

Chapter 17: Little Thurrock Blackshots and Little Thurrock Rectory wards

This chapter summarises the activities in Little Thurrock Blackshots and Little Thurrock Rectory wards relating to the project's construction and its operational phase (when the new road is open). It describes the construction, operation activities and impacts on these wards, which are situated in the borough of Thurrock. It also explains the proposed measures 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.

The activities within and impacts on these two wards are presented together in one chapter because both wards are on the fringes of the area directly affected by the project and the impacts on the wards are similar.

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 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.

17.1 Overview

17.1.1 About these wards

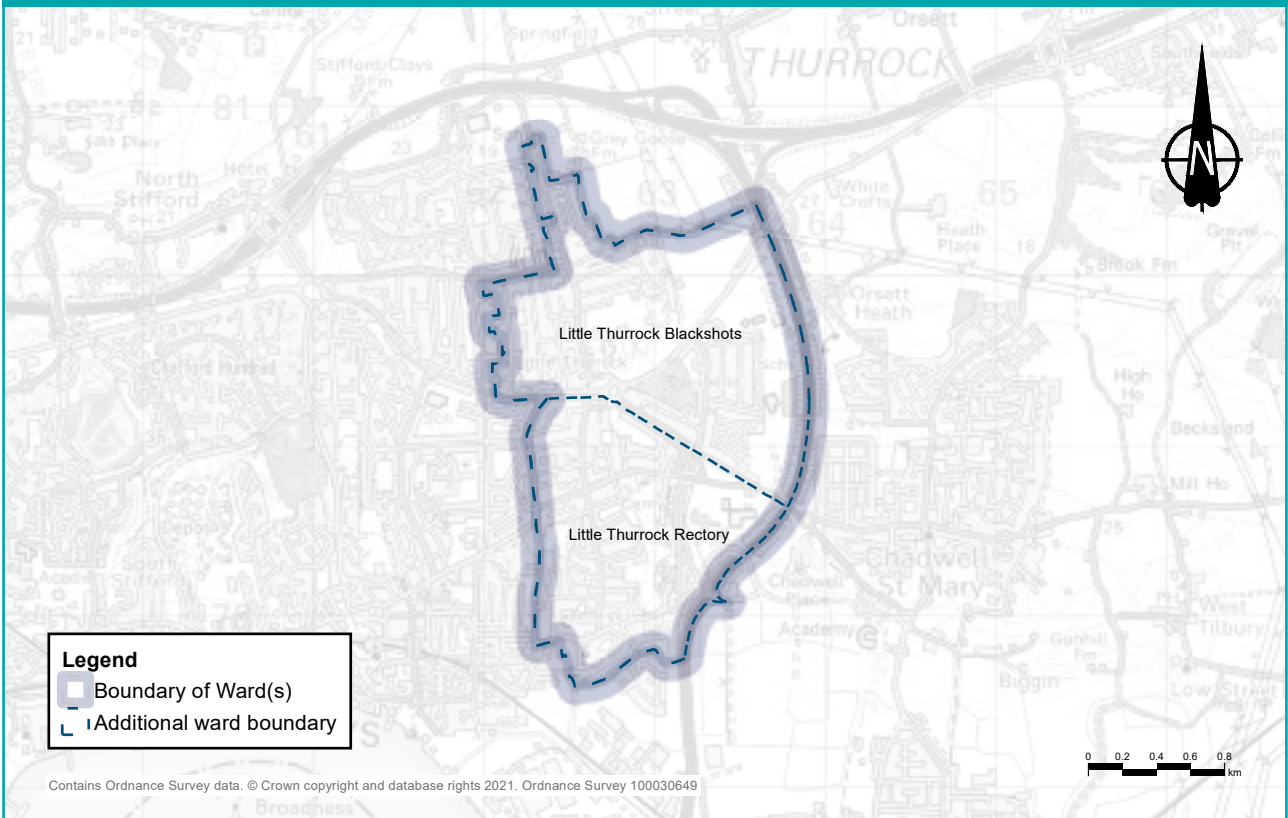
Little Thurrock Blackshots ward is located north of Little Thurrock Rectory ward, to the west of Chadwell St Mary ward, and south of Orsett ward. The ward is around 2.2km² in area and has an estimated population of 6,708¹. The ward is mostly residential with some open space at the centre of the ward including Hangman's Wood to the south-east of Stanford Road, King George's Field to the north of Stanford Road and Terrel's Heath to the west of the A1089.

Little Thurrock Rectory ward is located south of Little Thurrock Blackshots and west of Tilbury St Chads. The ward is 1.6km² in area and has an estimated population of 6,172². It is mostly residential with some open space to the east of the ward including Delafield Open Space and various playing fields. The A1089 (Dock Approach Road) runs north-south along the western ward boundary.

1 Office of National Statistics, 2018 ward-level population estimate

2 Office of National Statistics, 2018 ward-level population estimate

Figure 17.1: Little Thurrock Blackshots and Little Thurrock Rectory wards



17.1.2 Summary of impacts

Table 17.1: Summary of impacts during the project's construction and operation

Topic	Construction	Operations
<p>Traffic</p>	<p>Impact</p> <p>The most noticeable traffic impact in the ward is likely to be from the contraflow on the A1013 which will be in place for around 8 months. Further details about the impacts of the construction process on the wards can be found in the Traffic section of this chapter.</p> <p>Mitigation</p> <p>There are several mitigation measures to reduce the impact of the construction process on local residents, including avoiding using local roads where possible. For further details about the mitigation measures, see the traffic section of this chapter.</p>	<p>Impact</p> <p>There would be little change in predicted traffic in these two wards, except on the route from the Orsett Cock junction along the A1013 Stanford Road southbound, at Daneholes Roundabout and Wood View and the Old Dock Approach Road.</p> <p>Mitigation</p> <p>Regular monitoring would take place once the road is open. Further details about the mitigation measures for Little Thurrock Blackshots and Little Thurrock Rectory wards can be found in the traffic section of this chapter.</p>
<p>Public transport</p>	<p>Buses</p> <p>Due to additional traffic on the A1089, journey times for the Z2 and Z4 buses may increase. When traffic management is place on other roads, there may be delays to buses using those routes.</p> <p>Rail</p> <p>During construction, there may be some increases in journey times to Tilbury Town and East Tilbury stations as a result of increased traffic through the area and traffic management on local roads. There would be some night-time closures of the Tilbury Loop railway line but these are not expected to affect services.</p>	<p>Buses</p> <p>There are changes predicted to the 5A bus from Pitsea to Grays, the 73 from Tilbury through Grays to Lakeside Shopping Centre, and the 83 from Chadwell St Mary through Grays to Lakeside.</p> <p>Rail</p> <p>There are no discernible changes in access times to Grays station or changes in rail services expected once the road opens. It would, however, become easier to access Ebbsfleet International Station.</p>

Topic	Construction	Operations
<p>Footpaths, bridleways and cycle routes</p>	<p>Impact</p> <p>One footpath, one bridleway and one pedestrian-cycle track would be impacted during the construction of the project. Closures range from less than a week to five years to allow for road realignment, utilities works and construction activities.</p> <p>Mitigation</p> <p>Where routes need to be closed to allow for construction of the project, closures would be kept to a minimum to reduce disruption.</p>	<p>Impacts</p> <p>The footpath, bridleway and pedestrian-cycle track affected by the project during construction would be shortened or permanently diverted and link up with the existing public right of way network in this ward when the road is open. One path would be shortened near the A13.</p> <p>Mitigation</p> <p>Realignments of existing paths would be as close as is practical to the current alignments, while the new routes would link up to the local public right of way network.</p>
<p>Visual</p>	<p>Impacts</p> <p>Views towards construction activities from residential properties on the north-east edge of Little Thurrock Blackshots would include the construction of the proposed A13/A1089 junction, viewed beyond the Utility Logistics Hub, construction compounds and diversion of two overhead power lines, which would feature noticeably in view from Thurrock Rugby Football Club. Similar views would be seen from the footpath in this area.</p> <p>Views towards construction activities are screened by mature roadside vegetation from Little Thurrock Rectory, so there would be no visual effects from the project.</p> <p>Mitigation</p> <p>The visual impact of the project would be controlled through a range of good practice measures set out in the CoCP and REAC.</p>	<p>Impacts</p> <p>Elevated structures of the Lower Thames Crossing/A13 junction and associated traffic, gantries and lighting would be visible. The diverted section of overhead lines would move slightly closer to residential properties and the replacement of pylons would be more visibly intrusive.</p> <p>Mitigation</p> <p>Elevated structures would be softened by false cuttings on the south side of the proposed A13/A1089 junction, along with woodland planting. This would screen views of the new road and traffic, and help integrate it into the surrounding landscape.</p>

Topic	Construction	Operations
<p>Noise and vibration</p>	<p>Impacts</p> <p>The construction activity associated with the A13/A1089 junction upgrade, main alignment and utility works is expected to create noise and vibration in this ward. There would also be 24-hour, seven-day construction working in some locations. There would be negligible changes in noise from road traffic for most roads in the ward during the construction period, except for Dock Approach Road and Stifford Clays Road, where minor increases in road traffic noise are predicted.</p> <p>Mitigation</p> <p>Construction noise levels would be controlled through the mitigation measures set out in the REAC. There are also measures set out in the CoCP.</p>	<p>Impacts</p> <p>Once the road is completed, there would be direct noise impacts from both the road and the proposed improvements to Stanford Road and Dock Approach Road in the north-eastern section of Little Thurrock Blackshots. As Little Thurrock Rectory is approximately 1.5km west of the new road, it would not be audible from this ward. In both wards, there would be an indirect noise impact from the changes in traffic flow and speed on the existing road network.</p> <p>Mitigation</p> <p>Low-noise road surfaces would be installed on all new and affected resurfaced roads, plus noise barriers would be fitted.</p>

Topic	Construction	Operations
<p>Air quality</p>	<p>Impacts</p> <p>There is likely to be dust and emissions from construction equipment and traffic during the construction phase.</p> <p>Our analysis of construction traffic predicts that the impact on most roads in these wards would be negligible, although there would be a temporary minor worsening in air quality in the area around the A1089 and along the A126 Marshford Road, Chadwell Road and the B149 Wood View. Also, there would be a temporary minor improvement in air quality in the area around Stanford Road, Lodge Lane and Southend Road.</p> <p>Mitigation</p> <p>The contractor would follow the good practice construction measures presented in the CoCP and REAC to minimise the dust. 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 that would ensure measures are effectively controlling dust and exhaust emissions.</p>	<p>Impacts</p> <p>There would be no exceedance of NO₂ and PM₁₀.</p> <p>Mitigation</p> <p>No mitigation is required.</p>

Topic	Construction	Operations
<p>Health</p>	<p>Impacts</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. There is also likely to be perceivable changes in noise levels from the construction of the new road, utility works and construction traffic.</p> <p>There would also be temporary visual impacts in Little Thurrock Blackshots, as set out earlier in this table, and changes in accessibility.</p> <p>Mitigation</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, noise and visual screening, traffic management measures and community engagement. This includes establishing Community Liaison Groups.</p>	<p>Impacts</p> <p>The new road would improve access to work and training, open spaces, and local resources and amenities.</p> <p>Some residents may experience impacts on mental health and wellbeing (such as anxiety around perceived changes to air quality, or from changes to noise levels).</p> <p>There would be no adverse impacts from noise, air quality or visual changes in Little Thurrock Rectory.</p> <p>Mitigation</p> <p>No essential mitigation is required for health other than those measures described in the Noise mitigation and Visual sections.</p>

Topic	Construction	Operations
<p>Biodiversity</p>	<p>Impacts</p> <p>The construction of the road would involve the removal of habitat areas, both temporarily and permanently. The removal of hedgerows would result in the loss of badger setts and reptile habitat.</p> <p>Mitigation</p> <p>Vegetation clearance would be carried out in winter to avoid impacting breeding birds. Protected species would be relocated, under a Natural England licence. Boxes to support bats and birds would be erected. Habitat lost temporarily for construction works would be reinstated.</p>	<p>Impacts</p> <p>There is the potential to cause mortality of species by encountering road traffic as well as habitat fragmentation and disturbance from traffic.</p> <p>Mitigation</p> <p>Newly created areas of habitat would be managed to ensure they provide high quality habitat to support a broad range of plant and animal species. Impacts would also be managed through the range of good practice measures set out in the CoCP and REAC.</p>
<p>Built heritage</p>	<p>Impacts</p> <p>None identified.</p> <p>Mitigation</p> <p>No mitigation would be required.</p>	<p>Impacts</p> <p>None identified.</p> <p>Mitigation</p> <p>No mitigation would be required.</p>
<p>Contamination</p>	<p>Impacts</p> <p>None identified.</p> <p>Mitigation</p> <p>No mitigation would be required.</p>	<p>Impacts</p> <p>None identified.</p> <p>Mitigation</p> <p>During the operation of the road, should an incident occur, for example, 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.</p>

17.2 Project description

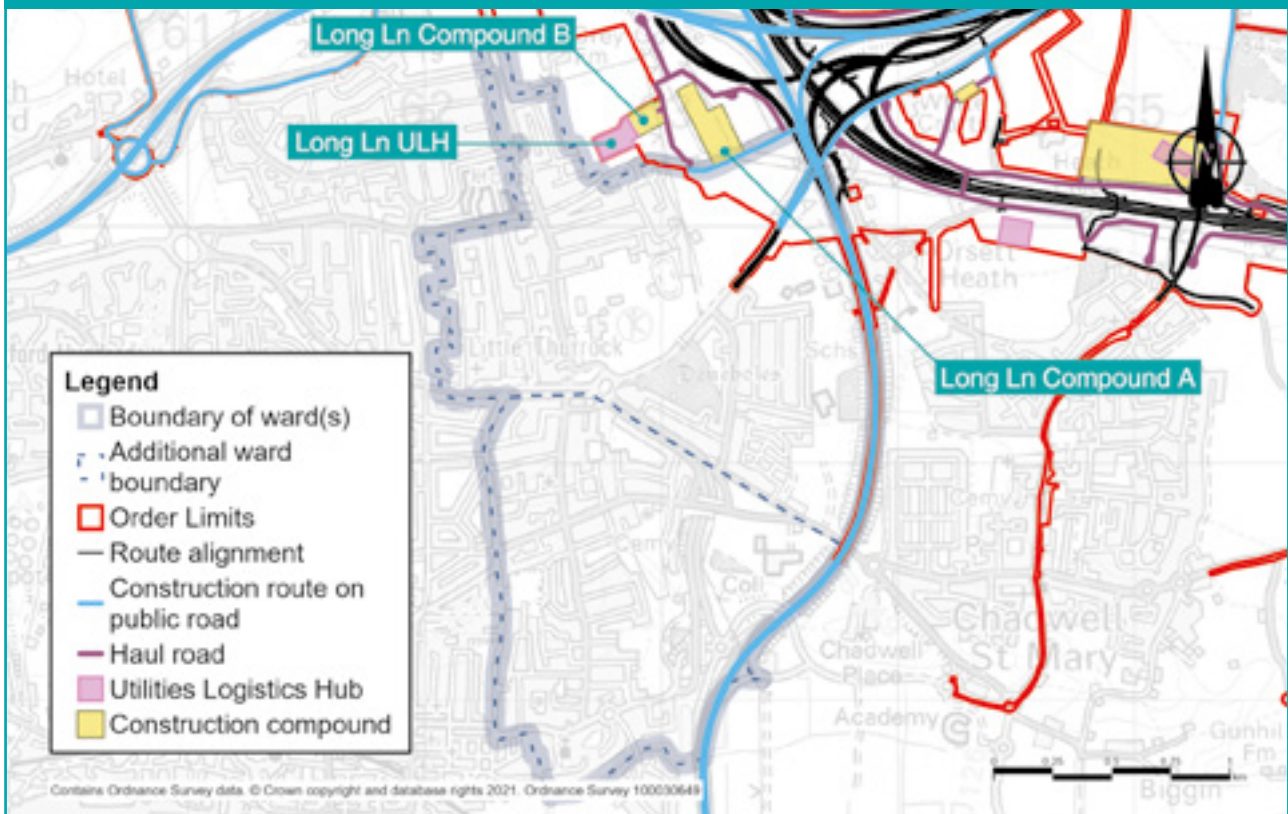
17.2.1 Construction

Construction activities

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.

Construction works would take place on the north-eastern side of Little Thurrock Blackshots ward, with works on the proposed A13/A1089 junction, works along the A1089, and the diversion of overhead power lines south of Long Lane. Substantial works to realign utilities under the A1089 would be required, as would works to divert utilities along the A1013. There would be part of a construction haul road in the north-east corner of Little Thurrock Blackshots ward, which would be used to transport equipment and materials around the worksite away from public roads.

Figure 17.2: Main construction areas in Little Thurrock Blackshots and Little Thurrock Rectory wards



Construction compounds and Utility Logistics Hubs

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

There are no construction compounds or Utility Logistics Hubs (ULHs) in these wards. For information about the Long Lane A and B compounds and the Long Lane ULH, which are located just outside Little Thurrock Blackshots ward on the north side of Long Lane, see chapter 16 about Orsett ward.

Construction related traffic

There will be additional traffic on the A1089 going to the Northern tunnel entrance compound, the Station Road compound.

Construction routes on public roads

The A1089 and part of the A1013 Stanford Road would be designated construction routes. This means they would be used by construction traffic, including HGVs and workforce vehicles. The roads would remain open to the public during the construction period, except if specific traffic management measures are needed.

Construction schedule

Construction of the whole project is scheduled to last for around six years from 2024 to 2029/30. To deliver our construction programme efficiently, we would divide activities into coordinated packages of work. Maps and programmes for the packages in this ward can be found in chapter 6 of the Construction update.

Construction working hours

Most construction activities in this ward would take place during core hours, from 7am to 7pm on weekdays, and 7am to 4pm on Saturdays. However, there would be times when our working hours would need to be extended – for example, when realigning overhead power lines, diverting utilities under existing roads, and connecting new roads to existing ones. These works would be done when the road is less busy for the safety of roads users and construction workers. Working outside core hours would also benefit road users by reducing the need for traffic management measures during busy times. More information about working hours can be found in the Noise and vibration section and in the CoCP.

Traffic management

The main traffic management measures for Little Thurrock Blackshots and Little Thurrock Rectory wards are below.

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 will be subject to final approval by the Secretary of State for Transport, following consultation with the local highways authority.

Table 17.2: Main traffic management measures in Little Thurrock Blackshots and Little Thurrock Rectory wards

Road(s) affected	Traffic management	Purpose	Duration
A1013	Lane reduction and traffic lights	Works on the A1013 and utility diversions	8 months between June 2025 and March 2026
A1013	Closure	Works on the A1013 including utility diversions	Occasional weekend or night closures for specific works during the construction period
A1089 northbound	Closure	Works to divert the overhead power line	Occasional weekend or night closures for specific works during the construction period
Long Lane	Closure	Works including utility connections to Long Lane A and B Compounds and overhead power line realignment	Occasional weekend or night closures for specific works during the construction period
A1013	Closure	Connecting new roads to existing roads	Occasional weekend or night closures for specific works during the construction period
A13 westbound to 1089 southbound	Closure	Switchover to permanent alignment	One weekend in August 2025

Measures required across the project would include narrow lanes, reduced speed limits, lane closures and temporary traffic lights. We have sought to minimise traffic management measures wherever practical. However, they would be necessary in some places to allow construction traffic and local communities to travel 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 will be subject to final approval by the Secretary of State for Transport, following consultation with the local highways authority.

17.2.2 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. Below, we set out the main features of the new road in Little Thurrock Blackshots and Little Thurrock Rectory wards once the new road is open:

- The A1013 Stanford Road would have a cycle route diversion parallel to the southbound carriageway connecting to Little Thurrock and Grays.
- Overhead power lines would follow a new route through the north-east of Little Thurrock over the A1013 Stanford Road.
- Several public rights of way would be rerouted permanently. For more information, please see the Footpaths, bridleways and cycle routes section.

Changes to the project since our design refinement consultation

As part of our ongoing design development and following discussions with utility companies, we have made a change to the project and Order Limits (the area of land required to construct and operate the project, formerly known as the development boundary) in these wards since our design refinement consultation in July 2020.

- Additional land would be needed around the A13/A1089 junction to allow permanent access to diverted utilities for maintenance and operation.

More information about our proposed changes, including updated maps of the Order Limits, can be found in chapter 3 of the Operations update.

Impacts on open space and common land

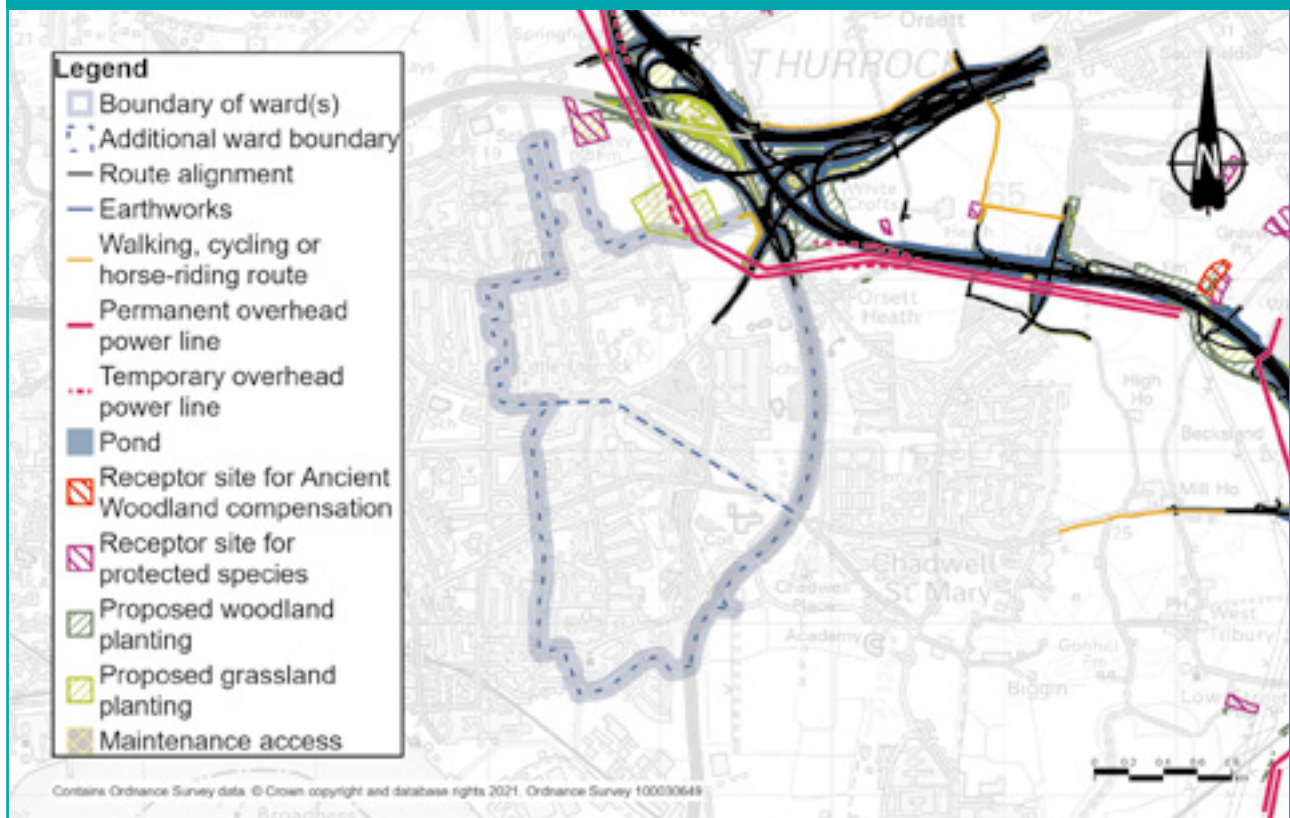
Within Little Thurrock Blackshots and Little Thurrock Rectory wards, there are no changes to our proposals to remove or replace open space land. More information about our proposals for compensating for impacts on open space land (which includes special category and recreational land), including proposals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

Impacts on private recreational land

Within Little Thurrock Blackshots and Little Thurrock Rectory wards we propose to use a small area to the north-east of the Thurrock Rugby Football Club to divert overhead electricity transmission lines. The works are not expected to cause any impact on the use of the rugby club. Permanent rights would be acquired over the area affected for the operation and maintenance of those utilities.

More information about the project's impacts on private recreational land can be found in chapter 3 of the Operations update.

Figure 17.3: The main features of the completed project in Little Thurrock Blackshots and Little Thurrock Rectory wards



17.3 Traffic

We carried out traffic assessments to understand how construction and operation would affect nearby roads, compared with the situation if the project was not implemented. For more information, see chapter 4 of the Operations update.

17.3.1 Construction

Construction impacts

Information about construction activities in these wards, including construction routes on public roads, can be found in the project description section earlier, with table 17.2 setting out the proposed construction traffic management.

The most noticeable traffic impact in the ward is likely to be from the contraflow on the A1013 which will be in place for around 8 months.

Measures to reduce construction traffic impacts

Our approach to construction has been refined after further investigations and feedback. 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. To reduce the construction traffic impacts in Little Thurrock Blackshots and Little Thurrock Rectory, we would carry out measures such as the following:

- Minimising use of the local road network as far as practical through construction of temporary offline haul routes directly from the strategic road network.
- 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 from the public road network during the construction phase.
- Where practical, designing new bridge structures so that they can be built offline. This would avoid closing local roads for extended periods. Where this is not possible and space is available to do so, the existing road would be temporarily realigned to enable the construction of new bridges.
- Banning HGVs associated with the road's construction from using some local roads where possible, following discussion with key stakeholders.
- Stockpiling material within the Order Limits to allow material to be managed on site rather than off site, reducing the number of HGVs journeys needed.

17.3.2 Operations

Operational traffic impacts

We have carried out traffic modelling in the wards to predict changes in traffic on the roads, including those within or on the boundary with these wards for the first year of the project's operation.

Figures 17.4, 17.6 and 17.8 below 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 17.5, 17.7 and 17.9 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.

The largest change in traffic flows in the ward would occur on the northern section of the A1089, between the Marshfoot roundabout and the A13, on the western boundary of the ward. In the northbound direction, the traffic flows would increase by between 500 and 1,000 PCUs an hour in the morning and evening peak hour, and by between 250 and 500 PCUs an hour in an interpeak hour. This represents an increase of over 40% in the morning peak hour and between 20% and 40% in the interpeak and evening peak hour. The change would be a result of some traffic from the Stifford Clays and Grays area changing their routes, for example by driving eastwards to use the A1089 rather than joining the A13 at the Stifford interchange.

There would be a decrease in traffic flows southbound on the A1089, between the A13 and Marshfoot roundabout. This would be a reduction of between 250 and 500 PCUs (between 10% and 20%) in the morning peak hour, and between 50 and 250 PCUs (a decrease of under 10%) in the interpeak and evening peak, compared with the predicted flow on the A1089 if the road was not built.

At the Daneholes roundabout, traffic flows on some roads coming into the junction would increase, but on other links they would reduce. On the A1013 Stanford Road, the traffic flows northbound would fall by between 50 and 250 PCUs in the morning peak hour, a drop of between 10% and 20% in each peak hour. Southbound, coming from the Orsett Cock roundabout, would see a rise of between 50 and 250 PCUs in the morning peak hour, the interpeak hours and the evening peak hour. This is an increase of between 20% and 40% in each of the modelled time periods.

On Woodview, which runs from Daneholes roundabout to the Marshfoot interchange, the traffic flows would decrease westbound (towards Daneholes roundabout) by between 50 and 250 PCUs in each modelled time period. This is a reduction of between 20% and 40% in the morning and evening peak hours and between 10% and 20% in an average interpeak hour. Eastbound traffic flows (towards the Marshfoot interchange) would increase by between 250 and 500 PCUs in the morning peak hour, a rise of over 40%. In an average interpeak hour and the evening peak hour the increase would be between 50 and 250 PCUs an hour – a rise of between 20% and 40%.

On Lodge Lane, the traffic flows would decrease in both directions. Westbound the reduction would be between 50 and 250 PCUs an hour in each modelled time period – a fall of between 10% and 20%. Eastbound traffic flows would decrease in the interpeak period and the evening peak hour, by between 50 and 250 PCUS – a reduction of between 10% and 20%.

On Blackshots Lane, there would be a reduction in traffic flows westbound in the morning and evening peak hours of between 50 and 250 PCUs an hour – a decrease of between 20% and 40%.

At the Marshfoot interchange, the traffic flows on the A126 Marshfoot Road northbound (towards Chadwell St Mary) would increase by between 50 and 250 PCUs (between 10% and 20%) in the morning peak hour and an average interpeak hour. Eastbound traffic flows would increase by between 250 and 500 PCUS in the morning peak hour – a rise of over 40%. In the interpeak period the average increase in traffic flows per hour would be between 50 and 250 PCUs an hour – a rise of between 20% and 40%. In the evening peak hour, the rise would be between 50 and 250 PCUs – an increase of over 40%.

On the northbound slip road onto the A1089, traffic flows would increase by over 500 PCUs an hour in the morning and evening peak hours – a rise of over 40%. In the interpeak period, the average increase in traffic flows would be between 250 and 500 PCUs an hour – also a rise of over 40%.

On the northbound slip road from the A1089 to the Marshfoot interchange, the traffic flows would decrease by between 50 and 250 PCUs in the morning peak hour. This is a fall of between 20% and 40%.

Dock Road runs west-east across Little Thurrock Rectory ward. At its junction with the Marshfoot interchange there would be a drop in traffic flows westbound of between 50 and 250 PCUs in the morning peak hour. This is a decrease of between 10% and 20%. Eastbound traffic flows would increase by between 50 and 250 PCUs in each modelled time period – a rise of between 10% and 20%.

The Old Dock Approach Road runs from the Marshfoot interchange towards the Deneholes roundabout. Northbound the change in traffic flows would be less than 50 PCUs an hour. Southbound traffic flows (towards the Marshfoot interchange) would increase by between 250 and 500 PCUs an hour – a rise of over 40% in the morning and evening peak hours. In an average interpeak hour, the increase would be between 50 and 250 PCUs an hour. This is also a rise of over 40% compared to the level of traffic without the new road.

The A1013 Southend Road lies on the western boundary of the Little Thurrock Rectory, the traffic flows would decrease northbound by between 50 and 250 PCUs an hour, a fall of between 10% and 20% in the evening peak hour. Southbound, the reduction in traffic occurs in the morning peak hour – a decrease of between 50 and 250 PCUs an hour (between 10% and 20%) in the evening peak hour.

Long Lane is in the west of the Little Thurrock Blackshots ward. Here traffic flows would increase westbound in the morning and evening peak hours by between 50 and 250 PCUs, a rise of between 20% and 40%.

Figure 17.4: Predicted change in traffic flows (PCUs) with the project during the morning peak in 2029/30

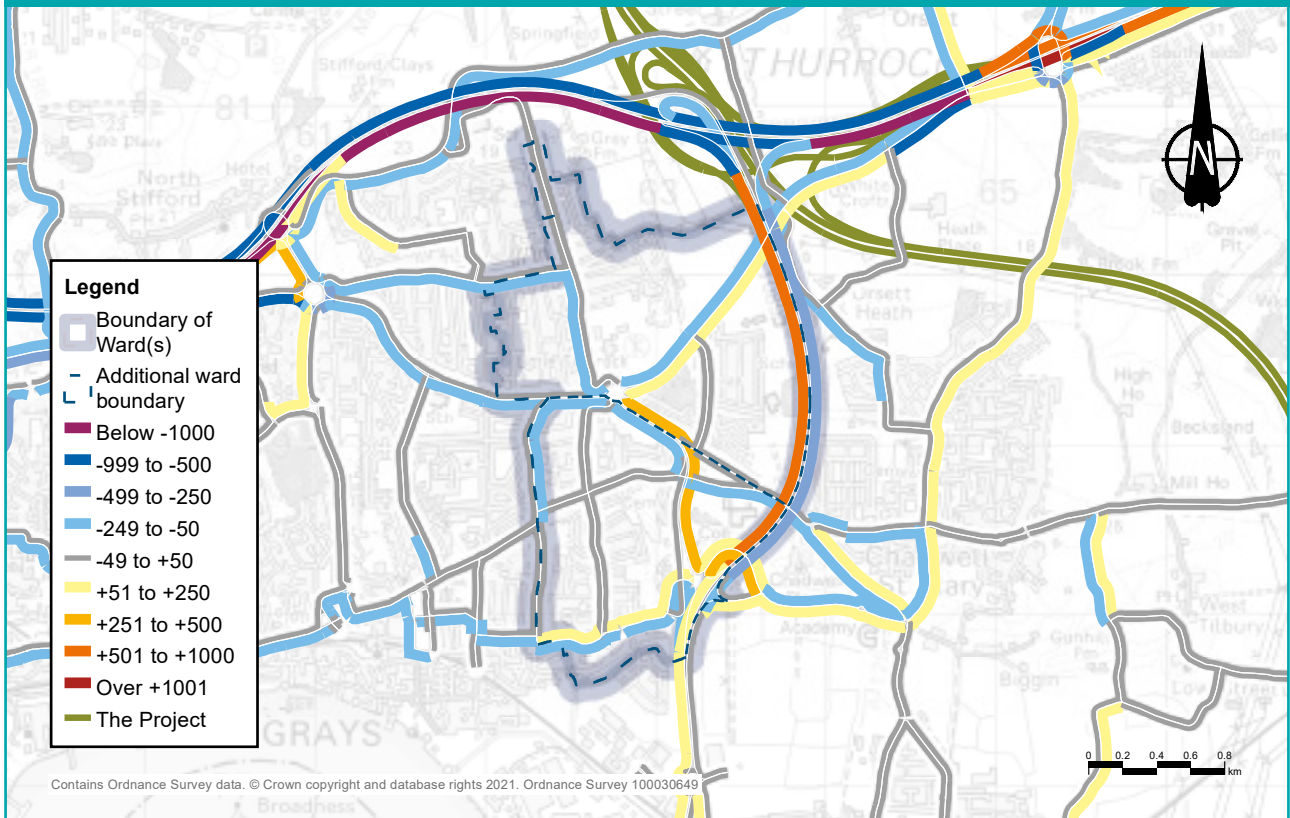


Figure 17.5: Predicted percentage change in traffic flows with the project during the morning peak in 2029/30

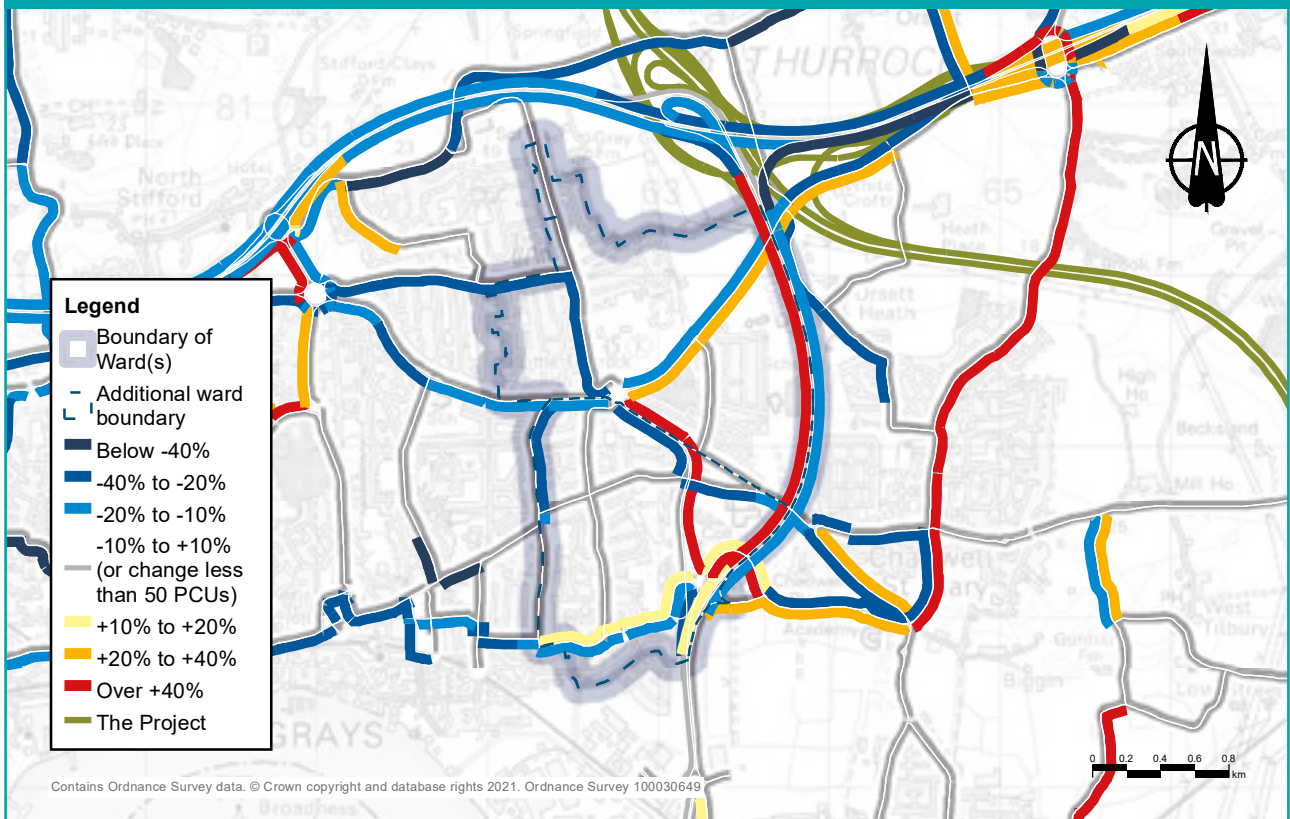


Figure 17.6: Predicted change in traffic flows (PCUs) with the project during the interpeak in 2029/30

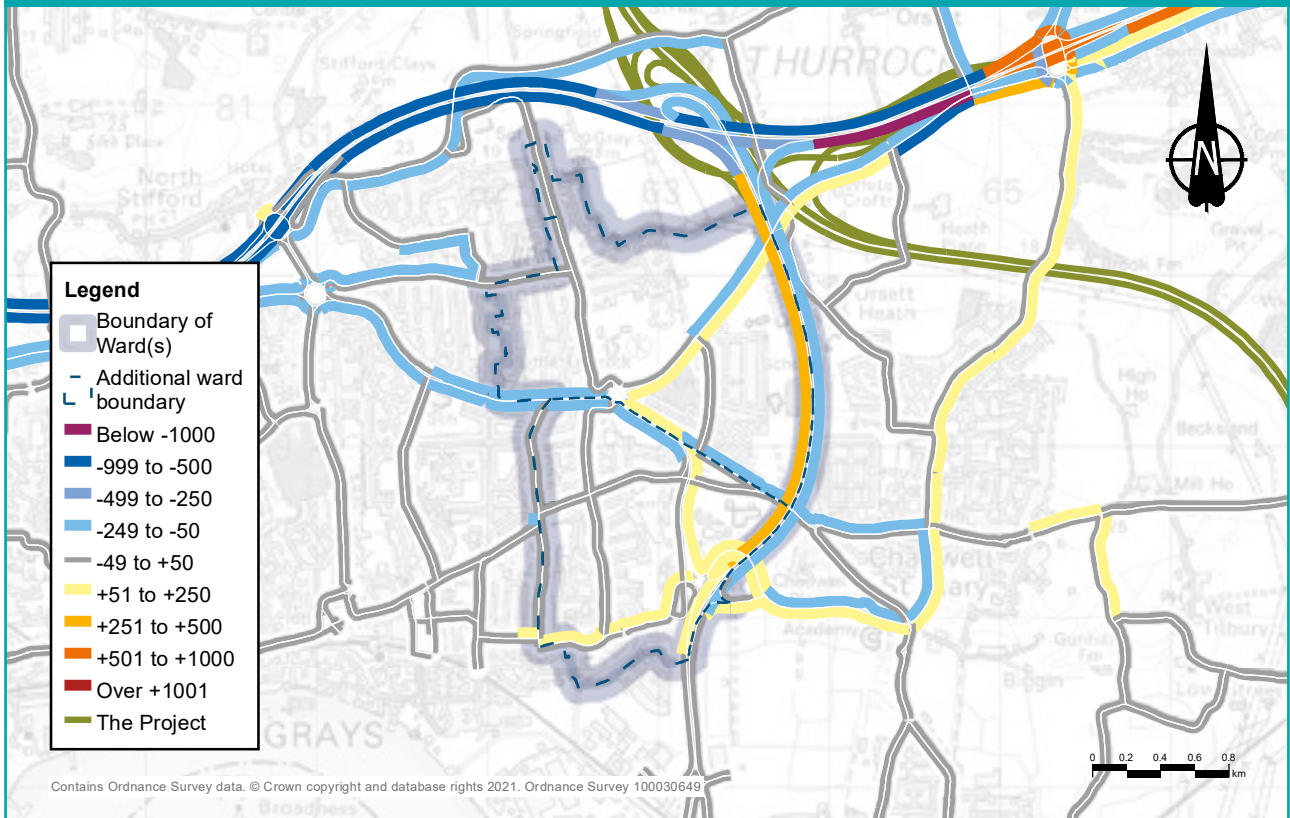


Figure 17.7: Predicted percentage change in traffic flows with the project during the interpeak in 2029/30

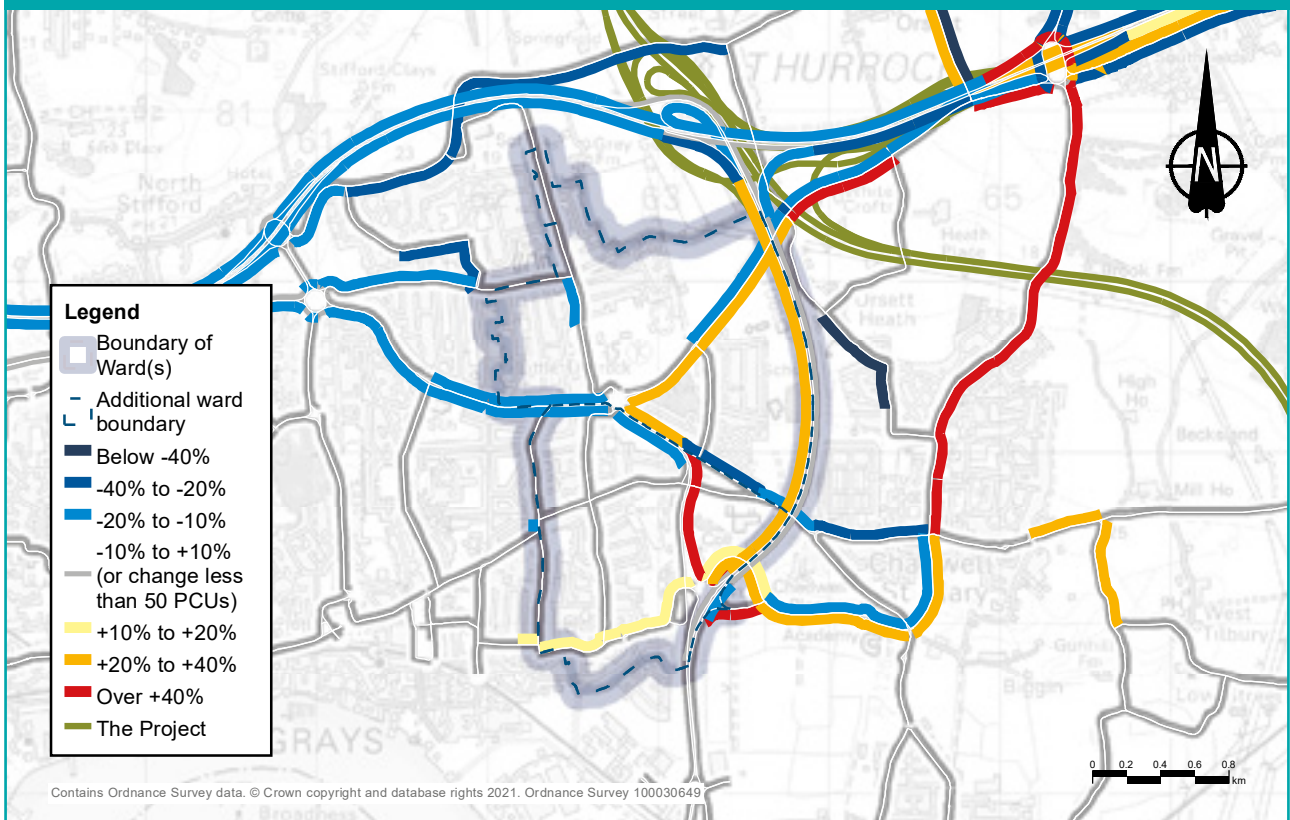


Figure 17.8: Predicted change in traffic flows (PCUs) with the project during the evening peak in 2029/30

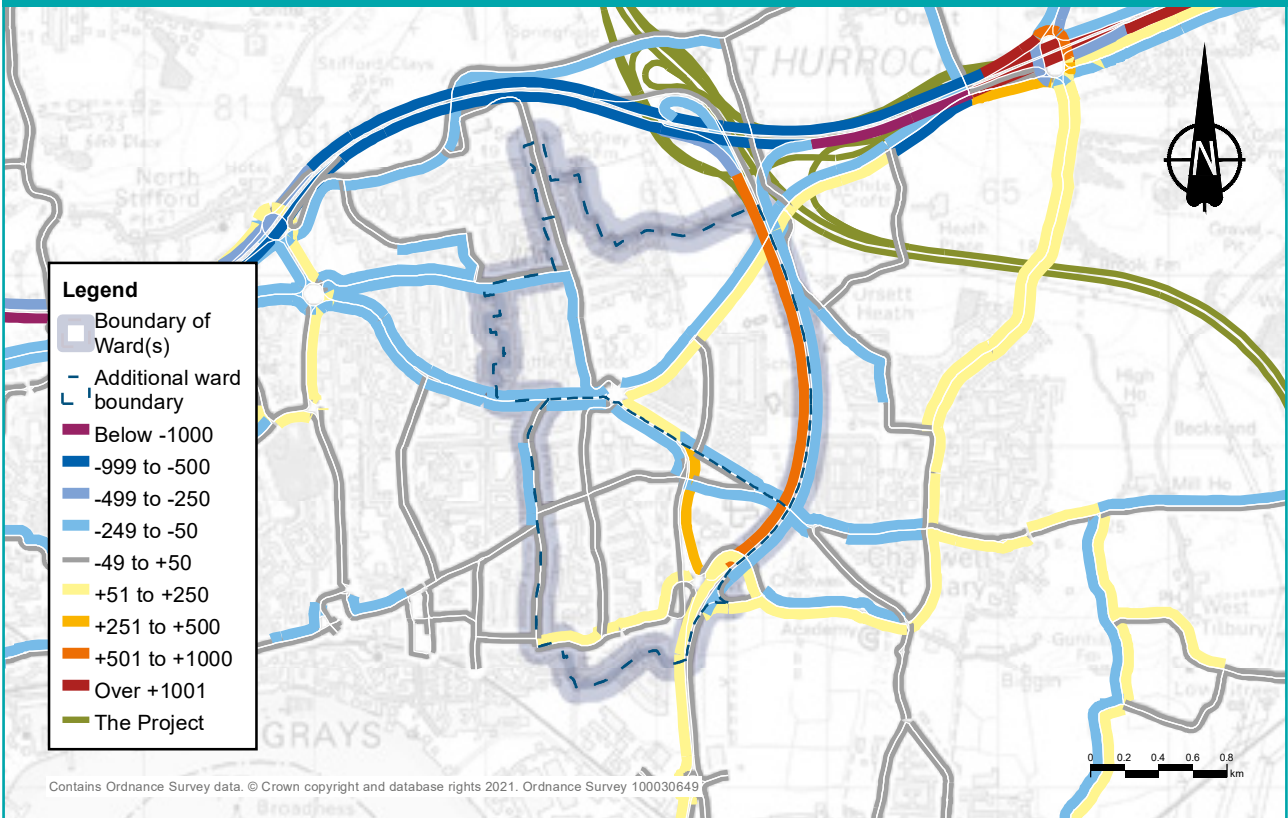
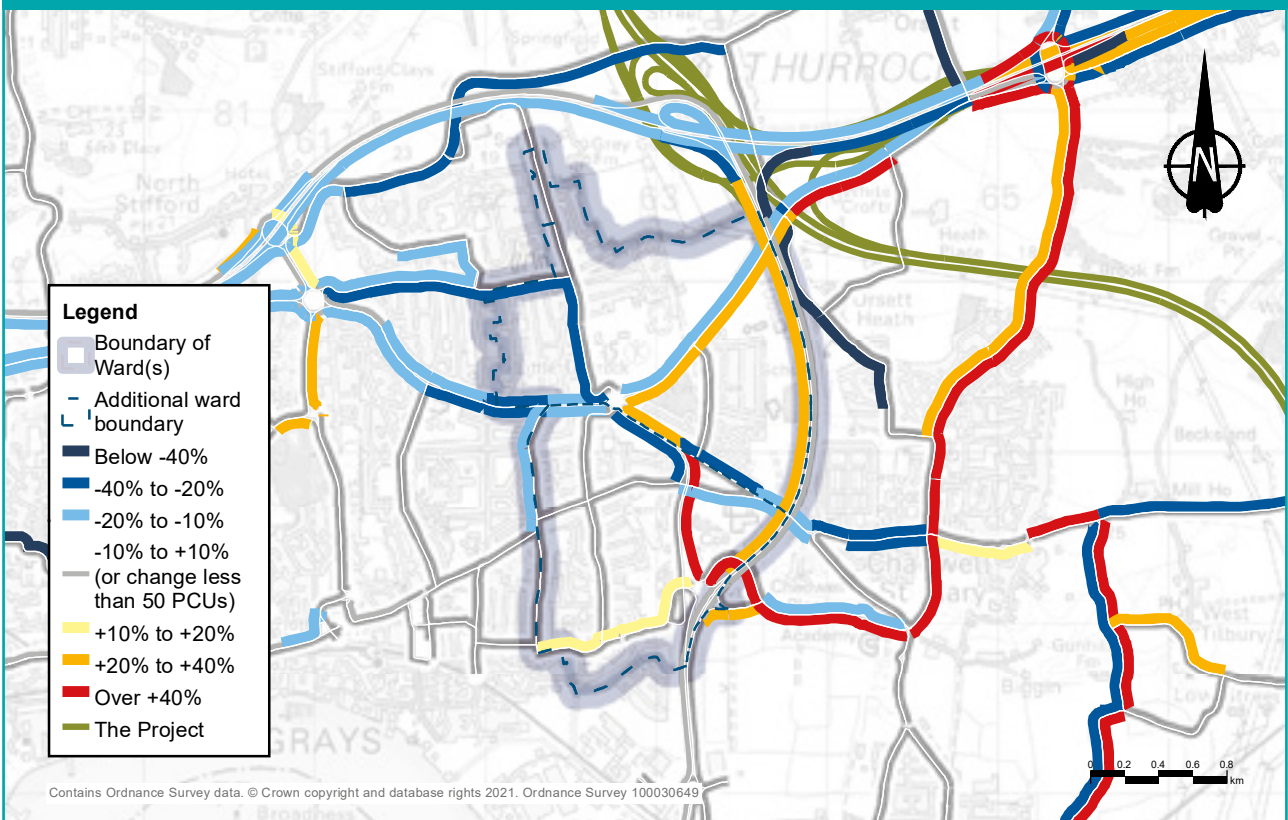


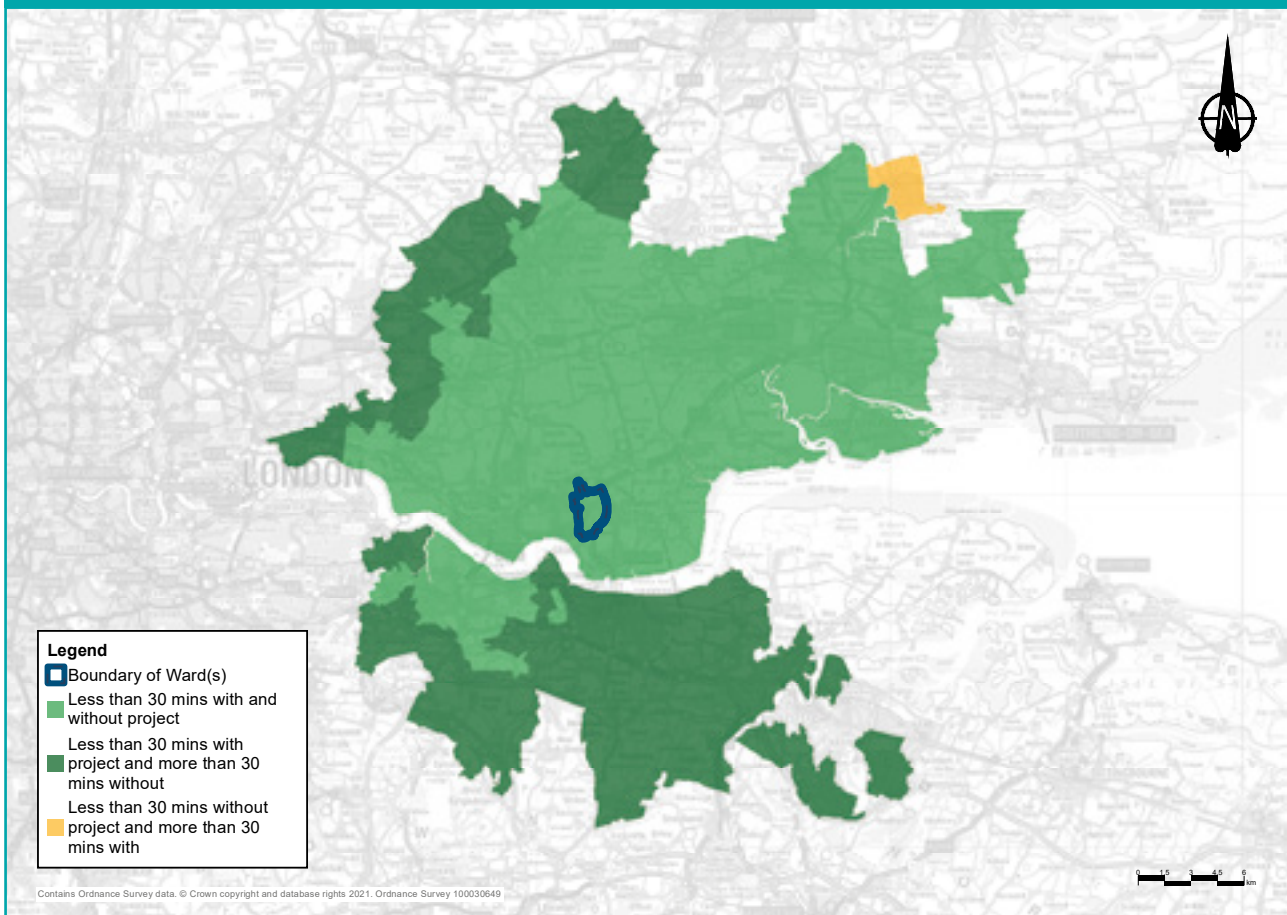
Figure 17.9: Predicted percentage change in traffic flows with the project during the evening peak in 2029/30



Changes to journey times

Figure 17.10 shows the change in the area that could be reached within a 30-minute drive from the centre of the ward both with and without the new road. Figure 17.11 shows the change in area that can be reached within a 60-minute drive. The areas have been calculated for the morning peak hour (7am-8am). The number of jobs within a 30-minute catchment area would increase by 56% with the new road providing access to an additional 193,300 jobs. The number within a 60-minute drive would rise by 26%, which would provide access to an extra 598,000 jobs. Despite the project providing a substantial net gain in access for motorists within these wards, there is an area (shown in orange on the map below) that would no longer be accessible by car within 30 minutes because of changes to traffic flows on the wider road network.

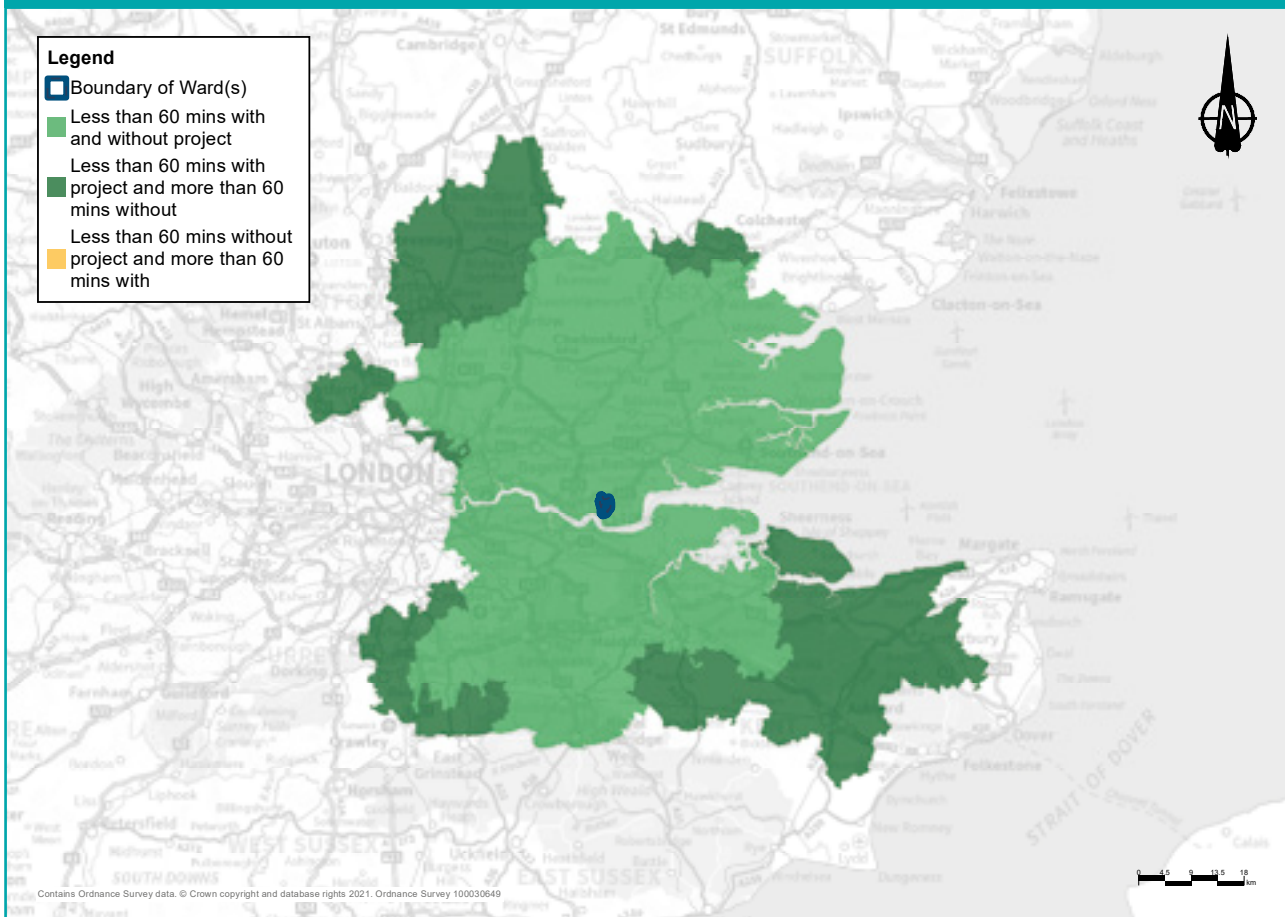
Figure 17.10: Change in the area that motorists could drive to within 30 minutes from Little Thurrock Blackshots and Little Thurrock Rectory wards



Operational traffic flows

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

Figure 17.11: Change in the area that motorists could drive to within 60 minutes from Little Thurrock Blackshots and Little Thurrock Rectory wards



17.4 Public transport

Existing situation

Little Thurrock Blackshots and Little Thurrock Rectory wards are served by the Tilbury Loop railway line, but there are no stations in these wards. The nearest stations are Grays, in South Stifford ward, and Tilbury Town in Tilbury Riverside and Thurrock Park ward.

The wards are serviced by several bus routes, including: 474; 475; 10; 100; 11; 265; 269; 374; 51; 5A; 5B; 5X; 66; 66A; 7; 73; 77; 77A; 77B; 7B; 7C; 83; 88; 88A; Z1; Z2; and Z4.

17.4.1 Construction

Rail

There would be a series of night-time rail closures of the Tilbury Loop railway line over a period of two months, in the adjacent East Tilbury ward while the Tilbury Viaduct is constructed. These possessions would be agreed with the network operator. It is intended that the works would take place outside train operational times, and so services would not be disrupted.

Throughout construction, there may be some increases in journey times to Grays and Tilbury Town stations, associated with increased traffic through the area and traffic management on local roads.

Buses

Due to the additional traffic on the A1089, the journey times of the Z2 and Z4 buses may increase. When traffic management is placed on other roads, there may be delays to buses using those roads, including the 5A, 11, 66, 73, 73a, 77, 77a, 83, 100 and the Z1.

17.4.2 Operations

Rail

There would be no discernible change in local access times to nearby stations and no change to the rail services at those stations. It would be quicker to access HS1 services at Ebbsfleet International station with the journey time decreasing by around six minutes in the morning and evening peaks.

Buses

The following bus services would be affected by changes in traffic levels on local roads once the new road is open:

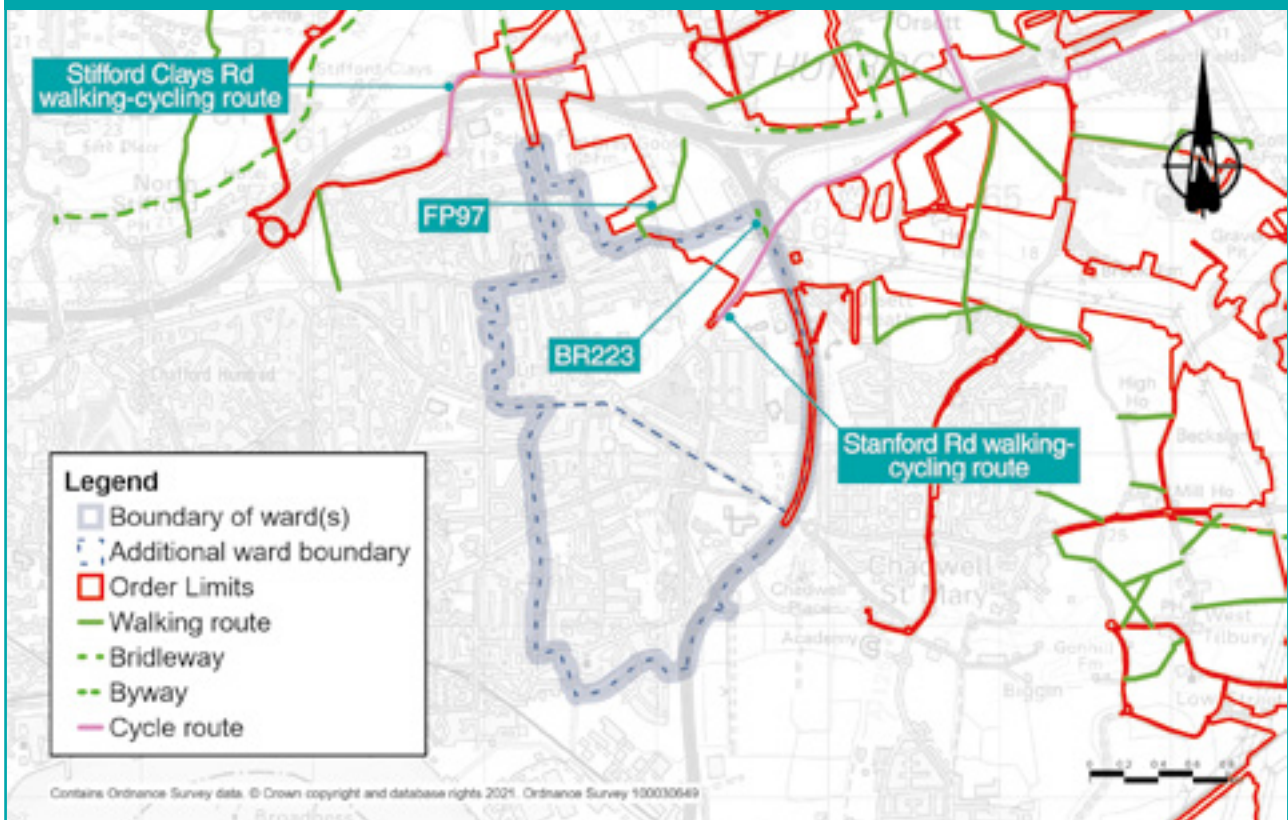
- Bus 5A from Pitsea to Grays. There would be an increase of around two minutes on the travel time for this bus route, westbound in the morning peak. The other time periods and eastbound services would not be affected.
- The 73 bus runs from Tilbury through Grays to Lakeside Shopping Centre. The journey times westbound in the morning peak hour would decrease by around two minutes.
- The 83 bus from Chadwell St Mary through Grays to Lakeside would also run slightly quicker in the morning peak westbound, with a decrease in journey time of between one to two minutes.

17.5 Footpaths, bridleways and cycle routes

Existing situation

Little Thurrock Blackshots and Little Thurrock Rectory wards include a footpath near the A13/A1089 junction and a shared cycling-walking route alongside the A1013 Stamford Road. These would be directly affected by the project. These are set out below, while other impacts, such as visual, and noise and vibration, are covered in other sections of this chapter.

Figure 17.12: Existing footpaths, bridleways and cycle routes in the vicinity of the project in Little Thurrock Blackshots and Little Thurrock Rectory wards



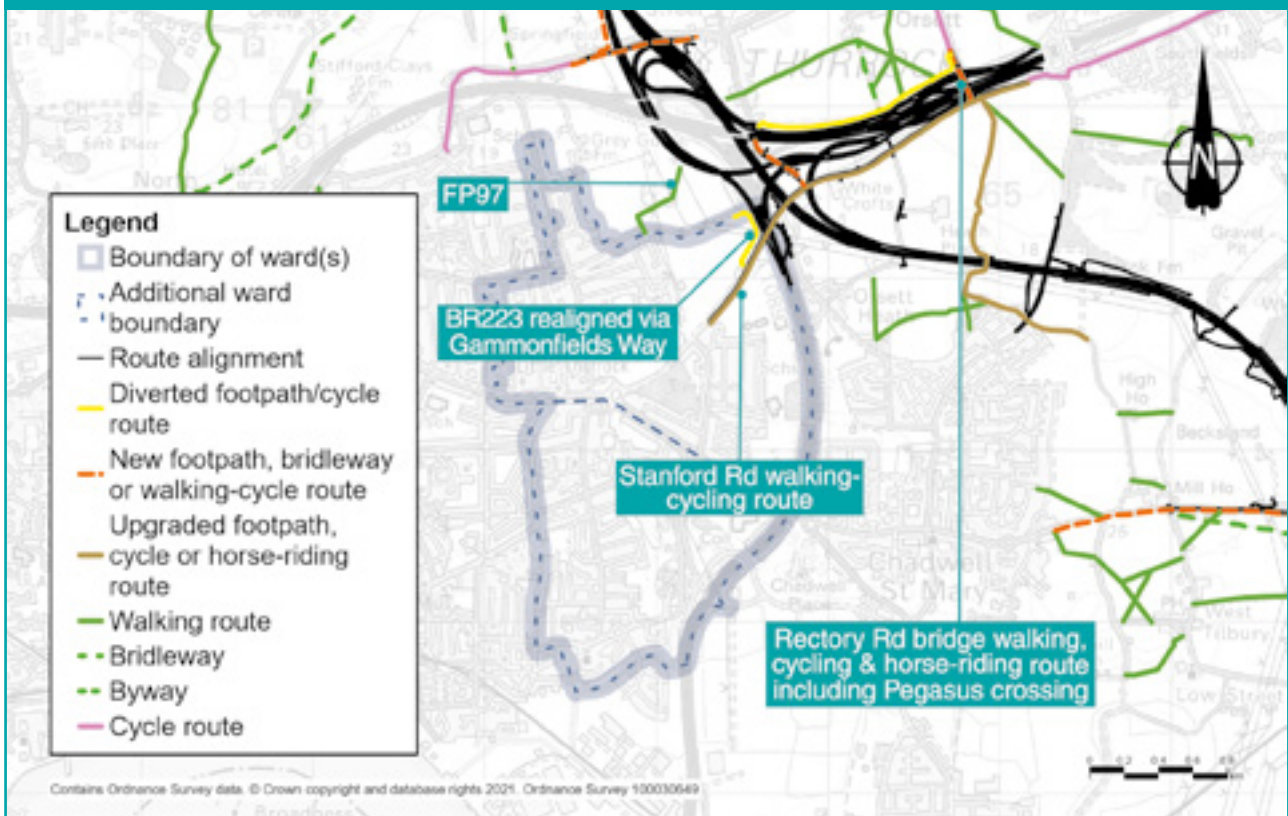
17.5.1 Construction

Construction impacts

There would be a small number of changes to the network of footpaths and bridleways during construction. More information about the proposed network of footpaths, bridleways and cycle routes after completion of the project can be found in the Operational impacts section.

- Footpath FP97 would need to be closed for eight months for utilities works. A section of the route would be closed permanently, shortening the path at the A13 end.
- Bridleway BR223 would need to be closed for five years for utilities diversion works and construction activities.
- The pedestrian-cycle track that runs along the south side of the A1013 would need to be closed for less than a week while traffic is diverted onto the new bridges over the project.

Figure 17.13: Proposed footpaths, bridleways and cycle routes in the vicinity of the project in Little Thurrock Blackshots and Little Thurrock Rectory wards



17.5.2 Operations

Operational impacts

Overall, the proposals for walking, cycling, and horse riding include more than 46km of new, diverted, extended or upgraded footpaths, bridleways and cycle routes. These would provide greatly improved connections across the project. We developed our proposals after consultation and engagement with local communities and stakeholders. For more information, see chapter 7 of the Operations update.

- Footpath FP97 would be shortened at the A13 end.
- Bridleway BR223 would be permanently diverted along the realigned Gammonfields Way.
- Once operational, a new off-road cycle track parallel to, and south of, A1013 Stanford Road would be opened with an adjacent grass verge for horse-riders to use. This cycle route would cross the project via a new pegasus crossing (suitable for horse-riders, as well as walkers and cyclists) connecting A1013 cycle track and Rectory Road bridge cycle track.

17.6 Visual

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.

Existing situation

The northern and eastern edges of Little Thurrock Blackshots have views towards the land on which the road would be built. Other views towards the road would be from the footpath between the north-east edge of Little Thurrock and A13 junction with the A1089, and from Thurrock Rugby Football Club (Thurrock RFC) and adjoining playing fields.

Current views from homes on the north-east edge of Little Thurrock Blackshots towards the proposed road are mostly of a flat, arable landscape bounded by mature hedgerows. Overhead power lines feature prominently, with glimpsed views of traffic along the A13 and A1089 beyond, partially screened by vegetation. Similar views are seen from the footpath between the north-east edge of Little Thurrock and A13 junction with the A1089.

Views from Thurrock RFC and the neighbouring playing fields are similar to those from nearby homes on the north-east edge of Little Thurrock Blackshots. However, a line of mature trees along the southern boundary and vegetation along Stanford Road, limits easterly views towards the project.

Views towards the new road bounding the A1089 corridor, in the eastern tip of the Little Thurrock Rectory ward, are screened by mature roadside vegetation. Consequently, there would be no visual effects from the project in Little Thurrock Rectory ward.

17.6.1 Construction

Construction impacts

The main construction activities likely to be seen from Little Thurrock Blackshots ward are:

- construction of the proposed A13/A1089 junction
- construction and operation of the Long Lane A and B Compounds
- construction and operation of the Long Lane Utility Logistics Hub
- utilities works, including overhead power line diversions

More information about construction activities can be found in the Project description section.

Views of construction activities from homes along the north-east edge of Little Thurrock Blackshots would include construction of the proposed A13/A1089 junction, which would be seen beyond the Utility Logistics Hub, construction compounds and the works to divert two overhead power lines. Similar views would be seen from the footpath between the north-east edge of Little Thurrock Blackshots and the A13 junction with the A1089, becoming more prominent the closer to the works.

From Thurrock RFC and the playing fields, there would be views to elements of works outside these wards, including the building of Stanford Road overbridge, construction compounds and more distant views towards construction of the proposed A13/A1089 junction. The overhead line diversion works would feature noticeably in views from Thurrock RFC.

Measures to reduce visual impacts during construction

No specific measures are proposed.

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

17.6.2 Operations

By opening year we would have restored the former construction compounds and Utility Logistics Hub to their original use. Further information about the completed project is provided in the Project description section.

Operational impacts

Changes to the view from the north-east edge of Little Thurrock Blackshots would include elevated structures of the Lower Thames Crossing/A13 junction and associated traffic, gantries and lighting. However, this would be softened by false cutting (a landscape mound alongside the new road to reduce views of the road and traffic) and proposed woodland planting. The diverted section of overhead line would be slightly closer to some homes, and replacement of two existing suspension pylons with four angle pylons would be more visually intrusive.

From Thurrock RFC and the adjacent playing fields, there would be views of the Stanford Road overbridge and more distant views towards the Lower Thames Crossing/A13 junction, softened by woodland planting mitigation. The diverted and reconfigured section of overhead line would be slightly closer to Thurrock RFC.

Measures to reduce visual impacts during operation

The false cutting on the south side of the Lower Thames Crossing/A13 junction and associated woodland planting would be our main measures to screen the views of the new road and traffic, and integrate the Lower Thames Crossing/A13 junction into the surrounding landscape.

17.7 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 Little Thurrock Blackshots and Little Thurrock Rectory wards is mainly as a result of traffic where the A1089, A1013, A126 and the B149 pass through the wards. There is also noise from other roads including the A13 at the northern end of the wards, agriculture and human activity.

As part of the environmental assessment process, we carried out surveys of existing background noise at three locations in these wards, which were agreed with the local authority. The levels monitored at these locations recorded average existing noise levels in the range of 49 to 53 dB(A)³ during the day and 47 to 52 dB(A) during the night.

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 road's proposed opening year if it was not built. We model this because we cannot assume that noise levels when the road opens would be the same as they are now. For example, our assessment of the opening year noise levels takes into account 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 road would change the noise levels if it were to be built.

3 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.

In the opening year (2029/30), noise levels without the road are predicted to range, on average, from 40 to 76 dB(A) during the day and from 30 to 61 dB(A) during the night-time period at identified locations within this ward. As such, our noise assessments predict that by opening year, noise levels would increase even if the road is not built. Information about noise levels with the project, during its construction and operation, are presented below.

17.7.1 Construction

Daytime construction noise impacts

The main construction activities that are expected to make noise and vibration in these wards relate to the A13/A1089 junction upgrade, main roads works and utilities works. There are no main works compounds or Utility Logistics Hubs currently proposed within the wards. We would also build haul roads for use during construction, with one of these partially within Little Thurrock Blackshots ward and others nearby. These are described in the Project description section above.

Within these wards, there would be no percussive or vibratory works proposed.

Although not located in Little Thurrock Blackshots or Little Thurrock Rectory wards, Long Lane Compound A, Long Lane Compound B and Long Lane Utility Logistics Hub may affect noise levels in these wards as they are close to the boundary.

Construction noise levels have been predicted at six locations across these wards. These sites were chosen to provide a representation of the level of noise communities are expected to experience during construction. For more information about how we carried out these assessments, see chapter 1.

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

Figure 17.14. shows the locations at which we have predicted the daytime construction noise during the project's construction period.

Each vertical bar in figure 17.15 and 17.16 below shows the predicted noise levels for that month of the construction period (from month one to month 72). The horizontal green line in each chart shows the existing background noise level at each assessment point without the new road. The horizontal red line shows the level at which construction noise would exceed defined thresholds (see chapter 1 for more information about these thresholds). If noise is predicted to exceed acceptable levels, then specific measures would be introduced to reduce the noise.

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

Figure 17.14: Construction noise assessment locations in Little Thurrock Blackshots and Little Thurrock Rectory wards

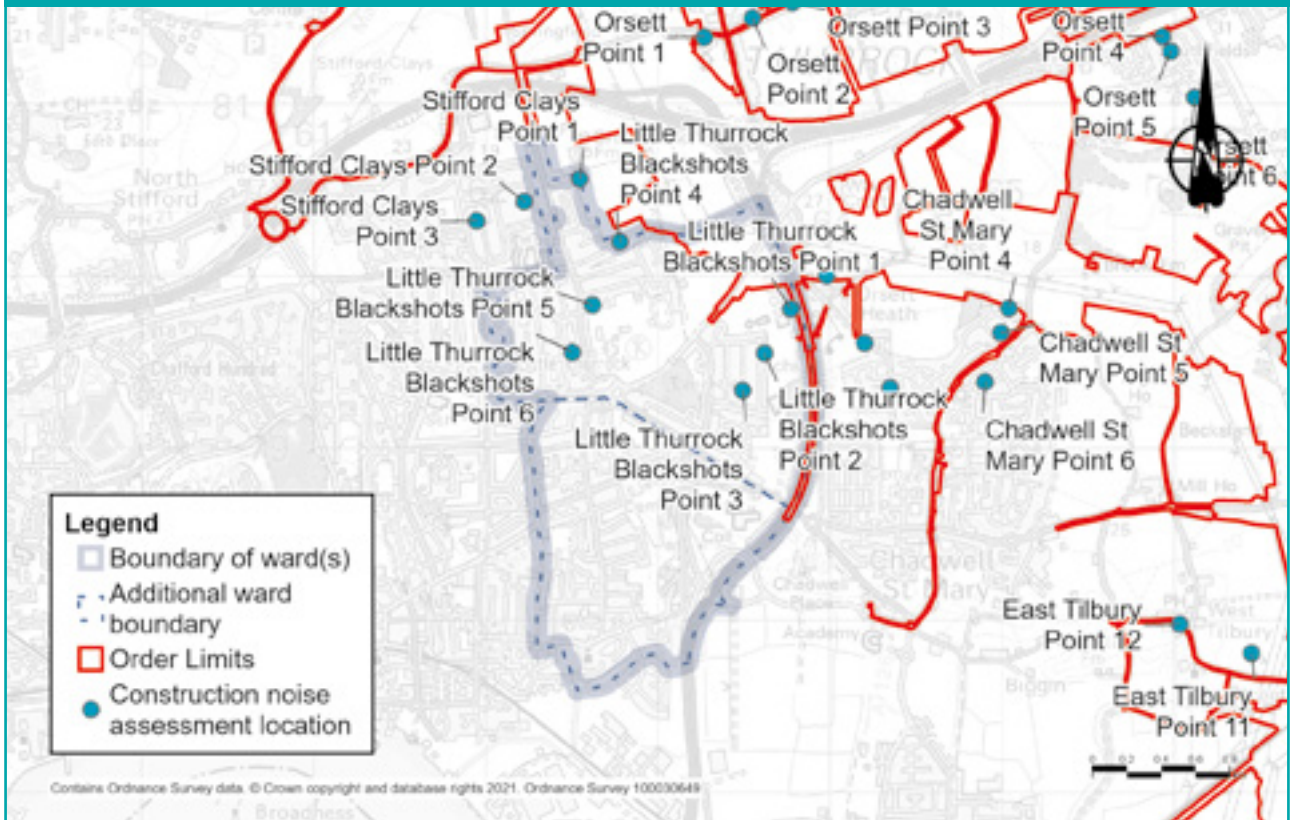
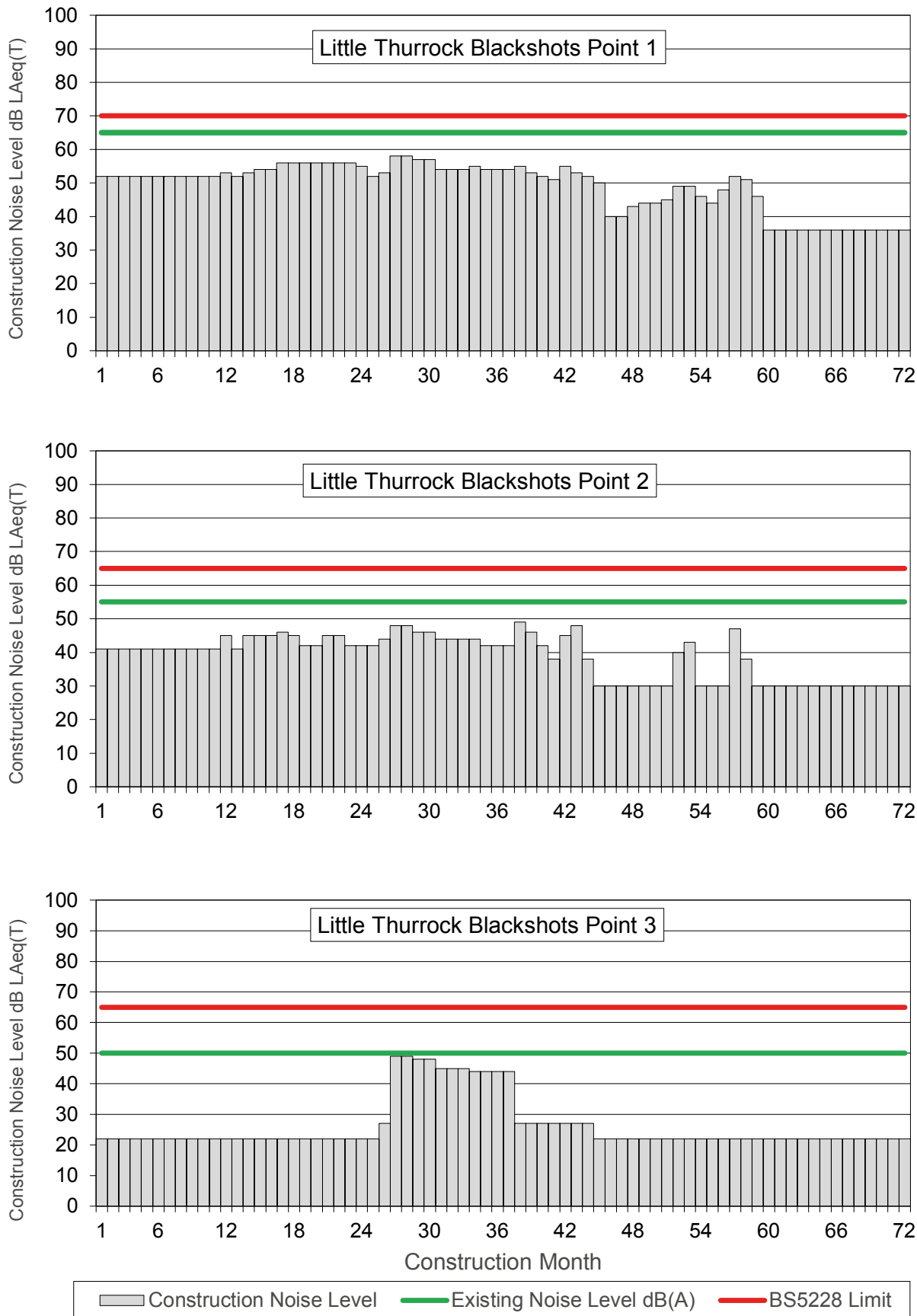


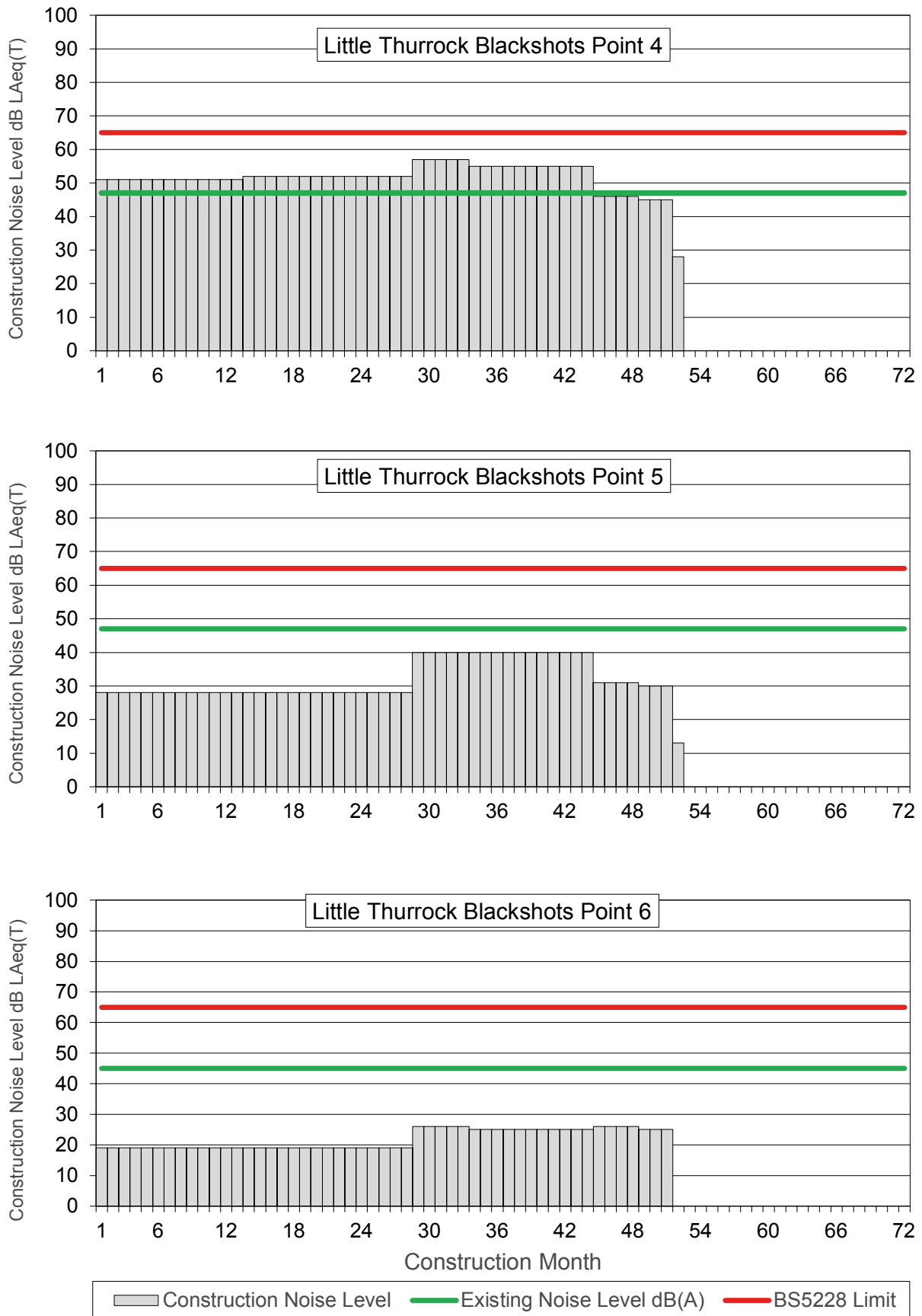
Figure 17.15: Construction noise by month for points 1, 2 and 3 in Little Thurrock Blackshots ward



With reference to figure 17.15 the following summarises the noise level changes over the six-year construction period for points 1 to 3. The construction noise levels are not predicted to exceed existing background noise levels at these assessment locations:

- at point 1, construction noise levels are predicted to range from 36 to 58dB LAeq (12-hour).
- at point 2, construction noise levels are predicted to range from 30 to 49dB LAeq (12-hour).
- at point 3, construction noise levels are predicted to range from 22 to 49dB LAeq (12-hour).

Figure 17.16: Construction noise by month for points 4, 5 and 6 in Little Thurrock Blackshots ward



With reference to figure 17.16 the following summarises the noise level changes over the construction period for points 4 to 6:

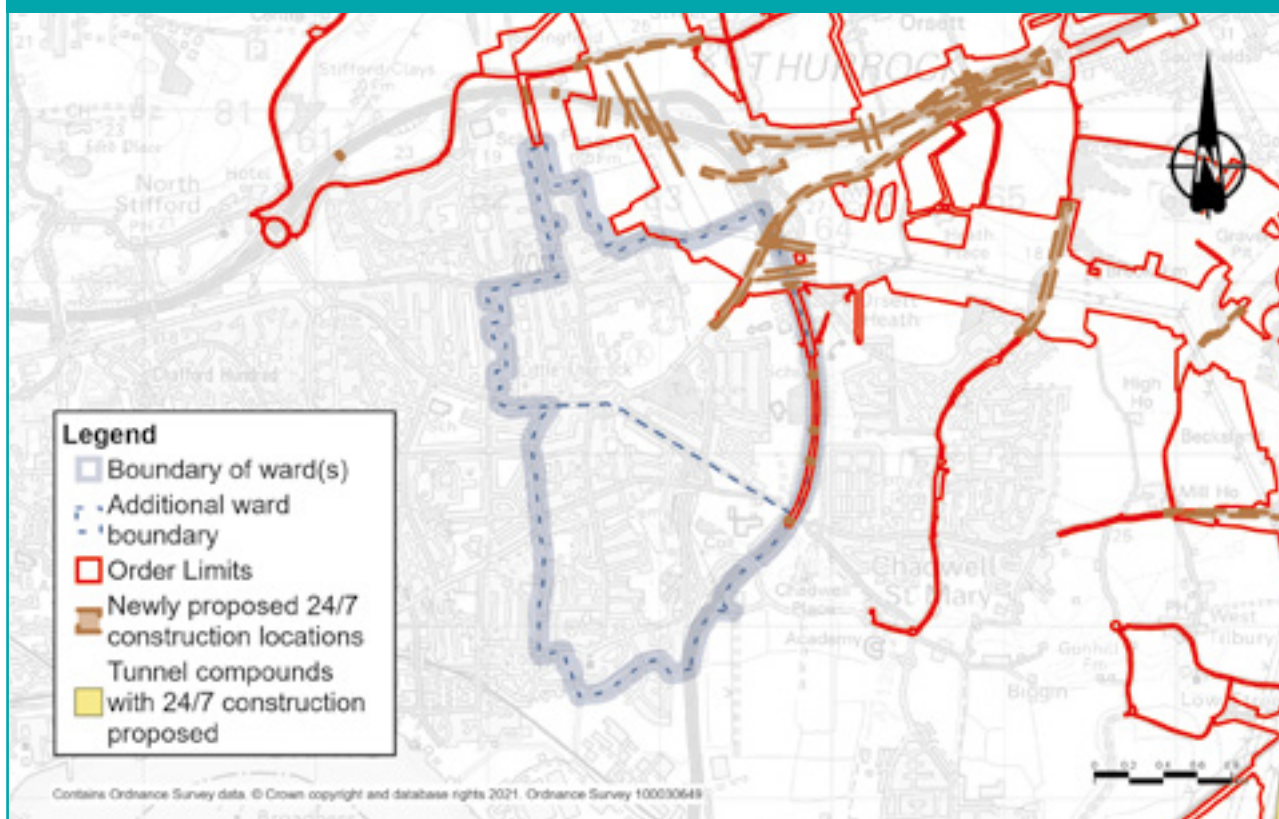
- At point 4, construction noise levels are predicted to range from 28 to 57dB LAeq (12-hour) during the construction programme. Construction noise levels would exceed the existing background daytime noise level for approximately 44 months. However, they would not breach the defined threshold.
- At point 5, construction noise levels are predicted to range from 13 to 40dB LAeq (12-hour) during the construction programme. Construction noise levels are not predicted to exceed the existing background noise levels at this assessment point.
- At point 6, construction noise levels are predicted to range from 19 to 26dB LAeq (12-hour) during the construction programme. Construction noise levels are not predicted to exceed the existing background noise levels at this assessment point.

24/7 construction working

In addition to the changes to daytime noise presented in the section above, 24-hour seven-day construction working is proposed at the locations shown in figure 17.17 below.

These locations are where works may need to be carried out at night to maintain safety and reduce disruption to road and utility networks. The works in this area are expected to be night-time or weekend highways works. These works could have an impact on local communities, and we would work with the local authority to manage these impacts.

Figure 17.17: Newly proposed and tunnel 24/7 working locations in Little Thurrock Blackshots and Little Thurrock Rectory wards



Construction traffic noise impacts

Maps showing the predicted changes in road traffic noise within these wards during each year of construction can be found in chapter 7 of the Construction update. Based on currently available traffic data (which offers a representative picture of what people within the wards are likely to experience) during the construction period, there would be negligible changes in road traffic noise (less than 1dB change in noise levels), except along the roads where increases in noise levels (less than 3dB change in noise levels) have been predicted. For more information about how we define noise impacts (negligible, minor, moderate and major), see chapter 1.

Table 17.3: Construction traffic noise impacts in Little Thurrock Blackshots and Little Thurrock Rectory wards

Affected road(s)	Predicted noise impact	Construction year(s)
Dock Approach Road	Minor increase in noise levels	2
Stifford Clays Road	Minor increase in noise levels	2

Measures to reduce construction noise and vibration

Construction noise levels would be mostly controlled by using Best Available Techniques (BAT), with specific measures 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 that loose body fittings or exhausts do not rattle or vibrate
- using silenced equipment where available, in particular power generators and pumps
- no music or radios would be played for entertainment purposes outdoors onsite
- site layout would be planned to ensure that reversing is kept to a practical 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
- Minimisation of construction vehicle traffic by, where practical, selection of local suppliers along the project route, using local workforces and by minimising material transportation for earthworks construction.

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

The CoCP sets out additional measures that we would use to reduce noise and vibration during the construction period.

17.7.2 Operations

Operational noise impacts

Little Thurrock Blackshots ward is located approximately 200 metres to the south-west of the proposed new road. Direct noise from the new road and the proposed improvements to Stanford Road and Dock Approach Road would be audible in the north-eastern section of Little Thurrock Blackshots ward.

Little Thurrock Rectory ward is located around 1.5km west of the new roads so direct noise from it wouldn't be heard in the ward.

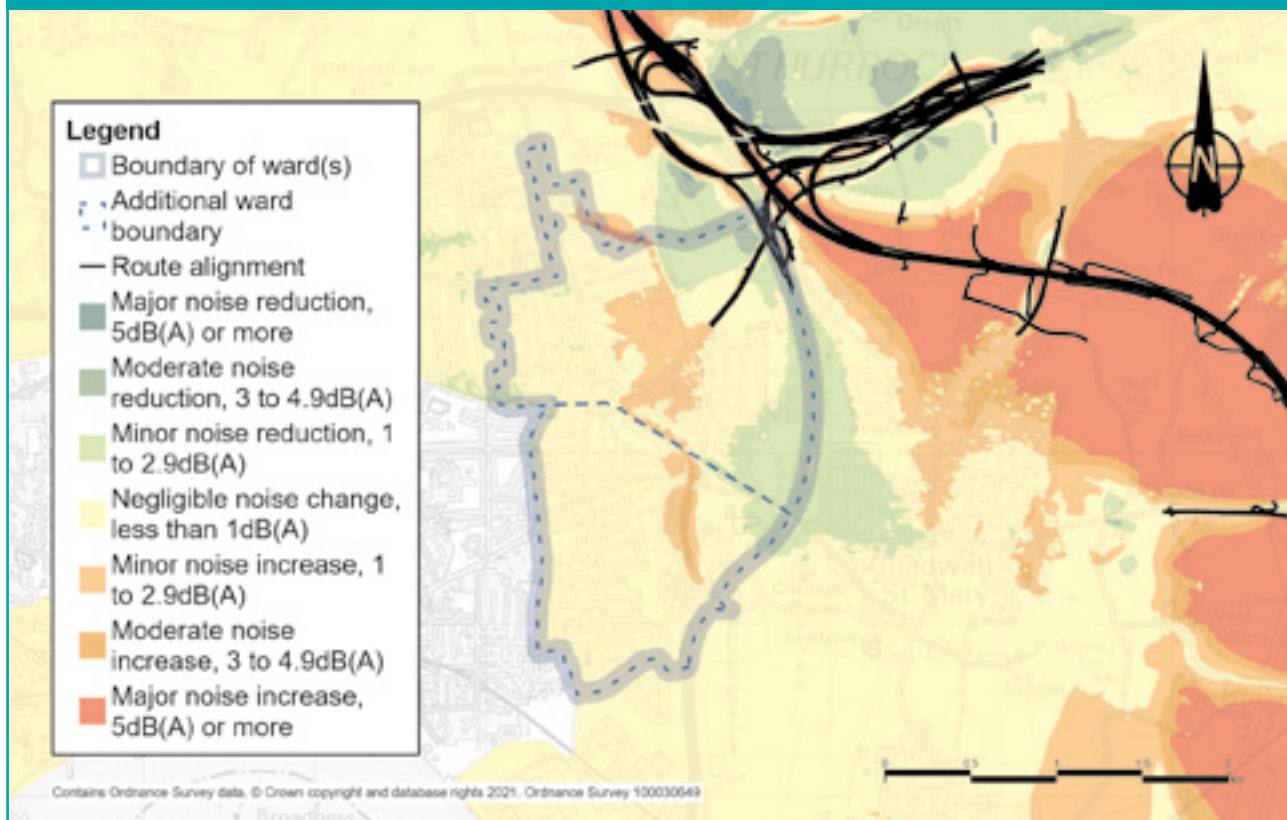
In both wards, there would also be changes to noise levels as a result of changes in traffic flow, the number of HGVs, and traffic speed on other roads in the wards.

Figure 17.18 shows the changes in noise levels for roads in these wards in the opening year of the project:

- In Little Thurrock Blackshots ward, predicted changes in traffic noise at identified locations are predicted to range from a moderate decrease in noise levels of between 3.0 and 4.9dB to (in a small area) a major increase of more than 5dB.
- In Little Thurrock Rectory ward, predicted changes in traffic noise at identified locations are predicted to range from a minor decrease in noise levels of between 1.0 and 2.9dB to moderate increases of between 3.0 and 4.9dB.

For more information about how we define noise impacts (negligible, minor, moderate and major), see chapter 1.

Figure 17.18 Noise impacts during operation in Little Thurrock Blackshots and Little Thurrock Rectory wards



Measures to reduce traffic noise and vibration during operation

The main methods of controlling noise would be, where practicable, to design the road within landscaped features such as cuttings and bunds (walls of earth). 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).

17.8 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

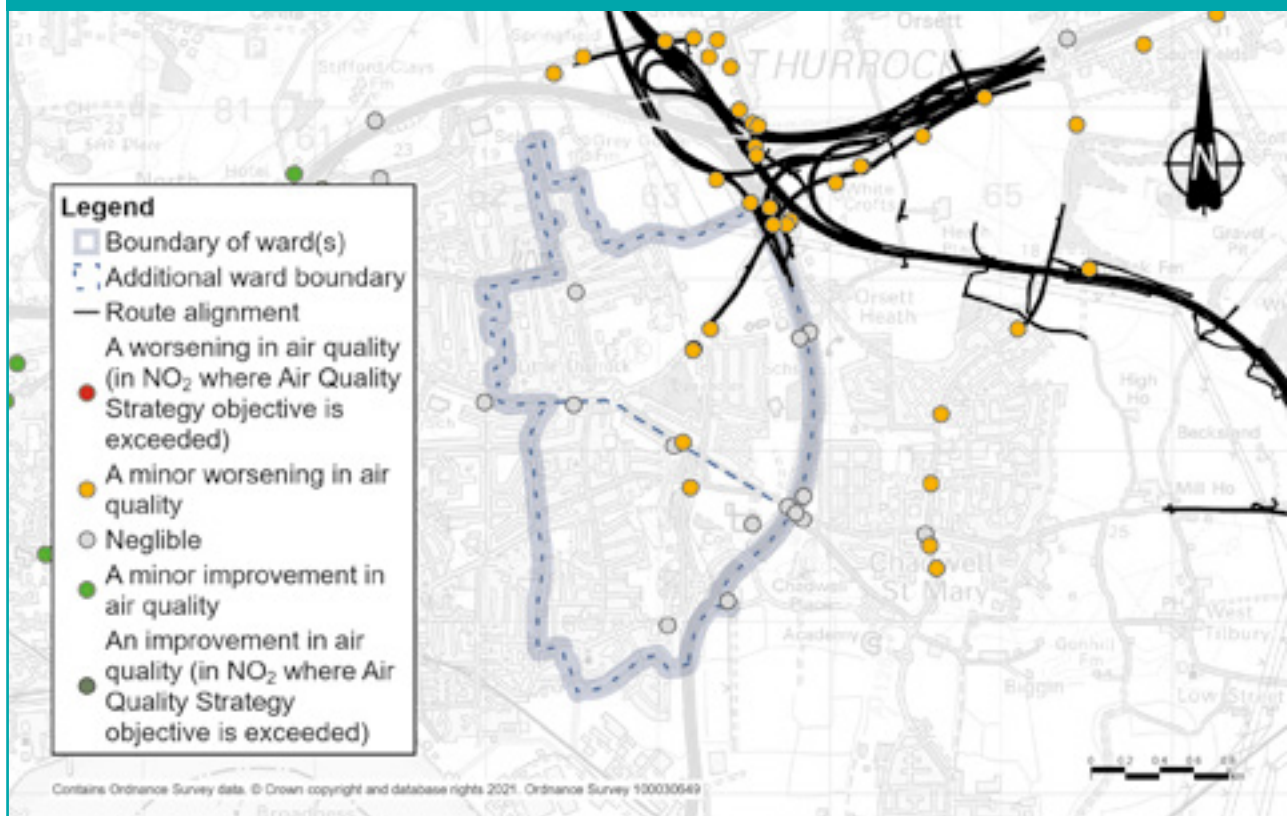
Little Thurrock Rectory ward and Little Thurrock Blackshots ward are not located within an Air Quality Management Area (AQMA). AQMAs are areas that have been identified by local authorities as areas of poor air quality that require additional monitoring and controls.

17.8.1 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.

Figure 17.19: Predicted changes in NO₂ levels within Little Thurrock Rectory ward and Little Thurrock Blackshots ward once the new road is open



Properties more than 200m from the worksite, which is the majority of properties within these wards, are outside the area likely to be affected by construction dust or emissions from the worksite. In these wards, there are only a few properties within 200m of the worksite, including those to the north-east of Little Thurrock such as A1013 Stanford Road and south of Ashley Gardens. 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 construction traffic predicts that the impact on most roads in these wards would be negligible, although there would be a temporary minor worsening in air quality in the area around the A1089 (from 2025 to 2027) and along the A126 Marshford Road, the Chadwell Road and B149 Wood View (2025) as a result of traffic increase. Also, there would be a temporary minor improvement in air quality in the area around the Stanford Road, Lodge Lane and Southend Road as a result of the traffic management in place in 2025. 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 Thurrock Council for consultation (see REAC entry AQ006).

17.8.2 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 200m buffer around the roads 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.

There are receptors (properties or habitats that are sensitive to changes in air quality) within the wards, that are predicted to experience a minor worsening in the air quality for nitrogen dioxide (NO₂), the main traffic-related pollutant. The highest modelled yearly average NO₂ concentration within Little Thurrock Blackshots ward is 25.2 µg/m³, and in Little Thurrock Rectory ward is 26.0 µg/m³, which is below the yearly average threshold of 40µg/m³. 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 NO₂ 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 NO₂, our assessment predicts that PM₁₀ 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.

17.9 Health

Existing situation in Little Thurrock Blackshots

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.

Little Thurrock Blackshots ward has a noticeably older population than is the case for Thurrock as a whole and nationally, with a higher proportion of people aged 60 and over (27.0%, compared to 18.3% for Thurrock and 23.6% for England). When compared to Thurrock and other neighbouring wards, Little Thurrock Blackshots has a less ethnically diverse population, with a significantly higher proportion of white residents compared to the England average, 92.3% and 85.4% respectively. However, Little Thurrock Blackshots has a high proportion of residents who are Asian, compared to other wards throughout Thurrock, 2.1%.

As a whole, Little Thurrock Blackshots has low rates of deprivation. However, an area to the north-east of the ward is in the top 20% most deprived in England. Economic activity rates here are relatively low, compared to Thurrock as a whole, 69.5% and 79.1% respectively. Benefit claimant rates are also comparatively low compared to wards throughout Thurrock, which reflects the high proportion of elderly people in the ward. Little Thurrock Blackshots has a higher proportion of residents in social grade AB (16%) than is the case for Thurrock as a whole (15%). The area has a significantly higher proportion of households which are owned outright compared to Thurrock and England as a whole, 81.7%, 66.2% and 63.3% respectively. In terms of car or van availability, Little Thurrock Blackshots has a significantly lower proportion of households with no cars or vans compared to Thurrock as a whole, 16.9% and 20.1% respectively.

Ward residents generally have slightly lower rates of self-reported very good health compared to Thurrock and England as a whole, 45.2%, 48.2% and 47.2% respectively. The ward also has a high proportion of residents who state that their day-to-day activities are 'limited a lot' and 'limited a little', compared to Thurrock as a whole, 8.1% and 7.2% respectively.

When looking at life expectancy and causes of death, Little Thurrock Blackshots has better rates than Thurrock as a whole across a number of measures, including life expectancy at birth, deaths from respiratory and coronary heart disease, from cancer and from all causes.

Existing situation in Little Thurrock Rectory

Little Thurrock Rectory has an older population than is the case for Thurrock as a whole, with a higher proportion of people aged 60 and over (23.4% compared to 18.3% for Thurrock). The ward has an ethnically diverse population, with a high proportion of Asian residents compared to Thurrock as a whole, 5.0% and 3.8% respectively.

Little Thurrock Rectory has very low rates of deprivation, with the ward among the least 30% deprived in the whole of England. Economic activity rates are relatively high here, compared to other wards throughout Thurrock, with claimant counts also relatively low compared to wards throughout Thurrock. Little Thurrock Rectory has a higher proportion of residents in social grade AB (16.6%) than is the case for Thurrock as a whole (15.0%). The area has a significantly higher proportion of households which are owned outright compared to Thurrock and England as a whole, 81.8%, 66.2% and 63.3% respectively. In terms of car or van availability, Little Thurrock Rectory has a significantly lower proportion of households with no cars or vans compared to Thurrock as a whole, 16.5% and 20.1% respectively.

Little Thurrock Rectory residents generally have higher rates of self-reported very good health compared to Thurrock and England as a whole, 49.8%, 48.2% and 47.2% respectively. The ward also has a relatively low proportion of residents who state that their day-to-day activities are 'limited a lot' compared to Thurrock and England as a whole, 6.4%, 7.2% and 8.3% respectively.

When looking at life expectancy and causes of death, Little Thurrock Rectory has better rates than for Thurrock as a whole across a number of measures, including life expectancy at birth, deaths from respiratory and coronary heart disease, from cancer and from all causes. In fact, Little Thurrock Rectory has better rates than England for life expectancy for men at birth and deaths from all causes and cancer.

17.9.1 Construction

Construction impacts

Construction activities affecting Little Thurrock Blackshots and Little Thurrock Rectory are outlined in the Project description section, and mostly relate to the construction of the proposed A13/A1089 junction, and the formation and operation of the associated compounds Long Lane Compound A and Long Lane Compound B and the ULH.

Elements of these activities have the potential to effect health, whether from noise associated with construction activities, traffic, changes to air quality (dust emissions), severance caused by construction traffic, or through impacts on mental health and wellbeing.

There are likely to be both positive and negative effects on people's health and wellbeing as a result of our construction. To reduce the negative effects on people's mental health and wellbeing, we would make sure good communications and local engagement provides people with essential information about when construction works would begin and their likely effects. Equally, some residents would enjoy health and wellbeing benefits from improved access to work and training opportunities as a result of our construction activities (see the Traffic impacts section). The relationship between mental health and unemployment is bi-directional. Good mental health is a key influence on employability, finding a job and remaining in that job. Unemployment causes stress, which ultimately has long-term physiological health effects and can have negative consequences for people's mental health, including depression, anxiety and lower self-esteem.

Construction impacts in Little Thurrock Blackshots

Little Thurrock Blackshots residents may experience:

- Changes in accessibility. This may be the case for people who are more dependent on public transport and have less choice about method and route travelled.
- Positive health outcomes may be experienced by residents as a result of access to work and training opportunities presented by construction activities.
- There are likely to be mental health and wellbeing impacts associated with stress and anxiety relating to construction of the project.
- There are few properties in the Little Thurrock Blackshots ward within 200 metres from the Order Limits and are therefore unlikely to be affected by dust or emissions from the project's construction. Those properties that are within 200 metres have the potential to experience air quality impacts as a result of increased dust and emissions from nearby construction activities.
- Views of construction activities would be largely constrained by the urban area of Grays and mostly limited to residential areas and Thurrock Rugby Football Club and adjoining playing fields on the north-east edges of the settlement.
- The main construction activities that are expected to give rise to noise and vibration impacts in this ward are associated works to construct the new road and utilities works. However, during core daytime hours, construction noise is unlikely to present any impacts over and above the existing background noise in the area.
- 24-hour, seven-day construction working is proposed along Stanford Road. At this location, works may need to be carried out at night to maintain safety and reduce disruption to road and utility networks. These works could have an impact on local communities.
- Although not located in Little Thurrock Blackshots, Long Lane Compound A, Long Lane Compound B and Long Lane Utility Logistics Hub may effect noise levels as they are close to the ward boundary.

Construction impacts in Little Thurrock Rectory

Little Thurrock Rectory residents may experience:

- Positive health outcomes may be experienced by residents as a result of access to work and training opportunities presented by construction activities.
- There are few properties in the Little Thurrock Rectory ward within 200 metres from the Order Limits and are therefore unlikely to be affected by dust or emissions from construction.
- There are likely to be mental health and wellbeing impacts associated with stress and anxiety relating to construction of the project.
- There are no main construction works or activities that are expected to give rise to construction noise and vibration impacts on this ward.
- Although not located in Little Thurrock Rectory, Long Lane Compound A, Long Lane Compound B and Long Lane Utility Logistics Hub may effect noise levels as they are close to the ward boundary.
- Increases in road traffic noise during the construction period are predicted to be negligible (less than 1dB) on all roads within this ward except along those roads where a minor increase in noise levels (less than 3dB change) is predicted. See the section on Construction traffic noise impacts above for more information.

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 the Visual, Noise and vibration and Air quality sections. Further information relating to mitigation measures for these areas is set out in the CoCP and the REAC. 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 Consultation Guide.

Engagement and effective two-way communication with communities both prior to and during construction by providing information about the programme and impact of works 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.

17.9.2 Operations

Information about the operational project in the wards is provided in the Project description section above.

Operational health impacts in Little Thurrock Blackshots

Direct noise from the new road and the proposed improvements to Stanford Road and Dock Approach Road would be audible in the north-eastern section of Little Thurrock Blackshots ward. Conversely, changes in traffic noise at identified locations are predicted to range from a barely perceivable decrease in noise levels.

The operation assessment study area includes 200m buffer from roads within the affected road network. The air quality modelling shows that the operation of the Project is predicted to cause a barely perceivable change in the air quality for nitrogen dioxide, the main traffic related pollutant. Those properties modelled within the Little Thurrock Blackshots ward are predicted to be well below the Air Quality thresholds for the key traffic related pollutants nitrogen dioxide and particulate matter.

Changes to the view from the north-east edge of Little Thurrock Blackshots would include elevated structures of the Lower Thames Crossing/A13 junction and associated traffic, gantries and lighting. However, this would be softened by false cutting (a landscape mound alongside the new road to reduce views of the road and traffic) and proposed woodland planting. The diverted section of overhead power line would be slightly closer to some homes and replacement of two existing suspension pylons with four angle pylons would be more visually intrusive.

From Thurrock Rugby Football Club and the adjacent playing fields, there would be views of the Stanford Road overbridge and more distant views towards the Lower Thames Crossing/A13 junction, softened by woodland planting mitigation. The diverted and reconfigured section of overhead line would be slightly closer to Thurrock RFC.

Positive health outcomes may be experienced by residents as a result of improvements to accessibility, access to work and training, and access to open space. The newly created Tilbury Fields would provide residents with a new recreational resource which could encourage physical activity.

Operational health impacts in Little Thurrock Rectory

The assessment undertaken for noise, air quality and visual impacts have shown that no adverse impacts are anticipated as a result of the project for people in Little Thurrock Rectory ward. A proportion of residents may also experience positive health benefits through accessibility improvements, better access to jobs and training, and to open space, including new recreational areas outside the ward, such as Tilbury Fields, near Gravesend.

Measures to reduce operational health impacts

Mitigation measures have been incorporated into the project design to reduce adverse effects in Little Thurrock Blackshots ward:

- The false cutting on the south side of the project's junction with the A13 and associated woodland planting mitigation, comprise the primary mitigation in this ward, helping to screen views of the new road and traffic, and integrate the project's junction with the A13 into the surrounding landscape.
- While our main method of controlling noise is to use more 'natural'-looking measures such as cuttings and bunds (earthworks) to reduce the effects of noise on the local area, we would also install noise barriers where appropriate.

Mitigation measures have been incorporated into the project design to reduce adverse effects in Little Thurrock Rectory ward:

- The impact of construction and changes in traffic on local air quality would be controlled and minimised through the range of good practice measures set out in the project's CoCP and the REAC.
- While our main method of controlling noise is to use more 'natural'-looking measures such as cuttings and bunds (earthworks) to reduce the effects of noise on the local area, we would also install noise barriers where appropriate.

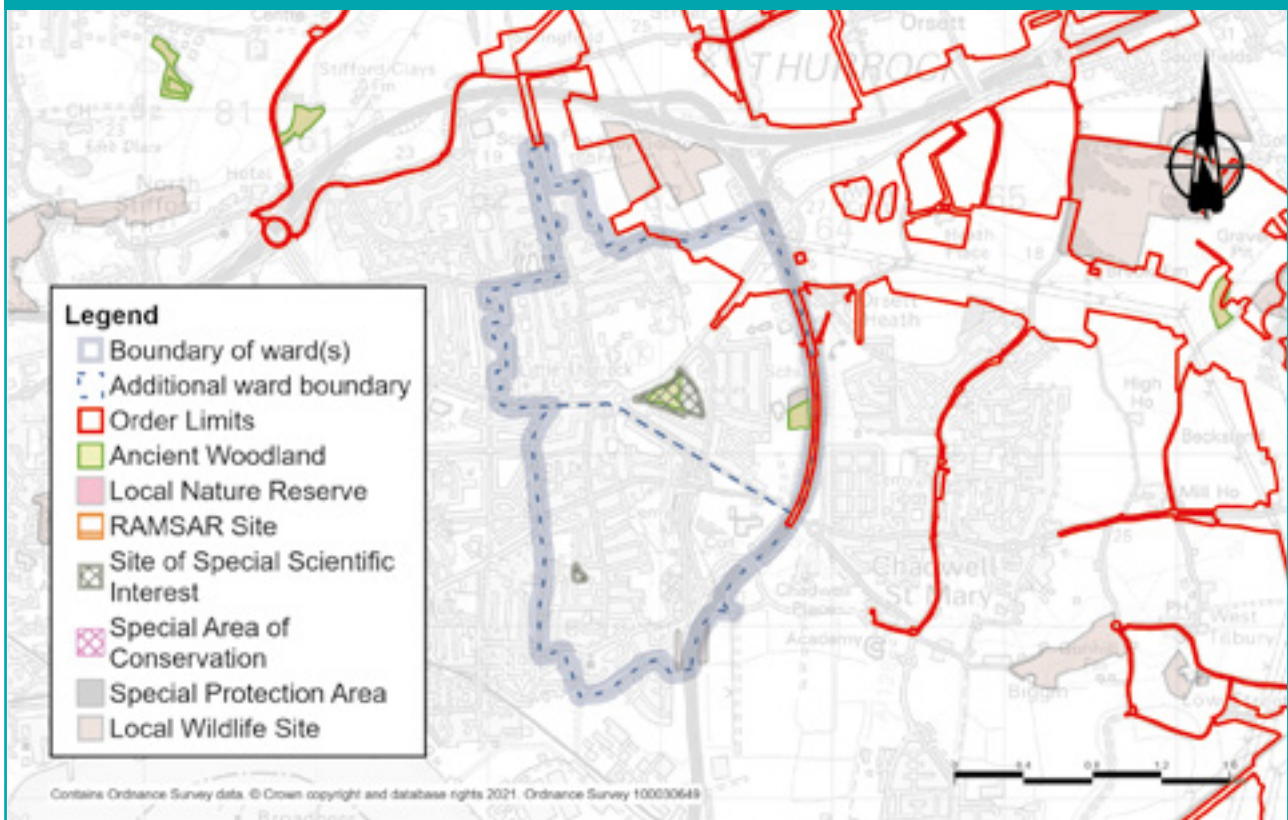
17.10 Biodiversity

Existing situation

Only a small area of the Little Thurrock Blackshots ward falls within the Order Limits. The main habitat type is arable fields, with some hedgerows. Little Thurrock Blackshots ward contains the designated site Hangman's wood and Deneholes SSSI and the non-designated sites of Terrels Heath Grays Local Wildlife Sites (LWS) and Chadwell Wood 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. A number of badger outlier setts were identified and reptiles are present, and Hangman's Wood and Deneholes SSSI is a known bat roost. No other protected species were identified.

Figure 17.20 Designated and non-designated biodiversity sites in Little Thurrock Blackshots and Little Thurrock Rectory wards



Only a small area of the Little Thurrock Rectory ward falls within the project Order Limits, and where it does, the Order Limits are restricted to a small area of landscape adjacent to the A1089. Little Thurrock Rectory ward contains Globe Pit SSSI. However, this is not designated for its terrestrial biodiversity interest and is not discussed further in this section. No non-designated sites are located within Little Thurrock Rectory ward. For marine biodiversity, please refer to chapter 7 of the Construction update.

Surveys to establish a baseline for assessment were undertaken within the Order Limits and relevant buffer zones, with no presence of protected and notable species identified.

17.10.1 Construction

Construction impacts

Construction of the project would require the removal of areas of habitat, both temporarily and permanently from the route alignment and compound locations. Removal of the hedgerows would cause the loss of badger setts and reptile habitat and cause disturbance to retained habitats.

A small area of landscape planting would be removed adjacent to the A1089.

Measures to reduce biodiversity impacts during construction

Vegetation clearance would be undertaken during the winter where possible to avoid the impacts on breeding birds. Where this is not practicable, clearance would be supervised by an Ecological Clerk of Works (ECoW) to ensure no nests are disturbed or destroyed. Where protected species are present, these 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 to displace reptiles) or translocation. Where required, works affecting protected species would be carried out under a Natural England licence. Boxes to support bats and birds would be erected within retained habitat. Habitat lost for temporary construction works would be reinstated following construction.

The landscape planting removed from the A1089 would be reinstated during the construction process.

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.

17.10.2 Operations

Operational impacts

Operation of the project has the potential to cause mortality of species by encountering road traffic, habitat fragmentation, and noise disturbance from traffic. It should be noted that in this location the existing A13 and the A1089 already cause these impacts on the terrestrial biodiversity, and it is not anticipated that the impacts from the new road would add to these.

Measures to reduce biodiversity impacts during operation

Newly created areas would be managed to ensure that they provide high quality habitat to support a broad range of different plant and animal species.

The impact of operation on biodiversity would be controlled through the range of good practice measures set out in the project's CoCP and the REAC. See chapter 5 of the Consultation guide for more information about this and the project's other control documents.

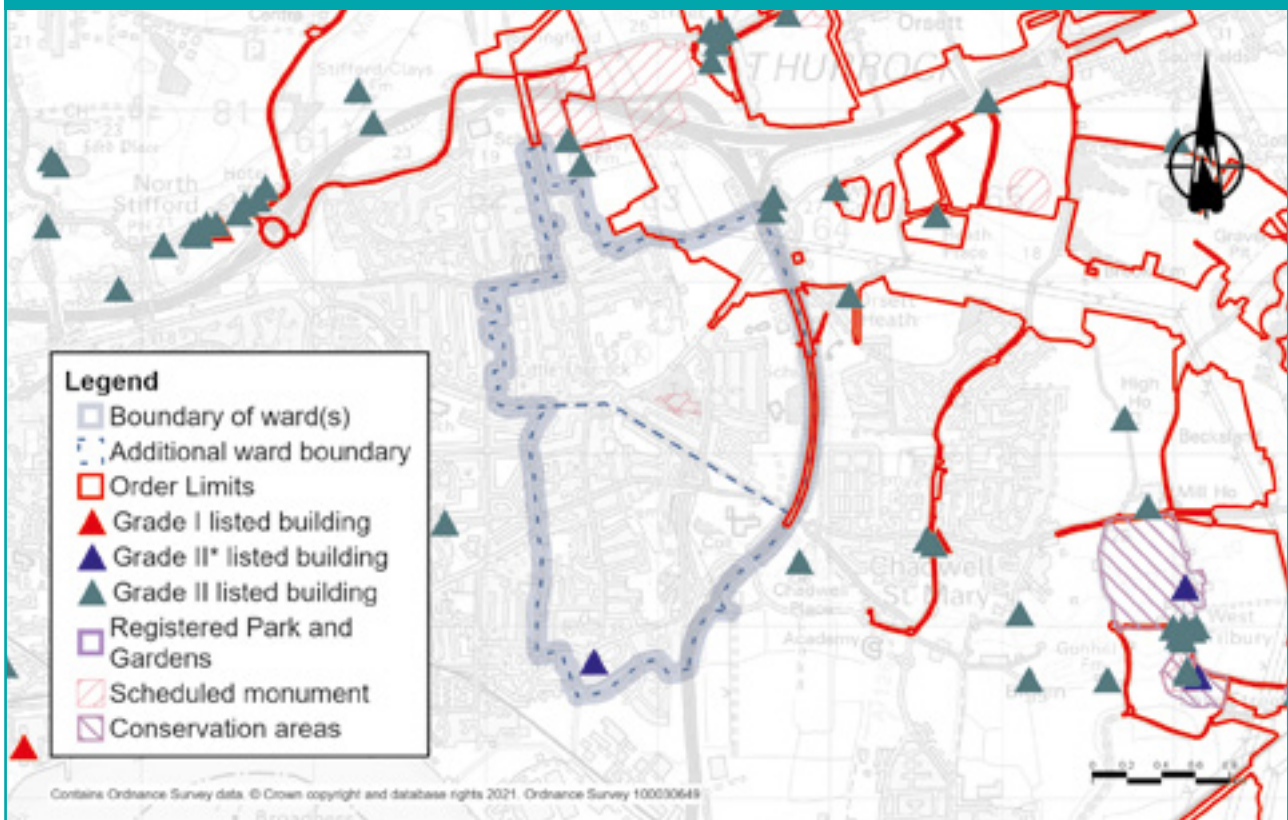
17.11 Built heritage

Existing situation

There is a scheduled monument in Little Thurrock Blackshots. The scheduled monument is of high heritage value and comprises a group of 'dene holes' in Hangman's Wood. These are located around 420 metres south of the project. Dene holes are underground structures consisting of a number of small chalk caves entered by a vertical shaft. The holes at Hangman's Wood are believed to have been created by medieval and post-medieval mining for either chalk or flint. Only three of this group of holes are now visible, and only one is open. Extensive exploration of these dene holes was made by Essex Field Club in 1880s. They were shown to have shafts 80ft deep with chalk cut chambers, three on each side of the shaft. There were originally more than 70 dene holes in the wood but most of these are now poorly preserved. The scheduled group of holes are known to be some of the best-preserved of their kind.

There are no Listed Buildings or other structures of historical relevance within Little Thurrock Blackshots ward.

Figure 17.21 Built heritage in Little Thurrock Blackshots and Little Thurrock Rectory wards



17.11.1 Construction

Construction impacts

Construction activities affecting Little Thurrock Blackshots ward relate to the establishment and operation of the construction Long Lane Compound A, Long Lane Compound B and Long Lane Utilities Logistics Hub in the adjacent ward.

There would be no physical impacts on scheduled monuments. Construction activities would temporarily introduce additional noise, lighting and visible construction activity and machinery in the vicinity of Long Lane compounds A and Long Lane compounds B and increases in noise/traffic along construction access routes including A1809 Dockyard Approach Road, Long Lane, and A1013 Stanford Road. However, due to distance from construction activity and secluded nature of Hangman's Wood, the scheduled monument would not be impacted by the project

Measures to reduce impacts during construction

No mitigation required as heritage not impacted.

17.11.2 Operations

Operational impacts

No operational impacts.

Measures to reduce the impacts during operation

No mitigation required.

17.12 Contamination

Construction

From the review of desk-based sources (historical maps and environmental data), there are no known medium or high-risk sources of contamination that could be disturbed during construction of the project within the Little Thurrock Blackshots and Little Thurrock Rectory wards.

By following a construction management plan and ensuring that, where potential sources of contamination are used (e.g. oils, lubes, mechanical plant), that appropriate spill containment and emergency response procedures are in place to prevent adverse environmental impacts from occurring.

Operation

During the operation of the road, should an incident occur for example 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.