4.5 SERVICING AND DELIVERIES

4.5.1. The servicing and deliveries will be carried out from on-street loading bay facilities. Distances will follow Manual for Streets and Design for Deliveries best practice guidelines as closely as practicable.

4.5.2. The Wharf Lane building will be serviced from a delivery bay located on its eastern side, whilst the Water Lane building will be served from a service area located at the eastern end of the Service Road.

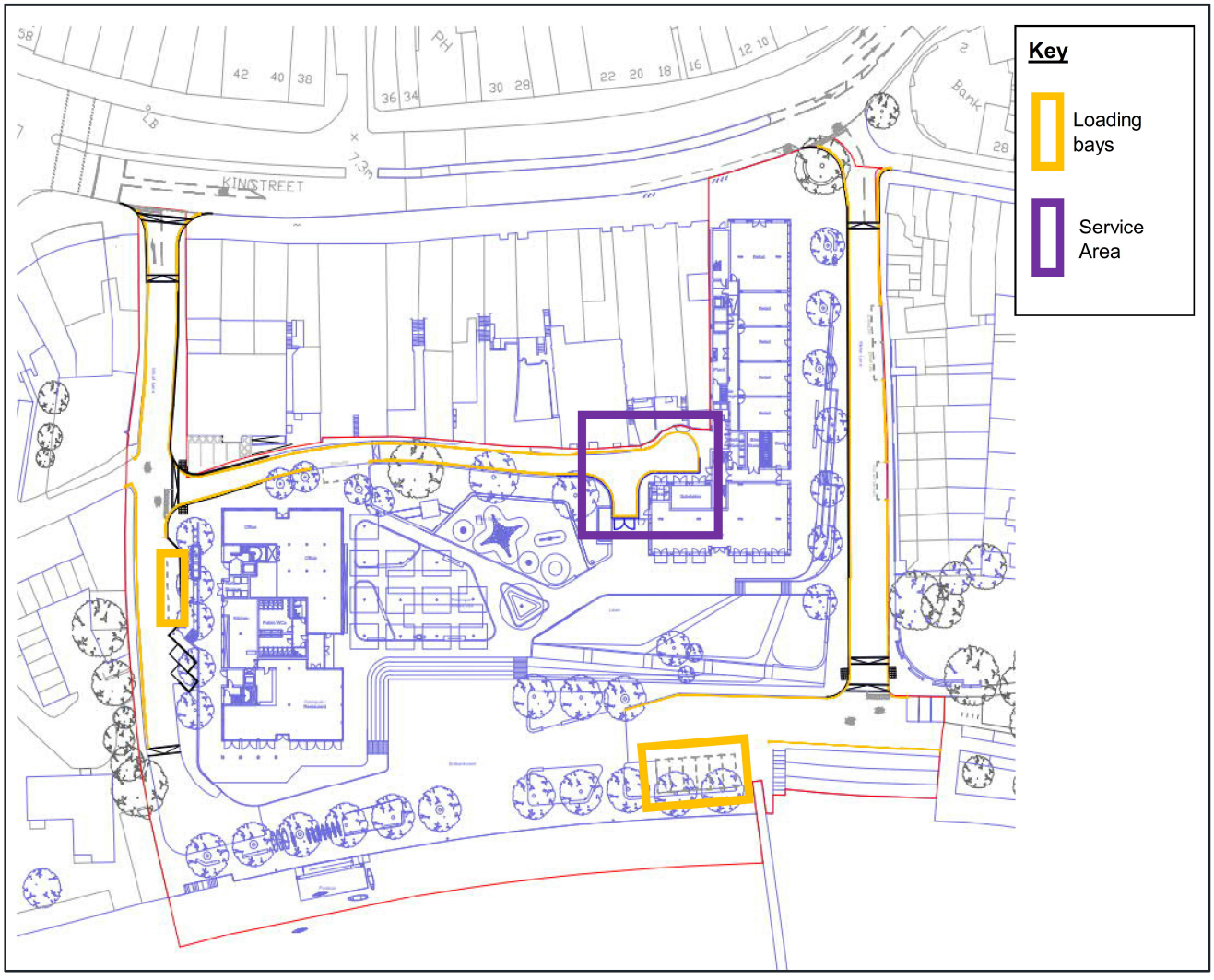
4.5.3. The service road will feature landscaping and a secure perimeter to manage footfall within the proposed gardens and ensure no general public access conflicts with the deliveries and servicing vehicle manoeuvring.

4.5.4. A gate to the west of the café will provide access to the gardens for servicing and maintenance and will be opened to allow vehicles larger than 7.5t box van to reverse.

4.5.5. A small-medium delivery van (up to 7.5t box van) can service the Proposed Development and reverse whilst the gates are closed.

4.5.6. As stated above, six loading bays will be provided adjacent to the footbridge on the Embankment and dedicated for use by Eel Pie Island tradespeople and businesses.

Figure 4-9 - Servicing and Delivery Locations



4.5.7. For more details on servicing and deliveries including likely trip generation and swept path analysis please refer to the Delivery and Servicing Plan submitted under a separate cover.

4.6 REFUSE

4.6.1. As per the deliveries, refuse collection is proposed to take place from the two loading bays located within 20meters circa of the Proposed Development refuse stores.

4.6.2. The current LPA refuse collection vehicle fleet uses a 10.8m long vehicle which therefore will be required to pick up waste during the Embankment opening hours for vehicles (early morning Monday-Friday) and will require the gates to the west of the proposed café' to be open to allow for turning manoeuvre.

4.6.3. Should the contractors move to a smaller vehicle fleet in future it would be possible to:

- Reverse west of the café' without opening the gates
- Access the Proposed Development servicing loading bays from King Street via Wharf Lane

4.6.4. At the moment however this is aspirational only.

4.7 EMERGENCY ACCESS

4.7.1. Emergency vehicles can access the area along Water Lane, Wharf Lane and the Embankment via lock pad. Fire tenders are able to access areas within 18m of the Proposed Development risers.

4.7.2. Please refer to **Appendix D** for swept path analysis.

4.8 EEL PIE ISLAND

4.8.1. Eel Pie Island is a unique entity in terms of its access and operational needs and requirements. The island can be access via footbridge only (See Figures below) and it currently hosts a small active community of residents and businesses. Having liaised closely with representatives from the island with the aim to understand their needs and agree a suitable solution for servicing and deliveries, a provision of 6 spaces in the proximity of the bridge has been proposed as demonstrated in Proposed Development layout.

4.8.2. It is understood that the Eel Pie Island requirements in terms of access currently require highway access to the area in proximity of the pedestrian bridge from where goods are moved on foot or trolley to the bridge. The occasional larger goods deliveries are transferred to a barge and moved via river. Photographic evidence and anecdotal description of deliveries and servicing has been provided by the Eel Pie Island association which can be summarised as follows:

- Regular and frequent deliveries and visitor with car and or light goods vehicles (van)
- Occasional deliveries with medium sized and rigid lorry vehicles
- Infrequent deliveries to boatyards with articulated vehicles
- Fire tenders
- Two waste collection vehicles

4.8.3. It is acknowledged that the current servicing operations for Eel Pie Island take place at the southern end of Water Lane, with three parking spaces are dedicated for the use of the Island loading/unloading activities. In addition, larger vehicles have been observed to park and carry out loading and unloading operations along the stretch of the Embankment between the pedestrian bridge and Water Lane at the top of the slip way.

4.8.4. As part of the Proposed Development, the vehicular access along the Embankment will be controlled and therefore vehicles will be required to reverse and head northbound along Water Lane when departing from the area.

4.8.5. A formal footway will be provided at the northern end of the Embankment leading into the pedestrian priority area to ensure that deliveries facilities for the Eel Pie Island do not affect the vulnerable road user's safety.

4.8.6. For further details please refer to the Deliveries and Servicing Plan submitted under standalone cover.

Eel Pie Island footbridge access from the Embankment

Map of Eel Pie Island

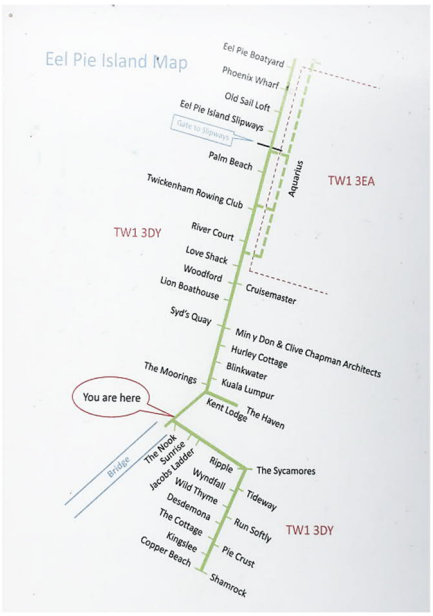


Figure 4-10 - Eel Pie Island access

4.9 5-33 KING STREET

4.10 The Proposed Development is seeking to formalise the area behind Iceland, along the Service Road and the stretch of Wharf Lane alongside the Iceland store.

4.11 The ability for businesses located here to operate under business as usual circumstances has been retained in the proposals and will be retained during construction. Once the Proposed Development highway changes are operational the rear end of properties 5-33 of King Street will be accessible for entry and exit via Wharf Lane.

4.12 35-59 KING STREET

4.12.1. The businesses along 35-39 King Street will remain accessible throughout the construction process and once the Proposed Development is operational, they will access and exit via Wharf Lane/King Street.

5 ACTIVE TRAVEL ZONE

5.1 INTRODUCTION

5.1.1. The Active Travel Zone (ATZ) assessment is a qualitative analysis of the cycle and walking network surrounding the Proposed Development's. The methodology has been developed by TfL to support the new London Plan objectives, Healthy Streets and Vision Zero approach. The ATZ assessment is carried out to assist the understanding of the Proposed Development potential to contribute in promoting sustainable travel.

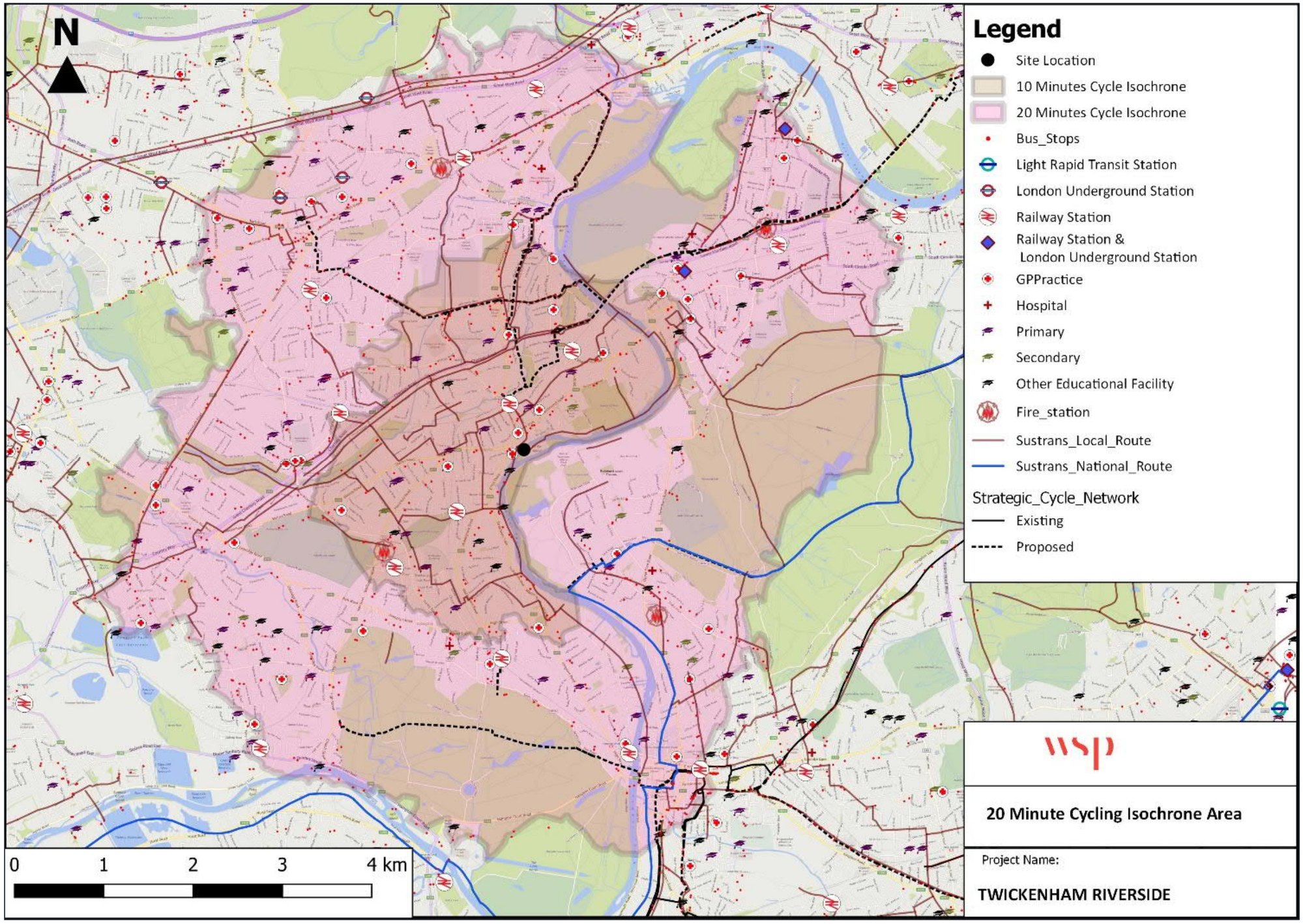
5.1.2. The ATZ Assessment consists of a review of walking and cycling routes, a site visit[1] during which Point of View (PoV) is recorded of the key routes are taken at circa 150m intervals. The photographic survey of the routes is later than benchmarked against Healthy Streets indicators[2] 3-10 as follows:

- Easy to cross;
- People feel safe;
- Things to see and do;
- Places to stop and rest;
- People feel relaxed;
- Not too noisy;
- Clean air; and
- Shade and shelter.

5.1.3. The ATZ is defined as the area that stretches around the Proposed Development encompassing a zone within a 20-minute cycle journey. The ATZ extent for the Proposed Development is illustrated in Figure 5-1.

[1] During Covid-19 outbreak TfL accepts remote desktop review.
[2] The Healthy Streets indicator parameters are described in the TfL Guide to Healthy Streets Indicators 2017 (https://content.tfl.gov.uk/guide-to-the-healthy-streets-indicators.pdf - accessed May 2021)

Figure 5-1 - Active Travel Zone



5.2 MOST IMPORTANT JOURNEYS

Neighbourhood Scale

5.2.1. It is acknowledged in the TfL guidance that the ATZ extends for a distance equivalent to 20-minutes cycling from the Site; within London, however, most people will rely on a smaller area for access to key destinations by active travel.

5.2.2. The BREAAM 2016 standard recognises the proximity of amenities as an index of sustainability, and the amenities benchmark distance is 500m to 1,000m depending on the type of development. Another indication of the ATZ neighbourhood extent in London could be the willingness to walk to a public transport station which according to TfL is 960m or up to 12 minutes walking. As similar approach could be taken for cycling (e.g. 10 minutes cycling).

5.2.3. Nevertheless, the extent of each ATZ neighbourhood varies depending on the context (central, suburban, etc.), the proposed land uses and the density of amenities. The TfL guidance refers to this area as the ATZ 'neighbourhood' area.

5.2.4. Within this neighbourhood area the key destinations should include transport hubs and transport facilities, town centres and amenities and access to a cycle network.

Key destinations within the ATZ

5.2.5. The key destinations have been prioritised, as shown in Table 5-1, based on the expected main users of the site and their most common journeys. The selection of the routes has been presented and discussed with LBRuT.

Public Transport Services and Stops

5.2.6. Key public transport hubs and bus stops within the ATZ and National Rail stations are as follows:

- Twickenham station – with services that run to Central London and Reading
- Bus stops including:
  - York Road Twickenham
  - Heath Road Twickenham
  - Poulett Gardens

Town Centres and Amenities

5.2.7. Key local amenities within the ATZ include parks, schools / education institutions, hospitals / medical practices, town centres and street retail.

Destination Priority

5.2.8. The key trip attractor associated with the Proposed Development is the residential use and park/riverside visitors, when determining the relevance of key destinations, those linked to the residential and leisure use have been prioritised as follows:

- Public transport services – high priority
- Strategic cycle network – high priority
- Town centres – high priority
- Amenities – high priority

5.2.9. As the Proposed Development is mixed in its land-use classes in nature, each of the above destination types is of high priority and will be well utilised by different users of the Proposed Development. Each trip type will be made by users of the Twickenham Riverside development on a day-to-day basis.

5.2.10. The key destinations have been prioritised, as shown in Table 5-1 below, based on the expected main users of the Site and their most common journeys.

Table 5-1 – Key ATZ Destinations

Destination		Priority	Included in ATZ
Public transport stops	Bus stops including: York Street Twickenham, Heath Road Twickenham, and Poulett Gardens	High	Yes
Public transport stations	Twickenham Station	High	Yes
Current and future strategic cycle network	King Street/Embankment	High	Yes
Town centres	Twickenham Town Centre	High	Yes
Parks	York House Gardens / Champions Wharf Play Beach	High	Yes
Schools/colleges	Orleans Park School, St Catherines School, St Richards Reynolds Catholic School	Medium/Low	No
Hospitals/doctors	Cross Deep Surgery / The Acorn Group Practice	Medium/Low	No
Places of worship	St Mary's Church, Twickenham Methodist Church	Medium/Low	No

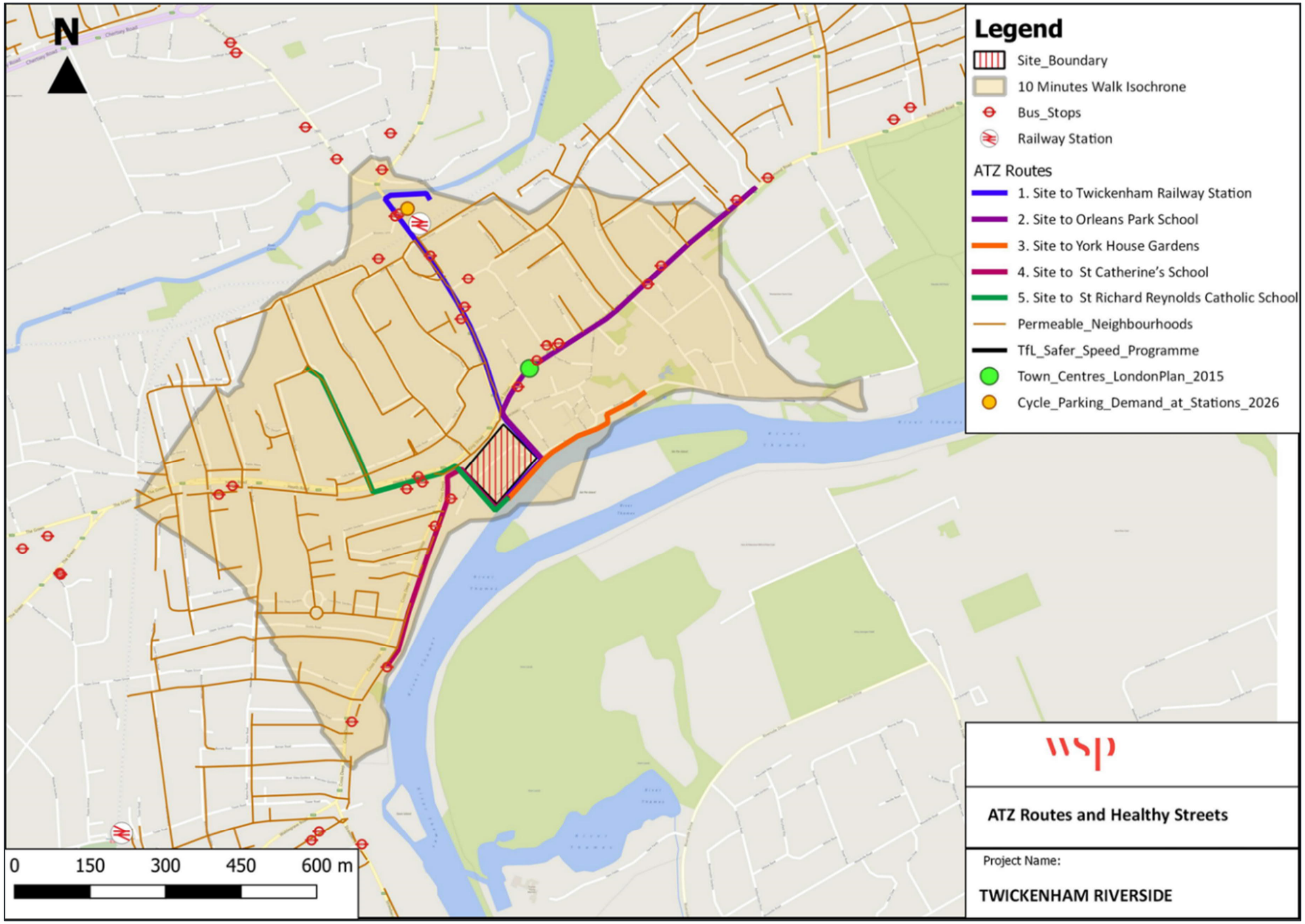
Active Travel Zone Routes

5.2.11. The scope of the ATZ refers to the routes that will most likely be undertaken frequently by the Proposed Development occupiers and visitors, these routes will be further considered for assessment. These routes will incorporate the key ATZ destinations as outlined in Table 5-1. The routes that will be undertaken for assessment are:

- Route 1 – To/From Twickenham Railway station
- Route 2 – To/From Orleans Park School
- Route 3 – To/From York House Gardens
- Route 4 – To/From St Catherine's School
- Route 5 – To/From St Richard Reynold's Catholic School

5.2.12. The routes for assessment are illustrated in Figure 5-2 below.

Figure 5-2 - ATZ Routes for Assessment



5.3 VISION ZERO REVIEW

5.3.1. This section identifies the location of accidents along the routes highlighted in the ATZ assessment. The location of accident clusters will be reviewed in order to determine whether there is a need for improvements or mitigation solutions.

5.3.2. To understand the location of accident clusters along the ATZ routes Personal Injury Accident (PIA) data has been obtained from the TfL website for the entire ATZ area for the latest available 60-month period, from July 2014 to July 2019. Accidents are categorised into 3 types:

- Slight
- Serious
- Fatal

5.3.3. Clusters of serious or fatal accidents will be explored in much greater depth as these are the highest priority areas for potential mitigation solutions. As part of the Mayor's Transport Strategy, Vision Zero sets out the goal that, by 2041, all deaths and serious injuries will be eliminated from London's transport network. The Proposed Development will contribute towards a safer environment for pedestrians and cyclists due to the removal of traffic associated with the public car park and thanks to the pedestrian priority area created along the Embankment and new junction treatments along Water Lane, Wharf Lane and their junctions.

5.3.4. The Figure below outlines the location of all serious accidents that have occurred along the route between 2014 – 2019. The Figure 5-3 also highlights that several clusters of serious accidents have occurred along some of the routes identified for the ATZ assessment. These serious clusters are located at:

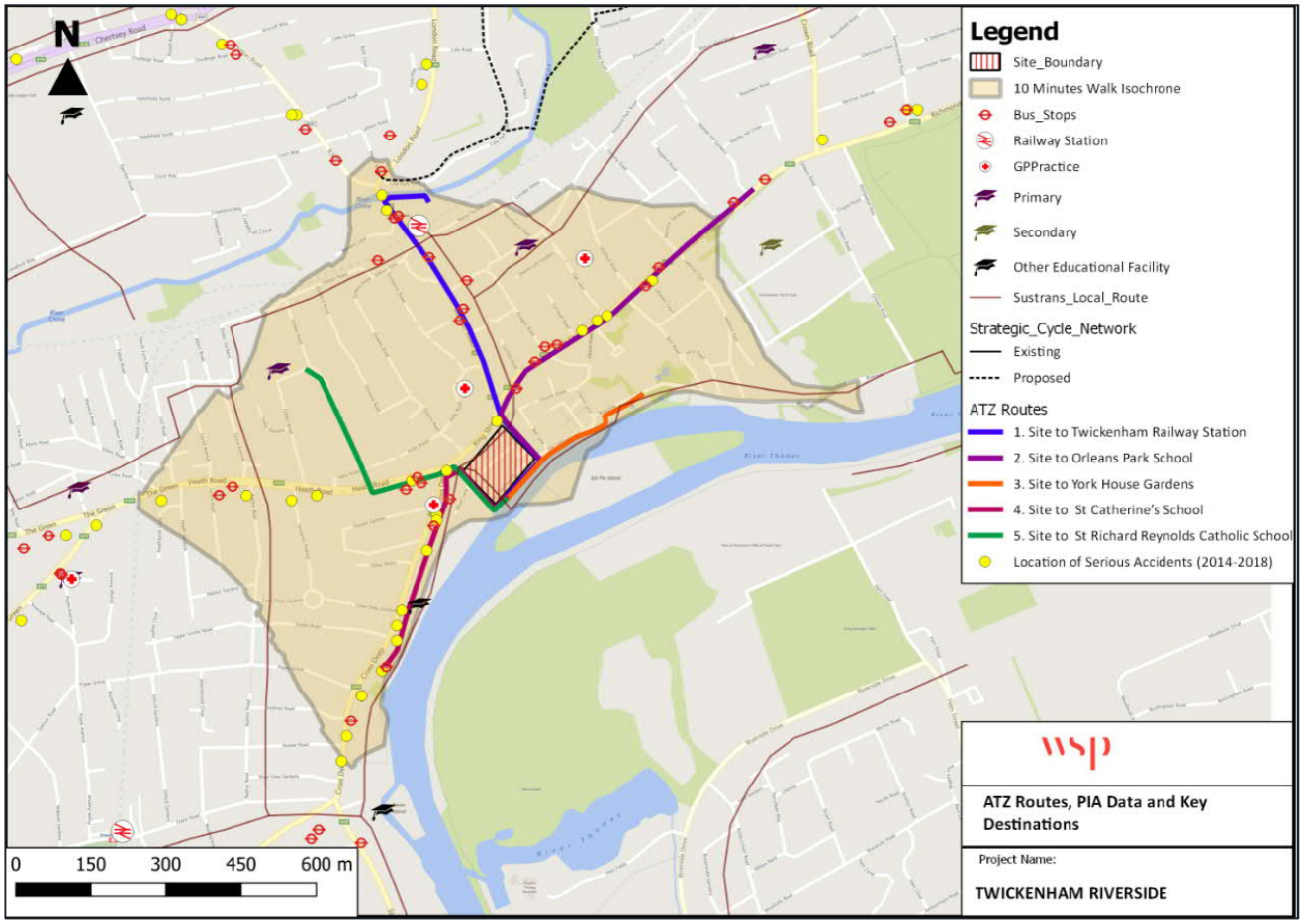
- Route 1 – Close to Twickenham Railway station
- Route 2 – At the pedestrian crossing close to the Oak Lane / A305 Richmond Road junction
- Route 4 – Close to the A310 Cross Deep / Cross Deep Gardens junction
- Route 4 – Close to the A310 Cross Deep / Poulett Gardens junction

5.3.5. As no detailed description of the accidents is provided it is difficult to speculate on the nature of the accidents and the likely causes. However, analysis of the locations of the aforementioned clusters has found that these incidents occurred mainly at junctions, pedestrian crossings and bus stops, along the routes that have relatively high levels of traffic.

5.3.6. Therefore, a summary of general safety improvements is provided that could help reduce the likelihood of accidents occurring at these locations:

- Raised tables at junctions
- Resurfacing road and pavements at and around junctions
- Formalised crossings
- Traffic calming measures such as buildouts and road markings / signage

Figure 5-3 - PIA Data along Key Routes



5.4 ATZ ASSESSMENT SUMMARY AND IDENTIFIED IMPROVEMENTS

5.4.1. As part of the ATZ Assessments, on-site studies are typically taken for the route to each key active travel destination. Due to the current COVID-19 situation, on-site studies were not plausible as per TfL guidelines. Therefore, a desk-based approach using Google Street view was employed to undertake the ATZ assessment.

5.4.2. The associated route photos are included in **Appendix E**.

ROUTE 1 – TO TWICKENHAM RAILWAY STATION

5.4.3. The pedestrian and cycle route to Twickenham station is approximately 450m in length (6 minutes' walk and 4 minutes cycle). The route is well maintained throughout, passing through Twickenham town centre, with commercial and retail outlets comprising most of the route. The POV photographic record of the route is illustrated in Figure 5-4.

5.4.4. The photo shows an intersection along the route where traffic levels appeared to be relatively high.

5.4.5. The route has been assessed towards the Healthy Street indicators in Table 5-2.

Figure 5-4 - POV Route 1

Table 5-2 – Route 1 – To/From Twickenham Railway station

Healthy Streets indicator	Observations	Areas for improvement
Clean air	The majority of the route runs along A310 London Road, which is trafficked. The route comprises bus stops and junctions where traffic is able to stop and idle. There are some trees and bushes along the route, but they are infrequent.	The route could benefit from more bushes and planters, whilst public transport and active modes could be further promoted.
People feel safe	Streetlights are located at all points on the pedestrian and cycle route. The area is mainly commercial and retail intensive in nature and the surrounding blocks of flats offer high levels of natural surveillance. The road provides unobstructed views of the route ahead.	There is no area for improvement.
Not too noisy	N/A as desk-based assessment	N/A as desk-based assessment.
Easy to cross	Signalised crossings are located at multiple points along the route, as part of larger intersections. All crossings feature clear road markings, dropped kerbs, tactile paving and refuge islands where needed.	There is no area for improvement.
Places to stop and rest	The section of the route closest to Twickenham Station features street furniture that also acts as a place to stop and rest. There are plenty of cafes and retail outlets on the route where people can stop and also sheltered bus stops.	There is no area for improvement.
Shade and shelter	Twickenham Station at the end of the route is covered and provides somewhere for people to find shade and shelter. There are sheltered bus stops along the route and the tall surrounding buildings provide both protection from the sun and some areas of overhang to protect people from inclement weather.	There is no area for improvement.
People feel relaxed	The route is trafficked however, and this could be intimidating for cyclists where the route narrows in places and is not segregated.	The route could benefit from segregation or partial segregation for cyclists.
Things to see and do	Along the route there are plenty of retail and commercial outlets for people to visit.	There is no area for improvement.

ROUTE 2 – TO/FROM ORLEANS PARK SCHOOL

5.4.6. The pedestrian and cycle route to Orleans Park School is approximately 650m in length (8 minutes' walk and 2 minutes cycle). The route is well maintained throughout, starting in Twickenham town centre, with residential dwellings comprising most of the route. The POV photographic record of the route is illustrated in Figure 5-5. The photo shows the junction between A305 Richmond Road and Seymour Gardens.

5.4.7. The route has been assessed towards the Healthy Street indicators in Table 5-3.

Figure 5-5 - POV Route 2

Table 5-3 – Route 2 – To/From Orleans Park School

Healthy Streets indicator	Observations	Areas for improvement
Clean air	The majority of the route runs along A3505 Richmond Road, which has York House Gardens present on its southern side. The park is a large green space which will act as a carbon sink and mitigate some emissions from nearby traffic. The route also contains many trees, shrubs and planters.	There is no area for improvement.
People feel safe	Streetlights are located at all points on the pedestrian and cycle route. The area is mainly residential in nature and offers high levels of natural surveillance. The road provides unobstructed views of the route ahead.	There is no area for improvement.
Not too noisy	N/A as desk-based assessment	N/A as desk-based assessment.
Easy to cross	Signalised crossings are located at multiple points along the route. Crossings are provided close to the school to meet pedestrian desire lines to reach public transport stops. All signalled crossings feature clear road markings, dropped kerbs, tactile paving and refuge islands where needed. Uncontrolled crossings do not provide tactile paving and level surfaces.	Uncontrolled crossings, particularly in proximity of the school could be provided as continued footway / raised table.
Places to stop and rest	There are sheltered bus stops along the route that provide places to stop and rest and some cafes. The route has plenty of low walls that ca act as informal areas to stop and rest.	There is no area for improvement.
Shade and shelter	There are large trees located consistently along A305 Richmond Road that provide shade and shelter. Other than the natural coverage offered by these, there are also sheltered bus stops and cafes.	There is no area for improvement.
People feel relaxed	The area has a pleasant feel due to the wide road and pavements, and the large amount of green space present along the route.	There is no area for improvement.
Things to see and do	The route has some local cafes and shops and also passes parallel to York House Gardens, with its unique landscaping and local architecture.	There is no area for improvement.

ROUTE 3 – TO YORK HOUSE GARDENS

5.4.8. The pedestrian and cycle route to York House Gardens is approximately 300m in length (4 minutes' walk and 1 minute cycle). The route is well maintained throughout, running parallel to the River Thames for the majority of the route along The Embankment and Riverside. The POV photographic record of the route is illustrated in Figure 5-6. The photo shows a section of the pedestrian route that runs parallel to the River Thames, to the east of Champions Wharf.

The route has been assessed towards the Healthy Street indicators in Table 5-4.

Figure 5-6 - POV Route 3

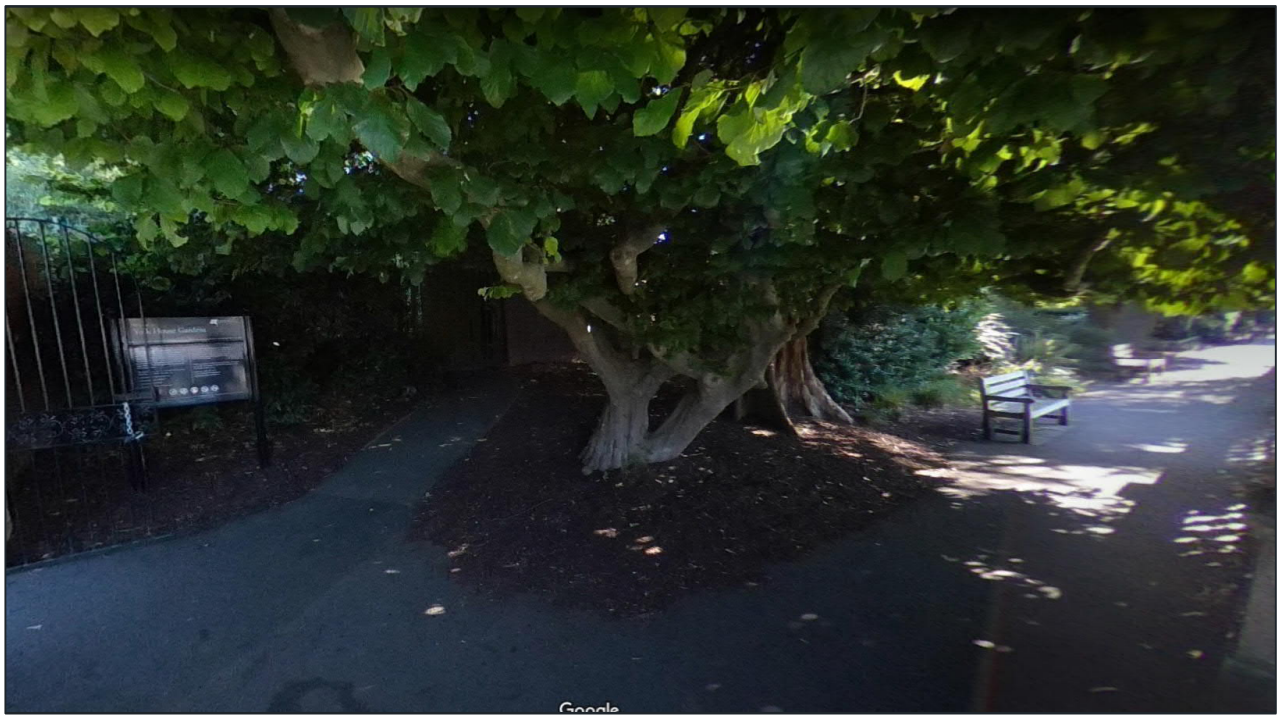


Table 5-4 – Route 3 – To/From York House Gardens

Healthy Streets indicator	Observations	Areas for improvement
Clean air	The majority of the route runs through Champions Wharf and York House Gardens, which is a pedestrian route with an abundance of trees and natural wildlife. There are very low levels of traffic along nearby Riverside and Church Lane.	There is no area for improvement.
People feel safe	The section of the route shown in the POV image highlights the pedestrian route east of Champions Wharf where there is a lack of lighting, a lack of surveillance and ambush points that may make people feel unsafe when travelling through here at night or alone.	This section of the route could benefit from increased surveillance, lighting and even mirrors that help mitigate potential ambush points.
Not too noisy	N/A as desk-based assessment	N/A as desk-based assessment
Easy to cross	Traffic volumes appear to be very low and the route is highly pedestrianised, so it is easy to cross along the majority of the route.	There is no area for improvement.
Places to stop and rest	The route runs through The Embankment, Champions Wharf and York House Gardens where there is an abundance of seating with park benches, picnic tables and low walls where people can stop and rest.	There is no area for improvement.
Shade and shelter	There are plenty of large trees located along the route that provide shade and shelter.	There is no area for improvement.
People feel relaxed	The area has a pleasant feel due to the fact that the route is highly pedestrianised and appears clean and well maintained. A section of the route at the western end of Riverside doesn't meet pedestrian desire lines very clearly and the pavement ends, causing vehicles and active modes to compete for the same space.	Riverside could benefit from pavement or resurfacing that is designed in a way that helps improve pedestrian desire lines.
Things to see and do	There is plenty to see and do along this scenic route, pedestrians are able to visit Champions Wharf and the associated Play Beach, York House Gardens and the local pubs and The Twickenham Museum.	There is no area for improvement.

ROUTE 4 – TO/FROM ST CATHERINE'S SCHOOL

5.4.9. The pedestrian and cycle route to St Catherine's School is approximately 500m in length (7 minutes' walk and 2 minutes' cycle). The route is well maintained throughout, starting at Twickenham town centre, with residential dwellings comprising most of the route. The POV photographic record of the route is illustrated in Figure 5-7. The photo shows the junction between A310 Cross Deep and Valley Mews.

5.4.10. The route has been assessed towards the Healthy Street indicators in **Table 5-5.**

Figure 5-7 - POV Route 4

Table 5-5 – Route 4 – To/From St Catherine's School

Healthy Streets indicator	Observations	Areas for improvement
Clean air	The route runs along A310 Cross Deep for the majority, where traffic levels are moderate. There are cycle lanes and bus lanes to promote alternatives to private car travel and plenty of trees and shrubs along the route that provide a natural carbon sink.	There is no area for improvement.
People feel safe	Streetlights are located at all points on the pedestrian and cycle route. The area is mainly residential in nature and the houses provide natural surveillance.	There is no area for improvement.
Not too noisy	N/A as desk-based assessment	N/A as desk-based assessment
Easy to cross	There are two signalised crossings located along the route. These are relatively far apart but located at key areas that meet pedestrian desire lines. All crossings feature clear road markings, dropped kerbs, tactile paving and refuge islands where needed.	There is no area for improvement.
Places to stop and rest	There are some sheltered bus stops located along the route where people can stop and rest and low walls that provide informal seating.	There is no area for improvement.
Shade and shelter	There are large trees located consistently along A310 Cross Deep that provide natural coverage. There are also sheltered bus stops along the route.	There is no area for improvement.
People feel relaxed	The majority of the route is well maintained with wide pavements that are offset from the road, especially on the southern side of A310 Cross Deep where there is a cycle lane. The section of the route shown in the POV image highlights the A310 Cross Deep and Valley Mews junction where the road surface is in a poor condition. This could cause a trip hazard or make it difficult for people with disabilities or pushchairs to cross safely.	The A310 Cross Deep / Valley Mews junction could benefit from resurfacing and if possible, tightening of the kerb radii.
Things to see and do	At the route terminus there is Radnor Gardens which provides people with something to visit. There is plenty of historical architecture as well that people can look at.	There is no area for improvement.

ROUTE 5 – TO/FROM ST RICHARD REYNOLDS CATHOLIC SCHOOL

5.4.11. The pedestrian and cycle route to St Richard Reynolds School is approximately 500m in length (6 minutes' walk and 2 minutes' cycle). The route is well maintained throughout, starting at Twickenham town centre, with residential dwellings comprising most of the route. The POV photographic record of the route is illustrated in Figure 5-8. The photo shows the Copthall Gardens / Holly Road junction.

5.4.12. The route has been assessed towards the Healthy Street indicators in Table 5-6.

Figure 5-8 - POV Route 5

Table 5-6 – Route 5 – To/From St Richard Reynolds Catholic School

Healthy Streets indicator	Observations	Areas for improvement
Clean air	The route is split across Twickenham town centre and residential routes but has trees and planters frequently placed along it. Traffic levels are moderately high but there is plenty of bus activity along the A305 Heath Road.	There is no area for improvement.
People feel safe	Streetlights are located at all points on the route and there is plenty of natural surveillance from shops and residential dwellings.	There is no area for improvement.
Not too noisy	N/A as desk-based assessment	N/A as desk-based assessment.
Easy to cross	Signalised crossings are located at multiple points along A305 Heath Road. The section of the route shown in the POV image is at the Copthall Gardens / Holly Road junction where there is no tactile paving, the pavement is uneven and very narrow along the northern side of Holly Road. Walls obstruct the view of pedestrians and vehicles making it harder to cross.	This section of the route would benefit from resurfaced paving, road markings that make it easier for people to cross, narrower junctions and traffic calming measures that slow vehicles down as they approach the junction.
Places to stop and rest	There are sheltered bus stops and cafes along A305 Heath Road where people can stop and rest. At the route terminus there is a lack of seating and the low walls are part of private property.	The large paved area at the Clifton Road / Coptham Gardens junction next to St Richard Reynolds Catholic School could benefit from formal seating.
Shade and shelter	There are trees and planters located along the route and sheltered bus stops on A305 Heath Road where people can find shade and shelter.	There is no area for improvement.
People feel relaxed	The route is generally well maintained, traffic levels appear relatively moderate along Coptham Gardens and the pavement is offset from the road by resident permit bays.	There is no area for improvement.
Things to see and do	There are commercial and retail outlets that people can visit close to Twickenham town centre, on A305 Heath Road.	There is no area for improvement.

5.6 ATZ SUMMARY AND IDENTIFIED IMPROVEMENTS

Potential Improvements

5.6.1. As part of the Active Travel Zones Assessment, a desktop review was carried out for the following routes:

- Route 1 – To Twickenham Railway station
- Route 2 – To Orleans Park School
- Route 3 – To York House Gardens
- Route 4 – To St Catherine's School
- Route 5 – To St Richard Reynold's Catholic School

5.6.2. Three key areas of improvement were identified:

- There is potential to plant more shrubs and planters along the A310 London Road to contribute to cleaner air;
- To review street lighting to improve the safety of pedestrians at Riverside; and
- Resurface and improve the safety of junctions for pedestrians crossing.

Improvements vs Mitigation

5.6.3. It is essential that any financial contributions sought towards mitigation of the Proposed Development are sought in accordance with the National Planning Policy Framework (2019). Paragraph 55 of the NPPF states that "*planning obligations must only be sought where they meet all of the following tests:*

- *necessary to make the development acceptable in planning terms.*
- *directly related to the development.*
- *fairly and reasonably related in scale and kind."*

6 TRIP GENERATION

6.1 INTRODUCTION

6.1.1. This chapter presents the methodologies used to examine the number of multi-modal trips generated by the Site. This section will detail the net change in trips between the consented and proposed uses at the Site during peak times for travel on the local transport network, namely the weekday AM peak hour (08:00-09:00) and weekday PM peak hour (17:00 – 18:00).

6.1.2. It should be noted that land use classes A and B1 have been revoked in September 2020. The new land use class E has replaced these land uses however the technical standards, databases and London Plan still make reference to land use classes A and B1. These will therefore be represented as such in this document for the purpose of facilitating the technical assessment.

6.1.3. A summary of the net change in floor areas is outlined in Table 6-1.

Table 6-1 - Land Use Net Change

Land Use	Existing	Proposed	Net Change
A1 Retail	1,193 sqm	368 sqm	-825 sqm
A2-5 Restaurant / Café/ Pub	46 sqm	699 sqm	+653 sqm
B1 Office	245 sqm	320 sqm	+75 sqm
C3 Residential	0	45 Units	+45 Units

6.2 EXTANT/EXISTING TRIP GENERATION POTENTIAL

6.2.1. The existing site comprises permission to operate a mix of A1 retail, A2 retail and B1 office space. A detailed breakdown of the existing site and what it is currently occupied by (and has planning consent for) is detailed below:

- Public garden (Jubilee Gardens);
- Retail (King Street)
- A1 Retail – 1,193 sqm
- A2-5 Retail – 46 sqm
- B1 Office – 245 sqm
- Leisure centre
- Car parking – 26 spaces
- Public car parking (Embankment).

6.2.2. It should be noted that there are occasional market/festival events associated with the Site as well.

6.2.3. For the purposes of assessment, the net impact of the Proposed Development will be assessed against the Sites existing uses (assuming the Site is fully occupied and operational). This approach is considered appropriate as the site could operate within the parameters of its existing uses.

6.2.4. Table 6-2 outlines the travel demand generation associated with the existing site. The majority of the travel associated to retail uses can be attributed to trips already on the network as part of the King Street and Twickenham Town centre retail activity, therefore the forecast below shows only the trip generation related to the existing B1 office and associated private parking facilities.

6.2.5. For consistency of assessment, the methodology outlined below in section 5.4 for the proposed B1 workspace was used to forecast the baseline office trips in Table 6-2.

Table 6-2 – Existing Office Land Use Trips

Mode	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Rail	4	4	8	4	0	4
Bus	3	3	6	3	0	3
Taxi	0	0	0	0	0	0
Motorcycle	0	0	0	0	0	0
Car Driver	6	8	14	8	0	8
Car Passenger	0	0	1	0	0	0
Bicycle	1	1	3	1	0	1
On Foot	2	2	4	2	0	2
Total	**16**	**19**	**36**	**19**	**0**	**19**

6.3 PROPOSED TRIP GENERATION

6.3.1. The trip generation methodology at the Proposed Development assumes that there will be a total of 45 residential units, as well as office, café, pub and retail.

6.3.2. The methodology used to assess each land use is provided in turn below.

Residential

6.3.3. The trip generation associated with the proposed residential units has been forecast using surveys from the TRICS database, the survey site selection was based on the following criteria:

- Land use – Residential – Private Flats;
- Weekday surveys – All;
- Location – London;
- Units – 25 +;
- PTAL 5+; and
- Location – Town Centre

6.3.4. The selected sites are summarised in Table 6-3 below. It should be noted that the TRICS sites selected have been used to determine total person trips only with local data (ONS Census) used to determine trips by travel mode.

Table 6-3 – Residential TRICS site selection

Reference	Description	Town/City	Area	Location	Units
BM-03-C-01	blocks of flats	bromley	bromley	Town Centre	160
HM-03-C-01	block of flats	fulham	hammersmith and fulham	Town Centre	42
HM-03-C-02	blocks of flats	hammersmith	hammersmith and fulham	Town Centre	194

6.3.5. The total proposed residential person trip generation is then shown in Table 6-4 below. The table summarises the AM peak 0800-0900 and PM peak 1700-1800 total person trip rates and total person trip generation based on 45 residential units.

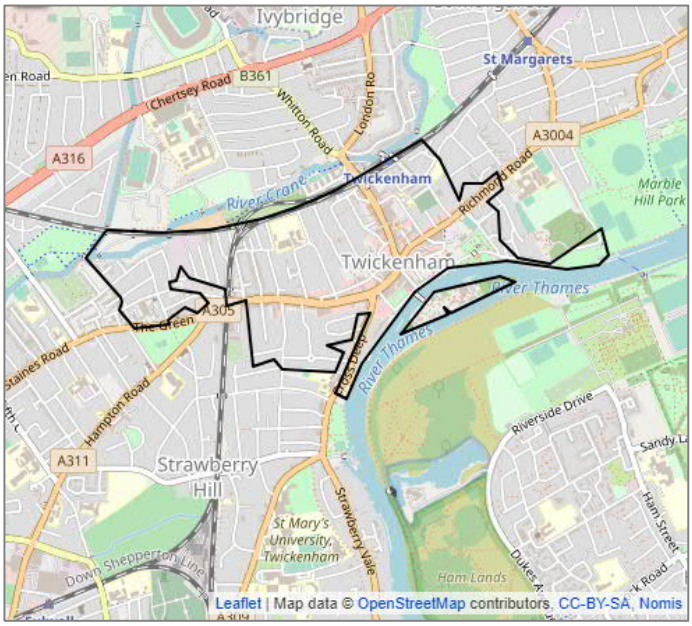
Table 6-4 – Total Proposed Residential Trip Generation

TRICS	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Total Person Trip Rate (per unit)	0.085	0.49	0.575	0.266	0.131	0.397
Proposed Total Person Trips (45 units)	4	23	26	12	6	18

6.3.6. As outlined above, the proposed residential units would typically generate 26 two-way total person trips in the AM peak hour and 18 during the PM peak hour.

6.3.7. The 2011 residential population Census data has been extracted for the middle super output area (MSOA) Richmond upon Thames 014 shown in Figure 6-1 below to inform the current local mode share.

Figure 6-1 – Richmond upon Thames 014 MSOA



6.3.8. The census mode share has been adjusted to represent the car free nature of the Proposed Development. Car driver trips have been proportionally split across sustainable travel modes, following the principles of the

Mayor Transport Strategy (GLA, 2018) therefore reallocating vehicular trips to public transport, walking and cycle transport modes.

6.3.9. The resulting modal split and multi-modal trip generation for the proposed residential element of the Proposed Development is shown in Table 6-5 and Table 6-6 respectively below.

Table 6-5 - Mode share (Resident population)

Mode	Rail	Bus	Taxi	M/C	Car	Car Pass.	Bicycle	On Foot	Total
2011 Census	43%	9%	0%	1%	29%	1%	6%	10%	100%
Adjusted	54%	13%	0%	1%	3%	1%	9%	20%	100%

Table 6-6 - Forecast Residential Multi-Modal Trip Generation (45 units)

Mode	Adjusted Mode Share	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Rail	54%	2	12	14	6	3	10
Bus	13%	0	3	3	2	1	2
Taxi	0%	0	0	0	0	0	0
Motorcycle	1%	0	0	0	0	0	0
Car Driver	3%	0	1	1	0	0	1
Car Passenger	1%	0	0	0	0	0	0
Bicycle	9%	0	2	2	1	1	2
On Foot	20%	1	4	5	2	1	4
Total	**100%**	**4**	**22**	**26**	**12**	**6**	**18**

B1 Commercial Use

6.3.10. In order to robustly assess the proposed B1 commercial space, a first principles trip generation approach has been undertaken. This approach focusses on the 'typical' number of staff that will be occupying the workspace based on the proposed floorspace.

6.3.11. The total 'maximum' number of employees is based upon the proposed land use NIA floorspace and the Full Time Employee (FTE) capacity. The number of FTE employees has been calculated as 1 FTE per 12sqm of NIA floorspace, as detailed in the Employment Density Guide 3rd Edition (Homes & Communities Agency, 2015).

6.3.12. The study Reporting on desk sharing in office environment the Occupier Density Study (British Council for Office, 2013) reported that *'mean utilisation rates of 60–70% are commonly observed: utilisation rates of 80% are typically a target rather than a reality in most instances.'* Therefore, it can be assumed that it is very uncommon for a workplace that all the office facilities are occupied at once, which indicates that not all employees will be attending the office at the same time.

6.3.13. For the purposes of this assessment it is assumed that 85% of staff will occupy the building on any given day. Underutilisation of an office may be caused by absence from work (leave and sickness), working from home

(or another location), attendance at external meetings as well as longer term absences such as work secondments and part-time working.

6.3.14. Based on the above methodology, a summary of average employment densities is provided in Table 6-7 which also provides an indication of the proposed staff numbers.

Table 6-7 - Average Employment Densities and Additional Employees

Land Use	Proposed Floor Area (NIA m2)	Area Per FTE (NIA m2)	Forecast New Employees (Assumes 85% Occupancy
Office	304*	12	22

**assuming a GIA to NIA ratio of 0.95*

6.3.15. The mode split for the total employee trips to and from the proposed office floorspace has been determined through the application of the 2011 Census Travel to Work data for Richmond Upon Thames 014 as above.

6.3.16. On the basis that the Proposed Development does not include any car parking for the office use the adjusted mode shares have been applied. The resultant Travel to Work modal split is summarised in Table 6-8.

Table 6-8 - Forecast Office Multi-Modal Trip Generation – First Principles

Mode	2011 Census	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Rail	43%	9	0	9	9	0	9
Bus	31%	7	0	7	7	0	7
Taxi	0%	0	0	0	0	0	0
Motorcycle	0%	0	0	0	0	0	0
Car Driver	0%	0	0	0	0	0	0
Car Passenger	2%	0	0	0	0	0	0
Bicycle	13%	3	0	3	3	0	3
On Foot	11%	2	0	2	2	0	2
Total	**100%**	**22**	**0**	**22**	**22**	**0**	**22**

6.3.17. As outlined above the first principles approach generates a total of 22 two-way trips during the AM peak and 22 during the PM peak period.

A3 Restaurant / Café

6.3.18. The TRICs database has been interrogated to derive forecast trips associated with the A3 and retail offering proposed on Site for a robust assessment. The TRICS surveys have been selected based on the following criteria:

- Land use – Hotel, Food and Drink – Restaurants;
- Weekday surveys – All;
- Location – London;
- Floor Area – All;
- PTAL All; and
- Location – All.

6.3.19. The selected sites are summarised in Table 6-9 below. It should be noted that the TRICS sites selected have been used to determine total person trips only with localised data used to determine trips by mode.

Table 6-9 - A3 Restaurant / Café TRICS Site Selection

Reference	Description	Town/City	Area	Location	Units
BT-06-B-01	Coffee shop & restaurant	Wembley	Brent	Suburban Area	150
LB-06-B-01	Portuguese restaurant	Stockwell	Lambeth	Edge of Town Centre	194

6.3.20. Table 6-10 summarises the AM peak 0800-0900 and PM peak 1700-1800 total person trip rates and total person trip generation based on a land use area of 255 café plus 368 retail, to give a total of 623 sqm.

Table 6-10 - Proposed Restaurant / Café Total Person Trip Generation

TRICS	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Total Person Trip Rate (per 100sqm)	3.093	1.031	4.124	6.977	6.105	13.082
Proposed Total Person Trips (607 sqm)	19	6	26	43	38	82

6.3.21. With regards to the modal split associated with the ground floor unit, it is considered that the majority, if not all of trips will be generated in the form of pass-by trips either associated with the Proposed Development itself or drawn from pedestrians already present on the existing network.

6.3.22. Therefore, it has been assumed that the majority of trips associated with the A3 offering will be on foot with the exception of a number of cycles. The Richmond Upon Thames 014 census workplace model split for cycle has been assumed with the remaining trips comprising of pedestrians. **Table 6-11** below outlines the multi-modal trip generation.

Table 6-11 - Forecast A3 Restaurant / Cafe Multi-Modal Trip Generation

Mode	2011 Census	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Rail	0%	0	0	0	0	0	0
Bus	0%	0	0	0	0	0	0
Taxi	0%	0	0	0	0	0	0
Motorcycle	0%	0	0	0	0	0	0
Car Driver	0%	0	0	0	0	0	0
Car Passenger	0%	0	0	0	0	0	0
Bicycle	13%	3	1	3	6	5	11
On Foot	87%	17	6	22	38	33	71
Total	**100%**	**19**	**6**	**26**	**43**	**38**	**82**

6.3.23. As outlined above the A3 offering is forecast to generate up to 26 two-way trips during the AM peak hour and 82 during the PM peak hour.

6.3.24. For assessment purposes, it is reasonable to assume the restaurant / cafe use will not generate material increase in new trips to the Site and will likely comprise pass-by, diverted trips with no additional impact to the existing highway or public transport network.

A4 Pub Use

6.3.25. Trip generation associated with the pub has been forecast using surveys from the TRICS database on the following:

- Land use – Hotel, Food and Drink – Pub / Restaurant;
- Weekday surveys – All;
- Location – London;
- Floor Area – All;
- PTAL 5+, and
- Location – All,

6.3.26. The selected sites are summarised in Table 6-12 below.

Table 6-12 - Pub TRICS Site Selection

Reference	Description	Area	Location	GFA
ci-06-c-01	pub/restaurant	city of london	Town Centre	700
hg-06-c-01	wetherspoon	wood green	Town Centre	1,000
lb-06-c-01	pub/restaurant	waterloo	Town Centre	220
wh-06-c-01	pub/restaurant	wandsworth	Town Centre	400

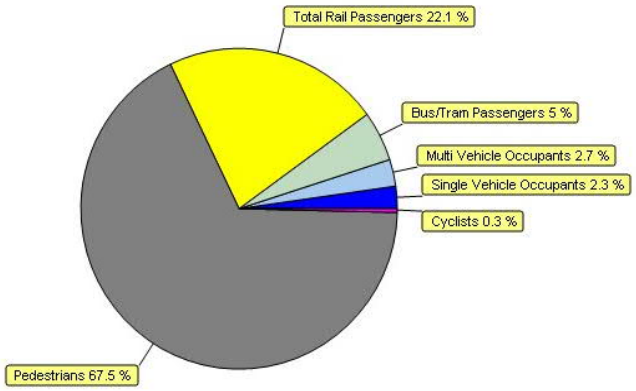
6.3.27. Table 6-13 summarises the AM peak 0800-0900 and PM Peak 1700-1800 total person trip rates and total person trip generation based on a 444sqm A4 Pub.

Table 6-13 - Proposed A4 Pub Total Person Trip Generation

TRICS	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Total Person Trip Rate (per 100sqm)	0	0	0	17.241	14.224	31.465
Proposed Total Person Trips (444sqm)	0	0	0	77	63	140

6.3.28. In order to derive trips by mode, the modal split derived from TRICS has been used as a basis for the assessment as it is considered that travel characterises associated with town centre pubs would be a comparable proxy to the Proposed Development. Figure 6-2 below outlines the modal split percentages derived from TRICS.

Figure 6-2 - Pub modal split percentages (source: TRICS)



6.3.29. It should be noted that the car driver (single vehicle occupants) modal split percentage has been adjusted so no visitors travel by car. The car driver trips have been shifted to the walking mode as this is a good alternative in consideration of the car-free nature of the Site. The resulting multi-modal analysis is outlined below in Table 6-14 below.

Table 6-14 - Forecast A4 Pub Multi-Modal Trip Generation

Mode	2011 Census	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Train	18%	0	0	0	17	14	31
Bus	5%	0	0	0	4	3	7
Taxi	0%	0	0	0	0	0	0
Motorcycle	0%	0	0	0	0	0	0
Car Driver	0%	0	0	0	0	0	0
Car Passenger	3%	0	0	0	2	2	4
Bicycle	0%	0	0	0	0	0	0
On Foot	70%	0	0	0	53	44	98
Total	**100%**	**0**	**0**	**0**	**76**	**63**	**140**

6.3.30. As expected, the forecast trip generation for the A4 Pub does not generate any visitor AM peak hour trips with a two-way total of 140 trips in the PM peak period with the majority of trips made on foot.

6.4 TRIP GENERATION SUMMARY

6.4.1. Based on the preferred trip generation approaches outlined above, Table 6-15 provides a summary of the forecast trip generation associated with the Proposed Development.

Table 6-15 – Proposed Trip Generation

Mode	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Rail	11	12	23	33	17	50
Bus	7	3	10	12	4	16
Taxi	0	0	0	0	0	0
Motorcycle	0	0	0	0	0	0
Car Driver	0	1	1	0	0	1
Car Passenger	0	0	1	3	2	4
Bicycle	6	3	9	10	6	16
On Foot	20	10	30	96	78	174
Total	**45**	**29**	**73**	**153**	**107**	**261**

6.4.2. As outlined above, the Proposed Development is forecast to generate up to 73 two-way total person trips in the AM peak hour and 261 during the PM peak period. This equates to approximately 4no. trips per minute during the busier PM peak period.

6.4.3. This level of movements is not considered to have a significant impact on the local highway network however as only one trip is anticipated to be by car with the majority of trips undertaken on sustainable transport modes such as public transport and walking.

6.5 NET IMPACT ASSESSMENT

6.5.1. As outlined above, as the majority of the existing site is associated with retail uses which can be attributed to trips already on the network, therefore the net impact assessment focusses on trips associated with the existing office. In the interest of a robust assessment the forecast trips associated with the proposed pub and café have not been attributed to trips already on the network and have been included in the net impact assessment below. In reality the majority of these trips would be linked or pass by as a result of the Site's town centre location. The net impact assessment is shown in Table 6-16 below.

Table 6-16 - Net Impact Assessment

Mode	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Rail	7	7	15	28	17	45
Bus	4	0	4	9	4	13
Taxi	0	0	0	0	0	0
Motorcycle	0	0	0	0	0	0
Car Driver	-6	-7	-13	-7	0	-7
Car Passenger	0	0	0	2	2	4
Bicycle	5	2	6	8	6	14
On Foot	18	8	26	94	78	172
Total	**28**	**9**	**37**	**134**	**107**	**241**

6.5.2. In addition to the table above, the Proposed Development will result in the removal of up to 97 parking spaces from a total of 113 currently available, on this basis, the Proposed Development will result in a significant net reduction in vehicle trips.

6.5.3. To note, appropriate loading facilities will be maintained for Eel Pie Island to accommodate the delivery trips recorded servicing the island which comprised of an average of 19 trips across two survey days.

6.5.4. Based on the net impact assessment above, the Proposed Development is forecast to generate up to 37 total person trips during the AM peak hour (0800-0900) and 241 during the PM peak hour (1700-1800).

6.5.5. This net impact assessment is considered to be highlight robust as a significant number of these trips will already be on the network due to the Site's town centre location. This equates to 4 additional trips per minute during the peak hour across the various sustainable transport modes.

6.5.6. This level of trips is not considered to have significant impact on the local highway network and is considered acceptable in highway terms.

6.7 DELIVERY AND SERVICING TRIP GENERATION

Residential Servicing

6.7.1. Delivery and servicing trips have been forecast using TRICS sites including more recent surveys. The following sites have been identified from the TRICS database:

- Kew, Block of flats, 170 dwellings, survey 2019
- Barking, Block of flats, 40 dwellings, 2020 survey (COVID)
- Barnet, mixed private/affordable housing, 271 dwellings, 2019
- Richmond, mixed private/affordable housing, 76 dwellings, 2016

6.7.2. The residential delivery/servicing trip rates are set out in Table 6-17 below.

Table 6-17 – Residential Servicing Trip Rates (Per dwelling)

Time Period	Weekday AM Peak (0800-0900)			Weekday PM Peak (1700-1800)			Daily (0700-1900)		
	In	Out	Total	In	Out	Total	In	Out	Total
LGV	0.014	0.015	0.029	0.015	0.009	0.024	0.199	0.200	0.399
HGV	0.001	0.001	0.002	0.002	0.002	0.003	0.016	0.016	0.033

6.7.3. The forecast servicing demand associated with the Proposed Development (45 dwellings) is outlined below in Table 6-18.

Table 6-18 – Servicing Demand: 45 Units

Time Period	Weekday AM Peak (0800-0900)			Weekday PM Peak (1700-1800)			Daily (0700-1900)		
	In	Out	Total	In	Out	Total	In	Out	Total
LGV	1	1	1	1	0	1	9	9	18
HGV*	0	0	0	0	0	0	1	1	2
*HGV can only service the site on limited hours due to Embankment pedestrian priority scheme									

6.7.4. Applying the above servicing trips to the proposed 45 units, this generates a total of 20 servicing trips over the course of a day. This level of servicing is expected to generate maximum of one residential servicing trip in any one hour across a typical day.

B1 Office Servicing

6.7.5. Delivery and servicing trips have been forecast using TRICS sites in order to include more recent surveys. The following sites have been identified from the TRICS database:

- Hammersmith, Regus Offices, survey 2018
- Kensal Green, Fruit Drinks Company, survey 2019
- Vauxhall, Start-up Offices and Studios, survey 2019
- Streatham, Music Company, survey 2020 (COVID)

6.7.6. On this basis, the Proposed Development is forecast to have a typical servicing demand of up to 2no. servicing vehicles arrivals per day. Based on typical servicing arrival profiles for commercial developments, the peak hour of servicing activity would be forecast to generate up to 2no. service vehicle. A forecast for the B1 office servicing arrivals is shown in Table 6-19 below.

Table 6-19 – B1 Office Forecast Servicing Arrivals

Time Period	AM Peak (0800-0900)	PM Peak (1700-1800)	Daily (0700-1900)
Light Goods Vehicle	0	0	3
Heavy Goods Vehicle*	0	0	0
Total	**0**	**0**	**4**
*HGV can only service the site on limited hours due to Embankment pedestrian priority scheme			

A3 Restaurant / Café Servicing

6.7.7. Delivery and servicing trips associated with the A3 Restaurant / Café proposed on Site have been forecast using the TRICS sites selected above in previously in Table 6-9. The resulting servicing rates and trips are outlined in Table 6-20 below.

Table 6-20 – Restaurant / Café Servicing Trip Rates

Time Period	Weekday AM Peak (0800-0900)			Weekday PM Peak (1700-1800)			Daily (0700-1900)		
	In	Out	Total	In	Out	Total	In	Out	Total
Service Vehicles	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.667	1.334

6.7.8. For the purposes of assessment and due to the size of the restaurant / café offering it has been assumed that all deliveries will be undertaken via LGV's. The proposed servicing arrivals for the pub is shown in Table 6-21 below.

Table 6-21 – Restaurant / Café Forecast Servicing Arrivals

Time Period	AM Peak (0800-0900)	PM Peak (1700-1800)	Daily (0700-1900)
Light Goods Vehicle	0	0	3
Heavy Goods Vehicle*	0	0	1
Total	**0**	**0**	**4**
*HGV can only service the site on limited hours due to Embankment pedestrian priority scheme			

Note: LGV / HGV split based on a typical 80% 20% split

A4 Pub Servicing

6.7.9. Delivery and servicing trips associated with the A4 Pub proposed on Site have been based on the TRICS selection above in Table 6-12. To note, only one of the four sites HG-06-C-01 provided delivery and servicing survey data. The resulting servicing rates and trips are outlined in Table 6-22 below.

Table 6-22 – Restaurant / Café Servicing Trip Rates

Time Period	Weekday AM Peak (0800-0900)			Weekday PM Peak (1700-1800)			Daily (0700-1900)		
	In	Out	Total	In	Out	Total	In	Out	Total
Service Vehicles	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100	0.200

6.7.10. For the purposes of assessment and due to the size of the restaurant / café offering it has been assumed that all deliveries will be undertaken via LGV's. The proposed servicing arrivals for the pub is shown in Table 6-23 below.

Table 6-23 – Pub Proposed Servicing Arrivals

Time Period	AM Peak (0800-0900)	PM Peak (1700-1800)	Daily (0700-1900)
Light Goods Vehicle	0	0	1
Heavy Goods Vehicle*	0	0	0
Total	**0**	**0**	**1**
*HGV can only service the site on limited hours due to Embankment pedestrian priority scheme			

Servicing Summary

6.7.11. Table 6-24 outlines the sitewide servicing trips forecast for the Proposed Development. The results outline up to one delivery and servicing trip during each of the AM and PM peak hours with a total of 22 trips across a typical day. Based on a typical 12 hour day the Proposed Development will typically generate one servicing and delivery trip across each hour with the occasional hour generating two trips. It is considered that this level of delivery and servicing trips will be accommodated within the two delivery bays proposed to serve the Site.

Table 6-24 – Proposed Servicing Trips

Time Period	Daily (0700-1900)
Light Goods Vehicle	21
Heavy Goods Vehicle*	2
Total	**22**
*HGV can only service the site on limited hours due to Embankment pedestrian priority scheme	

7 IMPACT ASSESSMENT

7.1 PUBLIC TRANSPORT NETWORK ASSESSMENT

7.1.1. The Site is within walking distance of Twickenham Railway station (circa 10-minute walk) as well as six bus stops as highlighted previously in Chapter 3.

7.1.2. The assessment of the Proposed Development effects on the public transport network included identifying the net change in trips per mode and identify the additional number of passengers per service attributable to the Proposed Development.

Bus Impact

7.1.3. It is estimated that the Proposed Development would generate 4 bus trips in the AM peak and 13 in the PM peak. There are 41 buses across 9 different services running in the peak hours, which if split evenly across these would represent 1 or less extra passengers per peak hour per services. This would be a negligible impact.

Rail Impact

7.1.4. It is estimated that the Proposed Development would generate 15 rail trips in the AM peak and 45 in the PM peak. There are 27 trains in the AM peak and 24 in the PM peak across 6 different rail services. If spread evenly this would represent 1 extra passenger per service in the AM Peak and 2 extra passengers per service in the PM peak. This would be a negligible impact.

7.2 HIGHWAY NETWORK ASSESSMENT

7.2.1. As the Proposed Development is car free and a significant number of car parking spaces will be removed as a result of the Proposed Development, we are not anticipating detrimental impacts on highway capacities and a requirement to undertake junction traffic modelling at this stage has not been raised by the LPA.

7.2.2. Compared to baseline traffic data collected by Systra for the parking review, we understand that the removal of public and on-site car parking spaces could result in a significant reduction of traffic through the area. The surveys have been analysed to produce a traffic flow diagram reporting the Manually Classified Turning Counts undertaken at key junctions and representing the likely trip generation resulting from the Proposed Development. This can be found in **Appendix F**.

7.2.3. The Proposed Development will be car free with exception for blue badge holders parking bays. The Proposed Development will therefore only generate traffic related to delivery and servicing, which is anticipated to generate up to 21 LGV trips and day and 2 HGV / large lorry trips a day.

7.2.4. The existing level of servicing and visitors associated with Eel Pie Island will be accommodated on Site to guarantee business continuity for the Island. Through surveys and conversations with Eel Pie Island residents and business association it has been estimated that 6 parking / loading spaces along The Embankment and two parking spaces along Wharf Lane should be sufficient to accommodate the existing needs of businesses and residents that require parking spaces in close proximity of the Eel Pie Island pedestrian bridge.

7.3 ROAD SAFETY ASSESSMENT

7.3.1. An independent Road Safety Assessment Stage 1 has been carried out by Project Centre on behalf of the Applicant in September 2020 and a further review will be carried out in the form of a Road Safety Audit Stage 2 once detail design is completed.

7.3.2. The Road Safety Audit report can be found in **Appendix G** at the rear of this document and a designer's response technical note is provided in **Appendix H**. A summary of the issues identified, and the designer's responses are provided in the Table 7-1 below.

Table 7-1 – Stage 1 Road Safety Audit Summary

Problem	Location	Summary	Recommendation
General	Wharf Lane and Water Lane	Narrow two-way road may lead to a risk of collisions between vehicles and between vehicles and cyclists	Ensure that any pinch points on the carriageway are minimised so that there is sufficient width for vehicles to pass each other safely
Local Alignment	Wharf Lane and Water Lane	Insufficient width at junction mouths, resulting in collisions between vehicles travelling in opposite directions and collisions between vehicles and pedestrians	If possible, retain the one-way arrangement for Wharf Lane and Water Lane. As a minimum, provide bell-bollards or other physical features on the corners of the junctions to protect waiting pedestrians
	Wharf Lane and Water Lane	Two-way working introduces the risk of reversing vehicles, which may result in collisions between vehicles and collisions between vehicles and pedestrians	Ensure that there is sufficient carriageway space at the ends of Wharf Lane and Water Lane for vehicles to turn around
Junctions	N/a	No issues have been identified	N/a
Walking, Cyclists and Horse Riding	North-west corner of Water Lane	Proposed kerb line runs alongside the existing bench, increasing the risk of pedestrian injury or vehicle damage	Ensure that the kerb line of the carriageway is kept a suitable distance away from any street furniture
	Junction mouths of Wharf Lane and Water Lane	Pedestrians with sight impairments may enter the road without realising, resulting in conflict with passing traffic leading to injury.	Provide suitable high-contrast tactile paving on the footway at the pedestrian crossing points, to warn pedestrians with sight impairments that they are entering a traffic environment
Traffic Signs, Carriageway Marking and Street Lighting	N/a	No issues have been identified	N/a

7.3.3. A Road Safety Assessment Stage 2 will be carried out once details define the assessment that will be required.

7.4 MANAGEMENT PLANS

7.4.1. We will describe the management plans strategies recommended to support the Proposed Developments; at this stage we anticipate these will be:

- Delivery and Servicing Strategy (Submitted under separate cover).
- Travel Plans (Submitted under separate cover).
- Waste Management Strategy (To be secured via condition).
- Framework Construction Management Plan (Provided by Arcadis).

FRAMEWORK TRAVEL PLAN

7.4.2. The NPPF highlights that a key tool for facilitating the promotion of sustainable travel choices will be the provision of a Travel Plan:

> *"All developments which generate significant amounts of movement should be required to provide a Travel Plan."*

7.4.3. A Framework Travel Plan (FTP) for residents, staff and visitors of the Proposed Development has been submitted as a standalone document. The objective of the Framework Travel Plan will be to reduce car trips made to and from the site as far as practicable and encourage active travel modes.

7.4.4. The Framework Travel Plan will set out the site wide management structure and outline the sustainable travel principles and measures to be incorporated within the Proposed Development.

7.4.5. The implementation of pre-occupation measures to be included within the Framework Travel Plan will be the responsibility of the Travel Plan Co-ordinator (TPC). The TPC role will be undertaken by either a nominated employee of the site management company or an appointed consultant. The success of the Framework Travel Plan will be regularly monitored and reviewed to ensure that the Framework Travel Plan continually develops during its lifetime.

7.4.6. The FTP will be prepared in accordance with TfL Travel Planning Guidance as well as 'Travel Planning for New Development in London: Incorporating Deliveries and Services' and DfT's 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process'.

8 SUMMARY AND CONCLUSIONS

8.1 SUMMARY

8.1.1. This Transport Assessment demonstrates the following:

- The Site currently has a PTAL score of 5, showing very good connectivity to the public transport network
- The Proposed Development will provide significant improvements to the local area with new pedestrian and cycle routes through the site and towards local bus services
- Cycle parking will be provided on-site in accordance with London Plan policy standards
- The Proposed Development is intended to be car-free albeit providing a small amount of Blue Badge parking, a small number of retained Pay & Display bays, and bays for loading activity
- Appropriate deliveries and servicing provision will be provided on site for the Proposed Development and nearby stakeholders

8.1.2. Analysis of the existing and forecast multi-modal travel demand found that there will be a small net increase in in total person trips across the Site. This equated to 4no. additional trips per minute during the peak hour across the various sustainable transport modes available within the town centre. The Proposed Development is forecast to generate a net reduction in vehicle trips through the removal of the existing private parking and a number of on-street bays.

8.1.3. When considering delivery and servicing trips, the results outline up to one vehicle during each of the AM and PM peak hours with a total of 22 trips across a typical day. Based on a typical 12 hours day the Proposed Development will typically generate one servicing and delivery trip each hour with the occasional hour generating two trips. It is considered that this level of delivery and servicing trips will be accommodated within the delivery and servicing strategy for the Site.

8.1.4. The initial assessment is considered to demonstrate that the Proposed Development would not be expected to have a material impact on the operation on the surrounding of the local highway network and instead seek to provide a sustainable design improving the local area.

Appendix A

SCOPING NOTE & PRE-APPLICATION ENGAGEMENT

Twickenham Riverside

Transport Assessment Scoping Report Summary

London Borough Richmond upon Thames

70059704

Quality Control

Issue/revision	Draft Report	Issued Report
Date	March 2021	March 2021
Prepared by	Ryan Cogan/Tom Edwards	Rea Turohan
Checked by	Rea Turohan	Rea Turohan
Authorised by	Tim Gabbitas	Tim Gabbitas

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Contents

Section 1:

Site Context

Twickenham Riverside

Context

Site context

The development site is currently occupied by a mixture of retail, leisure and residential land uses.

The site is bound by:

- King Street and 3-31 King Street properties to the north;
- Water Lane to the east;
- The Embankment and the river Thames to the south; and
- Wharf Lane to the west.

The Site is accessed from Water Lane and Wharf Lane via King Street and via the Embankment from the riverside. Water Lane is a one-way southbound street which runs between King Street and the Embankment. Vehicles then egress back onto King Street via Wharf Lane, a one-way northbound street.

Planning History

The Site had previously been subject to one planning application in 2017 (Ref 17/4213/FUL) was then withdrawn by the applicant in 2018 citing consultation with the Environmental Agency (EA) as the reason, the EA advised against the proposed development due to unsatisfactory flood risk management measures.

Stakeholder Engagement

Whilst the development proposals have been developed in close partnership with LBRuT as the final Client, there has been no formal consultation on transport with LBRuT as Local Planning Authority.

It should be noted that the development proposals do not require engagement with TfL since the proposed scheme is not referable and no TfL assets are impacted by the scheme.

Section 2:

Policy Review

Twickenham Riverside

Policy Review

Policy Framework

- National Planning Policy Framework 2019
- National Planning Practice Guidance 2019
- London Plan 2021
- LBRuT Local Plan 2018-2020
- Twickenham Area Action Plan 2013

Transport Strategies

- Mayor's Transport strategy 2018
- LBruT Cycling Strategy 2016-2026

Source: Lucy Saunders

Policy LP 44

Sustainable Travel Choices

The Council will work in partnership to promote safe, sustainable and accessible transport solutions, which minimise the impacts of development including in relation to congestion, air pollution and carbon dioxide emissions, and maximise opportunities including for health benefits and providing access to services, facilities and employment. The Council will:

A. Location of development Encourage high trip generating development to be located in areas with good public transport with sufficient capacity, or which are capable of supporting improvements to provide good public transport accessibility and capacity, taking account of local character and context.
B. Walking and cycling Ensure that new development is designed to maximise permeability within and to the immediate vicinity of the development site through the provision of safe and convenient walking and cycling routes, and to provide opportunities for walking and cycling, including through the provision of links and enhancements to existing networks.

Walking, Cycling & Public Transport

Developments should encourage the use of modes other than the car by making it as easy as possible through provision of good pedestrian facilities, clear layout and signage, provision of cycling facilities and improving access to public transport interchanges. Civic spaces and public realm should be accessible and inclusive. A good walking environment has been shown to be not only beneficial to an individual's health and social life, but also to bring economic benefits to the borough's centres.

Cycling and walking contributes significantly towards creating an attractive and pleasant environment. New development should include all the facilities needed to encourage a safe walking and cycling environment from first occupation. The minimum cycle parking standards are set out in policy LP 45 in 'Parking Standards and Servicing'

Developments should be integrated into the surrounding community and existing local routes and provide for improvements to accessibility for all. There are many footpaths, Public Rights of Way and cycle routes in the borough that new development should not compromise, and opportunities to improve them should be taken wherever possible. For this reason, in line with policy LP 1 in 4.1 'Local Character and Design Quality', gated developments will not be permitted. [..]