Former Greggs Factory, Twickenham - Scheme 1

RSA Problem Location	RSA Problem	RSA Recommendation	Designers Response	Overseeing Organisation Response	Agreed RSA Action
Locations 1 & 2 - Within the alignment of the proposed residential development site access road	Forward visibility impacted upon by the presence of the proposed trees could lead to a potential increased risk of vehicular and pedestrian and pedal cyclist collisions occurring, whereby pedestrians and pedal cyclists could sustain personal injury.	It is recommended that the proposed trees should be omitted or relocated in order to ensure that a driver's forward visibility to oncoming pedestrians and pedal cyclists is optimised.	The RSA comment on the forward visibility within the site is noted, and the location of the trees will be reviewed as part of Stage 2 on-site design with the view to relocating the trees where possible. As part of the proposed design, the internal mews road through the site will be one-way northbound and has incorporated a shared-use approach to encourage lower vehicular speeds, focus driver attention and offer priority for non-motorised users. There are a number of additional design interventions which have been employed on the north-south mews street to reinforce the shared-surface approach and hierarchy of users, such as planters and landscaping features located along the western side, adjacent to the mews houses. The one-way working and design interventions result in an environment where low speeds are encouraged, non-motorised users have priority and where there is sufficient space to allow different users to safely navigate the road. In the Department for Transport publication Manual for Streets (DfT 2007), the utilisation of planting is outlined to be a clear benefit in softening urban street scenes whilst acting to "limit forward visibility to help reduce vehicle speeds" (see MfS section 5.12). The following relevant text extracted from Chapter 7, "Street Geometry", summarises the stance on obstacles to visibility: *7.8.6 The impact of other obstacles, such as street trees and street lighting columns, should be assessed in terms of their impact on the overall envelope of visibility. In general, occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or a pedestrian, including a child or wheelchair user, will not have a significant impact on road safety."*		
Location 3 - The proposed residential development site access road priority T-junction with Crane Road/Gould Road	Proposed visibility splays at the Crane Road/Gould Road junction could result in a potential increased risk of side impact vehicular collisions occurring, whereby vehicle occupants could sustain personal injury.	It is recommended that the proposed visibility splays should be measured to the effective edges of the vehicular carriageways, which are the longitudinal carriageway markings which form and delineate the on-street parking bays. In order to ensure that operational road safety is not compromised in the future scenario, this may result in adjustments being required to the existing on-street parking bay provision.	The RSA has raised concern that there "could result in a potential increased risk" of vehicle collisions occurring as a result of reduced visibility due to the presence of on-street parking. It is noted in Manual for Streets that improved visibility and/or increased carriageway width are considered to correlate with increased vehicle speeds (see MfS section 7.4) and should be taken into account in layout design and street geometry. The following relevant text extracted from Chapter 7, "Street Geometry", summarises the stance on obstacles to visibility: *"7.8.5 Parking in visibility splays in built-up areas is quite common, yet it does not appear to create significant problems in practice. Ideally, defined parking bays should be provided outside the visibility splay. However, in some circumstances, where speeds are low, some encroachment may be acceptable."*		
Locations 4 & 5 - The proposed residential development site access road priority T-junctions with Edwin Road and Crane Road/Gould Road.	Accommodating pedestrian movements into and out of the proposed development site in order to ensure that pedestrian safety is not compromised in the future scenario.	It is recommended that the existing footways in Edwin Road and Crane Road/Gould Road should tie into the overall shared area width of 6.0 metres of the development site access road and that the pedestrian access routes are clearly defined in order to ensure that pedestrian safety is not compromised in the future scenario.	The proposed development will largely retain the two existing access points, albeit with changes to the entry treatment. The proposed entry treatments along both the south and north entrances would reinstate the footway across each access, with the vehicular accesses being akin to Copenhagen-style crossings rather than formal junctions, with pedestrians crossing having the right of way over vehicle traffic. The detailed design of the two accesses and arrangements would still be the subject of an s278 Agreement, detailed design and technical approval. If the preferred entry treatment described above was not accepted, then we proposed to revert to traditional kerbed access, which would incorporate dropped kerbs and tactile paving.		

APPENDIX E

ROAD SAFETY ASSESSMENT REPORT

Former Greggs Factory Twickenham

Road Safety Assessment Study

For Velocity Transport Planning

Prepared by Acorns Projects Limited

Safety Traffic Project Management & Highway Engineering Consultants

JULY 2022

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Approvals

This document requires the following approvals:

Name	Title
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Distribution

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Name	Title & Organisation
Matt Penn	Associate - Velocity Transport Planning
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CONTENTS

1.0 INTRODUCTION

1.1 This Road Safety Assessment Study report has been commissioned by Velocity Transport Planning, Unit B, Taper Studios, The Leather Market, 120 Weston Street, London, SE1 4GS and is intended to provide additional road safety related information in support of a planning application for the redevelopment of the Former Greggs Factory site in Twickenham, London Borough of Richmond upon Thames. The Former Greggs Factory site can be approached from a number of local residential roads with vehicular access to the site being from Edwin Road and Crane Road. The Site Location Plan is shown in Appendix A and the Study Area is detailed in Appendix B.

1.2 The purpose of this completely independent Road Safety Assessment Study report is to assess and evaluate in operational road safety terms, the current situation and circumstances relating to the residential roads in proximity to the Former Greggs Factory site; these being Colne Road, a short length of Marsh Farm Road, Edwin Road, Crane Road, May Road, Gravel Road, Mereway Road and Gould Road and, whether the proposed planning application for the redevelopment of the Former Greggs Factory site may have any potential impact upon vehicular, pedestrian flows, pedal cycle flows and existing public transport provision.

1.3 The report format has been devised on the basis that it contains sufficient information to be a technically based document but should, nevertheless, be easily understood by a wide range of interested parties. The technical information is presented in summary form.

1.4 The starting point in any study of this nature is the consideration of the personal injury collision record, together with an assessment in operational road safety engineering terms of Colne Road, the short length of Marsh Farm Road, Edwin Road, Crane Road, May Road, Gravel Road, Mereway Road and Gould Road.

1.5 There were no personal injury collisions recorded within the study area from the 1st January 2017 to the 31st December 2021, a period of 5 years (60 months). As there were no personal injury collisions recorded within the Study Area, the collision analysis exercise was slightly extended to include the nearest principal road, this being the A305 Heath Road and the A305 The Green, which runs to the south of the Study Area.

1.6 There were three personal injury collisions recorded within A305 Heath Road and The Green from the 1st January 2017 to the 31st December 2021, a period of 5 years (60 months). The collision information as supplied by CrashMap is shown in Appendix C.

1.7 The Site Survey Findings are discussed in Section 4.0 of this report. Options for Improvement are discussed in Section 5.0 and detailed in Appendix D in concept format. Section 6.0 draws Conclusions and makes Recommendations.

2.0 EXISTING SITE DESCRIPTION

2.1 This Road Safety Assessment Study report assesses and evaluates in operational road safety terms, the current situation and circumstances relating to Colne Road, a short length of Marsh Farm Road, Edwin Road, Crane Road, May Road, Gravel Road, Mereway Road and Gould Road as part of the Former Greggs Factory site redevelopment proposals.

2.2 The proposed redevelopment of the Former Greggs Factory in Twickenham, London Borough of Richmond comprises two schemes. The Residential and Industrial scheme is for 97 residential dwellings, which will be accessed from Crane Road and Gould Road respectively. The Residential and Industrial scheme will include 86 car parking spaces, cycle parking for 182 pedal cycles and an industrial unit comprising 883sqm GIA plus 117sqm of affordable workspace. To the south of the site, 22 car parking spaces and 12 pedal cycle spaces will be provided. A communal car club bay will also be implemented along Edwin Road, to the south of the site.

2.3 The Residential scheme is for 116 residential dwellings which will be accessed from Edwin Road. The redevelopment of the site will include 100 car parking spaces, cycle parking for 228 pedal cycles and a small commercial unit (175sqm GIA) to the south of the site. A communal car club bay will also be implemented along Edwin Road, to the south of the site.

2.4 An overview of the Existing Site Description for Colne Road, the short length of Marsh Farm Road, Edwin Road, Crane Road, May Road, Gravel Road, Mereway Road and Gould Road are as follows:

Colne Road

2.5 Colne Road essentially runs in an east/west orientation and for the purposes of this Road Safety Assessment Study, extends from the junction of the A305 Heath Road to the east, through to the Mereway Road junction to the west. Near the eastern limits of Colne Road, the carriageway passes beneath a railway bridge where the existing footway provision for pedestrians is narrow. Adjacent to the Marsh Farm Road junction, a Controlled Zone for parking commences, together with a 20 mph speed limit. Beyond this point on the southern side of the carriageway, the Twickenham Primary Academy school site is present.

2.6 In September 2021 a School Street scheme was approved and made permanent for the Twickenham Primary Academy, for part of Colne Road between the junction of Marsh Farm Road and Albion Road. School Streets do not operate during school holidays or at weekends and the on-street signs for the scheme are not displayed during holidays and half term periods.

2.7 The operating hours for the Colne Road School Street scheme are Monday to Friday 08:20 am to 09:00 am and 15:30 pm to 16:15 pm. People walking, scooting, using wheelchairs, mobility scooters and cycles (including adapted cycles), are not restricted. All other motor vehicles are restricted during the operating times displayed on the signs, subject to exemptions. The following motorised vehicles are automatically exempt:

- Emergency vehicles;
- Council waste trucks serving properties within the School Street zone;
- Postal service vehicles serving post boxes within the School Street zone;
- Statutory undertakers (such as water and gas companies) attending emergency works within the School Street zone;
- School buses serving the school or properties within the School Street zone;
- Public transport and taxis (Hackney Carriage) serving properties within the School Street zone.

The following vehicles are also exempt, but they must apply for exemption using the London Borough of Richmond upon Thames online exemption form or by contacting the Borough directly:

- Residents and businesses within the School Street zone;
- Blue badge holders, when their destination is within the School Street zone;
- Carers and healthcare workers serving properties within the School Street zone;
- Private hire taxis serving properties within the School Street zone;
- Trades people/service providers serving properties within the School Street zone;
- Delivery vehicles serving properties within the School Street zone.

2.8 Colne Road is a two-way residential road with footways along both sides of the carriageway for the major part, the exception being on the southern side of the carriageway from a point to the west of the May Road crossroads junction up to a point to the east of the Mereway Road junction. In addition, the existing footway provision along the northern side of the carriageway along this particular length is quite narrow, in places being no more than 1 metre wide.

2.9 Permit only parking is present along Colne Road, both on the carriageway and in a footway parking arrangement along lengths where the carriageway widths become quite narrow. Typically, where footway parking is provided, the remaining width of footway available for pedestrian use can be as little as 1 metre. Street lighting is present throughout the length of Colne Road, which was found to be operating satisfactorily as established during a night time site visit.

2.10 Where junctions are present along the linear length of Colne Road, there is no evidence of tactile paving provision to assist pedestrians to cross the junctions. This is not a particularly conducive situation, particularly for those pedestrians who may be blind or visually impaired. It is noted that a cul-de-sac arrangement is present at the very western limits of Colne Road and that prior to these limits, access back onto the A305 The Green is available via Briar Road. To the immediate west of the Mereway Road junction, a 7 foot width restriction is present in the carriageway.

Marsh Farm Road

2.11 Marsh Farm Road essentially runs in a north/south orientation and for the purposes of this Road Safety Assessment Study, extends from the Colne Road junction to the south, through to the Edwin Road junction to the north. Marsh Farm Road is a two-way road with no residential property frontage, and there is a footway on the western side of the carriageway only.

2.12 The eastern side of the carriageway provides access to a few commercial properties situated within the railway arches. The fifth and final last railway arch provides pedestrian access to and from the length of Edwin Road on the eastern side of the railway line and into the Twickenham town centre area beyond.

2.13 Parking is precluded on both sides of the carriageway by virtue of double yellow lines and notification of the Controlled Zone for parking within the residential area beyond is identified within the footway on the western side of the carriageway. Street lighting is present throughout the length of Marsh Farm Road, which was found to be operating satisfactorily as established during a night time site visit.

Edwin Road

2.14 Edwin Road essentially runs in an east/west orientation and for the purposes of this Road Safety Assessment Study, extends from the junction of Marsh Farm Road to the east, through to Crane Road to the west. A Controlled Zone for parking is present together with lengths of double yellow line waiting restrictions protecting junctions and accesses from injudicious parking, together with a 20 mph speed limit.

2.15 Edwin Road is a two-way road, principally residential, with footways along both sides of the carriageway. Edwin Road provides vehicular access to the Former Greggs Factory site on the northern side of the carriageway and, directly opposite there are a few commercial premises, some of which are associated with the motor trade.

2.16 Permit only parking is present along Edwin Road, both on the carriageway and in a footway parking arrangement along specific lengths.

Typically, where footway parking is provided, the remaining width of footway available for pedestrian use can be as little as 1 metre. Street lighting is present throughout the length of Edwin Road, which was found to be operating satisfactorily as established during a night time site visit. Where junctions are present along the linear length of Edwin Road, there is no evidence of tactile paving provision to assist pedestrians to cross the junctions. This is not a particularly conducive situation, particularly for those pedestrians who may be blind or visually impaired.

Crane Road

2.17 Crane Road essentially runs in a north/south orientation and for the purposes of this Road Safety Assessment Study, extends from the junction of Gould Road to the north, through to Colne Road to the south. A Controlled Zone for parking is present together with lengths of double yellow line waiting restrictions protecting junctions and accesses from injudicious parking, together with a 20 mph speed limit.

2.18 Crane Road is a two-way road, principally residential, with footways along both sides of the carriageway. Permit only parking is present along Crane Road on the carriageway only. Street lighting is present throughout the length of Crane Road, which was found to be operating satisfactorily as established during a night time site visit.

2.19 Where junctions are present along the linear length of Crane Road, there is no evidence of tactile paving provision to assist pedestrians to cross the junctions. This is not a particularly conducive situation, particularly for those pedestrians who may be blind or visually impaired.

May Road

2.20 May Road essentially runs in a north/south orientation and for the purposes of this Road Safety Assessment Study, extends from the junction of Gould Road to the north, through to the A305 The Green junction to the south. A Controlled Zone for parking is present together with lengths of double yellow line waiting restrictions protecting junctions and accesses from injudicious parking, together with a 20 mph speed limit.

2.21 Between the A305 The Green junction and the Colne Road crossroads junction, May Road is subject to a one-way north bound vehicular traffic arrangement, with footways along both sides of the carriageway. Beyond the Colne Road crossroads junction, May Road reverts to being a two-way residential road, with footways along both sides of the carriageway.

2.22 May Road is subject to a combination of Permit only parking and on-street parking both on the carriageway and in a footway parking arrangement along specific lengths.

Typically, where footway parking is provided, the remaining width of footway available for pedestrian use can be as little as 1 metre. Street lighting is present throughout the length of May Road, which was found to be operating satisfactorily as established during a night time site visit. Where junctions are present along the linear length of May Road, there is no evidence of tactile paving provision to assist pedestrians to cross the junctions. This is not a particularly conducive situation, particularly for those pedestrians who may be blind or visually impaired.

Gravel Road

2.23 Gravel Road essentially runs in an east/west orientation and for the purposes of this Road Safety Assessment Study, extends from the junction of May Road to the east, through to the Mereway Road junction to the west. On-street parking is present together with lengths of double yellow line waiting restrictions protecting junctions and accesses from injudicious parking, together with a 20 mph speed limit.

2.24 Street lighting is present throughout the length of Gravel Road, which was found to be operating satisfactorily as established during a night time site visit. At the May Road junction to the east and the Mereway Road junction to the west, there is no evidence of tactile paving provision to assist pedestrians to cross the junctions. This is not a particularly conducive situation, particularly for those pedestrians who may be blind or visually impaired.

Mereway Road

2.25 Mereway Road essentially runs in a north/south orientation and for the purposes of this Road Safety Assessment Study, extends from the junction of Gould Road to the north, through to the Colne Road junction to the south. On-street parking is present together with lengths of double yellow line waiting restrictions protecting junctions and accesses from injudicious parking, together with a 20 mph speed limit.

2.26 Mereway Road is a two-way road, principally residential, with footways along both sides of the carriageway. At the southern end of Mereway Road on the western side of the carriageway, there are a few commercial premises and the Mereway Industrial area is present.

2.27 Street lighting is present throughout the length of Mereway Road, which was found to be operating satisfactorily as established during a night time site visit. Where junctions are present along the linear length of Mereway Road, there is no evidence of tactile paving provision to assist pedestrians to cross the junctions. This is not a particularly conducive situation, particularly for those pedestrians who may be blind or visually impaired.

Gould Road

2.28 Gould Road essentially runs in an east/west orientation and for the purposes of this Road Safety Assessment Study, extends from the junction of Crane Road to the east, through to Mereway Road to the west. Gould Road is a two-way road, principally residential, with footways along both sides of the carriageway. Gould Road provides vehicular access to the Former Greggs Factory site on the northern side of the carriageway, on the corner of the junction with Crane Road.

2.29 A combination of Permit only and on-street parking is present along Gould Road on the carriageway. Street lighting is present throughout the length of Gould Road, which was found to be operating satisfactorily as established during a night time site visit. Where junctions are present along the linear length of Gould Road, there is no evidence of tactile paving provision to assist pedestrians to cross the junctions. This is not a particularly conducive situation, particularly for those pedestrians who may be blind or visually impaired.

3.0 COLLISION ANALYSIS

3.1 Personal injury collision data for the 5 year (60 months) period from the 1st January 2017 to 31st December 2021 has been procured from the CrashMap collision data system and subsequently analysed. During this 5 year (60 month) period, no personal injury collisions occurred within the Study Area.

3.2 As there were no personal injury collisions recorded within the Study Area, the collision analysis exercise was slightly extended to include the nearest principal road, this being the A305 Heath Road and the A305 The Green, which runs in an east/west orientation to the south of the Study Area.

3.3 There were three personal injury collisions recorded within A305 Heath Road and The Green from the 1st January 2017 to the 31st December 2021, a period of 5 years (60 months). The collision information as supplied by CrashMap is shown in Appendix C.

3.4 A tabulated summary of the personal injury collisions within A305 Heath Road and The Green for the 5 year (60 month) period is shown below:

Year	Collisions	Casualties
2017	2	2 serious injuries
2018	1	1 serious injury
2019	0	0
2020	0	0
2021	0	0
Total	**3**	**3 serious casualties**

3.5 The following summarises the personal injury collisions for the A305 Heath Road and The Green;

- 3 personal injury collisions.
- 3 total casualties.
- 0 fatal casualties (0%).
- 3 serious casualties (100%).
- 0 slight casualties (0%).
- 0 casualties involving vehicle occupants (0%).

- 0 collisions during peak periods (0%).
- 3 collisions during off-peak periods (100%).
- 1 collision during daylight hours (33%).
- 2 collisions during dark conditions (66%).
- 1 collision in dry road conditions (33%).
- 2 collisions in wet/damp road conditions (66%).
- 0 collisions in frost/ice road conditions (0%).
- 0 collisions involving nose to tail shunts (0%).
- 0 collisions involving a turning manoeuvre (0%).
- 2 collisions involving a pedestrian (66%).
- 0 collisions involving a pedal cyclist (0%).
- 1 collision involving a motorcyclist (33%).
- 0 collisions involving a learner driver (0%).

3.6 There were three personal injury collisions recorded within A305 Heath Road and The Green from the 1st January 2017 to the 31st December 2021, a period of 5 years (60 months). The collision analysis exercise has identified that all three personal injury collisions resulted in serious casualties being sustained, two by pedestrians and one by a motorcyclist.

3.7 As no personal injury collisions have occurred since July 2018, it is suggested that the operational safety performance of the A305 Heath Road and The Green in proximity to the Study Area should be monitored by the London Borough of Richmond upon Thames. This could be important as for considerable periods of time since the first Covid lockdown announced in March 2020, the numbers of movements of all types of road users would have reduced, perhaps by significant levels, and, thus, may not have been reflecting a typical or seemingly normal situation for the area.

4.0 SITE SURVEY FINDINGS

4.1 Site visits have been undertaken in order to identify any items, issues or causal factors that may impact upon or be considered detrimental to operational road safety within the Study Area.

4.2 As the collision exercise has demonstrated, no personal injury collisions occurred within the Study Area. As a result, and with no identifiable vehicular collisions to be considered for potential treatment, attention was drawn to the existing provision within the Study Area, particularly for vulnerable road user types, especially pedestrians.

4.3 The site visits have established that at all of the junctions within the Study Area, there is no evidence of dropped kerbs which comply with current design standards and best practice. Combined with a complete lack of tactile paving provision to assist pedestrians to cross the junctions, this situation results in potential trip hazards being present within the highway network. This is not a particularly conducive situation, particularly for those pedestrians who may be blind or visually impaired. Thus, some typical examples (but not limited to), are evidenced in the following paragraphs and photographs taken within the Study Area.

Colne Road junction with Marsh Farm Road

4.4 The site visits have established the difficult situation facing pedestrians entering the Study Area at this junction. On the eastern side of the junction, the wholly inadequate footway width/landing pad area creates a very difficult situation for pedestrians. On the western side of the junction, the unacceptable height of the kerb upstand can be seen, which results in a potential trip hazard being present whereby pedestrians could fall and consequently sustain personal injury.

Eastern side of the Colne Road junction with Marsh Farm Road

Western side of the Colne Road junction with Marsh Farm Road

May Road junction with Gould Road

4.5 The site visits have established the difficult situation facing pedestrians crossing at this junction. On the eastern and western sides of the junction, the unacceptable height of the kerb upstand can be seen, which results in a potential trip hazard being present whereby pedestrians could fall and consequently sustain personal injury.

Eastern side of the May Road junction with Gould Road

Eastern side of the May Road junction with Gould Road

May Road junction with Colne Road

4.6 The site visits have established evidence of a reasonably acceptable upstand at the kerbed build out arrangement at the junction, which it is assumed was installed as part of the one-way north bound vehicular traffic arrangement between the A305 The Green junction and the Colne Road crossroads junction. However, the lack of tactile paving provision does little to assist blind or visually impaired pedestrians when crossing at the crossroads junction.

May Road junction with Colne Road

Colne Road - Extremely narrow existing footway provision

4.7 The site visits have established evidence of a length of extremely narrow footway for pedestrians on the northern side of the carriageway. The footway provision along the northern side of the carriageway along this particular length is quite narrow, in places being no more than 1 metre wide. When pedestrians are required to pass one another, this situation results in pedestrians having to step out into the carriageway, with a resultant potential increased risk of collisions occurring with vehicular traffic, whereby pedestrians could sustain personal injury. In addition, the presence of the brick boundary is potentially hazardous for blind or visually impaired pedestrians.

Colne Road - Extremely narrow existing footway provision

4.8 Based on the above site survey findings, the Options for Improvement should be considered as described in Section 5.0 of this Road Safety Assessment Study Report.

5.0 OPTIONS FOR IMPROVEMENT

5.1 The purpose of this Road Safety Assessment Study report is to assess and evaluate in operational road safety terms, the current situation and circumstances relating to the residential roads in proximity to the Former Greggs Factory site; these being Colne Road, a short length of Marsh Farm Road, Edwin Road, Crane Road, May Road, Gravel Road, Mereway Road and Gould Road and, whether the proposed planning application for the redevelopment of the Former Greggs Factory site may have any potential impact upon vehicular, pedestrian flows, pedal cycle flows and existing public transport provision.

5.2 The site visits have established evidence of significant issues being present for pedestrians, particularly for those pedestrians who may be blind or visually impaired. With regard to pedal cyclists, it is not considered that there are any exceptional operational road safety related risks or issues for this road user type which may require addressing, commensurate with the principally residential status of the Study Area.

5.3 On this basis, the following Options for Improvement are offered for consideration, all of which are detailed in concept format in Appendix D.

At all of the junctions within the Study Area

5.4 The following Options for Improvement should be considered:

- At all junctions within the Study Area, all existing kerbing should be removed and new dropped kerbing should be installed to upstand parameters of between 0 to 6 mm absolute maximum.
- Tactile paving should be installed in order to assist and enhance blind or visually impaired pedestrian movements at all junctions within the Study Area.
- Existing footways leading up to the new dropped kerbs should be re-graded to suit new levels.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 The principal objective of this Road Safety Assessment Study report is to assess and evaluate in operational road safety terms, the current situation and circumstances relating to the residential roads in proximity to the Former Greggs Factory site; these being Colne Road, a short length of Marsh Farm Road, Edwin Road, Crane Road, May Road, Gravel Road, Mereway Road and Gould Road and, whether the proposed planning application for the redevelopment of the Former Greggs Factory site may have any potential impact upon vehicular, pedestrian flows, pedal cycle flows and existing public transport provision.

6.2 This Road Safety Assessment Study Report has established that in terms of driver behaviour and vehicle speeds, the existing characteristics and physical restraints of the highway network within the Study Area result in a situation which are considered to be somewhat self regulating. This professional view is supported by the speed survey data provided for the purposes of this Road Safety Assessment Study, tabulated as follows;

Road Name	Average Daily 85%ile Speed	Vehicles exceeding 20 mph speed limit
Edwin Road	17.6 mph	4.3 %
Crane Road	19.7 mph	13.7 %
Gould Road	14.4 mph	0.3 %
Colne Road	18.1 mph	7.2 %
May Road	19.1 mph	8.9 %

6.3 Whilst there are small percentages of drivers who exceeded the 20 mph speed limit, the site observations undertaken offer little to contradict the reasonably positive behavioural manners adopted by drivers when travelling within the Study Area, as can be seen from the Average Daily 85%ile speeds recorded.

6.4 As stated in the Transport Assessment, one of the key benefits in transport terms of delivering a residential led mixed-use scheme, including the provision of light industrial on the Former Greggs Factory site when compared to its previous use as an industrial factory, is a substantive reduction in the number of HGV movements.

6.5 This is substantiated by the following LGV and HGV two-way trips as listed overleaf. It is important to note that the TRICS database provides survey data based on operating periods of between 06.00 am and 18.00 pm; however, it is known that the Former Greggs Factory site operated on a 24 hour basis, and, that their peak delivery times were between 02.00 am and 04.00 am:

Estimated two-way Greggs Factory Servicing and Delivery Trips

- LGV - 30 per day
- HGV - 68 per day

TOTAL 98 TRIPS PER DAY

Estimated two-way servicing and delivery trips associated with the Residential and Industrial Scheme

- LGV - 54 per day
- HGV - 8 per day

TOTAL 62 TRIPS PER DAY

Estimated two-way servicing and delivery trips associated with the Residential Scheme

- LGV - 28 per day
- HGV - 2 per day

TOTAL 30 TRIPS PER DAY

6.6 As can be seen, there are tangible benefits to be derived from the choice made for the redevelopment of the Former Greggs Factory Site, particularly if that choice should be based on the level of additional trips by LGV's and HGV's being minimised as much as possible:

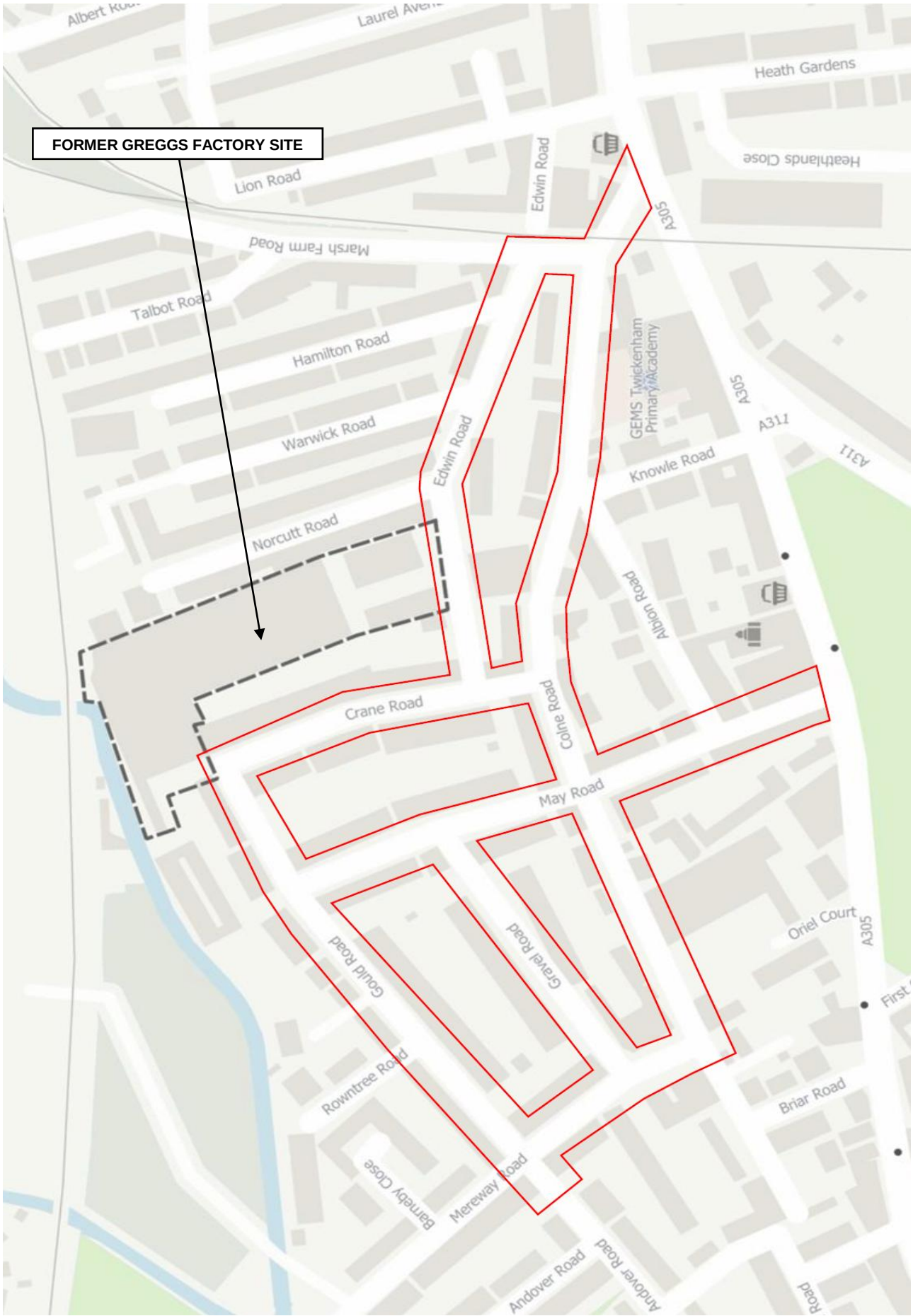
- A reduction in the potentially adverse impact of LGV and HGV movements within the adjacent principally residential local highway network;
- A potential enhancement of operational road safety resulting from a reduction of LGV and HGV movements within the adjacent local highway network;
- A reduction in the potential for conflicts to occur between pedestrians and LGV's and HGV's when manoeuvrability issues are experienced by LGV and HGV drivers;
- A reduction in the potential for damage to be sustained to existing footways and kerbs;
- A reduction in the potential for damage to be sustained to residents parked cars;
- The potential for a reduction in local complaints of noise and poor air quality (this is particularly important as the site is not subject to any restrictions and can in effect operate on a 24 hour basis);
- A potential complete removal of the peak delivery times experienced at the Former Greggs Factory site between 02.00 am and 04.00 am when residents are sleeping;
- Maintaining the improved environment and residential area as seen during the course of this Road Safety Assessment Study, directly resulting from the current lack of activity associated with the Former Greggs Factory site.

6.7 All that appears to remain in operational road safety terms, are improvements for pedestrians within the principally residential streets of the Study Area. Thus, on the basis of our findings, we Recommend that the Options for Improvement as described in Section 5.0 of this Road Safety Assessment Study Report should be considered for inclusion as part of a package of highway improvements and operational road safety improvements for pedestrians. This would be of particular benefit for those pedestrians who may be blind or visually impaired.

6.8 A package of highway improvements and operational road safety improvements for pedestrians should follow the undertaking of a Feasibility Study to accurately and in thorough detail establish if pedestrian improvements at junctions can be delivered within the Study Area, cognisant of the principally residential characteristics where on-street parking and turning movements at junctions will need to be accommodated and maintained in the future scenario.

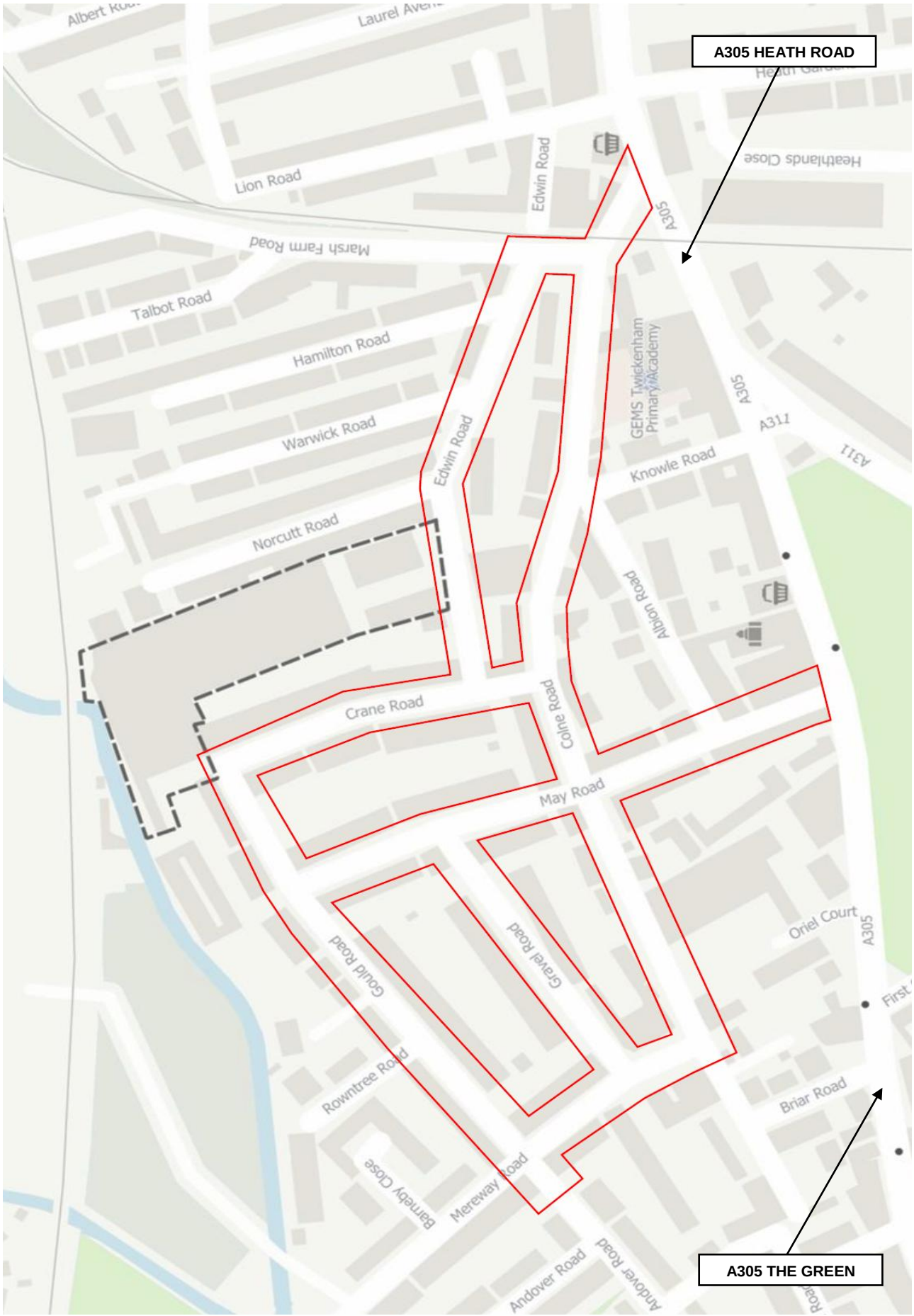
APPENDIX A

APPENDIX A - FORMER GREGGS FACTORY, TWICKENHAM - SITE LOCATION PLAN



APPENDIX B

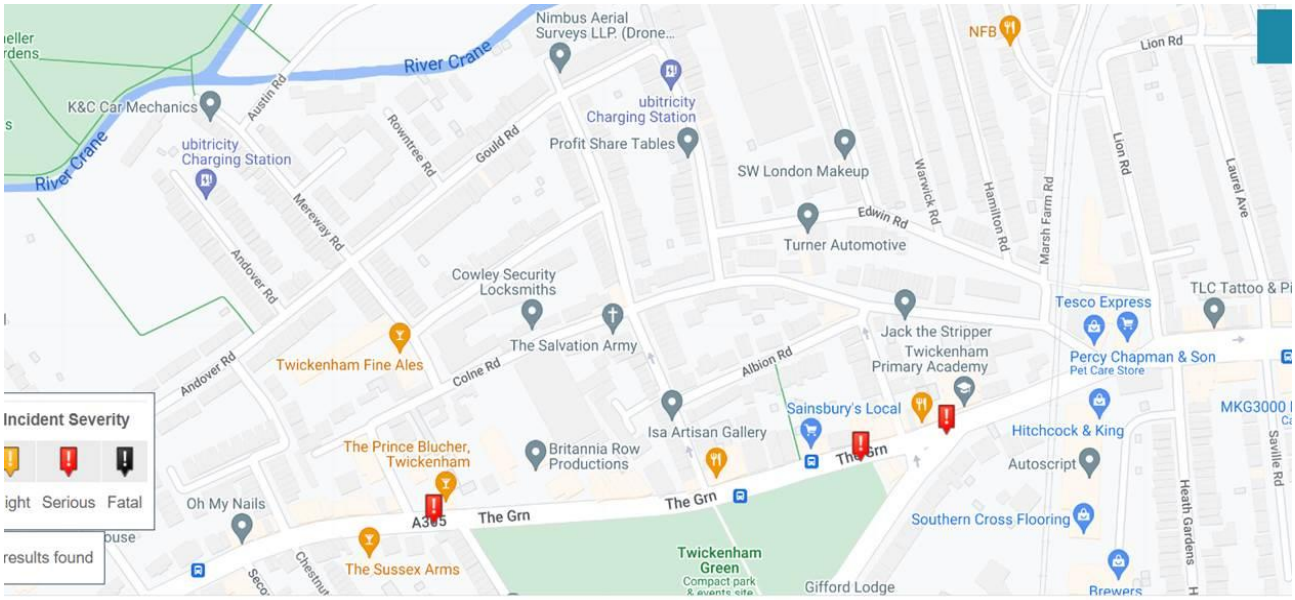
APPENDIX B - THE STUDY AREA



APPENDIX C

APPENDIX C - ROAD TRAFFIC COLLISION LOCATION PLAN

(ALL THREE COLLISIONS OCCURRED ON THE A305 THE GREEN)

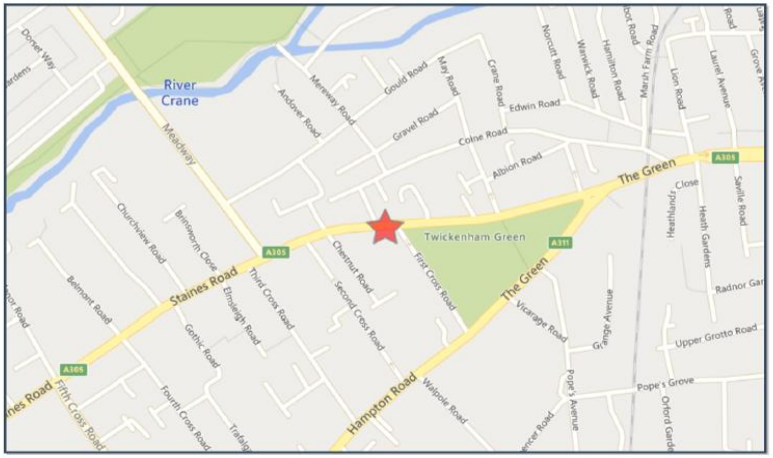


crashmap.co.uk

Validated Data

Crash Date:	Tuesday, December 12, 2017	**Time of Crash:**	11:55:00 PM	**Crash Reference:**	**2017010077392**

Highest Injury Severity:	Serious	**Road Number:**	A305	**Number of Casualties:**	1
Highway Authority:	Richmond upon Thames			**Number of Vehicles:**	1
Local Authority:	Richmond upon Thames London Borough			**OS Grid Reference:**	515110 172990
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	Other object in carriageway				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	Zebra crossing				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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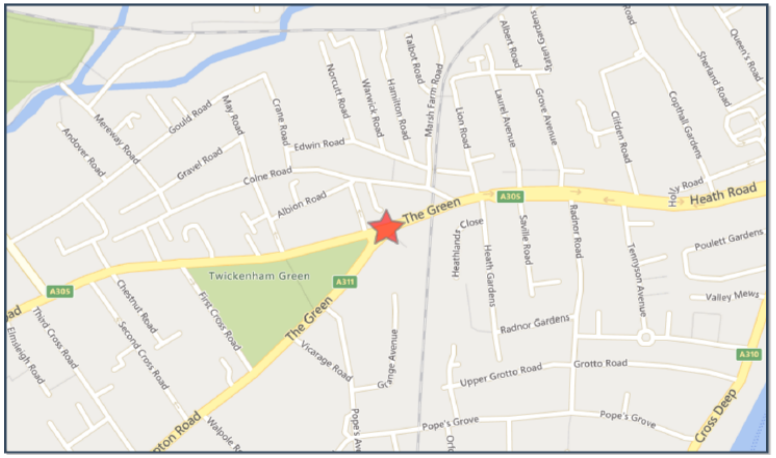
Validated Data

Crash Date:	Thursday, December 21, 2017	**Time of Crash:**	10:59:00 PM	**Crash Reference:**	**2017010079647**

Highest Injury Severity:	Serious	**Road Number:**	A305	**Number of Casualties:**	1
Highway Authority:	Richmond upon Thames			**Number of Vehicles:**	1
Local Authority:	Richmond upon Thames London Borough			**OS Grid Reference:**	515470 173060
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	Pedestrian phase at traffic signal junction				
Road Type:	Single carriageway				
Junction Control:	Auto traffic signal				



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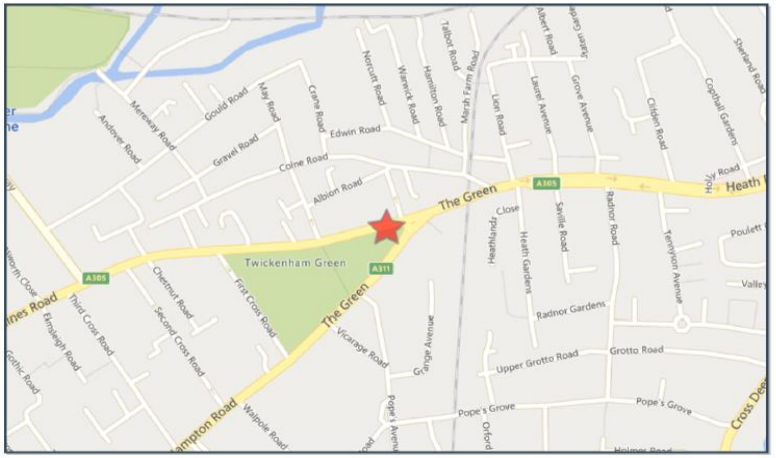
Validated Data

Crash Date:	Monday, July 23, 2018	**Time of Crash:**	12:04:00 PM	**Crash Reference:**	**2018010122708**

Highest Injury Severity:	Serious	**Road Number:**	A305	**Number of Casualties:**	1
Highway Authority:	Richmond upon Thames			**Number of Vehicles:**	1
Local Authority:	Richmond upon Thames London Borough			**OS Grid Reference:**	515410 173040
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	Pedestrian phase at traffic signal junction				
Road Type:	Dual carriageway				
Junction Control:	Not Applicable				



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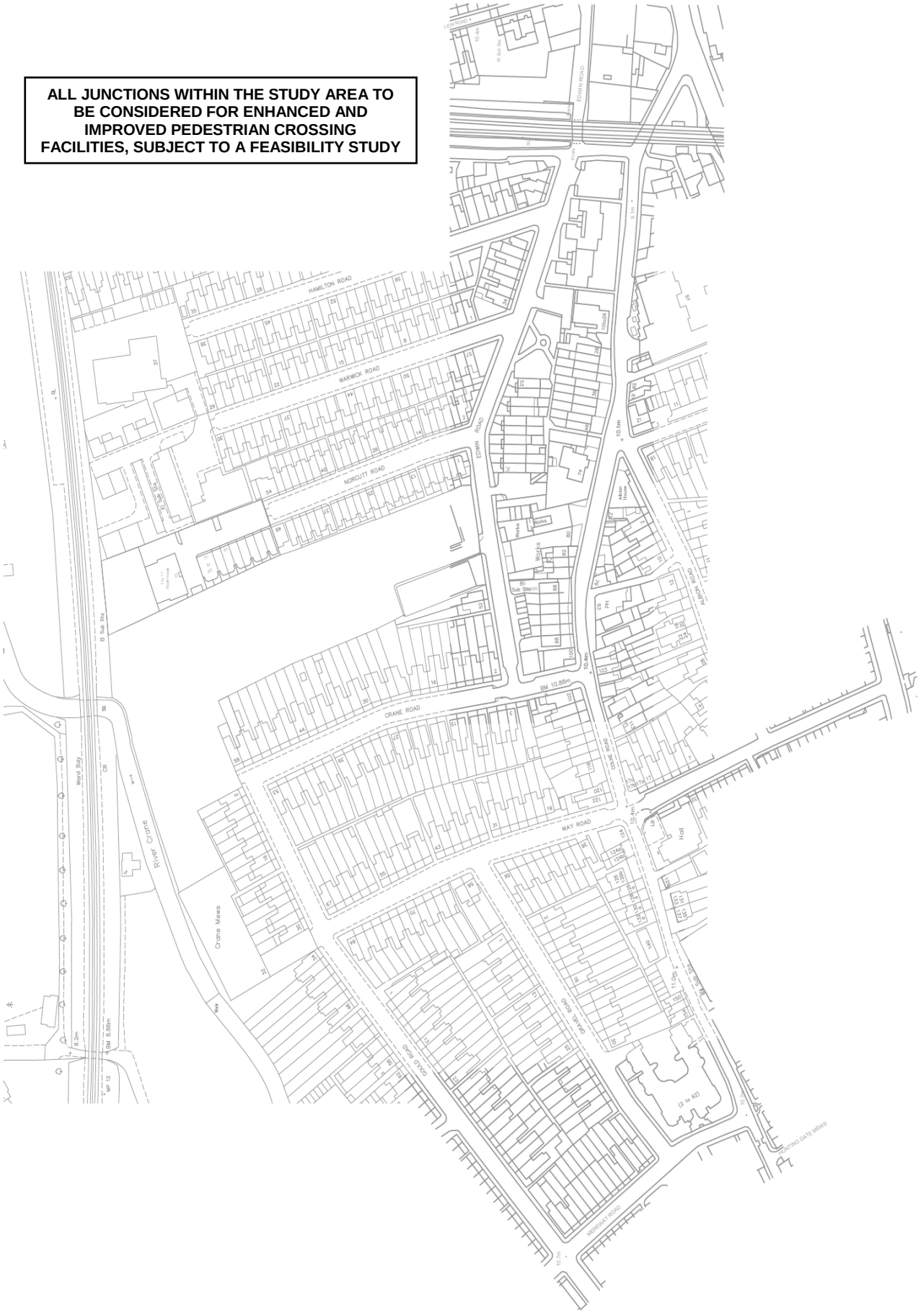
APPENDIX D

APPENDIX D - OPTIONS FOR IMPROVEMENT

ALL JUNCTIONS WITHIN THE STUDY AREA TO BE CONSIDERED FOR ENHANCED AND IMPROVED PEDESTRIAN CROSSING FACILITIES, SUBJECT TO A FEASIBILITY STUDY



APPENDIX F

EMPLOYMENT SCHEME ASSESSMENT

1 INTRODUCTION

1.1 NOTE PURPOSE

1.1.1 This technical note has been produced to assess the potential highway impacts associated with a full commercial or industrial scheme on the former Greggs Factory site in Twickenham.

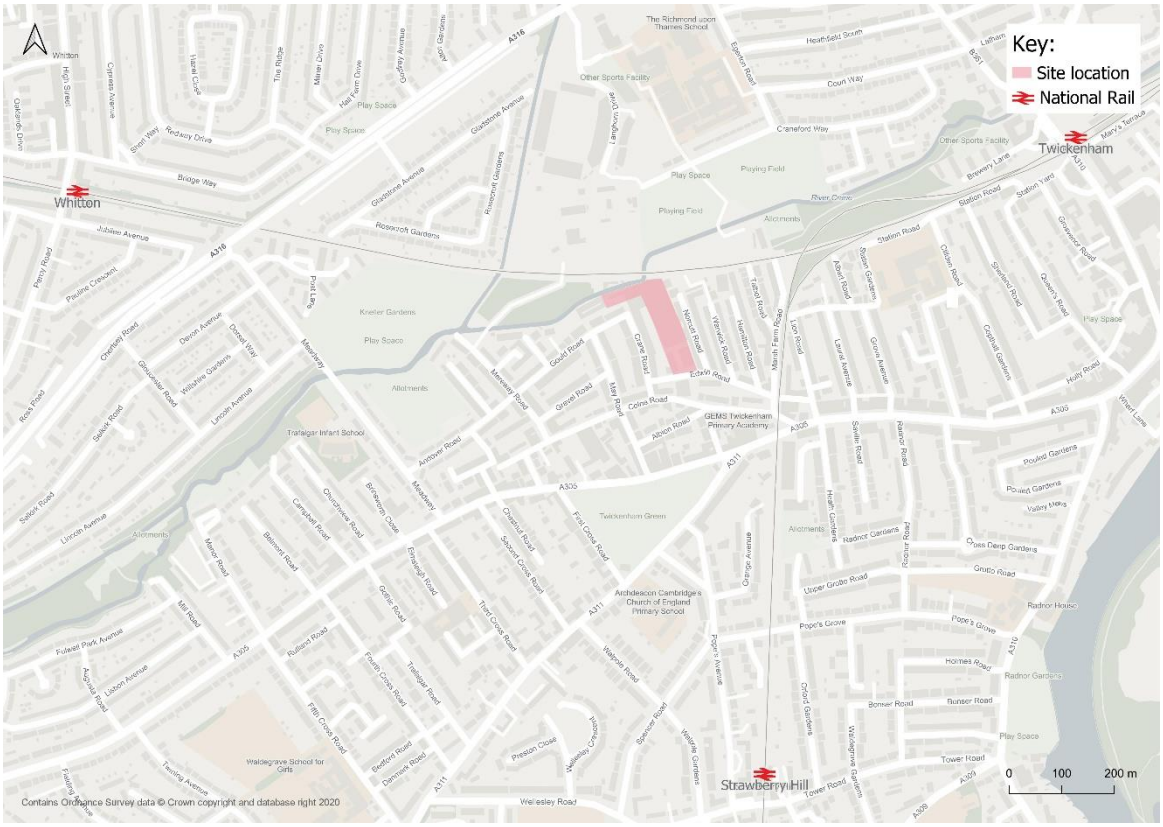
1.1.2 Although the land is allocated as locally important industrial land, this technical note demonstrates that a full industrial site could not be adequately mitigated, and the site is not suitable to accommodate significant industrial land without impacts to local residents and highway safety.

1.1.3 A Technical Note was previously produced that assessed the maximum quantum of employment land that could be accommodated on the former factory site. The findings of that assessment established that 885sqm of light industrial floor space could be accommodated within the site before highway safety was compromised.

1.1 BACKGROUND INFORMATION

1.1.1 **Figure 1-1** illustrates the location of the Site. The existing Site comprises the former Greggs Bakery Site in Twickenham and no.2 Gould Road, within the London Borough of Richmond Upon Thames. The Site is L shaped and is bound by the River Crane to the north and the railway line beyond, residential properties on Norcutt Road to the east, Edwin Road to the south, residential properties on Crane Road to the west and further residential properties on Crane Road/ Gould Road and at Crane Mews to the northwest.

Figure 1-1: Site location and local context



1.1.2 The Site is highly constrained and is accessed via Edwin Road to the south and Gould Road to the north of the Site. There is a small yard to the south of the Site accessed from Edwin Road, which is where HGVs historically accessed the Site. A limited amount of car parking associated with the existing bakery is located within the Site accessed off Gould Road to the north of the Site. Staff from Greggs Bakery were previously able to park on the surrounding streets prior to parking restrictions associated with the introduction of the 'West Twickenham CPZ', which came into force in May 2018.

1.1.3 The existing use of the Site is for industrial purposes and includes ancillary office floor space associated with the bakery operations that previously operated from the Site. The bakery operation is now redundant, and Greggs ceased the bakery use on the Site in 2018. Greggs has been unable to sell the facility despite a marketing exercise that commenced in February 2018.

1.1.4 Greggs operated on the Site since its acquisition in 1994 until 2018. Agents for Greggs have advised that throughout this period, it proved problematic from an operational and asset management perspective. The buildings gave rise to an unsustainable maintenance cost resulting in the business beginning a search for alternative premises in the late 1990s as the Site was considered unfit for purpose. The business operated from the Site unsatisfactorily and inefficiently, maintaining a difficult relationship with neighbouring residents. Alternative premises were identified in Enfield, and the Bakery production and distribution has now relocated outside of the Borough to a purpose-built facility that is more operationally efficient than the Bakery premises at Gould Road.

1.2 HISTORICAL SITE ISSUES

1.2.1 Whilst the Site was operational as Greggs Bakery, it generated a moderate number of regular daily HGV movements, with instances of conflict where large vehicles were passing other vehicles. Highway safety was compromised when the Site was occupied, primarily because of the conflicts created by the number of larger sized service vehicles accessing the Site and using the local roads.

1.2.2 On the A305 The Green, this is not an issue, but on the residential roads surrounding the Site, this has led to:

- Damaged footways and kerbs;
- Concerns about safety for other road users and pedestrians;
- Local complaints of noise and poor air quality (particularly important as the Site is not subject to any restrictions and can operate 24 hours a day); and
- Damage to parked cars

1.2.3 Due to the Site's residential setting, the adjoining network of roads does not lend themselves to moderate-volume HGV movements. Carriageways are in parts, narrow and often flanked by parked cars. There have been regular instances of vehicles mounting the kerb, as illustrated by the condition of the pavement and kerb along Marsh Farm Road (which is the route HGVs used to take between the Site and the A305 and is indeed reinforced by signage identifying other routes as being unsuitable for HGVs). Evidence of damage and over-running is shown in **Figure 1-2** and **Figure 1-3**.

Figure 1-2: Damage to Marsh Farm Road footway

Figure 1-3: Tyre marks on Marsh Farm Road footway

2 TECHNICAL ANALYSIS

2.1 TRIP GENERATION METHODOLOGY

2.1.1 The existing Site, when previously operational, would have generated demand for travel by:

- Employees and visitors – office or site-based; and
- Delivery and servicing-related trips.

2.1.2 The industrial Site's travel demand has been forecasted using data extracted from the TRICS database. TRICS is a database that holds transport-related surveys from sites across the UK. It is the industry-standard tool used to estimate the effect of the proposed change in land use on transport travel patterns.

2.1.3 The following selection criteria were used to ensure the suitability of comparable survey data sets:

- Comparable location (outer London boroughs);
- Comparable Public Transport Accessibility Level, i.e. PTAL 1 – 4 (within reason and where possible);
- Comparable on-site parking provision; and
- Comparable development type in terms of use class.

2.1.4 The following section apply data from comparable TRICS sites to assess the extant Site and establish:

- Trip rates are based on "total person" trip rates.
- Trip-generation mode share based on "travel to work census data" for the specific ward in Richmond".
- Multi-modal trip generation based on "total person" trip data.

2.1.5 It is important to note, as shown by the total person trip rates across the day, that a comparable industrial use to the previous is characterised by shift working and will generate a significant number of trips earlier in the morning and across a longer PM peak.

2.1.6 Looking more specifically at modes of travel, it is important to consider the larger vehicle trips that a fully operational industrial site would generate. These HGV trips have been a clear source of neighbourhood conflict for the extant site use.

2.1.7 With regard to employee parking provision at the Site when operational as an industrial site, the limited amount of parking resulted in employees parking within the surrounding roads, which prior to 2018 were not part of a Controlled Parking Zone, thus causing issues of high parking stress and conflict with residential car owners in neighbouring streets. Any industrial redevelopment at the Site would need to take into account the CPZ implementation, prohibiting additional parking within the surrounding area, potentially compromising the size of industrial floorspace on-site as a result of a need to provide adequate on-site parking.

2.1.8 As outlined in **Section 1**, HGV trips have been a clear source of neighbourhood conflict for the extant site use. As such, it is pertinent to review the projected HGV trips for similar industrial use at the Site to consider the impact of an alternative, fully operational industrial Site.

2.2 EXTANT INDUSTRIAL USE TRIP GENERATION

2.2.1 As the trip generation and modal split methodology for the extant were accepted for the previous application. The same methodology has been used within this analysis.

2.2.2 The TRICS database of Industrial surveyed sites contains one outer-London borough site, shown in **Table 2-1**, which is deemed to be reasonably comparable to the permitted use.

Table 2-1: TRICS Site Selection – Industrial estate use (existing site)

REFERENCE	LOCATION	SURVEY YEAR	GFA (SQM)	PARKING SPACES
BT-02-C-02	Brent	2014	6100	156

2.2.3 The above Site, situated in West London, is also a food production facility, similar to the permitted use of the Greggs Bakery site.

EMPLOYEE TRAVEL DEMAND

2.2.4 The corresponding TRICS output showing the weighted average total person trip rates (per 100sqm) has been applied to the extant Site's GFA of 7,371sqm (the floor area of the existing buildings on-site) and the forecast total person trips during the AM peak (06:00-07:00), and PM peak (17:00-18:00) are summarised in **Table 2-2**.

Table 2-2: Existing Site – Industrial total person trip rates and trip generation

TIME PERIOD	TOTAL PERSON TRIP RATE (PER 100 SQM)			TOTAL PERSON TRIP GENERATION (7,371 SQM)		
	Arrive	Depart	Total	Arrive	Depart	Total
06:00	2.672	0.098	2.77	193	7	200
07:00	0.344	0.262	0.606	25	19	44
08:00	0.131	0.066	0.197	9	5	14
09:00	0.164	0.098	0.262	12	7	19
10:00	0.279	0.279	0.558	20	20	40
11:00	0.311	0.23	0.541	22	17	39
12:00	0.115	0.148	0.263	8	11	19
13:00	0.18	0.197	0.377	13	14	27
14:00	0.148	0.164	0.312	11	12	23
15:00	0.295	0.18	0.475	21	13	34
16:00	1.885	0.18	2.065	136	13	149
17:00	0.066	3.311	3.377	5	239	244
TOTAL	**6.59**	**5.213**	**11.803**	**476**	**377**	**853**

2.2.5 The peak hour for the industrial Site is 06:00-07:00. It is important to note, as shown by the total person trip rates across the day, that an industrial use comparable to the previous use is characterised by shift working and will generate a significant number of trips earlier in the morning and across a longer PM peak.

2.2.6 Whilst the TRICS site is comparable in terms of land use, and likely OGV/HGV trip generation, the selected Site has a different level of public transport accessibility.

2.2.7 Mode share is dependent on the local transport network, which is more accurately obtained from local Census data. The use of 2011 Census data' WD703EW - Method of travel to work (2001 specification) for

the middle super output area (MSOA) "Richmond ward 14" has been used to disaggregate the total person (i.e. employee or visitor) trips (shown in **Table 2-2**) by mode.

2.2.8 The modal share has been adjusted to remove those "not in employment" or "working from home", with the percentage share adjusted across the travel modes accordingly. The mode share is shown in **Table 2-3.**

Table 2-3: 2011 Census data - mode share

RICHMOND WARD 014	PERCENTAGE*
Pedestrians	11%
Cyclists	7%
Bus	17%
Underground	5%
Rail	18%
Taxi	0%
Motorcycle	1%
Vehicle drivers (no servicing)	39%
Vehicle occupants (including taxi passengers)	2%
Total	100%*

(source: WP703EW)

**Rounding has occurred*

2.2.9 The estimated multi-modal industrial peak hour travel demand based on industrial use of 7,371sqm is outlined in **Table 2-4**.

Table 2-4: Industrial Site Peak Hour Travel Demand

RICHMOND WARD 014	AM PEAK			PM PEAK		
	Arrive	Depart	Total	Arrive	Depart	Total
Pedestrians	21	1	22	1	27	27
Cyclists	14	1	14	0	17	17
Bus	33	1	34	1	41	42
Underground	9	0	9	0	11	11
Rail	36	1	38	1	45	46
Taxi	0	0	0	0	0	0
Motorcycle	2	0	2	0	3	3
Vehicle drivers (no servicing)	77	3	80	2	96	98
Vehicle occupants (including taxi passengers)	4	0	4	0	5	5
Total	**197**	**7**	**204**	**5**	**244**	**249**

DELIVERIES AND SERVICING TRAVEL DEMAND

2.2.10 A key generator of traffic for industrial sites is OGV/HGV trips. Taking the weighted average OGV/HGV trip rates from the site and applying these to a notional developable area on the Site of 7,371sqm (equivalent to the existing buildings) for an Industrial Use produces the OGV/HGV trips in **Table 2-5**.

Table 2-5: Existing Site – Industrial HGV trip rates and trip generation

TIME PERIOD	HGV TRIP RATE (PER 100 SQM)			HGV TRIP GENERATION (7,371 SQM)		
	Arrive	Depart	Total	Arrive	Depart	Total
06:00	0.016	0	0.016	1	0	1
07:00	0.049	0.033	0.082	4	2	6
08:00	0.016	0.049	0.065	1	4	5
09:00	0.066	0.033	0.099	5	2	7
10:00	0.066	0.115	0.181	5	8	13
11:00	0.066	0.066	0.132	5	5	10
12:00	0.016	0.033	0.049	1	2	4
13:00	0.066	0.033	0.099	5	2	7
14:00	0.066	0.098	0.164	5	7	12
15:00	0	0.016	0.016	0	1	1
16:00	0.016	0	0.016	1	0	1
17:00	0.016	0	0.016	1	0	1
TOTAL	**0.459**	**0.476**	**0.935**	**34**	**35**	**69**

2.2.11 As **Table 2-5** suggests, the permitted use could be expected to generate around 69 HGV trips during a typical day, notwithstanding further HGV trips prior to 06:00 and beyond 18:00 and smaller LGV trips not indicated in the TRICS assessment. This is considered to be similar to the former Greggs use, where HGVs were used for the distribution of goods throughout the day. The forecast also shows the concentration of HGV movements tends to be in the morning and over lunchtime. As with the previous uses on-site, this has the potential to result in vehicle conflicts on the local highway network, which are well-documented.

2.2.12 It is, therefore, reasonable to assume that bringing the Site back into industrial use with an alternative tenant or activities does not necessarily overcome any of the historical highway safety issues associated with HGVs on the local road network.

2.3 B1 COMMERCIAL OFFICE TRIP GENERATION

2.3.1 To further assess the impact of alternative development at the Site, the scheme architects, Assael Architecture, have prepared an indicative scheme, shown in **Figure 2-1,** comprised of 100% E(g)(i) commercial units. This allows the assessment of potential transport and trip-generation impacts that such a development would have at the Site and upon the surrounding highway network. The comparative 100% commercial scheme comprises 6,223sqm (GIA) of commercial units with associated parking spaces and commercial loading bays.

Figure 2-1: Indicative Commercial Scheme

Ground floor plan of full industrial scheme of B1/B2/B8 uses achieving 3,773 sq m (1-3 storeys)

2.3.2 The commercial development would generate demand for travel by:

- Employees and visitors; and
- Delivery and servicing-related trips.

2.3.3 The commercial Site's travel demand has been forecasted using data extracted from the TRICS database.

2.3.4 The following selection criteria were used to ensure the suitability of comparable survey data sets:

- Comparable location (outer London boroughs);
- Comparable Public Transport Accessibility Level, i.e. PTAL 1 – 4 (within reason and where possible);
- Comparable on-site parking provision; and
- Comparable development type in terms of use class.

2.3.5 The TRICS database of office surveyed sites contains two outer-London borough sites, shown in **Table 2-6** which are deemed to be reasonably comparable to commercial use.

Table 2-6: TRICS Site Selection – Employment Office Use

REFERENCE	LOCATION	SURVEY YEAR	GFA (SQM)	PARKING SPACES
BN-02-A-01	Barnet	2021	1,366	19
HD-02-A-09	Hillingdon	2018	12,100	425

EMPLOYEE TRAVEL DEMAND

2.3.6 The corresponding TRICS output showing the weighted average total person trip rates (per 100sqm) has been applied to the extant Site's GIA of 6,223sqm (the maximum floor area due to site constraints including mezzanine) and the forecast total person trips during the AM peak (08:00-09:00), and PM peak (17:00-18:00) are summarised in **Table 2-7.**

Table 2-7: Commercial Site – total person trip rates and trip generation

TIME PERIOD	TOTAL PERSON TRIP RATE (PER 100 SQM)			TOTAL PERSON TRIP GENERATION (6,223 SQM)		
	Arrive	Depart	Total	Arrive	Depart	Total
07:00	1.144	0.037	1.181	71	2	73
08:00	2.51	0.052	2.562	156	3	159
09:00	0.75	0.059	0.809	47	4	50
10:00	0.201	0.097	0.298	13	6	19
11:00	0.104	0.141	0.245	6	9	15
12:00	0.579	0.772	1.351	36	48	84
13:00	0.55	0.535	1.085	34	33	68
14:00	0.163	0.178	0.341	10	11	21
15:00	0.059	0.401	0.46	4	25	29
16:00	0.089	1.092	1.181	6	68	73
17:00	0.082	2.124	2.206	5	132	137
18:00	0.007	0.921	0.928	0	57	58
TOTAL	6.238	6.409	12.647	388	399	787

2.3.7 The peak hour for the commercial Site is 08:00-09:00.

2.3.8 Whilst the TRICS sites are comparable in terms of land use, and likely OGV/HGV trip generation, the selected sites have a different level of public transport accessibility.

2.3.9 The public transport mode share is dependent on the local transport network, which is more accurately obtained from local Census data. The use of 2011 Census data' WD703EW - Method of travel to work (2001 specification) for the middle super output area (MSOA) "Richmond ward 14" has been used to disaggregate the total person (i.e. employee or visitor) trips (shown in Table 2-7) by mode.

2.3.10 The modal share has been adjusted to remove those "not in employment" or "working from home", with the percentage share adjusted across the travel modes accordingly. The mode share is shown in **Table 2-8.**

Table 2-8: 2011 Census data - mode share

RICHMOND WARD 014	PERCENTAGE*
Pedestrians	11%
Cyclists	7%
Bus	13%
Underground	5%
Rail	15%
Taxi	0%
Motorcycle	1%
Vehicle drivers (no servicing)	44%
Vehicle occupants (including taxi passengers)	2%
Total	100%*

(source: WP703EW)
**Rounding has occurred*

2.3.11 The estimated multi-modal commercial peak hour travel demand based on commercial use of 6,223sqm is outlined in **Table 2-9.**

Table 2-9: Commercial Site Peak Hour Travel Demand

RICHMOND WARD 014	AM PEAK			PM PEAK		
	Arrive	Depart	Total	Arrive	Depart	Total
Pedestrians	17	0	17	1	14	15
Cyclists	11	0	11	0	9	10
Bus	26	1	27	1	22	23
Underground	7	0	7	0	6	6
Rail	29	1	29	1	24	25
Taxi	0	0	0	0	0	0
Motorcycle	2	0	2	0	1	1
Vehicle drivers (no servicing)	61	1	63	2	52	54
Vehicle occupants (including taxi passengers)	3	0	3	0	3	3
Total	**156**	**3**	**159**	**5**	**132**	**137**

TRICS PARKING ACCUMULATION

2.3.12 A parking accumulation exercise has been undertaken using the TRICS trip rates used to forecast the proposed commercial trips. Whilst the TRICS sites are comparable in terms of land use; the selected sites have a different level of public transport accessibility.

2.3.13 The use of 2011 Census data' WD703EW - Method of travel to work (2001 specification) for the middle super output area (MSOA) "Richmond ward 14" has been used to disaggregate the total person trips by mode.

2.3.14 The car trip rates extracted from the TRICS data have been adjusted downward to reflect the vehicle driver mode share in **Table 2-9**.

2.3.15 The parking accumulation has been set out in **Table 2-10** below.

Table 2-10: Parking Accumulation Adjusted - Commercial

TIME RANGE	CAR TRIP RATES			CAR TRIPS*			PARKING ACCUMULATION
	Arrivals	Departures	Two-way	Arrivals	Departures	Two-way	
07:00	0.824	0.015	0.839	34	1	35	34
08:00	1.559	0.037	1.596	65	2	66	97
09:00	0.527	0.03	0.557	22	1	23	117
10:00	0.111	0.037	0.148	5	2	6	120
11:00	0.045	0.067	0.112	2	3	5	119
12:00	0.059	0.186	0.245	2	8	10	114
13:00	0.074	0.059	0.133	3	2	6	115
14:00	0.037	0.097	0.134	2	4	6	112
15:00	0.015	0.29	0.305	1	12	13	101
16:00	0.037	0.809	0.846	2	34	35	69
17:00	0.052	1.381	1.433	2	57	59	14
18:00	0.007	0.594	0.601	0	25	25	-11

**adjusted to reflect vehicle driver mode share.*

2.3.16 As part of a commercial development on the Site, a total of 95 car parking spaces could be provided. This means that based on the assessment in **Table 2-10** the car park would be over capacity for the majority of the working day (indicated by values in red in Table 2-10) and up to 25 cars will not be accommodated on-site.

DELIVERIES AND SERVICING DEMAND

2.3.17 A generator of traffic for commercial sites is servicing vehicle trips. The TRICS servicing vehicle trip rates have been applied to the developable area on the Site of 6,223sqm for a Commercial Use and produces the servicing trips in **Table 2-11.**

Table 2-11: Commercial Site – Servicing Vehicle trip rates and trip generation

TIME PERIOD	SERVICING TRIP RATE (PER 100 SQM)			SERVICING TRIP GENERATION (6,223 SQM)		
	Arrive	Depart	Total	Arrive	Depart	Total
07:00	0.03	0.022	0.052	2	1	3
08:00	0.015	0.007	0.022	1	0	1
09:00	0	0.007	0.007	0	0	0
10:00	0.045	0.052	0.097	3	3	6
11:00	0.022	0.03	0.052	1	2	3
12:00	0.015	0.015	0.03	1	1	2
13:00	0	0	0	0	0	0
14:00	0.007	0.007	0.014	0	0	1
15:00	0	0	0	0	0	0
16:00	0.03	0.03	0.06	2	2	4
17:00	0	0	0	0	0	0
18:00	0	0	0	0	0	0
TOTAL	**0.164**	**0.17**	**0.334**	**10**	**11**	**21**

2.3.18 As **Table 2-11** suggests, the commercial use could be expected to generate around 21 servicing vehicle trips during a typical day, notwithstanding further trips prior to 07:00 and beyond 19:00.

2.3.19 There would also be potential for additional daily trips for commercial waste and recycling vehicles, which would not form part of the existing residential refuse strategy. This would create an additional burden on the road network, exacerbating the existing issues caused by years of industrial estate activity at the former factory in terms of both road safety, and kerbside damage caused by HGV and LGV vehicles on the local road network.

3 SUMMARY

3.1.1 This note reviews a fully commercial and industrial scheme on the Site and considers if the impacts could be adequately mitigated and whether such schemes might be acceptable from a highway safety perspective.

3.1.2 Employment use on the Site would generate two major impacts:

- Local traffic and parking pressures; and
- Safety issues associated my multiple HGVs using the local road network at the same time.

3.1.3 An E(g)(i) commercial scheme would result in a reasonably high trip generation and parking demand generated by the number of employees due to the modest PTAL. The high trip generation and parking demand have the potential to result in localised congestion during the morning and evening peak hours, as well as generating overspill parking demand on surrounding streets if sufficient supply is not provided on-site. The immediate area is within a CPZ, but there are roads slightly further away which do not have any form of parking control. People are willing to park further away from their workplace than they do their home, so the potential impact on these uncontrolled streets is likely to be worse than a residential scheme.

3.1.4 A full industrial scheme impacts are less to do with trip generation and local parking issues as the employment density would be lower. The impacts associated with a B2 use on the Site have more to do with highway safety on the local residential streets. When the Site was operating as a Greggs factory, there were frequent instances of HGVs not being able to pass each other on the local roads and having to either backup or mount the footways. Both activities compromise highway safety, especially mounting the kerb which puts pedestrians at danger. The probability assessment undertaken in Technical Note TN003 calculated that two HGVs associated with the full industrial scheme will meet at least twice over a 12-hour period along the length of Edwin Road and an HGV would meet 13 times per day with another vehicle on Edwin Road.

3.1.5 **Figure 3-1** below shows a Greggs HGV using Marsh Farm Road to allow another Greggs HGV to pass. The vehicle in Marsh Farm Road is then required to reverse without the use of a banksman across the pedestrian/cycle route underneath the railway on Edwin Road causing potential highway safety issues.

Figure 3-1: Greggs Vehicles passing on Edwin Road

3.1.6 Any use of the Site will certainly result in the occasional HGV movement from refuse collection or larger rigid vehicles, but the concentration of both HGV and LGVs associated with industrial or significant commercial use has historically caused safety issues. It is likely that if the Site were brought into industrial use again, this issue would likely continue.

3.2 CONCLUSIONS

3.2.1 It is clear through the trip-generation assessment undertaken that a commercial or industrial use would generate a considerable number of total person and vehicle trips and would not alleviate the issues surrounding LGV and HGV trips associated with the extant Site.

3.2.2 In comparing a commercial development to the extant consented use, the trip generation assessment has illustrated that both developments would generate a high number of vehicle trips. The industrial Site would still generate a significant number of HGV/LGV traffic, and this could not be alleviated or remedied.

3.2.3 With the concentration of E(g)(iii) or B2 on the development site, there are no obvious measures to mitigate the highway risks. The introduction of the CPZ highlights local residents have suffered from parking pressures and increasing the parking capacity on local residential streets is extremely difficult and often impossible. The impacts of multiple HGVs using the local roads are also very difficult to mitigate where there is no scope to widen roads and dedicated HGV routes are already signed.

3.2.4 In summary, the re-introduction of significant employment uses on the Site from a highway's perspective would be unacceptable, unsafe and very difficult if not impossible to mitigate.

APPENDIX G

CONSTRUCTION PROGRAMME

Activity	2024											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Site Setup and Demolition												
Sub-Structure												
Super-Structure												
Cladding												
Fit-Out, Testing and Commissioning												

Activity	2025											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Site Setup and Demolition												
Sub-Structure												
Super-Structure												
Cladding												
Fit-Out, Testing and Commissioning												

Activity	2026				
	Jan	Feb	Mar	Apr	May
Site Setup and Demolition					
Sub-Structure					
Super-Structure					
Cladding					
Fit-Out, Testing and Commissioning					