter 1 of the Construction update for more information about this and the project's other control documents.

## **6.12.2 Operations**

Verification reports would be prepared for the remediation that is carried out in site-specific areas and this would be provided to the local authority. During the operation of the road, should an incident occur, a traffic accident resulting in localised contamination, significantly affected soils would be assessed and, if necessary, removed to reduce the risk of contamination migrating across a wider area or entering controlled waters. For more information on these controls, see the REAC.