Lower Thames Crossing

7.18 Workers Accommodation Report

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Lower Thames Crossing

7.18 Workers Accommodation Report

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1 Executive summary

Purpose and structure of the report

1.1.1 This Workers Accommodation Report (WAR) sets out the estimated number of workers at the peak construction phase of the A122 Lower Thames Crossing (the Project) who would require temporary accommodation. It considers what type of accommodation these workers are anticipated to seek and where, and a consideration of this demand in the context of supply and the operation of the accommodation market.

1.1.2 Following this executive summary, the report begins with an introduction in Chapter 2. Chapter 3 sets out National Highways (the Applicant) objectives and approach to worker accommodation. Chapter 4 describes stakeholder engagement. Chapter 5 provides the context and demand for accommodation which provides the basis for the accommodation assessment in Chapter 6 where demand, supply and the impacts are considered. Chapter 7 sets out proposed measures.

National Highways objectives and approach to worker accommodation

1.1.3 The Applicant wishes to understand and manage the use of the local accommodation market by the Project workforce while making sure this nationally significant project can be delivered efficiently, safely and on time by attracting a high-quality workforce. The Applicant aims to create a balanced approach through:

a. Promoting local employment.

b. Making provision for up to 480 onsite single bedrooms at the northern tunnel entrance compound, which includes hyperbaric beds in relevant construction phases.

c. Making use of existing accommodation in the local area to house Project workers temporarily in order to provide economic benefits while being mindful of the statutory duties of local authorities relating to housing need.

d. Identifying, and where necessary, reducing potential strain on the accommodation market and local communities.

e. Incorporating sustainable transport opportunities.

f. Providing appropriate monitoring, review, and measures where needed.

1.1.4 The report has been informed by other major relevant projects in terms of their approach to accommodation.

1.1.5 This WAR has been developed with stakeholder concerns in mind and the Applicant remains committed to working with stakeholders to ensure concerns are addressed, information is shared, and action taken as necessary.

Context and demand for accommodation

1.1.6 From a traffic management perspective, the Project is divided into phases as described in Table 5.1. The workforce for the Project would reach a peak of 4,514 in Phase 6 (April 2027 - August 2027). However, the north and south sections peak at different times, with the north peaking in Phase 6 with 3,802 workers and the south peaking in Phase 7 (September 2027 - March 2028) with 885 workers.

1.1.7 The Applicant has made assumptions on which accommodation types workers would demand as illustrated in Table 1.1 to Table 1.3. This is based on an understanding of the Project's needs and by drawing on other relevant infrastructure projects in terms of their approach to accommodation.

1.1.8 This WAR has categorised workers as: locally employed, who are assumed to not need temporary accommodation (including any onsite accommodation), or those who would require temporary accommodation.

1.1.9 As part of the Project's Skills, Employment and Education Strategy, the Project aspires to recruit 45% of its workforce from the labour supply that already live within a 20-mile radius of the Project as detailed in Section 106 Agreements – Heads of Terms , Appendix B). For this WAR, a lower estimate of 35% for locally employed workers has been assumed. This represents a precautionary approach for the purposes of assessing impacts on local accommodation provision because the Project is likely to have a greater number of locally employed workers who would not require temporary accommodation.

1.1.10 This WAR explains that most staff seeking temporary accommodation would use the Private Rented Sector (PRS), with an estimated 305 workers requiring PRS accommodation at the peak in the south, representing 34% of the total workforce in the south. Similarly, 1,055 workers are likely to require PRS accommodation at the Project peak in the north representing 28% of the total workforce in the north.

1.1.11 After PRS, latent accommodation is the next largest category of accommodation type. This comprises properties not currently available, which could be made up of new properties for sale, spare rooms in people's houses, new rentals to the market (new development and tenure shift), and any new visitor accommodation. The next largest categories after latent accommodation are then visitor accommodation and owner-occupied accommodation (properties purchased by workers).

Table 1.1 Worker accommodation demand (peak) in the south (Phase 7)

Category	% of total southern workforce	% Workforce requiring accommodation	Number of workers
Total workers			**885**
Locally employed	35	0	310
Onsite	0	0	0

Category	% of total southern workforce	% Workforce requiring accommodation	Number of workers
Total requiring accommodation	**65**	100	**575**
Owner	5	8	46
PRS	34	53	305
Visitor	10	16	92
Latent	15	23	132

Table 1.2 Worker accommodation demand (peak) in the north (Phase 6)

Category	% of northern workforce	% of workforce requiring accommodation	Number of workers
Total workers			**3,802**
Locally employed	35	0	1,331
Onsite	13	0	480
Total requiring accommodation	**52**	**0**	**1,991**
Owner	4	8	159
PRS	28	53	1,055
Visitor	8	16	319
Latent	12	23	458

Table 1.3 Worker accommodation demand at the peak of the whole Project (Phase 6)

Category	% of total workforce	% of workforce requiring accommodation	Number of workers
Total workers			**4,514**
Locally employed	35	0	1,580
Onsite	10.6	0	480
Total requiring accommodation	**54.4**	**0**	**2,454**
Owner	4	8	196
PRS	29	53	1,301
Visitor	9	16	393
Latent	13	23	564

1.1.12 The demand above has been further split based on the anticipated travel mode, based on a split identified in the Transport Assessment (Application Document 7.9) of 70% single occupancy car mode share and 30% by other modes (including multiple occupancy car trips) for large compounds.

1.1.13 This WAR presents evidence to support the assumption that workers who have to move to the area to work on the Project would aim to find accommodation within a travel time of up to 60 minutes to site.

1.1.14 Having considered demand, supply is then considered. Rather than assess supply of accommodation in terms of a 60-minute travel time from all compounds, the northern tunnel entrance and southern tunnel entrance compounds were chosen because they are where most workers would be based, with 64% of the total workers in the south and 66% in the north respectively. This is considered a conservative approach compared to considering supply for all compounds, because in reality, workers would be at other compounds across the route, which would disperse the impacts on worker accommodation.

Accommodation assessment

1.1.15 This WAR has assessed the supply of accommodation within a 60-minute commute catchment area in the various categories against the demand. This report also aggregates the data at local authority level. The assessments indicate that even with the conservative assumptions made, including levels of locally employed and degree of public transport use, the Project would have a limited impact in any of the accommodation categories. Table 1.4 and Table 1.5 summarise the findings.

Table 1.4 Summary of demand against supply for the areas within the catchment in the south

Category (mode of commute)	No of workers requiring accommodation	Capacity (bedrooms)	Project take-up
Owner	46	44,690	0.1%
PRS (car)	213	37,009	0.6%
PRS (public transport)	91	1,575	5.8%
Visitor	92	5,379	1.7%
Latent	132	11,709*	1.1%

** Estimated as 50% of latent supply for the south*

Table 1.5 Summary of demand against supply for the areas within the catchment in the north

Category (mode of commute)	No of workers requiring accommodation	Capacity (bedrooms)	Project take-up
Owner	159	39,352	0.4%
PRS (car)	739	39,130	1.9%
PRS (public transport)	317	3,689	8.6%
Visitor	319	3,323	9.6%
Latent	458	11,709*	3.9%

** Estimated as 50% of latent supply for the north*

Owner-occupied

1.1.16 For the owner-occupied sector, given the scale of supply and annual turnover compared to demand, and the fact that any sales would be within the control of the occupier, there is unlikely to be a noticeable impact on the sector as a result of the Project's demand for accommodation.

PRS

1.1.17 For the PRS, the area within a 60-minute journey time from the northern and southern tunnel entrance compounds has a substantial supply of rental accommodation – with the 2011 census highlighting that there were over 1 million bedrooms in 2011 (ONS, 2011). The 2011 Census gives the most robust information on the scale of the PRS – however it is estimated based on early 2021 Census data, and other sources such as the English Housing Survey (ONS, 2021) that the overall number of PRS bedrooms has increased in all areas since 2011. The English Housing Survey is recorded each year, and notes that despite the growth in the overall PRS stock (and proportion of all housing that is PRS), the proportion of vacant PRS properties has remained at around 10%.

1.1.18 Therefore, demand from the Project for PRS is unlikely to be substantial at the macro-scale – with demand equating to a fraction of 1% of supply for each of the north and south areas, and less than 3% of the 'frictional vacancy' at that scale.

1.1.19 The Applicant wishes to promote sustainable travel and assumes that for the northern and southern tunnel entrance compounds which are large compounds, that 30% of the workforce would travel either using public transport or car sharing. As such, this means that element of the workforce is likely to be far more concentrated to local areas where there is public transport accessibility. Even with constraint, this WAR identifies that demand is likely to account for only a fraction of supply and would not exceed frictional capacity.

1.1.20 At a local authority level, the analysis also shows that the Project would only utilise a small proportion of the frictional vacancy in the PRS.

Visitor

1.1.21 For the visitor sector, the Project's workforce demand has been demonstrated to be within 10% of supply, even when conservative assumptions are made about the availability and affordability of this type of accommodation. For a substantial proportion of the year, there is far more currently unoccupied supply. It is a commercial decision for visitor accommodation providers to let to workers, bringing additional spending that would not otherwise be achieved in the area.

Latent

1.1.22 Use of latent accommodation is difficult to estimate, but experience from other projects suggests this is likely to be a helpful element of the market for the Project's workforce to utilise, especially in the PRS and visitor sector. The latent opportunity provides additional economic benefits to hosts and offers flexibility and affordability to workers without infringing on formal, pre-existing accommodation, in particular the rental sector which is important for the local authority to use (in part) to discharge its statutory housing duty.

Sensitivity tests

1.1.23 Taking a precautionary approach, this WAR undertakes a sensitivity test that reduces the catchment area artificially to a 30-minute journey time, and even at that scale it demonstrates that demand would represent a small proportion of supply and remains well within the level of frictional vacancy available. Further sensitivities are reviewed in relation to level of local employment and still show limited impact in the unlikely event that the local employment ambitions are not achieved.

Sensitivity taking into account other projects

1.1.24 The sensitivity assessment shows that even in the unlikely event that relevant infrastructure projects near to the area were to require their workforce at the same time as the Project, the market would be able to adjust and cope.

Conclusion

1.1.25 Overall, the analysis undertaken shows that while the Project would bring workers into the area that would require accommodation the market can absorb these workers. The Project recognises that there is a greater impact in those areas closest to the northern and southern tunnel entrance compounds and that this would impact the PRS sector the most. As a result, the Applicant has considered appropriate measures described below.

Pro-active measures

1.1.26 The WAR demonstrates that there is sufficient capacity in the local accommodation market for temporary workers. Given concerns raised by local authorities about localised effects on some parts of the accommodation market, the Applicant is nonetheless proposing the pro-active measures set out below to monitor and manage the uptake of accommodation. These are secured via the Framework Construction Travel Plan (FCTP) (Application Document 7.13):

a. Accommodation Helpdesk – this would be operated by the Applicant and would be a tool to assist workers with finding suitable and available accommodation near the Project. The Helpdesk would support prospective

providers of accommodation in understanding the Project and its workforce and managing tenancies safely and legally. Workers would not be mandated to use accommodation registered on the Accommodation Helpdesk. The Helpdesk would also oversee collation of monthly data from the Contractors and produce accommodation monitoring reports, which would in turn, inform where workers could be directed/recommended via the Helpdesk.

b. Accommodation database – the Contractors would be required to create and maintain a live database that monitors the accommodation being used by the workforce in terms of the type of accommodation (onsite project accommodation, private rented, spare rooms/latent, owner-occupied or tourist/visitor) and the location of this accommodation (via a postcode). The Contractors would mandate that their workforce, and those of their suppliers, regularly update their information related to the database for every worker. This database would be reported on a monthly basis to members of the Workforce Accommodation Working Group (WAWG).

c. WAWG – this would include representatives from the Applicant, its Contractors, and local authorities. The WAWG would receive monthly workforce accommodation monitoring reports from the Helpdesk, and regular updates and information from the Project including 'look-ahead' for potential workforce implications over a 12-month period led by the Applicant and Contractors. The findings of the workforce accommodation monitoring report would be considered alongside other information, such as other monitoring secured by the Project (for example, via the FCTP (Application Document 7.13) and SEE Strategy (appended to Section 106 Agreements – Heads of Term, Application Document 7.3) and information provided by local authorities on market conditions and other developments in the local area.

1.1.27 Contractors would also be required to propose further reasonably practicable measures which encourage a higher proportion of locally employed workers (thereby reducing demand for accommodation) and incentivise workers to live in areas which have higher capacity. Measures would be presented to the WAWG, and the Applicant would have due regard to comments raised at that group on the measures to be undertaken.

2 Introduction

2.1 Purpose and structure of the report

2.1.1 This Workers Accommodation Report (WAR) sets out the estimated number of workers at the peak construction phase of the A122 Lower Thames Crossing (the Project) who would require temporary accommodation. It considers what type of accommodation these workers are anticipated to seek and where, and a consideration of this demand in the context of supply and the operation of the accommodation market.

2.1.2 For the purposes of this report, accommodation refers to sleeping accommodation, not offices or onsite welfare. The numbers quoted within this report are number of workers not full-time equivalents (FTE).

2.1.3 This report is submitted as part of the Development Consent Order (DCO) application for the Project and the numbers and conclusions are used in the Environmental Statement (ES) Chapter 13: Population and Human Health (Application Document 6.1). The report considers stakeholder feedback and the development of appropriate measures.

2.1.4 The remainder of the document is structured as follows:

a. Chapter 3 sets out National Highways objectives and approach to worker accommodation.

b. Chapter 4 describes stakeholder engagement.

c. Chapter 5 provides context and the demand for accommodation.

d. Chapter 6 provides the accommodation assessment, which considers demand, supply and impacts. This includes sensitivity tests with other projects and as a result of changed assumptions.

e. Chapter 7 sets out proposed measures.

2.1.5 Worker accommodation is also covered elsewhere in the DCO application, including in:

a. Schedule 1 ‘ancillary works’ of the draft DCO, which makes provision for accommodation.

b. ES Chapter 2: Project Description (Application Document 6.1), which describes proposals for onsite worker accommodation.

c. ES Chapter 13: Population and Human Health (Application Document 6.1), which summarises the impacts of the Project on accommodation.

d. Code of Construction Practice (CoCP) (Application Document 6.3), which describes proposals for onsite worker accommodation.

e. Temporary Works Plans (Application Document 2.17), which set out the illustrative location for worker accommodation.

f. Transport Assessment (Application Document 7.9), which assesses the impacts of the Project during construction and makes assumptions that relate to worker travel.

g. FCTP (Application Document 7.13), which describes proposals for worker accommodation and secures measures mentioned in Chapter 7 of this report.

h. Statements of Common Ground (Application Document 5.4), which set out matters agreed and not agreed with stakeholders, including in relation to worker accommodation.

2.1.6 The report has reviewed other projects in terms of their approach and potential good practice to managing worker accommodation. Assessments and strategies reviewed have been based on them being of a comparable size to the Project and with relevant information being available, such as Hinkley Point C, Sizewell C, Wylfa Newydd and HS2.

2.1.7 Other highways and linear projects were also reviewed, such as the Thames Tideway Tunnel. However, detailed accommodation assessments or strategies were not found due to their characteristics in terms of workforce supply, size, scale and nature of the projects meaning that accommodation impacts were scoped out.

2.2 The Project

2.2.1 The A122 Lower Thames Crossing (the Project) would provide a connection between the A2 and M2 in Kent and the M25 south of junction 29, crossing under the River Thames through a tunnel. The Project route is presented in Plate 2.1.

2.2.2 The A122 would be approximately 23km long, 4.25km of which would be in tunnel. On the south side of the River Thames, the Project route would link the tunnel to the A2 and M2. On the north side, it would link to the A13, M25 junction 29 and the M25 south of junction 29. The tunnel portals would be located to the east of the village of Chalk on the south of the River Thames and to the west of East Tilbury on the north side.

2.2.3 Junctions are proposed at the following locations:

a. New junction with the A2 to the south-east of Gravesend

b. Modified junction with the A13/A1089 in Thurrock

c. New junction with the M25 between junctions 29 and 30

2.2.4 To align with National Policy Statement for National Networks (NPSNN) (Department for Transport, 2014) policy and to help the Project meet the Scheme Objectives, it is proposed that road user charges would be levied in line with the Dartford Crossing. Vehicles would be charged for using the new tunnel.

2.2.5 The Project route would be three lanes in both directions, except for:

a. link roads

b. stretches of the carriageway through junctions

c. the southbound carriageway from the M25 to the junction with the A13/A1089, which would be two lanes

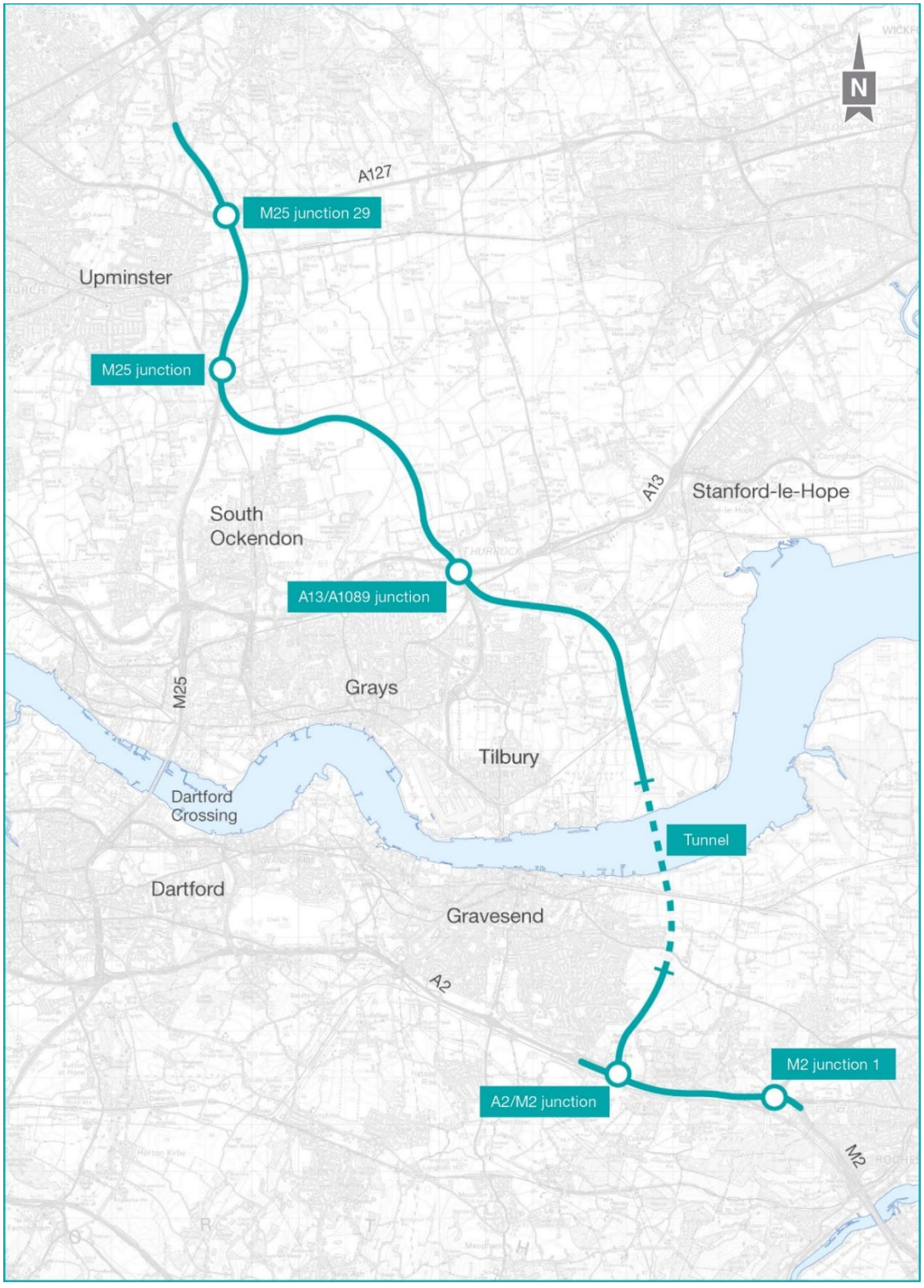
2.2.6 In common with most A-roads, the A122 would operate with no hard shoulder but would feature a 1m hard strip on either side of the carriageway. It would also feature technology including stopped vehicle and incident detection, lane control, variable speed limits and electronic signage and signalling. The A122 design outside the tunnel would include emergency areas. The tunnel would include a range of enhanced systems and response measures instead of emergency areas.

2.2.7 The A122 would be classified as an all-purpose trunk road with green signs. For safety reasons, walkers, cyclists, horse riders and slow-moving vehicles would be prohibited from using it.

2.2.8 The Project would include adjustment to a number of local roads. There would also be changes to a number of Public Rights of Way, used by walkers, cyclists and horse riders. Construction of the Project would also require the installation and diversion of a number of utilities, including gas pipelines, overhead electricity powerlines and underground electricity cables, as well as water supplies and telecommunications assets and associated infrastructure.

2.2.9 The Project has been developed to avoid or minimise significant effects on the environment. The measures adopted include landscaping, noise mitigation, green bridges, floodplain compensation, new areas of ecological habitat and two new parks.

Plate 2.1 Lower Thames Crossing route



3 National Highways objectives and approach to worker accommodation

3.1.1 The Applicant wishes to understand and manage the use of the local accommodation market by the Project workforce while making sure this nationally significant project can be delivered efficiently, safely and on time by attracting a high-quality workforce. The Applicant aims to create a balanced approach through:

a. Promoting local employment so that a lasting positive effect is created for the local economy, in line with the Skills, Education & Employment Strategy (National Highways, 2022) and to reduce the need to bring in a temporary workforce.

b. Making provision for up to 480 onsite single bedrooms at the northern tunnel entrance compound, which includes hyperbaric beds in relevant construction phases. This is in order to provide suitable accommodation for an element of the workforce that is very likely to be non-local due to very specific tunnelling skillsets. This provision is assumed for the purposes of the DCO application and represents a solution that the Applicant believes balances the need for accommodation with the amount of land used.

c. Making use of existing accommodation in the local area to house Project workers temporarily in order to provide economic benefits while being mindful of the statutory duties of local authorities relating to housing need.

d. Identifying, and where necessary, reducing potential strain on the accommodation market and local communities.

e. Incorporating sustainable transport opportunities such as public transport, walking and cycling, in line with the FCTP (Application Document 7.13).

f. Providing appropriate monitoring and review measures where needed.

4 Stakeholder engagement

4.1.1 This WAR has been developed with stakeholder concerns in mind, including in response to technical engagement.

4.1.2 In June 2020 the Project shared a summary version of this report with local authorities. Thurrock Council provided feedback on the document itself, while Kent County Council and Gravesham Borough Council also provided comments on accommodation issues more generally.

4.1.3 A presentation to the Lower Thames Crossing Community Impacts and Public Health Advisory Group (CIPHAG) was undertaken in July 2022 to summarise the approach to and key findings of this WAR and how they have developed in the interim period. In this meeting the Applicant confirmed the approach to controlling impacts of the Project on local accommodation.

4.1.4 Further meetings were held with Thurrock Council on 18 July 2022 and with Gravesham Council on 1 September 2022. These discussed in greater depth technical information relating to pre-existing housing need and homelessness in the context of the Project's workforce. The meetings explored a number of themes including; key local pressures and indicators of housing market stress, the Councils' use of the private rented sector for discharging housing need, the data the Councils hold on the scale of demand and supply for accommodation, the current measures the Councils have in place to reduce housing need/risk of homelessness, the engagement streams the Councils have with landlords and the scope of possible measures, and application of the Project's Accommodation Helpdesk.

4.1.5 Feedback from this engagement and the Applicant's response is summarised in Table 4.1.

4.1.6 Further information on matters agreed and not agreed with stakeholders is provided in the Statements of Common Ground (Application Document 5.4) with individual local authorities.

4.1.7 The Applicant remains committed to working with stakeholders to ensure concerns are addressed, information is shared, and action taken as necessary.

Table 4.1 Stakeholder feedback themes

Theme	Project response
Ability of the Private Rented Sector (PRS) to cope with the influx of the Project's workers.	The purpose of this WAR is to assess the impact of the Project on local housing markets and this is presented Chapter 6. The Project has considered how it can manage impacts which is included in Chapter 7.
Impact on the ability of the local authorities to house homeless families on an emergency basis. Influx of workers block-booking visitor accommodation could drive up prices and take up stock, leaving those in need of emergency accommodation (bed and breakfasts, hotels etc.) struggling to find suitable and affordable temporary accommodation.	The measures presented in Chapter 7 would work to minimise the impact on this accommodation sector.

Theme	Project response
An increase in rental cost, driven by increased demand, may lead low-income families that are struggling in PRS into homelessness.	The purpose of this WAR is to assess the impact of the Project on local housing markets and this is presented in Chapter 6. The Project has considered how it can manage impacts which is included in Chapter 7.
There are other large schemes that may be going ahead at the same time as the Project further exacerbating the demand on accommodation from the anticipated migration of workers to the area.	This WAR has considered other schemes, and this is presented in Chapter 6.
Whether the Applicant would provide workers with support in finding accommodation and whether this includes engagement with local authorities.	Chapter 7 presents measures, which includes a role for local authorities, monitoring of accommodation being used by workforce and an Accommodation Helpdesk which are Project commitments.
The direct and indirect impacts on local services as a result of the increase in population during construction of the Project.	Direct and indirect impacts on local services such as healthcare and education are assessed in ES Chapter 13: Population and Human Health (Application Document 6.1)

5 Context and demand for accommodation

5.1 Introduction

5.1.1 To understand the Project's demand for accommodation, it is necessary to set out a number of key factors and assumptions. These include scale of the workforce (the non-local workforce in particular), its distribution across compounds and the local area, likely accommodation choices and the Project programme phasing.

5.2 Compounds and phasing

5.2.1 The construction of the Project would require a number of construction compounds and Utility Logistics Hubs. Plate 5.1 - Plate 5.3 show the location of these along the Project Route from south to north. The two main compounds would be the northern tunnel entrance and southern tunnel entrance compounds.

5.2.2 For the purposes of assessing the impacts of the proposed construction programme on the transport network, the Transport Assessment (Application Document 7.9) identifies 11 phases for the construction period which are set out in Table 5.1. These same phases have been used to assess accommodation impacts.

5.2.3 Following the DCO Grant it is anticipated that preliminary works would take place in 2024. The main construction period for the Lower Thames Crossing would start in early 2025, with the road being open for traffic in late 2030.

Table 5.1 Project construction traffic modelling phases

Phase	Dated	Duration (months)
1	01/01/2025 – 31/08/2025	8
2	01/09/2025 – 28/02/2026	6
3	01/03/2026 – 31/05/2026	3
4	01/06/2026 – 31/10/2026	5
5	01/11/2026 – 31/03/2027	5
6	01/04/2027 – 31/08/2027	5
7	01/09/2027 – 31/03/2028	7
8	01/04/2028 – 30/11/2028	8
9	01/12/2028 – 31/03/2029	4
10	01/04/2029 – 31/07/2029	4
11	01/08/2029 – 31/12/2030	17

Plate 5.1 Project compounds – part 1

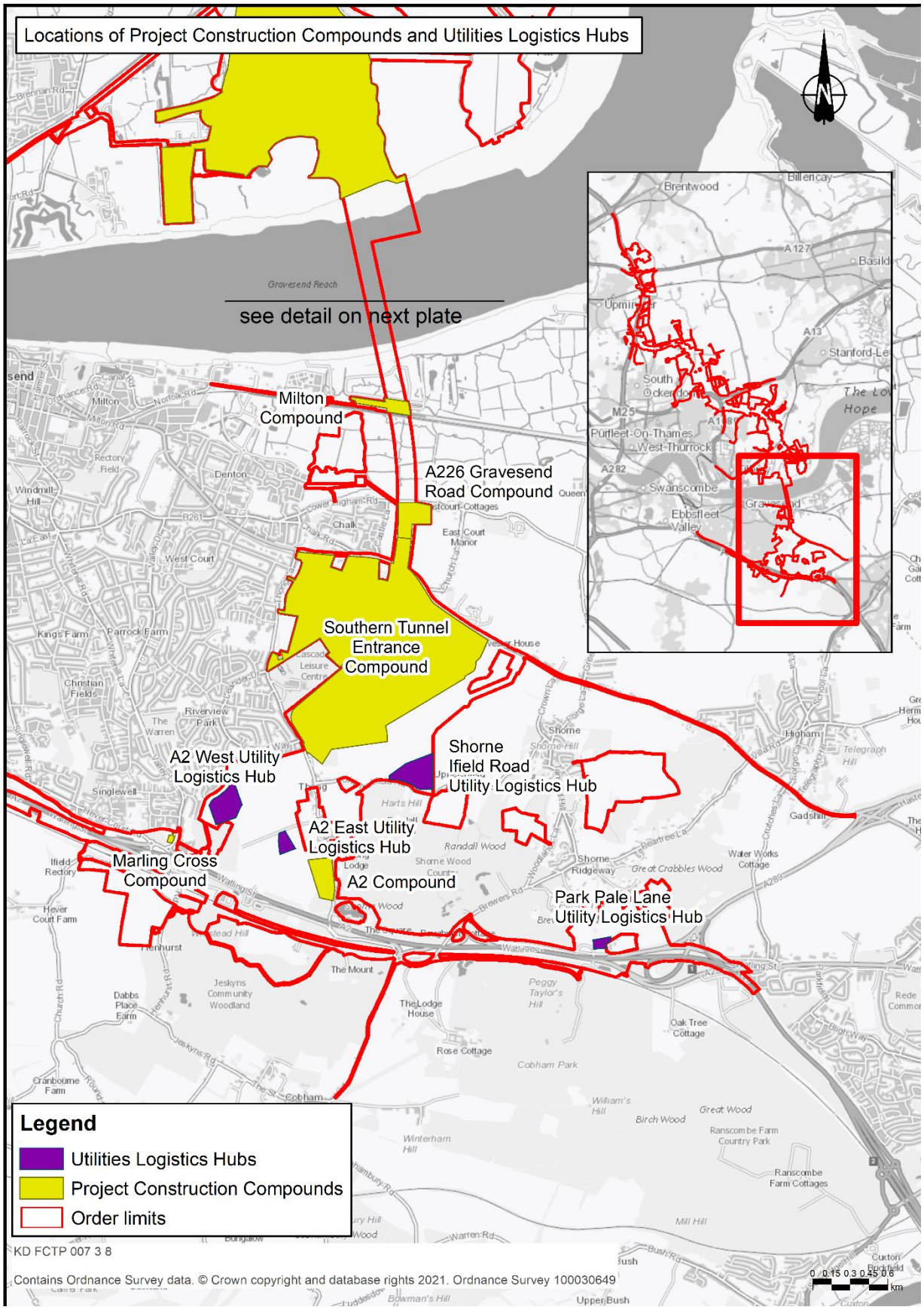


Plate 5.2 Project compounds – part 2

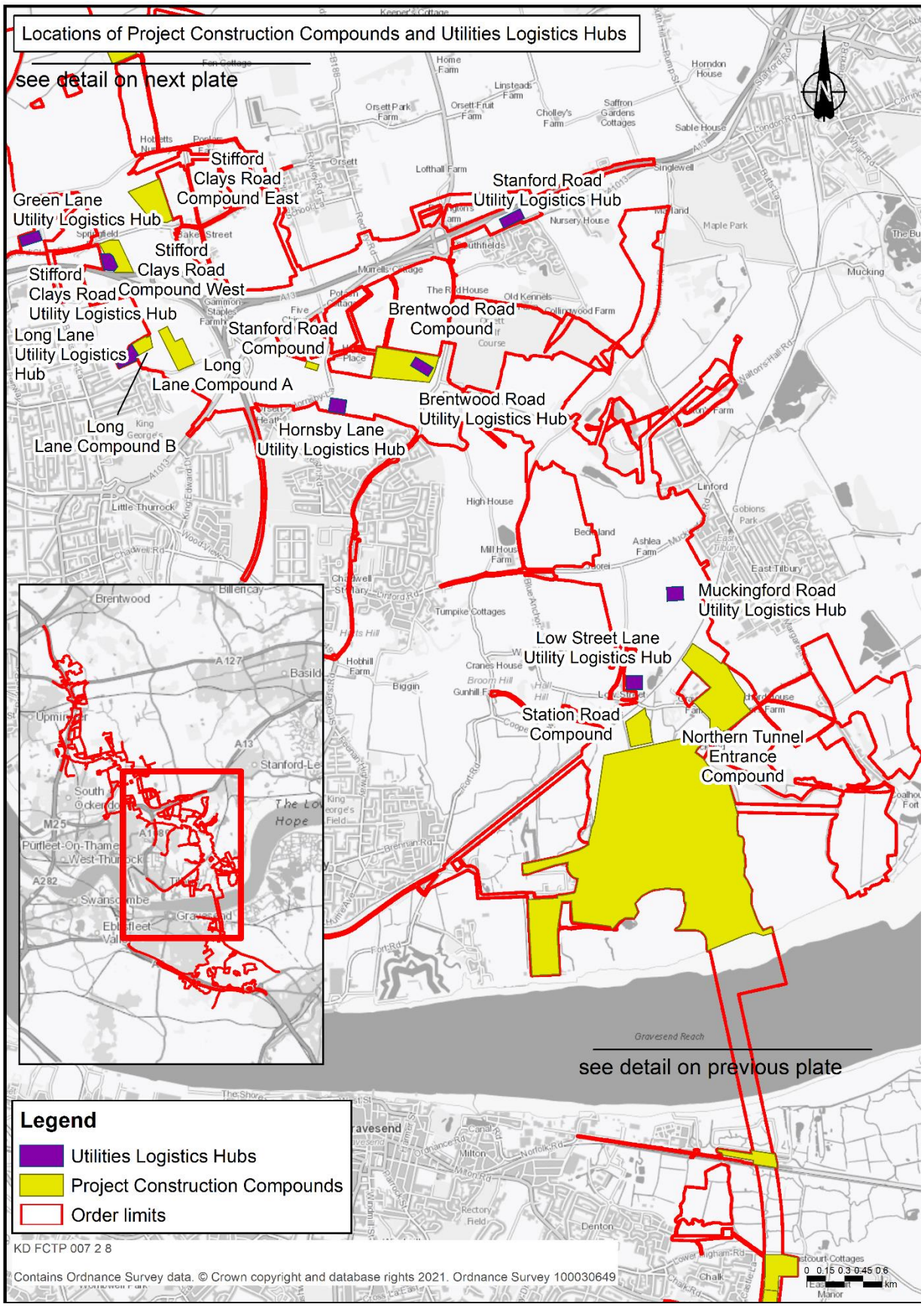
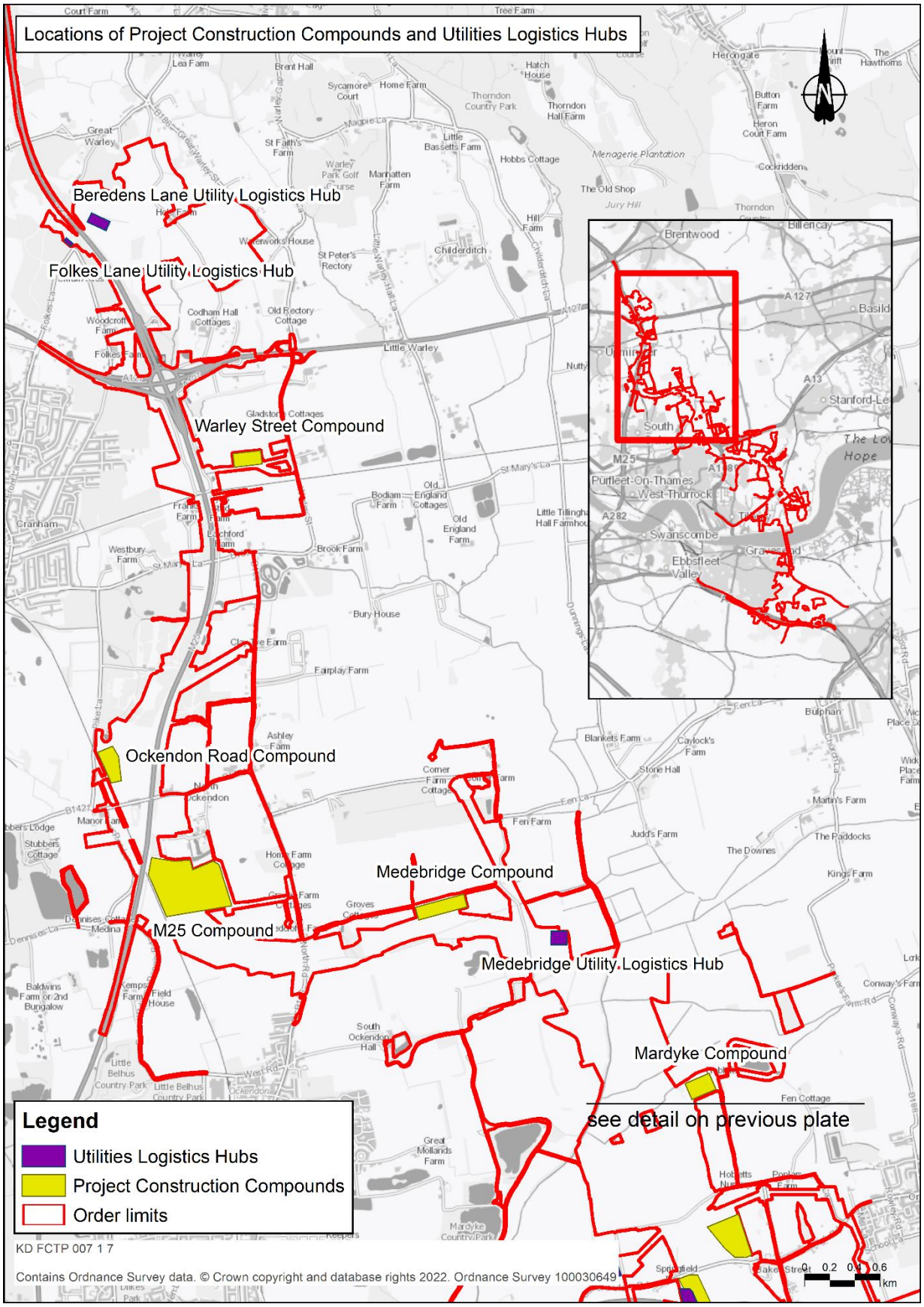


Plate 5.3 Project compounds – part 3



5.3 Size and characteristics of the workforce

5.3.1 There are a variety of different peaks within the programme in terms of the size of the workforce: for the overall Project, for the areas to the north and south of the River Thames, and for specific construction compounds. Not all of these peaks are expected to coincide.

5.3.2 The workforce for the Project would reach an overall peak of 4,514 in Phase 6. However, the north and south section peaks are at different times, with the south peaking in Phase 7 with 885 workers and the north peaking in Phase 6 with 3,802 workers. The analysis in this WAR considers the peak in the north, south and overall as appropriate.

5.3.3 The overall workforce peak can be seen in Plate 5.4 and a greater level of detail can be seen in Plate 5.5.

5.3.4 These numbers are slightly higher than those used for the Project's Transport Assessment (Application Document 7.9). The tunnelling activity is undertaken on a 24-hour shift pattern and the Transport Assessment considers three of the shifts that cover the 24-hour rota, assuming that the fourth shift will be on a break and so would not be travelling to work. However, from an accommodation perspective, all four shifts must be considered as all staff require accommodation. Therefore, the Project's Transport Assessment (Application Document 7.9) sets out a reasonable case from a traffic perspective whereas this WAR sets out a reasonable case from an accommodation perspective because the traffic assessment deals with traffic movements and this WAR looks at potential accommodation needs.

Plate 5.4 Project construction workforce profile (2025 – 2030)

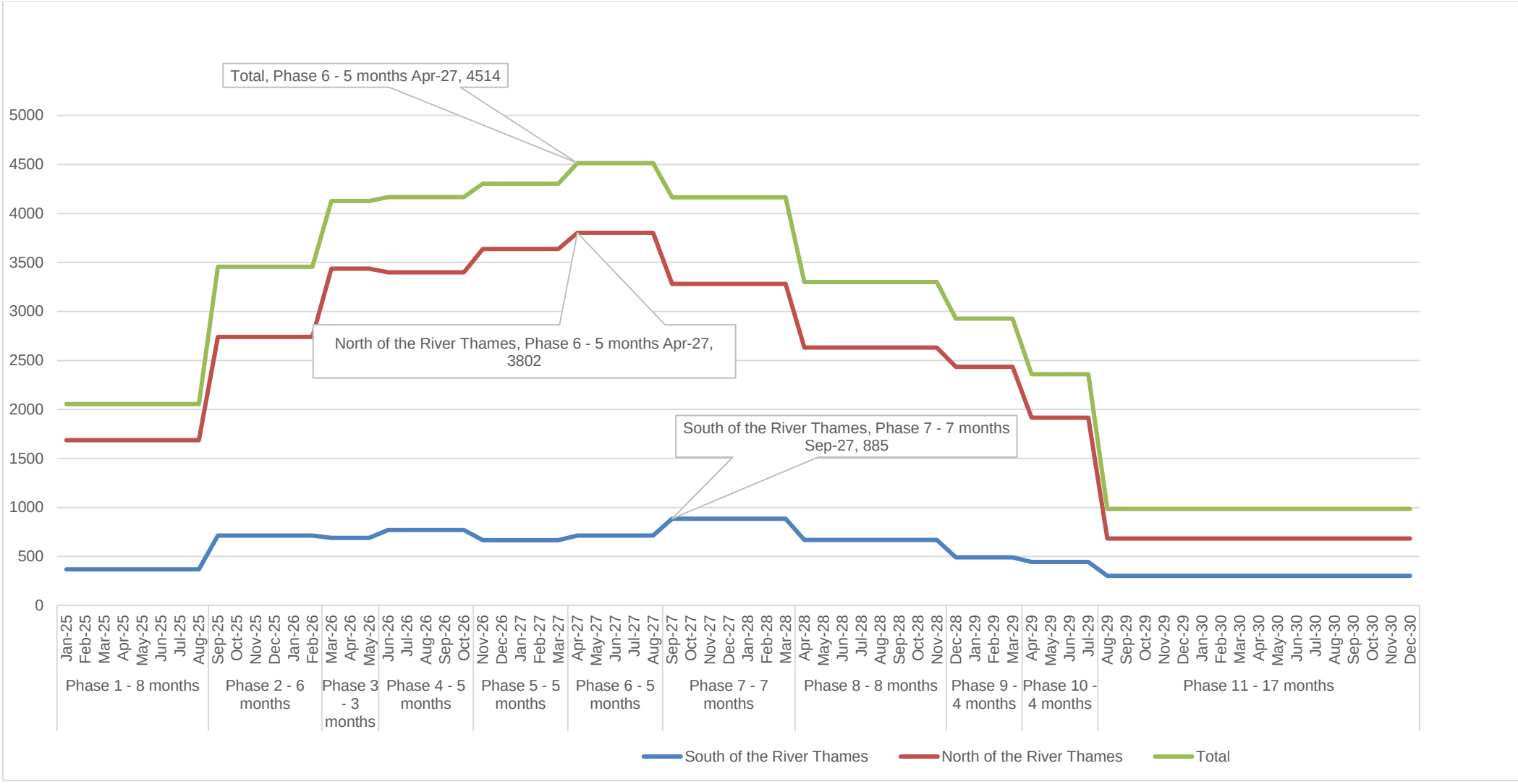
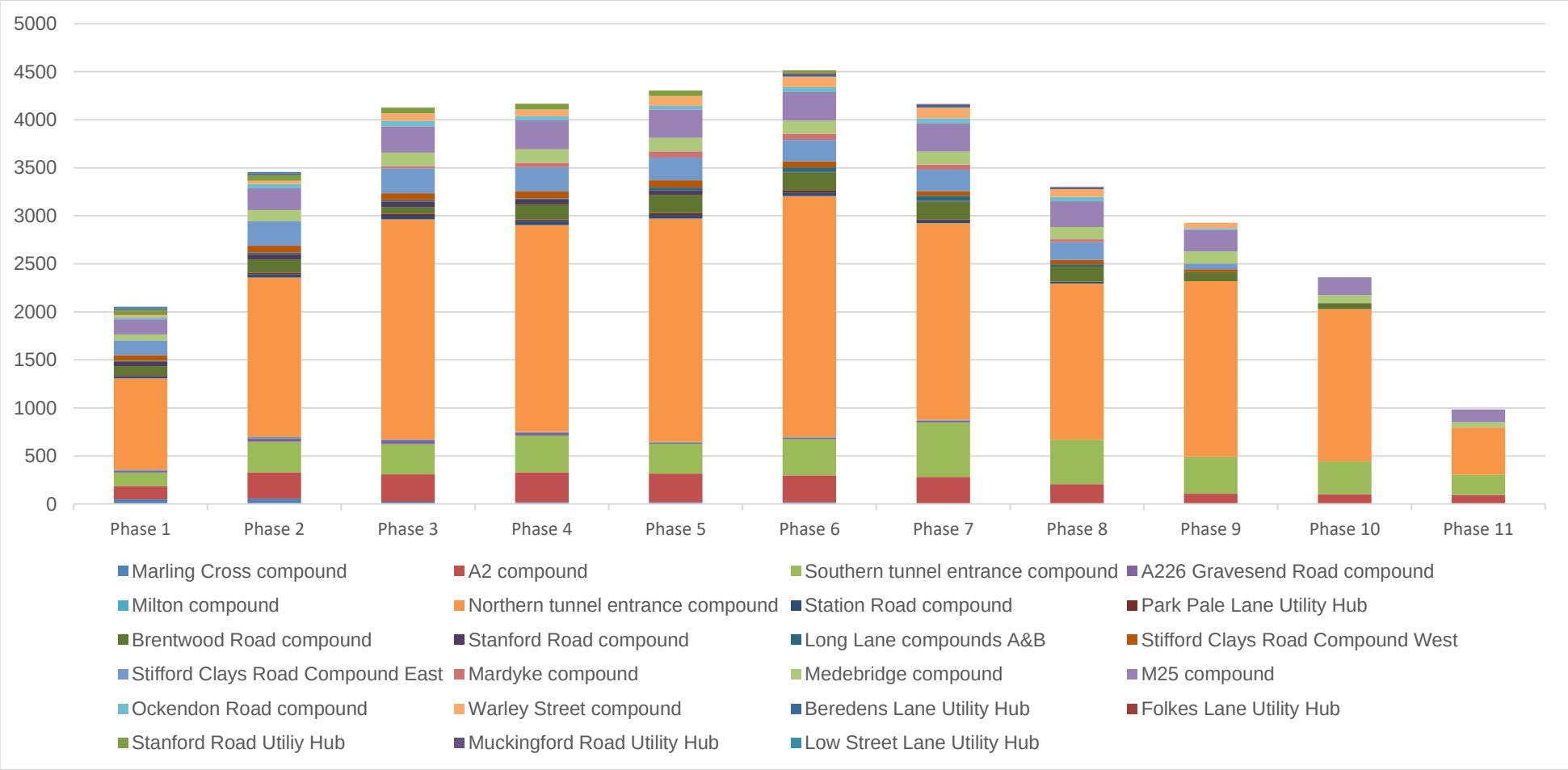


Plate 5.5 Worker profile by compound over the construction programme for the Project (2025 – 2030)



5.3.5 Plate 5.6 and Plate 5.7 illustrate the breakdown of workers at peak phase by compound and section to illustrate where the workers would be based. This would impact their accommodation needs as discussed within this WAR. The analysis in this WAR is based on travel times from the northern tunnel entrance and southern tunnel entrance compounds as these compounds are where the majority of workers would be located. While the proportion of workers in these compounds would vary during different construction phases the southern tunnel entrance compound is the base for circa 64% of the southern workforce and the northern tunnel entrance compound is the base for around 66% of the northern workforce.

5.3.6 For the purposes of this WAR, the peak workforce north (3,802) and south (885) of the River Thames have been assumed to all be working at the northern and southern tunnel entrance compounds respectively. This is an overestimation of the number of workers at these compounds for the purposes of ensuring a precautionary assessment; in reality, workers would be working at other compounds across the route, which would mean workers would seek accommodation over a more dispersed area. For example, a 60-minute commute from the M25 compound would include areas further north that are not within the 60-minute commute from the northern tunnel entrance compound, thereby reducing impacts on local accommodation.

Plate 5.6 Peak Project workers south of the River Thames (phase 7)

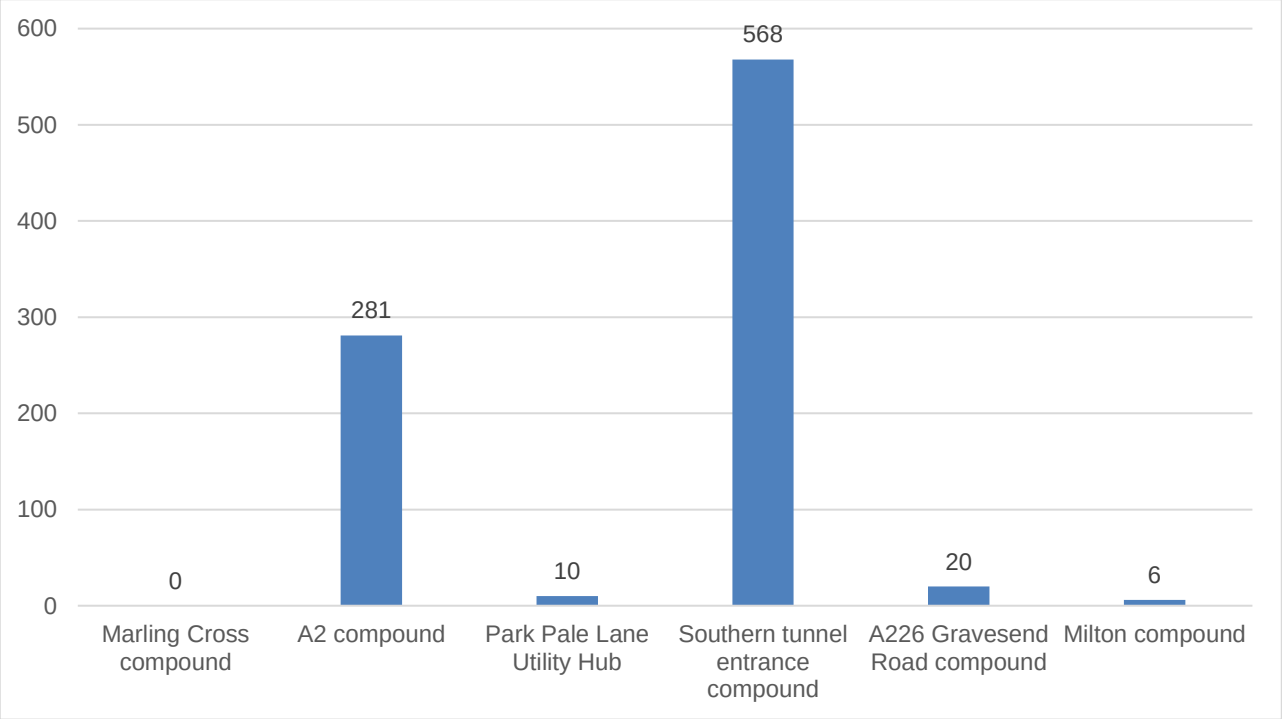
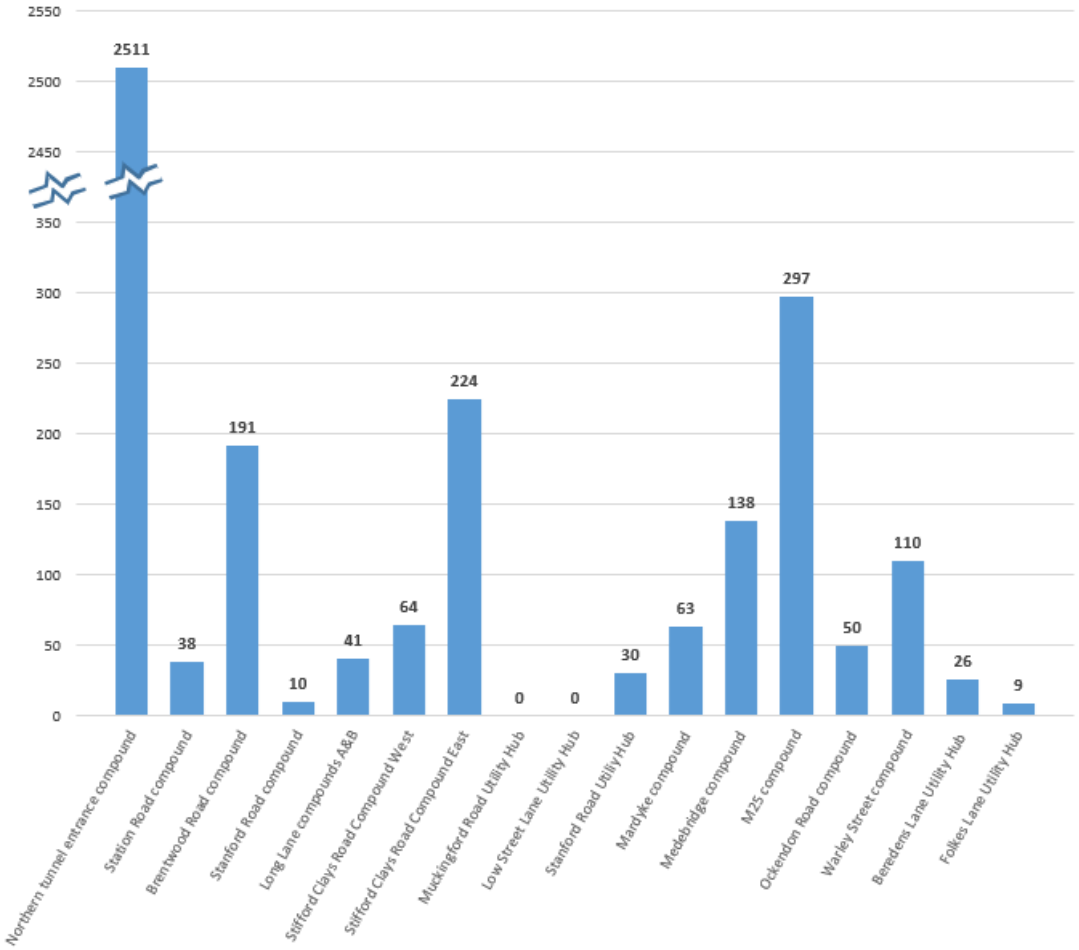


Plate 5.7 Peak Project workers north of the River Thames (Phase 6)



5.4 Local employment

5.4.1 For the purposes of this WAR, workers have been categorised as either locally employed, who are assumed to not need temporary accommodation (including any onsite accommodation), or those who would require temporary accommodation.

5.4.2 As part of the Project's Skills, Employment and Education Strategy (Application Document 7.3, Section 106 Agreements – Heads of Terms, Appendix B), the Project aspires to recruit 45% of its workforce from the labour supply that already live within a 20-mile radius of the Project. The ability of the market to meet the skills needs has not been taken into account in this report and the assumption is that the Project would meet the desired levels of local employment as outlined in the SEE Strategy (Application Document 7.3 Section 106 Agreements – Heads of Terms, Appendix B). For this WAR, a lower estimate of 35% for locally employed workers has been assumed. This represents a precautionary approach for the purposes of assessing impacts on local accommodation provision because the Project is likely to have a greater number of locally employed workers who would not require temporary accommodation.

5.4.3 Reviews of other large infrastructure projects situated in relatively less populated areas, such as Sizewell C (EDF, 2020), Wylfa Newydd (Horizon, 2018) and Hinkley Point C (EDF Energy, 2021) stated in their DCOs they would achieve 25%, 22% and 34% locally employed workers respectively.

5.4.4 It should be noted that Hinkley Point C has achieved up to 50% at points during its civil construction phase where its total workforce was around the same as forecast for the Project's peak and is most recently at 32% with an average of 45% (Sedgemoor District Council, 2022). The civil construction phase of Hinkley Point C has a similar skill profile to the Project, in a much smaller labour market and it is therefore considered to be reasonable to assume that 35% would be available for the Project for the purposes of this assessment.

5.5 Accommodation locations

5.5.1 The location that workers choose to live would be dependent on a number of factors including their ability to claim subsistence and/or travel allowance under Working Rule Agreements, the duration of their contracts, cost of accommodation, travel choices and access to facilities such as leisure and other services.

5.5.2 Table 5.2 shows commute times and the proportion of workforce commuting for the ONS regions through which the Project's construction would take place. It shows that the proportion of people travelling broadly declines as a result of distance, particularly over 40 minutes, but that the three regions still show workers commuting in excess of 60 minutes, with 14% of workers travelling in outer London taking between 60 and 90 minutes to travel to work. Based on the ONS data (ONS, 2019), a 90-minute commute, for a small number of locally employed workers, is not an unreasonable expectation. Between 82% and 92% of people are prepared to travel up to 60 minutes.

Table 5.2 Workforce commuting time

Region of workplace	% Commuting				
	<20 minutes	<40 minutes	<60 minutes	<90 minutes	>90 minutes
East of England	44	37	11	6	2
Outer London	29	38	16	14	4
South-east England	43	35	13	6	3

5.5.3 Evidence from the CITB Workforce Mobility and Skills Report (BMG Research, 2019) provides some further insights into construction workers travel behaviours. It describes how 42% of workers travel less than 10 miles to work, 25% between 11-19 miles, 27% 20-49 miles, 5% between 50-99 miles and 1% travelled further.

5.5.4 While distance and travel zones do not directly correlate to time, this WAR has attempted to translate the distances in the CITB data to time, using average road speeds, see Table 5.3.

Table 5.3 Worker travel times from home by car

% of construction workers	Distance (miles)	Time
42%	10 (or less)	20 mins or less
25%	11-19	20 - 35 mins
27%	20-49	36 mins - 1 hour 31 mins
5%	50-99	1 hour 32 mins - 3 hours and 5 mins
1%	Further	

5.5.5 This analysis suggests that 27% of people are willing to travel between 36 minutes and an hour and a half.

5.5.6 This WAR has also reviewed publicly available accommodation strategies including those for projects including Wylfa Newydd (Horizon 2018) and Hinkley Point C Nuclear Power Station (EDF, 2011). All applied similar parameters as proposed within this WAR.

5.5.7 Workers would also mainly look to live in temporary accommodation within 60-minutes as a result of balancing their ability to access either transport or accommodation/subsistence allowances via Construction Industry Joint Council (NIJC) Working Rule Agreements. The criteria for these vary, but generally there is a benefit in moving to an area close to the site if the worker lives beyond 90 minutes (so they would receive accommodation allowance but not travel allowance, and so would seek to reduce their travel time).

5.5.8 Based on all the above evidence this WAR has assumed that some workers who are locally employed would be willing to travel up to 90 minutes for work purposes in order to remain living at home. Workers that choose to move to the area to work on the Project would aim to find accommodation within a 60 minute travel time. This is a reasonable worst-case assumption from an accommodation perspective, as workers would be distributed over a smaller area. The Transport Assessment (Application Document 7.9), however, assumes workers that move to the area would travel up to 90 minutes as a reasonable worst-case for assessing the impact on the road network. Three travel zones have therefore been identified:

a. Less than 30 minutes

b. 30-60 minutes

c. 60-90 minutes (locally employed workers only)

5.5.9 For the purposes of this WAR, temporary accommodation has been assessed in the 0-60 minutes catchment.

5.5.10 While it is possible to cross between the north and south of the River Thames, there are barriers to north-south movements, for example, delays and costs associated with the Dartford Crossing. Therefore, for the purposes of carrying out a precautionary assessment, it has been assumed that workers requiring accommodation in the north would live in the north and those working in the south would live in the south. This WAR acknowledges, however, that those commuting from home may cross the river though that number is likely to be limited.

5.5.11 Journey time catchment areas are illustrated in Plate 5.8 and Plate 5.9. These have been defined assuming private car use during the AM peak.

Plate 5.8 Car commute catchment areas from the northern tunnel entrance compound

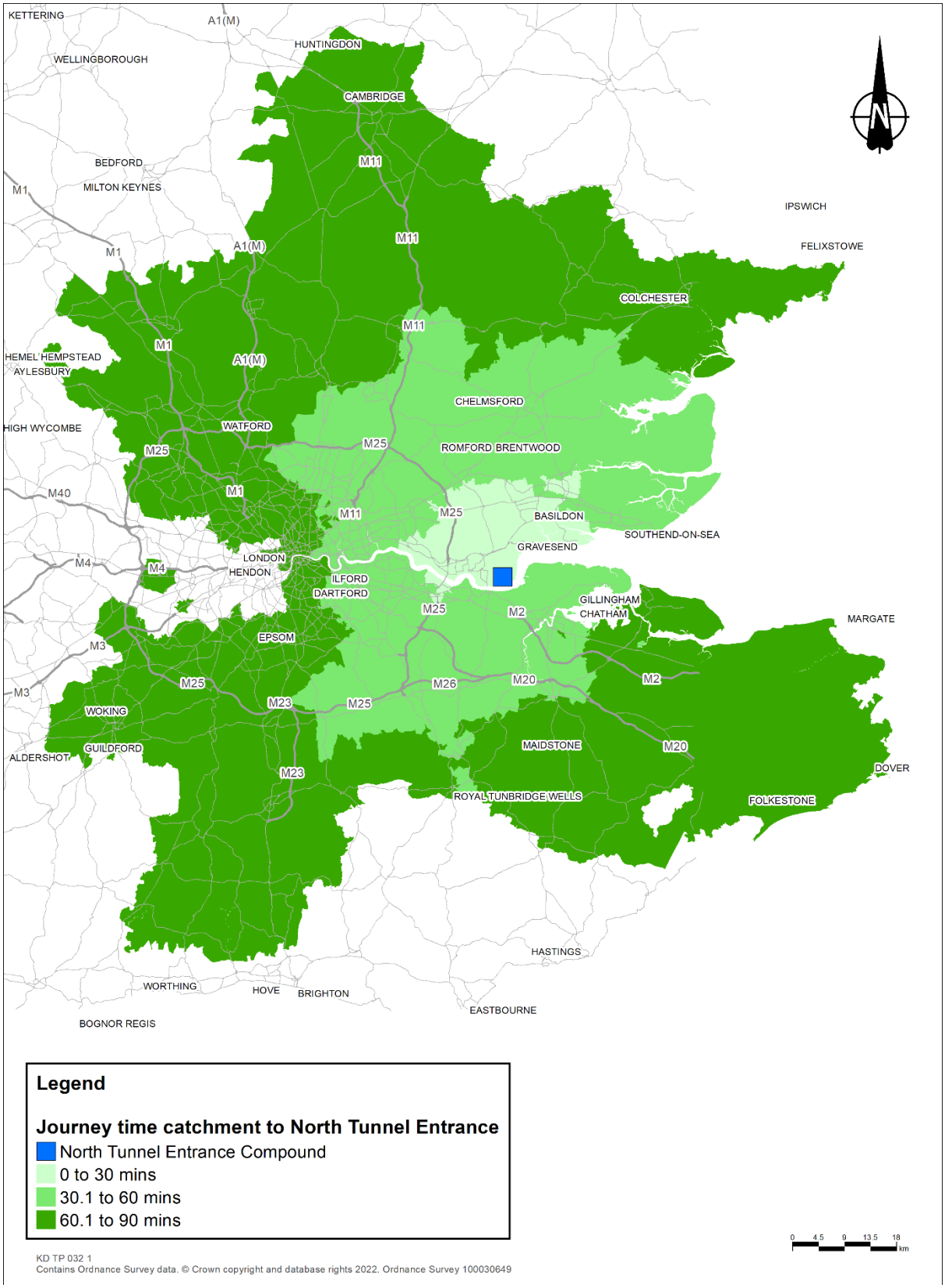
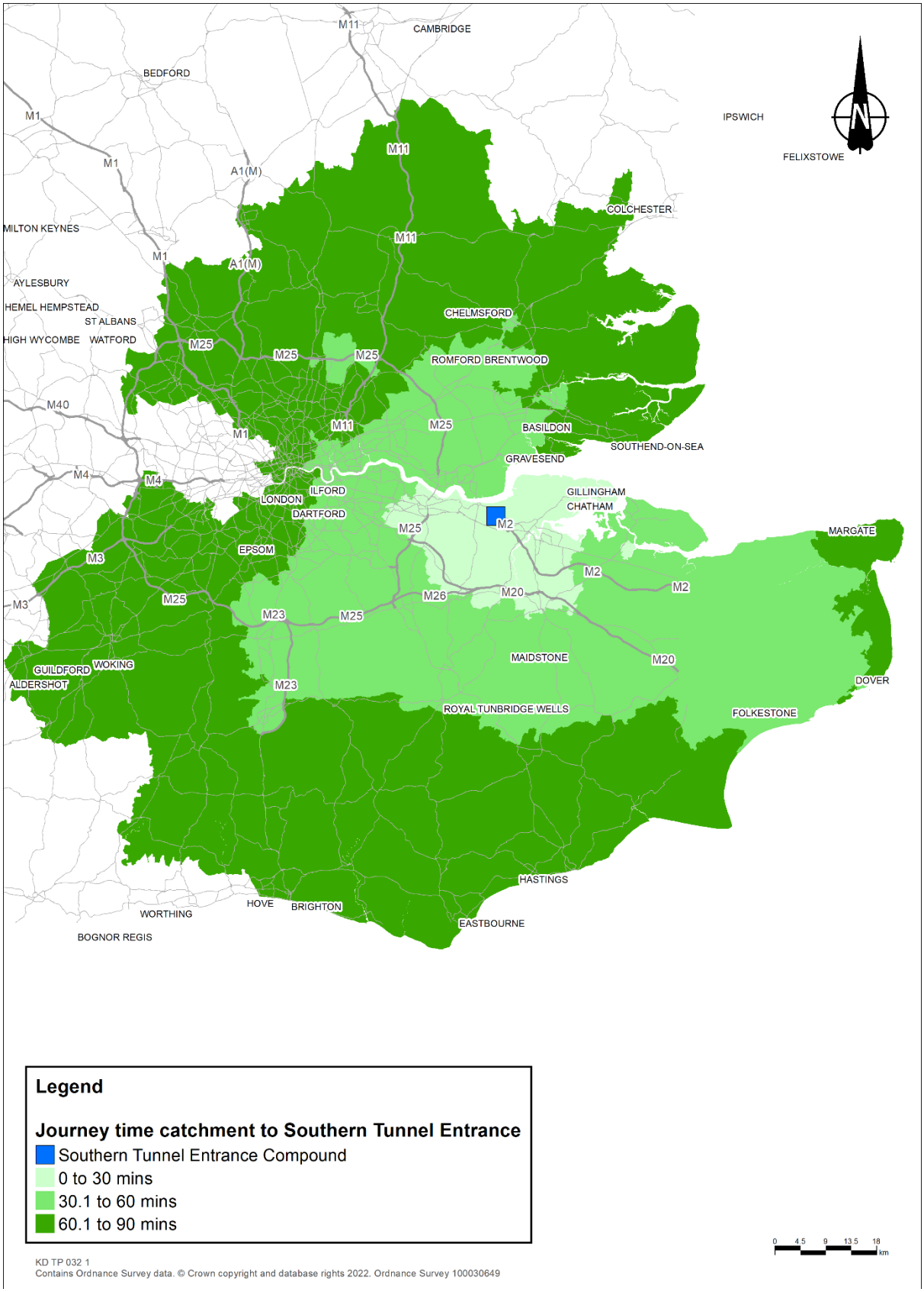


Plate 5.9 Car commute catchment areas from southern tunnel entrance compound



5.5.12 Having firstly looked at journey time catchment areas by car, this WAR has also considered catchments based on public transport. The Transport Assessment (Application Document 7.9) has assumed that for larger compounds, such as the southern tunnel entrance and northern tunnel entrance compounds, there would be a 70% single occupancy car mode share and 30% by other modes including public transport and multiple occupancy car trips.

5.5.13 A conservative approach has been taken which assumes all workers travelling by other modes would commute by public transport rather than car share. The locations then identified as suitable for these workers becomes narrower as suitable access to public transport becomes the limiting factor. The assumption made in selecting these locations has been that workers would need 10 minutes to reach their departure station and then spend 10 minutes to get to the compound of work from the arrival station. This leaves a 40-minute journey time for those workers to fall under the 60-minute commute time-limit.

5.5.14 Table 5.4 provides a selected list of locations that match these criteria and therefore can be used in the assessment in Chapter 6. Transport for London's 'plan a journey' service online was used to confirm the journey times.

Table 5.4 Accommodation locations identified by public transport

Location	Origin	Destination	Train link
South of the River Thames	Ashford	Gravesend Station	35 mins
	Bexley		29 mins
	Chatham		20 mins
	Dartford		16 mins
	Erith		31 mins
	Gravesend		N/A
	Higham		7 mins
	Maidstone		35 mins
	Snodland		27 mins
North of the River Thames	Barking	Tilbury Town Station	25 mins
	Basildon		36 mins
	Grays		3 mins
	Limehouse		35 mins
	Purfleet		9 mins
	Rainham		27 mins
	Romford		40 mins
	South Benfleet		26 mins
	South Ockendon		11 mins
	Southend-on-Sea		35 mins
	Stanford-le-Hope		9 mins
	Tilbury		N/A

Location	Origin	Destination	Train link
	Upminster		19 mins
	Upton Park		36 mins
	West Ham		36 mins

5.6 Socio-Economic Context

5.6.1 The socio-economic data, featured in the Level 3 Wider Economic Impacts Report of the Combined Modelling and Appraisal Report (Application Document 7.7, Appendix D) sets out data on changes in population, labour trends and business within the areas through which the Project passes. The following extracts are helpful in understanding the accommodation environment and the dynamic nature of the area. The following themes have been identified:

a. Population growth: The population to the north of the River Thames (Brentwood, Thurrock, Havering) has grown by 9.8% between 2011 – 2021, with a more modest 8.7% growth for the population to the south of the Thames (Dartford, Gravesham, Medway) over the same period. In terms of the future, Local Planning Authorities (LPA) forecast increases in population during their respective local plan periods. Thurrock Council, for example, is a designated growth area within the Thames Gateway, with future growth projected to continue to outstrip national and regional rates (Thurrock Council, 2015). Dartford's Core Strategy forecasts that the area's population will increase by 43% by 2026 (Dartford Borough Council, 2011) (Level 3 Wider Economic Impacts Report of the Combined Modelling and Appraisal Report (Application Document 7.7, Appendix D)).

b. Increases in housing provision: The policies and plans set out the increases in required dwelling numbers in order to meet their predictions of housing need. Notably, Thurrock Council aims to provide 23,250 new dwellings up to 2026 (Thurrock Council, 2015), the London Borough of Havering expects 17,550 new dwellings (London Borough of Havering, 2017) and Medway Council plans 13,000 new dwellings during their respective plan periods (Medway Council, 2003). Dartford has identified land for up to 17,300 homes to be built between 2006 and 2026 (Dartford Borough Council, 2011). These increases sum to over 70,000 new dwellings (Level 3 Wider Economic Impacts Report of the Combined Modelling and Appraisal Report (Application Document 7.7, Appendix D)).

c. Construction clustering: As noted in Level 3 Wider Economic Impacts Report of the Combined Modelling and Appraisal Report (Application Document 7.7, Appendix D), the Lower Thames area already has a strong construction cluster and this could assist the Project in meeting its local employment aspirations.

5.7 Other pressures on local accommodation

5.7.1 The region is one of considerable change in terms of housing, commercial and industrial developments which would both impact population and demand for workers and therefore accommodation needs. This WAR has considered the combined impacts of other developments on accommodation, as set out in Section 6.7.

5.8 Accommodation types

5.8.1 This WAR has considered the following types of accommodation that workers would seek on a temporary basis:

a. Private rented sector (PRS): those rented properties made available through the private sector. This does not include any social rentals. It is assumed that this kind of accommodation would be appropriate for workers moving to the area for medium to long-term contracts, as a standard Assured Shorthold Tenancy lasts for at least six months.

b. Home purchasing (owner-occupied): where a worker chooses to purchase in the area for part of or the whole duration of the Project.

c. Visitor accommodation: this includes bed and breakfasts, hotels, hostels and official caravan sites. Workers would seek this accommodation on a shorter-term basis where it is cost-effective and flexible.

d. Latent: property not currently available, which could be made up of new properties for sale, spare rooms in people's houses, new rentals to the market (new development and tenure shift), and any new visitor accommodation.

e. Temporary onsite accommodation (within the Order Limits).

5.8.2 It has been assumed that a majority of the workers would remain employed at a specific compound for the duration that compound is active, including set up and de-commissioning time. The Project also aims to redeploy workers between different phases to allow for workers to remain on the Project for longer.

5.8.3 Based on an understanding of the Project's needs and other relevant large infrastructure projects such as Hinkley Point C (EDF, 2011) Nuclear Power Station and Wylfa Newydd (Horizon, 2018) Nuclear Power Station, the demand set out in Table 5.5 has been derived.

5.8.4 Some staff may move to the area for a substantial length of time (potentially several years) and they may seek permanent owner-occupied housing in the area and bring their families with them. Other major projects, including Sizewell B (EDF, 2020), Hinkley Point C (EDF, 2011), Wylfa Newydd (Horizon, 2018) estimated 30%, 8% and 22% respectively of workers that would relocate into the area. Balancing the fact that there is a relatively higher cost of housing in the Project area and the more transient nature of construction in the region with the growing level of construction activity, a lower percentage of 8% has been assumed for the Project.

5.8.5 ONS data suggests that the Project areas to the north and south of the River Thames have a larger PRS than the national average of 19% of the housing stock (ONS, 2020) and therefore a larger proportion of the workers would rely on this category. Other projects situated in relatively less populated areas assumed as much as 41% of the workers requiring accommodation would live in the PRS. Based on the proportion of rentals in the area and the level of dependency on PRS in the other DCOs used in this report, the Project has assumed 53% of workers would use PRS given that it is close to urban areas.

5.8.6 The assumption made for the Project for latent accommodation is 23%. This is based on data during the construction of Hinkley Point C, which to date has seen 37% of workers using this type of accommodation overall (Sedgemoor District Council, 2022). At the lower end, Wylfa Newydd assumed 12% of workers would reside in latent properties (Horizon, 2018). The Project is located close to densely populated areas and there are numerous planned housing developments which would mean that new housing stock would come onto the market. The Project's 60-minute journey time catchment area has thirteen times more homes than Hinkley Point C's and is only assuming two-thirds of the number of workers in latent accommodation than Hinkley Point C has assumed, making these estimates very conservative. According to the 2011 Census, as one measure of a type of latent accommodation, there were 58,000 spare rooms in Thurrock alone in 2011 (based on occupancy rating, using a conservative assessment considering that any home with a '+1' occupancy rating has at least one 'spare' bedroom). Clearly, not all of these 'spare' bedrooms are unused (or used as bedrooms), so this shows a speculative scale of supply simply to demonstrate that there is headroom. Additionally, the Project can signpost potential landlords to bring current unused rentals into the market via the Helpdesk (see Chapter 7) and given the vast amount of PRS in the area it is likely there would be untapped rentals that would add to the latent stock. The Applicant has bought a number of residential properties under the Blight Scheme where the value of a property within the Order Limits is impacted because of the Project and the owners are unable to sell it at market value. The Project is looking at the potential to utilise some of this accommodation for worker accommodation. This is estimated to be about 117 bedrooms for the purposes of this report.

5.8.7 Finally, the visitor sector is assumed to take a smaller percentage of workers at 16%, less than Hinkley Point C which had allocated the smallest proportion of workers (17%) compared to the other projects. This is because there is a lower stock of available visitor accommodation in the areas through which the Project passes.

Table 5.5 Comparison with other DCO accommodation reports

Project	% Owner	% PRS	% Latent	% Visitor
A122 Lower Thames Crossing	8	53	23	16
Hinkley Point C (latest staff survey)	8	38	37	17
Sizewell C	30	41	-	27
Wylfa Newydd	22	33	12	33

5.8.8 Table 5.6, Table 5.7 and Table 5.8 show the breakdown of demand by accommodation type based on the aforementioned assumptions. Percentages in the second column in the tables below vary because the impact of onsite accommodation on numbers. However, all percentages in the third column titled 'percentage of workforce requiring accommodation' are kept the same in line with Table 5.5 above. Percentages and worker numbers are rounded and therefore may not add up to the highlighted total.

Table 5.6 Worker accommodation demand (peak) in the south (Phase 7)

Category	% of total southern workforce	% of workforce requiring accommodation	Number of workers
Total workers			**885**
Locally Employed	35	0	310
Onsite	0	0	0
Total requiring accommodation	**65**	**100**	**575**
Owner	5	8	46
PRS	34	53	305
Visitor	10	16	92
Latent	15	23	132

Table 5.7 Worker accommodation demand (peak) in the north (Phase 6)

Category	% of northern workforce	% of workforce requiring accommodation	Number of workers
Total workers			**3,802**
Locally Employed	35	0	1,331
Onsite	13	0	480
Total requiring accommodation	**52**	**0**	**1,991**
Owner	4	8	159
PRS	28	53	1,055
Visitor	8	16	319
Latent	12	23	458

Table 5.8 Worker accommodation demand at the peak of the whole Project (Phase 6)

Category	% of total workforce	% of workforce requiring accommodation	Number of workers
Total workers			**4,514**
Locally Employed	35	0	1,580
Onsite	10.6	0	480
Total requiring accommodation	**54.4**	**0**	**2,454**
Owner	4	8	196
PRS	29	53	1,301
Visitor	9	16	393
Latent	13	23	564

5.8.9 Note that the northern peak and Project peak occur in the same phase.

5.8.10 Based on travel assumptions the peaks can be broken down further. Table 5.9 and Table 5.10 show this breakdown together with the demand for the various accommodation categories. The peak to the south of the River Thames would see 403 workers commuting by car, with the remaining 173 workers commuting by other modes. Similarly, for the peak to the north of the River Thames, 1,394 workers would commute by car and 597 would commute by other modes.

Table 5.9 Final breakdown of peak demand for the south in phase 7

Category	Number of workers	Car (70%)	Other modes (30%)
Total requiring accommodation	**575**	**403**	**173**
Owner	46	32	14
PRS	305	213	91
Visitor	92	64	28
Latent	132	93	40

Table 5.10 Final breakdown of peak demand for the north in phase 6

Category	Number of workers	Car (70%)	Other modes (30%)
Total requiring accommodation	**1,991**	**1394**	**597**
Owner	159	112	48
PRS	1,055	739	317
Visitor	319	223	96
Latent	458	321	137

5.9 Conclusion

5.9.1 This chapter has considered the assumptions and factors contributing to estimating workforce accommodation demand. In summary, the workforce for the Project would reach a peak of 4,514 in Phase 6 (April 2027 - August 2027, see Chapter 5 for further detail on Project construction modelling phases). However, the north and south sections peak at different times, with the north peaking in Phase 6 with 3,802 workers and the south peaking in Phase 7 (September 2027 - March 2028) with 885 workers.

5.9.2 This chapter discusses the ambitions for local employment that is further detailed in the SEE Strategy (National Highways, 2022). This WAR assumes that 35% of workers would be employed locally and therefore would not require accommodation provision. The Project has assumed that there would be provision for 480 workers to be accommodated onsite and that they would be part of the 65% of those requiring accommodation.

5.9.3 Based on the evidence presented, this WAR has assumed that workers who have to move to the area to work on the Project would aim to find accommodation within a travel time of up to 60 minutes to site.

5.9.4 The remainder of workers would take a variety of different accommodation types including home ownership, PRS, visitor accommodation and latent. The spread across these types has been reached through reviewing accommodation strategies for other infrastructure projects, as well as understanding the socio-economic context of the Project areas and the nature of the workforce. The majority of staff would use the PRS, with an estimated 305 workers requiring PRS accommodation at the peak in the south, representing 34% of the total workforce in the south. Similarly, 1,055 workers are likely to require PRS accommodation at the Project peak in the north representing 28% of the total workforce in the north.

6 Accommodation assessment

6.1 Introduction

6.1.1 This chapter reviews the supply of accommodation by type and commuting catchment and compares this to the demand set out in the previous chapter. The chapter concludes with a sensitivity test with different parameters on the proportion of locally employed workers and a more localised 30-minute catchment zone.

6.1.2 The assessment considers catchment areas based on car and public transport for the private-rented sector, as this is the main type of accommodation anticipated to be used by the workforce. The distinction between car and public transport has not been applied to other sectors, such as owner-occupied given the relatively low forecasted take-up by the Project as described in this chapter. Data for visitor accommodation relates to areas, rather than locations close to public transport.

6.1.3 Affordability has been based on an accommodation allowance which is assumed to be given in line with the National Agreement for the Engineering Construction Industry (NAECI).

6.1.4 The assessments have been limited to existing accommodation supply data not forecast data. However, efforts have been made to identify future demand from other construction projects and consideration of latent accommodation.

6.2 Overall housing stock by tenure

6.2.1 The housing market within 60 minutes travel time from each of the northern and southern tunnel entrance compounds is substantial, given that the Project is on the edge of London and accessible to a number of major urban areas, see Plate 5.8 and Plate 5.9.

6.2.2 At the time of the 2011 Census, there were approximately 2.47 million homes in the area with a travel time of less than 60 minutes to the northern and southern tunnel entrance compounds. 1.2 million of these were in the northern catchment, and 1.27 million were in the southern catchment. Table 6.1 shows the number of homes, by tenure.

Table 6.1 Homes by tenure within 60 minutes of the northern and southern tunnel entrance compounds (ONS, 2011)

Category	Combined	North	South
Total homes	2,472,284	1,200,724	1,271,560
Owner-occupied	1,556,322	728,732	827,590
Private Rented Sector	455,853	235,577	220,276
Social rented	460,109	236,415	223,694

6.2.3 While 2021 Census data on housing stock is not yet available (as at the time of DCO submission) at this level of granularity, published data on household estimates from the 2021 Census (ONS, 2021) suggests growth of around 6% in the number of households in Thurrock, and 3% in Gravesham, which is where the main northern and southern tunnel entrance compounds are located.

6.3 Owner-occupied

6.3.1 A small proportion of workers would be seeking to buy accommodation in the 60-minute area given the length of their contract with the Project, and their skill and earning level. This is estimated at around 159 people in the north (at the peak phase) and 46 in the south (at the peak phase) as seen in Table 5.6 and Table 5.7 in Section 5.8.

6.3.2 There were over 1.5 million owner occupied properties in the combined catchment area in 2011 (as set out in Table 6.1) and therefore demand from the Project's workforce is likely to account for up to 0.02% of the available market.

6.3.3 In 2011, across the south-east, London and east regions, 5.4% of households in the owner-occupied sector moved house – applied to the 60-minute area that equates to around 84,000 households each year (ONS, 2011). The percentage of houses changing ownership is the churn in a sector and is used as a measure of turnover in the market for that sector.

6.3.4 Demand from the Project would therefore represent a small fraction of owner-occupied homes and would be well within the average level of churn within the sector (0.24% of annual churn) and would therefore be expected to lead to a negligible impact overall on the operation of the housing market. Table 6.2 shows this assessment. Breaking this down to north and south of the River Thames, the north would have a greater take up of properties in churn, however, it still has a limited impact.

Table 6.2 Assessment of owner-occupied accommodation

	North	South
Overall demand for owner-occupied	159	46
Overall supply of owner-occupied homes (2011 Census)	728,732	827,590
Overall supply used by the Project workforce	0.02%	0.01%
Churn (5.4%)	39,352	44,690
% of churn used by the Project workforce	0.40%	0.10%

6.4 Private Rented Sector (PRS)

Gravity Model

6.4.1 The PRS is inherently responsive to changes in demand, and variable depending on a number of factors with pockets of high and low vacancy rates likely to exist but very difficult to quantify or monitor. The common methodology (as used in other DCOs such as Hinkley Point C, Sizewell C and Wylfa Newydd Nuclear Power Plant) in attempting to gauge the likely impact of a project on the PRS market has been by comparing demand from a gravity model with the frictional vacancy.

6.4.2 To carry out an assessment of the PRS, a distribution of workers in the 60-minute catchment areas was required. Trip distribution for workers in the Project's transport model (the LTAM) was derived from multiple data sources, which are themselves derived from multiple data sources, including information

on travel times, housing and employment locations, and observations of trip movements collected from mobile network data. Using this data, the LTAM estimates a weighting of attractiveness (or gravity) to each transport zone within 60 minutes of the construction compounds, which can then be used to distribute worker locations. Please refer to the Transport Assessment (Application Document 7.9) for further information.

6.4.3 These zones were then aggregated to local authority level in order to compare modelled demand with actual supply, using ONS datasets.

6.4.4 A sub-set of these zones – selected where they are accessible by public transport within 60 minutes – was also used to distribute the proportion of the workforce travelling by public transport, these locations were listed out in Section 5.5.

2011 Census

6.4.5 The 2011 Census dataset includes the number of bedrooms per household by tenure – setting out that in 2011 in the PRS there were over 1 million PRS bedrooms in this area (514,868 in the north, and 486,966 in the south).

6.4.6 2021 Census data on housing tenure is not yet available - however the 2021/22 English Housing Survey (EHS) estimates that in London, the south-east and east of England combined, the PRS has grown by approximately 295,000 households, or by 17% since 2010/11 – now making up around 20% of all homes (compared to 18.4% in the 60-minute areas combined in 2011).

6.4.7 Applying these growth estimates to the average PRS household size in 2011, there could be up to 152,000 extra PRS bedspaces in the area today compared with 2011 (a total of 1.152 million bedspaces).

6.4.8 Table 6.3 sets out the number of PRS homes and bedrooms by the areas of each local authority within the 60-minute areas, based on 2011 Census data. Using bedrooms as a measure is based on the principle that workers are likely to share properties wherever possible to reduce costs and that construction workforces tend to move around as gangs and seek accommodation together. Overall, 61% of PRS properties within the 60-minute area are 1–2-bedroom properties, with fewer large dwellings. Bedrooms are often preferred to properties because of the demand character (i.e, sharing or small properties) and the fact that the alternative would be to try to model demand across different sizes, for which there is insufficient baseline evidence to complete this. On this basis bedrooms are a more accurate representation of supply than dwellings.

Table 6.3 PRS bedrooms within local authority areas within 60 minutes of the northern and southern tunnel entrance compounds (ONS, 2011)

Local Authority	PRS Homes	PRS Bedrooms
North		
Barking	12,992	28,885
Basildon	8,078	18,451
Braintree	2,539	5,834

Local Authority	PRS Homes	PRS Bedrooms
Brentwood	3,838	8,399
Broxbourne	4,483	9,449
Castle Point	4,287	9,718
Chelmsford	9,119	20,819
Enfield	23,296	49,911
Epping	6,417	14,593
Hackney	3,452	7,212
Harlow	4,057	8,761
Havering	11,116	25,057
Maldon	2,784	6,626
Newham	35,799	81,177
Redbridge	23,830	52,748
Rochford	3,116	7,330
Southend-on-Sea	17,109	35,190
Thurrock	9,270	20,583
Tower Hamlets	26,829	53,398
Uttlesford	879	2,511
Waltham Forest	22,287	48,216
Total	235,577	514,868
South		
Ashford	6,824	16,947
Bexley	11,319	25,689
Bromley	18,616	38,811
Canterbury	12,755	32,120
Crawley	6,717	15,460
Croydon	16,320	33,078
Dartford	6,778	14,112
Dover	4,160	9,563
Gravesham	7,019	15,547
Greenwich	21,084	46,569
Lewisham	29,375	58,901
Maidstone	10,010	22,813
Medway	19,246	45,204
Reigate	7,659	16,671
Sevenoaks	5,804	14,202

Local Authority	PRS Homes	PRS Bedrooms
Shepway	9,849	20,593
Swale	9,123	21,518
Tandridge	4,117	9,583
Tonbridge and Malling	5,415	12,954
Tunbridge Wells	8,086	16,631
Total	**220,276**	**486,966**

6.4.9 Those travelling by car are less likely to be influenced by accessibility to public transport and would be distributed across the 60-minute area based on the journey time (by car) to the compounds, as forecasted by the LTAM (which combines journey time with location of accommodation to distribute workers).

6.4.10 This WAR assumes that the remaining 30% of workers would be more likely to seek accommodation in locations with good public transport accessibility to the construction compounds (within 60 minutes travel time, including transfer). This narrows the availability of accommodation for that proportion of the workforce to 24 locations, as defined in Section 5.5.

6.4.11 Table 6.4 identifies the supply of PRS accommodation within those areas. Note this is not additional to the accommodation stated within Table 6.3.

Table 6.4 PRS bedrooms within 60-minutes of the northern and southern tunnel entrance compounds, limited to public transport accessible locations (ONS, 2011)

Category	Combined	North	South
Within 60 minutes by public transport	69,275	48,546	20,729
By Local Authority (North)			
Barking & Dagenham	N/A	3,230	N/A
Basildon	N/A	849	N/A
Castle Point	N/A	766	N/A
Havering	N/A	2,304	N/A
Medway	N/A	16,338	N/A
Newham	N/A	8,034	N/A
Southend-on-Sea	N/A	10,670	N/A
Thurrock	N/A	3,125	N/A
Tower Hamlets	N/A	3,230	N/A
By Local Authority (South)			
Ashford	N/A	N/A	2,322

Category	Combined	North	South
Bexley	N/A	N/A	2,305
Dartford	N/A	N/A	1,953
Gravesham	N/A	N/A	5,650
Maidstone	N/A	N/A	3,112
Medway	N/A	N/A	4,281
Tonbridge and Malling	N/A	N/A	1,106

Vacancy

6.4.12 Data is not available for vacancy of rented accommodation at a local scale. Average (national) vacancy rates in the PRS over the last ten years, as recorded by the English Housing Survey, have been around 10%. This includes properties that are empty or available to let, or away from the market for short, medium, or long terms.

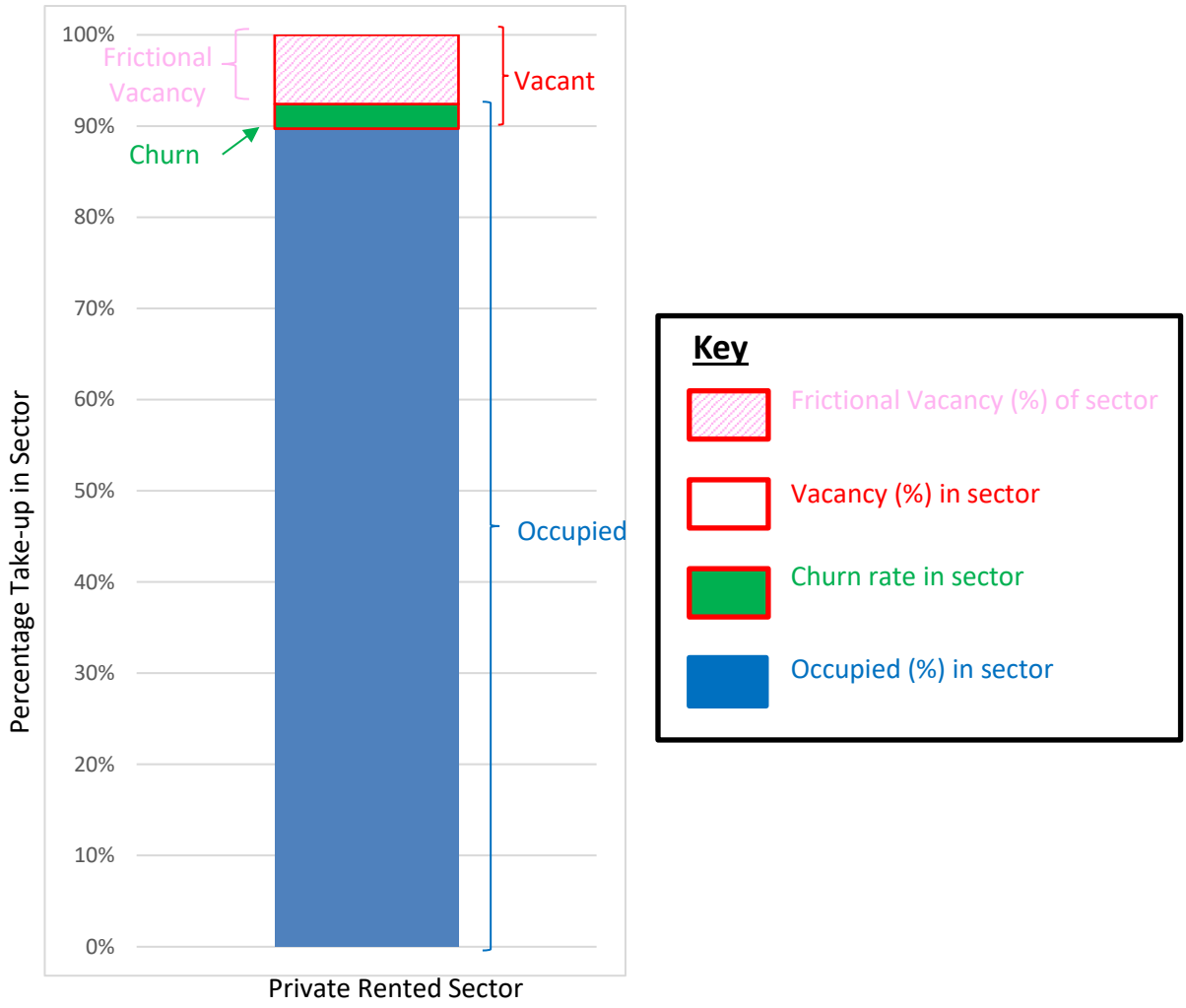
Churn

6.4.13 Data from the 2011 Census shows that the annual level of churn (households moving within a sector in a given year as a proportion of all households in that sector i.e., turnover) for PRS households in England is between 26% and 29% for the east, south-east and London – this calculates out to between 2.2% to 2.4% of PRS properties turning over each month.

Frictional Vacancy

6.4.14 Frictional vacancy is also known as the spare capacity. The concept is based on the principle that for the market to operate effectively, there needs to be enough supply that is vacant on top of what is occupied (by those currently renting in the PRS) and those households changing hands i.e., the churn. Therefore, the frictional vacancy is calculated by subtracting the monthly churn rate from the percentage of properties that are vacant. Plate 6.1 below depicts this concept as a chart.

Plate 6.1 Diagram showing concept of frictional vacancy



6.4.15 Based on the data above, between 89.7% and 90% of the PRS accommodation is occupied at any one time (as 10-10.3% is vacant). The churn per month is between 2.2% and 2.4% and therefore the frictional vacancy is the vacancy minus the churn rate. This is between 7.6% (10% - 2.4%) at the lower end and 8.1% (10.3% - 2.2%) at the higher end. If the frictional vacancy is exceeded, hypothetically this would then impede the ability of the market to turnover unaffected.

6.4.16 Taking a conservative approach and applying the lower end of the frictional vacancy, 7.6%, to the total existing stock in the PRS 60-minute areas, this equates to 39,130 PRS bedrooms in the north, and 37,009 in the south.

6.4.17 Table 6.5 summarises frictional vacancy for areas within the 60-minute catchment:

Table 6.5 Frictional vacancy estimates in the PRS within 60-minute catchment (ONS, 2011)

Category	Combined	North	South
Full 60-minute catchment area			
Total PRS Bedrooms	1,001,834	514,868	486,966
Frictional vacancy (7.6% of total)	76,139	39,130	37,009
Public transport locations (24)			
Total PRS Bedrooms	69,275	48,546	20,729
Frictional vacancy (7.6% of total)	5,265	3,689	1,575

Demand against frictional vacancy - car

6.4.18 Comparing this supply with overall demand gives the likely impact the Project would have on the frictional vacancy. Table 6.6 confirms that demand from the workforce is likely to equate to only a very small fraction of the overall supply (0.2% in the north, and 0.06% in the south) and also a very small proportion of the frictional vacancy – up to 2.7% in the north and 0.82% in the south – which is likely to be negligible.

Table 6.6 Overall impact on PRS bedrooms across the 60-minute area

	North	South
Overall demand for PRS bedspaces	1,055	305
Overall supply of PRS bedspaces (2011 Census)	514,868	486,966
Overall supply used by workers	0.20%	0.06%
Frictional vacancy	39,129	37,009
Frictional vacancy used by workers	2.70%	0.82%

Demand against frictional vacancy – public transport

6.4.19 The demand for accommodation in the subset of 24 locations suitable for those using public transport also represents a small fraction of accommodation in those areas – less than 1% in both (north and south) cases. When compared to the frictional vacancy, demand is equivalent to less than 10% of supply and is likely to be negligible. This is shown in Table 6.7.

6.4.20 This shows that the element of the workforce who use public transport, while limited in terms of the available supply compared to private car users, is unlikely to have a substantial impact on the overall stock or frictional vacancy in those areas combined.

Table 6.7 Overall impact on PRS bedrooms for the 24 areas suitable for those using public transport

	North	South
Overall demand for PRS bedspaces	317	91
Overall supply of PRS bedspaces in 60-minute area the 24 locations (2011 Census)	48,546	20,729
Overall supply used by workers	0.65%	0.44%
Frictional vacancy	3,689	1,575
Frictional vacancy used by workers	8.59%	5.78%

Analysis at local authority level

6.4.21 Local authorities may also find it helpful to consider a potential hypothetical distribution based on administrative boundaries, the level at which any potential impacts on the statutory duty to respond to housing need and homelessness might be experienced. In order to estimate this distribution, model zones used within the LTAM have been aggregated to compare against the overall supply and frictional vacancy in each local authority.

6.4.22 Table 6.8 shows the impact by local authority in the north. Local authorities where the number of workers anticipated is forecast to be less than 10 are excluded from this table as the impact is considered to be negligible. While demand is highest in Thurrock, which is where the northern tunnel entrance compound is located, demand does not exceed 3% of the available PRS market in any local authority (see fourth column). The demand for PRS accommodation in Thurrock is equivalent to around a third of the frictional vacancy (see final column). As such, demand from the Project at the peak is not likely to exceed the level of vacancy needed for the market to operate effectively.

Table 6.8 Potential PRS-based worker distribution based on local authority (north) with >10 workers

Local Authority	Workers	PRS bedspaces	PRS bedspaces used by workers	Frictional vacancy	Frictional vacancy used by workers
Thurrock	570	20,583	2.8%	1,564	36.4%
Havering	168	25,057	0.7%	1,904	8.8%
Basildon	103	18,451	0.6%	1,402	7.3%
Castle Point	74	9,718	0.8%	739	10.0%
Brentwood	56	8,399	0.7%	638	8.8%
Barking and Dagenham	38	28,885	0.1%	2,195	1.7%
Southend-on-Sea	27	35,190	0.1%	2,674	1.0%

6.4.23 Table 6.9 then shows the same data for the local authorities in the south and demand here does not exceed 0.5% of the available PRS market (see fourth column), which is the case for Gravesham which is where the southern tunnel entrance compound is located. The demand for PRS accommodation in Gravesham is equivalent to less than 10% of the frictional vacancy. As such, demand from the Project at peak is not likely to exceed the level of vacancy needed for the market to operate effectively.

Table 6.9 Potential PRS-based worker distribution based on local authority (south) with >10 workers

Local authority	Workers	PRS bedrooms	PRS bedrooms used by workers	Frictional vacancy	Frictional vacancy used by workers
Gravesham	76	15,547	0.5%	1,182	6.4%
Medway	45	45,204	0.1%	3,436	1.3%
Bexley	40	25,689	0.2%	1,952	2.0%
Dartford	40	14,112	0.3%	1,073	3.7%
Tonbridge and Malling	28	12,954	0.2%	985	2.8%
Greenwich	25	46,569	0.1%	3,539	0.7%

Availability of accommodation to the Project workforce

6.4.24 From January 2023, under the NACEI Working Rule Agreement workers who need to move temporarily to work on a project would receive an accommodation allowance of £43.27 per night which could amount to between £930 to £1,300 per month.

6.4.25 The most recent and robust publicly available dataset on rental prices is published by the Valuation Office Agency for the 12-month period to March 2022, which estimates the mean, median and lower- and upper-quartile rents by size of accommodation.

6.4.26 This is set out below for Gravesham and Thurrock as examples of the most local host authorities for the Project.

Table 6.10 Rents for Gravesham

Gravesham	Mean	Lower quartile	Median	Upper quartile
Room	£502	£463	£500	£550
Studio	£612	£573	£600	£650
1-bed	£719	£650	£715	£775
2-bed	£914	£840	£900	£980
3-bed	£1,129	£1,000	£1,100	£1,250
4-bed+	£1,556	£1,248	£1,400	£1,750

Table 6.11 Rents for Thurrock

Thurrock	Mean	Lower quartile	Median	Upper quartile
Room	£640	£650	£650	£700
Studio	£628	£595	£625	£675
1-bed	£765	£715	£750	£800
2-bed	£945	£850	£950	£1,000
3-bed	£1,199	£1,090	£1,200	£1,325
4-bed +	£1,595	£1,450	£1,595	£1,750

6.4.27 This means that based on a monthly accommodation allowance of between £930 to around £1,300, almost all 1-bed, 2-bed and 3-bed PRS accommodation would be affordable to the Project workforce.

6.4.28 As such, while there may be some overlap between workers and local residents in competition for cheaper accommodation, and while workers may seek to spend as little as possible, they can access almost the whole market and may also seek to reduce costs by sharing more expensive, higher quality accommodation in more accessible locations that may not be accessible to local residents claiming housing benefit/in housing need.

Consideration of potential impacts on affordability in the Private Rented Sector

6.4.29 Affordability in the PRS has reduced substantially over the last few years across the UK. This is influenced by a number of factors – including the lack of affordable housing (increasingly inaccessible entry-level prices for private housing, and a shortfall in delivery of social rented housing) which is driven by national and local economic reasons.

6.4.30 The Project recognises that there are a number of pre-existing factors that are already leading to pressures on housing services, and local authorities have reported that key sensitivities include an increase in households identifying a risk of homelessness due to affordability of rents, related to the cost of living.

6.4.31 Lower income households are supported to rent accommodation in some cases through the Local Housing Allowance (LHA), which identifies (along with their household size requirements) the amount of the housing benefit element of Universal Credit they receive to support their access to the rental market.

6.4.32 In the UK Government policy paper “A fairer private rented sector” published in June 2022, it is noted that:

“In 2020 to 2021, there were an estimated 1.1 million households in England who received Housing Benefit to help with the payment of their rent, representing 26% of all households in the rented sector”.

6.4.33 Theoretically, safeguards are in place to link the level of Local Housing Allowance (which translates into the housing benefit element of Universal Credit) to the lower 30th percentile of market rents, taking into account different average rents by size of rented accommodation per Broad Rental Market Area (BRMA), which ought to ensure that there is enough accommodation where the rent is 100% covered by housing benefits.

6.4.34 However, in reality the LHA rate is subject to a 'lag' and has not kept up with recent changes in rent levels. This is difficult to evidence quantitatively due to lack of available data but is generally accepted as standard by local authorities. In addition, LHA rates have been frozen since March 2020.

6.4.35 The Project's 60-minute area primarily covers the South West Essex BRMA (which includes Thurrock) and the North West Kent BRMA (including Gravesham).

6.4.36 Table 6.12 sets out the monthly LHA rates by size for these areas.

Table 6.12 LHA rates in South West Essex and North West Kent BRMA

	South West Essex BRMA	North West Kent BRMA
Shared Rate	£306.56	£355.40
1-bed Rate	£644.40	£621.36
2-bed Rate	£805.48	£782.48
3-bed Rate	£989.60	£966.56
4-bed Rate	£1,226.64	£1,196.72

6.4.37 This suggests that in both cases, the LHA rate would not cover 100% of rent for the lower quartile of rental options. Table 6.13 and Table 6.14 set out the proportion of rental costs that the LHA would cover for accommodation by size, comparing the lower and upper quartiles and mean and median rents.

Table 6.13 Proportion of rent accounted for by LHA rates in Gravesham

Gravesham	Mean	Lower quartile	Median	Upper quartile
Room	71%	77%	71%	65%
Studio	102%	108%	104%	96%
1-bed	86%	96%	87%	80%
2-bed	86%	93%	87%	80%
3-bed	86%	97%	88%	77%
4-bed+	77%	96%	85%	68%

Table 6.14 Proportion of rent accounted for by LHA rates in Thurrock

Thurrock	Mean	Lower quartile	Median	Upper quartile
Room	48%	47%	47%	44%
Studio	103%	108%	103%	95%
1-bed	84%	90%	86%	81%
2-bed	85%	95%	85%	81%
3-bed	83%	91%	82%	75%
4-bed+	77%	85%	77%	70%

6.4.38 The tables show that while 100% of rent would not be covered in the lower quartile, the LHA would cover a substantial proportion of rent levels in different types of accommodation at the lower quartile and even at the median and upper quartile.

6.4.39 The UK Government policy paper "A fairer private rented sector" published in June 2022, notes that:

"Excluding income from housing related welfare, the average proportion of income spent on rent was 36% for social renters and 37% for private renters".

6.4.40 Thurrock's emerging Housing Strategy (Thurrock Council, 2022) notes several actions to address affordability issues in the area – including building more homes and securing more affordable homes, and supporting households to maximise their incomes, as well as engaging with and supporting private sector landlords to increase the supply of affordable and good quality private rental sector properties. Gravesham have a similar strategic approach.

6.4.41 National Highways is acutely aware of the potential for construction workers to seek accommodation that would also be sought by local households in receipt of housing benefit but note that the Project's workforce can and would use more of the market that is available to them due to the level of accommodation allowances, and that while in most cases Local Housing Allowance does not cover 100% of rent, it covers a substantial proportion. Based on available data, LHA rates would cover over 80% of the average monthly rent levels for 1-3 bed accommodation, and 90% of the lower quartile rent levels for 1-3 bed accommodation.

6.4.42 Stakeholders have also raised a concern that they believe workers entering the market would inflate rents. Given the relatively small number of workers as set out above in the context of the size of the market, as well as in the context of frictional vacancy, National Highways considers this to be unlikely.

6.4.43 Similar construction projects with a large non-local workforce have not led to a substantial increase in rent levels – for example rental prices (Valuation Office Agency) in Sedgemoor District (Somerset) have only increased slightly more than the national average during the construction phase of Hinkley Point C, albeit from a lower starting point. Lower quartile monthly rents for 1-bed properties have increased on average by £50 per month in Sedgemoor as compared to £40 per month in England between 2016/17 and 2019/20.

6.4.44 Furthermore, during construction phase, the Project would create substantial employment and skill development opportunities that support local authorities employment and skills action plans. During operation, the Project would have wider benefits in terms of supporting local development and housing growth.

6.4.45 There is an opportunity to work collaboratively to ensure that the Accommodation Helpdesk dovetails with local authorities aims to support private sector landlords to increase the supply of affordable and good quality private rental sector properties.

6.5 Visitor accommodation

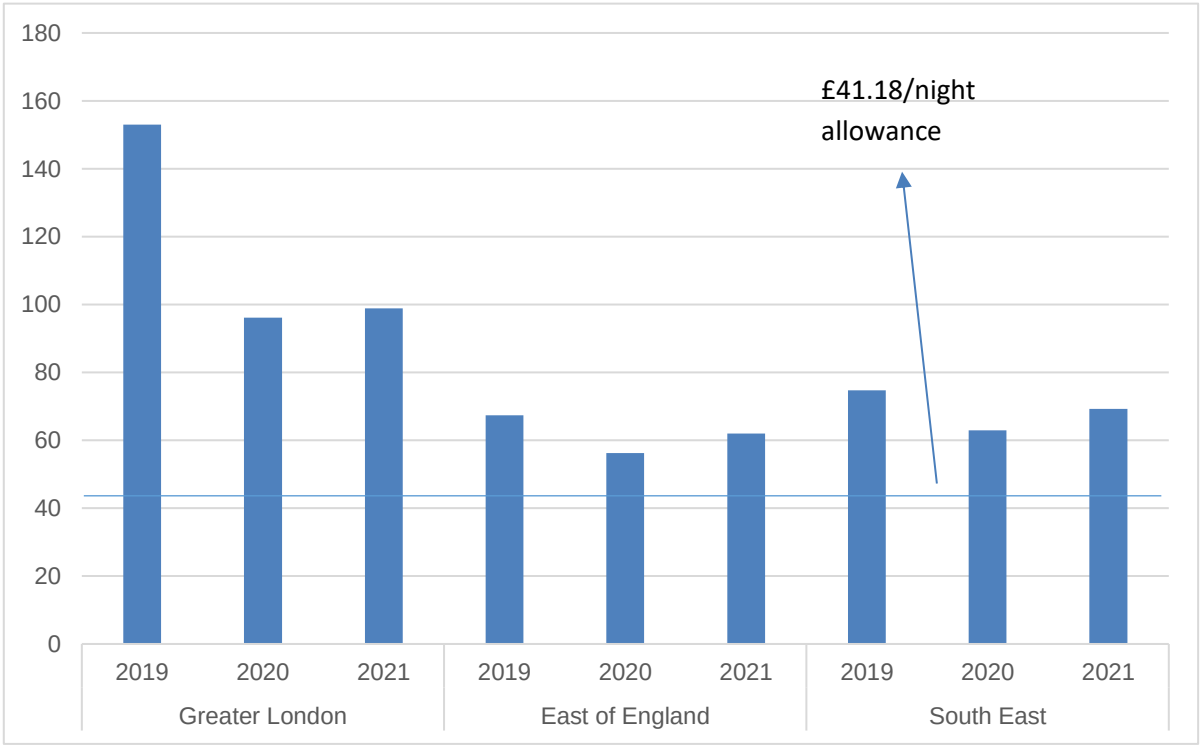
6.5.1 Using Visit England data, 2020 and 2021 saw a reduction in occupancy levels, principally due to the impacts of COVID-19. Visit England trends show that as 2021 went on, the sector was increasingly performing more in line with the 2019 figures.

6.5.2 It is not unreasonable to believe that by the time construction activities for the Project commence such that worker accommodation is required, accommodation occupancy levels would be back more in line with 2019 levels. Therefore, occupancy rates for 2019 have been used i.e., 79% occupancy in the north (including London) and 80% in the south (including London), meaning that 21% and 20% of visitor accommodation respectively would be potentially available for use by project workers.

6.5.3 The average daily rate for visitor accommodation in the East of England is £61.95 with the south-east being £69.21 and Greater London £93.83 (Visit England, 2022). PWC estimate an average rate of £62 in 2022 (PWC, 2022) – all of these put the cost of accommodation higher than the standard allowance of £282.26 per week or £41.18 per night as stipulated in the NAECI National Agreement. Average room cost per night is illustrated in Plate 6.2. This data refers to hotel rates and is therefore likely to be higher per night than other types of accommodation such as self-catering, caravan sites and B&B's, however there is not a reliable source for this. Therefore, an assumption has been made that 50% of the accommodation would be affordable.

6.5.4 Cost of accommodation within caravan sites varies but licenced commercial sites start at around £25 per night, with £35 per night being at the higher end. This brings the cost in line with construction worker allowances.

Plate 6.2 Average room cost (per night)



6.5.5 Taking into account availability and affordability overall, there are 8,702 properties available for those workers who choose to use visitor accommodation in the area to work on the Project.

6.5.6 Using Visit Britain data, visitor stock has been identified, as shown in Table 6.15.

Table 6.15 Bedroom spaces in areas within 60 minutes of southern and northern tunnel entrance compounds (Visit Britian, 2016)

Category	Total serviced and non-serviced establishment
Total in the north	31,643
Availability after average occupancy of 79%	6,645
Availability after 50% affordability considered	3,323
Total in the South	53,794
Availability after average occupancy of 80%	10,759
Availability after 50% affordability considered	5,379
Totals	**Total visitor bedrooms**
Overall total	85,437
Overall total after average occupancy	17,404
50% affordability	8,702

6.5.7 During the peak, the Project is anticipated to create demand from within the visitor accommodation sector for 92 bedspaces in the south and 319 in the north.

6.5.8 In order to be conservative, based on availability and affordability restrictions, the average availability of supply has been reduced to around 3,323 in the north and 5,379 in the south. This means that demand from the Project equates to 2% of available, affordable accommodation in the south and 10% in the north.

6.5.9 This analysis demonstrates that the Project would have a limited impact on the visitor sector in terms of take-up of accommodation. Workers seeking accommodation have the potential to generate income for the sector by using tourist accommodation that would otherwise be unoccupied.

6.6 Latent accommodation

6.6.1 Latent accommodation refers to property not currently available, which could be made up of new properties for sale, spare rooms, new rentals to the market (new development and tenure shift), and any new visitor accommodation.

6.6.2 Based on the 2011 Census data for occupancy rating (using a conservative assessment – considering that any home with a '+1' occupancy rating has at least one 'spare' bedroom), there were over 58,000 spare bedrooms in Thurrock alone.

6.6.3 Clearly, not all of these 'spare' bedrooms are unused (or used as bedrooms), so this shows a speculative scale of supply simply to demonstrate that there is headroom. For the purposes of assessment, a conservative estimate of 10% has been applied as a measure of supply for the potential latent properties in Thurrock only and this has been compared with the Applicant's overall demand for latent accommodation, to give an indication of the vast potential supply in the market.

6.6.4 The high degree of latent bedrooms brought to market at Hinkley Point C suggests that there is a considerable market in renting of spare rooms as illustrated in Table 5.5.

6.6.5 Additionally, as mentioned in Section 5.8, the Applicant has bought a number of residential properties under the Blight Scheme and is looking at the potential to utilise some of this accommodation for worker accommodation.

6.6.6 Another aspect of the market which is likely to increase the stock of latent accommodation is the introduction of new owner-occupied, rental and visitor accommodation into the market. Section 5.7 explained that in the wider economic context the aim of local authorities is to meet their predictions of housing need by building new dwellings. When the data for local authorities through which the Project passes was analysed, the forecasted increase exceeded 70,000 new dwellings (Level 3 Wider Economic Impacts Report of the Combined Modelling and Appraisal Report (Application Document 7.7, Appendix D)). A conservative approach has been taken in assuming that only 25% of these new dwellings enter as latent accommodation.

6.6.7 It is difficult to quantify latent accommodation by its very nature, as it is currently not available. Therefore, an overly conservative reduction has been applied to one element of it – namely existing spare bedrooms – to account for potential reduction in the original stock that exists and what is forecasted. Factoring 10% of the existing potential latent stock in Thurrock only, which is 5,800, the 117 potential bedrooms owned by the Applicant and 25% of the number of new properties likely to enter the market, 17,500, the demand of 590 workers is likely to be absorbed into the market without issues. Table 6.16 shows how the Project is likely to take up only 2.5% of this stock.

Table 6.16 Estimate of the Project's impact on latent accommodation

Existing latent accommodation stock	10% of existing latent
58,000 (using data for Thurrock only)	5,800
Potential bedrooms owned by the applicant in the Project area	100% of Applicant owned
117	117
Expected new dwellings in the catchment	25% of new properties
70,000	17,500
Total supply	23,417
Project demand	590
Project take-up	2.5%

6.7 Sensitivity taking into account other projects

Approach

6.7.1 The Project is likely to be constructed, if granted consent, alongside other schemes in a dynamic market where construction stimulates demand for and supply of labour and accommodation.

6.7.2 The CITB (BMG Research, 2019) estimates that at any given time 7% of construction workers are non-local and living in temporary private accommodation in the east and south-east regions. Given that there are around 280,000 construction workers in Kent, London and Essex alone, that means that up to around 20,000 may be expected to be in temporary accommodation at any time. As such, effects of non-local construction workers on the private accommodation market already occur as a 'background' element and as part of the baseline for this WAR. The level of churn and frictional vacancy in the PRS, for example, inherently includes an element of pre-existing non-local construction workers. See Section 6.4 and Plate 6.1 within this document.

6.7.3 As such, it is not considered necessary to consider the 'usual' trend-based housing and other developments that form the basis of future Local Plan targets as part of this sensitivity assessment as they are reasonably considered to be incorporated into the baseline.

6.7.4 Instead, this sensitivity assessment focuses on 'above trend' developments that would add to the 'usual' effect of non-local workers' demand for accommodation. This approach to combined impacts is based on the consented Hinkley Point C and Sizewell C DCOs. While those projects are not linear, they are like the Project, of a significant scale and are more appropriate given the relative comparability of the construction periods.

6.7.5 For the purposes of this assessment, the Applicant has used professional judgement to identify proposed schemes within the 60-minute drive time from the northern and southern tunnel entrance compounds so that a scenario which 'stress tests' the potential impacts on the local housing can be established. These are schemes which are proposed to be under construction at the same time as the Project as DCOs or planning applications have been submitted:

a. Nationally Significant Infrastructure Projects (NSIPs).

b. Major projects identified by stakeholders as part of wider technical engagement on the Project, which may or may not be NSIPs.

c. Major projects that are considered to be 'above trend', taking into account the number of homes and/or floorspace and/or capital construction value. These developments are typically out of scale with records of delivery influencing Local Plans.

6.7.6 This approach to identifying other developments is necessarily different to the other developments considered in the Transport Assessment (Application Document 7.9) and Environmental Statement (Application Document 6.1 – 6.3). For example, the ES cumulative effects assessment includes some smaller-scale developments which would be part of the 'usual' trend for

accommodation and the ES spatial scope is necessarily larger than the 60 minute zone used for WAR. The TA assesses impacts on the road network, and is based on TAG, whereas the WAR looks to stress test the impact of the Project on accommodation.

Data gathering

6.7.7 Few schemes other than Cleve Hill Solar Park, Cambridge Waste Water Treatment relocation, London Resort and Thurrock Flexible Generation Plant have provided publicly available information on their estimated construction workforce. Likewise, details of mitigation plans are also not readily available. Where construction worker numbers were not available, an estimate was applied based on floorspace and/or capital construction value.

6.7.8 Where floorspace is provided, an estimate of worker numbers was developed on an assumption that it takes one full time equivalent worker a year to build 44m2 of floorspace. A multiplier of 1.5 to account for a peak workforce was then applied considering the duration of the construction programme. A figure of 7% was then applied, which represents the average proportion of workers requiring temporary accommodation (BMG Research, 2019). For example, Highsted Park is a development of 332,000m2. Divided by 44m2, this equates to 7,545 required workers. This is a 9-year project, so 7,545 divided by 9 is 838 workers per year. The peak is 1.5 times this number which equates to 1,257. 7% of this number would require accommodation, which is 88 workers.

6.7.9 Where floorspace information was not available or appropriate, a financial value comparison has been made. As an example, Sizewell C is a £20 billion project with 9,000 construction workers, equating to 450 workers per £1 billion spend, over 10 years. This has then been applied, for example, to the Thames Freeport which is valued at £1 billion over 10 years and so it has been assumed it will require 450 workers. This is then multiplied by 1.5 to allow for the peak and therefore 675 workers would be required. 7% of this number would require accommodation, which is 48 workers.

6.7.10 It is anticipated that such developments, as part of their own planning processes and applications, are likely to have secured interventions to reduce those effects. However, in line with the conservative approach taken in this combined-effects assessment to stress test the local housing situation, no interventions have been assumed unless there is clear evidence on such measures being incorporated and secured.

6.7.11 This assessment considers a static baseline based on data for previous years (e.g., Census 2011) rather defining future accommodation numbers.

6.7.12 While there is limited available information on the construction workforce figures and uncertainty around many of the schemes, data has nevertheless been gathered and used for the purposes of a scenario which stress tests impacts on local accommodation supply.

6.7.13 This assessment is precautionary in that all identified developments in Table 6.17 are assumed to peak at the same time as the Project, which is considered highly unlikely and which would lead to a worsened impact on local accommodation. For example, the numbers include Silvertown Tunnel and London Gateway; however, both schemes are anticipated to be complete by the time the Project workforce peaks.

6.7.14 Noting these uncertainties and limitations, Table 6.17 presents the estimated combined demand for temporary accommodation from other schemes in the study area. It shows that there could potentially be another 4,354 workers requiring accommodation during the Project's workforce peak. Again, this is considered highly unlikely and conservative but is intended to show a worst case insofar as local accommodation is concerned.

Assessment

6.7.15 Taking this precautionary approach, Table 6.18 shows the combined impact of the Project and other identified projects would not push any category over the level of annual churn for owner occupied property (5.4%) or frictional vacancy for PRS property (7.6% - 8.1%). Based on this assessment, the combined impact is considered to be limited.

6.7.16 For example, in the potentially most sensitive examples of PRS and visitor accommodation:

a. To the north of the River Thames, in the PRS, the combined demand of the Project (1.89%) plus other schemes (3.48%) equates to a combined impact of 5.37% of the frictional capacity of 39,130.

b. To the north of the River Thames, in the visitor sector, the combined demand of the Project (9.59%) plus other schemes (12.38%) equates to a combined impact of 21.97% of the capacity of 3,323.

6.7.17 As discussed in the following Chapter, the Applicant has committed to ongoing monitoring and management of its construction workforce, and facilitation of engagement between its contractors and local authorities.

6.7.18 As part of this, stakeholders and the Project would be able to iteratively consider how the housing market is responding to demand from the Project and other projects.

6.7.19 This would allow the Project to actively consider external sources of stress on the housing market and where relevant, tailor potential measures to support local authorities and other stakeholders deal with risks where the Project may have the potential to exacerbate them.

Table 6.17 Combined demand for accommodation from other projects

Area	Project	Construction period	Estimated workers requiring accommodation
North	Thurrock Flexible Generation Plant	2023 – 2026	24
	Silvertown Tunnel	2020 - 2025	70
	London Gateway	2022 - 2023	123
	Thames Freeport	10-year plan: 2020 - 2030	48
	East Anglia Green	2027 - 2031	11
	Brentwood Enterprise Park	2024 - 2026	32

Area	Project	Construction period	Estimated workers requiring accommodation
	M25 Junction 28	2022 - 2025	8
	Hole Farm	2023 – 2026. Given the nature of the project, it is unlikely there will be demand for temporary accommodation	0
	Tilbury Link Road	DCO potentially 2025, delivery unlikely before 2030 but included for purposes of this assessment	11
	A120 Braintree to A12 upgrade	No published dates, estimates based on Tilbury Link road	46
	Longfield Solar Farm	2024 – 2026	240
	Bradwell B new nuclear power station	2025 - 2035	1,600
	A12 Chelmsford to A120 widening scheme	2023 - 2028	70
	Oikos Marine & South Side Development	Unknown - scoping study submitted 2021	12
	Cambridge Waste Water Treatment relocation	2024 - 2028. Planning documents state all labour sourced will be sourced locally	0
	Purfleet Regeneration Scheme	2022 - 2032	135
	Thames Enterprise Park	2022 - 2024. Numbers already accounted for in Thames Freeport	0
	Dunton Mills Garden Village	2023 - 2039	53
Total for the north			**2,483**
South	London Resort	Resubmission expected 2023 - new dates plus 3 years from original: 2025 - 2031.	1,375
	Extension to Allington Integrated Waste Management Facility.	3-year construction	24
	M2 junction 5 improvements	2021 - 2025	11
	Cory Riverside 2	2022 - 2026	77

Area	Project	Construction period	Estimated workers requiring accommodation
	Manston Airport	2023 - 2038	236
	Cleve Hill Solar Park Ltd	2022 - 2025	28
	Hoo Highway improvements	2022 - 2024. Planning documents state labour will be sourced locally.	0
	Highsted Park	2022 - 2031	88
	MedwayOne	2022 - 2032	32
Total for the south			**1,871**
Total requiring accommodation IF the peaks of these projects happened at the same time.			**4,354**

Table 6.18 Combined impacts assessment

Category	% of workforce requiring accommodation	Number of workers	Capacity	Other project impacts	Project impact	Combined impact
North						
Total requiring accommodation		**2571**	**-**	**-**	**-**	**-**
Owner	8%	206	39,352	0.52%	0.40%	0.93%
PRS	53%	1,363	39,130	3.48%	1.89%	5.37%
Visitor	16%	411	3,323	12.38%	9.59%	21.97%
Latent	23%	591	11,709	5.05%	3.91%	8.96%
South						
Total requiring accommodation		**1,783**	**-**	**-**	**-**	**-**
Owner	8%	143	44,690	0.32%	0.10%	0.42%
PRS	53%	945	37,009	2.55%	0.58%	3.13%
Visitor	16%	285	5,379	5.30%	1.71%	7.01%
Latent	23%	410	11,709	3.50%	1.13%	4.63%

6.8 Sensitivity analysis

6.8.1 This WAR has been developed based on a number of robust assumptions. These may nevertheless change or evolve, potentially affecting:

a. the number of locally employed workers

b. worker preferences relating to type of accommodation

c. worker preferences relating to location

d. the capacity of the accommodation sector (all types)

6.8.2 Table 6.19 to Table 6.21 consider the impact of changes to the assumptions on numbers of locally employed versus those with accommodation needs. The existing estimate of locally employed workers is already a conservative figure and therefore if a greater number of locally employed workers are employed then the impact on the accommodation requirement would be less. That said, should only 15% of workers be recruited locally, and the remainder required accommodation, the analysis suggests that any impact could still be absorbed by the market. The Project would only take up 12% of the frictional vacancy in the PRS in the north by public transport (438 workers demanding accommodation in the PRS by public transport, divided by the capacity in the PRS sector that is commutable by public transport 3,689, as per Table 6.5). At 15% locally employed, workers would take 13% of available visitor accommodation (440 workers divided by the capacity 3,323 – see Table 6.15) in the north.

Table 6.19 North accommodation sensitivities

Category	% locally employed										
	50%	45%	40%	35%	30%	25%	20%	15%	10%	5%	0%
	No. of workers										
Locally employed	1,901	1,711	1,521	1,331	1,141	951	760	570	380	190	0
Onsite	480	480	480	480	480	480	480	480	480	480	480
Accommodation needed	1,421	1,611	1,801	1,991	2,181	2,372	2,562	2,752	2,942	3,132	3,322

Table 6.20 Split of accommodation sensitivities by accommodation type for the north

Category	Accommodation capacity	% split	Total no. of workers needing accommodation by % of locally employed taken from Table 6.19										
			50%	45%	40%	35%	30%	25%	20%	15%	10%	5%	0%
			1,421	1,611	1,801	1,991	2,181	2,372	2,562	2,752	2,942	3,132	3,322
Owner	39,352	8%	114	129	144	159	175	190	205	220	235	251	266
PRS car	39,130	53%	527	598	668	739	809	880	950	1,021	1,091	1,162	1,232
PRS Public Transport	3,689		226	256	286	317	347	377	407	438	468	498	528
Visitor	3,323	16%	227	258	288	319	349	379	410	440	471	501	532
Latent	11,709	23%	327	371	414	458	502	545	589	633	677	720	764

Table 6.21 South accommodation sensitivities

Category	% locally employed										
	50%	45%	40%	35%	30%	25%	20%	15%	10%	5%	0%
	No. of workers										
Locally employed	443	398	354	310	266	221	177	133	89	44	0
Accommodation needed	443	487	531	575	620	664	708	752	797	841	885

Table 6.22 Split of accommodation sensitivities by accommodation type for the south

Category	Accommodation capacity	% split	Total no. of workers needing accommodation by % of locally employed taken from Table 6.21										
			50%	45%	40%	35%	30%	25%	20%	15%	10%	5%	0%
			443	487	531	575	620	664	708	752	797	841	885
Owner	44,690	8%	35	39	42	46	50	53	57	60	64	67	71
PRS car	37,009	53%	164	181	197	213	230	246	263	279	296	312	328
PRS Public Transport	1,575		70	77	84	91	99	106	113	120	127	134	141
Visitor	5,379	16%	71	78	85	92	99	106	113	120	127	135	142
Latent	11,709	23%	102	112	122	132	142	153	163	173	183	193	204

6.8.3 As an additional sensitivity check, the owner occupied and PRS categories were assessed for a 30-minute catchment zone. That would mean that all Project workers during the peak were to find accommodation within a 30-minute commute of the northern and southern tunnel entrance compounds. Table 6.23 shows this sensitivity for the owner-occupied market which would still be a negligible portion of the churn.

Table 6.23 Sensitivity analysis of owner-occupied within 30-minute catchment and impact on the market (ONS, 2011)

Location	Total owner-occupied	Properties in churn	Project Demand	Proportion of churn used by workers
South	177,941	9,609	46	0.5%
North	126,068	6,808	159	2.3%

6.8.4 The PRS is arguably the most sensitive tenure as it had the highest impact on the frictional vacancy, and it is important for the local authorities to use it (in part) to discharge their statutory housing duty. A further sensitivity check has therefore been carried out for the PRS sector in Table 6.24 which shows that even limiting the catchment to 30 minutes would mean the Project does not take up all the frictional vacancy.

Table 6.24 Sensitivity analysis of PRS within 30-minute catchment and impact on the market (ONS, 2011)

Location	Total PRS bedrooms	Frictional vacancy	Project demand	Proportion of frictional vacancy used by workers
South	97,079	7,378	305	4%
North	51,408	3,907	1,055	27%

6.9 Conclusion

6.9.1 This chapter assessed the supply of properties in the various categories against the demand. Assessments at 60-minute area scale and disaggregated for local authorities both indicate that even with the conservative assumptions made, the Project would have a limited impact in any of the accommodation categories.

6.9.2 The peak workforce north (3,802) and south (885) of the river have been assumed to all be working at the northern and southern tunnel entrance compounds respectively, and so is an overestimation of the number of workers at these compounds and that in reality, workers would be at other compounds across the route, which would disperse the impacts on worker accommodation.

6.9.3 Table 6.25 and Table 6.26 summarise the findings.

Table 6.25 Summary of demand against supply for the areas within the catchment in the south

Category (mode of commute)	No of workers requiring accommodation taken from Table 5.9	Capacity (bedrooms)	Project take-up
Owner	46	44,690	0.1%
PRS (car)	213	37,009	0.6%
PRS (public transport)	91	1,575	5.8%
Visitor	92	5,379	1.7%
Latent	132	11,709*	1.1%

** Estimated as 50% of latent supply for the south*

Table 6.26 Summary of demand against supply for the areas within the catchment in the north

Category (mode of commute)	No of workers requiring accommodation taken from Table 5.10	Capacity (bedrooms)	Project take-up
Owner	159	39,352	0.4%
PRS (car)	739	39,130	1.9%
PRS (public transport)	317	3,689	8.6%
Visitor	319	3,323	9.6%
Latent	458	11,709*	3.9%

** Estimated as 50% of latent supply for the north*

6.9.4 For the owner-occupied sector, given the scale of supply and annual turnover compared to demand, and the fact that any sales would be within the control of the occupier, there is unlikely to be a noticeable impact on the sector as a result of the Project's demand for accommodation.

6.9.5 For the latent sector, use of latent accommodation is difficult to estimate, but experience from other projects suggests this is likely to be a helpful element of the market for the Project's workforce to utilise, especially in the PRS and visitor sector. The latent opportunity provides additional economic benefits to hosts and offers flexibility and affordability to workers without infringing on formal, pre-existing accommodation, in particular the rental sector which is important for the local authority to use (in part) to discharge its statutory housing duty.

6.9.6 For the visitor sector, the Project's workforce demand has been demonstrated to be within 10% of supply, even when conservative assumptions are made about the availability and affordability of this type of accommodation. For a substantial proportion of the year, there is far more currently unoccupied supply.

6.9.7 For the PRS, the area within a 60-minute journey time from the northern and southern tunnel entrance compounds has a substantial supply of rental accommodation – with the 2011 census highlighting that there were over

1 million bedrooms in 2011 (ONS, 2011). The 2011 Census gives the most robust information on the scale of the PRS – however it is estimated based on early 2021 Census data, and other sources such as the English Housing Survey (ONS, 2021) that the overall number of PRS bedrooms has increased in all areas since 2011. The English Housing Survey is recorded each year, and notes that despite the growth in the overall PRS stock (and proportion of all housing that is PRS), the proportion of vacant PRS properties has remained at around 10%.

6.9.8 Therefore, demand from the Project for PRS is unlikely to be substantial at the macro-scale – with demand equating to a fraction of 1% of supply for each of the north and south areas, and less than 3% of the frictional vacancy at that scale.

6.9.9 In order to be precautionary, this Report considers a sensitivity test that reduces the catchment area artificially to 30 minutes journey time, and even at that scale it demonstrates that demand would represent a very small proportion of supply and remains well within the level of frictional vacancy available.

6.9.10 The Applicant wishes to promote sustainable travel and assumes that for the northern and southern tunnel entrance compounds which are large compounds, that 30% of the workforce would travel either using public transport or car sharing. As such, this means that element of the workforce is likely to be far more concentrated to local areas where there is public transport accessibility. Even with this constraint, this WAR identifies that demand is likely to account for only a fraction of supply and would not exceed frictional capacity.

6.9.11 At a local authority level, the analysis also shows that the Project would only utilise a small proportion of the frictional vacancy in the PRS.

6.9.12 The combined impacts assessment showed that even in the extremely unlikely event that all infrastructure projects near to the area were to have a peak workforce at the same time as the Project, the market would be able to cope.

6.9.13 It should also be noted that the assumptions used across this WAR are highly conservative. For example, the proportion of local workforce is anticipated to be much greater than 35% (which has been used primarily to assess the ‘worst case’ for transport effects).

6.9.14 Overall, the analysis undertaken shows that while the Project would bring workers into the area that would require accommodation, the market can absorb these workers. The Project recognises that there is a greater impact in those areas closest to the northern and southern tunnel entrance compounds and that this would impact the PRS sector the most. As a result, the Applicant has considered appropriate measures described below. The Project also brings with it economic opportunities in terms of stimulating direct and indirect demand for property.

7 Pro-active measures relating to accommodation

7.1.1 The WAR demonstrates that there is sufficient capacity in the local accommodation market for temporary workers. Given concerns raised by local authorities about localised effects on some parts of the accommodation market, the Applicant is nonetheless proposing the following pro-active measures to monitor and manage the uptake of accommodation. These are secured via the Framework Construction Travel Plan (FCTP, Application Document 7.13):

a. Accommodation Helpdesk – this would be operated by the Applicant and would be a tool to assist workers with finding suitable and available accommodation near the Project. The Helpdesk would support prospective providers of accommodation in understanding the Project and its workforce and managing tenancies safely and legally. Workers would not be mandated to use accommodation registered on the Accommodation Helpdesk. The Helpdesk would also oversee collation of monthly data from the Contractors and produce accommodation monitoring reports which would in turn inform where workers could be directed/recommended via the Helpdesk.

b. Accommodation database – the Contractors would be required to create and maintain a live database that monitors the accommodation being used by the workforce in terms of the type of accommodation (onsite project accommodation, private rented, spare rooms/latent, owner-occupied or tourist/visitor) and the location of this accommodation (via a postcode). The Contractors would mandate that its workforce, and those of its suppliers, regularly update their information related to the database for every worker. This database would be reported on a monthly basis to members of the Workforce Accommodation Working Group (WAWG).

c. WAWG – this would include representatives from the Applicant, its Contractors, and local authorities. The WAWG would receive monthly workforce accommodation monitoring reports from the Helpdesk, and regular updates and information from the Project including ‘look-ahead’ for potential workforce implications over a 12-month period led by the Applicant and Contractors. The findings of the workforce accommodation monitoring report would be considered alongside other information, such as other monitoring secured by the Project (e.g., via the Framework Construction Travel Plan (Application Document 7.13) and SEE Strategy (appended to Section 106 Agreements – Heads of Term (Application Document 7.3)) and information provided by local authorities on market conditions and other developments in the local area.

7.1.2 Contractors would also be required to propose further reasonably practicable measures which encourage a higher proportion of locally employed workers (thereby reducing demand for accommodation) and incentivise workers to live in areas which have higher capacity. Measures would be presented to the WAWG, and the Applicant would have due regard to comments raised at that group on the measures to be undertaken.

7.1.3 The early creation of an effective Accommodation Helpdesk would not only identify and direct workers to appropriate accommodation but would be a key mechanism, together with the accommodation monitoring reports, to monitor impacts on the local accommodation market.

7.1.4 The Helpdesk would also signpost potential landlords and businesses to assist and encourage bringing forward of latent beds to the market.

7.1.5 The Applicant would continue to monitor the combined impacts of accommodation and work with local authorities to assess impacts on local accommodation through the WAWG.

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Glossary

Term	Abbreviation	Explanation
A122		The new A122 trunk road to be constructed as part of the Lower Thames Crossing project, including links, as defined in Part 2, Schedule 5 (Classification of Roads) in the draft DCO (Application Document 3.1)
A122 Lower Thames Crossing	Project	A proposed new crossing of the Thames Estuary linking the county of Kent with the county of Essex, at or east of the existing Dartford Crossing.
A122 Lower Thames Crossing/M25 junction		New junction with north-facing slip roads on the M25 between M25 junctions 29 and 30, near North Ockendon.
A13/A1089/A122 Lower Thames Crossing junction		Alteration of the existing junction between the A13 and the A1089, and construction of a new junction between the A122 Lower Thames Crossing and the A13 and A1089, comprising the following link roads: • Improved A13 westbound to A122 Lower Thames Crossing southbound • Improved A13 westbound to A122 Lower Thames Crossing northbound • Improved A13 westbound to A1089 southbound • A122 Lower Thames Crossing southbound to improved A13 eastbound and Orsett Cock roundabout • A122 Lower Thames Crossing northbound to improved A13 eastbound and Orsett Cock roundabout • Orsett Cock roundabout to the improved A13 westbound • Improved A13 eastbound to Orsett Cock roundabout • Improved A1089 northbound to A122 Lower Thames Crossing northbound • Improved A1089 northbound to A122 Lower Thames Crossing southbound
A2		A major road in south-east England, connecting London with the English Channel port of Dover in Kent.
Application Document		In the context of the Project, a document submitted to the Planning Inspectorate as part of the application for development consent.
Construction		Activity on and/or offsite required to implement the Project. The construction phase is considered to commence with the first activity on site (e.g. creation of site access), and ends with demobilisation.
Development Consent Order	DCO	Means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects (NSIP) under the Planning Act 2008.
Development Consent Order application	DCO application	The Project Application Documents, collectively known as the 'DCO application'.

Term	Abbreviation	Explanation
Environmental Statement	ES	A document produced to support an application for development consent that is subject to Environmental Impact Assessment (EIA), which sets out the likely impacts on the environment arising from the proposed development.
Highways England		Former name of National Highways.
M2 junction 1		The M2 will be widened from three lanes to four in both directions through M2 junction 1.
M2/A2/A122 Lower Thames Crossing junction		New junction proposed as part of the Project to the east of Gravesend between the A2 and the new A122 Lower Thames Crossing with connections to the M2.
M25 junction 29		Improvement works to M25 junction 29 and to the M25 north of junction 29. The M25 through junction 29 will be widened from three lanes to four in both directions with hard shoulders.
National Highways		A UK government-owned company with responsibility for managing the motorways and major roads in England. Formerly known as Highways England.
National Policy Statement	NPS	Set out UK government policy on different types of national infrastructure development, including energy, transport, water and waste. There are 12 NPS, providing the framework within which Examining Authorities make their recommendations to the Secretary of State.
National Policy Statement for National Networks	NPSNN	Sets out the need for, and Government's policies to deliver, development of Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks in England. It provides planning guidance for promoters of NSIPs on the road and rail networks, and the basis for the examination by the Examining Authority and decisions by the Secretary of State.
Nationally Significant Infrastructure Project	NSIP	Major infrastructure developments in England and Wales, such as proposals for power plants, large renewable energy projects, new airports and airport extensions, major road projects etc that require a development consent under the Planning Act 2008.
Order Limits		The outermost extent of the Project, indicated on the Plans by a red line. This is the Limit of Land to be Acquired or Used (LLAU) by the Project. This is the area in which the DCO would apply.
Planning Act 2008		The primary legislation that establishes the legal framework for applying for, examining and determining Development Consent Order applications for Nationally Significant Infrastructure Projects.

Term	Abbreviation	Explanation
Project route		The horizontal and vertical alignment taken by the Project road.
The tunnel		Proposed 4.25km (2.5 miles) road tunnel beneath the River Thames, comprising two bores, one for northbound traffic and one for southbound traffic. Cross-passages connecting each bore would be provided for emergency incident response and tunnel user evacuation. Tunnel portal structures would accommodate service buildings for control operations, mechanical and electrical equipment, drainage and maintenance operations. Emergency access and vehicle turn-around facilities would also be provided at the tunnel portals.

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