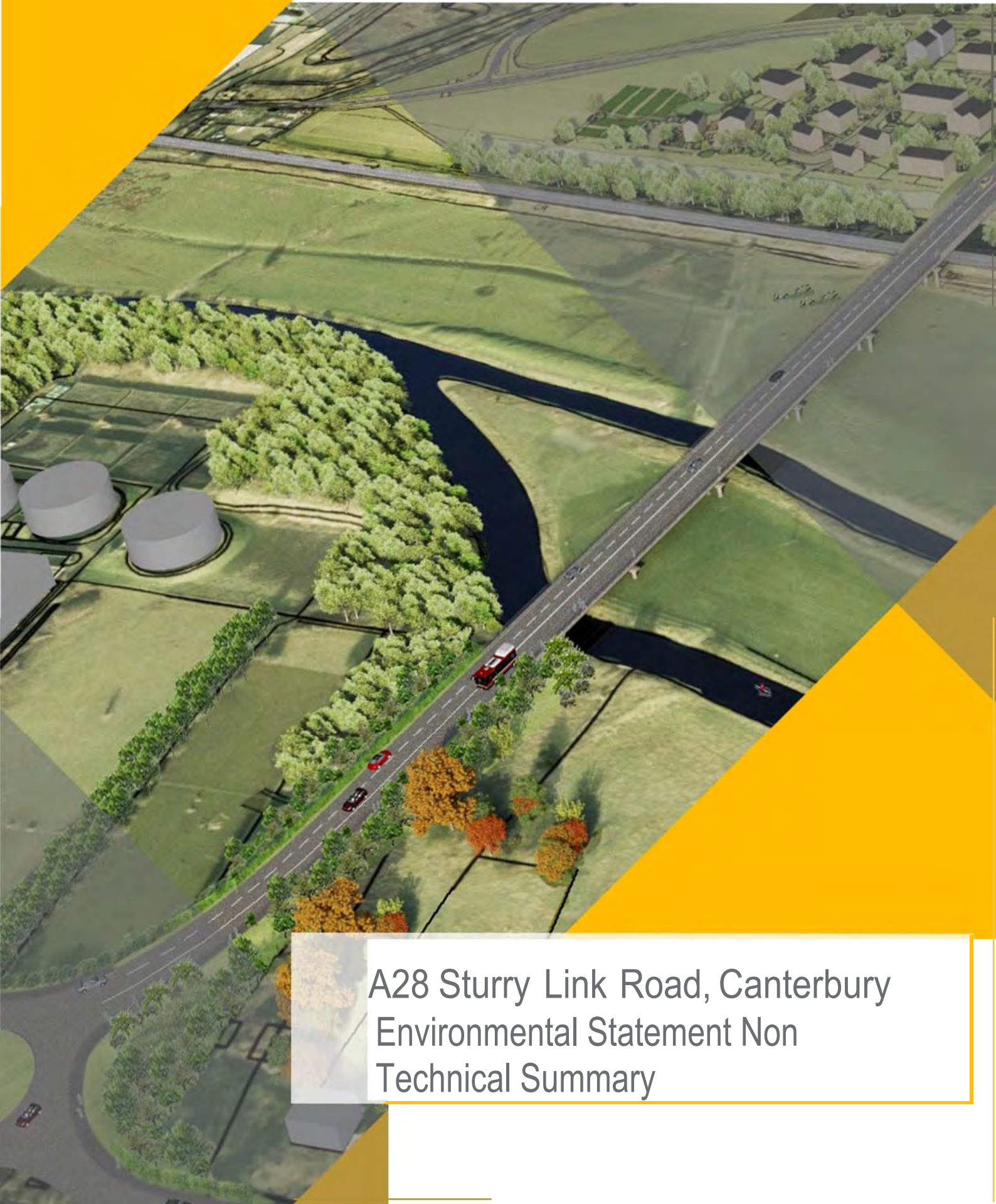


Received - 21 June 2021  
Planning Applications Group

Amey Consulting

Kent  
County  
Council  
kent.gov.uk



A28 Sturry Link Road, Canterbury  
Environmental Statement Non  
Technical Summary

## Document Control Sheet

<b>Project Name:</b>	A28 Sturry Link Road, Canterbury
<b>Project Number:</b>	CO04300050
<b>Report Title:</b>	Environmental Statement: Non Technical Summary
<b>Report Number:</b>	NTS

Issue Status/Amendment	Prepared	Reviewed	Approved
00	Name: [Redacted] Signature: [Redacted]	Name: [Redacted] Signature: [Redacted]	Name: [Redacted] Signature: [Redacted]
	Date: 31/05/2021	Date: 01/06/2021	Date: 09/06/2021
01 Addressing comments from KCC	Name: [Redacted] Signature: [Redacted]	Name: [Redacted] Signature: [Redacted]	Name: [Redacted] Signature: [Redacted]
	Date: 21/06/2021	Date: 21/06/2021	Date: 21/06/2021
	Name:  Signature:  Date:	Name:  Signature:  Date:	Name:  Signature:  Date:
	Name:  Signature:  Date:	Name:  Signature:  Date:	Name:  Signature:  Date:

## Contents

1. Background Information .....	2
1.1. Introduction .....	2
1.2. Background to the scheme .....	2
1.3. Need for the scheme.....	3
1.4. Planning Application.....	3
1.5. Consultation .....	4
1.6. Alternatives considered .....	4
2. General Description .....	6
2.1. The existing environment .....	6
2.2. Description and changes to the scheme .....	7
3. Environmental Assessment.....	10
3.1. Environmental assessment methodology.....	10
3.2. Air Quality .....	11
3.3. Cultural Heritage.....	12
3.4. Landscape.....	13
3.5. Biodiversity .....	13
3.6. Geology and Soils .....	15
3.7. Material Assets and Waste.....	15
3.8. Noise and Vibration.....	16
3.9. Population and Human Health.....	17
3.10. Road Drainage and the Water Environment.....	18
3.11. Climate .....	19
3.12. Interactions and Cumulative Effects.....	20
3.13. Mitigation Measures .....	20
3.14. Conclusion.....	21
4. Further Information.....	22
5. What happens next?.....	23

# 1. Background Information

## 1.1. Introduction

- 1.1.1 A planning application for the Sturry Link Road was submitted in 2019 by Kent County Council (KCC) to the planning department in Kent County Council (planning application number KCC/CA/0091/2019). As part of the planning application, an Environmental Statement (ES) was submitted which assessed the environmental impacts of the proposed scheme (A28 Sturry Link Road, Canterbury, Environmental Statement). The ES was presented in four volumes, with the Non-Technical Summary as Volume 1, the Main Text (Environmental Impact Assessment) as Volume 2, Drawings as Volume 3 and Volume 4 Technical Appendices.
- 1.1.2 The planning application for the link road was considered by the Kent County Council's Planning Applications Committee in March 2021 and was refused planning permission. KCC have now prepared a new submission for the link road for a new planning consent. As part of this new consent application, the 2019 ES has been reviewed, in light of the design changes and to support the new application. An ES Update report has been produced which provides an updated environmental impact assessment to support the new planning application.
- 1.1.3 This document is a Non Technical Summary (NTS) of the 2019 ES, and subsequent amendments by the Environmental Statement Update for the new application. This NTS supercedes the 2019 NTS as submitted for the application KCC/CA/0091/2019. The new planning application, full ES Update and this NTS are available for inspection at the locations listed at the end of this document.
- 1.1.4 A location plan for the scheme is included as **NTS Figure 1**.

## 1.2. Background to the scheme

- 1.2.1 The A28 Sturry Link Road is identified in the Canterbury City Council's (CCC) District Local Plan (adopted 2017) as a key piece of strategic infrastructure required to support development within the Plan area with new home allocations of around 16,000 as well as to relieve existing congestion.
- 1.2.2 The existing A28 through the village of Sturry suffers from congestion due to the high volumes of traffic and the operation of the level crossing. The Sturry Link Road provides an alternative route away from the level crossing with a new road viaduct over the railway line and Great River Stour as well as other associated improvements to the A28 corridor.
- 1.2.3 In June 2017, an outline application for a mixed-use development comprising of 700 homes, primary school, medical hub, community building, car park and associated amenity space was submitted to CCC to examine proposals for the southern part of the strategic allocation known as Land at Sturry (Ref: CA/17/01383). This application included the construction of part of the link road that lies to the north of the railway line within the development site. The original Land at Sturry Planning application was refused permission at Planning Committee in November 2020. A new planning application was submitted for up to 630 dwellings (CA/20/02862). The new Land at Sturry application received planning consent in March 2021. The Land at Broad Oak Farm (CA18/00868) for 456 dwellings, which forms the northern part of the allocated site, also received planning consent in March 2021.
- 1.2.4 The Land at Sturry development however will not secure delivery of the new road in its entirety and is dependent on KCC securing and carrying out construction of the north-south link of the scheme.
- 1.2.5 In broad terms, the proposed Sturry Link Road consists of a new 1.5km single carriageway road located, in part, to the north of the Canterbury to Ramsgate railway line in an east-west direction to join the A291 Sturry Hill in the east, and in a north-south direction over the railway and across the flood plain of the Great Stour to join the A28 in the south. The east-west section of the link road will be provided by the developer of the Land at Sturry development. Kent County Council are responsible for constructing the north-south link of the scheme, which includes the roundabout connection with the east-west link, the bridge over the railway and Great River Stour and the connection to the A28 in the south.
- 1.2.6 Kent County Council (KCC) have therefore commissioned Amey Consulting to design the north-south link and to provide support for the new planning application and supporting documentation for this section of the link

road. However, to provide continuity and as the link road in its entirety is dependent on both the developer section and the KCC section being delivered, the Environmental Statement Update considers the link road as a whole.

- 1.2.7 A scoping report was undertaken in December 2016 to determine whether or not significant effects on the environment were likely and what environmental topics should be taken forward for assessment in the Environmental Statement. This scoping report was submitted to KCC under the requirements of the 2011/92/EU Directive, which has subsequently been superseded by the amended EIA Directive in 2014. On 16th May 2017 the amended EIA Directive was transposed into UK legislation as the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. The revised Directive introduced the requirement to include climate change impacts, human health and major accidents/disasters in the EIA process. Following discussions with the planning group at KCC, it was agreed that the ES for Sturry Link Road would be updated to reflect the requirements of the 2014 Directive and the Town and Country Planning (EIA) Regulations 2017 with respect to content.
- 1.2.8 In accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations, the Sturry Link Road required an Environmental Statement as the link road falls under Schedule 2 of the Regulations and exceeds the screening criteria due to the works exceeding 1ha.

### 1.3. Need for the scheme

- 1.3.1 New home allocations of around 16,000 have been identified in the Canterbury District Local Plan 2017 over the plan period of 2011 to 2031. This includes strategic allocations of Land at Sturry and Broad Oak Farm for up to 1,100 new homes. The Local Plan acknowledges and accepts that these new homes will create additional traffic and that, in accordance with the Local Plan policies, Kent County Council will seek to implement the Sturry Link Road.
- 1.3.2 The proposed Sturry Link Road aims to reduce traffic through Sturry, ease congestion at the Sturry level crossing and cater for the extra traffic from the new housing proposed at Sturry and Broad Oak Farm. Sturry experiences high levels of traffic which combined with frequent operation of the level crossing can lead to severe congestion, making journey times unreliable. The scheme will also provide additional pedestrian and cycle facilities, with a combined footpath/cycle path along the route of the link road. The north-south section of the link road also provides a dedicated bus lane to improve public transport infrastructure, linking to the existing Canterbury bound bus lane network.
- 1.3.3 The Sturry Link Road is an integral part of wider development proposals in the Sturry area, namely the housing developments at Land at Sturry and Land at Broad Oak Farm. The developers of these two sites have committed to deliver the east-west section of the link road as part of their developments. KCC have entered into an agreement with the developers which requires KCC to prepare the designs for the entirety of link road and submit the planning application to the Local Planning Authority (KCC).

### 1.4. Planning Application

- 1.4.1 The Land at Sturry and Land at Broad Oak Farm developments were submitted to Canterbury City Council for planning consent, and outline planning consent for both was granted in March 2021.
- 1.4.2 However, the link road was refused planning permission by KCC planning committee in March 2021 (KCC/CA/0091/2019). The reasons for the refusal were:
- The development makes inadequate provision for public transport infrastructure, contrary to policies T1 and T3 of the Canterbury District Local Plan 2017.
  - The development fails to demonstrate that the navigation of the Great Stour river will not be compromised by the construction of the viaduct, contrary to policy LB13 of the Canterbury District Local Plan 2017.
  - The proposed alterations at the A291/A28 junction make inadequate provision for local traffic movements, contrary to policies T1 and SP3 of the Canterbury District Local Plan 2017.

- 1.4.3 In order to address these issues, a new planning application will be submitted which includes a revised junction layout at the A291/A28 to allow the movement of local traffic through the junction. The revised layout also includes a priority slip road for use by buses, as well as pedestrian crossing points.
- 1.4.4 It should be noted that for the new application, the layout of the link road from the A28 Sturry Road to the A291 Sturry Hill Road remains largely unchanged from that submitted in 2019 in the original planning application. There have been some minor changes to the drainage with an additional attenuation pond provided to the north of the railway, and a minor change in the extent of the red line boundary at the west to accommodate widening on the Shalloak Road. The red line boundary also now includes land for ecological enhancements.
- 1.4.5 This NTS will be submitted in support of the new planning application for the link road which includes an ES Update.

## 1.5. Consultation

- 1.5.1 Consultation was carried out at the pre-planning stage for KCC/CA/0091/2019 to provide the public and stakeholder organisations with the opportunity to provide feedback and make suggestions on the road scheme before plans were finalised for the planning application. The consultation enabled the public and organisations to:
- Understand in some detail the road scheme being proposed;
  - Consider the possible impacts and benefits of the proposed scheme;
  - Interact with other members of the public and with organisations to understand their views; and
  - Ask KCC questions on the proposals.
- 1.5.2 The consultation took place over a 6-week period from 26<sup>th</sup> July to 6<sup>th</sup> September 2017 and offered the opportunity to open a dialogue with stakeholder organisations and the public so their comments and concerns could be incorporated into the on-going work to finalise the scheme design.
- 1.5.3 Details of the proposals were available to view and download online with feedback obtained via a questionnaire which asked for the views on the road layout, its features and its impacts on the surrounding environment including suggestions for improvement. In total, 116 questionnaires were received.
- 1.5.4 Comments and suggestions received during the consultation process were then fed back into the detailed design process.
- 1.5.5 Overall the provision of the link road was supported by local residents. Key concerns raised during the consultation process included: movement of congestion to other areas of Sturry, increased air pollution, cycling and walking provision and the changes to the A28/A291 junction.
- 1.5.6 Since publication of the 2019 Sturry Link Road ES as part of the application KCC/CA/0091/2019, further consultation has taken place with one statutory stakeholder; Natural England. During the 2019 ES consultation period concerns were raised by Natural England over the potential effects on Stodmarsh Special Area of Conservation, Special Protection Area and Ramsar site. As a result, updated ecological surveys were undertaken in August/September 2019 and an Ecological Addendum issued (Amey Consulting/KCC. A28 Sturry Link Road, Canterbury. ES Addendum Ecology and Nature Conservation, September 2019). The drainage design was amended to provide additional attenuation with salt tolerant planting provided around the ponds to reduce impacts on the site and its species and habitats from winter maintenance operations.
- 1.5.7 Further details on the consultation with NE and the resulting amendments to the scheme are included in the Report to Inform Habitats Regulations Assessment (Amey Consulting/KCC. A28 Sturry Link Road, Canterbury Report to Inform Habitats Regulations Assessment. February 2020).

## 1.6. Alternatives considered

- 1.6.1 A “do nothing” scenario was not considered, as it would result in the loss of the opportunity to help CCC meet its house building and employment targets as set out in Canterbury District Local Plan 2017.
- 1.6.2 The alignment of the scheme was developed to enable sufficient housing density to meet the needs of the Local Plan, to avoid impacts on Den Grove Wood and provide alternative access to Sturry. For the north south link from the railway to the new junction with the A28 Sturry Road, three alternative alignments were considered. These were primarily concerned with reducing landtake and minimising the impact on the floodplain of the Great Stour River. The final alignment was chosen as one that met the requirements to maintain an 8m distance from the river for the bridge piers and minimising landtake from private property.
- 1.6.3 The design of the bridge as a multi-span viaduct over the railway and the Great Stour River was chosen to reduce the impact on the floodplain. Due to the nature of the weak alluvial soils along the river, the bridge will be a piled structure.
- 1.6.4 A number of options were considered for the changes at the A28/A291 junction within the centre of Sturry. These were primarily concerned with reducing congestion and improving traffic flow by diverting through traffic onto the link road. The preferred layout chosen was that all traffic movements would be signal controlled, with a restriction of traffic turning left from Island Road southwards to the level crossing, with buses and cyclists only permitted. Traffic travelling west bound on the A28 would therefore be diverted northbound onto the A291 and then onto the link road to rejoin the A28 west of Sturry.
- 1.6.5 The junction design has been amended and the new application includes a revised junction layout at the A291/A28 to allow the movement of local traffic through the junction. The revised layout also includes a priority slip road for use by buses, as well as pedestrian crossing points.

## 2. General Description

### 2.1. The existing environment

- 2.1.1 Sturry is a small village located approximately 3km east of Canterbury, as shown on Figure 1. There is a rail station at Sturry on the Canterbury to Ramsgate line between Canterbury West and Minster. There is a level crossing in the centre of the village where the A28 Sturry Road and A291 Sturry Hill converge at a junction. The closure of the level crossing gates, combined with the road junction, causes significant congestion at times in the village centre.
- 2.1.2 The surrounding area comprises a mosaic of arable, pastoral and wooded land occupying the south facing slopes of the Stour Valley. The Great River Stour is a key feature of the environment, between the railway and the A28 Sturry Road, the river is shown on Photograph 1.



Photograph 1: Great Stour River

- 2.1.3 Den Grove Wood, a large block of semi-natural woodland, is located to the north of the railway. Public Rights of Way cross the landscape between the A28 and Den Grove Wood.
- 2.1.4 Photograph 2 shows the general landscape along the PRow towards Den Grove Wood.





Photograph 2: Landscape along PRoW towards Den Grove Wood

- 2.1.5 To determine if the existing environment had changed since the 2019 ES, a site walkover was undertaken in May 2021. Some minor changes to the ecological baseline were recorded, such as some additional areas of scrub, but generally the existing environment remains the same as that described above.

## 2.2. Description and changes to the scheme

- 2.2.1 The link road will be delivered in two parts, with the east west link north of the railway being delivered by the developers of Land at Sturry. The north south link that goes over the railway and the Great Stour River will be provided by KCC and it is this section of the road that forms the application for which this NTS has been prepared. The planning red line boundary for the north south link is shown on **NTS Figure 2**. However, as the delivery of both sections is interdependent the description of the scheme is for the link road in its entirety.
- 2.2.2 The new link road (hereafter referred to as the scheme) will be approximately 1.5km in length and consist of a single carriageway which will connect the A28 Sturry Road in the south to the A291 Sturry Hill Road in the east. The road will follow a northerly route from its junction with the A28 Sturry Road, crossing over the Great Stour River and the Canterbury to Ramsgate railway line. North of the railway line the link road diverges with a section travelling east to connect to the A291 Sturry Hill Road. A link will be constructed travelling west which will connect to the Shalloak Road.
- 2.2.3 The section of the link road north of the railway to the connection with the A291 Sturry Hill Road will be constructed by the developer of the Land at Sturry development. The section between the A28 and the railway will be constructed by KCC and consent for this north-south link road will be determined by Kent County Council. The Land at Sturry and Sturry Link Road are part of a wider masterplan that includes the Land at Broad Oak Farm development, to provide new housing and community facilities in Sturry.
- 2.2.4 The scheme includes the construction of a viaduct to carry the road over both arms of the Great Stour River, its floodplain and the railway line. A number of connections to the proposed housing developments will also be constructed along the link road to connect the Land at Sturry development to the road.
- 2.2.5 The scheme alignment is shown on **NTS Figure 3a and 3b**. An indicative visual of the scheme is shown in Plate 1, showing the road looking south towards the A28 Sturry Road.



Plate 1: Indicative visual of north-south section of link road and viaduct

### Proposed alignment

- 2.2.6 The scheme will provide a new 1.5km single carriageway road with three new at-grade roundabouts and several ghost island 'T' junctions that provide access to the new development and connections to the existing road network.
- 2.2.7 Commencing at a new roundabout on the A28 Sturry Road to the east of the existing Vikings car showroom, the route will head in a northerly direction for approximately 0.75km crossing the Great Stour River, its floodplain and the railway line before changing direction to head in a easterly direction for 0.65km towards Sturry, skirting the southern edge of the Den Grove ancient woodland before joining the A291 Sturry Hill, and in a westerly direction for 0.35km to provide a direct link to Shalloak Road in the west.
- 2.2.8 The scheme will include a shared pedestrian and cycle way along the carriageway, with signal controlled pedestrian crossings and street lighting throughout, except over the viaduct.

### Junctions

- 2.2.9 In addition to the scheme proposals, improvements to the existing junction to the north of the Sturry level crossing where the A291 Sturry Hill joins the A28 Island Road will be required. These improvements are necessary to cater for the extra traffic generated from the Land at Sturry development and help ease congestion in the area. Whilst the junction itself is remote from the scheme, the improvements will have a major impact on the reassignment of traffic in the area and is therefore an integral part of the scheme proposals. It is expected however, that upgrades to this junction however will not be implemented until the link road is complete and open to traffic.

### Drainage

- 2.2.10 The new drainage includes surface water attenuation ponds, gullies and Penstock valves with oil interceptors along the carriageway. Sturry Dyke, which runs alongside the A28 will be culverted where the new roundabout connects the link road to the A28.

### Proposed bridge structure

- 2.2.11 A key feature of the scheme is a 250m long continuous bridge structure (viaduct) crossing over the flood plain of the Great Stour River and spanning the railway. This viaduct will be an open span structure where it crosses the Great Stour River and the railway, with piers located at least 8m from the riverbank. Plate 2 shows an indicative visual of the viaduct.



Plate 2: Indicative visual of viaduct

### **Security, lighting and signage**

- 2.2.12 New traffic signs will be standard verge mounted installations located mainly outside of footways in adjacent soft verge areas
- 2.2.13 It is proposed to adopt post top mounted lighting columns limited to a maximum height of 8 metres. No lighting columns will be placed on the viaduct.

### **Design Changes**

- 2.2.14 The red line boundary has been amended slightly at the western end, to accommodate the proposed access onto the Shalloak Road. This ensures the red line boundary for the link road meets the red line boundary for the Land at Sturry development. The change is minimal, resulting in an additional 2043m<sup>2</sup> to the western extents of the red line boundary.
- 2.2.15 The red line boundary also now includes an area of land of approximately 1.5ha to the south of the railway that has been secured for ecological mitigation works. Further information on this is available in the Ecological Addendum issued in late 2019 (Amey Consulting/KCC. A28 Sturry Link Road, Canterbury. ES Addendum Ecology and Nature Conservation, September 2019).
- 2.2.16 Following the refused planning application on the grounds of the A291/A28 junction not providing sufficient movement for local traffic, a revised traffic signal-controlled junction layout is now proposed that caters for all traffic movements at this junction as well as providing bus facilities and safe controlled pedestrian crossings.
- 2.2.17 The drainage design for the scheme has been amended, further details of which are included within the Report to Inform Habitats Regulations Assessment, submitted in February 2020 as part of the original planning application. This includes the provision of an attenuation pond north of the railway.

## 3. Environmental Assessment

### 3.1. Environmental assessment methodology

#### EIA guidance update

- 3.1.1 The 2019 ES was prepared in line with the guidance set out in the Design Manual for Roads and Bridges (DMRB) Volume Section 3 Environmental Assessment. Since the publication of the 2019 ES the DMRB guidance has been updated and the majority of the guidance documents relating to the assessment process have been re-issued with new and updated guidance. As a result of this, much of the guidance that was used to prepare the 2019 ES has been superseded and the assessment process within each technical chapter updated. For some environmental topics, this has included minor amendments to the assessment methodologies.
- 3.1.2 In addition to this, as a response to the most recent amendments to the EIA Directive, the list of environmental topics considered within the DMRB has also been updated, with some topics being renamed or consolidated with others. The full updated DMRB topic list as of July 2020 is summarised below;
- Air Quality;
  - Cultural Heritage;
  - Landscape;
  - Biodiversity;
  - Geology and Soils;
  - Material Assets and Waste;
  - Noise and Vibration;
  - Population and Human Health;
  - Road Drainage and the Water Environment; and
  - Climate.
- 3.1.3 This NTS therefore considers any changes to the assessment process from the 2019 ES as amended by the updated guidance.
- 3.1.4 The assessment process however, as set in LA104 environmental assessment and monitoring, remains largely unchanged from that as previously set out in DMRB HA205/08 Assessment and management of environmental effects.
- 3.1.5 The significance of environmental effects is determined based on the magnitude of impact and the environmental value or sensitivity of the receptor, as represented in Table 3.1. For example, a magnitude of impact of minor on a receptor with a medium value will result in a slight significant effect.

Table 2.1: Determining significance of environmental effects

		Magnitude of impact (degree of change)				
		No change	Negligible	Minor	Moderate	Major
Environmental Value (Sensitivity)	Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Slight or Moderate	Moderate of Large	Large of Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

- 3.1.6 A significant effect is considered to be one of moderate or above in significance.
- 3.1.7 Environmental impacts are assessed taking into account design mitigation. For this scheme this includes the incorporation of sustainable drainage systems and oil interceptors, the bridge being open span on piers to ensure continuity of the floodplain, lighting design to avoid light spill across the Great Stour River corridor, maintaining access to Public Rights of Way and incorporation of a bus lane, cycleway and footpath. Construction effects will be managed through the implementation of a Construction Environmental Management Plan, which is included in Volume 4 Technical Appendices.

## 3.2. Air Quality

- 3.2.1 Baseline conditions were determined by a combination of desk top study and air quality modelling. The desk top study identified an Air Quality Management Area (AQMA), automatic monitoring stations, passive diffusion tube monitoring and sensitive receptors located within the study area. The study area was determined at a distance of 350m from the scheme boundary for temporary (construction) effects, and 200m from the scheme boundary for permanent (operational traffic) effects.
- 3.2.2 The desk top study identified one AQMA within the City of Canterbury with nitrogen dioxide measured at two continuous, automatic monitoring stations and 33 passive diffusion tube locations, the closest being a diffusion tube located at the junction of Sturry Hill/Field Way. The area immediately surrounding the scheme is predominately rural in nature with most receptors being residential properties. There are no ecological designated sites within 50m of the proposed scheme that could be affected by temporary effects, however Sites of Special Scientific Interest were identified within 200m of road links affected by the permanent effects of the scheme.
- 3.2.3 The air quality assessment has been revised and supersedes the operational results presented in the 2019 ES. The air quality model was updated in 2020 following third party review and an addendum issued. The current iteration reflects the revised junction layout and updated traffic flows on the surrounding road network, using the same receptors as those in the 2020 addendum.
- 3.2.4 Construction has the potential to generate dust emissions from earthworks including removal of topsoil, handling on site and deposition, stockpiling and handling of loose materials. Dust emissions may also be due to vehicle movements, however the dust risk during the construction phase is considered to be low to negligible as best practice and pollution prevention measures would be employed; consequently, the residual effects are unlikely to be significant.
- 3.2.5 The results of detailed modelling of the impacts, i.e. change in concentrations, on receptors in Sturry show that concentrations are below the limit values for all pollutants. Although increases in concentrations are

predicted for the Do-Something scenarios at one of the three locations considered, decreases are predicted at the other two. This is not enough to meet the criteria to be considered a significant effect.

- 3.2.6 Predictions for air quality levels at the new receptors at Land at Sturry show predicted concentrations above the background levels in the Do-Something scenarios, because of the new road. However, none of the levels predicted are near the air quality objective levels and are comparable to the Do-Something concentrations at existing receptors within Sturry. The significance of effect on the village of Sturry is assessed to be slight beneficial.
- 3.2.7 Modelled concentrations within the Canterbury City AQMA shows that six receptors are predicted to experience a deterioration in NO<sub>2</sub> concentrations with the link road in place under the 2022 Do-Something scenario where the traffic is expected to increase. Overall, the effect on the AQMA is assessed to be slight adverse.
- 3.2.8 The results from nitrogen deposition modelling show that no nutrient loading above the critical load range is predicted at any of the ecological receptors.
- 3.2.9 Overall, there are no predicted significant effects from the scheme on the identified receptors.

### 3.3. Cultural Heritage

- 3.3.1 The proposed link road and viaduct are located within the rural hinterland between the late 20th century suburbs and industrial area of Canterbury and the historic village of Sturry. The assessment considers the direct effects upon the known and potential archaeological resource located within the application red line boundary. Indirect effects are considered within 1km on the scheme centre line, as well as potential indirect effects on Canterbury City World Heritage Site.
- 3.3.2 There are no Scheduled Monuments located within the study area. The non-designated archaeological resource within the study area includes evidence for human activity from the Lower Palaeolithic period and the potential for encountering archaeological remains within the red line boundary to the north of the railway line has been assessed as moderate based upon the results of an archaeological evaluation undertaken for the Land at Sturry development. To the south of the railway line the archaeological potential currently remains uncertain, although an assessment of the Palaeolithic potential suggests that there is a low to moderate potential for encountering Upper Palaeolithic remains, principally on the edges of the floodplain. It is anticipated that post-determination archaeological evaluation will be required to enhance the understanding of the potential for encountering archaeology more generally and to assess its character, origin, nature and significance. The results of this work will inform the need for and scope of any further archaeological mitigation.
- 3.3.3 The designated heritage assets which were considered as part of the assessment comprise the Canterbury Cathedral, St Augustine's Abbey and St Martin's Church World Heritage Site (WHS), located 2.5km to the south west; the Sturry Conservation Area; two Grade I listed buildings; 28 Grade II listed buildings and nine locally listed buildings. No registered battlefields or registered parks and gardens were located within the study area. Although it is outside the study area, the WHS is considered here due to its great significance.
- 3.3.4 The Outstanding Universal Value (OUV) of the WHS particularly notes the significance of the Cathedral's Bell Harry Tower in views of the city from the wider landscape. Nine key views were identified within the Canterbury Conservation Area Appraisal which emphasised the relationship between Bell Harry Tower and the adjacent historic built heritage of the city. None of these views were sited from the north east and Sturry. The historic and aesthetic interest of the view of Bell Harry Tower from the red line boundary is compromised by the presence of the late 20th century Vauxhall Industrial Estate buildings and by the electricity pylons located between the city and the proposal site. It has been determined that the effect of the proposals will result in no harm to the OUV and the significance of effect is neutral.
- 3.3.5 The proposed viaduct will be constructed at the western end of the Sturry Conservation Area where it will cross an area of meadows lining the Great Stour River which were identified as being an important feature of the setting of the village. Whilst the historic connection between this landscape and the village remains, the aesthetic value has been compromised by the insertion of wire fencing, electricity pylons and the establishment of playing fields. The historic core of the village is orientated away from the meadows and

the relationship between these areas is of local interest and low value. During the operational phase, the viaduct and link road will result in a slight effect upon the Conservation Area, although this is off-set to a degree by the benefits of reducing the traffic through the historic core of the village.

- 3.3.6 A slight effect has been identified to the setting of the two Grade I listed buildings School Hall and St Nicholas' Church as a result of both the construction and operational stages. A neutral effect is anticipated to the setting of any of the remaining listed or locally listed buildings within Sturry from the construction of the viaduct and link road. The operation of the viaduct and link road, will also result in a neutral effect, although as with the Sturry Conservation Area, there will be a benefit arising from reduced traffic to those historic buildings located adjacent to Sturry Road and Sturry Hill.
- 3.3.7 The historic landscape reflects the rural character of the site. The red line boundary passes through valley floor fields (meadows) identified as forming part of HLCA 19 Wantsum Channel in the KCC Historic Landscape Character project, and through the remains of medieval to post medieval field systems forming part of HLCA 12 Former Forest of Blean. It is bound to the north by ancient woodland, to the east by King's Junior School and the 19th century and later expansion of Sturry and to the west by the late 20th century residential and industrial expansion of Canterbury. The historic landscape character is of local interest and low value. The construction and operation of the road within the Land at Sturry site will result in a slight effect upon HLCA 22; whilst the viaduct will result in a neutral effect on HLCA 19.

### 3.4. Landscape

- 3.4.1 Baseline conditions were determined from a combination of desk top study and field surveys, based on a 2km study area from the centreline of the road. The desk top study determined that there are no national landscape designations, registered parks and gardens or any designated Areas of Outstanding Natural Beauty (AONB). Sturry however, lies within an area which is classified as an Area of High Landscape Value, and part of the study area additionally lies within Sturry Conservation Area and Fordwich Conservation Area. Numerous areas of ancient woodland are also located throughout the study area. The scheme lies within National Character Area (NCA) Profile 113; North Kent Plain and is located within 2km of four County Wide Landscape Character Areas (CWLCAs). The scheme also lies directly within two Landscape Character Areas (LCAs); Stour Valley Slopes LCA and Stour Valley – Sturry and Fordwich LCA. A further five LCAs are located within 2km of the scheme.
- 3.4.2 Residential, institutional and business, recreational routes and users of Public Rights of Way, and road receptors all have views across the study area. Many of the receptors views are screened by vegetation and residential or commercial premises.
- 3.4.3 During construction, there will be significant effects on landscape fabric and the two LCAs that the scheme lies within; Stour Valley Slopes LCA and Stour Valley: Sturry and Fordwich LCA. Such effects will result from earthworks (and associated plant and machinery) and the alteration and removal of features which contribute to the landscape character. Specifically, there will be a loss of vegetation along the alignment of the link road and haul roads. Visually, the scheme will have an impact on numerous residential, road and Public Rights of Way (PRoW) receptors due to vegetation removal, the presence of plant and machinery and the disruption caused by traffic management.
- 3.4.4 When the scheme is in year 1 of operation, significant effects will remain for landscape fabric and the two LCAs that the scheme lies within. At year 1, mitigation planting will not have established and the link road, viaduct and its associated infrastructure, such as lighting and signage, will remain perceptible within the local landscape. There will be a permanent change of landcover along the alignment of the new road and also a permanent loss of green space. As a result of such factors, significant effects will remain for a number of residential and PRoW receptors.
- 3.4.5 By year 15 of operation, no significant effects are determined for any landscape or visual receptor. Mitigation planting on the embankments at either end of the viaduct will have established by this point and as a result, the scheme will have integrated into the local landscape. By Year 15, the Land at Sturry development will also have been completed and will subsequently screen views of the link road and viaduct for many of the surrounding visual receptors.

### 3.5. Biodiversity

- 3.5.1 Baseline conditions were determined from a combination of desk top study and field surveys. The desk top study identified designated sites within 10km of the scheme. Survey data was gathered for the study area, encompassing the route of the link road and the Land at Sturry housing application site where the road forms part of that development. Extended Phase 1 habitat surveys of the route were carried out between 2013 and 2015 and updated during site visits in 2016, 2017 and 2018. Surveys for notable flora and non-native invasive plants were conducted at the same time.
- 3.5.2 Protected species surveys were carried out between 2013 and 2018 for badger, bats roosting in buildings and trees, bat activity, dormouse, otter, water vole, great crested newt, reptiles, breeding and wintering birds, and Desmoulin's whorl snail.
- 3.5.3 The desk study identified statutory and non-statutory nature conservation designations within 10km of the scheme, including:
- Sturry Pit Site of Special Scientific Interest (SSSI);
  - Stodmarsh SSSI/Special Area of Conservation (SAC)/Special Protection Area (SPA)/Ramsar;
  - West Blean & Thornden Woods SSSI; and
  - AS27 Great Stour River, Ashford to Fordwich Local Wildlife Site (LWS).
- 3.5.4 The study area consists of a range of habitat types typical of East Kent, including ancient and non-ancient and semi-natural woodland; plantation broadleaved woodland; hedgerows, trees and scrub; semi-improved and species-poor grassland; improved and amenity grassland; marshy grassland; arable; tall ruderal; swamp vegetation; rivers, ditches and ponds; and buildings and hardstanding.
- 3.5.5 Design mitigation has been incorporated to avoid or reduce the potential adverse effects of the scheme on important ecological receptors. The scheme has been designed to avoid ancient woodland and minimise land-take from the Great Stour floodplain by using an open span viaduct to cross the river. The viaduct piers will be at least 8m from the river bank to prevent changes to in-channel flow and allow unimpeded access for aquatic wildlife. Sustainable Urban Drainage Systems will be used to maintain water quality and prevent road runoff pollutants from entering wetland habitats. There will be no street lighting on the viaduct to avoid light spill across the river corridor and minimise disturbance to sensitive species such as otter, migratory fish and foraging bats.
- 3.5.6 The construction phase of the development has the potential to have adverse effects on water quality and fauna of the Stodmarsh Ramsar/SPA/SAC/SSSI as it is hydrologically connected to the scheme via the Great Stour River. There is also potential for construction to cause disturbance to Stodmarsh qualifying species using functionally linked habitat along the river corridor, including Desmoulin's whorl snail and overwintering lapwing and snipe.
- 3.5.7 The construction phase could also adversely affect notable plant species and priority habitats such as ancient and non-ancient woodland, rivers, grazing marsh and hedgerows through temporary land-take, polluting discharges, noise and lighting disturbance and dust generation.
- 3.5.8 There is the potential for bats, dormouse, Desmoulin's whorl snail, reptiles, birds, badger and other mammals to be affected directly through disturbance and mortality or indirectly via loss of and damage to habitat. Slight adverse effects are predicted for otter due to disturbance of a resting site beside the river.
- 3.5.9 Construction impacts will be managed through the measures detailed in the CEMP including pollution prevention measures, pre-construction surveys and monitoring, best practice with regard to working hours, noise control and dust emissions, and habitat restoration on completion of construction activities.
- 3.5.10 The operational phase is predicted to cause slight adverse effects on notable plant species, which includes the loss of nationally scarce clustered clover populations within the scheme footprint, and hedgerows and trees due to habitat loss.



- 3.5.11 Residual effects, following implementation of mitigation and enhancement measures, are predicted to be neutral for these features in the medium to long term as new planting and habitat management becomes established along the route and within the wider Sturry masterplan area.
- 3.5.12 After the publication of the ES in early 2019, an ecology addendum to the ES was produced in late 2019 in response to comments from consultees during the ES consultation period.
- 3.5.13 The study area remains the same as described in the 2019 NTS and 2019 Ecology and Nature Conservation Addendum. Baseline conditions were updated following a site walkover in May 2021. This walkover indicated that the habitats recorded on the site remain the same as from previous surveys from 2013 through to 2019. The only change has been development of some additional scrub areas close to the railway line.
- 3.5.14 Overall there will be no significant effects on biodiversity resulting from the construction and operation of the scheme.

### 3.6. Geology and Soils

- 3.6.1 Baseline conditions were determined from a combination of desk top study and field surveys. The study area is taken to be 100m from the scheme footprint and designated sites within 2km of the scheme are also considered.
- 3.6.2 The desk top study identified a geologically designated site within the study area; Sturry Pit Site of Special Scientific Interest (SSSI), located approximately 10m east of the scheme along the A291 Sturry Hill.
- 3.6.3 The underlying bedrock is a mixture of Thanet Formation, Lambeth Group, Harwich Formation and London Clay formation. Superficial deposits are a mixture of alluvium, head deposits and river terrace deposits comprising clay, silt, sand and gravel.
- 3.6.4 The northern section of the scheme overlies an aquifer which experiences intermediate groundwater vulnerability, while the southern section overlies an aquifer with high groundwater vulnerability associated with the alluvial deposits. Eight groundwater abstraction points are located within the study area.
- 3.6.5 The agricultural land is predominately Grade 3 (good to moderate) with a small area of Grade 2 (very good). The desk top study identified areas of potentially contaminative land uses within the study area and three historic landfill sites have been located within the study area.
- 3.6.6 Construction impacts on soils will be managed through the best practice measures as set out in the CEMP, including measures such as use of geotextiles in areas of soft ground, restricting movement of plant to designated haul routes to reduce risk of soil compaction. The CEMP outlines measure to prevent the pollution of underlying subsoils during works. Excavated material will be reused on site where possible to maximise the use of site won material.
- 3.6.7 The alluvium below the embankments has potential to be adversely affected by compression and settlement. It is likely that some form of pre-loading or the use of geotextiles under the embankment will be used to minimise settlement.
- 3.6.8 With adherence to the CEMP, construction effects on soils, geology and land contamination are assessed to be not significant.
- 3.6.9 There are no significant effects on geology and soils or designated sites from operation. Due to the degree of encapsulation from the road and Land at Sturry development, the risk of encountering land contamination will be very low.

### 3.7. Material Assets and Waste

- 3.7.1 Baseline conditions were determined through a desk top study. The study area was taken to be the scheme footprint of the entire link road with a construction working corridor of 30m either side of the road. A wider study area of 30km was used to identify local waste facilities.

- 3.7.2 Within the study area there are three main roads which connect the City of Canterbury to Sturry and Broad Oak villages. These roads are drained through a highway drainage network including verge kerb and gully system and verge filter drains, which discharge to local outfalls including watercourses and ditches.
- 3.7.3 The road network contains minimal street furniture (road signage, boundary fencing, gates, street lighting units, reflective road studs, kerbing) and overhead/underground utilities are also present along these roads. The Canterbury to Ramsgate railway line crosses the centre of the study area and comprises an embankment and foundations (soil/engineering material), ballast (stone), sleepers (concrete) and steel trackers. The remainder of the study area comprises greenfield sites made up of naturally occurring soils and vegetation. The current material resource in the study area is not considered to be rare, unique or unusual.
- 3.7.4 As the scheme will involve the construction of a new link road and a new viaduct, it is anticipated that this will require substantial volumes of steel, asphalt, concrete, aggregates and imported fill. Where possible, the scheme will maximise the reuse of site-won materials and the procurement of material resources with recycled content. The scheme is expected to generate moderate quantities of inert (and potentially non-inert) materials. Overall, the effect of the scheme on materials during construction is assessed to be not significant.
- 3.7.5 During operation, any road repairs will require granular sub base, asphalt binder and surface course. There may also be material and waste issues from the upkeep of road furniture and lighting. Operational effects are considered to be not significant.

### 3.8. Noise and Vibration

- 3.8.1 The assessment predicted the noise and vibration effects of the proposed link road both during construction and operation at noise sensitive receptors within 600m of the proposed link road. Concurrent with the link road, the Land at Sturry development proposals are to build up to 630 residential properties and a school; this assessment also considered the impact of the link road on the proposed development.
- 3.8.2 The noise environment in the vicinity of the scheme is predominantly associated with road traffic travelling along the A28 at Sturry, the main route to and from Canterbury.
- 3.8.3 There are many existing noise sensitive receptors within the study area, including residential areas on Sturry Hill, Mill Road, Vauxhall Avenue, Broad Oak Road and Shalloak Road, in addition to the proposed residential properties at Land at Sturry and a school.
- 3.8.4 All properties, both existing and proposed need to be assessed against DMRB comparing Do-Minimum and Do-Something scenarios, even if the properties are not yet built.
- 3.8.5 Noise levels during construction are predicted to increase significantly at the closest residential and community receptors. Actions to reduce noise as much as is reasonably practicable are recommended and the relevant British Standards should be adhered to during the works. Local residents should be kept informed of the works and a point of contact should be established to deal with queries or complaints. Construction of the scheme is expected to take around 18 months, with standard daytime working hours recommended and any deviation from daytime hours should be discussed and approved by the local authority.
- 3.8.6 The noise assessment was revised for the new junction layout and this supersedes the operational results presented in the 2019 ES. The noise model was updated to reflect the change in junction layout and traffic flows on the surrounding network, using the same receptors as those in the 2019 assessment.
- 3.8.7 Operation of the proposed link road is predicted to result in significant changes in noise levels, both adverse and beneficial, at existing receptors. In the Do-Something future year scenario, 1275 residential receptors were predicted to experience an increase in noise levels, with 269 residential receptors predicted to experience a perceptible increase i.e. an increase greater than 3dB LA10,18h in the day-time. It was predicted that there will be a decrease in noise levels at 339 residential receptors, 101 of which were predicted to experience a perceptible decrease in noise levels. Two receptors (22 Deansway Avenue and 4 Shalloak Road) are predicted to experience a minor adverse change in noise level, compared to the negligible adverse change predicted in the 2019 assessment.

- 3.8.8 Adverse significant noise changes, compared to the baseline conditions are predicted for properties at the proposed development. The baseline condition assumes greenfield conditions, with the Do-Something scenario comparing noise from the link road at the new properties to the greenfield noise levels. The assessment however has not taken into account the expected screening of the link road by the Land at Sturry development as the exact locations of the new properties are not known and the link road is expected to be in place before the residential development is complete. The new development is also expected to screen the effects of the link road at some of the existing receptors.
- 3.8.9 Due to the constraints of the site, the restricted corridor for the route of the Link Road, and the visual impact, there is limited opportunity to provide noise barriers to reduce the significant, adverse noise predicted to affect existing receptors. The assessment identified eligible receptors in line with the Noise Insulation Regulations 1975. This requires further assessment in accordance with the regulations, 1 year after opening of the link road, 5 years and 10 years with the recorded exact traffic data.
- 3.8.10 For the properties and the school in the proposed development, it would be expected that the developer will apply good acoustic design to the development, in accordance with current guidance, so that the noise sensitive receptors are located as far away from the road as possible and noise sensitive rooms (such as bedrooms) are located as far away from the road as possible. Mitigation for the new development will be the responsibility of the Land at Sturry developer to provide.

### 3.9. Population and Human Health

- 3.9.1 Since publication of the 2019 ES, the DMRB guidance has been updated which has resulted in changes to what is assessed within this topic. The updated guidance considers impacts on land use and accessibility, and human health. The topic has been renamed from People and Communities to Population and Human Health.
- 3.9.2 The main land use within the study area is agricultural, with arable land to the north of the railway and grazing land in the floodplain of the Great Stour River between the railway and the A28 Sturry Road to the south. The road will be constructed within development site Strategic Allocation SP3 Site 2 as set out in the Canterbury City Local Development Plan 2017, which has been allocated for housing and community facilities (currently in use for agriculture). This is the Land at Sturry development and the link road is an integral part of the development.
- 3.9.3 Existing residential development within the study area is concentrated within Sturry, with occasional single dwellings located along the A28 Sturry Road in the south and a higher density of housing along the A291 Sturry Hill. There are a few residential properties located along the road corridor that would be affected by the link road.
- 3.9.4 There is a single commercial business that would be affected by the link road which is Greenfields Shooting Grounds. The link road and housing development will result in the demolition of the Greenfields building and the loss of the associated grounds.
- 3.9.5 There are a number of community facilities within the study area, most of them located in Sturry. The main facilities affected by the link road are the Public Rights of Way CB60 and CB64. Pedestrian counts undertaken over two days identified that these paths are used by recreational walkers, although usage was low.
- 3.9.6 The provision of the housing development and the link road will result in the loss of agricultural land, having a moderately adverse significant effect. This is due to the permanent loss of land available for agriculture. This land has however, been allocated for development in the Local Development Plan. It is likely that the route will result in the loss of small amounts of residential land (loss of gardens) although the link road has been designed to minimise impacts on private land.
- 3.9.7 The closure of Greenfields Shooting Grounds and the loss of the associated grounds to the road and housing will have a moderate adverse effect on commercial land.
- 3.9.8 The Public Rights of Way will be retained as part of the development. This will result in a slight significant effect on severance, as although crossing points will be provided, the road introduces a degree of severance

that is not currently existing. The amenity of these routes will also change, through the introduction of housing and traffic in an existing tranquil environment. This is of slight significance.

- 3.9.9 The human health assessment considers the health profile of the community and whether there are external factors affecting health, such as Air Quality Management Areas or noisy environments. Baseline information relating to the population of the Sturry ward in 2018 indicates nearly 50% of the population is in the age range of 25 to 64 years. Approximately 16% of the population were below the age of 15, while 22% were over 65 years of age. The health profile of the population was considered to be medium sensitivity to change.
- 3.9.10 Potential impacts on human health during both construction and operation include;
- Temporary changes in air quality, noise and vibration and visual amenity arising from construction activities and associated vehicle/plant movements.
  - Temporary impacts on social cohesion as a result of disrupted walking/cycling routes;
  - Permanent changes in air quality, noise and vibration and visual amenity as a result of improved traffic flow through the study area.
- 3.9.11 The scheme includes new pedestrian and cyclist infrastructure, with the link road providing an unsegregated shared footway on the northern verge of the east-west link, and a shared footway/cycleway along the entire length of the link road, connecting A291 Sturry Hill Road, with Shalloak Road and the A28. The addition of new routes will have a beneficial effect on human health, by encouraging more active forms of travel.
- 3.9.12 A neutral health outcome is determined for construction and positive for operation, as a result of new pedestrian and cyclist infrastructure.

## 3.10. Road Drainage and the Water Environment

### Surface Water

- 3.10.1 The scheme will cross the river valley and floodplain of the Great Stour River, a main river which flows in a north-eastern direction from Canterbury towards Sturry and Fordwich. There is also an extensive network of drainage channels located within close proximity to the scheme which channel run-off from the agricultural land and residential areas. The drainage channels discharge into the Great Stour River.
- 3.10.2 Surface water interactions involve construction within 50m of watercourses for scheme components such as the viaduct, culverts and discharge outfalls. Construction activities necessitate the use of fuels, oils and chemicals plus earthworks; all of which introduce potential contamination. Mitigation in the form of a CEMP will incorporate good site environmental management practices with clear procedures and the installation of specific measures to protect the surface water environment.
- 3.10.3 Once the road is operational, there is potential for routine runoff to introduce sediment and soluble contaminants and for an accidental spillage to occur and cause pollution to the downstream receiving watercourse. An assessment was undertaken to assess the potential impacts on surface water resources and the results indicate that all discharges would pass standards. In addition, use of SuDS and pollution control devices (trapped gullies and catchment pits, oil separators) installed in all drainage networks will ensure water quality at the outfalls will have a neutral effect. A SuDS pond to the north of the railway was incorporated into the design to ensure impacts from salt runoff during winter was controlled and to avoid runoff into ditches used by the protected species, Desmoulin's whorl snail.
- 3.10.4 Therefore, the impacts on surface water following the implementation of mitigation measures are not considered significant.

### Groundwater

- 3.10.5 The Thanet Formation sand, silt and clay and the Lambeth Group sands and gravel underlying the proposed scheme constitute a Secondary A Aquifer. The groundwater vulnerability within close proximity to the proposed scheme is classified as intermediate-high.

- 3.10.6 Groundwater can be polluted by construction activities; however, groundwater pollution is less likely than surface water pollution due to the barrier presented by soil or drift deposits. Contamination to groundwater is more likely where construction activities remove soil or drift and occur close to or penetrate into the water table, such as during the creation of excavation and piling works. Construction activities will incorporate good site environmental management practices with clear procedures and mitigation measures to protect the groundwater environment.
- 3.10.7 The operation of the scheme is unlikely to affect the integrity of the underlying groundwater body as the proposed drainage system will only discharge into surface waterbodies via kerb drains which tie into the existing piped drainage system and surface water drains and SuDS ponds.
- 3.10.8 Therefore, the impacts on groundwater following the implementation of mitigation measures is not considered significant.

### **Flooding**

- 3.10.9 The proposed scheme traverses flood risk zones 2 and 3 which are associated with the Great Stour River. Groundwater levels within the proposed site area are responsive to water levels in the Great Stour River; thus, the low-lying areas adjacent to the Great Stour are at low to medium risk of groundwater flooding.
- 3.10.10 Flood risks can be aggravated as a result of a number of construction activities including the compression of soil surfaces, increase of impermeable surfaces, excavation works, accidental sediment releases which cause blockages and alteration of the river profile/floodplain area. Good site environmental management practices and adherence to the CEMP will be implemented to mitigate flood risks.
- 3.10.11 There is a potential increase in risk of flooding (surface, fluvial, groundwater and sewerage) due to the increase in impermeable surfaces and local modifications to drainage catchment patterns. Transport infrastructure in flood risk areas must be designed and constructed to remain operational and safe for users in times of flood. The mitigation for this proposed scheme comprise a number of 'designed in' elements, including sustainable drainage systems and the bridge being an elevated open span structure to maintain the floodplain continuity. A Flood Risk Assessment has been undertaken as part of the planning application for this scheme and concluded that the link road will not result in a significant increase in flood risk.
- 3.10.12 Therefore, the impacts on flood risk following the implementation of mitigation measures is not considered significant.

## **3.11. Climate**

- 3.11.1 In terms of identifying the study area for climate adaptation measures, the county of Kent is taken as a whole in considering if the scheme fulfils their adaptation strategies. For climate change mitigation measures, the study area is taken to be the scheme footprint, plus the affected road network.
- 3.11.2 Kent has experienced changes in its climate as a result of climate change with average temperatures between 1961 and 2006 having risen by at least one degree Celsius and average sea levels around the south-east coast having risen by about one millimetre a year.
- 3.11.3 The UK Climate Projections report for a medium emissions scenario suggest that by 2050 in Kent, winter rainfall is likely to increase by 16% while summer rainfall is likely to decrease by 19%. Average winter temperatures are predicted to be warmer by around 2.2 degrees Celsius, while summer temperatures are predicted to be hotter by around 2.8 degrees Celsius. Kent as a whole is considered to be vulnerable to changes in climate as it has a long coast line which is likely to be affected by rising sea levels and increased storm frequency, resulting in coastal erosion and risk of flooding. On a more local level, increased risk of flooding is likely which may affect key infrastructure and can result in communities being cut off from power and water supplies during extreme weather events.
- 3.11.4 The scheme has been designed to allow an additional 35% river flow to allow for climate change and flood risk modelling was completed. This indicated that the scheme impact on flood risk is minimal and the bridge should be unaffected by flooding, allowing for an extreme flood event. The surface water drainage has been designed for a 1 in 100-year storm plus 20% allowance for climate change. The SuDS pond has also been designed to cope with this 20% allowance.

- 3.11.5 As the scheme has been designed with climate change adaptation taken into account, it is assessed that climate change will not have a significant effect on the scheme from an increased risk of flooding.
- 3.11.6 Anthropogenic greenhouse gases are a contributory factor in climate change and the key GHGs are carbon dioxide, methane, nitrous oxides and chlorofluorocarbons. The combustion of fossil fuels is a key contributor to increased carbon dioxide concentrations from pre-industrial levels. Greenhouse gas emissions were calculated based on the traffic data received for the Sturry Link Road which included the contribution from local committed development. Based on this data, the estimated amount of GHG emissions from the scheme over the period 2022-2031 was calculated as 8721 tCO<sub>2</sub>e. This value was compared to the annual CO<sub>2</sub> budget for the UK and the contributions from the scheme are less than 1% of the UK carbon budget. This is assessed to be an insignificant effect.

### 3.12. Interactions and Cumulative Effects

- 3.12.1 During construction, there is potential for cumulative effects to arise on receptors from noise and dust production on local residents and wildlife. Construction impacts will be managed through the application of the CEMP to reduce nuisance and therefore these cumulative effects are not considered significant.
- 3.12.2 The properties along A28 Sturry Road will experience cumulative effects when the road is in operation from noise and visual intrusion. Visual effects will be mitigated through sensitive landscape design to provide screening to reduce significant effects. Further assessment on noise levels once the road is operational will be required to ascertain if any properties qualify for noise insulation measures.
- 3.12.3 There are a number of proposed or approved planning developments in and around Sturry including Land at Broad Oak Farm, Richborough Connection Project, Land South of the A28 Chislet Colliery and Hoplands Farm. The Land at Sturry is already included in operational effects as inter-related with the link road.
- 3.12.4 It is likely that construction programmes for all the housing schemes will have some degree of overlap, affecting residents in Sturry through changes in air quality, noise and traffic. All the developments will have CEMPs to manage construction effects and ensure impacts on local receptors are kept to minimum levels.
- 3.12.5 During operation, the provision of additional housing will generate additional traffic, with some roads experiencing congestion and saturation. Overall, cumulative effects on traffic from the housing will result in changes in air quality. The Sustainability Appraisal Report produced by Canterbury County Council following the publication of the LDP indicates that the additional housing development is unlikely to significantly affect air quality in the council area. This is partly due to associated policies within the LDP to promote more sustainable modes of travel such as walking and cycling and improve access to public transport, to reduce car use.
- 3.12.6 Only one additional development was identified as having potential for cumulative effects with the link road since 2019. This is for construction of 10 houses at East Street, Canterbury. However, given the minor footprint of this proposed development, it is not expected to result in any significant cumulative effects.

### 3.13. Mitigation Measures

- 3.13.1 Construction mitigation measures are set out in the Construction Environmental Management Plan, included within Volume 4 Technical Appendices. These include measures to avoid soil and water pollution, controlling dust emissions, controlling noise from construction machinery and avoidance of ecologically sensitive areas.
- 3.13.2 A Schedule of Environmental Commitments has been prepared and the following list provides a non-exhaustive list of the key mitigation measures identified for operational effects.
- Further pre-determination archaeological evaluation including geoarchaeological deposit modelling and targeted trial trenching. It is likely this will form a condition of the planning application.
  - Landscaping of the road embankments and verges to mitigate effects on the landscape and provide visual interest.
  - Replanting to include seeding of clustered clover to create a new population of this species.

- Installation of 2 artificial otter holts in suitable riparian habitat along the Great Stour River.
- Provision of bat boxes.
- Post operation monitoring for a minimum of five years of Desmoulin's whorl snail, clustered clover, bats, otter.

3.13.3 Since the publication of the 2019 ES, an additional area of land south of the railway has been included in the scheme for ecological enhancement measures. These measures include habitat improvement for overwintering birds by providing additional wet grassland habitat and improvement of the existing ditches on site for the Desmoulin's whorl snail population.

### 3.14. Conclusion

3.14.1 With adherence to pollution prevention measures, the CEMP and the mitigation measures as set out in the Schedule of Environmental Commitments, construction effects from the scheme are not significant.

3.14.2 The main operational effects will be:

- loss of agricultural land due to the link road and Land at Sturry development;
- loss of Greenfields Shooting Grounds;
- visual impacts on receptors along Sturry Road from new road and viaduct.

3.14.3 The scheme will also result in beneficial effects. It will divert traffic away from the centre of Sturry, having a beneficial effect on the Sturry Conservation Area and associated buildings, by reducing traffic and having localised positive effects on noise and air quality. In addition, the link road is integral to the Land at Sturry and provides access to the strategic housing allocations set out in the Canterbury City Local Plan. The scheme incorporates new cycle infrastructure, footpaths and a bus lane to encourage a shift away from car travel and towards more sustainable transport.

## 4. Further Information

The Environmental Statement Update will be available from:

Kent County Council

Highways, Transportation and Waste

1st Floor, Invicta House

Maidstone

ME14 1XX.

Opening hours are 9am to 5pm.

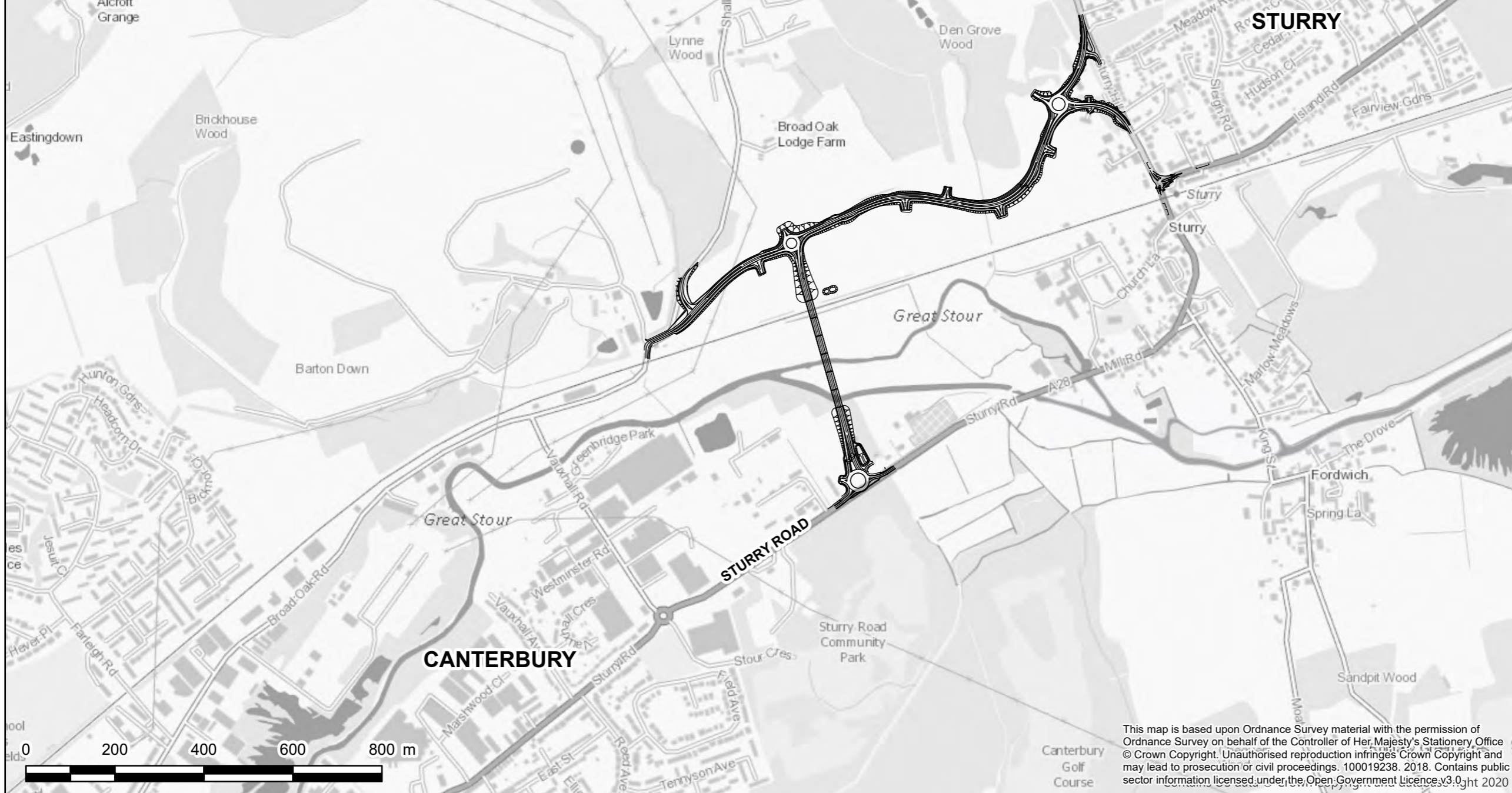
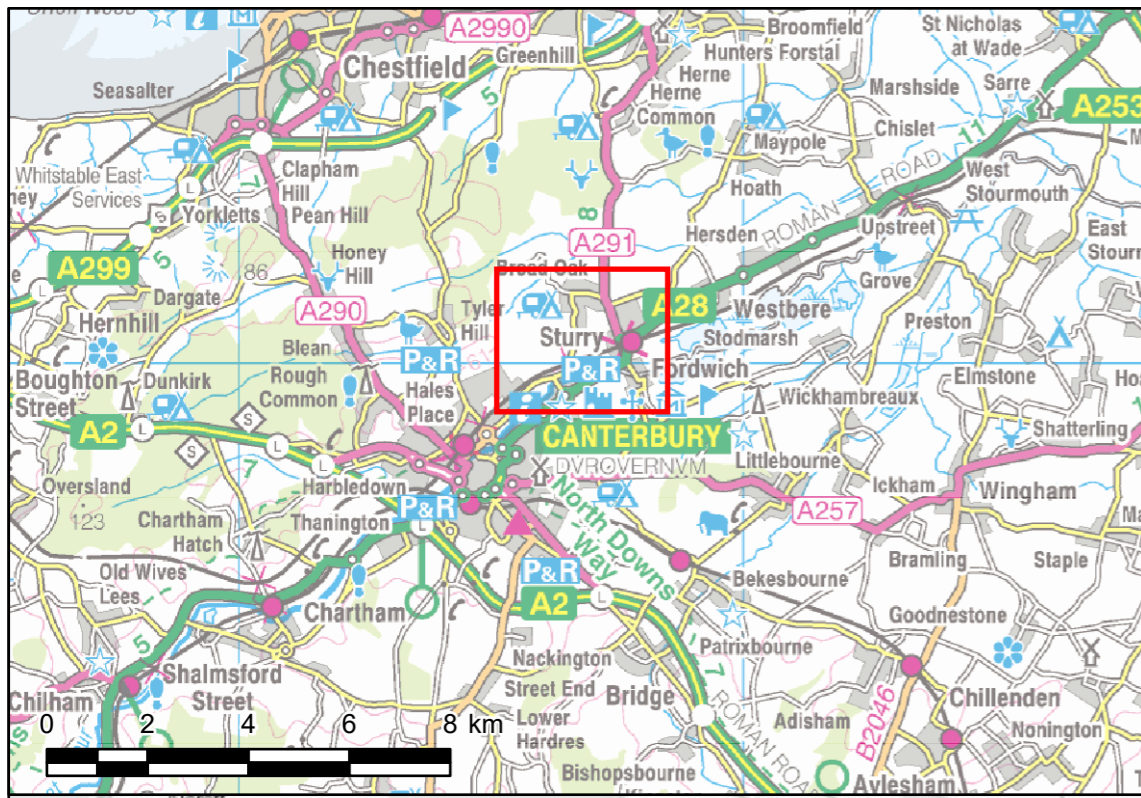
The documents are also available to download from the Kent County Council Planning Portal:

<https://www.kent.gov.uk/waste-planning-and-land/planning-applications>





## 5. What happens next?

Construction of the Sturry Link Road will be dependent on approval from Kent County Council Planning Department. The ES Update will be considered by the Council as part of the new planning application in making their decision on whether or not to approve the Sturry Link Road.



**Legend**

-  Scheme Design
-  Scheme Location

Rev	Revision Details	Chkd	Appd	Date
Drawn : ACT			Preliminary	<input checked="" type="checkbox"/>
Design : ACT			For Comment	
Chkd : HC			For tender	
Appd : AW			For construction	
Date : June 2021			As constructed	
			Other	

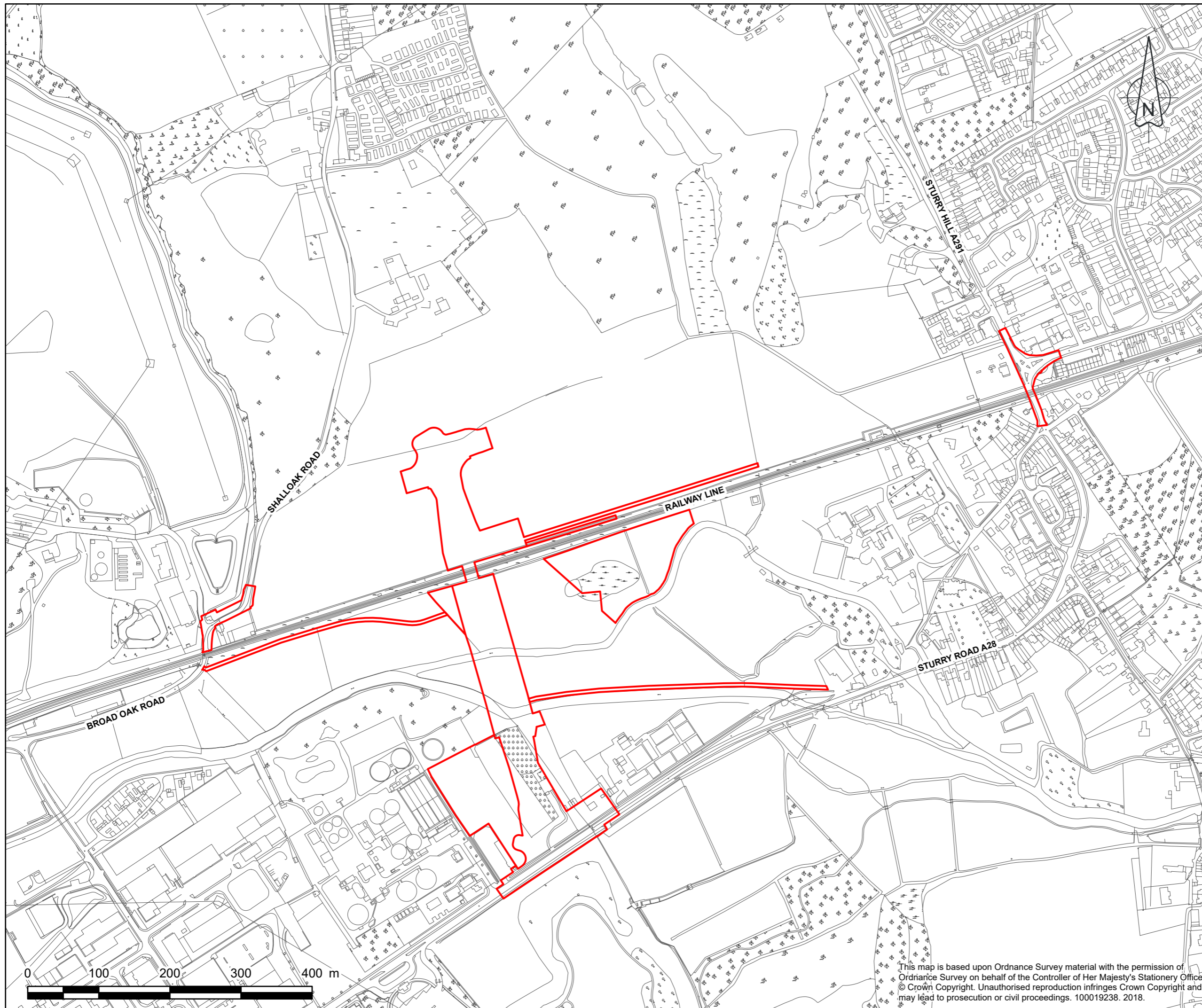


Project Name :  
**A28 Sturry Link Road  
 Canterbury**

Drawing Title :  
**Non Technical Summary  
 Scheme Location**

Original Drawing Size : A3	Scale : AS SHOWN	Dimensions :
Drawing No Figure 1	Rev -	

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. 100019238. 2018. Contains public sector information licensed under the Open Government Licence v3.0. Jht 2020



This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. 100019238. 2018.

**Legend**  
 — Red Line Boundary

Rev	Revision Details	Chkd	Appd	Date
Drawn : JB				Preliminary
Design : JB				For Comment
Chkd : HC				For tender
Appd : AW				For construction
Date : Jun 2021				As constructed
				Other

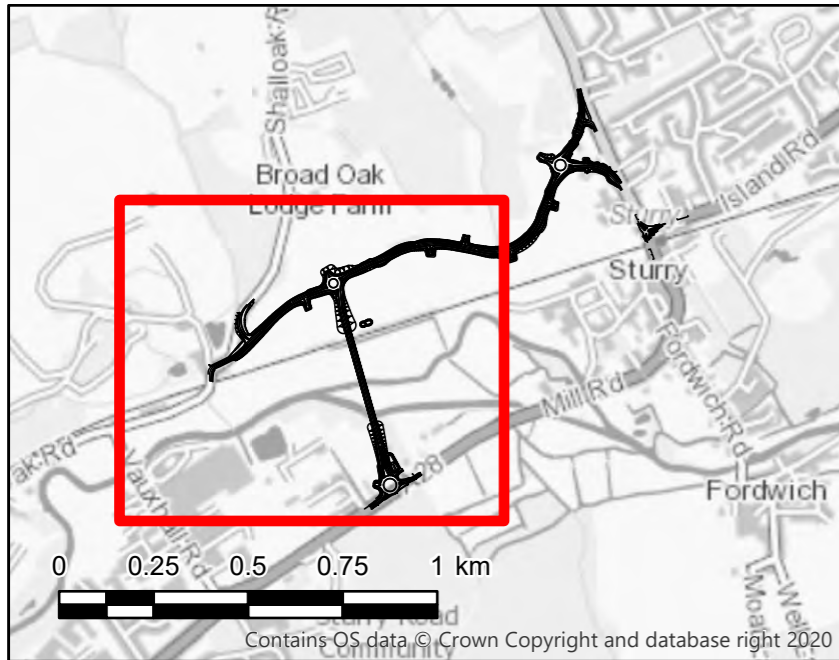
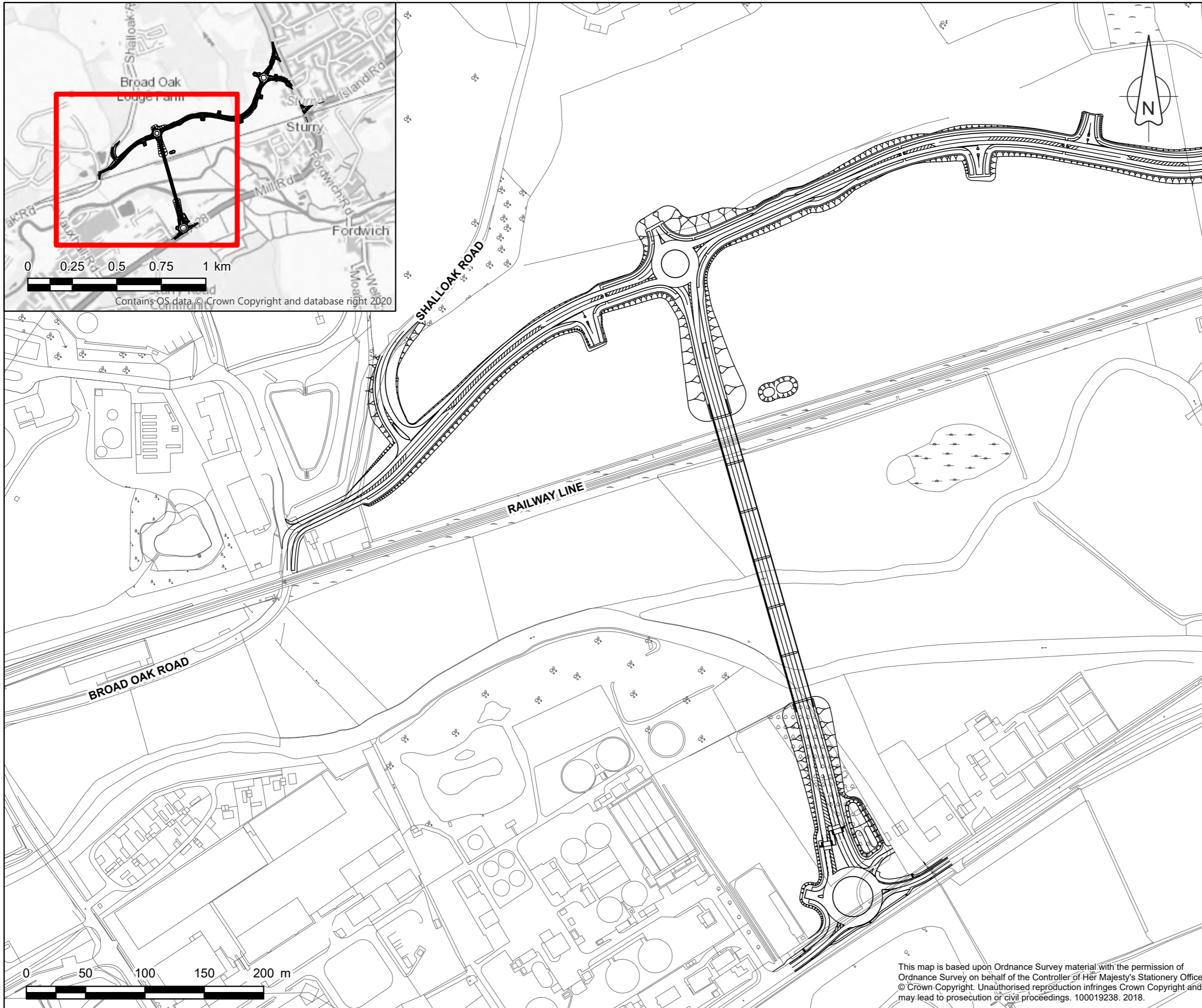


Project Name :  
**A28 Sturry Link Road  
 Canterbury**

Drawing Title :  
**Non Technical Summary  
 Red Line Boundary**

Original Drawing Size : A3  
 Scale : 1:6,000      Dimensions :

Drawing No Figure 2	Rev -
------------------------	----------



**Legend**

— Scheme Design

Rev	Revision Details	Chkd	Appd	Date
Drawn : FK				Preliminary
Design : ACT				For Comment
Chkd : HC				For tender
Appd : AW				For construction
Date : May 2021				As constructed
				Other



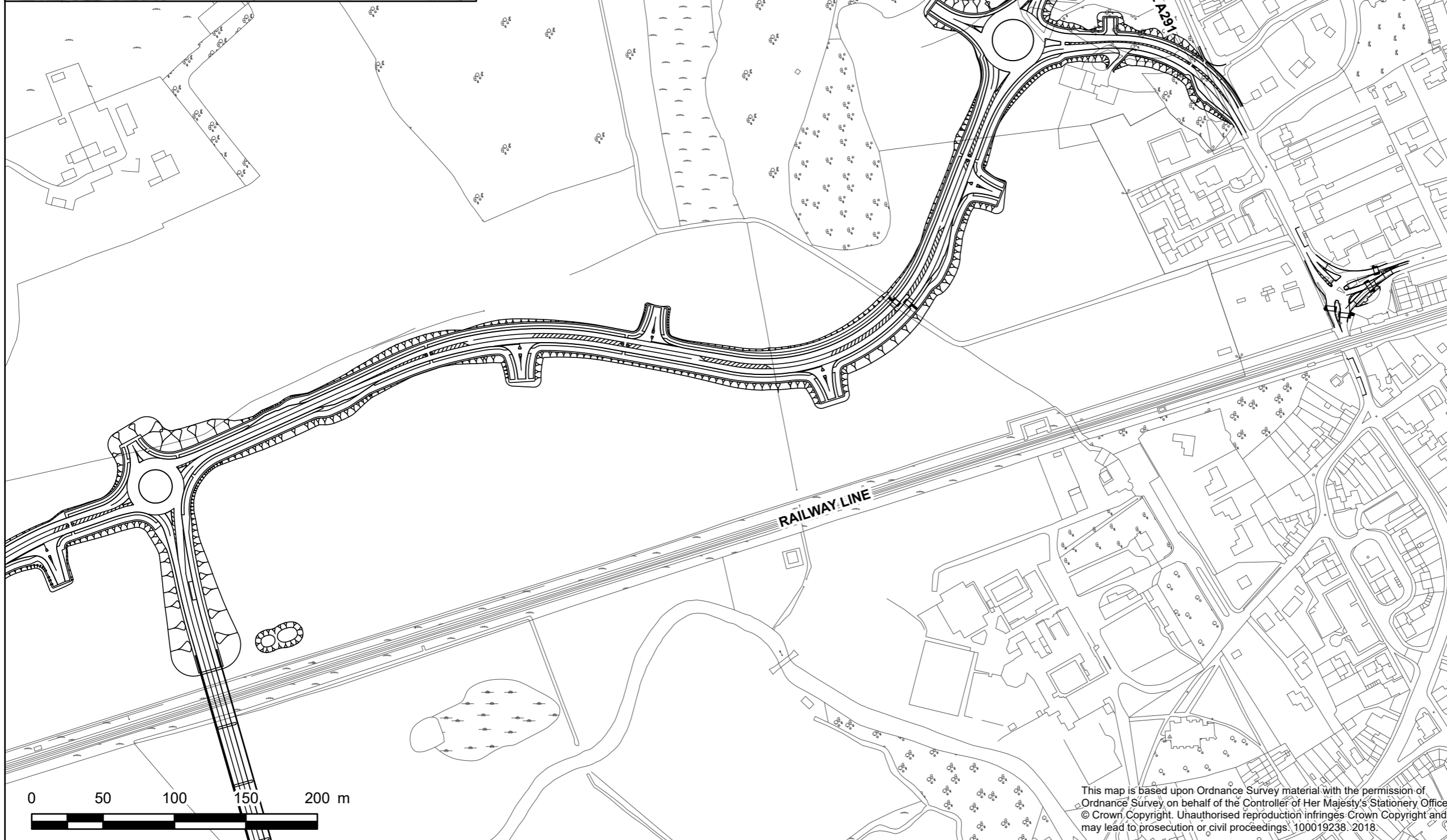
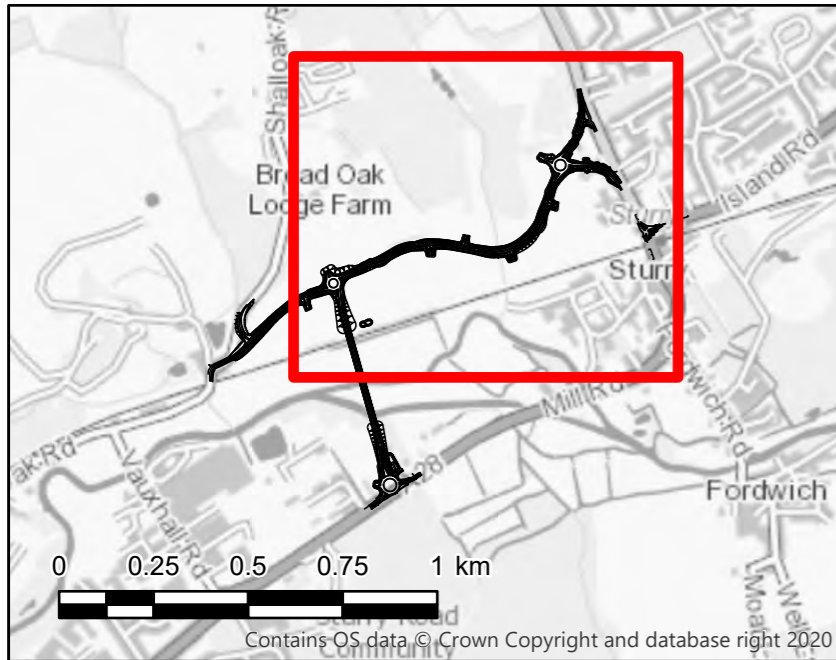
Project Name :  
**A28 Sturry Link Road  
 Canterbury**

Drawing Title :  
**Non Technical Summary  
 Scheme Layout**

Original Drawing Size : A3  
 Scale : AS SHOWN    Dimensions :

Drawing No  
 Figure 3a    Rev  
 P01.1

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. 100019238. 2018.



**Legend**

— Scheme Design

Rev	Revision Details	Chkd	Appd	Date
Drawn : FK				Preliminary
Design : ACT				For Comment
Chkd : HC				For tender
Appd : AW				For construction
Date : May 2021				As constructed
				Other



Project Name :  
**A28 Sturry Link Road  
 Canterbury**

Drawing Title :  
**Non Technical Summary  
 Scheme Layout**

Original Drawing Size : A3  
 Scale : AS SHOWN      Dimensions :

Drawing No  
**Figure 3b**

Rev  
**P01.1**

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. 100019238. 2018.