

Appendix: Traffic and Transport

Annex 1: Transport Assessment

Gravesend Borough Council

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TRANSPORT ASSESSMENT

Northfleet Central 1 Limited

Northfleet Harbourside, Gravesham

September 2022

Transport Assessment

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Northfleet Harbourside, Transport Assessment

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1 Introduction

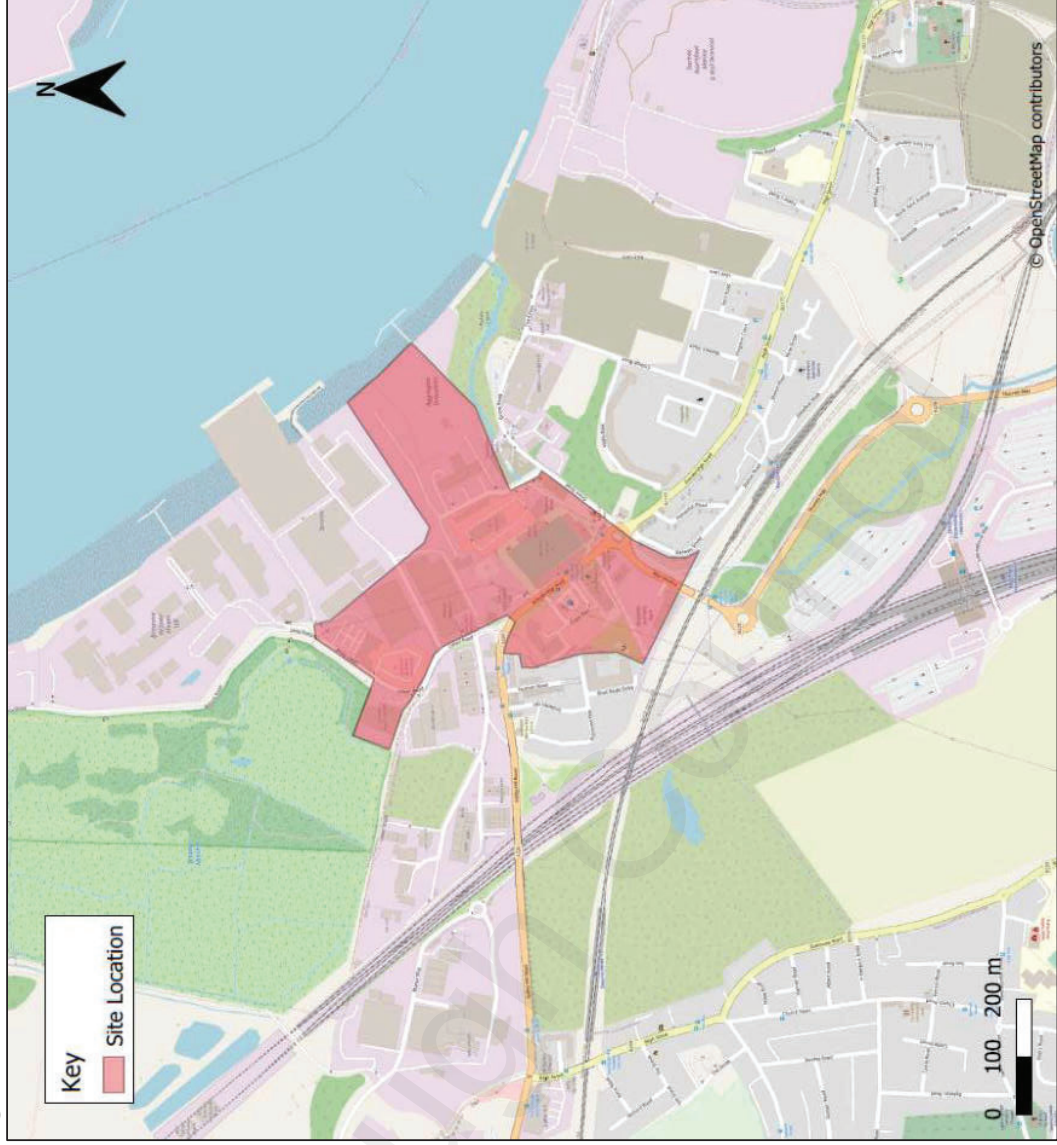
Preamble

- 1.1 Vectos is appointed by Landmarque Properties Limited to provide transport advice in support of the proposed redevelopment of the Ebbsfleet United football ground and surrounding industrial area to provide a residential-led, mixed use scheme.

Site Location

- 1.2 The site is located within Northfleet, 7.7km to the east of Dartford and 6.4km from Junction 1A of the M25. The site covers an area comprising Ebbsfleet United football ground, along with areas of industrial and warehousing use. The A226 (Stonebridge Road) passes through the centre of the site. The site is located within the administrative boundary of Gravesham Borough Council.

Figure 1.1 – Site Location



Outline Development Proposals

- 1.3 The Proposed Development seeks outline planning permission for a mixed-use residential-led scheme consisting of up to 3,500 residential units as well as a hotel, a new football stadium with associated business and leisure facilities, a range of commercial, business and services uses including retail and food and beverage and community uses.
- 1.4 In addition, the Proposed Development will provide associated public realm and hard and soft landscaping, highways works, car parking, access and servicing arrangements, infrastructure and ancillary works and associated works.
- 1.5 The planning application seeks approval of outline parameters for the Proposed Development described above except for the primary means of access into and out of the site via the A226 (to the south), B2175, Grove Road, Galley Hill Road (A226), Northfleet Industrial Estate, Lower Road and Seacon Terminals (as illustrated in the Highway Access Parameter Plan).

Consultation

- 1.6 As part of the extensive consultation prior to submission, pre-application advice was sought from Kent County Council (KCC), via a pre-application request issued to KCC on 22nd June 2022.
- 1.7 A subsequent Transport Scoping Note ('TSN') was issued to KCC for review on 29th June 2022 and is shown in **Appendix A**.
- 1.8 The TSN set out the transport-related matters proposed to be considered as part of the assessment and sought to agree the approach to this TA.
- 1.9 A scoping meeting with KCC was held on the 8th July 2022.
- 1.10 A formal response was received from KCC on 19th July 2022, which is shown in **Appendix B**.
- 1.11 The contents and assessment within this TA are in accordance with the scope agreed with KCC. Supporting Documentation.
- 1.12 This TA should be read in conjunction with the following documents, which will be submitted as part of the planning application:

- Framework Travel Plan (FTP): The FTP provides outline targets and measures to promote sustainable travel behaviour and encourage a positive mode shift towards more sustainable, active modes. The FTP will be updated and kept as a 'live' document to promote sustainable travel, with detailed travel plans based on the FTP being secured via planning condition.
- Framework Construction Logistics Plan (CLP): This document focuses on the impacts of construction and construction vehicles, setting out a list of measures that will reduce the impact of construction on the surrounding area and where possible, identify the relevant mitigation measures required. The CLP will be secured by condition and updated once the

construction methodology is known, being kept as a 'live' document until the construction programme is finished.

- Framework Car Park Management Plan (FCMP): As stated by KCC in the pre-application correspondence, it is likely a Car Parking Management Plan ('CPMP') will be conditioned on any planning consent. The principle of conditioning the CPMP is supported by the Applicant who considers this approach to be reasonable given the amount of multi-use parking to be provided throughout the site.
- Framework Delivery and Servicing Plan (FDSP): This document will provide a list of objectives and measures that will assist with minimising the potential impacts of delivery and servicing activities. The DSP will be secured by condition.

Report Context

1.13 This TA will examine the relevant development planning policy, provide a review of the baseline transport conditions, present the development proposals and trip generation on the surrounding highway network and ultimately determine whether the proposals can be accommodated on the existing network, or whether any highways mitigation is required.

1.14 Following this introduction, this TA is structured as follows:

- Section 2: Policy Context;
- Section 3: Existing Conditions;
- Section 4: Development Proposals;
- Section 5: Trip Generation;
- Section 6: Traffic Assessment Methodology;
- Section 7: Impact Assessment;
- Section 8: Mitigation; and
- Section 9: Conclusions

2 Existing Conditions

Overview

2.1 The section will outline the existing conditions at the site relating to the transport network.

Active Travel

Walking

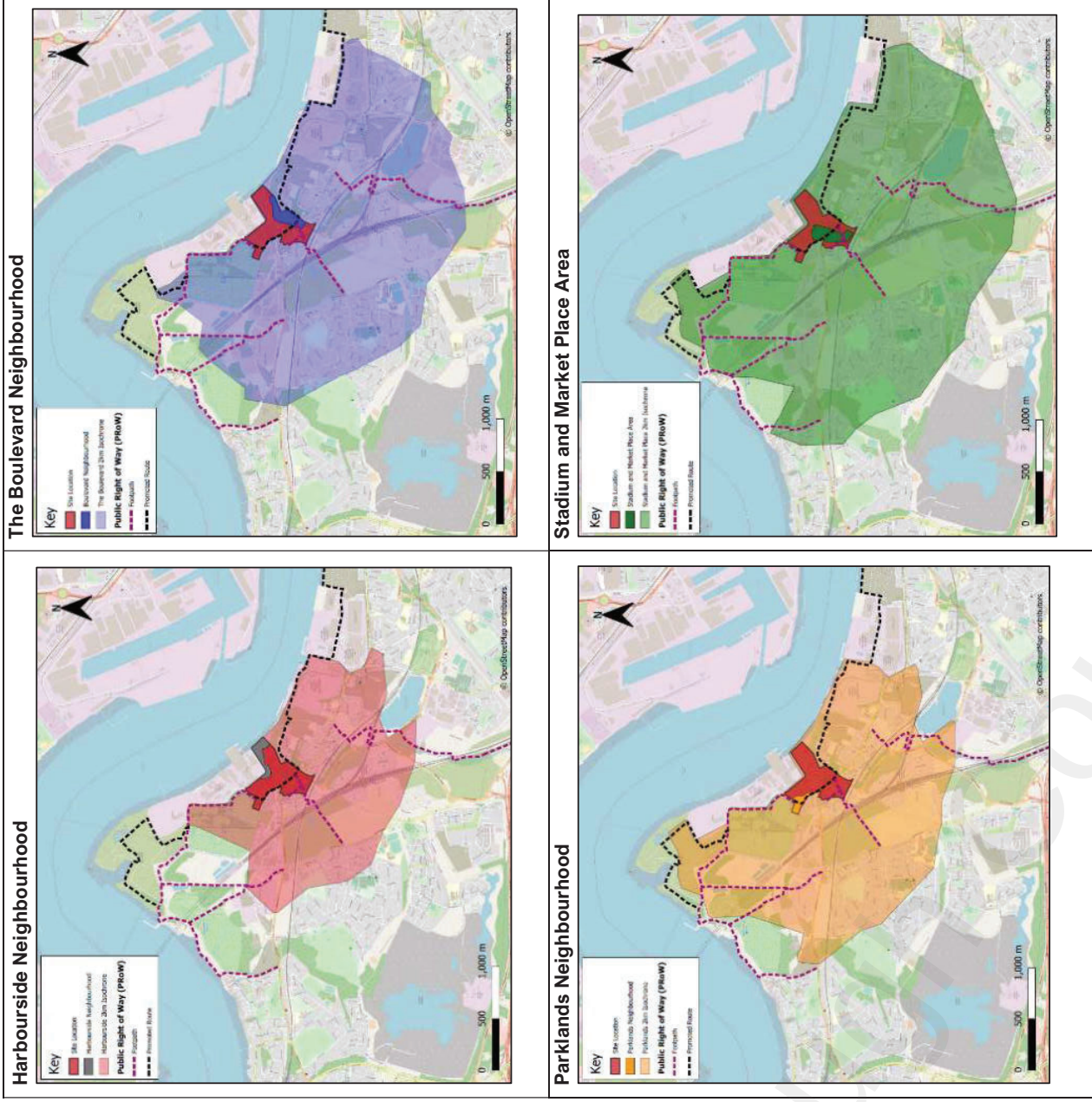
2.2 The transport network surrounding the site has excellent pedestrian and cycling connectivity with several footway and cycleway connections in the local area.

2.3 Footways are present along both sides of the A226 with street lighting provided throughout. The footways are adequately surfaced, with dropped kerbs and tactile paving present at times. These footways continue along the B175 (Stonebridge Road) and the A226 to the north with footway connections also provided from the site to Ebbsfleet International station.

2.4 Further pedestrian routes are also available in the form of PROWs. To the south, a pedestrian footpath provides access to the site via a footway over the railway line towards Swanscombe. An additional promoted PROW route travels through the site with a general north south alignment. This route travels northwest from Gravesend passing through the site and into the marshes.

2.5 These routes and the 2km isochrones associated with each of the character areas across the site are illustrated within **Figure 2.2** overleaf. Full size plans are shown in **Appendix C**.

Figure 2.2: Walking Routes and 2km Isochrones



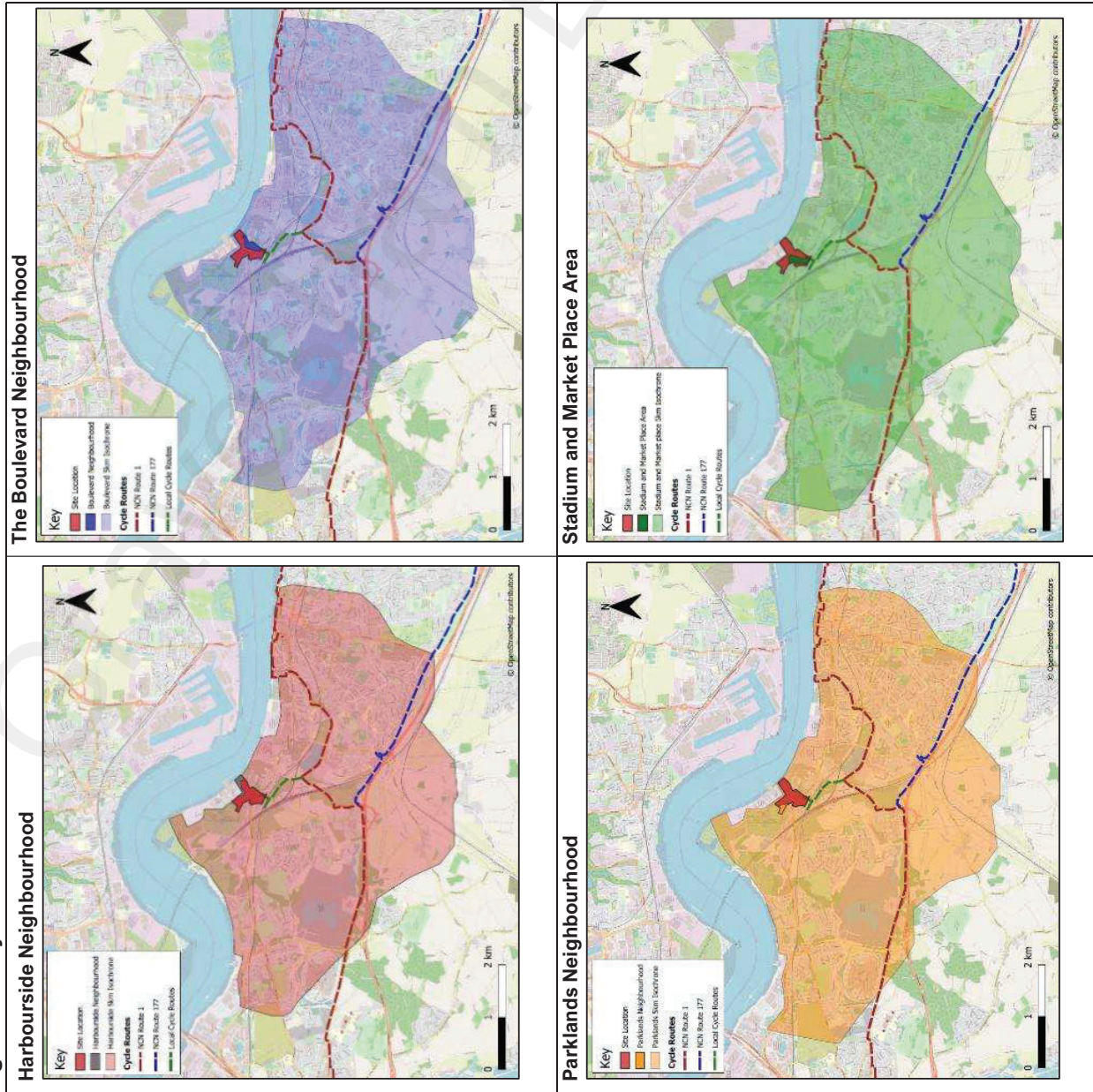
Cycling

2.6 Regarding cycling, there is a local cycle route along the A226 to the south of the site that consists of an off carriageway shared cycleway. This carriageway continues to travel southbound along the A226 (Thames Way) towards Gravesend. At the A226/A2260 junction, 1.2km from the site the local cycle route changes to become NCN Route 1, however the route characteristics remain the same.

2.7 NCN Route 1 is a long-distance cycle route that runs from Kent to Essex passing through central London. In closer proximity to the site, the route provides access to Gravesend to the east and Dartford to the west. Further to the south, NCN Route 1 provides access to NCN Route 177. **Figure**

2.3 overleaf highlights these key cycle routes along with the 5km isochrone associated with each of the key character areas across the site. Full size plans are shown in **Appendix D**.

Figure 2.3: Cycle Routes and 5km Isochrones



Existing Offsite Walking / Cycling Assessment

- 2.8 A desk-based audit has been completed to review the existing walking and cycling routes that are not located within the site boundary. Routes within the site boundary have not been included within this assessment as the proposals for this development involve the complete redevelopment of the area and as such an assessment of these routes would not be beneficial or representative of the future site.
- 2.9 It is also noted that The Green Corridors and KCC Active Travel teams are considering / proposing several walking/cycling schemes across the Ebbsfleet / Gravesham area. These schemes include:
- Improvements to the cycle route along Thames Way;
 - A feasibility study looking to improve the Fastrack service and the walking/cycling facilities along Stonebridge Road between Lower Road and Grove Road. This is the section of Grove Road through the proposed site.
 - A feasibility study looking to improve the walking/cycling connections along the A226 between Craylands Land and Lower Road.
 - Improvements to Northfleet High Street
- 2.10 The routes that have been assessed are from the site boundary to the following locations:
- Ebbsfleet International Station
 - Northfleet Railway Station
 - Swanscombe Station
- 2.11 The assessment of these routes is shown in **Appendix E**.
- ### Public Transport
- 2.12 The site has excellent connectivity to the surrounding public transport network and has access to regular bus and rail services within a few minutes' walk of any area within the proposed red line boundary.
- ### Bus Services
- 2.13 There are several bus stops within walking distance of the site, including one stop within the site at the Ebbsfleet United Football Ground. A second bus stop, Taunton Road is located along the A226 approximately 200m north of the Ebbsfleet United Football Ground. Both bus stops provide raised kerbs and timetables are present.
- 2.14 An overview of the bus services servicing these bus stops is presented within **Table 2.1**.

Table 2.1: Bus Routes and Frequencies

Stop Name	Route Number	Route	Approximate Frequency		
			Weekday	Saturday	Sunday
Ebbsfleet Football Ground Bus Stop	AZ Fastrack	Dartford – Gravesend	5 per day	5 per day	5 per day
Ebbsfleet Football Ground Bus Stop	B Fastrack	Temple Hill – Gravesend	5 per hour	5 per hour	3 per hour
Ebbsfleet Football Ground Bus Stop	34	New Barn – Wilmington	1 per day (School Bus)	No Service	No Service
Ebbsfleet Football Ground Bus Stop	3	Gravesend – Wilmington Grammar School	1 per day (School Bus)	No Service	No Service
Ebbsfleet Football Ground Bus Stop	306	Sevenoaks – Bluewater	1 morning Service	5 evening services	No Service
Ebbsfleet Football Ground Bus Stop	308	Gravesend – Sevenoaks	1 per hour	1.5 per hour	No Service
Taunton Road Bus Stop	480	Dartford – Riverview Park	3 per hour	3 per hour	2 per hour
Taunton Road Bus Stop	490	Dartford – Gravesend	3 per hour	3 per hour	2 per hour

2.15 **Table 2.1** highlights the range of bus services available from the site, indicating that the site and its users would be able to travel using buses thus minimising the need to travel using private vehicles.

Rail Services

2.16 The closest railway station to the site is Northfleet Rail Station which is located approximately 450m to the southeast of the site. This station can also be reached using the 480 and 490 bus services which stop at the Hive bus stop situated approximately 240m from Northfleet Station on the B2175 High Street. Rail services from Northfleet travel to destinations including London Charing Cross and Luton.

2.17 Ebbsfleet International Station is also located in close proximity to the site, approximately 800m to the south of Ebbsfleet United Football Club. Ebbsfleet International Station has provision for approximately 3,000 car parking spaces and approximately 100 cycle parking spaces. London St Pancras can be reached in 20 minutes from Ebbsfleet International.

2.18 **Table 2.2** presents the rail services operating at both Northfleet Station and Ebbsfleet International, along with their frequencies.

Table 2.2: Rail Routes and Frequencies

Station	Operator	Route	Approximate Frequency		
			Weekday	Saturday	Sunday
Ebbsfleet International	Southeastern	St Pancras International – Ebbsfleet International – Ramsgate	2 per hour	2 per hour	2 per hour
Ebbsfleet International	Southeastern	St Pancras International – Ebbsfleet International – Maidstone West	3 per day	No Service	No Service
Ebbsfleet International	Southeastern	St Pancras International – Ebbsfleet International – Gravesend	2 per hour	1 per hour	1 per hour
Northfleet Station	Southeastern	St Pancras International – Northfleet – Rainham	2 per hour	2 per hour	2 per hour
Northfleet Station	Southeastern	London Charing Cross – Northfleet – Gravesend	2 per hour	2 per hour	2 per hour
Northfleet Station	Thameslink	Luton – Northfleet – Rainham	2 per hour	2 per hour	2 per hour

2.19 Considering the results presented in **Table 2.3**, there are a wide range of rail services available to those using the site. These services operate at a high frequency and provide access to several locations.

Local Highway Network

2.20 This section describes the existing highway network relevant to the proposed site.

A226

2.21 The A226 has a general east-west alignment travelling between Dartford and Gravesend. The A226 comprises a two-way single carriageway with sections operating at both 30mph and 40mph. Throughout pedestrian footways are present on at least one side of the carriageway along with street lighting. The A226 runs through the site, along this section there is a ghost island right turn bay adjacent to the football ground, along with bus stops, pedestrian footways and street lighting.

2.22 To the west of the site the A226 continues for approximately 3km until it reaches the A206 / A226 / B255 roundabout junction. The A226 continues westbound from the roundabout towards Dartford. To the southeast the A226 continues for 3.7km until it reaches the Thames Way/London Road priority junction.

A206

2.23 The A206 has a general east west alignment travelling between the A206 / A226 / B255 roundabout and the M25 Junction 1A. Throughout this is a dual carriageway that is subject to a 40mph speed limit. The A206 has a pedestrian footway along at least one side of the carriageway throughout along

with an in-carriageway cycle lane for extended sections. To the west the A206 provides access to Junction 1A of the M25, to the east it provides access to the A206 / A226 / B255 roundabout

M25

2.24 The M25 is part of the strategic road network and provides an orbital route around London. The M25 also provides access to a number of key national routes including the M1 and M40 and its most immediate point of access is approximately 6.4km or an 11-minute drive time from the site.

A2206

2.25 1.1km to the southwest of the site, the A226 also provides a connection to the A2206. The A2206 comprises a two-way single carriageway road with sections operating at 40mph and 50mph. There is a shared cycle/footway travelling along the northern side of the carriageway, street lighting is present throughout. The A2206 provides a strategic link to the A2 corridor further south.

A2

2.26 The A2 has an east west alignment and provides a strategic link through Kent to both the east and west extending east to Dover and west beyond Kent into London. The A2 has multilane carriageways operating in both directions. This road operates at the national speed limit. The A2 is accessed and egressed using the most relevant slip roads, and its most immediate point of access is approximately 2.5km or a 4-minute drive time from the site.

Road Safety Review

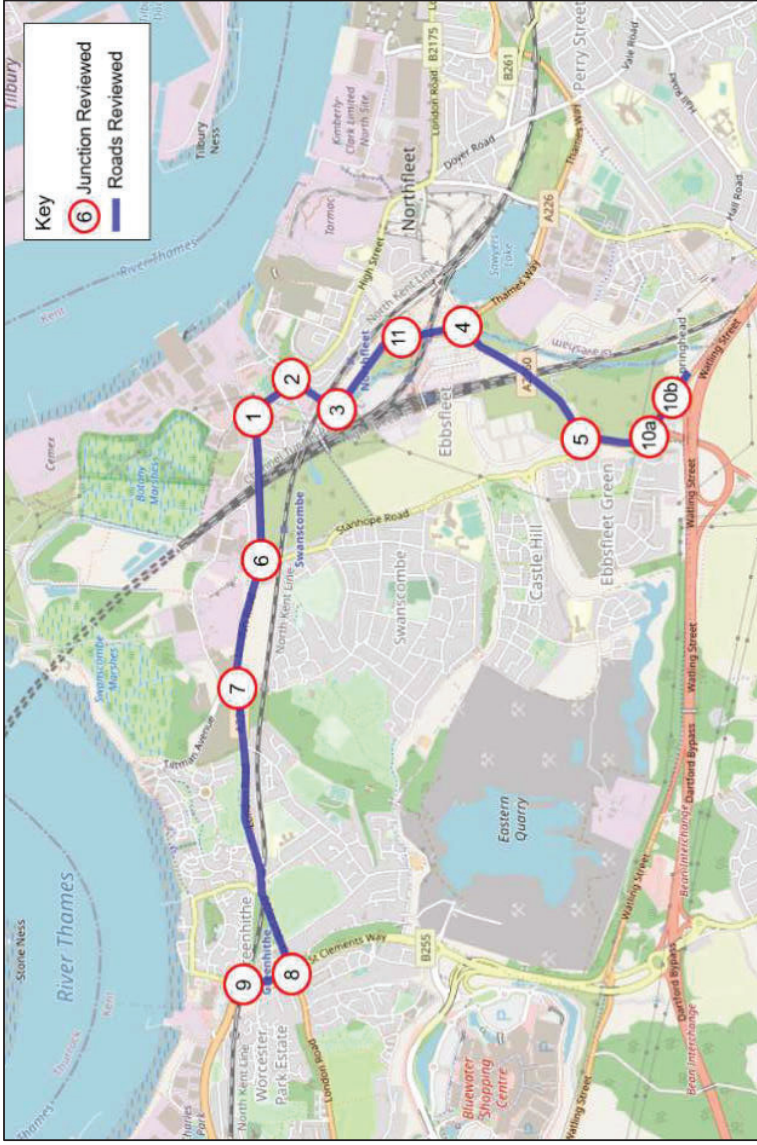
2.27 Paragraph: 015 Reference ID: 42-015-20140306 of the National Policy Planning Guidance recommends that the following should be undertaken:

“an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five-year period if the proposed site has been identified as within a high accident area.”

2.28 Whilst there is no suggestion that the local highway network is subject to an abnormally high accident rate, the personal injury accidents over the past five years have been reviewed using data provided by CrashMap for the period 2017-2022.

2.29 CrashMap has been used as the accident data requested from KCC was received on 27th September 2022, which left insufficient time for review. However, the CrashMap and KCC data is presented within **Appendix F**. The KCC data will be reviewed in a supplementary Transport Assessment.

Figure 2.4: Road Safety Review Area and Junctions



2.30

Each junction has been reviewed individually to ascertain if there is any design flaw that can be attributed to the accidents occurring. Across the extent of assessment (shown in **Figure 2.4**), there were a total of 62 accidents reported across the five-year period. 48 of these incidents were classed as slight and 14 were classed as serious. The majority of these incidents (44) occurred at the junctions, with the remainder occurring on links between junctions. **Table 2.3** shows the breakdown of when incidents across the assessment area occurred and their severity.

Table 2.3: Accident Data

Severity of Incident	Number of Accidents					
	2017	2018	2019	2020	2021	2022
Junctions						
Slight	10	7	9	7	3	0
Serious	3	2	1	1	1	0
Fatal	0	0	0	0	0	0
Links						
Slight	6	2	1	2	1	0
Serious	1	1	1	3	0	0
Fatal	0	0	0	0	0	0
Total						
Slight	16	9	10	9	4	0
Serious	4	3	2	4	1	0
Fatal	0	0	0	0	0	0
Total	20	12	12	13	5	0

Summary

- 2.31

The site is well located to benefit from public and active travel. A number of PROWs and cycle lanes are present within the vicinity of the site suggesting that the site is easily accessible for both pedestrians and cyclists.
- 2.32

Furthermore, a wide range of both bus and rail services operating at a high frequency are accessible in close proximity to the site, again, suggesting that the site is easily accessible through the use of public transport modes. The site is also located in close proximity to major multilane carriageways that provide further means of access by car or public transport (bus) to the wider area, and is therefore considered to address the needs of people with disabilities and reduced mobility in relation to all modes of transport.
- 2.33

The road safety review determined that across the assessment area there were a total of 62 incidents between 2017 and 2022. These comprised of 48 slight incidents and 14 serious incidents. There were no fatal incidents across the accident assessment area.

3 Planning Policy

- 3.1

This section of the report considers the relevant current and emerging land use and transport planning policies in relation to the development proposals.

National Policy

National Planning Policy Framework (NPPF) (July 2021)

- 3.2

This section of the report considers the relevant current and emerging land use and transport planning policies in relation to the development proposals.
- 3.3

The National Planning Policy Framework (NPPF) was published by the Ministry of Housing, Communities and Local Government in July 2021. The NPPF sets out the Government’s planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced.
- 3.4

The NPPF sets out the Government’s planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced.
- 3.5

Paragraph 10 states that to ensure that sustainable development is pursued in a positive way, at the heart of the framework is a ‘presumption in favour of sustainable development’ and continues in paragraph 11 to state that plans and decisions should apply a presumption in favour of sustainable development.
- 3.6

In section 9 of the policy framework, paragraph 102 states that with regards to promoting sustainable transport issues should be considered from the earliest stages of plan-making and development proposals, so that:
 - the potential impacts of development on transport networks can be addressed;
 - opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
 - opportunities to promote walking, cycling and public transport use are identified and pursued;
 - the environmental impacts of traffic and transport infrastructure can be identified, assessed, and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
 - patterns of movement, streets, parking, and other transport considerations are integral to the design of schemes and contribute to making high quality places.
- 3.7

Within section 9, Paragraph 104 states that planning policies should:

“support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities”

3.8 Paragraph 108 states that in assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all users; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

3.9 Paragraph 109 states that:

“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety or the residual cumulative impacts on the road network would be severe.”

3.10 Paragraph 110 states that within this context, applications for development should:

- give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- create places that are safe, secure, and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- allow for the efficient delivery of goods, and access by service and emergency vehicles; and;
- be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible, and convenient location.

3.11 Paragraph 111 states:

“All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.”

Regional Policy

Kent Local Transport Plan 4: Delivering Growth without Gridlock (2016-2031)

3.12 This is the Local Transport Plan for the County of Kent covering the years 2016-2031. This document has 5 main outcomes for which policy is stated.

“Outcome 1: Economic growth and minimised congestion – **Policy:** Deliver resilient transport infrastructure and schemes that reduce congestion and improve journey time reliability to enable economic growth and appropriate development, meeting demand from a growing population

Outcome 2: Affordable and accessible door-to-door journeys – **Policy:** Promote affordable, accessible and connected transport to enable access for all to jobs, education, health and other services.

Outcome 3: Safer travel – **Policy:** Provide a safer road, footway and cycleway network to reduce the likelihood of casualties and encourage other transport providers to improve safety on their networks.

Outcome 4: Enhanced Environment – **Policy:** Deliver schemes to reduce the environmental footprint of transport, and enhance the historic and natural environment.

Outcome 5: Better health and wellbeing – **Policy:** Provide and promote active travel choices for all members of the community to encourage good health and wellbeing, and implement measures to improve local air quality.”

3.13 Within a section focussing on enabling growth in the Thames Estuary area, in which our site is located, there is a focus on prioritising the transport improvements in the area that are required to deliver the major commercial and residential developments that are set to be planned over 10 – 15 years. This area’s importance was acknowledged by the creation of the EDC by the government. It also states transport improvements required to deliver growth in the Thames Estuary Area:

- “A2 Bean and Ebbsfleet junctions upgrade;
- M2 Junction 5 upgrade;
- Increased high speed rail services to Ebbsfleet;
- Crossrail extension to Dartford and Ebbsfleet;
- Expanded Fastrack bus network”

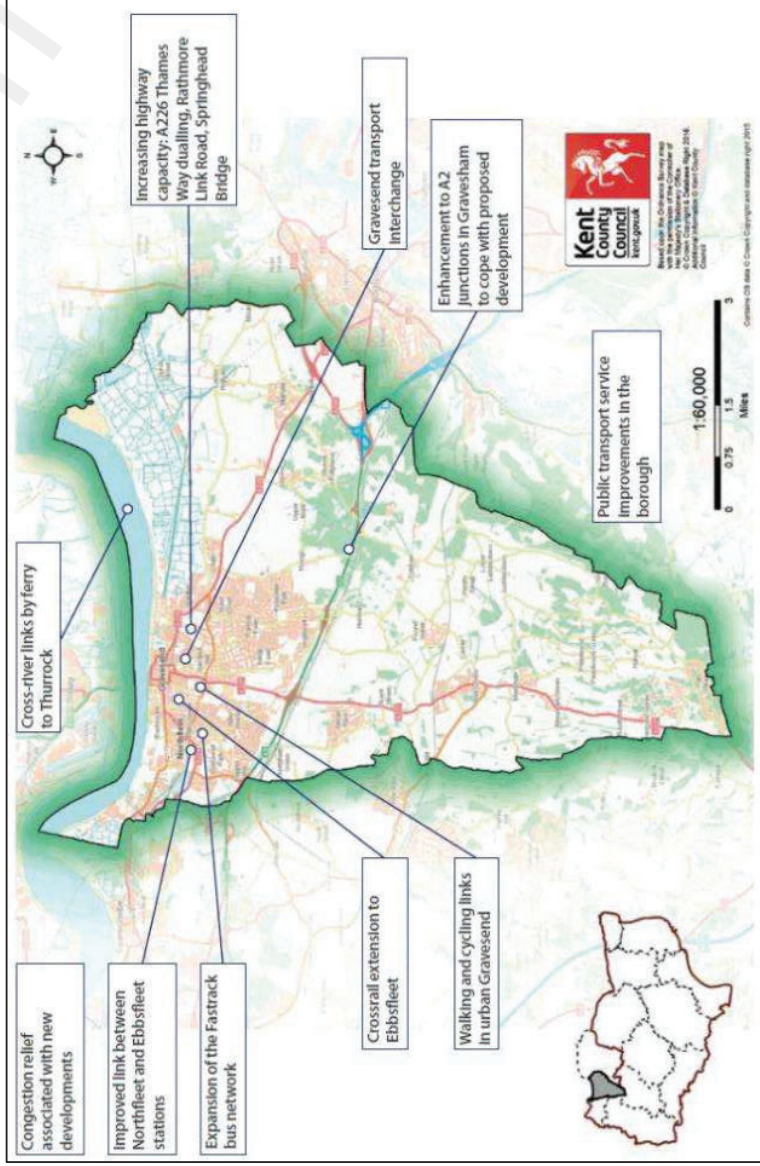
3.14 Furthermore, within the section focusing on Gravesham a number of more local transport priorities have been highlighted

- “Cross river links by ferry to Thurrock
- Increasing highway capacity: A226 Thames Way dualling, Rathmore Link Road, Springhead Bridge

- Gravesend transport interchange
- Enhancement to A2 junctions in Gravesham to cope with proposed development
- Public transport service improvements in the borough
- Walking and cycling links in urban Gravesend
- Crossrail extension to Ebbsfleet
- Expansion of the Fastrack bus network
- Improved link between Northfleet and Ebbsfleet stations
- Congestion relief associated with new developments”

3.15 The above transport priorities are presented within a map on page 35 of the LTP4, this map is presented within **Figure 3.1** below.

Figure 3.1: Transport Priorities for Gravesham



3.16 Key points to apply from this policy through the proposed development are to deliver resilient transport infrastructure that offers capacity for all modes. Furthermore, to ensure the provision of high-quality walking and cycling infrastructure both to improve active travel offering and to reduce potential safety issues that can occur from retro-fitted schemes.

Local Policy

Gravesham Local Plan (2014)

- 3.17 The Gravesham Local Plan sets out the planning policies that will be used to guide development within Gravesham until March 2028. All planning applications associated with developments in the borough will need to adhere to the policies introduced within this local plan.
- 3.18 The Gravesham Local Plan outlines how GBC will ensure that:
- ‘new development is mixed use, is located in areas with best access to services and facilities which minimise the need to travel, particularly by car and minimises impacts on the road network; support is given to alternatives to car based transport such as improved bus, train, cycling, walking and river transport provision and improved transport hubs in Gravesend town centre and at Ebbsfleet; commercial wharves and other sites needed to support the River Thames as a working waterway are retained or appropriate alternative provision is available or will be provided where rationalisation is proposed to allow regeneration to take place; and out-commuting is reduced.’*
- 3.19 Furthermore, within the Gravesham Local Plan, Strategic Objective 7 aims to:
- ‘Enhance the Borough’s public transport network to serve existing and new neighbourhoods and communities in Gravesend, Northfleet and Ebbsfleet.’*
- 3.20 Strategic Objective 15 aims to:
- ‘Increase accessibility, minimise congestion, and improve air quality through the improvised provision of local public transport and the provision of local jobs and services.’*
- 3.21 The Local Plan also introduces a number of key policies, with regard to transport at the site:
- 3.22 Policy CS11 ‘Transport’ states that:
- “New developments should mitigate their impact on the highway and public transport networks as required. As appropriate, transport assessments and travel plans should be provided and implemented to ensure the delivery of travel choice and sustainable opportunities for travel. Transport assessment work is required to be undertaken in accordance with national and local policy guidance, and to identify detailed highway and public transport network requirements and management arising from the development.
 - Sufficient parking in new development will be provided in accordance with adopted parking standards which will reflect the availability of alternative means of transport and accessibility to services and facilities.
 - The Council will support proposals which improve public transport provision and facilities in the Borough. In particular, it will:
 - seek to maintain and expand, where justified, segregation lanes for Fastrack and • existing bus priority measures elsewhere;

- require Key Sites to include provision for buses;
 - support the development of transport hubs at Gravesend Town Centre and Ebbsfleet (in Dartford Borough Council area) to provide high quality interchange facilities between bus, rail, walking and cycling; and
 - Ensure an adequate supply of public car parking.
- The Council will seek improvements to walking and cycling facilities and networks in the Borough including provision in new development as appropriate. These should provide improved access to Gravesend Town Centre and Ebbsfleet and to other services and facilities in the Borough. In particular, the Council will seek the provision of pedestrian and cycle links between Northfleet and Ebbsfleet stations and along the River Thames, as part of the proposed Thames Estuary Path.
- Land required for the possible future extension of Crossrail and to protect the High Speed 1 (HS1) railway is safeguarded on the Policies Map and proposals that would prejudice these will be refused.
- The Council will support proposals which improve the efficiency of freight transport and provide opportunities for alternatives to road transport where possible. The Council will safeguard wharves, as shown on the Policies Map, subject to the provisions of paragraph 5.1.36 of Policy CS07 (Economy, Employment and Skills).
- The Council will support proposals which facilitate the use of the River Thames for passenger transport and enable cruise liners to visit the Borough.”

Ebbsfleet Sustainable Travel Strategy (2020)

- 3.23 The Ebbsfleet Development Corporation have set out a prescribed design guide which presents a methodology again which all development within Ebbsfleet should align with. Whilst not strictly enforceable planning policy, it forms a very useful reference point against which development plan proposals can be assessed.
- 3.24 A key consideration for transport is the Design Guide set out within the Sustainable Travel Strategy. The overarching aims of the STS are the promotion and operation of affordable and attractive sustainable travel options. Through the inclusion of convenient sustainable travel solutions, the reliance on the private car can be reduced and, as a result, the need for private single use vehicle parking can also be reduced, making space available for a wider provision of homes, employment and leisure facilities.
- 3.25 The basis for the STS and the masterplan requirements for this site is predicated on the assumption that 40% of all local journeys are to be made on foot, by bicycle or on public transport. It is therefore key that the infrastructure and facilities are the starting point for creating a new neighbourhood.
- 3.26 There are five sequential steps set out by the STS key to providing and enabling journeys on foot, by bicycle and on public transport ahead of private car use. These are:

- Providing the facilities
- Align Parking Provision
- Locate Discretely
- Enable Vehicle Charging
- Proactively Manage

Parking Standards

Kent Design Guide, Movement & Connectivity – Parking Standards (2021)

- 3.27 The most recent car parking standards for Kent are presented within the Kent Design Guide, Movement & Connectivity – Parking Standards. These standards supersede the parking standards presented within the Kent Vehicle Parking Standards (SPG4).
- 3.28 Specifically, within the 2021 Kent Design Guide parking standards for ‘Edge of Town’ have been consulted as this location most accurately represents the proposed development. The residential parking standards are presented within **Table 3.1**.

Table 3.1: Kent Residential Parking Standards (2021)

Number of Rooms	Car Parking
1 bedroom flat	1 space per dwelling
2 and 3 bedrooms	1 space per dwelling
4 or more bedrooms	2 spaces per dwelling

- 3.29 The Kent non-residential vehicle and residential and non-residential bicycle parking standards are also set out within the Kent Design Guide, Movement & Connectivity Parking Standards (2021). The standards relevant to the site are presented below:

Table 3.2: Kent Residential Cycle Parking Standards (2021)

Type of Residence	Cycle Parking
Houses	1 space per bedroom
Flats & Maisonettes	1 space per unit
Sheltered Accommodation	1 space per 5 units
	1. Cycle parking provision should normally be provided within the curtilage of the residential dwelling. Where a garage is provided it should be of a suitable size to accommodate the required cycle parking provision. 2. Parking provision should be provided as a secure communal facility where a suitable alternative is not available.

Table 3.3: Kent Non-Residential Car and Cycle Parking Standards (2021)

Use Class	Subcategory	Car Parking	Cycle Parking	
			Short Stay	Long Stay
A1	Non-food retail	1 space per 25sqm	Over 5000sqm	
A3	Restaurants and Cafes	1 space per 2 employees, and 1 space per 6sqm for customers	1 space per 10 seats	1 space per 20 seats
B1	Offices over 2500sqm	1 space per 30sqm	1 space per 1000sqm	1 space per 200sqm
C1	Hotels/motels/guest houses	1 space per 2 employees, 1 space per bedroom (guests/visitors)	1 space per 10 beds	
D2	Stadia	1 space per 15 seats	1 space per 300 seats	1 space per 300 seats
	Leisure Centre	1 space per 22sqm	1 space per 10 participants + 10%	1 space per 10 staff

Table 3.4: Kent Blue Badge Parking (2021)

Subcategory	Car Parking
For employees and Visitors to Business Premises (Land Use Classes including B1)	
Car parks with up to 40 spaces	2 designated spaces + 1 space of sufficient size but not specifically designed.
Car parks with 40 to 200 spaces	4 designated spaces or 5% of the total capacity, whichever is greater
Car parks with greater than 200 spaces	6 designated spaces + 2% of the total capacity
For Shopping, Recreation and Leisure (Land Use Classes A1, A3, C1 & D2)	
Car parks with up to 40 spaces	1 designated space + 2 spaces of sufficient size but not specifically designed.
Car parks with 40 to 200 spaces	3 designated spaces or 6% of the total capacity, whichever is greater
Car parks with greater than 200 spaces	4 designated spaces + 4% of the total capacity
Notes 1. The provision of parking spaces for the mobility impaired will be part of the overall level of parking provision for the development as opposed to an additional requirement 2. The use of spaces allocated for the mobility impaired should be regularly monitored to ensure that the allocation is correct and that the system is working well.	

Table 3.5: Motorcycle Parking Standards (2021)

Use Class	Motorcycle Parking
Non-Residential Developments	1 space + 1 space for every 20 car parking spaces provided

3.30 Blue Badge spaces would be conveniently located, within walking distance and clearly signed across the site. Furthermore, disabled parking bays would be at least 6.6m long and 2.4m wide to ensure that both drivers and passengers are able to enter and exit the vehicle safely.

Table 3.6: Electric Vehicle Charging (2021)

Subcategory	Residential Uses	Car Parking
Dwellings with On-Plot Parking	1 Active charging point per dwelling minimum output 7kW	
Dwellings with unallocated communal parking	10% Active Charging Spaces and 100% passive charging spaces	
Non-Residential Uses		
All Uses with Off-Street Parking	10% Active Charging Spaces and 100% Passive Charging Spaces	

Summary

3.31 A review of the local, regional and national policy relevant to the site has outlined the importance of ensuring that the proposed development is progressive regarding the incorporation of sustainable transport infrastructure across the development.

4 Development Proposals

4.1 This section provides a description of the development proposals including active travel provision, access strategies for all modes and parking provision for different users.

Development Proposals

4.2 The planning application is being made for:

“Outline planning application with all matters reserved, except for the primary means of access, for a mixed-use redevelopment involving the demolition of existing buildings and structures including site preparation / remediation works, and the development of residential units (Use Class C3), Use Class E floorspace including floorspace for retail, food and beverage, office floorspace and flexible Class E floorspace, floorspace for a new multi-use stadium with associated business and leisure facilities, floorspace for a hotel (Use Class C1), floorspace for community uses (Use Class F2) and other sui generis uses, delivery of open space and the realignment of the A226 Galley Hill Road / Stonebridge Road with hard / soft landscaping, car and cycle parking, highways works, infrastructure works, ancillary and associated works.”

4.3 The Proposed Development will comprise:

- Site clearance including the existing industrial uses on-site and remediation of brownfield land as relevant;
- Realignment of the A226 Galley Hill Road / Stonebridge Road;
- Up to 3,500 residential units (Use Class C3);
- A new multi-use stadium (with associated facilities) with up to 8,000 seats and up to 15,000m2 Gross External Area (GEA) (Sui Generis Use);
- Up to 22,500m2 (GEA) Use Class E(a) retail floorspace;
- Up to 9,500m2 (GEA) Use Class E(b) food and beverage floorspace;
- Up to 18,000m2 (GEA) Use Class E(g) office floorspace;
- Up to 5,000m2 (GEA) ‘other’ flexible use, comprising local services, indoor sport, recreation and fitness, medical or health services, crèche or nursery, etc.) (Use Class E(c, d, e, f));
- Up to 4,000m2 (GEA) (Use Class F2) local community use;
- Up to 300 room hotel (Use Class C1), comprising up to 20,000m2 (GEA) floorspace;
- Car, cycle parking and e-charging facilities; and
- Provision of landscaping, public realm and associated works.

4.4 It should be noted that the retail area outlined above can’t be brought forward as a larger supermarket. This is because this type of development would have implications regarding to the transport, for example operational trip generation and parking would be impacted.

Quantum of Development

4.5 The quantum of development is shown in **Table 4.1**.

Table 4.1: Maximum Quantum of Development

Land Use	Use Class	GEA (m2) / Units
Residential	C3	3,500 units
Hotel	C1	20,000m2 / 300 bed
Stadium and Associated Facilities	Sui Generis	15,000sqm
Retail (excluding Supermarket)	E(a)	22,500sqm
Food and Beverage	E(b)	9,500sqm
Office	E(g)	18,000sqm
Non-residential Flexible Use	E(c, d, e, f)	5,000sqm
Local Community Use	F2	4,000sqm

Site Layout

4.6 The proposed site is an irregular shape and covers an area of 19Ha (45 acres). The Proposed Development comprises nineteen development plots (‘Plots’), i.e. a defined extent of developable area of a land use type, with access and areas of public realm located throughout the site.

4.7 The Proposed Development has been designed as a series of interconnected neighbourhoods, with a football stadium and retail podium forming the core, tying together the neighbourhood elements of the Proposed Development.

4.8 A podium level is proposed across the central area of the site (beneath the stadium and retail village) in order to allow for movement and circulation through the site, including to facilitate the movement of Heavy Goods Vehicles through the site to the existing industrial uses to the north of the site. A podium is also proposed at all other development plots, primarily for the purpose of car parking provision.

Neighbourhood Character Areas

4.9 Because of its extensive size and the goals of the development the site has been broken down into five Character Areas. These areas are presented within **Figure 4.1**.

Figure 4.1: Proposed Site Character Areas



There are five Neighbourhood Character Areas proposed as part of the Proposed Development, as illustrated in **Figure 4.1**, which are defined in regard to their land uses, design and character. These areas allow for each neighbourhood to establish its own identity while retaining its overall connection to the Proposed Development identity. The public realm ties together these neighbouring parts into one cohesive development. The five Neighbourhood Character Areas are as follows:

- **Marketplace Neighbourhood Character Area:** This neighbourhood marks the main arrival point of the Proposed Development and contains a meandering podium route along which two levels of flexible non-residential land uses and local community uses;
- **Stadium Neighbourhood Character Area:** The stadium lies at the heart of the Proposed Development, bringing the past and future of the site together in one space. This 8,000 capacity stadium contains the functions of car parking, non-residential use and the football pitch;
- **Boulevard Neighbourhood Character Area:** This neighbourhood creates a strong organisational boundary comprising non-residential land uses, a hotel and residential use;
- **Riverside Neighbourhood Character Area:** This neighbourhood creates the connection between the Proposed Development and the River Thames Harbour. The area comprises of both residential and non-residential land uses; and
- **Parkland Neighbourhood Character Area:** This neighbourhood has several ground floor uses including non-residential uses, local community uses, and residential use.

4.11 Figure 4.2 shows the illustrative masterplan.

Figure 4.2: Proposed Site Layout (Illustrative Masterplan)



Road Layout

- 4.12 Due to the scale of the site and its geographical location there are a number of existing road links running through the site as well as the formation of new road links. The latest site layout is presented within **Figure 4.3**.
- 4.13 It is proposed that the A226 is realigned further to the west, and that a podium is constructed over this section of the A226. The realignment of the A226 will also require the Galley Hill Road/Lower Road junction to be updated to introduce an additional arm to accommodate the A226. This would become a three are signalised junction. A segregated Fastrack route would be introduced through the site along with a new dedicated access road for the Seacon site.

Figure 4.3: Proposed Road Network Layout



A226

- 4.14 The main strategic route through the site is along the A226 which as noted within section 2, travels between Darford and Gravesend. In order to achieve the goals of the development and create a space that is safe and inviting it is proposed that Stonebridge Road (A226) is realigned.
- 4.15 In these proposals, the A226 would be realigned to the west of its current location, connecting Thames Way (A226) to Galley Hill Road (A226). At the point at which the realigned road reaches Galley Hill Road it is proposed that a new arm is added to the existing signalised junction, this would allow vehicles to continue along Galley Hill Road or across onto Lower Road. This realignment would remove the need for vehicles to travel through the centre of the site, thus reducing its impact on site users.

- 4.16 In order to further reduce the impact of the A226 on the site it is proposed that a podium will be constructed over the carriageway. This podium would screen the road from the site acting to further reduce the impact of the road on the development and its users.

- 4.17 The realigned road would be 7.3m wide with a 3m wide shared use footway along both sides of the carriageway. The proposed realignment of the A226 is shown in **Figure 4.3**.

Seacon / Glencore existing Site Access

- 4.18 In order to ensure that access to the Seacon site to the north is maintained it is proposed that a new access road is introduced through the site. This road would be accessed from the Gally Hill Road/Lower Road junction and would have priority over Lower Road.

- 4.19 This route would be designed to accommodate the movement of HGV vehicles, and as such the geometries of the road will be in accordance with relevant requirements for vehicles of this size.

Fastrack Route

- 4.20 A dedicated Fastrack route would be provided through the site, traveling with a general north south alignment between the Gally Hill Road (A226) and Grove Road. The Fastrack route through the site will be segregated from other road users, including commercial bus services who would not be permitted to use then dedicated Fastrack route. Where possible, the Fastrack route will benefit from having priority at junctions.

- 4.21 The route would travel northeast along the proposed Seacon Access Road where there would be a segregated bus lane dedicated to the Fastrack service. Buses would then turn right onto a dedicated bus lane that would be 6.75m wide, this route would continue through the site, onto The Boulevard. Buses would then re-join the existing road network at the Grove Road/B2175 junction.

- 4.22 Two bus stops would also be located within the site boundary along the proposed bus corridor. The first of these bus stops would be located adjacent to the proposed mobility hub, the second would be located along The Boulevard, located within the Boulevard Neighbourhood.

- 4.23 The demand for the Fastrack service through the site has been predicted using mode share information acquired from TRICS for the residential aspect of the development and Census data for the commercial aspect of the development. **Table 4.2** presents the bus user mode share for both the residential and commercial aspects of the development.

Table 4.2: Forecast Bus Mode Share

Use Class	Bus Mode Share
Residential	9.0%
Non-Residential	6%

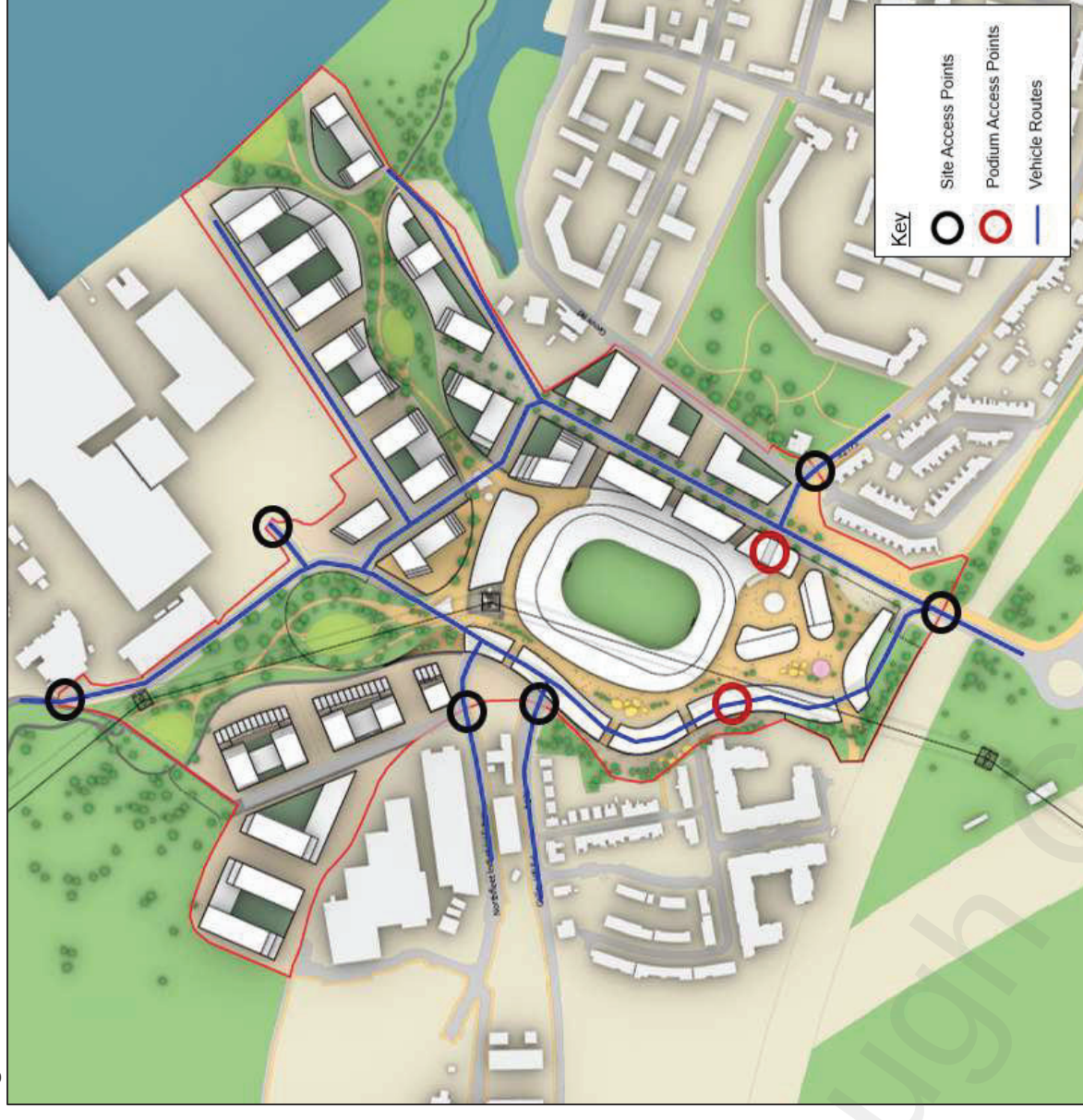
Vehicle Access

4.24 The site benefits from six vehicular site access points:

- A226 Thames Way – To the southwest the site is accessible from Thames Way (A226). This is a two-way single carriageway road. In line with the proposals above soon after this access point the A226 will be realigned to the west of its existing location. Traffic will also be able to travel between this access and the B2175 access using the existing Thames Way carriageway.
- Lower Road/Galley Hill Road Junction – To the east this junction provides access to the proposed Season Access road that would travel in an easterly then northerly direction towards the northeast corner of the site. This access would benefit from a segregated bus lane dedicated to the Fastrack Service.
- B2175 (Stonebridge Road) – To the south, the site is accessible from the B2175. This is a two-way single carriageway road with a 30mph speed limit. This access will be used to those looking to access the site, whilst also acting as a through route between the B2175 and A226. Furthermore, this access may be utilised by the Fastrack service, however it is more likely that Fastrack services will instead be routed north along Grove Road and into the neighbouring Bellway Scheme.
- Season Site Access – It is proposed that an access to the Season site will be located along the sites interior access route which travels through the site from the Galley Hill Road junction towards Botany Road to the northeast of the site. This access will form a priority junction with the Interior Road.
- Northfleet Industrial Estate Access Road – This is a minor access comprising of a two-way single carriageway road. This road solely provides access to the Northfleet Industrial Estate.
- Lower Road/Manor Way – The final vehicular access point will be located in the north-western corner of the site. This access will be used by vehicles accessing the Season site and Britannia Refined Metals Ltd.

4.25 The vehicle access points presented above are shown within **Figure 4.3**.

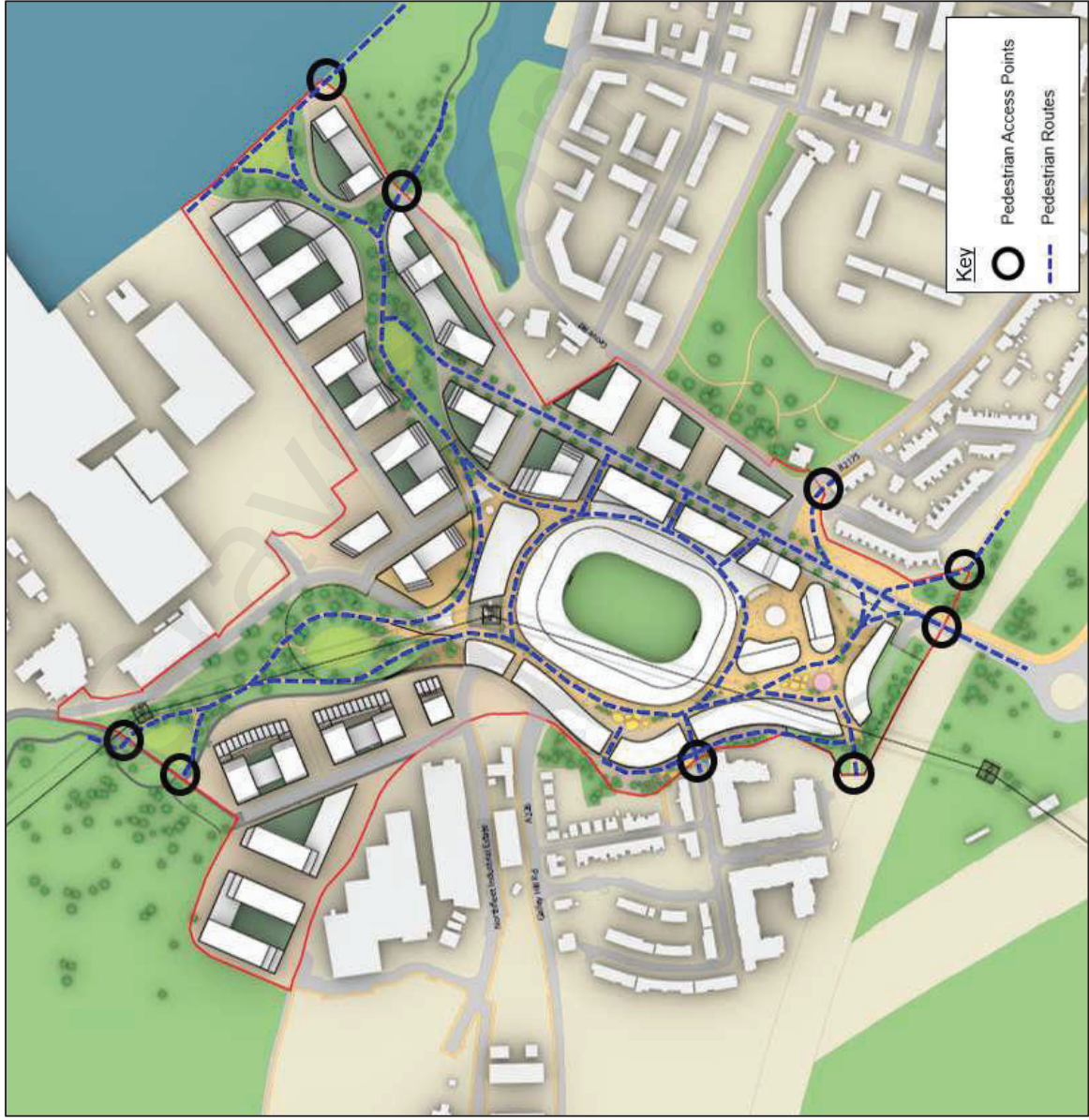
Figure 4.3: Vehicular Access Points



Pedestrian Access

- 4.26 There are several pedestrian focused access points proposed around the site that will work to support active travel to and from the site. Throughout adequate provision would be provided to ensure that pedestrian routes are suitable for those with impaired mobility or vision. For example, drop down kerbs and tactile paving will be present throughout.
- 4.27 In addition, the existing the PROW routes travelling through the site, as presented within **Figure 2.2** would be realigned and upgraded to ensure that they remain usable for pedestrians. This would include NU1 and the English Coastal Path (ECP).
- 4.28 The proposed pedestrian routes and access points are presented within **Figure 4.4**.

Figure 4.4: Pedestrian Access Plan

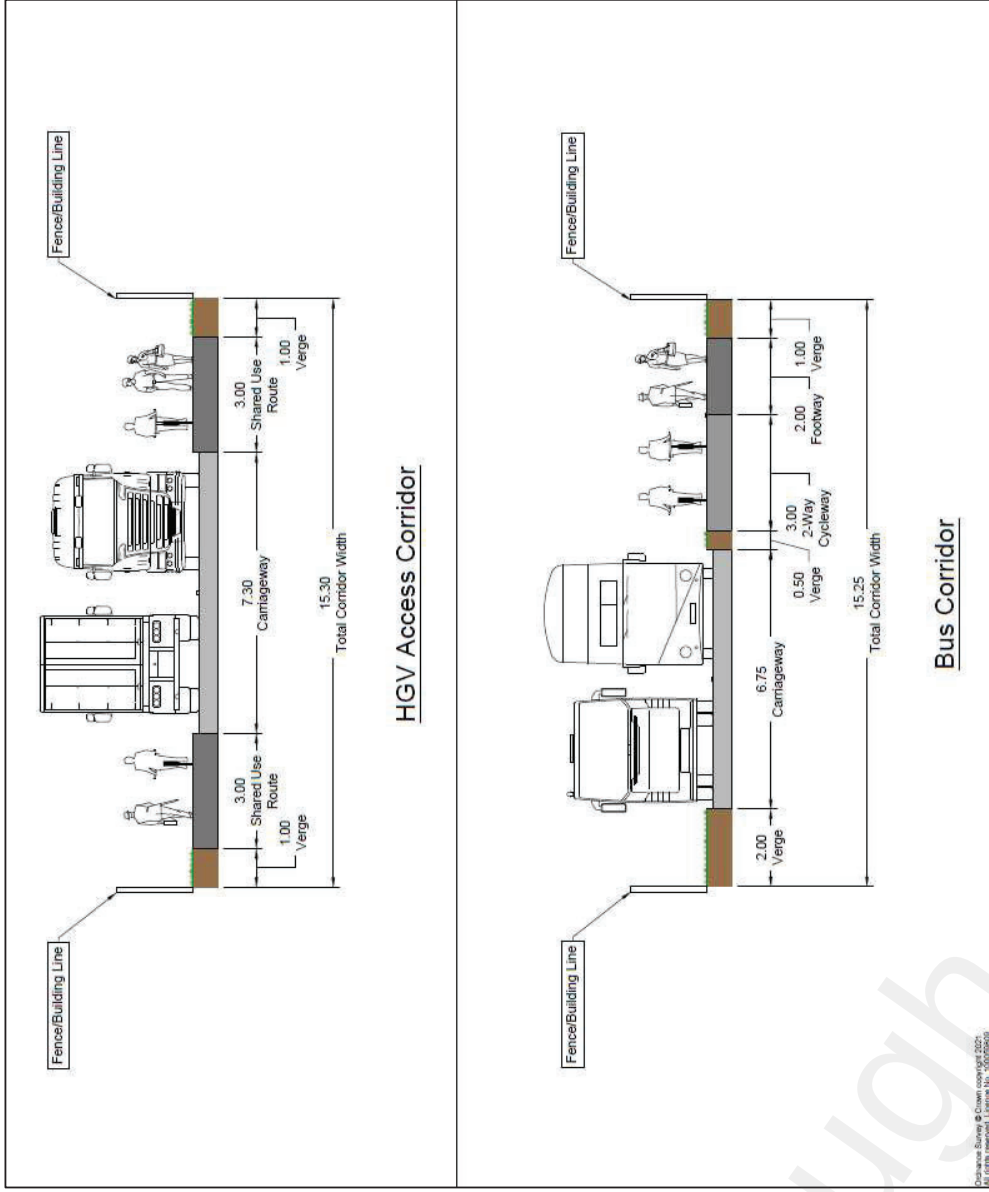


Cycle Access

- 4.29 Regarding cycle access, several traffic free cycle access points would be present at the site. High quality connections will be introduced or maintained to link the proposed site to several existing cycle routes such as the cycleway along the A226 Thames Way and NCN Route 1.
- 4.30 All cycle routes at the site would be designed in line with LTN 1/20, including appropriate segregation. These cycle routes will be safe, direct and appropriately sized to accommodate the anticipated demand at the site.
- 4.31 Specifically, cycle paths would also be introduced along the realigned A226 and internal bus corridor. Along the A226 these would comprise 3m wide shared use cycle/footways along both sides of the carriageway. Along the bus corridor a 3m wide dedicated cycleway would be introduced. A 2m

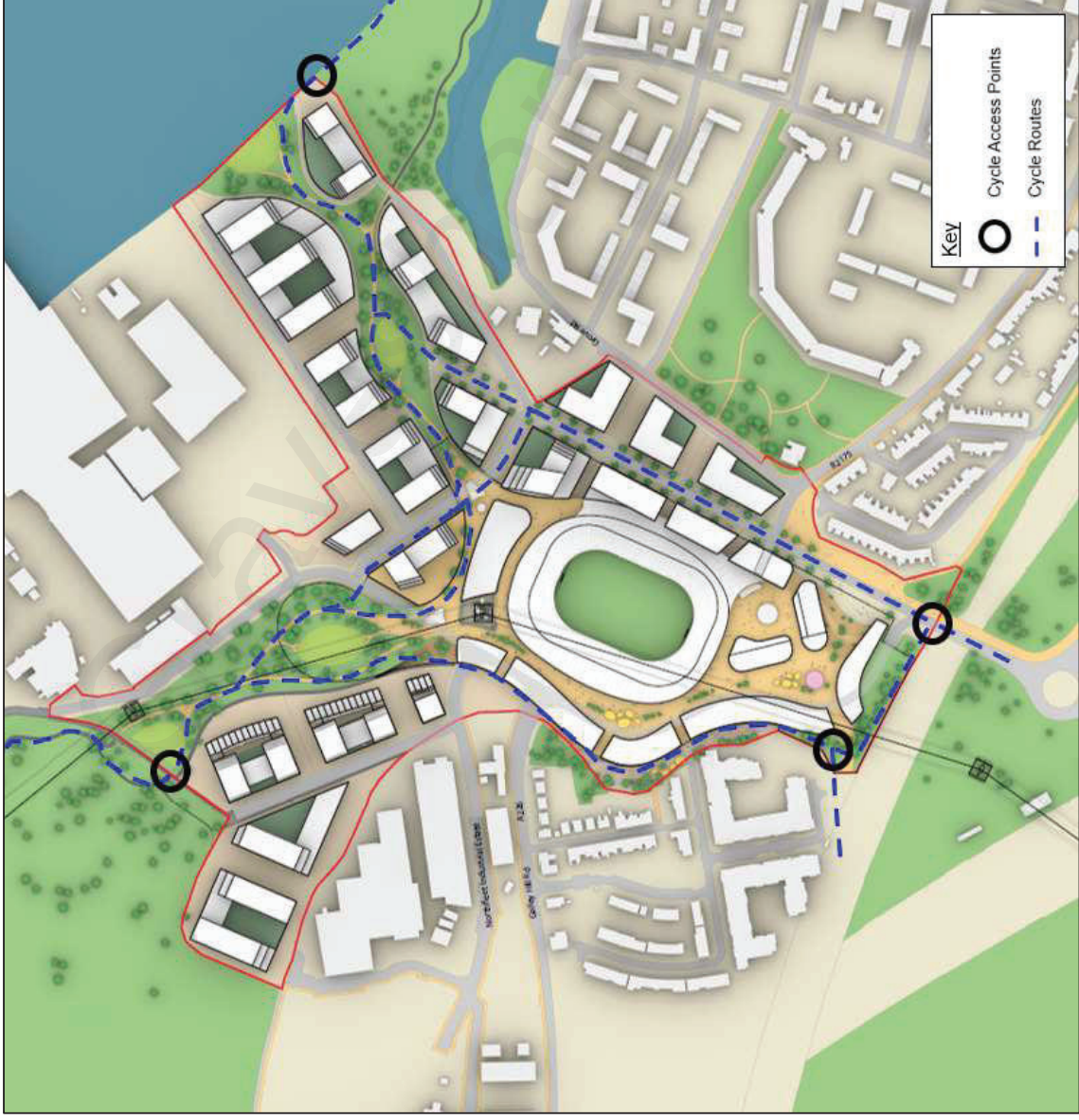
footway would also be present along this bus corridor. Figure 4.5 provides an illustrative view of the arrangement of these cycle lanes.

Figure 4.5: Proposed On-Site Cycle Lanes (Illustrative)



- 4.32 Additionally, as part of the application for the adjacent Grove site to the east, Grove Road itself is proposed to be upgraded. These upgrades will include the introduction of both pedestrian and segregated cycle facilities. Additional improvements are proposed by this development along the southern end of Grove Road to tie in with any scheme delivered by KCC or another developer.
- 4.33 The proposed site will be highly permeable to both pedestrians and cyclists, with large pedestrianised areas present throughout the site ensuring that site users can travel on foot or cycle in a traffic free environment. This environment would promote more trips using active travel modes, therefore reducing the number of car trips.
- 4.34 The proposed cycle access points and routes at the site are presented within Figure 4.6.

Figure 4.6: Proposed Cycle Access Points and Routes



Mobility Hub

4.35 A mobility hub provides a focal point in an area or sites transport network. Their presence helps to facilitate the seamless integration of different modes of transport, multimodal supportive infrastructure, and placemaking strategies to create a centre of activity.

Mobility hubs support local living, low-car lifestyles and the reallocation of space from roads and carparking to housing and public realm, and have the potential to contribute significantly to decarbonising transport. Indicative images of what the mobility hub proposed for the site could look like are presented within the below in **Figure 4.7** and **Figure 4.8**.

Figure 4.7: Indicative Mobility Hub Image 1



Figure 4.8: Indicative Mobility Hub Image 2



4.36 The Mobility Hub proposed for the site could benefit from several the features listed below:

- High-quality bicycle parking, including secure
- Bicycle repair stations
- Bike, e-bike and e-scooter share
- Connected active travel routes
- Cargo bike share
- EV car club
- Demand Responsive transport (DRT) pick up and drop off bays
- EV charging points for car club and DRT
- Secure parcel lockers
- High speed free Wi-Fi
- Real time travel information
- Wayfinding totem signage for onward active travel journeys
- Proximity to a public transport stop
- Appropriate safety infrastructure, primarily good lighting
- Highly accessible for everyone
- Shower facilities

4.37 In addition, several concierge features could be provided:

- Micro-consolidation centre for parcel receipt, including onward delivery by cargo bike, ground drone and air drone
- Third Place working hub
- Café
- Travel planning services, including for schools
- Coordination of local walks and cycles
- Management of IT platforms for carsharing and DRT

Parking

Car Parking

4.38 The car parking standards relevant to the site are presented within the 2021 Kent Design Guide and are presented within **Section 3** of this report. The proposed development will ensure that existing and emerging parking policy (including accessible parking) will be adhered to across the site. To support the emerging parking policy, the development will provide access to a range of sustainable travel modes. Additionally, car club vehicles and cycles to hire are incorporated into the sites proposals.

4.39 A Car Parking Management Plan (CPMP) will be completed that will present the car parking strategy for the site. Specifically, this document would set out how the parking spaces for all uses are intended to be allocated and managed in order to prevent ad hoc on street parking in surrounding areas. For example, the CPMP will outline measures to prevent parking along the Fasttrack bus route to ensure buses are not delayed. Furthermore, the parking restrictions along local roads would be reviewed and where necessary additional restrictions would be put in place to ensure that no site parking would extend onto, and therefore impact roads around the site. This would be secured by way of a planning condition.

4.40 Across the site a maximum 2,700 of parking spaces are proposed.

Residential Parking

4.41 It is proposed that parking will be provided for residents across the site. This parking will be provided at the podium level, ensuring that parked vehicles are not visible at the ground level. This design is in line with Kent Design Guide Parking Standards which states that *‘Car parking should be designed so that it is well integrated with and does not detract from the public realm, especially in high density developments’*. A total maximum of 1,750 residential spaces are proposed equating to a parking ratio of 0.5 car parking spaces per dwelling.

4.42 This level of parking provision is much lower than the 2021 Kent Design Guide parking standards, however it reflects the existing behaviour of residents in the area. The existing level of car ownership within the area has been determined to help predict the level of car ownership at the proposed site. 2011 Census data has been reviewed for the LSOA Gravesham 001C. The results are presented within **Table 4.2**.

Table 4.2: Car Ownership for flats/maisonettes (LSOA Gravesham – 001C)

Land Use	Flat/Maisonette
No Car in Household	59%
1 Car in Household	34%
2+ Cars in Household	7%
Total	100%

4.43 As presented within Table 4.2, car ownership for residents living in flats/maisonettes in the area is low, with just 34% having one car and 7% having 2 or more cars. Accordingly, 59% of flats had no car.

- 4.44 This level of provision also reflects the accessible location of the site in relation to public transport services in the area. Furthermore, **Figure 2.2** and **Figure 2.3** highlight the areas that can be reached by walking or cycling, whilst also highlighting the PROW and cycle routes accessible from the site.
- 4.45 Additionally, for trips of a longer distance, public transport services are located within walking distance of the site. Northfleet Railway Station and Ebbsfleet International Station are located 450m and 800m from the centre of the site. In addition, multiple bus stops are located within walking distance of the site, and the proposed Fastrack route through the site would provide a convenient bus service to the local area for site users.
- 4.46 Furthermore, the site itself will be providing a design that will favour active travel over travel by private vehicle. High pedestrian and cycle permeability will be achieved by the site design, ensuring that travel using these modes is safe, convenient and efficient. Furthermore, the presence of a mobility hub within the site would help to further promote cycling for those using the site who do not want to purchase a bicycle.
- 4.47 For those wishing to travel by car it is proposed that several car club vehicles will be provided at the proposed mobility hub. The presence of these vehicles will mean that residents will still be able to access a car for occasional journeys without having to own one themselves. As such, this will further reduce the need for residents to own a private vehicle, thus reducing the need to provide parking in line with the 2021 Kent Design Guide standards.

Non-Residential Parking

- 4.48 Regarding non-residential parking, the Kent SPG4 standards have been consulted, and parking provisions will be in line with these standards. The not yet adopted Kent Design Parking Standards have also been considered in the process of determining parking provisions for the site.
- 4.49 The total parking provision for non-residential components of the proposed development is proposed to be a maximum of 950 parking spaces.
- 4.50 EV parking is provided across the site in line with the parking standards presented within **Table 3.6**. Accordingly, the residential aspect of the development has a minimum of 175 spaces with active charging capability. All 1,750 residential spaces will have passive charging capabilities. Regarding the non-residential aspect of the development there will be up to 95 active charging spaces, equating to a minimum of 10% of the total number of spaces.
- 4.51 Accessible parking (Blue Badge) spaces will be provided in line with the standards presented within **Table 3.4** for the non-residential aspects of the development.
- 4.52 Motorcycle Parking will be provided for the non-residential aspect of the development in line with the minimum standards provided in **Table 3.5**.

Cycle Parking

- 4.53 The relevant cycle parking standards for this site are presented within the KCC Vehicle Parking Standards SPG4 (2006). These standards are presented within **Section 3** of this document.

- 4.54 A total of 3,500 cycle parking spaces will be associated with the residential aspect of the development. This equates to 1 space per dwelling which is in line with minimum cycle parking standards presented in **Table 3.2**.
- 4.55 The level of cycle parking proposed to be provided at the site for the Non-Residential aspect of the site is presented within **Table 4.5**.

Table 4.5: Non-Residential Cycle Parking

Use Class	Subcategory	Proposed Cycle Provision
A1	Non-food retail	135
A3	Restaurants and Cafes	171
B1	Offices	129
C1	Hotel	144
D2	Stadia	32
E(c,d,e,f)	Non-residential Flexible Use	50
F2	Local Community Use	48
Total		709

- 4.56 In summary, the proposed development will provide a policy compliant level of cycle parking.
- 4.57 Regarding cycle parking, spaces will be designed for use by disabled cyclists and adapted bikes. Furthermore, shower, lockers and changing facilities will be provided within the cycle parking areas associated with the non-residential aspects of the development that require them due to passing certain thresholds.

Refuse and Servicing

- 4.58 Delivery and servicing for the site will primarily be achieved from the future internal road system that would be implemented to provide the required access to the future buildings.
- 4.59 It is anticipated bins will either be stored communally (e.g. a shared bin store at ground level). Residential waste will be stored and collected in line with GBC's requirements. Sufficient containment capacity will be provided in all residential waste storage areas.
- 4.60 Regarding the stadium and retail within the Marketplace neighbourhood, refuse collection will take place from under the podium surrounding the stadium. Refuse vehicles will gain access to this area via the proposed junction along the realigned A226. The design of the site will be such that it is able to accommodate the movement of refuse vehicles. In order to achieve this, Swept Path Analysis will be undertaken along refuse routes.
- 4.61 A commercial waste management contractor will be appointed to collect waste at a suitable frequency. This is likely to be once or twice a week depending on the nature and quantity of waste arisings and space available for storage.

Operational Waste Management

- 4.62 An Operational Waste Management Strategy (OWMS) has been prepared and submitted in support of the planning application. The purpose of the OWMS is to detail how operational waste will be

stored, managed and collected when the Proposed Development is operational. Provisions will be detailed as part of future RMAs and are provided in outline below.

Residential Waste

- 4.63 Four waste streams are anticipated to arise from residential areas on a weekly basis: residual, mixed dry recyclable (MDR), cardboard and paper, and food. Bulky waste (such as fridges, mattresses, sofas, etc.) is expected to arise occasionally.
- 4.64 Residents will be expected to separate their wastes at source, likely within kitchen areas. Then they will deposit the sorted wastes into the appropriate container which will be presented for collection.
- 4.65 It is anticipated bins will be stored communally (e.g. a shared bin store at ground level). Bulky waste storage provisions (both communal and private) will be provided and will be determined during detailed design as part of future RMAs.
- 4.66 Communal storage provisions will be overseen by facilities management. The proposed facilities management strategy for the site will be determined at a later stage.
- 4.67 The LPA will collect residential waste from the Proposed Development once a week. The standard service offers at least weekly collections of residual, MDR, cardboard and paper, and food waste. Residents will be expected to liaise with the LPA if and when bulky waste arises.

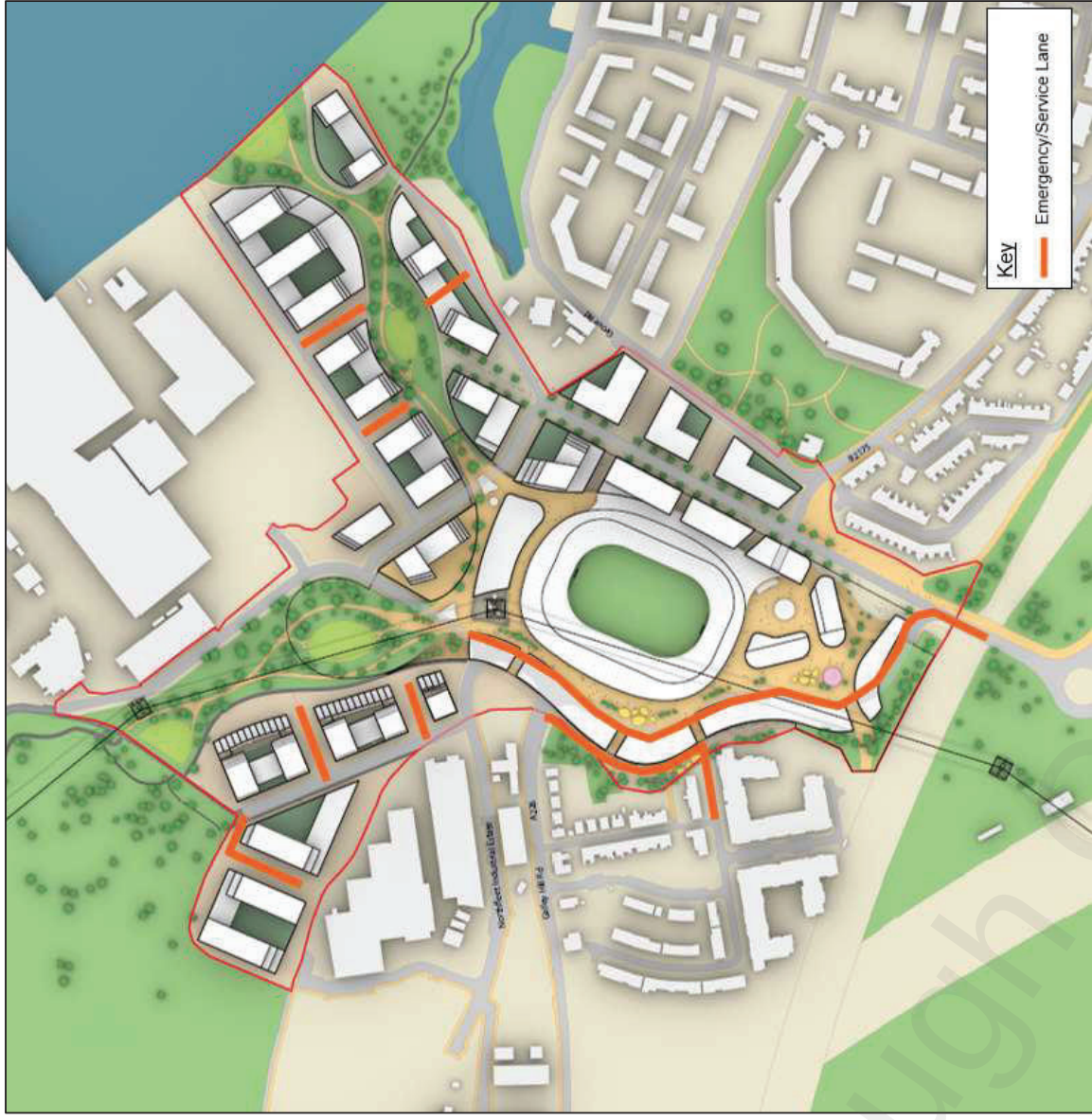
Non-Residential

- 4.68 Non-residential tenants will be responsible for segregating, storing, and managing their waste. They will be expected to consider the waste hierarchy when making decisions about off-site waste management solutions for their waste. Storage and collection arrangements for each use will be determined during detailed design and set out in reserved matters planning applications

Emergency Vehicle Access

- 4.69 Emergency vehicle access will be achieved via the three vehicular access points and the internal design of the site will be completed in such a way that accords with Manual for Streets and Kent Design Guide.
- 4.70 Throughout the site it is proposed that there would be several emergency / service lanes. These lanes are presented within **Figure 4.7**.

Figure 4.7: Emergency/Service Routes



5 Trip Generation

- 5.1 This section of the TA sets out the methodology for the trip generation for the proposed development. In order to calculate the total trip generation across the site the trip generation for each of individual land uses have been calculated.
- 5.2 The trip generation for this site has been determined for each of the land uses proposed at the development

Existing Trip Generation

- 5.3 The site currently consists of the Ebbsfleet United Football Ground, warehousing and industrial units and some residential units. It is estimated that there are in the region of 60 businesses across a floor area of 105,000 sqm. Therefore, there is expected to be a large number of a number of existing trips associated with the site that will be removed upon the redevelopment of the site.
- 5.4 Montagu Evans LLP have undertaken an assessment of existing employment within the red line boundary. Their study has estimated that there are approximately 520 existing and active jobs within the red line boundary across a range of businesses on site, such as car washes and industrial units to a petrol station and a gym.
- 5.5 It is considered that undertaking a trip generation exercise for the existing uses would currently be unreliable. We will liaise with site operators and KCC, and through use of the Kent Transport Model (KTM), we will develop the existing trip generation. This will be presented within a Supplementary TA.

Proposed Vehicular Trip Rates

- 5.6 To determine the proposed trip generation at the site, the TRICS database has been consulted.
- 5.7 The parameters selected for each land use are shown below including information, where required, of any alternative methods used to generate the trip rates
- 5.8 It should be noted that for all TRICS searches, any surveys that were undertaken during Covid-19 i.e. lockdowns or when other restrictions were in place, have been excluded.

- Residential
- o Land Use: Residential

o Category: Private Flats

- o Regions: England excluding Greater London
- o Floor Area / Dwelling: 15-618 dwellings
- o Date Range: 01/01/14-10/08/22
- o Selected Locations: Edge of Town, Suburban Area, Neighbourhood Centre

- o Parking Ratio: Sites with a parking ratio of greater than 1.5 have been excluded
- Retail
- o Land Use: Retail

o Category: Factory Outlet Centres

o Regions: England excluding Greater London

o Floor Area / Dwelling: 3,857-23,350

o Date Range: 01/01/14-07/12/14

o Selected Locations: Edge of Town, Suburban Area, Neighbourhood Centre

5.9 The proposed retail component of the site is expected to be a mix of open retail units. Therefore, to capture suitable mix of units the Factory Outlet Centres category has been used as typical retail would not provide for the variety of potential units without splitting the areas into specific, more defined land uses. Concerning the retail trip generation, the two TRICS sites available within this category were only surveyed on a Sunday.

5.10 Applying the proposed quantum of retail development to the trip rates provided a trip generation and subsequent parking accumulation that exceed the 700 parking spaces that will be available to the retail component, as shown in **Table 5.1**.

Table 5.1: Unconstrained Retail Trip Generation and Parking Accumulation (Weekend)

Time Period	Trip Rates			Trip Generation		
	In	Out	Total	In	Out	Total
10:00-11:00	1.763	0.511	2.274	397	115	512
11:00-12:00	2.866	1.372	4.238	645	309	954
12:00-13:00	2.738	2.190	4.928	616	493	1109
13:00-14:00	2.881	2.488	5.369	648	560	1208
14:00-15:00	2.441	2.595	5.036	549	584	1133
15:00-16:00	1.374	2.553	3.927	309	574	884
16:00-17:00	0.668	1.888	2.556	150	425	575
17:00-18:00	0.454	1.330	1.784	102	299	401
18:00-19:00	0.240	0.772	1.012	54	174	228
19:00-20:00	0.026	0.214	0.240	6	48	54
						220

5.11 Therefore, a factor of 0.72 was derived that reduced the parking accumulation down to a peak of 700 vehicles, as shown in **Table 5.2**. This is considered a reasonable approach as the sites surveyed within the TRICS database did not have the save level of public transport accessibility.

Table 5.2: Constrained Retail Trip Generation and Parking Accumulation (Weekend)

Time Period	Trip Generation			Total	Accumulation
	In	Out			
10:00-11:00	286	83		368	304
11:00-12:00	464	222		687	546
12:00-13:00	444	355		798	635
13:00-14:00	467	403		870	699
14:00-15:00	395	420		816	674
15:00-16:00	223	414		636	483
16:00-17:00	108	306		414	285
17:00-18:00	74	215		289	143
18:00-19:00	39	125		164	57
19:00-20:00	4	35		39	27

5.12 To use the data to generate a weekday trip generation, the 2021 National Travel Survey (NTS) was consulted to determine the relationship between retail trips made during the week and at the weekend. Weekday retail trip are typically 66% of the level of retail trips made at the weekend. Therefore, the weekend trip generation has been reduced to 66% to provide a weekday retail trip generation, as shown in Table 5.3.

Table 5.3: Constrained Retail Trip Generation and Parking Accumulation (Weekday)

Time Period	Trip Generation			Total	Accumulation
	In	Out			
10:00-11:00	188	54		242	200
11:00-12:00	305	146		452	359
12:00-13:00	292	233		525	418
13:00-14:00	307	265		572	460
14:00-15:00	260	277		537	443
15:00-16:00	146	272		418	318
16:00-17:00	71	201		272	188
17:00-18:00	48	142		190	94
18:00-19:00	26	82		108	38
19:00-20:00	3	23		26	17

- Food and Beverage
- o Land Use: Hotel, Food & Drink

o Category: Pub/Restaurant

o Regions: England excluding Greater London

- o Floor Area / Dwelling: 500sqm-12,000sqm

o Date Range: 01/01/14-10/08/22

o Selected Locations: Edge of Town, Suburban Area, Neighbourhood Centre
- Office
- o Land Use: Employment

o Category: Office

o Regions: England excluding Greater London

o Floor Area / Dwelling: 178sqm-70,291sqm

o Date Range: 01/01/14-21/10/21

o Selected Locations: Edge of Town, Suburban Area, Neighbourhood Centre
- Hotel

- o Land Use: Hotel, Food & Drink

- o Category: Hotels

- o Regions: England excluding Greater London

- o Floor Area / Dwelling: 10,000sqm-30,000sqm

- o Date Range: 01/01/14-10/08/22

- o Selected Locations: Edge of Town, Suburban Area, Neighbourhood Centre

- Community Use

- o Land Use: Leisure

- o Category: Community Centre

- o Regions: England excluding Greater London

- o Floor Area / Dwelling: 1,000sqm-6,000sqm

- o Date Range: 01/01/14 – 10/08/22

- o Selected Locations: Edge of Town, Suburban Area, Neighbourhood Centre

- Local Services (Flexible E-Class)

- o Land Use: Retail

- o Category: Shopping Centre – Local Shops

- Regions: England excluding Greater London
- Floor Area / Dwelling: 210sqm-8310sqm
- Date Range: 01/01/14-10/08/22
- Selected Locations: Edge of Town, Suburban Area, Neighbourhood Centre

5.13 Local Services has been used to provide a worst-case assessment of what the flexible land use proposed within the development could generate.

5.14 Full TRICS outputs are shown in **Appendix G**.

Vehicular Trip Rates and Trip Generation

5.15 **Table 5.4** provides a summary of the vehicular trip rates extracted from the TRICS database for each land use.

Table 5.4: Vehicular Trip Generation

Use	Peak Hour	Trip Rates		Trip Generation	
		Arrival	Departure	Arrival	Departure
Residential	AM	0.050	0.180	175	630
	PM	0.174	0.090	609	315
Retail	AM	0.441	0.128	99	29
	PM	0.454	1.330	102	299
Food and Beverage	AM	0.163	0.054	11	4
	PM	3.150	1.919	221	134
Office	AM	1.072	0.179	193	32
	PM	0.015	0.655	3	118
Hotel	AM	0.171	0.210	51	63
	PM	0.197	0.111	59	33
Community Use	AM	0.674	0.027	27	1
	PM	0.620	0.405	25	16
Flexible E-Class	AM	4.465	4.010	223	201

(c, d, e and f) Local Services	PM	6.031	6.321	302	316
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Internalisation

5.16 With any mixed-use size, and especially with one of the magnitude of the proposed development, there is typically a significant amount of internalisation or linked trips. For example, a person could travel to the site by car to work within the office space and at lunch, they could walk to one of the proposed food and beverage outlets within the development. This trip is considered to be an internal or linked trip rather than an entirely new trip attracted to the food and beverage outlet from outside of the site. The site has been developed to become a new neighbourhood that provides the facilities that residents and employees require, therefore, reducing their need to travel.

5.17 Considering the sustainable transport strategy for the site along with the permeability of the site for pedestrians and cyclists, it is expected that a large number of trips to local facilities would remain on site and be made on foot or by cycle rather than a short car trip.

5.18 Therefore, the following internalisation discounts have been applied for each land use:

- Food and Beverage: 20%
- Office: 20%
- Local Services (as worst-case flexible e-class use): 90%

5.19 Using these internalisation discounts, the proposed vehicular trip generation has been re-calculated and is shown in **Table 5.5**. The vehicular movements shown in this table are the flows that will be used within the traffic impact assessment

Table 5.5: Proposed Vehicular Trip Generation

Use	Peak Hour	Trip Generation	
		Arrival	Departure
Residential	AM	175	630
	PM	609	315
Retail	AM	99	29
	PM	102	299
Food and Beverage	AM	9	3
	PM	176	107
Office	AM	154	26

	PM	2	94
Hotel	AM	34	42
	PM	39	22
Community Use	AM	27	1
	PM	25	16
Flexible E-Class (c-f) Local Services	AM	22	20
	PM	30	32

Net Vehicular Trip Generation

5.20 As outlined in 5.5, an existing trip generation has not been calculated. Therefore, as a worst case, no net vehicular trip generation has been undertaken within this report. We will undertake this task and present within a Supplementary TA.

Multi-Modal Trip Generation

5.21 The sites selected from TRICS to provide a residential vehicular trip rate that also undertook multi-modal surveys were used to determine a mode split for the residential component of the site. The mode split for the non-residential components of the site was determined using 2011 Census data. Both the residential and non-residential mode split are shown in Table 5.6.

Table 5.6: Residential and Non-Residential Mode Split

Mode	Residential	Non-Residential
Car Driver	29%	76%
Car Passenger	32%	5%
Bus	9%	6%
Rail	3%	1%
Pedestrian	25%	8%
Cycle	2%	4%
Total	100%	100%

5.22 The mode splits shown in Table 5.6 has been applied to the vehicular trip rate to enable a multi-modal trip generation to be provided, as shown in Table 5.7 through to Table 5.14.

Table 5.7: Residential Multi-Modal Trip Generation

Mode	AM			PM		
	Arr	Dep	Tot	Arr	Dep	Tot
Car Driver	175	630	805	609	315	924
Car Passenger	196	25	900	681	352	1033
Bus	54	7	249	188	97	286
Rail	19	3	89	68	35	103
Pedestrian	151	20	693	524	271	796
Cycle	12	2	56	42	22	64
Total	607	686	2,792	2,112	1,093	3,205

Table 5.8: Office Multi-Modal Trip Generation

Mode	AM			PM		
	Arr	Dep	Tot	Arr	Dep	Tot
Car Driver	154	26	180	2	94	96
Car Passenger	10	2	4	0	6	6
Bus	12	2	5	0	7	8
Rail	2	0	1	0	1	1
Pedestrian	16	3	7	0	10	10
Cycle	12	2	5	0	7	8
Total	207	35	202	3	127	129

Table 5.9: Retail Multi-Modal Trip Generation

Mode	AM			PM		
	Arr	Dep	Tot	Arr	Dep	Tot
Car Driver	47	14	61	48	142	190
Car Passenger	5	1	6	5	14	19
Bus	6	2	7	6	17	23
Rail	1	0	1	1	3	4
Pedestrian	8	2	10	8	23	30
Cycle	4	1	39	4	11	15
Total	70	20	124	72	210	281

Local / non-local buses	3%	7.5%
Rail	2%	5%
Other public transport	1%	-

5.25 This mode split aligns with that identified for Garden City communities such as Ebbsfleet where a sustainable mode target of 60% is set. Given the location of this site and the agreement with KCC to adopt trip generating characteristics and parking standards associated with sites within Ebbsfleet, this revised mode split is considered a more realistic and appropriate baseline for the site.

6 Traffic Assessment Methodology

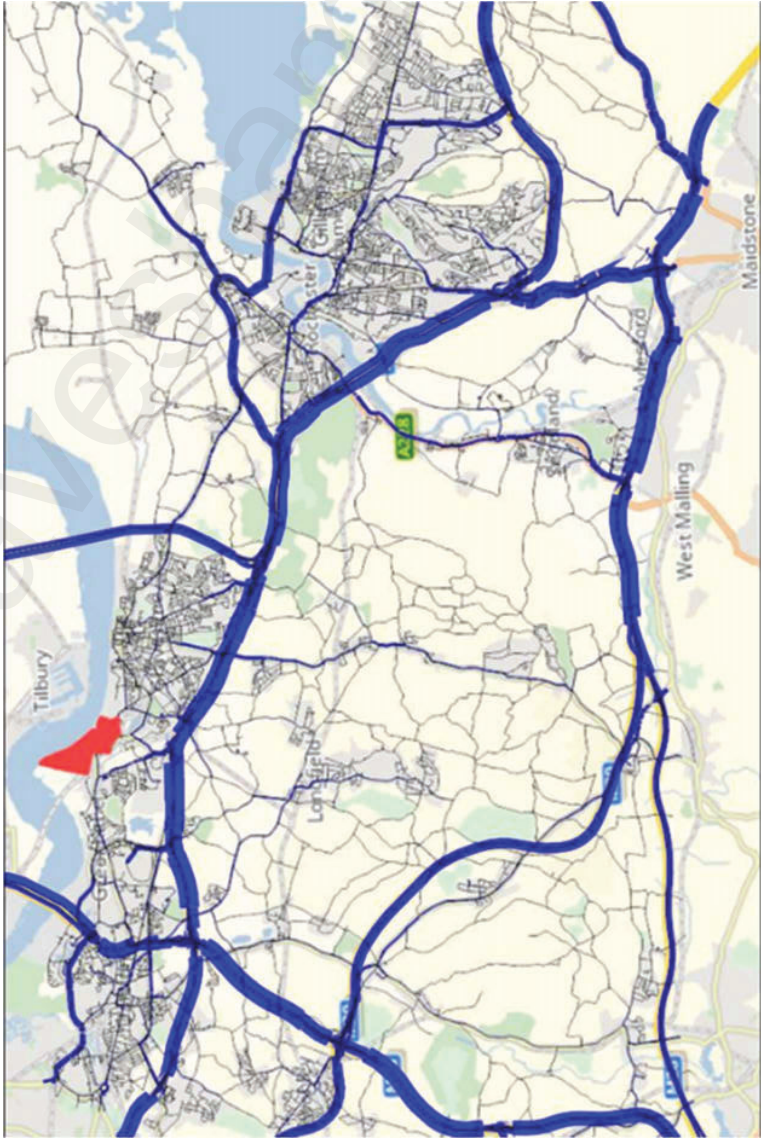
- 6.1 This chapter outlines the traffic assessment methodology used in the assessment of the potential traffic impacts associated with the development proposals.
- 6.2 The methodology for the traffic assessment has been agreed with KCC during the pre-application correspondence, which outlined the need to use the Kent Transport Model (KTM) for traffic impact assessment.
- 6.3 The client and project team, with all best intentions wanted to undertake the required traffic impact assessment using the KTM. However, it became evident during the inception meeting held with the Kent Modelling Team and their consultant on 9th August 2022, that the modelling could not be delivered ahead of the client's intended submission date of 30th September 2022.
- 6.4 It is currently forecast by KCC's consultant that the KTM outputs will be finalise by late November.

Kent Transport Model Assessment (KTM) Methodology

- 6.5 This section is an extract of the methodology provided by KCC's modelling team, that will be used to run the various scenarios required within the KTM. **Paragraphs 6.6** through to **Paragraph 6.23** form the extract taken from KCC's Task Order Form Response.
- 6.6 The assessment of the Northfleet Harbourside development will be undertaken using the KTM. Specifically, we will make use of recently developed 2030 and 2045 variable demand forecast year scenarios developed for the northwest Kent area for KCC.
- 6.7 The Highway assignment model of KTM will be used to assess the highway impact based on the following journey purposes:
- Car Commute
 - Car Business
 - Car Other
 - LGV
 - HGV
- 6.8 Public transport model and associated variable demand model calculations will not be carried out for this task order as this assessment is not required by KCC. The impacts analysis therefore concentrates on highway-based impacts (motorised road trip rates), but the trip rates should take account of agreed assumptions regarding public transport/active travel mode splits.
- 6.9 The existing time periods available within the KTM are AM, Inter Peak (IP) and PM weekday models. A Saturday KTM was never developed but will be required for this assessment, as specified by KCC
- The transport modelling undertaken for this study will include trip generation, distribution and highway assignment forecast.

KTM Road Network

- 6.10 The site lies in the Area of Detailed Modelling (AODM) within the VISUM model meaning that the zones and highway network has been modelled in greater details than the rest of the network as shown in the figure below.
- 6.11 In AODM, the zones boundaries are defined using Lower Super Output Areas (LSOAs) and all the highway network is 'active' except minor residential roads.



- 6.12 To facilitate the development, the alignment of the A226 Stonebridge Road between junctions with Lower Road and Grove Road (approximately 140m south of the roundabout) is to be altered and placed underground. This will be done by building over the top of the road close to its current level rather than tunnelling deeper. KCC's consultant will require the CAD files of altered road network geometry as well as proposed design speed. CAD drawings showing geometry of access junctions and control type should be provided. All provided information will help to determine new zonal split based on land use type, volume of traffic on connectors and type of access junction within the VISUM model.
- 6.13 The Do Minimum (DM) model will have network without proposed development and without proposed infrastructure associated with the development. The Do Something (DS) model will have proposed development and the network with proposed infrastructure associated with the development.

KTM Development Trip Generation

- 6.14 In addition to quantum and land use type provided, KCC's consultant requires information regarding the phasing of development between 2030 and 2045, if any. If no phasing, it will be assumed that all development will have been completed, opened and populated by 2030.
- 6.15 KCC's consultant expects to be provided with agreed vehicle trip rates (cars, LGV, HGV) for AM and PM Peak for all land use types proposed as part of the development. In the absence of trip rates, representative trip rates for the development will be sourced by KCC's consultant, using those agreed by KTC from previous studies and/or latest TRICS database. Trips associated with the school (nursery) and a local amenity centre will be assumed to be internal trips within the development area and so will not have an impact on the wider highway network.
- 6.16 Once the trip generation are finalised the demand matrices development for the different modelling scenario will be developed.

KTM Traffic Distribution

- 6.17 The forecast trip ends for the development zones will be distributed based on base year distribution patterns of (adjacent) zone(s) with similar land uses. If the land use type is not available in the vicinity e.g., for the stadium, then the distribution of the zone with the stadium currently used by the local team which is likely relocate to the new stadium will be used.
- 6.18 The development trip will then be added to the reference demand matrices to obtain the forecast of 'with development' matrices. These final matrices will serve as input to the network highway assignment model split by the following journey purposes.

- Commuter
- Employer's Business

- Others
- LGV, and
- HGV

- 6.19 The 2030 and 2045 forecasts matrices will be produced for two time periods:
- AM peak hour (08:00 – 09:00)
 - PM peak hour (17:00 – 18:00)

KTM Assessment Scenarios

- 6.20 Highway model runs will include scenarios with and without proposed development. The scenarios which will be run for AM and PM peak are as follows:
- 2030 Without Development (Without LTC)

- 2030 With Development (Without LTC)
- 2030 With Development (With LTC)
- 2045 Without Development (Without LTC)
- 2045 With Development (Without LTC)
- 2045 With Development (With LTC)

6.21 The 'core scenario' is therefore assumed to be the without LTC situation. With development will be compared to without development. Then with development with LTC will be compared to without LTC to understand the sensitivity of study conclusions to this key piece of potential infrastructure.

6.22 Since a Saturday model does not exist, Jacobs requested all available ATC in the vicinity of the development to estimate average IP weekday to average peak Saturday factors. These factors will be used to convert IP weekday traffic to peak Saturday traffic. It should be born in mind that the Saturday Origin-Destination (OD) patterns are different from those of weekdays and this conversion process will not change the pattern. It would be helpful to discuss further with KCC and Vectos how the client intends to use the Saturday information/conclusions so that we can better advise on the levels of risk and uncertainty associated with the Saturday outputs.

6.23 The full Task Order Form Response provided by the KCC modelling team is shown in **Appendix H**.

Standalone Junction Modelling

6.24 In lieu of receiving the KTM outputs, it has been agreed with KCC and GBC that an assessment of the junctions that traffic count data has been collected for should be assessed. Those junctions are:

- Junction 1: A226 Galley Hill Road / Lower Road / A226 Stonebridge Road junction;
- Junction 2: A226 Stonebridge Road / Grove Road / B2175 Stonebridge Road junction;
- Junction 3: A226 / Thames Way junction;
- Junction 4: A226 Thames Way / A2260 Ebbsfleet Gateway junction;
- Junction 5: A2260 Ebbsfleet Gateway / International Way / B259 junction;
- Junction 6: A226 London Road / Pilgrim's Road / A226 Galley Hill Road / High St junction;
- Junction 7: A226 London Road / Manor Way / Craylands Lane junction;
- Junction 8: A226 London Road / A206 / B255 junction;
- Junction 9: A206 / Station Road / Station Approach junction;
- Junction 10A: A2260 / Ackers Drive / A2 On/Off Slip junction; and
- Junction 10B: A2260 / A2 On Slip Road / A2 Off Slip Road junction.

6.25 Following receipt of the KTM outputs, a comparison between the traffic impact assessment in this report and the KTM results will be undertaken. Any significant difference in either assessed traffic flows or results will require the standalone junction models to be updated. This will be submitted within a Supplementary Transport Assessment.

Assessment Scenarios

6.26 The following scenarios have been assessed within each standalone model:

- 2022 Base Year: AM and PM
- 2031 Base (2022 + TEMPro Growth): AM and PM
- 2031 Base + Proposed Development: AM and PM

6.27 A Saturday assessment will be undertaken as part of the KTM process. The Supplementary TA will outline the trip rates used and the trip generation associated with the proposed development on a Saturday.

6.28 This assessment will consider the stadium fully operational at maximum capacity of 8,000 spectators.

Background Growth & Committed Developments

6.29 TEMPro has been used to derive a growth factor, which has been applied to the observed 2022 traffic data to forecast a future year of 2031 (full build out) in this assessment scenario. This growth factor is for the middle super output area (MSOA) of Northfleet North (E02005055).

6.30 Growth factors were extracted for car drivers for the average day based upon a trip end type of origin and destination. The resulting factors include for the build out of locally committed developments, increasing housing supply and job numbers.

6.31 As a result of this methodology there is an inherent accountability included within the 2031 Baseline data for committed developments. A review of the Tier 1 sites, shown within the Environmental Statement, identified that a number had already been built and were operational.

6.32 However, it should be noted that this methodology will be reviewed with KCC when modelling of the scheme using the Kent Transport Model (KTM) is undertaken.

Trip Distribution

6.33 The proposed development trips have been loaded onto the three access points from the site that meet the external road network i.e. roads outside of the red line boundary, which are accessed via:

- Lower Road;
- A226 Stonebridge Road (re-aligned);
- Boulevard Access (west of Grove Road).

6.34 **Table 6.1** shows the proportion of each land use located in each of the five neighbourhood character areas. Each of the neighbourhood character areas will access the highway network via a specific access. These access points are:

- Riverside is a 50/50 split via Lower Road or Boulevard access;
- Parkland is via Lower Road;
- Marketplace is via A226 Stonebridge Road (re-aligned);
- Boulevard is via Boulevard Access; and
- Stadium is via A226 Stonebridge road (re-aligned).

Table 6.1: Maximum Quantum of Floorspace (Percentage of Total Floorspace per Neighbourhood)

Use	Maximum Quantum of Floorspace (GEA) / Number of Units per Neighbourhood (inc. % of Total)				
	Riverside	Parkland	Marketplace	Boulevard	Stadium
Residential	1,600 (46%)	950 (27%)	-	950 (27%)	-
Retail	18,000 (80%)	-	-	-	4,500 (20%)
Food and Beverage	2,000 (29%)	0	1,000 (14%)	4,000 (57%)	2,500 (ancillary)
Office	-	-	1,000 (6%)	17,000 (94%)	-
Local Community Use	800 (18%)	700 (18%)	1,800 (45%)	800 (20%)	-
Hotel	-	-	-	200 beds (100%)	-
Flexible E(c-f)	1,100 (22%)	1,300 (26%)	-	2,600 (52%)	-

6.35 For the purpose of this assessment, it has been assumed that all traffic associated with the Proposed Development will distribute in accordance with existing turning movements.

Traffic Flows

6.36 Traffic flows for the following are shown in **Appendix I**:

- 2022 AM and PM;
- 2031 AM and PM; and
- Total Development AM and PM.

7 Impact Analysis

Vehicular

- 7.1 Junction capacity analysis has been undertaken using industry-standard software (Junctions 9 and LinSig) to determine the traffic impact of the Proposed Development and to determine whether there is capacity to accommodate the associated traffic it on the surrounding highway network.
- 7.2 For priority junctions and roundabouts, the industry standard package ‘Junctions 9’, produced by TRL has been used. Within Junctions 9, the design threshold for ratio of flow to capacity (RFC) is at 0.85. Beyond this point the junction begins to experience reduced capacity and becomes less efficient. An RFC above 0.85 indicates that closer analysis of the results is necessary to determine if mitigation would be required to improve junction performance.
- 7.3 For signalised junctions ‘LinSig’ software has been used. The results for signalised junctions have been assessed against the Degree of saturation (DoS), Delay (in seconds per PCU) and the Mean Max Queue (also in PCU). The DoS has been used as the first indicator of capacity constraint with any link forecasting a DoS over 90% given further scrutiny.
- 7.4 With regards to a Queue (‘Q’), this is expressed in vehicles and shows the number of vehicles that may be queueing, with a ‘1.0’ queue representing one full vehicle.
- 7.5 The results of the junction capacity assessments for the junctions set out in **Paragraph 6.24**, are outlined below.
- 7.6 The development proposals comprise significant revisions to the highway layout in the vicinity of the site and as such two of the modelled junctions take different forms to that currently in place. The indicative and modelled layouts of these junctions are provided in **Appendix J**.
- 7.7 Full copies of the junction modelling output files and junction geometry is provided within **Appendix K**.
- Junction 1: A226 Galley Hill Road / Lower Road / A226 Stonebridge Road junction**
- Junction 1 has not been modelled in its current form as the proposals with realign and re-provide this junction. It has therefore only been modelled for a future year with development scenario as it will not existing without the development in place. The results of the 2031 Base plus Development assessment are provided below in **Table 7.1**.

Table 7.1: Junction 1 Modelling Results

Movement	AM Peak Hour			Saturday Peak Hour		
	Degree of Saturation (%)	Delay (s)	Queue (pcu)	Degree of Saturation (%)	Delay (s)	Queue (pcu)
2031 Base + Development						
Link Road (North) - Ahead	56.9	16.1	4.7	43.0	13.3	3.4
Link Road (North) - Right Turn	10.8	11.4	0.7	10.0	10.6	0.6

Link Road (South) - Left Turn	43.1	6.2	3.2	44.5	6.4	3.5
Link Road (South) - Ahead	69.5	32.0	4.1	84.1	41.3	6.7
A226 London Road	73.8	16.6	7.0	81.8	21.5	8.8

7.9 The results in **Table 7.1** shows that the revised A226 junction is forecast to operate within capacity and that the proposed development would not lead to any concerns regarding congestion. All the degree of saturation percentages are below 85% during all scenarios, with delay under 90 seconds on all arms, during all scenarios.

Junction 2: A226 Stonebridge Road / Grove Road / B2175 Stonebridge Road junction

7.10 Junction 2 currently takes the form of a roundabout between the A226 Stonebridge Road, Grove Road and the B2175 Stonebridge Road. The development proposals seek to remove the roundabout and re-provide these connections via two new junctions. This layout is provided in **Appendix J**.

7.11 Grove Road would join the B2175 via a simple priority junction with the priority given to the ahead movements on the B2175 Stonebridge Road. This junction has therefore only been modelled for a future year with development scenario as it will not existing without the development in place. The results of the 2031 Base plus Development assessment are provided below in **Table 7.2** below.

Table 7.2: Junction 2 Modelling Results

Movement	AM Peak Hour			PM Peak Hour		
	Queue (pcu)	Delay (s/pcu)	RFC	Queue (pcu)	Delay (s/pcu)	RFC
	2031 Base + Development					
Grove Road	0.3	12.8	0.22	0.5	18.0	0.35
B2175 Ahead + Right	0.1	4.9	0.07	0.1	4.4	0.06

7.12 The results of the modelling identify that the proposed junction would operate within capacity during all scenarios with a peak RFC value of 0.35 during the PM peak for Grove Road. This movement has a forecast delay of 18 seconds per PCU with a queue of just one vehicle.

7.13 With the removal of the existing roundabout, the A226 to the south has been realigned and given priority for ahead movements over movements to Grove Road or the B2175. This junction has therefore only been modelled for a future year with development scenario as it will not existing without the development in place. The results of the 2031 Base plus Development assessment are provided below in **Table 7.3** overleaf.

Table 7.3: Junction 2 Modelling Results

Movement	AM Peak Hour			PM Peak Hour		
	Queue (pcu)	Delay (s/pcu)	RFC	Queue (pcu)	Delay (s/pcu)	RFC
	2031 Base + Development					
B2175	494.2	3896.8	2.67	676.0	5735.6	3.62
A226 Ahead + Right	8.4	39.4	0.86	38.5	188.4	1.08

7.14 The results in **Table 7.3** show that the junction in the form of a priority junction does not offer sufficient capacity to serve he existing or proposed development traffic. Given the on-going status of the wider modelling through the use of the Kent Transport Model and the potential for redistribution of background and development traffic through the proposed development it is considered that a revised junction layout and modelling will be completed as part of a Supplementary Transport Assessment to be provided in support of this application.

7.15 This approach has been adopted to limit the potential for further iterations of junction design in this location and to allow a proactive approach to junction design to be completed within input from KCC in consideration of potential future schemes in the area, including Ebbsfleet Central to the south, and the dualling of the A226 Thames Way.

Junction 3: A226 / Thames Way junction

7.16 Junction 3 is not proposed to be altered as part of the development proposals an therefore has been modelled as it is currently provided.

Table 7.4: Junction 3 Modelling Results

Movement	AM Peak Hour			PM Peak Hour		
	Queue (pcu)	Delay (s/pcu)	RFC	Queue (pcu)	Delay (s/pcu)	RFC
	2022 Observed					
A226 (NE)	0.5	3.7	0.29	0.4	3.2	0.26
A226 (SE)	0.4	3.2	0.27	0.2	2.6	0.16
Car Park Access	0.0	0.0	0.00	0.0	3.0	0.03
2031 Base						
A226 (NE)	0.5	3.8	0.31	0.4	3.3	0.28
A226 (SE)	0.5	3.3	0.29	0.2	2.6	0.18
Car Park Access	0.0	0.0	0.00	0.0	3.0	0.03
2031 Base + Development						
A226 (NE)	1.4	5.3	0.55	1.0	4.5	0.50
A226 (SE)	0.8	3.8	0.42	0.6	3.4	0.38
Car Park Access	0.0	3.5	0.01	0.1	3.6	0.05

7.17 The results in **Table 7.4** show that the proposed development would induce an increase in queuing, delays and the RFC values at this junction. However, the increase is of little concern as the RFC

values only reach a maximum of 0.55 during the 2031 Base + Development scenario, during the AM peak period. This is significantly lower than the 0.85 RFC value that would warrant further investigation and significantly below the maximum capacity value of 1.0.

Junction 4: A226 Thames Way / A2260 Ebbsfleet Gateway junction

Junction 4 has been modelled in its current form for all assessment scenarios as no proposals are in place to change this layout. The results of the modelling are set out in **Table 7.5** overleaf.

Table 7.5: Junction 4 Modelling Results

Movement	AM Peak Hour				PM Peak Hour		
	Degree of Saturation (%)	Delay (s)	Queue (pcu)	Degree of Saturation (%)	Delay (s)	Queue (pcu)	
	2022 Observed						
A226 Thames Way (N)	63.7	29.1	7.0	48.9	27.6	6.9	
A2260	66.5	27.8	9.7	47.8	28.8	8.6	
A226 Thames Way (S) - Left Turn	29.3	9.1	3.4	25.9	13.7	4.1	
A226 Thames Way (S) - Ahead	62.0	44.3	4.9	48.3	58.1	3.7	
2031 Base							
A226 Thames Way (N)	68.9	30.5	7.9	55.6	29.0	7.9	
A2260	71.8	29.7	10.8	57.6	34.1	10.2	
A226 Thames Way (S) - Left Turn	31.6	9.2	3.7	27.3	12.8	4.5	
A226 Thames Way (S) - Ahead	66.8	46.5	5.5	36.1	46.6	3.6	
2031 Base + Development							
A226 Thames Way (N)	95.9	64.6	30.0	87.5	40.5	17.9	
A2260	95.9	82.4	27.7	86.7	51.4	19.1	
A226 Thames Way (S) - Left Turn	35.4	17.5	7.1	28.7	14.5	4.7	
A226 Thames Way (S) - Ahead	96.5	122.9	17.1	88.3	85.5	11.3	

7.19 The results in **Table 7.5** show that the proposed development would increase the congestion at Junction 4 during both the AM and PM peak scenarios. The maximum degree of saturation forecast exceeds 95% for three of the four movements during the AM peak, albeit this is still below 100% i.e. maximum capacity. A review of the associated forecast delay identifies a maximum increase in delay of 77 seconds which is less than the cycle time of the junction. It is therefore considered that this would not have a severe impact on delay through the junction. To supplement this consideration, journey time analysis will be completed through the KTM in the Supplementary Transport Assessment.

7.20 Increases in queuing have also been reviewed and it is noted that increases on the A226 can be accommodated with no detrimental impacts on the operation of surrounding junctions. The queues forecast for the A2260 will extend into the operational area of the A2260 / International Way signalised junction.

7.21 Through discussions with KCC it has been identified that there is a upgrade scheme for this junction is in place as part of a S278 agreement (site reference number 02 / 0148) through the adjacent Blue Lake development. The junction will become a four-arm signalised crossroads rather than a three

arm T junction. As such no further mitigation works have been proposed at this stage with analysis of this approved scheme to be completed through the KTM and Supplementary Transport Assessment.

Junction 5: A2260 Ebbsfleet Gateway / International Way / B259 junction

7.22 Junction 5 comprises a four-arm priority-controlled roundabout. All development scenarios have been assessed using the existing layout with the results summarised in **Table 7.6** below.

Table 7.6: Junction 5 Modelling Results

Movement	AM Peak Hour			PM Peak Hour		
	Queue (pcu)	Delay (s/pcu)	RFC	Queue (pcu)	Delay (s/pcu)	RFC
	2022 Observed					
A2260 (East)	2.7	10.8	0.70	2.0	8.0	0.65
A2260 (South)	1.0	2.9	0.47	0.6	2.2	0.37
B259 (West)	1.5	6.9	0.59	0.6	4.1	0.39
International Way (North)	0.0	3.9	0.03	0.0	3.1	0.03
2031 Base						
A2260 (East)	3.8	14.3	0.77	2.7	10.1	0.72
A2260 (South)	1.2	3.2	0.51	0.7	2.4	0.40
B259 (West)	1.9	8.4	0.66	0.8	4.4	0.43
International Way (North)	0.0	4.1	0.04	0.0	3.2	0.04
2031 Base + Development						
A2260 (East)	19.3	57.9	0.97	7.5	23.9	0.89
A2260 (South)	1.4	3.5	0.55	0.9	2.7	0.47
B259 (West)	2.4	10.0	0.70	1.0	5.2	0.49
International Way (North)	0.0	4.4	0.04	0.0	3.6	0.04

7.23 The results in **Table 7.6** show that the proposed development will induce an increase in traffic at this junction. Most notably there will be a rise along the A2260 (East) where RFC values would rise from 0.70 and 0.65 to 0.97 and 0.89 for the AM Peak Hour and PM Peak Hour respectively.

7.24 To ascertain the impact this will have a review of the queue and delay has also been completed. During the AM peak the queue will increase on the A2260 by 15 PCUs with an increase of 5 PCUs during the PM peak. This queuing will not result in any detrimental impacts to the operation of the network and will not impeded any upstream junctions during the AM or PM peak.

7.25 The increase in delay during the AM peak is 44 seconds and 14 seconds during the PM peak. These increases are not considered to have a severe impact on the operation of the junction and are significantly lower than a single cycle of Junction 4. To supplement this consideration, journey time analysis will be completed through the KTM in the Supplementary Transport Assessment.

Junction 6: A226 London Road / Pilgrim's Road / A226 Galley Hill Road / High St junction

7.26 Junction 6 comprises a signalised four-arm junction with single lane approaches on all arms except High Street, which has a two-lane approach.

7.27 As a consequence of road works at Junction 6 during the survey periods no traffic modelling could be undertaken at this junction. Supplementary junction surveys are to be undertaken during an appropriate time and additional modelling will be completed for this junction and presented within the Supplementary Transport Assessment.

Junction 7: A226 London Road / Manor Way / Craylands Lane junction

7.28 Junction 7 comprises a signalised four-arm junction with single lane approaches on all arms with the exception of the A226 westbound approach which provides a two-lane approach with a dedicated right-turn lane into Manor Way.

7.29 As a consequence of road works at Junction 7 during the survey periods no traffic modelling could be undertaken at this junction. Supplementary junction surveys are to be undertaken during an appropriate time and additional modelling will be completed for this junction and presented within the Supplementary Transport Assessment.

Junction 8: A226 London Road / A206 / B255 junction

7.30 Junction 8 comprises a four-arm priority controlled roundabout with multi-lane approaches on all arms. The junction has been modelled in its current form for all assessment scenarios.

Table 7.9: Junction 8 Modelling Results

Movement	AM Peak Hour			PM Peak Hour		
	Queue (pcu)	Delay (s/pcu)	RFC	Queue (pcu)	Delay (s/pcu)	RFC
2022 Observed						
A206 (North) - LEFT TURN	0.4	6.0	0.27	0.7	7.9	0.41
A206 (North) - AHEAD	0.6	3.7	0.38	2.6	8.7	0.72
A226 London Road (East)	1.0	4.8	0.48	1.2	6.8	0.53
B255 (South) - LEFT TURN	0.4	5.1	0.27	0.4	5.1	0.30
B255 (South) - AHEAD	1.6	5.6	0.60	1.1	4.4	0.51
A226 London Road (West)	0.8	4.6	0.45	0.9	4.4	0.48
2031 Base						
A206 (North) - LEFT TURN	0.5	6.5	0.30	0.9	9.3	0.47
A206 (North) - AHEAD	0.8	4.0	0.42	4.4	13.6	0.82
A226 London Road (East)	1.2	5.5	0.53	1.7	9.2	0.62
B255 (South) - LEFT TURN	0.4	5.5	0.30	0.5	5.5	0.33
B255 (South) - AHEAD	2.1	6.8	0.67	1.4	5.2	0.57
A226 London Road (West)	1.1	5.5	0.52	1.2	5.2	0.54
2031 Base + Development						
A206 (North) - LEFT TURN	0.6	6.9	0.33	1.5	12.7	0.59
A206 (North) - AHEAD	0.8	4.2	0.42	5.7	17.9	0.86
A226 London Road (East)	1.5	6.1	0.58	2.4	11.4	0.70
B255 (South) - LEFT TURN	0.5	5.7	0.31	0.5	5.8	0.34
B255 (South) - AHEAD	2.3	7.5	0.69	1.7	5.9	0.62

A226 London Road (West)	1.2	5.9	0.54	1.5	6.2	0.60
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7.31 The results in **Table 7.9**, show that the proposed development would have a minimal impact on junction operation during the AM Peak Hour. Although a minor increase is noted for each movement this is minimal and presents no concerns regarding the operation of the junction.

7.32 A similar trend was noted for the PM Peak Hour, however, at this time the 0.85 RFC value is only slightly exceeded for the A206(North - AHEAD) movement. This only occurs in the 2031 Base + Development scenario with an associated increase of 4 vehicles in the queue. The delay increases by just over 1 second and as a result the impact of the development on this junction is not considered severe.

Junction 9: A206 / Station Road / Station Approach junction

Table 7.10: Junction 9 Modelling Results

Movement	AM Peak Hour			PM Peak Hour		
	Queue (pcu)	Delay (s/pcu)	RFC	Queue (pcu)	Delay (s/pcu)	RFC
2022 Observed						
Station Road (North)	0.2	3.6	0.14	0.2	5.2	0.17
Station Approach (East)	0.1	4.7	0.06	0.2	7.1	0.10
A206 St Clements Way (South)	1.5	3.9	0.59	0.7	2.8	0.41
A206 Crossways Boulevard (W)	0.3	1.8	0.23	0.9	2.3	0.45
2031 Base						
Station Road (North)	0.2	3.8	0.16	0.3	5.9	0.20
Station Approach (East)	0.1	4.9	0.06	0.2	8.2	0.12
A206 St Clements Way (South)	1.8	4.4	0.63	0.9	3.0	0.45
A206 Crossways Boulevard (W)	0.4	1.8	0.25	1.0	2.5	0.50
2031 Base + Development						
Station Road (North)	0.2	3.8	0.16	0.3	6.3	0.22
Station Approach (East)	0.1	5.0	0.06	0.2	8.6	0.13
A206 St Clements Way (South)	1.9	4.5	0.65	0.9	3.1	0.46
A206 Crossways Boulevard (W)	0.4	1.9	0.25	1.1	2.6	0.52

7.33 The results in **Table 7.10** show that the proposed development would have a negligible impact on Junction 9. The maximum RFC value would be 0.65 which remains significantly below the threshold RFC of 0.85.

Junction 10/10a: A2260 / A2 On / Off Slips

7.34 Junctions 10 and 10a which comprise the A2260 and A2 on and off slips via priority-controlled roundabouts have not been modelled due to errors recorded during the traffic surveys. Supplementary junction surveys are to be undertaken during an appropriate time and additional modelling will be completed for this junction and presented within the Supplementary Transport Assessment.

8 Mitigation

- 8.1 The junction capacity assessments completed in **Section 7** have identified that the operation of Junctions 1, 3, 5, 8 and 9 are not severely affected by the proposed development and will continue to operate within capacity during all assessment scenarios.
- 8.2 It is noted that junctions 6, 7 and 10 could not be modelled due to errors with the traffic counts completed at these locations, or due to the presence of road works on the survey days. As a result, additional surveys are to be completed at these junctions and capacity analysis completed as part of a Supplementary Transport Assessment.
- 8.3 Junction 2 has been identified as needing a revised layout to serve the levels of traffic forecast to demand its use. To ensure a robust and appropriate scheme can be developed for this junction, a revised design will be provided upon receipt of the KTM outputs, and in conjunction with input from KCC on local surrounding developments and highway schemes.
- 8.4 Junction 4 was forecast to experience increases in delay with queuing on the A2260 potentially blocking back to the signalised junction of the A2260 and International Way. No mitigation scheme is presented for this junction at present as a scheme is already in place for implementation in relation to the development at Blue Lake. Upon receipt of the KTM outputs this upgraded scheme will be tested with the proposed development in place and a summary of impacts and the need for further mitigation presented within the Supplementary Transport Assessment.
- 8.5 The following framework documents are appended to this report which outline objectives and measures to minimise and consolidate travel across a range of purposes:
- Appendix L – Framework Travel Plan
 - Appendix M – Framework Construction Traffic Management Plan
 - Appendix N – Framework Car Park Management Plan
 - Appendix O – Framework Delivery and Servicing Plan

9 Summary and Conclusions

Summary

- 9.1 Vectos is appointed by Landmarque Properties Limited to provide transport advice in support of the proposed redevelopment of the Ebbsfleet United football ground and surrounding industrial area to provide a residential-led, mixed use scheme.
- 9.2 The site is located within Northfleet, 7.7km to the east of Dartford and 6.4km from Junction 1A of the M25. The site covers an area comprising Ebbsfleet United football ground, along with areas of industrial and warehousing use. The A226 (Stonebridge Road) passes through the centre of the site. The site is located within the administrative boundary of Gravesham Borough Council.
- 9.3 The Proposed Development seeks outline planning permission for a mixed-use residential-led scheme consisting of up to 3,500 residential units as well as a hotel, a new football stadium with associated business and leisure facilities, a range of commercial, business and services uses including retail and food and beverage and community uses.
- 9.4 In addition, the Proposed Development will provide associated public realm and hard and soft landscaping, highways works, car parking, access and servicing arrangements, infrastructure and ancillary works and associated works.
- 9.5 The planning application seeks approval of outline parameters for the Proposed Development described above except for the primary means of access into and out of the site via the A226 (to the south), B2175, Grove Road, Galley Hill Road (A226), Northfleet Industrial Estate, Lower Road and Seacon Terminals.
- 9.6 The site is well located to benefit from public and active travel modes. Several PROWs and cycle lanes are present within the vicinity of the site suggesting that the site is easily accessible for both pedestrians and cyclists.
- 9.7 Furthermore, a wide range of both bus and rail services operating at a high frequency are accessible in close proximity to the site, again, suggesting that the site is easily accessible through the use of public transport modes. The site is also located in close proximity to major multilane carriageways that provide further means of access by car or public transport (bus) to the wider area and is therefore considered to address the needs of people with disabilities and reduced mobility in relation to all modes of transport.
- 9.8 The road safety review determined that across the assessment area there were a total of 62 incidents between 2017 and 2022. These comprised of 48 slight incidents and 14 serious incidents. There were no fatal incidents across the accident assessment area.
- 9.9 A review of the local, regional and national policy relevant to the site has outlined the importance of ensuring that the proposed development is progressive, regarding the incorporation of sustainable transport infrastructure across the development. The proposed development is in line with policy.
- 9.10 As part of the development proposal, the A226 is realigned further to the west, and that a podium is constructed over this section of the A226. The realignment of the A226 will also require the Galley

Hill Road/Lower Road junction to be updated to introduce an additional arm to accommodate the A226. This would become a three are signalised junction. A segregated Fastrack route would be introduced through the site along with a new dedicated access road for the Seacon site.

9.11 The proposed development will provide a maximum of 2,700 parking spaces, of which 1,750 will be for residential and 950 will be for non-residential.

9.12 The proposed development will provide a minimum of 3,500 cycle parking spaces and 907 non-residential cycle parking spaces.

9.13 The sites sustainable transport strategy will be supported by a mobility hub, which provides a focal point in an area or sites transport network. Their presence helps to facilitate the seamless integration of different modes of transport, multimodal supportive infrastructure, and placemaking strategies to create a centre of activity.

9.14 Mobility hubs support local living, low-car lifestyles and the reallocation of space from roads and carparking to housing and public realm, and have the potential to contribute significantly to decarbonising transport.

9.15 The TRICS database, Census and NTS has been used to estimate the likely multi-modal trip generation associated with the site, which is shown in the table below.

Mode	AM			PM		
	Arr	Dep	Tot	Arr	Dep	Tot
Car Driver	486	757	1,243	950	740	1,690
Car Passenger	218	34	923	705	385	1,090
Bus	81	18	277	217	137	354
Rail	24	4	94	72	42	114
Pedestrian	186	34	730	563	324	887
Cycle	34	9	183	62	51	112
Total	1,028	856	3,450	2,569	1,677	4,246

9.16 The Kent Transport Model (KTM) will be used to inform a robust modelling exercise to assess the potential impacts of the proposed development. This assessment is likely to be complete in November, therefore, a Supplementary TA will be provided.

9.17 In lieu of the KTM, standalone junction capacity assessments have been undertaken and show that the operation of Junctions 1, 3, 5, 8 and 9 are not severely affected by the proposed development and will continue to operate within capacity during all assessment scenarios.

9.18 It is noted that junctions 6, 7 and 10 could not be modelled due to errors with the traffic counts completed at these locations, or due to the presence of road works on the survey days. As a result, additional surveys are to be completed at these junctions and capacity analysis completed as part of a Supplementary TA.

9.19 Junction 2 has been identified as needing a revised layout to serve the levels of traffic forecast to demand its use. To ensure a robust and appropriate scheme can be developed for this junction, a revised design will be provided upon receipt of the KTM outputs, and in conjunction with input from KCC on local surrounding developments and highway schemes.

9.20 Junction 4 was forecast to experience increases in delay with queuing on the A2260 potentially blocking back to the signalised junction of the A2260 and International Way. No mitigation scheme is presented for this junction at present as a scheme is already in place for implementation in relation to the development at Blue Lake. Upon receipt of the KTM outputs this upgraded scheme will be tested with the proposed development in place and a summary if impacts and the need for further mitigation presented within the Supplementary Transport Assessment.

9.21 The following framework documents are appended to this report which outline objectives and measures to minimise and consolidate travel across a range of purposes:

- Appendix L – Framework Travel Plan
- Appendix M – Framework Construction Traffic Management Plan
- Appendix N – Framework Car Park Management Plan
- Appendix O – Framework Delivery and Servicing Plan

Conclusions

9.22 The National Planning Policy Framework states that with regard to transport, development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe. This report has identified that the impact of the development will not be severe and where impacts occur, on the local bus network, for example, measures can be undertaken to mitigate that impact through physical infrastructure improvements and financial contribution.

9.23 In conclusion, subject to the updated assessment of the proposed development following the issue of the Kent Transport Model outputs, (to be provided within a Supplementary Transport Assessment) it is therefore considered, there are no reasons relating to ‘transport and highways’ for not permitting the proposed regeneration of Northfleet Harbourside. Indeed, it is considered that the proposals will transform the public realm and highway infrastructure within Northfleet as well as encouraging more sustainable travel patterns.

Appendix A



Highways and Transportation
Ashford Highway Depot
4 Javelin Way
Ashford

TN24 8AD

Tel: 03000 418181

Date: 19 July 2022

Our Ref:

Non LPA

Application - PAP/2022/51

Location - KUFLINK STADIUM, STONEBRIDGE ROAD, NORTHFLEET, GRAVESEND, DA11 9GN

Proposal - THE PROPOSALS ARE FOR A MIXED-USE DEVELOPMENT COMPRISING OF APPROXIMATELY 3,000 NEW HOMES, A NEW 200-BED HOTEL WITH QUICK LINKS TO CENTRAL LONDON, A NEIGHBOURHOOD / SUB REGIONAL SHOPPING CENTRE, A NEW 8,000-SEAT STADIUM FOR EBBSFLEET UNITED, A COMMERCIAL QUARTER HOUSING EMPLOYMENT, TRAINING AND R&D COMPANIES, A WATERFRONT DINING PRECINCT AND VAST IMPROVEMENTS TO PUBLIC REALM.

Thank you for your consultation in relation to the above planning application. I have the following comments to make with respect to highway matters :-

This response follows a pre-application meeting held on 08th July 2022 between Kent County Council (KCC), Gravesham Borough Council (GBC), National Highways (NH) and the applicant team. A joint site visit between the Applicant and KCC is being arranged.

Thank you for providing information for a forthcoming planning application for land at Northfleet Central, Gravesend.

Background

The site comprises an area of 49 hectares and is currently occupied by a number of industrial warehouses, a sea freight terminal, a petrol station, a car dealership and Ebbsfleet Football Stadium.

The site is not allocated in the Gravesham Local Plan and was not considered in the Reg 18b consultation undertaken by GBC in 2020.

Existing Access

The A226 Stonebridge Road passes through the centre of the site, creating multiple vehicular access points.

A number of Public Rights of Way are currently located within or adjacent to the site and National Cycle Route 1 (NCR) passes to the south.

In terms of public transport, both Fastrack and commercial bus services run along the A226 Stonebridge Road, and Ebbsfleet International Station and Northfleet Station are both within walking distance.

A thorough review of the existing access to the site by all modes should be undertaken. This should include a walking and cycling audit of routes to key destinations (public transport, schools, town centre etc) and proposed improvements where required.

Development Proposals

The development proposals are for an Outline application, currently comprising (approx):

- 3500 residential units
- 8,000 seat football stadium, also capable of hosting events of 20,000 people
- 180,000sqft (16,723sqm) of commercial use
- 150,000sqft (13,935sqm) retail space
- 21,528sqft (2,000sqm) 'all medical service' use
- 200 Bed Hotel with conference facilities
- 75,347sqft (7,000sqm) local retail, medical and essential services space

Proposed Access

Walking, cycling and public transport should be at the forefront of the Application. Cycle routes should be designed in line with LTN 1/20, include appropriate segregation, and cycle routes and footways should be safe, direct and of an appropriate size to serve the anticipated demand.

As discussed at the meeting, the application will include / consider a range of sustainable travel measures including car clubs, bike hire and KCC administered Local Public Transport credits' (KCC's equivalent to MaaS).

As part of the application for the adjacent Grove Road site, Grove Road itself is proposed to be improved to provide pedestrian and segregated cycle facilities. However, existing restrictions means the route to the southern end of Grove Road may need to be shared. As the site shares a boundary with Grove Road, this application will be expected to provide further improvements.

The pre-app report shows a walking and cycling route to Northfleet Station via a proposed route to the south of Railway Street. However, KCC do not maintain all of this land. Highway boundary information can be obtained by contacting highwaydefinitionsearches@kent.gov.uk.

A number of PROW run through or adjacent to the site and these will need to be incorporated into the design / connected to. In particular, I draw your attention to NU1 and the English Coastal Path (ECP). KCC are likely to want to divert the ECP closer to the riverside once the development is complete. Further information on the ECP can be found here: [England Coast Path: manage your land in the coastal margin - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/manage-your-land-in-the-coastal-margin).

National Cycle Route 1 runs to the south of the site and high-quality connections to this will be required. Cycle facilities (including crossings and segregation) should be designed in line with LTN 1/20.

As discussed in the meeting, you are proposing to divert the Fastrack bus service through the site, to the north. This may be acceptable to the Fastrack team but further information should be provided, including predicted demand. Dedicated infrastructure separating Fastrack vehicles from other road users is vital to ensure more reliable and faster journey times for Fastrack users and as such, this is required, along with Fastrack priority at junctions (e.g. green wave at signals). Consideration needs to be given to how commercial bus services would be affected by the proposed road diversion, and how they can be incorporated into the design where

appropriate. Please note commercial services are not permitted to run on Fastrack dedicated routes. As discussed, the Fastrack network is constantly developing and there are plans to divert the service through the Grove Road and Northfleet Embankment sites to the east.

The ability of the railway network to accommodate the increase in demand should be explored and confirmed, assuming a worst-case scenario. The assessment should be based on the Dec 2022 timetable as it will be substantially different from the current timetable and the pre-pandemic services. This is expected to be released in the next month or two. Investment in Northfleet Station is likely to be requested, where required. The station currently lacks full step free access and needs to be fit for purpose to accommodate the development.

In terms of vehicle access the proposals include the diversion of the A226 Stonebridge Road to the south, between the junction with Lower Road in the west and just north of the railway bridge on the A226 Thames Way. I have no objections in principle to this proposal, at this initial pre-app stage. However, I will await further details including how the proposal will affect east – west traffic at the Stonebridge Road / Grove Road junction, the proposed junctions and priority, and how the stadium and shops will sit on a podium above it. The KCC structures team will need to be involved and contact details are provided below.

Vehicle access to the existing industrial uses off Lower Road will need to be maintained.

Consideration needs to be given to emergency / secondary access points in accordance with Manual for Streets and Kent Design Guide.

Vehicle and Cycle Parking

The adopted vehicle parking standards for Gravesham is SPG4, which are generally maximum standards. For residential use they permit up to 1 space per dwelling for one-bedroom units and 2 spaces for two and three bedroom units. Whilst the site is located within Gravesham it sits between two Ebbsfleet Garden City sites, both of which are designated in the EDC standards as being located in 'highly accessible areas' and therefore requiring parking of between 0-0.8 for one and two bed apartments and 0-1.05 for two bed houses.

The number of proposed vehicle parking spaces has not yet been determined, although 0.5 spaces for the residential aspects was discussed at the meeting. This would be in line with the above standards although further details are required to ensure appropriate provision and capacity of alternative modes will be available to meet demand, and that an appropriate parking management plan is provided setting out how the parking spaces for all uses are intended to be allocated and managed in order to prevent ad hoc on-street parking in surrounding areas.

Further information is required regarding parking for non-residential uses, including existing provision and use for any facilities that are to remain.

Appropriate provision for disabled users, vans, mobility aids, motorbikes and visitor parking will be required.

Electric vehicle charging provision will be required and KCC's emerging parking standards are likely to align with the Building Regulation requirements, although this can be confirmed nearer the time of the application.

SPG4 sets out minimum cycle parking standards for each use, although additional cycle parking will be welcome, particularly in this location where attractive cycle routes should be provided, further encouraging the take up of this mode. A proportion of the cycle parking should be designed for use by disabled cyclists/ adapted bikes. Showers, lockers and changing facilities will be required for non-residential uses over certain thresholds.

Traffic Generation, Distribution and Junction Modelling

Surveys of the existing uses should be undertaken to determine the existing level of trips generated.

In the meeting it was proposed to use first principles assessments for the trip generation and further information is requested. Please note, the worst-case scenario for each land use must be assessed or conditions applied to restrict the land use to a particular sub class. A monitor and manage approach is likely to be acceptable, where relevant.

It is proposed to use the Kent Transport Model for the capacity assessment, supported by further local junction assessments where required. This is welcomed and contact details for use of the model have already been provided. Further discussions will be required to determine the scope of the modelling.

Plans (to scale) showing assumed geometry should be provided for any local junctions modelled using LinSig, ARCADY or PICADY.

Further Comments

A review of crash data for the past three years must be undertaken for the local area including any junctions to be assessed. This can be obtained from crashdata@kent.gov.uk.

Site access plans (including changes to the highway) should be provided at an appropriate scale (1:500) including pedestrian /cycle access points, appropriate vehicle visibility splays and vehicle tracking. An adoption plan should be provided, where possible. As Stonebridge Road is an A class road, any changes to this highway should be designed to DMRB standards.

A Stage 1 Road Safety Audit and Designer's response are required to be submitted with the application for any proposed changes to the highway. Any departures from standards must be highlighted.

A Transport Strategy should be submitted with the Application, setting out how the necessary transport elements of the development will be provided and delivered over the build out of the development. The Strategy should include such things as the Framework Travel Plan, a proposal to establish a Transport Review Group (TRG), commitments to sustainable travel measures, details of high-quality cycle storage, a Parking Management Plan, proposed phases, timings for delivery of access points & sustainable travel measures etc.

Given the size and complexity of the proposals, a Construction Management Plan should be submitted with the Application. The Plan should remain live and be updated and as when required. Use of the river should be considered to remove construction related trips from the network.

A public consultation for the adjacent Ebbsfleet Central site was undertaken in Jan 2022 and included a number of proposed changes to the highway including the conversion of the A226 Thames Way roundabouts to signal controlled junctions. The consultation material can be viewed here <https://ebbsfleetcentral.com/monplace.is/>. An application for the Ebbsfleet Central site is expected later this year and as such, your application should consider both with and without Ebbsfleet Central scenarios.

The Green Corridors and KCC Active Travel teams are considering / have proposals for a number of walking and cycling schemes across Ebbsfleet and Gravesham. These include:

- improvements to the cycle route along the northern side of Thames Way;

- a feasibility study looking to improve the Fastrack, walking and cycling facilities along Stonebridge Road, between Lower Road and the Grove Road roundabout;
- a feasibility study looking to improve walking and cycling connections along the A226 between Craylands Lane and Lower Road.
- a cycle route along London Road and Overcliffe, connecting Gravesend and Northfleet. This scheme was consulted on in Sept 2021. The scheme itself will now not be going ahead but KCC are seeking to implement elements (set out here <https://letstalk.kent.gov.uk/gravesham-gravesend-to-northfleet>).
- Improvements to Northfleet High Street.

Further details on these schemes can be discussed when required. Connections to / funding for these schemes may be sought.

The Strategic Transport Infrastructure Programme (STIPs) in Kent Thameside is still operational and whilst most schemes on the STIPs list are either completed or under construction, the proposal for the Dualing of Thames Way has not yet been designed or delivered. There are no current plans to bring this proposal forward and it is currently under review. An outcome of the review is expected in September 2022.

To assist developers and designers, KCC offer a free Outline Technical Review of proposals affecting highway assets. This is separate from the planning process but will help you to ensure that your proposals will be acceptable to us as the highway authority. To find out more and request an application form, email assetmanagement@kent.gov.uk.

Approval will be needed from the KCC structures team for any structure proposed within 3.66m of the highway. Please contact structurestechnicalapproval@kent.gov.uk to start the structures Technical Approval Process.

Informative: It is important to note that planning permission does not convey any approval to carry out works on or affecting the public highway.

Any changes to or affecting the public highway in Kent require the formal agreement of the Highway Authority, Kent County Council (KCC), and it should not be assumed that this will be a given because planning permission has been granted. For this reason, anyone considering works which may affect the public highway, including any highway-owned street furniture, is advised to engage with KCC Highways and Transportation at an early stage in the design process.

Across the county there are pieces of land next to private homes and gardens that do not look like roads or pavements but are actually part of the public highway. Some of this highway land is owned by Kent County Council whilst some is owned by third party owners. Irrespective of the ownership, this land may have highway rights over the topsoil.

Works on private land may also affect the public highway. These include works to cellars, to retaining walls which support the highway or land above the highway, and to balconies, signs or other structures which project over the highway. Such works also require the approval of the Highway Authority.

Kent County Council has now introduced a formal technical approval process for new or altered highway assets, with the aim of improving future maintainability. This process applies to all

Appendix B

development works affecting the public highway other than applications for vehicle crossings, which are covered by a separate approval process.

Should the development be approved by the Planning Authority, it is the responsibility of the applicant to ensure, before the development is commenced, that all necessary highway approvals and consents have been obtained and that the limits of the highway boundary have been clearly established, since failure to do so may result in enforcement action being taken by the Highway Authority. The applicant must also ensure that the details shown on the approved plans agree in every aspect with those approved under the relevant legislation and common law. It is therefore important for the applicant to contact KCC Highways and Transportation to progress this aspect of the works prior to commencement on site.

Guidance for applicants, including information about how to clarify the highway boundary and links to application forms for vehicular crossings and other highway matters, may be found on Kent County Council's website: <https://www.kent.gov.uk/roads-and-travel/highway-permits-and-licences/highways-permissions-and-technical-guidance>. Alternatively, KCC Highways and Transportation may be contacted by telephone: 03000 418181

Yours Faithfully

Director of Highways & Transportation

*This is a statutory technical response on behalf of KCC as Highway Authority. If you wish to make representations in relation to highways matters associated with the planning application under consideration, please make these directly to the Planning Authority.

Northfleet Central Kent County Council Pre-app Request

226728/N02

Introduction

1. This note has been set out to provide supporting information to the forma pre-application request submitted for Northfleet Central.
2. This note uses the heading from Section 5 of the pre-application request form to provide supporting information to the request.

Details of current use

3. The site is currently occupied by a number of industrial warehouses, a sea freight terminal, a shell petrol station, a car dealership and Ebbsfleet FC Stadium.

Area of site in hectares

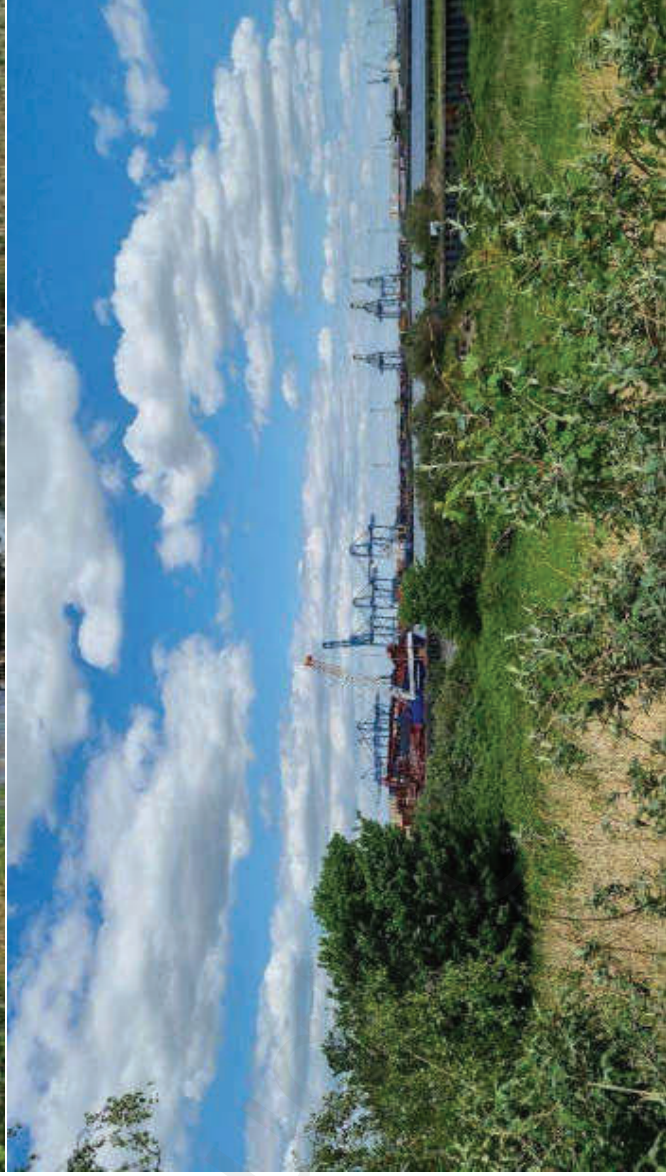
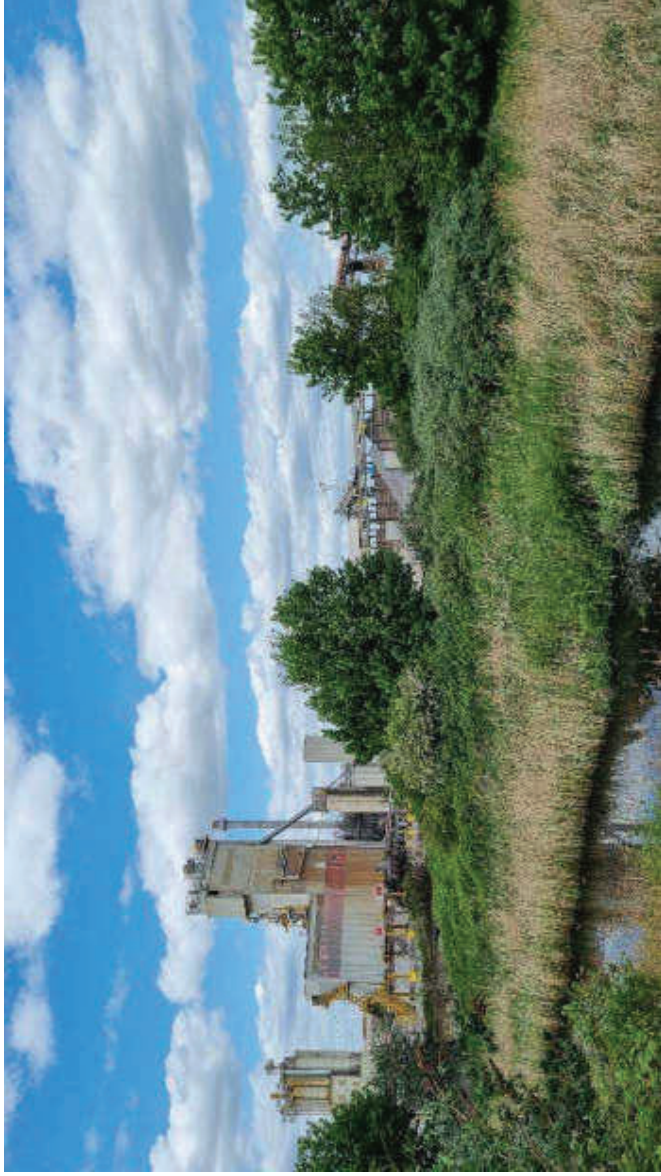
4. The site comprises an area of 49 hectares.

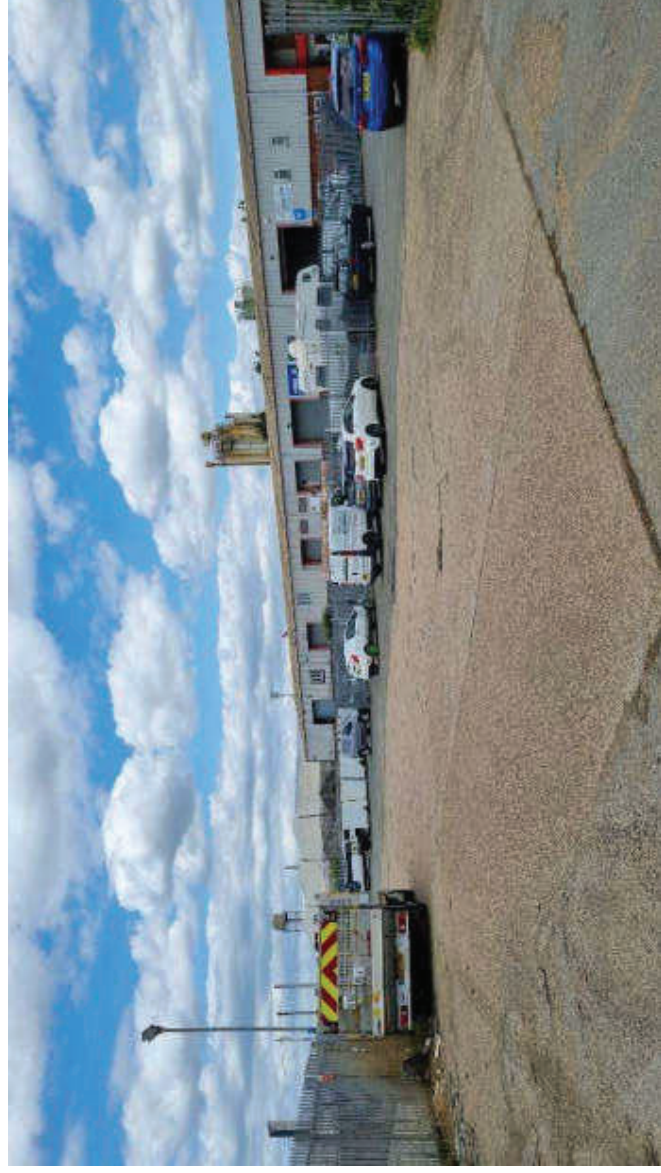
Site location plan

5. This is included in **Appendix A** but due to the size of the site it has not been possible to provide a 1:1250 plan which fits on to a standard size of page.

Photographs of site and surroundings

6. A selection of photographs of the site and surroundings are provided below demonstrating the typical make-up of the existing land uses.







Appendix A

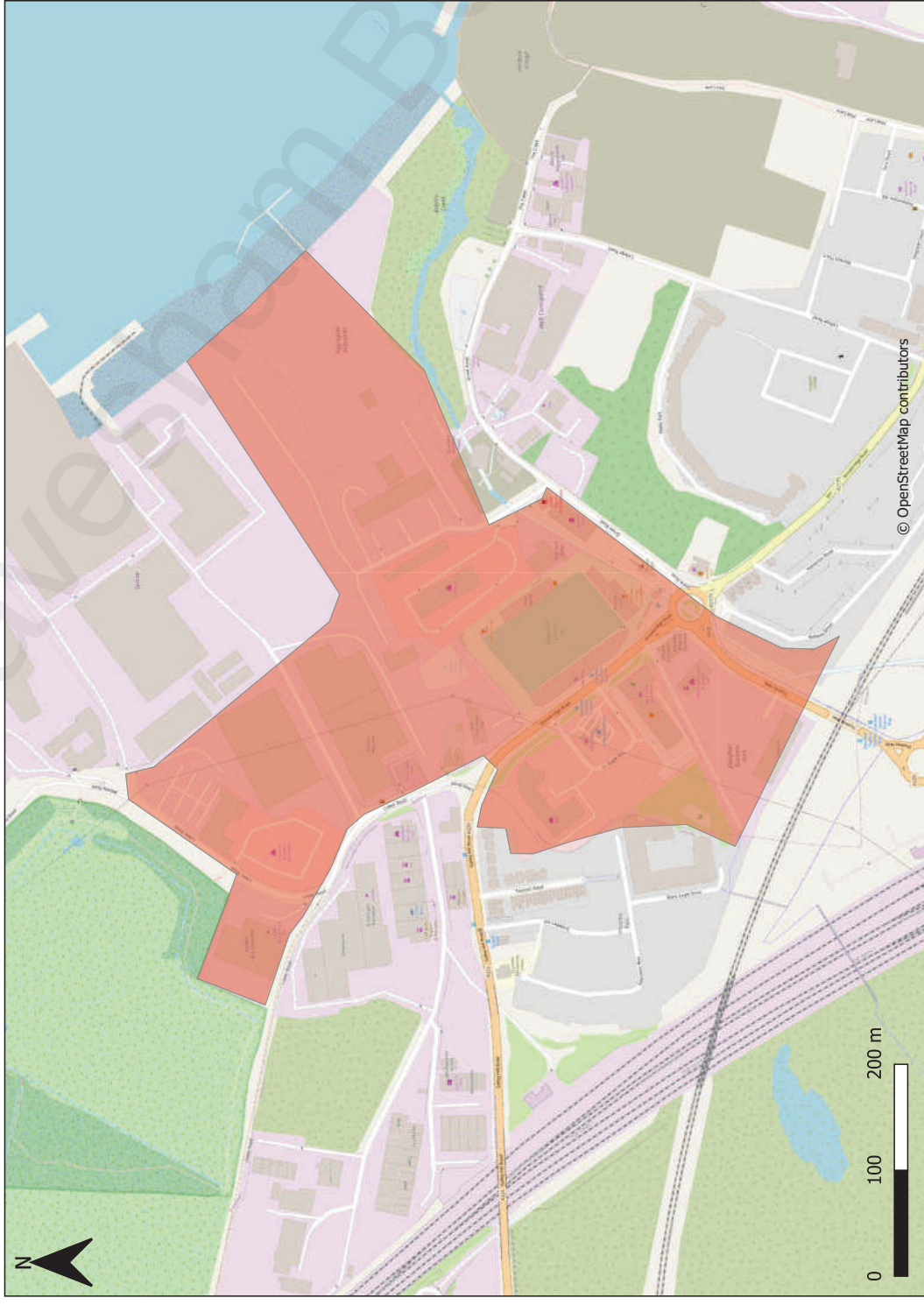
Layout plan of proposal

7. This is included in **Appendix B**.

Sketch drawings showing height and scale of development

8. A masterplan pack is appended which includes some indication of height and scale for the proposals.

Appendix B





Northfleet Riverside

Masterplan Vision
2022

uns
UNSTUDIO

**MONTAGU
EVANS**

**C·W O'BRIEN
ARCHITECTS**

**HLM
Architects**



Site Analysis

Northfleet Riverside

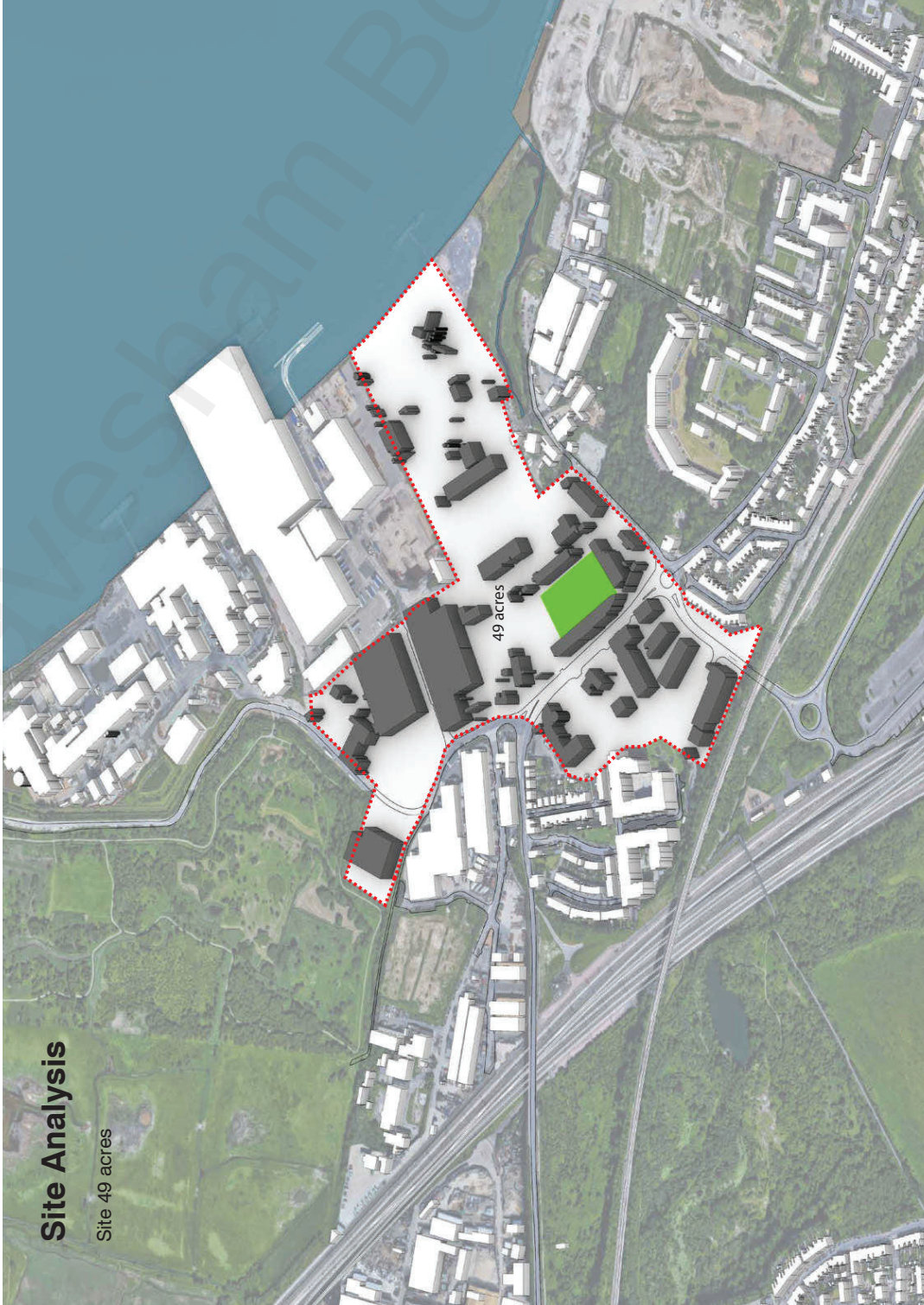
Northfleet Riverside
Masterplan

HLM
Architects

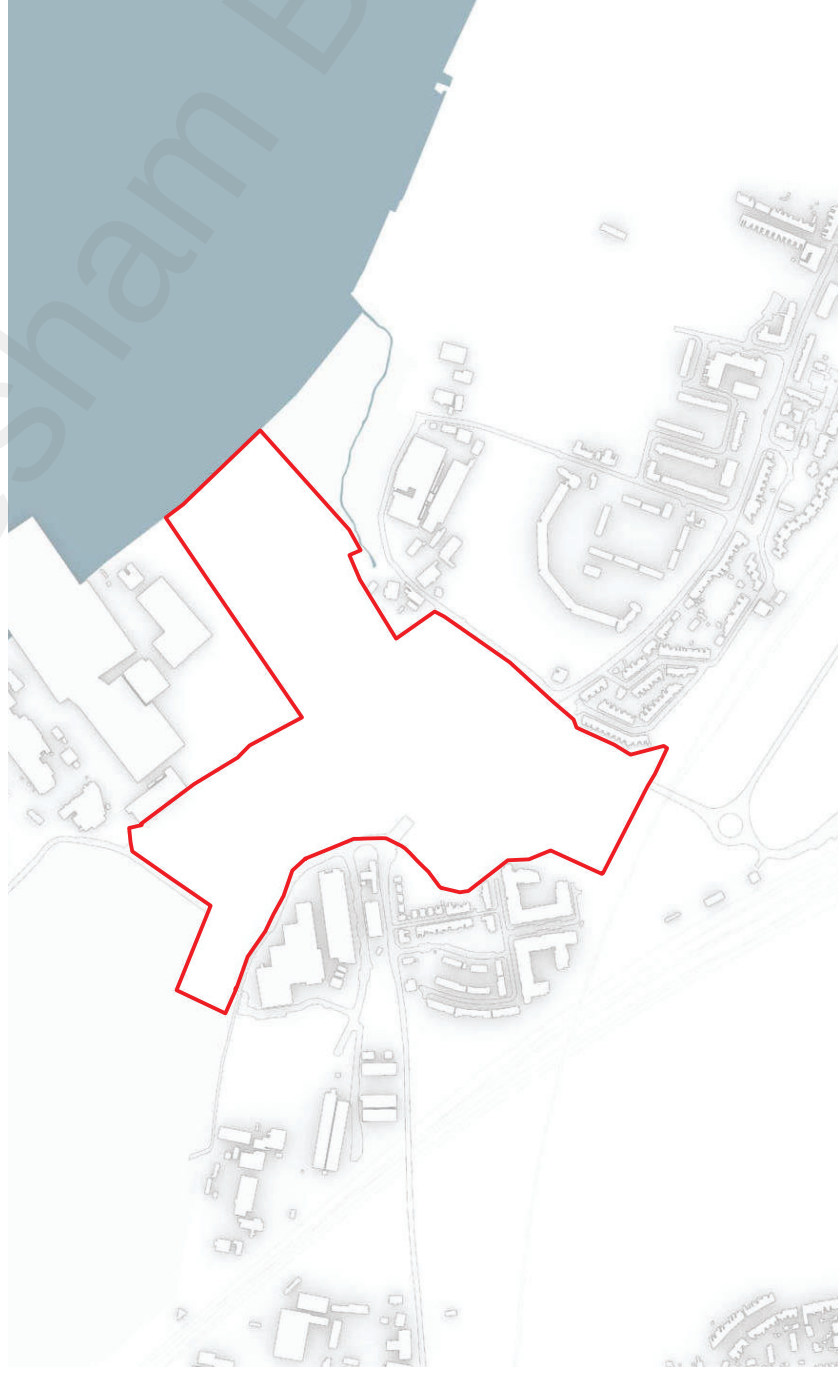
**C·W O'BRIEN
ARCHITECTS**

**MONTAGU
EVANS**

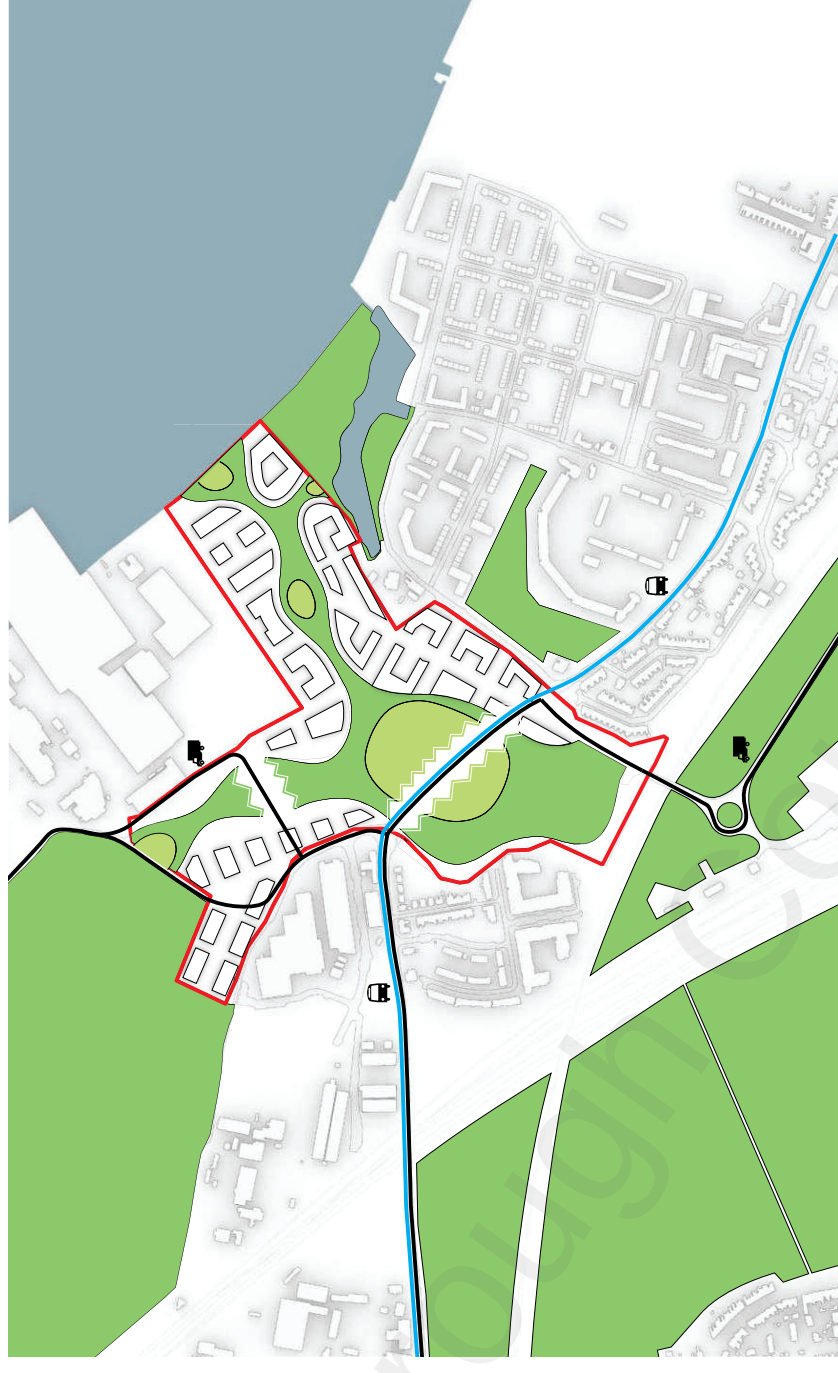
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Site



Challenges - High Traffic through site



Diverted Truck and Bus Route



48

Northfleet Riverside
Masterplan



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Connectivity - People First



49

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Form



Program



Green & Public Space



Facts & Figures

Northfleet Riverside