

## Route 1: Site – Chatham Road – A283 – Norbiton Railway Station



**1. Cambridge Road Traffic Lights**



**2. Chatham Road/Clevedon Road**



**3. Chatham Road**



**4. Coombe Road**



**5. Coombe Road/Norbiton station approach**

**Table 5.4 Route 1: Site to Norbiton Railway Station**

Healthy Street Indicator	Reason for not meeting	How to Improve
<b>Route 1: Photograph 3 (Chatham Road)</b>		
Easy to cross	The crossing points along this route are poor, there is no tactile paving, and the dropped kerbs are uneven making them unsafe.	Introduce tactile paving and improve the existing footways.
People feel safe	This is currently a back street; some people may feel unsafe due to the isolated nature of the road.	Regenerating the area to have more active frontages would help people to feel safe.
Things to see and do	There are currently no shops or places to carry out social activities on Chatham Road, although there are front gardens whereby people may be gardening.	The introduction of new retail units may encourage more interest and engagement in the area.
Places to stop and rest	As demonstrated in the photograph there are no formal stopping places for resting.	Benches could be installed that provide a range that provide a range of seating options.
People feel relaxed	The footway materials are poor and provide an uneven surface, with wheelie bins also taking up part of the footway which cause a trip hazard, putting some people on edge.	Improve the footways and also encourage residents not to leave their wheelie bins on the footway.
Not too noisy	Due to the nature of the road, there is little through traffic and therefore noise is limited.	None.
Clean air	Again, due to the residential nature of the road, the air is relatively clean.	None.
Shade and shelter	There is limited shade and shelter along Chatham Road.	Planting trees would provide shelter and are also aesthetically pleasing.
<b>Route 1: Photograph 2 (Chatham Road/Clevedon Road)</b>		
People feel relaxed	There is a lot of litter along this part of the route makes it feel like it is an undesirable location.	Reducing the amount of litter by providing more litter bins.



## Route 2: Site – Gloucester Road – Kingston Hospital



**1. Gloucester Road South**



**2. Gloucester Road North**



**3. Galsworthy Road/Kenley Road**



**4. Galsworthy Road**



**5. Kingston Hospital Approach**

**Table 5.5 Route 2: Site to Kingston Hospital**

Healthy Street Indicator	Reason for not meeting	How to Improve
<b>Route 2: Photograph 1 (Gloucester Road South)</b>		
Easy to cross	There are few formal crossings along this section of the route for users who want to cross from one side of Gloucester Road to the other.	Introduce tactile paving would aid safe crossing.
People feel safe	This is a residential road with little pedestrian activity, meaning that people may feel unsafe walking down this section of the route.	Introduce more street furniture, in terms of bollards to prevent vehicles parking on the footway.
Things to see and do	Although there are front gardens that belong to the residential units, most of them have dropped kerbs for car parking making it difficult for people to stop and meet, due to vehicle crossovers.	Reduce the amount of vehicle crossovers in order to encourage people to stop and meet on the footways.
Places to stop and rest	As demonstrated in the photograph there are no formal stopping places for resting.	Benches would provide a place to stop and rest.
People feel relaxed	Street furniture takes up sections of the footway reducing the fluidity of the route.	Encouraging residents to remove bins would free up the footways for pedestrians.
Not too noisy	Due to the nature of the road, there is little through traffic and therefore noise is limited. During the site visit refuse collection was taking place which created more noise than usual; however, this cannot be prevented and only takes places once a week.	None.
Clean air	Again, due to the residential nature of the road, the air is relatively clean.	None.
Shade and shelter	There is limited shade and shelter along Gloucester Road.	Planting trees would provide shelter and are also aesthetically pleasing.
<b>Route 2: Photograph 5 (Kingston Hospital Approach)</b>		
Easy to cross	There are no formal crossings along this section of the route, for people to be able to cross from the eastbound footway to the westbound footway, i.e. towards Kingston Hospital.	Introducing formal/signalised pedestrian crossing to aid with safe crossing.

### Route 3: Site – A308 – Kingston Railway Station



**1. A307**



**2. A307 Bus Station**



**3. Kingston Railway Station**



**Table 5.6 Route 3: Site to Kingston Railway Station**

Healthy Street Indicator	Reason for not meeting	How to Improve
<b>Route 3: Photograph 1 (A307)</b>		
Easy to cross	Whilst there are signalised crossings, it is not easy for pedestrians to cross the road at any other point other than the dedicated crossings.	Adding more crossing points would benefit pedestrians.
People feel safe	There are no dedicated cycleways along this section of road and due to the high capacity of the road could make people feel unsafe.	Providing cycle infrastructure, including a dedicated cycleway would help to encourage more sustainable travel.
Things to see and do	There is little to do in this area although there are plants to look at which provides an aesthetically pleasing view.	Active frontages would be beneficial.
Places to stop and rest	There are places to stop and rest, there are low walls to protect the footway from the busy road, and these can be used as resting places.	None.
People feel relaxed	Even though the A307 is a busy road, the footway has been protected with a low wall, this separates the footway from the road. There is no litter nor is there any graffiti.	None.
Not too noisy	Due to heavy traffic flow, including bus and HGV movements, there is a reasonable amount of noise throughout the day.	The planting of extra foliage would help to reduce noise.
Clean air	Again, with the high levels of traffic the air is not at its cleanest.	Foliage and greenery would help to compensate for the poorer air quality in this area.
Shade and shelter	Although there are plants around the junction, there is little shade and shelter from the inclement weather.	Taller bushes/trees would help to provide increase hade and shelter for pedestrians.
<b>Route 3: Photograph 2 (A307)</b>		
People feel safe	Although this is a one-way section of road, there is no dedicated cycle infrastructure.	Cyclists may be intimidated by the bus station located along this road and therefore a dedicated cycle route would be appropriately placed here. This would help to provide any conflict of traffic movements.

### Route 4: Site – Hawks Road – King Athelstan Primary School



**1. Hawks Road**



**2. Hawks Road**



**3. Hawks Road/Villiers Road**



**4. Villiers Road**



**6. King Athelstan School**

**Table 5.7 Route 4: Site to King Athelstan School**

Healthy Street Indicator	Reason for not meeting	How to Improve
<b>Route 4: Photograph 4 (Villiers Road)</b>		
Easy to cross	Whilst there are crossing points, including dropped kerbs and tactile paving, parked cars block the view of the road, this would make it difficult for wheelchair users to cross the road as they would be unable to see cars travelling down the road from behind the parked cars.	Reduce how close vehicles can park to the dedicated crossing points.
People feel safe	The large tree on the footway has caused an uneven surface due to the roots impacting on the concrete. This is considered to be a trip hazard making pedestrians feel uneasy. Further to this, due to the width restriction where the tree is positioned this could force pedestrians into the road, which also makes people feel unsafe.	Maintain the trees and also the footway surfaces.
Things to see and do	There is little to see along this part of the route, mainly due to vehicles parked on-street parallel with the footway.	Widening the footway would be beneficial and limiting the number of vehicles that are able to park on-street.
Places to stop and rest	Formal seating is not present, pedestrians are able to sit on residential front garden walls, although this is not ideal.	Providing benches would be beneficial, particularly at areas where crossings have been put into place.
People feel relaxed	The footway and on-street parking suffer from littering and is also very muddy and unkempt.	The installation of more bins would help to reduce any litter being dropped on the floor.
Not too noisy	Due to the close proximity to the school, there is a large amount of traffic going into and out of the school during peak school hours.	This could be prevented by stopping parents from driving into the school to pick up their children.
Clean air	The larger number of trips in the area has a negative effect on air quality.	Initiatives to coordinate and consolidate deliveries and school drop offs/pickups
Shade and shelter	There are trees all along this route to give shade and shelter.	n/a



**Route 5: Site – A2043 – Kingsmeadow Athletics and Fitness Ground**



**1. Cambridge Road**



**2. Cambridge Road**



**3. Kingsmeadow Athletics and Fitness Ground**

**Table 5.8 Route 5: Site to Kingsmeadow Athletics Ground**

Healthy Street Indicator	Reason for not meeting	How to Improve
<b>Route A: Photograph 2 (Cambridge Road)</b>		
Easy to cross	There are few crossing places and there are parked cars on the kerbside which makes it difficult for pedestrians to cross over the main road.	Due to the busy nature of the road it would be advisable to add signalised crossings along the route.
People feel safe	Cambridge road is a busy main road, although there are dedicated cycleways, it is apparent that cyclists may not feel safe due to parked cars overlapping onto the cycleways which means that cyclists are forced out into the main carriageway.	Preventing parking on the kerbside would free up the dedicated cycleways.
Things to see and do	There are active frontages along this section of road, although improvements could be made.	Shopkeepers could be encouraged to make further use of their shop frontages to provide something to look at.
Places to stop and rest	On the northbound carriageway of Cambridge Road there are seating opportunities however these are aimed at customers only.	Providing benches and seating at bus stops would be ideal.
People feel relaxed	The pavement is uneven.	The surface of the footways could be improved to reduce the risk of pedestrians falling.
Not too noisy	This is a noisy section of road with deliveries for the shops and also with Cambridge Road being a bus route.	Controlling delivery hours would reduce noise.
Clean air	HGV movements contribute towards pollution in the air	Controlling delivery movements would also control and improve air quality.
Shade and shelter	There are trees planted at intervals along Cambridge Road, that when are full of leaves provide shade and shelter. When the leaves fall, there is no shelter along this part of the route.	Shop frontages on the northbound carriageway could provide shade and shelter for pedestrians through the use of canopies.



## Route 6: Site – Cambridge Road – Old London Road – Kingston Town Centre



1. Cambridge Road



2. Cambridge Road/A308



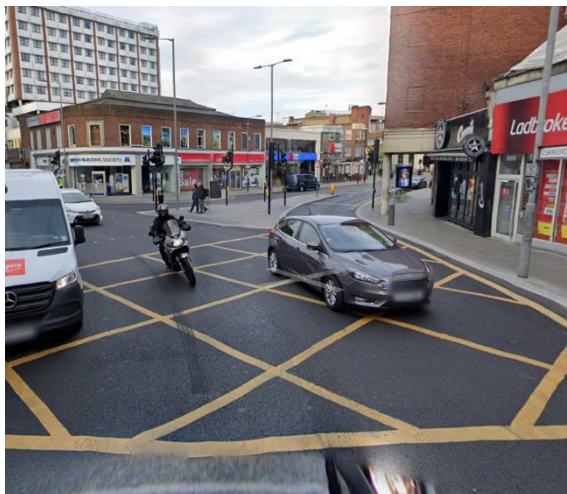
3. London Road



4. London Road



5. Old London Road



6. Clarence Street



**Table 5.9 Route 6: Site to Kingston Town Centre**

Healthy Street Indicator	Reason for not meeting	How to Improve
<b>Route 6: Photograph 5 (Old London Road)</b>		
Easy to cross	There are parked cars on either side of the carriageway which prevents safe crossing, it reduces pedestrian's ability to be able to see what is coming down the road.	Pedestrianizing the area would benefit pedestrians in terms of being able to freely cross the road and walk along the road browsing shops. Adding dropped kerbs and tactile paving would also be beneficial in this area.
People feel safe	There are a lot of active frontages along this part of the route including residential dwellings and retail units.	None.
Things to see and do	Again, due to the active frontages, there are a number of shop signs and café seating areas.	None.
Places to stop and rest	There are no places to stop and rest apart from the kerbside.	Benches would be appropriately placed in this area; it would be beneficial for shoppers and also those people travelling from Kingston town centre towards Cambridge Road Estate.
People feel relaxed	It is a busy area; pedestrians are in conflict with other pedestrian movements and cyclists are in conflict with vehicular movements. This reduces the relaxing environment	Pedestrianisation will help to reduce the conflicts by making the footways wider and providing cyclists with a dedicated cycleway.
Not too noisy	It is a noisy area due to shoppers and vehicles.	Resurfacing of the road would help to reduce noise vibrations.
Clean air	Considerable amount of traffic going along the road due to car parking, this results in poor air quality.	The Pedestrianisation of the road would help to improve the air quality by encouraging people to travel by sustainable modes of transport
Shade and shelter	There are some shop fronts with canopies which provide shelter although few of them do.	Encouraging more shop fronts to provide shelter through the use of canopies

## **5.9 Summary**

- 5.9.1 This chapter has provided an ATZ assessment in accordance with the latest TfL guidance (2019).
- 5.9.2 The assessment has identified key active travel destinations that will be of high priority to the site's users, as well as identifying the most important routes to key active travel destinations. Healthy Streets Indicators have also been assessed against specific parts of these routes to identify where improvements could be made.
- 5.9.3 Whilst the assessment undertaken above provides an overview of improvements to each element identified (in accordance with TfL guidelines) none of the above improvements identified above are required in order to mitigate the development and are not proposed to be provided by the applicant.

## 6. London Wide Network

### 6.1 Overview

- 6.1.1 This section of the TA assesses how people of all abilities will travel from the development onto London’s public transport and highway networks. A multimodal trip generation assessment has been undertaken to quantify the number of trips generated by both the existing and proposed land uses and summarising the overall net impact of the proposed development on the highway and transport networks.
- 6.1.2 The principles of the trip generation methodology were agreed with RBK and TfL during pre-application discussions held during 2019 and 2020.

### 6.2 Existing Site Trip Generation

#### Existing Vehicular Trip Rates – TRICS Assessment

- 6.2.1 Reviewing the TRIS database for Mixed Private/Affordable Housing category the trip rates and generation for vehicles has extracted and provided in **Table 6.1**.

**Table 6.1 Existing Vehicular Rates and Trip Generation (TRICS Data) for 832 Dwellings**

Vehicles	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (07:00-19:00)		
	In	Out	Total	In	Out	Total	In	Out	Total
<b>Trip Rate</b>	0.104	0.509	0.613	0.292	0.165	0.457	2.498	2.627	5.125
<b>Trip Generation</b>	42	106	149	72	53	126	740	765	1505

- 6.2.2 The above table indicates that for 832 dwellings the CRE estate would generate 149 vehicular movements in the AM peak, 126 in the PM peak and 1505 across the data (07:00-21:00), which is significantly different to that shown in **Table 6.2** above and confirms that the site attracts trips due to the unrestricted parking available within the site.

#### Existing Vehicular Trip Rates – ATC Assessment

- 6.2.3 In order to determine the existing trip generation for the site, survey data and existing levels of parking have been used. The ATC data outlined in **Table 3.6** includes Vincent Road and Cambridge Grove Road which includes properties outside the site boundary. Therefore, to provide an accurate trip estimate for the site itself the ATC’s from Vincent Road and Cambridge Grove Road have been excluded. **Table 6.2** shows the corresponding trip rates for the remaining ATC’s for Somerset Road, St Peters Road, Burritt Road and Willingham Way which serve approx. 774 dwellings. The table provides corresponding trip generation for 832 dwellings provided.



**Table 6.2 Existing Vehicular Trip Rates and Trip Generation (ATC Data) for 832 Dwellings**

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (24hr)		
	In	Out	Total	In	Out	Total	In	Out	Total
<b>Vehicular Trip Rate</b>	0.110	0.153	0.264	0.132	0.123	0.255	1.860	1.896	3.755
<b>Vehicular Trip Generation</b>	92	128	220	109	103	212	1547	1577	3124

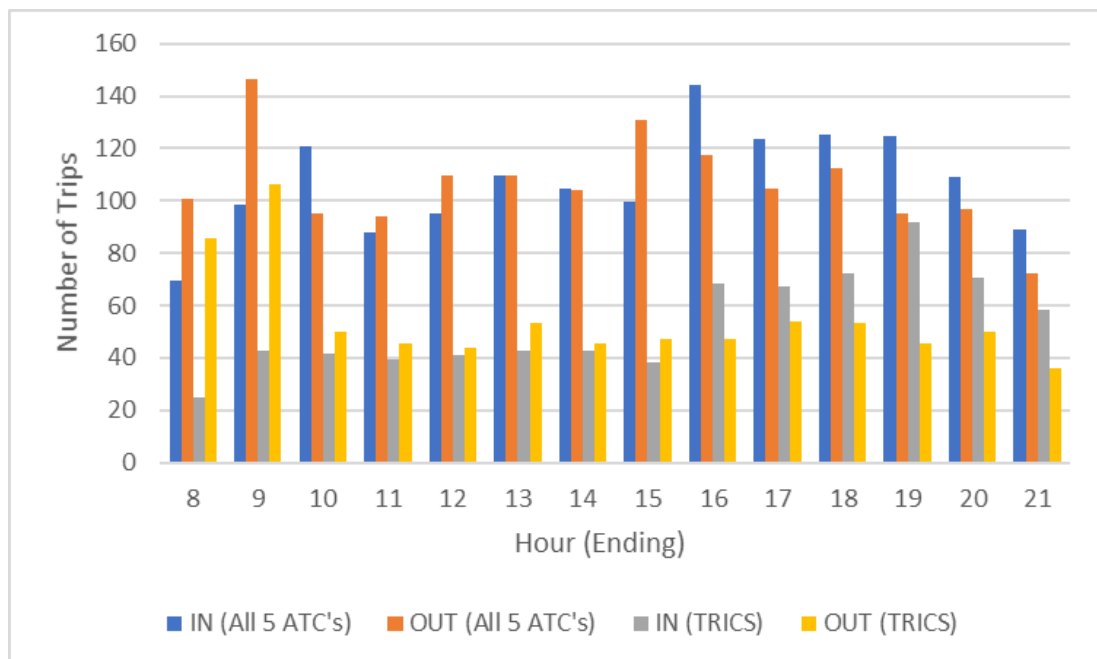
6.2.4 The above shows that for the existing 832 dwellings, the trip generation would be 220 vehicles in the AM peak and 212 vehicles in the PM peak, and 3124 trips across the day.

6.2.5 However, the ATC’s do not show a typical profile of trips into or out of the site, which you would not normally expect for a residential development.

### Comparison of ATC and TRICS Data

6.2.6 Therefore the weekday average ATC data (for all 5 ATC’s) has been compared against the TRICS data between 07:00 and 21:00 hours to understand the likely level of movement into / out of the estate which is probably related to retail / commuter traffic, with **Image 6.1** showing the profiles of the ATC and TRICS data.

**Image 6.1 Comparison of TRICS and ATC Trip Profiles (07:00-21:00)**



6.2.7 The graph above shows that across the day the number of in/out movements is significantly higher with the ATC data (blue and orange) when compared with the TRICS data (grey and yellow).

6.2.8 The difference between **Table 6.1** and **Table 6.2** is provided in **Table 6.3**.

**Table 6.3 Difference Between TRICS Data and ATC Data**

Total People	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (07:00-19:00)		
	In	Out	Total	In	Out	Total	In	Out	Total
Difference in Trips	-5	76	71	63	23	86	782	837	1619

6.2.9 The table above shows that due to the unrestricted parking within the existing site, an additional 71 trips in the AM peak, 86 trips in the PM peak and 1619 trips occur across the day. The additional level of movement is likely to be attributable to commuters and / or the public using the estate to park their cars to access other destinations such as the Health Centre, Kingston town centre, Kingston Hospital or Norbiton Railway Station.

6.2.10 Under the development proposals it is expected that the number of trips outlined in **Table 6.2** will be lost due to the proposed introduction of parking controls as part of the sites redevelopment.

6.2.11 As the proposed masterplan will remove the existing uncontrolled parking the vehicular trip generation outlined in **Table 6.2** will be used as the basis for the sites existing trip generation.

### Existing Multi-Modal Trip Generation

6.2.12 The existing total person trip generation has been determined from the TRICS database using both the Mixed Private/Affordable Housing category. The trip rates and trip generation are provided in **Table 6.4** below. The TRICS outputs are provided in **Appendix G**.

**Table 6.4 Existing Total Person Rates and Trip Generation**

Total People	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (07:00-19:00)		
	In	Out	Total	In	Out	Total	In	Out	Total
Trip Rate	0.104	0.509	0.613	0.292	0.165	0.457	2.498	2.627	5.125
Trip Generation	87	423	510	243	137	380	2078	2186	4264

6.2.13 The table above shows that the total person trips generated for the existing site would be approximately 510 trips in the AM peak, and 380 in the PM peak.

6.2.14 Taking the above vehicular trip generation from **Table 6.1** and the total person trip generation from **Table 6.4**; the modal split proportions for the local MSOA shown in **Table**

3.4 have been manually adjusted, amending the car driver proportion and adjusting the other modes on a pro-rata basis. The updated modal share and trip generation are shown in **Table 6.5**.

**Table 6.5 Existing Mode Share and Trip Generation**

Mode	AM Mode Share (%)	AM	PM Mode Share (%)	PM	Daily Mode Share	Daily
Underground, metro, light rail,	4%	19	4%	14	3%	148
Train	23%	115	21%	81	21%	882
Bus, minibus, or coach	14%	71	13%	50	13%	544
Taxi	0%	1	0%	1	0%	7
Motorcycle, scooter or moped	1%	7	1%	5	1%	55
Driving a car or van	29%	149	33%	126	35%	1505
Passenger in a car or van	1%	5	1%	4	1%	42
Bicycle	6%	29	5%	21	5%	223
On foot	22%	112	21%	79	20%	854
<b>Total</b>	<b>100%</b>	<b>510</b>	<b>100%</b>	<b>380</b>	<b>100%</b>	<b>4264</b>

6.2.15 Other than for the car, the table above shows that the existing site is likely to generate approximately 115 trips by train in the AM peak, 81 in the PM peak and 882 across the day, with Pedestrians undertaking 112 in the AM peak, 79 in the PM peak and 854 across the day.

Whilst the table above shows that the existing 832 residential dwellings will generate 1505 vehicle trips across the day, it is important to remember that the site as a whole generates 3124 vehicular trips across the day due to the unrestricted parking available.

## 6.3 Proposed Masterplan Site Trip Generation

### Proposed Vehicular and Total Person Trip Generation

6.3.1 The vehicular trip generation has been determined from the TRICS database using both the private flats and affordable flats categories. The trip rates and trip generation are provided in **Table 6.6** below and are based on 60% private flats and 40% affordable flats. The private housing TRICS outputs in **Appendix H** , with the Affordable housing TRICS outputs in **Appendix I** .



**Table 6.6 Proposed Vehicular and Total Person Rates and Trip Generation**

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
<b>Vehicular Trip Rates</b>									
Private Trip Rate	0.01	0.02	0.03	0.034	0.016	0.05	0.166	0.175	0.341
Affordable Trip Rate	0.026	0.091	0.117	0.041	0.032	0.073	0.378	0.42	0.798
<b>Vehicular Trip Generation</b>									
Total Vehicle Trips	36	105	141	80	49	128	544	592	1137
<b>Total People Trip Rates</b>									
Private	0.054	0.335	0.389	0.259	0.165	0.424	1.933	2.233	4.166
Affordable	0.135	0.568	0.703	0.388	0.241	0.629	2.783	2.882	5.665
<b>Total People Trip Generation</b>									
Total People Trips	187	929	1117	674	424	1098	4932	5409	10341

6.3.2 The table above shows that the likely trip generation for the proposed site is approximately 141 vehicles in the AM peak, and 128 in the PM peak and 1137 across the day. With regard to the Total People trips, the site would generate approximately 1117 trips in the AM peak, and 1098 in the PM peak and 10,341 across the day.

### Multi-Modal Trip Generation

6.3.3 Reflecting the fact that the proposed development is designed for a lower parking provision, the modal split proportions for the local MSOA shown in **Table 3.4** have been manually adjusted, reducing the car driver proportion and increasing the other modes on a pro-rata basis (which is consistent with the existing trip generation methodology). The adjusted mode share and trip generation are shown in **Table 6.7**.

**Table 6.7 Proposed Mode Share and Trip Generation**

Mode	AM Peak	AM Mode Share (%)	PM Peak	PM Mode Share (%)	Daily	Daily Mode Share (%)
Underground, metro, light rail, tram	52	5%	52	5%	492	5%
Train	312	28%	310	28%	2943	28%
Bus, minibus, or coach	193	17%	191	17%	1816	18%
Taxi	2	0%	2	0%	23	0%
Motorcycle, scooter or moped	19	2%	19	2%	183	2%
Driving a car or van	141	13%	128	12%	1137	11%
Passenger in a car or van	15	1%	15	1%	140	1%
Bicycle	79	7%	78	7%	743	7%
On foot	302	27%	300	27%	2849	28%
<b>Total</b>	<b>1117</b>	<b>100%</b>	<b>1098</b>	<b>100%</b>	<b>10341</b>	<b>100%</b>

## 6.4 Net Impact of Development

6.4.1 The net impact of the development by all modes of travel on the transport and highway networks is summarised below with the net change in trips by mode shown in **Table 6.8**.

**Table 6.8 Net Change in Trips (+/-)**

Mode	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Underground, metro,	5	27	33	23	15	38	159	177	336
Train	33	164	197	136	89	228	949	1060	2008
Bus, minibus, or coach	20	101	121	84	55	141	585	654	1239
Taxi	0	1	2	1	1	2	7	8	16
Motorcycle	2	10	12	8	6	14	59	66	125
Driving a car or van	10	-19	-8	0	3	-6	-189	-179	-368
Passenger in a car or	2	8	9	6	4	11	45	50	96
Bicycle	8	41	50	34	23	58	240	268	507
On foot	32	159	190	132	86	221	918	1026	1944
<b>Total</b>	<b>113</b>	<b>493</b>	<b>606</b>	<b>425</b>	<b>281</b>	<b>707</b>	<b>2772</b>	<b>3129</b>	<b>5901</b>

6.4.2 As shown in **Table 6.8**, the proposed development is forecast to result in an increase in approximately 606 trips in the AM peak and 707 trips in the PM peak and 5901 across the day. The majority of additional trips are forecast on public transport modes. The increases in trips outlined above are discussed in further detail in this chapter but are not considered to be significant due to the extremely high accessibility of public transport within close proximity to the site across which these trips are forecast to be distributed.

6.4.3 The above table compares the existing (TRICS assessment) trip generation (**Table 6.5**), with the proposed trip generation (**Table 6.7**). It does not reflect the total reduction in the level of vehicular movement as a result of the regeneration of the estate. The net impact of all vehicular traffic between the existing estate (**Table 6.2**) and the proposed development (**Table 6.6**) is summarised in **Table 6.9**.

**Table 6.9 Net Change in Site Wide Vehicular Traffic**

Mode	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing	92	128	220	109	103	212	1547	1577	3124
Proposed	36	105	141	80	49	128	544	592	1137
<b>Net</b>	<b>-56</b>	<b>-23</b>	<b>-79</b>	<b>-30</b>	<b>-54</b>	<b>-84</b>	<b>-1003</b>	<b>-985</b>	<b>-1988</b>

6.4.4 The table above shows that the development will result in vehicular traffic reducing by 79 trips in the AM peak, 84 in the PM peak and 1988 across the day. The existing traffic which currently uses the estates for commuter/retail/visitor purposes, will be lost as a result of

measures put in place to ensure that car parking on the existing and proposed local streets no longer occurs. This is discussed in more detail later in this report.

## 6.5 Other Land Uses

6.5.1 The development proposals include a range of other Land uses as outlined in **Table 2.1**. It is anticipated that that these uses are ancillary to the proposed residential uses and the residential properties of the surrounding area. No dedicated car parking will be provided for the non-residential uses in accordance with TfL's wishes. It is therefore expected that walking and cycling will be the predominate mode of transport for these uses as is the case for the existing commercial properties around the Hawks Road / Cambridge Road junction. For the purposes of this assessment, it is assumed that all trips generated by these land uses will be internalised with only servicing vehicles expected to visit the site.

## 6.6 Servicing Trips

6.6.1 RBK requested additional information regarding the number of delivery and servicing trips related to the residential and commercial elements.

### Residential Delivery and Servicing Trips

6.6.2 Residential delivery and servicing trips have been calculated from the TRICS database. Only the Private Flats has a 'Servicing Vehicle' category within the TRICS database, therefore this has been used to determine the number of vehicles for all the properties (private and affordable), with the results provided in **Table 6.10** and **Appendix H**.

**Table 6.10 Residential Delivery and Servicing Trips**

Mode	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
<b>Trip Rates</b>	0.002	0.002	0.004	0.004	0.006	0.01	0.032	0.032	0.064
<b>Existing Trips</b>	2	2	3	3	5	8	27	27	53
<b>Proposed Trips</b>	4	4	9	9	13	22	69	69	139
<b>Net Difference</b>	3	3	5	5	8	13	43	43	86

6.6.3 The same trip rates have been used for the existing residential properties and proposed residential development.

6.6.4 The table above shows that the existing 832 dwellings might generate 3 trips in the AM peak, 8 in the PM peak and 53 across the day.

6.6.5 The table above shows that the site is forecast to generate approximately 9 delivery and servicing trips in the AM peak, 22 in the PM peak and 134 across the day. Using the HGV's trip rate from the private flats it is possible to determine the ratio of LGV/HGV deliveries across the day. A total of 21 HGV trips are expected to serve the site across on day (none occurring in the peak hours), with the remainder being LGV vehicles.

6.6.6 The above results in a net increase of 5 trips in the AM peak 13 in the PM peak and 86 across the day.

### Commercial Delivery and Servicing Trips

6.6.7 Commercial delivery and servicing trips have been calculated from the TRICS database, with the exception of the community use. In addition, it is anticipated that the Community Use may include a Café element to it. Therefore, in order to be robust 200sqm of the community use has been modelled as Café in order to give a robust assessment regarding delivery vehicles.

6.6.8 With regard to the community use the TRICS database has many different community site surveys, which vary in terms of trip generation, but none are located within London. Therefore, a trip rate of 0.15 trips per 100sqm of NIA has been used for the community use. This figure – which is taken from the Battersea Power Station redevelopment – applies to the total daily trip rate, whereas for robustness this has been applied to the daily inbound and outbound (doubling the daily trip rate) for the community use in order to be robust.

6.6.9 **Table 6.11** shows the trip rates and generation are provided for each commercial use, with TRICS outputs provided in **Appendix J**, **Appendix K**, and **Appendix L**.

**Table 6.11 Commercial Delivery and Servicing Trip Rates and Generation**

Use Class	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
<b>Trip Rates</b>									
<b>A1 Retail</b>	0.024	0	0.024	0.048	0.071	0.119	0.618	0.62	1.238
<b>B1 Workspace</b>	0.008	0.016	0.024	0.008	0.008	0.016	0.218	0.219	0.437
<b>D2 Community Use</b>							0.15	0.15	0.3
<b>A3 Café (Community Use)</b>	0	0	0	0	0	0	0.291	0.291	0.582
<b>Site Wide Delivery and Servicing Trip Generation</b>									
<b>Total Trips Generation</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>20</b>

6.6.10 The table above shows that there will be a total of 20 commercial delivery and servicing trips across the day. Of the 20, nine are expected to be HGV's with the remainder LGV.

6.6.11 It should also be noted that this assessment does not consider the number of delivery and servicing trips which might occur on site for the existing non-residential uses. Therefore, the net change in delivery trips is likely to be less than the figures outlined in the table above. In any event the number of vehicles outlined in the table above would result in a negligible impact on the highway network.

6.6.12 Further detail regarding the delivery and servicing arrangements for the site is provided in the DSP which accompanies this TA.



## 6.7 Design Solutions

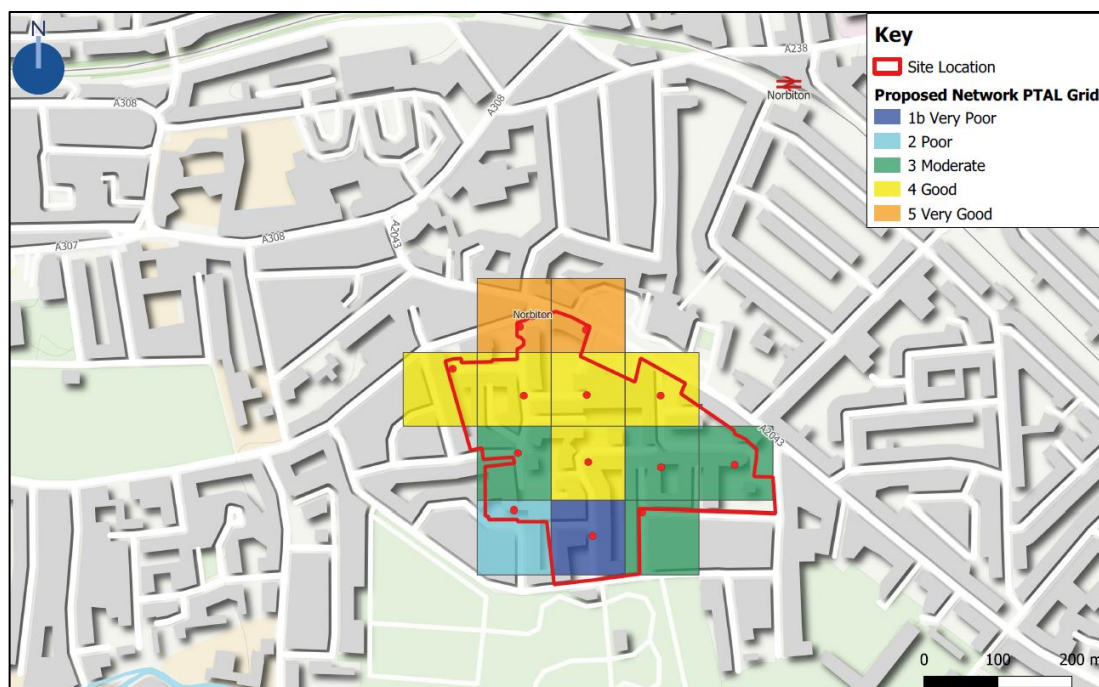
### Walking and Cycling Impact

- 6.7.1 The proposed development is forecast to generate an additional 190 walking trips in the AM peak and 221 in the PM peak, with 50 additional cycling trips in the AM peak and 58 additional trips in the PM peak.
- 6.7.2 As described in Chapter 4, the proposed development seeks to undertake a number of significant improvements to the public realm in and around the immediate vicinity of the site which will significantly improve the overall pedestrian and cyclist environment these include:
- The creation of new public spaces that will allow people to spend time, sit and relax.
  - New pedestrian / cycle routes throughout the masterplan increasing pedestrian and cycle permeability.
  - A significant increase in the number of active frontages, on all new internal streets increasing the natural surveillance of public space within the vicinity of the site.
  - New streets and footways with carefully selected and designed materials to align with the new public space.
  - The provision of short stay cycle parking evenly distributed throughout the site to encourage cycling.
  - New carriageway design and landscaping to result in slower vehicle speeds which has the potential to improve the overall air quality of the site.
- 6.7.3 As a result, whilst the proposed development is forecast to increase the number of pedestrian and cyclist trips within the vicinity of the site the overall improvements to the walking and cycling networks as described above are considered to significantly outweigh the increase in trips. The proposed development is therefore considered to result in a positive impact on the local walking and cycling networks and also deliver on the strategic objectives of designing Healthy Streets.

### Improvement in the Sites PTAL Rating

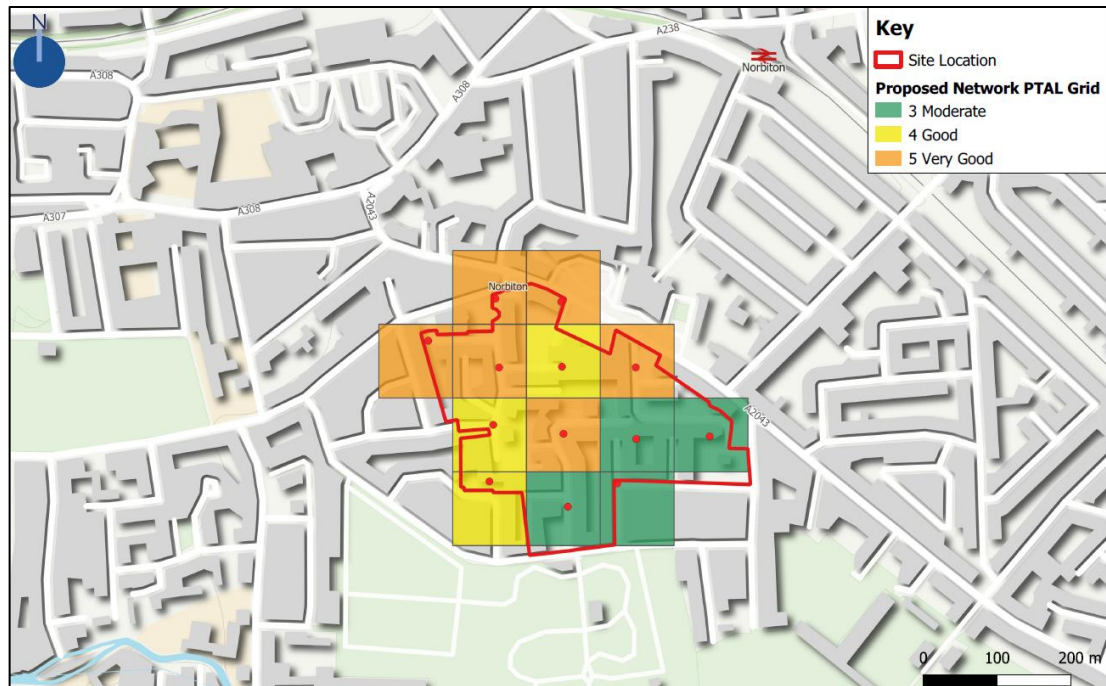
- 6.7.4 As outlined in Section 3.5 the existing PTAL of the site is between 0 in the southern areas of the site and 5 in the northern parts of the site. A manual calculation of the illustrative masterplan has been undertaken with the resulting PTAL scores shown in **Figure 6.1**

Figure 6.1 Manual PTAL Calculation of Illustrative Masterplan



- 6.7.5 The figure above shows that the site's PTAL rating increases from 1B in the south western corner of the site with the northern parts of the site remaining a PTAL of 5. This shows that the illustrative masterplan provides a significant improvement in accessibility to public transport. This improvement is as a result of the grid system and more direct north / south routes through the site. Although improved those parts of the site which have a rating of 1b or 2 is because Norbiton Station is outside the 960m walking distance cut off.
- 6.7.6 In addition, there is a more direct link through Cambridge Gardens (immediately to the north of the CRE) which provides a more direct pedestrian link to Norbiton Avenue. **Figure 6.2**, therefore shows a manual PTAL calculation which includes this link.

Figure 6.2 Manual PTAL Calculation Inc. Link Through Cambridge Gardens



6.7.7 The figure above shows that with the inclusion of the link through Cambridge Gardens the PTAL of the site ranges from a low of 3 (moderate) in the south western part of the site to a high of 5 in the middle and northern parts of the site. This again shows that the accessibility of the site is greatly improved by the proposed masterplan and the inclusion of more direct routes to Norbiton Railway Station in particular.

### London Underground

6.7.8 This level of impact is not considered to be of any material significance to the operation of the high capacity London Underground network. As a result, the impact of the proposed development upon the London Underground network is forecast to be negligible.

### National Rail Network

6.7.9 The proposed development is forecast to generate an additional 230 trips on the local rail network (inc tube journeys) in the AM peak and 266 in the PM peak. As described previously, the site is located within the vicinity of a number of major rail stations providing a high level of service to a wide range of destinations across London and the wider South East.

6.7.10 Using Census 2011 Method of Travel to Work Data for existing workplace residences in Kingston, an estimation of the distribution of residents by stations within the vicinity of the site has been undertaken. Assuming all rail and underground trips begin at Norbiton Railway Station and they all travel on the Kingston Loop, **Table 6.12** provides a summary of the distribution of trips across the AM and PM peaks.

**Table 6.12 National Rail Impact**

Rail Station	Peak Hour Frequency	AM Peak		PM Peak	
		Total Trips	Trips per Service	Total Trips	Trips per Service
Norbiton	6	230	38	266	44

- 6.7.11 As shown in **Table 6.12**, the additional trips forecast by the development will be distributed across several stations within the vicinity of the site. Given the high number of services from these stations, the proposed development is likely to result in between 38 and 44 additional passengers per train in the AM and PM peaks. Given the recent increase to 10 coach trains this is approximately 4 additional people per carriage.
- 6.7.12 This level of impact is not considered to be of any significance within the context of the density of rail network and large capacity of each of these services (of between 8 and 10 car trains with 800 to 1,200 passenger capacity). The impact of the proposed development upon the local rail network is therefore not considered to be of any significance.

### Bus Impact

- 6.7.13 The proposed development is forecast to generate an additional 121 trips in the AM peak and 141 trips in the PM peak. The development site is well served by buses with approximately 56/58 bus services accessible within 640m of the development during peak hours (based on a PTAL of 3). The proposed development will therefore result in approximately 2-3 additional passengers per bus in each peak period.
- 6.7.14 An impact of 3 additional passengers per bus is not considered to be significant.

### Car Parking Impact

- 6.7.15 The development proposes a parking ratio of 0.4 spaces per dwelling which is in accordance with the Draft London Plan. However, in order to ensure that there are no adverse impacts on the surrounding roads the following measures are proposed:
- Implementation of a Travel Plan to support the development and encourage active travel.
  - Two initial car club vehicles will be provided on-site under Phase 1, providing access to a car for residents (existing and new) should they require it.
  - No household will be allowed access to more than one parking space.
  - Existing residents will be provided a parking space with their new home should they require it.
  - New residents will not be allowed to purchase a permit to park on-street within any CPZ which surrounds the site.



## Summary

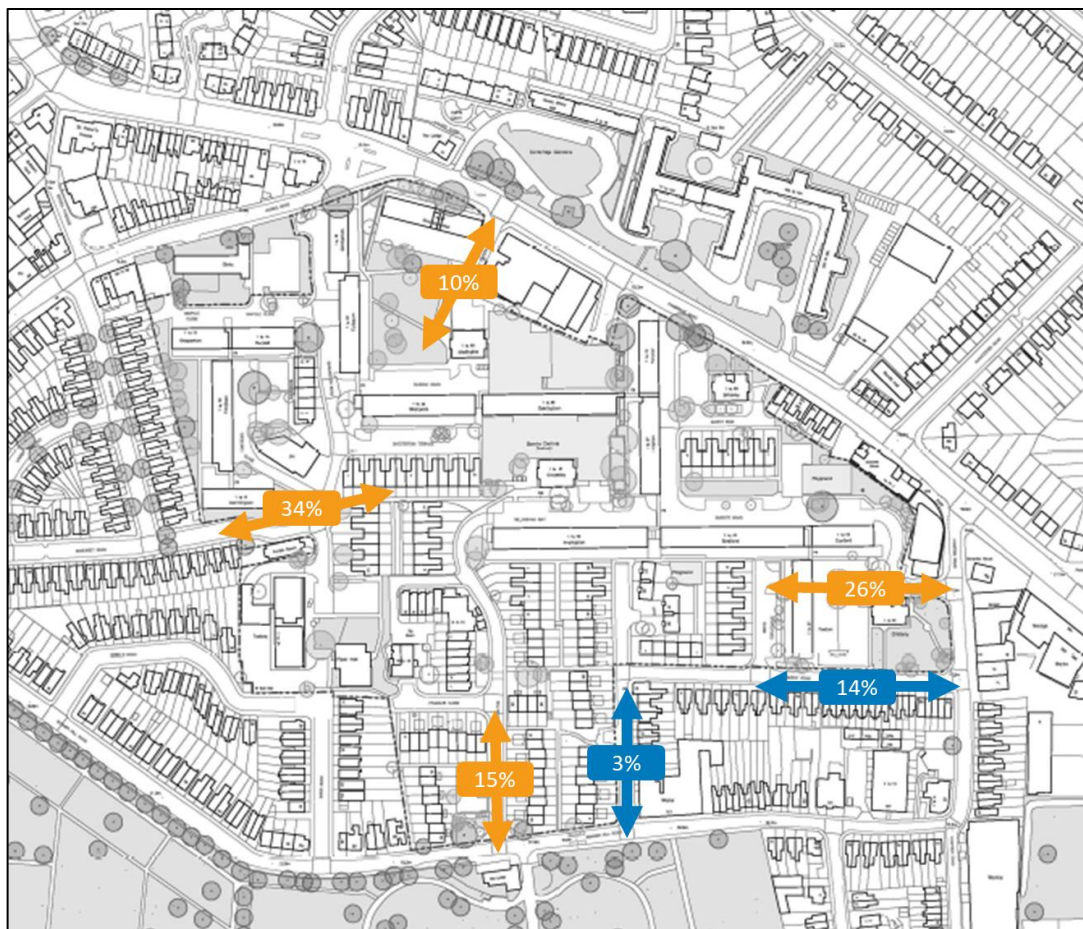
- 6.7.16 The proposed development is located within Greater London with excellent accessibility to a wide range of public transport services and destinations and is a reasonable location for a development of this density and trip generation characteristics. It is forecast that the proposed development trips will be distributed across all of the public transport modes within the vicinity of the site without reliance on any single station, line or service. As a result, the impact of the proposed development upon the public transport networks within the vicinity of the site is not considered to be significant and no specific mitigation measures required.
- 6.7.17 The proposals are forecast to result in increases to the number of trips on the local public transport networks, however given the proposed higher PTAL across much of site and the wide range of services and destinations which can be accessed from within a short walk from the site, once these trips have been distributed across those services and destinations the overall impact of the development is not considered to be significant.

## 6.8 Highway Network Impact

### Existing Trip Distribution

- 6.8.1 The existing trip distribution has been calculated from the ATC surveys undertaken in the following locations:
- i. Somerset Road
  - ii. St Peters Road
  - iii. Burritt Road
  - iv. Vincent Road
  - v. Cambridge Grove Road
  - vi. Willingham Way
- 6.8.2 ATC's 1, 2, 3 & 6 (approx. 774 dwellings) have been used to determine the likely trip generation for the entire estate. **Image 6.2** shows the trip distribution for the for the existing 832 dwellings.

Image 6.2 Existing Trip Distribution



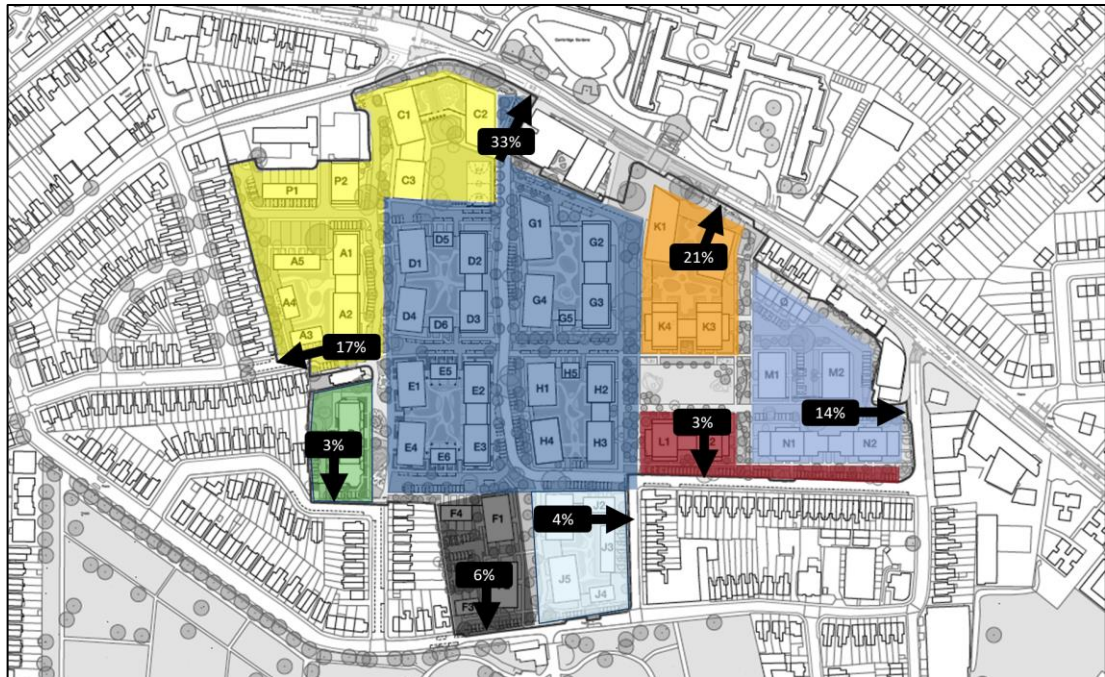
6.8.3 The distribution based on daily trip generation onto Hawks Road and Cambridge Road is as follows:

- 49% - Hawks Road
- 51% Cambridge Road

### Proposed Trip Distribution

6.8.4 The masterplan makes the site more accessible for active modes, but also changes the number/location of vehicular accesses across the site. Based on the location of the proposed parking spaces across the site the distribution of traffic is based upon the parking spaces nearest access to the surrounding highway network. **Image 6.3** shows the sites distribution for the proposed masterplan.

**Image 6.3 Proposed Trip Distribution**



6.8.5 The masterplan results in a change in the distribution of traffic entering and exiting the site, with St Peters Road access accommodating 45% of the site vehicular traffic and the new access adjacent to K2 accommodating 21% of the traffic. Using the modal split above **Table 6.13** shows the level of traffic for each proposed site access.

**Table 6.13 Proposed Trip Generation at each Site Access**

Access Location	AM Peak			PM Peak			24Hr		
	In	Out	Total	In	Out	Total	In	Out	Total
Somerset Road	6	18	25	14	8	22	95	103	198
St Peters Rd	12	34	46	26	16	42	177	193	370
K2 Access	8	22	30	17	10	27	116	126	241
Burritt Road	5	14	19	11	7	18	74	81	155
Vincent Road	1	3	4	2	1	3	14	15	29
Willingham Way	0								
Cambridge Grove Road	1	4	6	3	2	5	22	24	46
Rowlls Rd	1	3	4	2	1	4	16	17	34
Bonner Hill Road	2	6	8	4	3	7	30	33	63
<b>Total</b>	<b>36</b>	<b>105</b>	<b>141</b>	<b>80</b>	<b>49</b>	<b>128</b>	<b>544</b>	<b>592</b>	<b>1137</b>

6.8.6 The proposed development will result in the majority of vehicles using either the St Peters Road or K2 junctions with Cambridge Road.

6.8.7 **Table 6.14** shows the net impact in terms of vehicular traffic at each access.

**Table 6.14 Net Impact at each Site Access**

Access Location	AM Peak			PM Peak			24Hr		
	In	Out	Total	In	Out	Total	In	Out	Total
Somerset Road	-36	-26	-62	-22	-33	-54	-472	-477	-949
St Peters Rd	1	21	22	14	7	21	14	4	19
K2 Access	8	22	30	17	10	27	116	126	241
Burritt Road	-19	-22	-41	-22	-23	-45	-386	-368	-754
Vincent Road	-9	-24	-33	-16	-13	-29	-201	-241	-442
Willingham Way	-9	-25	-34	-22	-15	-37	-249	-249	-498
Cambridge Grove Road	-2	3	1	-2	0	-2	-56	-17	-73
Rowlls Rd	1	3	4	2	1	4	16	17	34
Bonner Hill Road	2	6	8	4	3	7	30	33	63
<b>Total</b>	<b>-63</b>	<b>-42</b>	<b>-105</b>	<b>-45</b>	<b>-64</b>	<b>-109</b>	<b>-1188</b>	<b>-1172</b>	<b>-2360</b>

6.8.8 The distribution based on daily trip generation onto Hawks Road and Cambridge Road is as follows:

- 43% - Hawks Road
- 57% - Cambridge Road

### Junction Modelling

6.8.9 This section outlines the impact of the proposed development on the two new proposed access junctions, namely St Peters Street and K2 Access as requested by RBK.

6.8.10 In order to be able to assess the effects of the proposed development accurately, capacity performance of these two junctions has been tested.

6.8.11 The junctions have been modelled using industry standard software appropriate for the particular junction type (i.e. PICADY). The main outputs used to assess how the junctions are performing are the Ratio of Flow to Capacity (RFC), Delay and Queue Lengths.

6.8.12 Priority junctions with an RFC of less than 0.85 are considered to be operating within their practical capacity and little or no queuing would be expected.

6.8.13 RFC's between 0.85 and 1.0 would mean that the junction is beginning to approach theoretical capacity and some queuing would be expected. RFC's over 1.0 would mean that flows at the junction are exceeding its theoretical capacity and more extensive queuing would begin to be experienced.

### Committed Development

6.8.14 The cumulative impact of the following developments has been considered:



- 65 Hampden Road (19/00020/FUL)
- Eden Walk Shopping Centre (15/13063/FUL)
- Canbury Place Car Park & Kingston Road (19/02323/FUL)
- 229-255 Kingston Road, New Malden(19/01228/FUL)
- Old Post Office, Kingston(14/13247/FUL)

6.8.15 The above developments only result in an additional 6 trips in the AM peak and 8 in the PM peak travelling along Cambridge Road. Despite the extremely low level of movement, they have been included in the junction modelling.

### Scenarios Tested

6.8.16 In order to access the impact of the traffic generated by the development, the junctions examined have been assessed including TEMPRO traffic growth based on the year of opening in 2033. The following scenario has been tested.

- 2033 Base + CD + Proposed Development

6.8.17 The 2033 Base + Proposed Development models the impact of 2170 dwellings (the proposed development).

### Cambridge Rd (East) / St Peters Street / Cambridge Rd (West) – Priority

6.8.18 **Table 6.15** summarises the junction capacity analysis for the Cambridge Rd and St Peters Street Access priority junction in the 2033 Base + Proposed Dev scenario. **Appendix M** includes the full PICADY outputs.

**Table 6.15 Cambridge Rd / St Peters St Access Priority Junction – Future Year Assessments**

Location	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
<b>2033 Base + Proposed Development</b>				
<b>B-AC (St Peters Rd to Cambridge Rd)</b>	0.128	0.1	0.054	0.1
<b>C-AB (Cambridge Rd to St Peters Rd)</b>	0.026	0.0	0.065	0.1

6.8.19 The table above shows that the Cambridge Rd / St Peters St Access priority would operate with RFC's significantly below 0.85 in 2033 with the proposed development, with virtually no queuing expected during the peak hours.

## Junction 2 – Cambridge Rd (East) / K2 Access / Cambridge Rd (West) – Priority

6.8.20 **Table 6.16** summarises the junction capacity analysis for the Cambridge Rd (East) / K2 Access / Cambridge Rd (West) priority junction in the 2033 Base and the 2033 Base + Proposed Dev scenarios. **Appendix N** includes the full PICADY outputs.

**Table 6.16 Cambridge Rd / K2 Access Priority Junction – Future Year Assessments**

Location	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
<b>2033 Base + Proposed Development</b>				
<b>B-AC (Block K to Cambridge Rd)</b>	0.075	0.1	0.036	0.0
<b>C-AB (Cambridge Rd to Block K)</b>	0.018	0.0	0.042	0.1

6.8.21 The table above shows that the Cambridge Rd / K2 Access priority would operate with RFC's significantly below 0.85 in 2033 with the proposed development, with virtually no queuing expected during the peak hours.

## 6.9 Summary of Masterplan

6.9.1 The illustrative masterplan provides for a comprehensive redevelopment of the existing Cambridge Road Estate. It removes an unwelcome environment with access issues and replaces it with a permeable welcome environment for residents to linger and enjoy the space.

6.9.2 The masterplan greatly improved the site PTAL rating by bringing public transport closer to each dwelling, with more direct walking and cycling routes. The parking is appropriate to the site's PTAL, accessibility to local facilities and is in accordance with the Draft London Plan. The development will not result in any overspill parking onto surrounding residential areas.

6.9.3 The impact of vehicular trips is positive with the development resulting in less traffic than that which currently accesses the site due to the unrestricted parking available. The impact on the underground, train and bus networks is not significant.

## 6.10 Phase 1 Trip Generation

### Existing Multi-Modal Trip Generation

6.10.1 Based on the loss of 129 dwellings and using the trip rates outlined in the above section **Table 6.17** summarises the trip generation for the existing dwellings.

**Table 6.17 Phase 1 – Existing Trip Generation**

Mode	AM	PM	Daily
Underground, metro, light	3	2	23
Train	18	13	137
Bus, minibus, or coach	11	8	84
Taxi	0	0	1
Motorcycle, scooter or	1	1	8
Driving a car or van	23	19	233
Passenger in a car or van	1	1	7
Bicycle	5	3	35
On foot	17	12	132
<b>Total</b>	<b>79</b>	<b>59</b>	<b>661</b>

6.10.2 The above table suggests that for the existing 129 dwellings within Phase 1 the level of vehicular traffic would be 23 trips in the AM peak, 19 in the PM peak and 233 across the day.

### Proposed Multi-Modal Trip Generation

6.10.3 Reflecting the fact that the proposed development is designed for lower parking provision, the modal split proportions for the local MSOA shown in **Table 3.4** have been manually adjusted, reducing the car driver proportion and increasing the other modes on a pro-rata basis. The adjusted mode share and trip generation are shown in **Table 6.18**.

**Table 6.18 Proposed Mode Share and Trip Generation**

Mode	AM	PM	Daily
Underground, metro, light	11	11	103
Train	65	65	613
Bus, minibus, or coach	40	40	378
Taxi	1	1	5
Motorcycle, scooter or	4	4	38
Driving a car or van	29	27	237
Passenger in a car or van	3	3	29
Bicycle	16	16	155
On foot	63	63	593
<b>Total</b>	<b>233</b>	<b>229</b>	<b>2154</b>

6.10.4 The proposed trips shown above have been compared to the existing trips generated by the existing site to understand the net change in trips resultant of the development proposals. The net change in trips is shown in **Table 6.19**.

**Table 6.19 Net Change in Trips (+/-)**

Mode	AM Peak		
	In	Out	Total
Undergroun	8	8	77
Train	47	51	459
Bus	29	31	283
Taxi	0	0	4
Car	3	3	28
Motorcycle	8	11	58
Car Driver	2	2	22
Bicycle	12	13	116
Walking	45	49	444
<b>Total</b>	<b>154</b>	<b>170</b>	<b>1493</b>

6.10.5 As shown in **Table 6.8**, the proposed development is forecast to result in an increase in approximately 154 trips in the AM peak and 170 trips in the PM peak and 1493 across the day. The majority of additional trips are forecast on public transport modes. The increases in trips outlined above are discussed in further detail in this chapter but are not considered to be significant due to the extremely high accessibility of public transport within close proximity to the site across which these trips are forecast to be distributed.

6.10.6 The table above indicates that Phase 1 will result in a very small increase in vehicular trips to and from the site. The level is negligible and well within daily fluctuations in traffic levels, as a result no junction modelling has been undertaken.

### Impact of Phase 1 on Vehicular Trips

6.10.7 Phase 1 results in an increase of 2 vehicular trips in the AM and PM peaks with 22 across the day. This is a negligible impact on the highway network. This impact is temporary as section **6.4** shows that the overall impact of the masterplan will result in a reduction in vehicular traffic across the site.

### Impact of Phase 1 on Walking and Cycling

6.10.8 The development results in an increase in walking of 45 movements in the AM peak with 49 in the PM peak and 444 across the day. With regard to cycling the increase is 12 trips in the AM peak, 13 in the PM peak and 116 across the day. The level of increase is small and is not significant due to the good provision of walking and cycling infrastructure.

### Impact of Phase 1 on the Rail (inc. Underground) Network

6.10.9 The development results in an increase in walking of 55 movements in the AM peak with 59 in the PM peak and 536 across the day. This equates to approximately 9 additional people per train in the AM and PM peaks. This level of increase is not considered to be significant.



## **Impact of Phase 1 on the Bus Network**

6.10.10 The proposed development is forecast to generate an additional 29 trips in the AM peak and 31 trips in the PM peak. Based upon the existing PTAL rating of 1b there are approx. 10 bus services in the peak hours which would equate to 3 additional persons per bus services. This level of impact is not considered to be significant.

## **Impact of Phase 1 on the Car Parking Levels**

6.10.11 Phase 1 of the masterplan proposes 126 parking spaces, a ratio of 0.3. It is acknowledged this provision is less than the 0.4 ratio the masterplan delivers as a whole. However, this is appropriate for the following reasons:

- The 'shortfall' is only temporary – 0.4 will be delivered across the masterplan.
- Plot C within Phase 1 has a PTAL of 5 which is under the Draft London Plan is appropriate for a car free development. A short-term lower parking provision in this area is considered appropriate whilst the remainder of the masterplan is built out.
- The parking beat survey shows that both the estate and the surrounding areas has a spare capacity.
- The new residents will not be allowed to apply for a permit within any existing/future CPZ outside of the site.
- New residents will not be allowed to purchase a permit to park on-street within any existing/future CPZ which surrounds the site.
- The applicant is willing to provide a S106 contribution to RBK to fund any changes to the waiting restrictions and/or CPZ either within the estate or in the surrounding area.
- Implementation of a Travel Plan to support Phase 1 of the development and to encourage active travel.
- Two initial car club vehicles will be provided on-site under Phase 1, giving existing and future residents access to a car without the need to own one.
- No household will be allowed access to more than one parking space.

6.10.12 Given the measures outlined above it is not expected that Phase 1 will result in any adverse impacts on the surrounding roads Summary of Phase 1

6.10.13 Phase 1 provides new walking routes in particular which begins to improve the site accessibility in line with the masterplan vision. The level of vehicular traffic does increase in the short term, but only marginally and are within the variations in traffic flow that occur on a daily basis. The increase in trips on the public transport network is considered to be significant.

## 7. Construction and Logistics

### 7.1 Overview

- 7.1.1 This chapter provides an overview of the Outline Construction and Logistics Plan (CLP) that has been prepared in support of the development proposals. The applicant has considered matters related to construction at an early stage of the project to ensure the local impacts of construction and demolition activity can be sufficiently mitigated. This chapter has been written in accordance with TfL's Construction and Logistics Plan guidance.
- 7.1.2 In accordance with the TfL CLP guidance the remainder of this chapter considers the construction related impacts of the proposed development and a series of measures that have been considered at this early stage of the development process to try and mitigate the impact of construction activity as far as possible. The Outline CLP details a series of measures that the applicant will use to mitigate the impact of the construction period on the wider transport networks, and most significantly the local road network.
- 7.1.3 The Outline CLP will be used and incorporated into the procurement of the project post planning consent to ensure that all contractors adopt the measures outlined in the document.
- 7.1.4 A Construction Management Plan has also been prepared by Countryside in support of the application and should be read in conjunction with the TA, and the CLP.

### 7.2 Vehicle Trips

- 7.2.1 At this stage the level of vehicular movement has not yet been determined, because of the early stage of the development. Once this is done the level of vehicular activity will be updated.
- 7.2.2 The number of HGV movements will vary day to day depending upon the activities. The typical daily movement are expected to be between:
- 630-1050 vehicles a month – based on a 4-week month (1260-2100 movements a month)
  - 165 and 275 vehicles per week (330-550 Movements a week)
  - 30-50 vehicles a day (60-100 movements a day)
  - 4-6 vehicles per hour (8-12 movements an hour)
- 7.2.3 As stated above the numbers provided are typical movements, on particular days there could be higher numbers depending upon circumstances. Equally on other days there will be less.

### 7.3 Temporary Construction Access

- 7.3.1 Access to the site during Phase 1 will be from Hawks Rd to the south of the Hawks Rd / Cambridge Rd signalised junction. This access is shown below in **Image 7.1** and in full on Drawing 19157-MA-XX-XX-DR-C-0045.

7.3.2 Drawing 19157-MA-XX-XX-DR-C-0045 shows swept path vehicle analysis for the following vehicles:

- 16.5m articulated lorry
- Large Tipper
- Skip

**Image 7.1 Phase 1 Hawks Rd Access – Swept Path Analysis**



7.3.3 It can be seen from the extract above that all vehicles can enter and exit from Hawks Road in a forward movement without obstructing the opposing lane of traffic.

7.3.4 Vehicles will use the access with left in and right out only movements. Only in exceptional circumstances will vehicles turn left out of the Washington Road access. It can be seen that there is no conflict with the opposing lane with vehicles entering the access.

7.3.5 Where any activity at the vehicle entrance occurs suitably qualified banksman will manage traffic. The banksman will additionally be tasked with ensuring that pedestrians are kept managed when vehicles are entering / exit the site access.

7.3.6 The access will only be operation for the duration of the construction period.

## 7.4 Programme

7.4.1 The outline construction programme for the proposed development (subject to planning permission) is shown in **Table 7.1**.

**Table 7.1 Proposed Construction Programme**

Project Stage	Block B	Block C	Block E
Site Setup & Demolition	Month 1-2	Month 8-14	Month 11-16
Basement Excavation & Piling	Month 2-3	Month 12-15	Month 16-21
Sub-structure	Month 3-6	Month 14-17	Month 20-24
Super-structure	Month 5-10	Month 16-32	Month 22-37
Façade / Cladding	Month 8-15	Month 19-34	Month 24-44
Fit-out, testing &	Month 11-19	Month 25-40	Month 32-48

## 7.5 Strategies to Reduce Impacts

7.5.1 **Table 7.2** outlines a series of strategies that have been considered by the applicant to reduce the impact of construction activity. The measures have been categorised into the following:

- **Committed:** a measure that the client is committed to at this stage.
- **Proposed:** a measure that the applicant will explore in greater detail as the project progresses, most likely post consent.
- **Considered Feasible:** measures that the applicant is willing to consider should circumstances change.

**Table 7.2 Proposed CLP Measures**

Project Stage	Time Period	Status
Safety and Environmental Standards	All contractors and the applicant will adhere to all relevant safety and environmental standards relating to the construction of the site. <i>Reason: to ensure all obligation in relation to safety and environment are met.</i>	Committed
Adherence to designated routes	All contractors will be required to adopt the routes to the site as outlined in this document [or any subsequent submission as required by LBS/TfL] <i>Reason: to ensure vehicles are appropriately routed to minimise impact on sensitive roads / junctions.</i>	Committed
Delivery Scheduling	The main contractor will implement a delivery schedule and booking system to manage the arrival and departures of vehicles evenly throughout the day. <i>Reason: to minimise impact during network peaks.</i>	Proposed
Use of Holding Area	The main contractor will implement a holding area in a suitable location away from the site where vehicles can wait until they are required on site. <i>Reason: to minimise waiting on the highway immediately adjacent to the site.</i>	Proposed
Car-lite Construction Site	That the construction site will not provide any parking on site for contractors. <i>Reason: to reduce vehicle trips associated with construction of the site.</i>	Proposed
Staff Travel Plan	Implement a travel plan for construction staff to encourage use of sustainable modes of transport. <i>Reason: to encourage sustainable trips to site by staff.</i>	Considered Feasible
Collaboration with Other Sites	Collaborate with neighbouring sites (if applicable) to combine vehicle trips where practical (i.e. spoil removal / delivery of regular small items). <i>Reason: increase efficiency of operation and reduce the number of primary vehicle trips.</i>	Considered Feasible
Vehicle Choice	Ensure all contractors working on site are members of CLOCS Silver or above. <i>Reason: ensure all vehicles operating at the site meet the CLOCS regulatory standard.</i>	Proposed

## 7.6 Summary

7.6.1 This chapter has demonstrated how the applicant has considered in detail matters relating to construction and logistics at an early stage. Whilst, within the context of the works proposed the impact of construction activity on the site is forecast to be low, the considerations within this CLP will be used to inform procurement, tendering and contractor selection going forward (subject to planning consent).



## 8. Need for Mitigation

### 8.1 Overview

- 8.1.1 This section considers the need for mitigation measures required resulting from the proposed development.
- 8.1.2 The proposed development provides a high-quality mixed-use development, with a greatly improved public realm offering for the existing and future residents of the Cambridge Road Estate and Norbiton. The proposed development maximises the pedestrian and cycle permeability for residents, staff and visitors.

### 8.2 Residential and Commercial Elements

- 8.2.1 The impact of the pedestrian, cycling and public transport trips resulting from the additional residential dwellings is not considered to be significant because of the significant improvements delivered by the development. The proposals will result in significant improvements to the connectivity and permeability of the pedestrian and cycling network, which in turn is shown to also increase the PTAL within the vicinity of the site.
- 8.2.2 The significant number of walking, cycling and public transport trips, coupled with the constraint-based approach to car parking supported by both local and regional policy, limits the number of additional trips on the highway network. However, in recognition of the uplift in people travelling to and from the estate the following mitigation is proposed.
- Appropriate financial contribution towards amending the design and subsequent construction of Go Cycle scheme to accommodate the 10m pedestrian crossing and relocation of the bus stops.
  - Appropriate financial contribution towards extending the Go Cycle scheme.
- 8.2.3 In order to support the parking ratio provision of the following measures is also proposed:
- Three years free car club membership for each dwelling.
  - Provision of 2 zip cars in Phase 1 with the possibility of additional vehicles in subsequent phases.
  - Appropriate financial contribution towards RBK for them to undertake parking surveys and determine whether the new or revised CPZ are required.
  - Other than existing residents who are being re-housed an obligation to prevent any future residents of the development from purchasing a permit for the existing or future CPZ's in the area.
  - Financial Obligation of £1,000 towards Travel Plan monitoring.
  - Financial Obligation of £3,500 towards Travel Plan monitoring
- 8.2.4 No specific mitigation measures are proposed to accommodate the additional train/tube trips because the impact of the development is not significant and there is capacity to accommodate the additional trips arising.

## **8.3 Design Implications**

- 8.3.1 The proposed mixed-use development provides a new public realm for commercial, retail, community and residential uses. This is a significant improvement over the existing estate, which is uninviting, and car dominated. The proposed development will create a more attractive environment with active frontages, which contributes to the local economy in providing public spaces for residents to enjoy, a permeable network of walking and cycle routes, which are safe and with no significant changes in level.
- 8.3.2 The site will also help reduce the reliance on the private car in accordance with the Mayor's transport strategy and encourage active travel through the provision of cycle parking. The site's proximity to public transport facilities will offer a realistic alternative to the car.
- 8.3.3 Other measures to support active modes of transport will be outlined in the framework TP which has been submitted alongside this TA and which supports the application.

## 9. Conclusions

### 9.1 Summary

9.1.1 This Healthy Streets Transport Assessment has been prepared in support of a planning application for the redevelopment of the Cambridge Road Estate in the Royal Borough of Kingston.

9.1.2 The development proposals seek outline planning permission for:

*“Hybrid Planning Application for a mixed use development, including demolition of existing buildings and erection of up to 2,170 residential units (Use Class C3), 290sqm of flexible office floorspace (Use Class E), 1,395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), 1,250sqm community floorspace (Use Class F2), new publicly accessible open space and associated access, servicing, landscaping and works.*

*Detailed permission is sought for Phase 1 for erection of 452 residential units (Use Class C3), 1,250sqm community floorspace (Use Class F2), 290sqm of flexible office floorspace (Use Class E), 395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), new publicly accessible open space and associated access, servicing, parking, landscaping works including tree removal, refuse/recycling and bicycle storage, energy centre and works*

*Outline permission (with appearance and landscaping reserved) is sought for the remainder of the development (“the Proposed Development”).”*

9.1.3 This TA has demonstrated that the site is accessible in terms of its proximity to existing social and sustainable transport infrastructure, justifying the principle of mixed used, quality design that helps deliver strategic objectives of Vision Zero, Healthy Streets and the Mayor’s Transport Strategy. The assessments have also demonstrated that the impact of the development proposals upon the wider transport network can be accommodated and do not need mitigation or result in a severe impact; therefore, deemed acceptable in accordance with the NPPF.

9.1.4 This TA has outlined in detail how the development proposals have been designed in accordance with and responding to the principles and policies set out in the NPPF, Draft London Plan and Kingston Sustainable Development Plan.

9.1.5 The proposals include new walking and cycling routes and associated public spaces which increases pedestrian and cycling connectivity and permeability, the development has been designed with a focus on improving the pedestrian and cyclist experience for both users of the site and those passing by. It is therefore considered to assist in meeting the Mayor’s strategic objectives of Healthy Streets, Vision Zero and those set in the Mayor’s Transport Strategy.

9.1.6 The masterplan delivers a significant improvement in the sites accessibility. Residents will benefit from improved connectivity to a range of sustainable transport modes that can be accessed through a high-quality walking and cycling network. The proposals include a

number of significant enhancements to the pedestrian and cycling environment within the immediate vicinity of the site, including links into the proposed Go Cycle Scheme on Cambridge Road. The proposals are therefore considered to have a positive impact on the local walking and cycling networks.

- 9.1.7 The TA demonstrates that the impact of the masterplan actually results in a net reduction of trips to / from the site. This is due to the proposals removing the existing free parking available to all uses. The proposed development does redistribute vehicular trips across the site under the masterplan. At the request of RBK junction modelling has been undertaken for the two junctions onto Cambridge Road. Both operate within capacity with no queueing.
- 9.1.8 The proposals result in a decrease in vehicular traffic to the site which is a benefit to the highway network.
- 9.1.9 The overall impact of the development upon the London wide transport networks is not considered to be significant. The proposals will result in increases to the number of trips on the local public transport networks. However, given the improved PTAL rating across much of the and the wide range of services and destinations which can be accessed from within a short walk from the site, once these trips have been distributed across the wide range of services and destinations, the overall impact of the development is not considered to be significant.
- 9.1.10 In summary, this TA outlines how the proposed redevelopment of Cambridge Road Estate will not result in any material impact to the public transport and road networks within the vicinity of the site, subject to the mitigation measures proposed which are largely delivered through the delivery of high quality streetscape and public space design. The significant improvements to the walking and cycling networks within the immediate vicinity of the site are considered to result in a positive impact to both new and existing users of the site whilst the proposals do not forecast any impact on the highway network. Accordingly, the development proposals are considered to be acceptable, compliant with policy and result in an overall positive impact to the transport networks within its vicinity.

**Table 9.1 Conclusion Summary**

	<b>Key Transport Impacts/Issues</b>	<b>Proposed Solutions/Mechanisms</b>
<b>Site and Surroundings</b>	The site is extremely well located in terms of local walking, cycling and public transport facilities.	The proposed development will complement the existing transport facilities within the vicinity of the site maximising the opportunities for travel by sustainable modes.
	The existing site has an inefficient servicing strategy with multiple servicing access points.	The proposed development significantly increases the efficiency of servicing activity whilst limiting the impact of activity on the local highway network through internalised loading bays with set points of access.
<b>ATZ</b>	Cambridge Rd Estate and some of the routes to nearby key destinations currently have low scores on Healthy Streets indicators.	The proposed development seeks significant improvements the estate which will result in significant improvements to Healthy Streets indicator scores.
<b>London-wide Network</b>	Increase in trips generated by the proposed development.	The increases in trips forecast by the proposed development are concentrated on public transport networks which provide frequent, reliable journeys with a wide range of destinations.
		The increases in trips forecast by the development on the walking and cycling networks will be mitigated by the significant improvements to the internal site design, the new public realm delivered by the development and links to proposed cycle infrastructure on Cambridge Rd.
	The existing site has limited cycle parking provision and/or quality of access for cyclists.	The proposed development will provide cycle parking provision in accordance with the Draft London Plan designed to LCDS standards.
	The existing site provides multiple car parking spaces which generate vehicle trips.	The proposed development provides less parking, alongside the Travel Plan and permit/CPZ stipulations, the development is forecast to result in a reduction in vehicle trips.
<b>Construction</b>	Additional construction traffic will be generated on the highway.	Introduction of the Construction and Logistics Plan measures will reduce the impact of construction activity.





# The Design Team

## **ACD Environmental**

Arboricultural consultant

## **Architecture in Perspective**

Visualisation artist

## **AWA Consulting**

MEP engineer

## **Base Models**

Physical modelmaker

## **Barton Willmore**

Planning consultant

Environmental Impact Assessment

Townscape Impact Assessment

## **Countryside Properties**

Developer

## **CTP Consulting**

Structural & Civil engineer

## **David Bonnett Associates**

Access and Inclusive Design consultant

## **Ensafe**

Air Quality consultants

## **GIA**

Daylight / Sunlight / RoL consultant

## **Greengage Environmental**

Ecology and biodiversity consultant

## **Hodkinson Consulting**

Sustainability / Energy consultant

## **H+H Fire**

Fire consultant

## **Markides**

Transport consultant

## **Patel Taylor**

Architect / Landscape Architect

## **Pipers**

Physical modelmaker

## **Realm**

Visualisation and verified views

## **Royal Borough of Kingston Upon Thames**

Project Joint Venture partner

## **Soundings**

Community engagement consultant

## **SRE**

Wind and microclimate consultant

## **Terence O'Rourke**

Archaeology and heritage consultant

## **ULL Property**

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## **WYG**

Noise and vibration

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