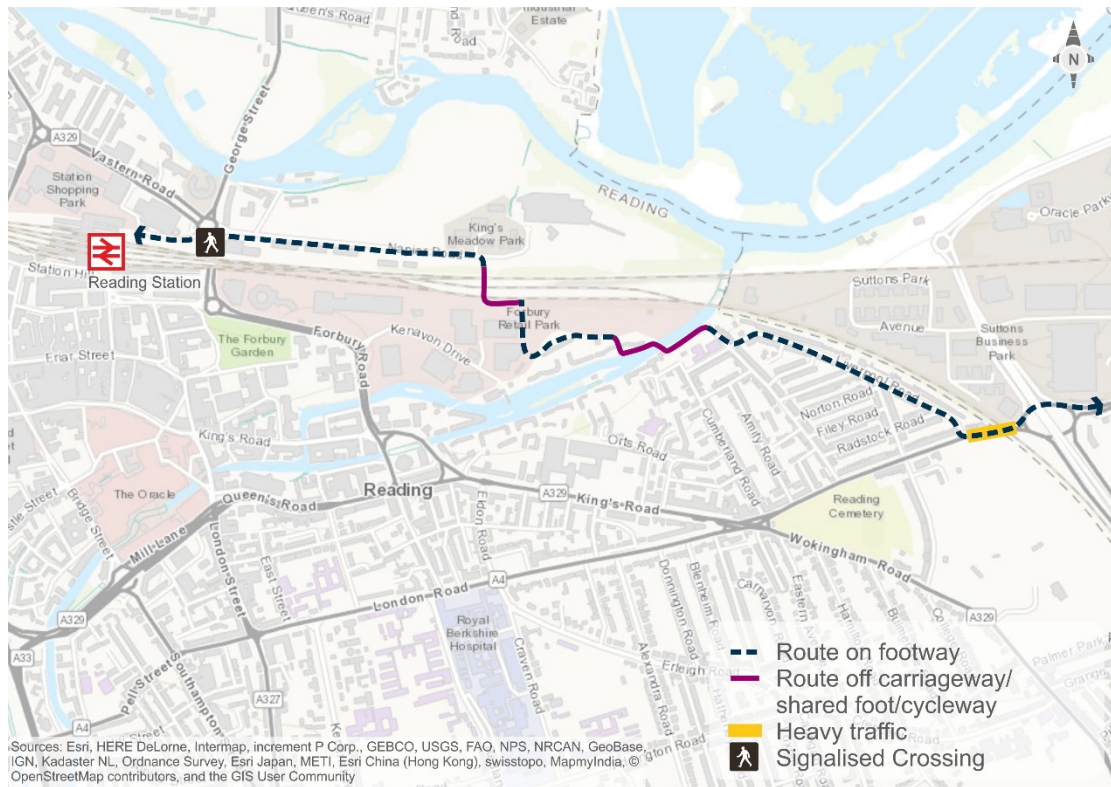


Figure 9.5: Pedestrian Route 4 – Via the River Thames, Kennet and Napier Road



Pedestrian Route 4 (PR4)

- 9.4.6 PR4 is approximately 1.8 miles in length, the whole route is along footways. The first section of the route is along the A4 London Road for approximately 150m, the route then continues along Liverpool Road before reaching the River Kennet towpath. Liverpool Road is a quiet, traffic calmed residential street in a 20mph speed limit zone and the River Kennet towpath is a shared foot/cycle way. The route crosses the River Kennet via a pedestrian and cycle bridge to the residential development of Kenavon Drive. The route then follows a footpath with the river to the south and residential homes to the north before and joining Kenavon Drive. The route then goes along a quiet residential road and crosses the railway line via an 65m long underpass of and joins Napier Road. Napier Road is a 30mph, relatively low trafficked route with a footway. Napier Road meets the IDR at Reading Bridge Roundabout; a signalised pedestrian crossing facility is available which crosses the IDR to the Reading Station car park and through to the northern station entrance.

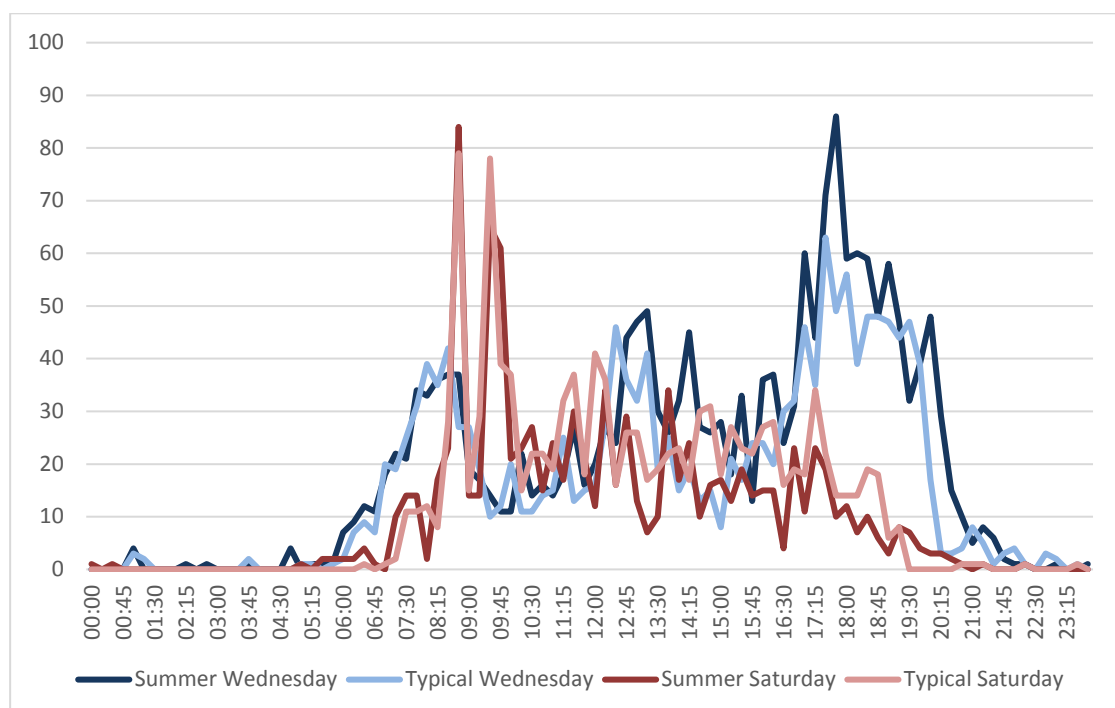
Figure 9.6: Stepped Horseshoe Bridge



Pedestrian Survey on Thames Towpath

- 9.4.7 A pedestrian survey has been undertaken along the Thames Towpath between the Waterside Centre and the Horseshoe Bridge. The purpose of this survey was to understand the number of pedestrian movement within the area, and to understand the use of the space.
- 9.4.8 **Figure 9-7** shows the results of the 24hr pedestrian count survey which was undertaken on a Wednesday and a Saturday in the summer period of August and during a typical week in September 2017.

Figure 9.7: Pedestrian Survey on Thames Towpath



- 9.4.9 **Figure 9.7** shows that on the surveyed weekday the peak number of movements were during the evening hours of 17:30 until 19:30, whereas on a Saturday the peak number of movements during the morning hours of 08:00 until 10:00. A copy of the pedestrian movement survey is included as part of the TS within **Appendix D.1**.

Open Space Video Observation Survey

- 9.4.10 An hourly video observation beat survey was carried out covering the area of open space between the Horseshoe Bridge and Dreadnought building, see **Figure 9.8**. The survey was undertaken between 09:00 and 18:00 on Thursday 1st June 2017, a sunny half term holiday week.
- 9.4.11 The results of the survey showed no use of the space with people only using the tow path. Two people were observed sitting on the edge of the towpath using their mobile phones which indicates a potential need for benches. The only activity seen in the open space was a tent laid out which appeared to belong to a narrow boat owner and a couple of erected tents. See screenshots in **Figures 9.9**.
- 9.4.12 It should be noted that the meadows further west and east opposite Tesco and Thames Valley Park Drive respectively were well used during the surveys periods.

Figure 9.8: Open Space Survey Area

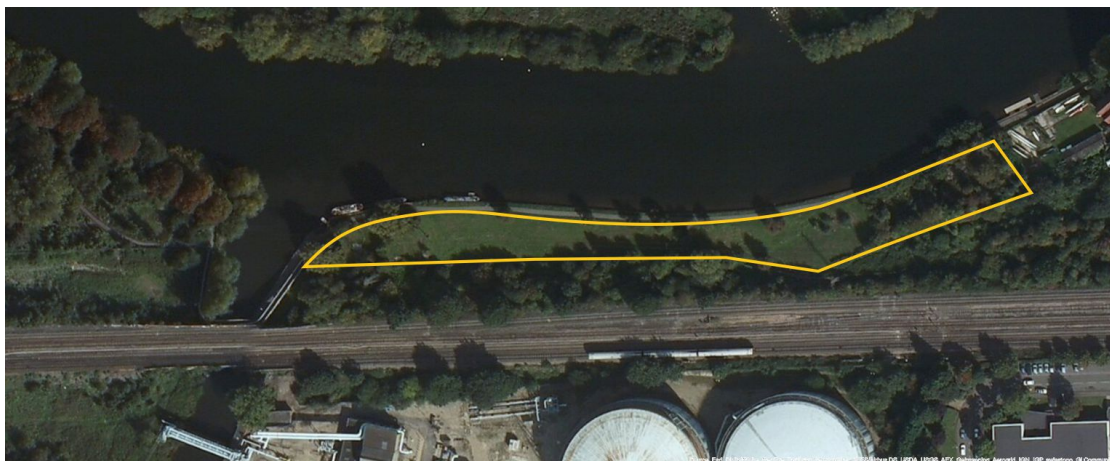


Figure 9.9: Survey Result Screenshots



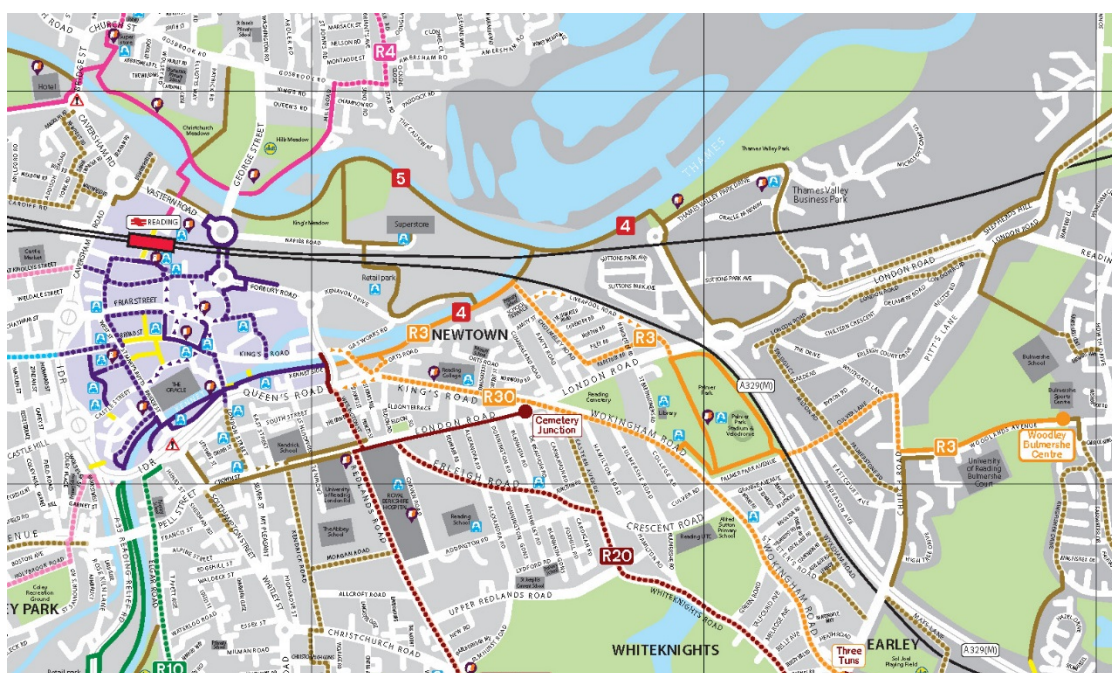
Cycling

9.4.13 There are currently three signed route options for cyclists travelling from the A4 London Road / A3290 roundabout to Reading town centre and station, these are:

- CR1) Via the River Thames towpath;
- CR2) Via the River Thames and Kennet towpaths;
- CR3) Via the River Kennet towpath; and
- CR4) Via the River Kennet and Napier Road.

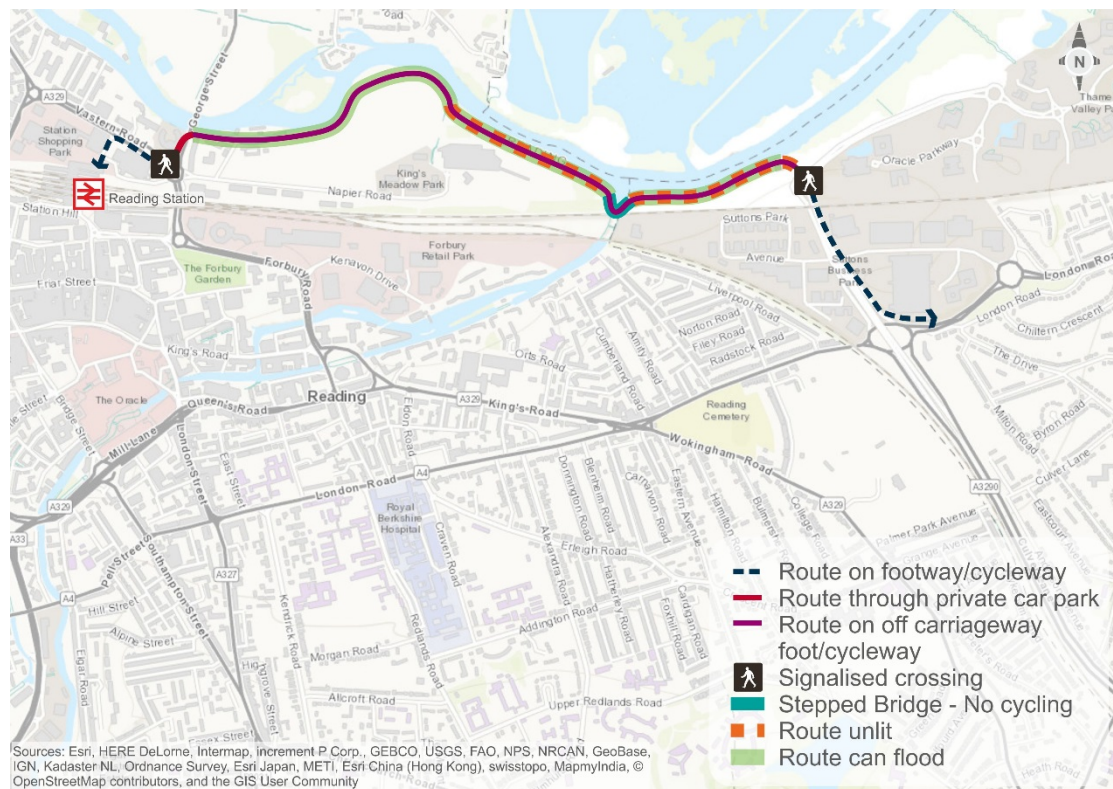
9.4.14 The routes are illustrated in **Figure 9.10, 9.11, 9.12, 9.13** and **9.14**.

Figure 9.10: Extract from Reading Borough Cycle Map



9.4.15 The only available continuous cycle route from the A4 east of the A3290 roundabout to Reading town centre and station is along the River Thames, as shown in **Figure 9.10**. The section on the A4 London Road between the A3290 junction and Kings Road is a heavily trafficked route with narrow traffic lanes therefore an undesirable route for cyclists. Cycling along this route, on carriageway, would be potentially dangerous with a high risk of collisions between vehicles and cyclists.

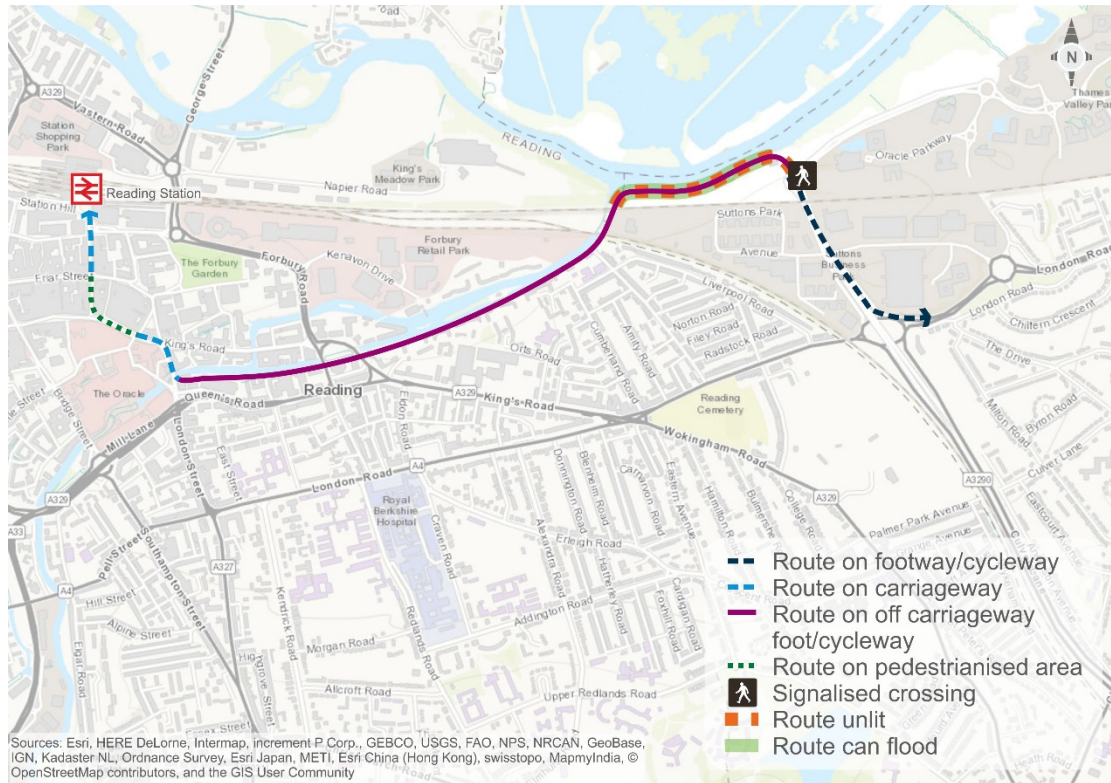
Figure 9.11: Cycle Route 1 – Via the River Thames



Cycle Route 1 (CR1)

- 9.4.16 CR1 is approximately 1.9 miles in length, and the whole route is along shared foot/cycleways. the majority of the route, along the Thames towpath, is at risk of flooding, unlit and narrow in places. The Thames Path is not a legal cycle path; however, it is part of the National Cycle Network. Pedestrians also use the shared foot/cycleways therefore speed is limited for cyclists as they have to navigate slower pedestrians. The Horseshoe Bridge is a stepped (small cycle ramp alongside the steps) pedestrian bridge where cyclists must dismount, see **Figure 9.6**. The route follows PR3 up to Tesco superstore and then continues along the towpath to Reading Bridge. At Reading Bridge, the route travels through a private car park and onto the IDR, Vastern Road. Vastern Road has shared foot/cycleways on both sides of the carriageway. The route crosses the IDR via a signalised crossing and continues to Trooper Potts Way, the northern entrance to Reading Station.

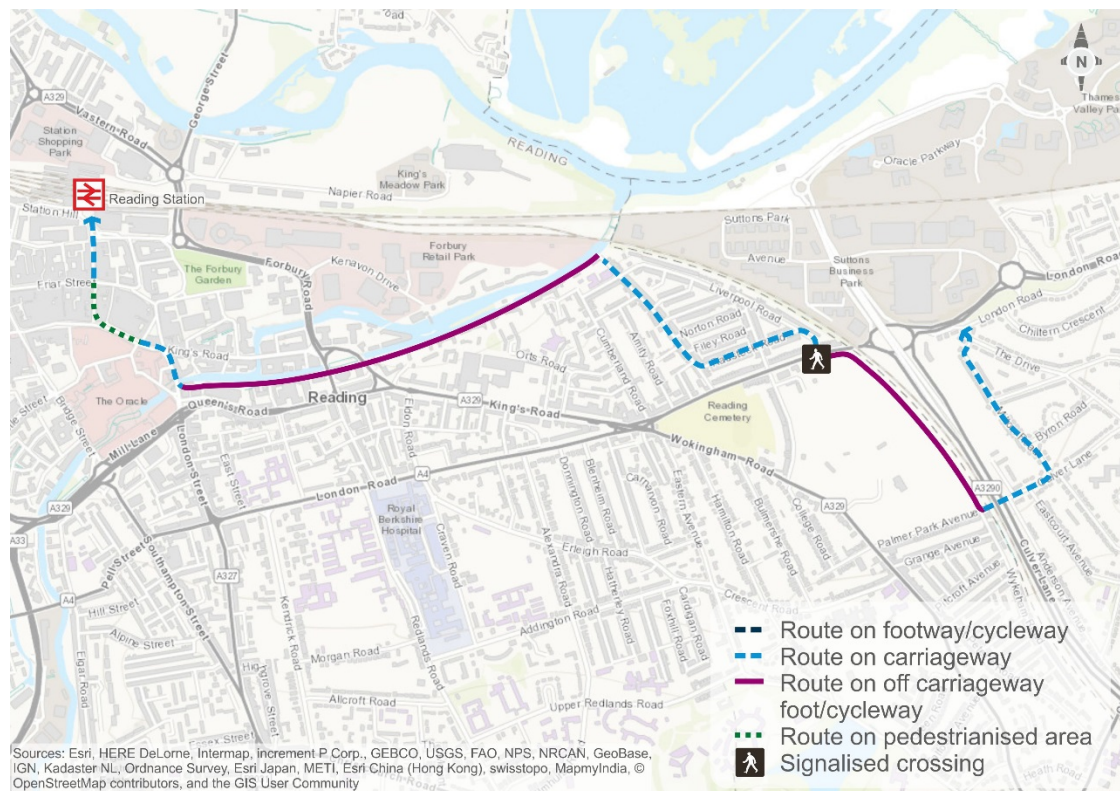
Figure 9.12: Cycle Route 2 – Via the River Thames and River Kennet



Cycle Route 2 (CR2)

- 9.4.17 C2 is approximately 2.1 miles in length, the route is along shared foot/cycleways and town centre streets, part of the route along the Thames towpath is unlit and at risk of flooding. Pedestrians also use the shared foot/cycleways therefore speed is limited for cyclists as they have to navigate slower pedestrians. The route follows CR1 up to the confluence of River Thames and Kennet. The route then follows PR2 along the River Kennet and through Reading town centre.

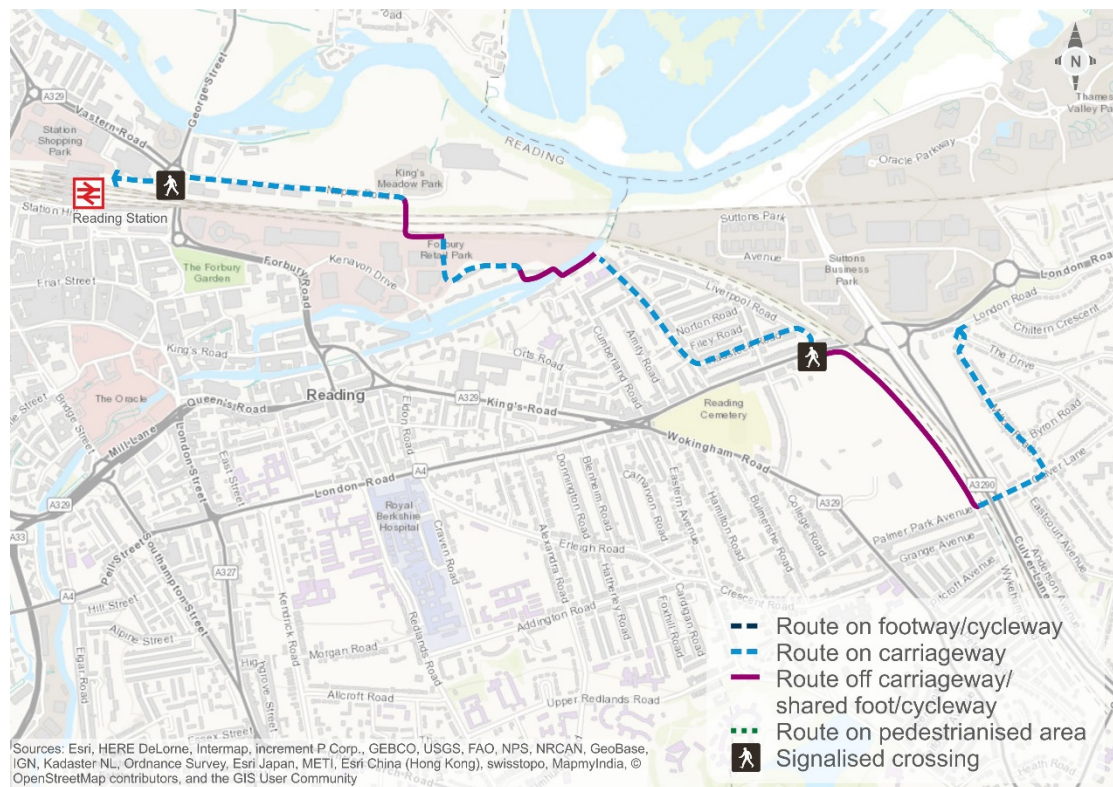
Figure 9.13: Cycle Route 3 – Via the River Kennet



Cycle Route 3 (CR3)

- 9.4.18 CR3 is approximately 2.7 miles in length, the route is along shared foot/cycleways, quiet streets and town centre streets. Pedestrians also use the shared foot/cycleways therefore speed is limited for cyclists as they have to navigate slower pedestrians. The route follows Milton Road, a quiet residential street up to Palmer Park Avenue which is also a residential street but with higher traffic flows than Milton Road. The route then continues through Palmer Park via a shared foot/cycleway up to the A4 London Road. Cyclists can cross London Road via a signalled crossing and onto Liverpool Road. The route then continues along Radstock Road and Cholmley Road, both 20mph quiet residential streets. The route then follows CR2 along the River Kennet and through Reading town centre.

Figure 9.14: Cycle Route 4 – Via the River Kennet and Napier Road



Cycle Route 4 (CR4)

9.4.19 CR3 is approximately 2.5 miles in length, the route is along shared foot/cycleways, quiet streets and town centre streets. Pedestrians also use the shared foot/cycleways therefore speed is limited for cyclists as they have to navigate slower pedestrians. The route follows Milton Road, a quiet residential street up to Palmer Park Avenue which is also a residential street but with higher traffic flows than Milton Road. The route then continues through Palmer Park via a shared foot/cycleway up to the A4 London Road. Cyclists can cross London Road via a signalised crossing and onto Liverpool Road. The route then continues along Radstock Road and Cholmley Road, both 20mph quiet residential streets. The route then follows the Kennet towpath for a short distance before crossing the river via a pedestrian and cycle bridge. The route then follows a footpath with the river to the south and residential homes to the north before and joining Kenavon Drive. The route then goes along a quiet residential road and crosses the railway line via an 65m long underpass of and joins Napier Road. Napier Road is a 30mph, relatively low trafficked route with a footway. Napier Road meets the IDR at Reading Bridge Roundabout where a shared foot/cycleway begins and leads to a signalised pedestrian crossing facility which crosses the IDR to the Reading Station car park and through to the northern station entrance.

Cycle Hire

9.4.20 Ready Bike Cycle Hire bicycles are available for use at TVP and across Reading Town Centre. People travelling between TVP and Reading station and town centre can currently use hire bicycles on routes CR1 and CR2.

Public Transport

9.4.21 Public transport services on the A4 London Road between Reading and the A4 east of the A3290 roundabout, comprise of seven different key bus services;

- TVP P&R from Winnersh Triangle;
- Thames Valley Park (TVP) Commuter bus;
- Heathrow Rail Air coach services;
- Service 13 and 14, between Woodley and Reading town centre;
- Reading – Twyford – Henley – High Wycombe (850);
- Reading – Twyford – Wokingham (Nos. 127/128/129); and
- Reading – Wokingham – Bracknell (4/x4).

9.4.22 The frequency of these services is shown in **Table 9.11**.

Table 9.11: Existing Public Transport Services Travelling Along A4 London Road

Bus Route and Service	Operator	Hours of Operation*			Two Way Number of Buses by Time Period Weekday		
		Weekday	Saturday	Sunday	AM Peak (07:00-10:00)	Inter Peak (10:00-16:00)	PM Peak (16:00-19:00)
Winnersh Park and Ride – Central Reading	Reading Buses	06:45 to 19:12	08:02 to 18:50	-	23	49	20
Reading Station - Thames Valley Park (TVP)	Stewarts	06:45 to 19:22	-	-	50	40	41
Reading Station - Heathrow Airport (RailAir)	First	04:00 to 00:05	04:00 to 00:05	04:00 to 00:05	17	37	17
Reading - Woodley (12, 13 & 14)	Reading Buses	05:00 to 00:19	05:00 to 03:19	07:30 to 23:19	14	24	13
Reading – Twyford – Henley – High Wycombe (850)	Arriva	05:25 to 23:43	06:40 to 23:43	07:45 to 23:33	15	19	7
Reading – Twyford – Wokingham (127/128/129)	Courtney Buses	06:38 to 18:35	07:13 to 17:35	-	9	10	8
Reading – Wokingham – Bracknell (4/x4)	Reading Buses	05:15 to 00:33	06:30 to 00:33	07:30 to 20:41	21	47	20

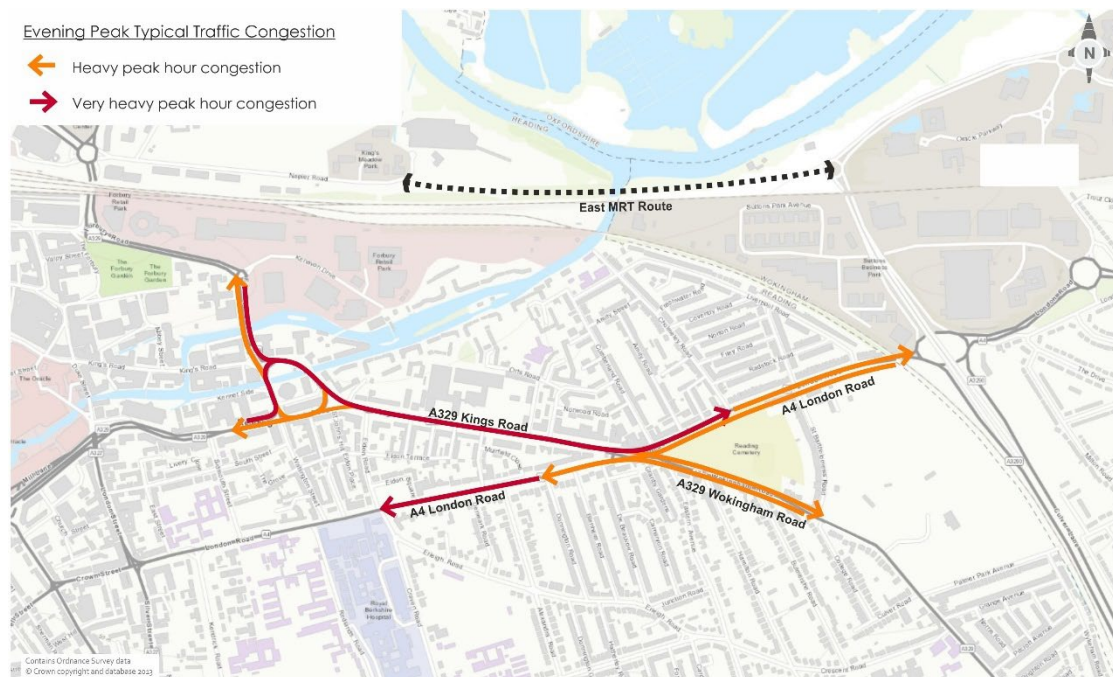
*Taken from timetables September 2018

- 9.4.23 Commuter shuttle buses operate from Reading town centre and railway station to Thames Valley Park between 06:45 and 19:30. These bus services are primarily used towards TVP in the AM peak period and towards Reading Station in the PM peak period. Commuter shuttle buses also run between Thames Valley Park and Winnersh Triangle during peak periods only.
- 9.4.24 Inbound buses use the A4 London Road as far as Cemetery Junction, where there is a contra-flow bus lane on the A329 Kings Road to the town centre. Outbound buses use Kings Road, where there is a bus lane to A4 London Road. There is limited scope to provide further bus priority on the section of A4 London Road between Cemetery Junction and the A3290 junction due to lack of space available.
- 9.4.25 The London Road suffers from peak period traffic congestion which leads to unreliable public transport journey times. Public transport journey times between the A3290 / A4 roundabout and Reading Station can take between 12 and 18 minutes during peak traffic periods.

Highway

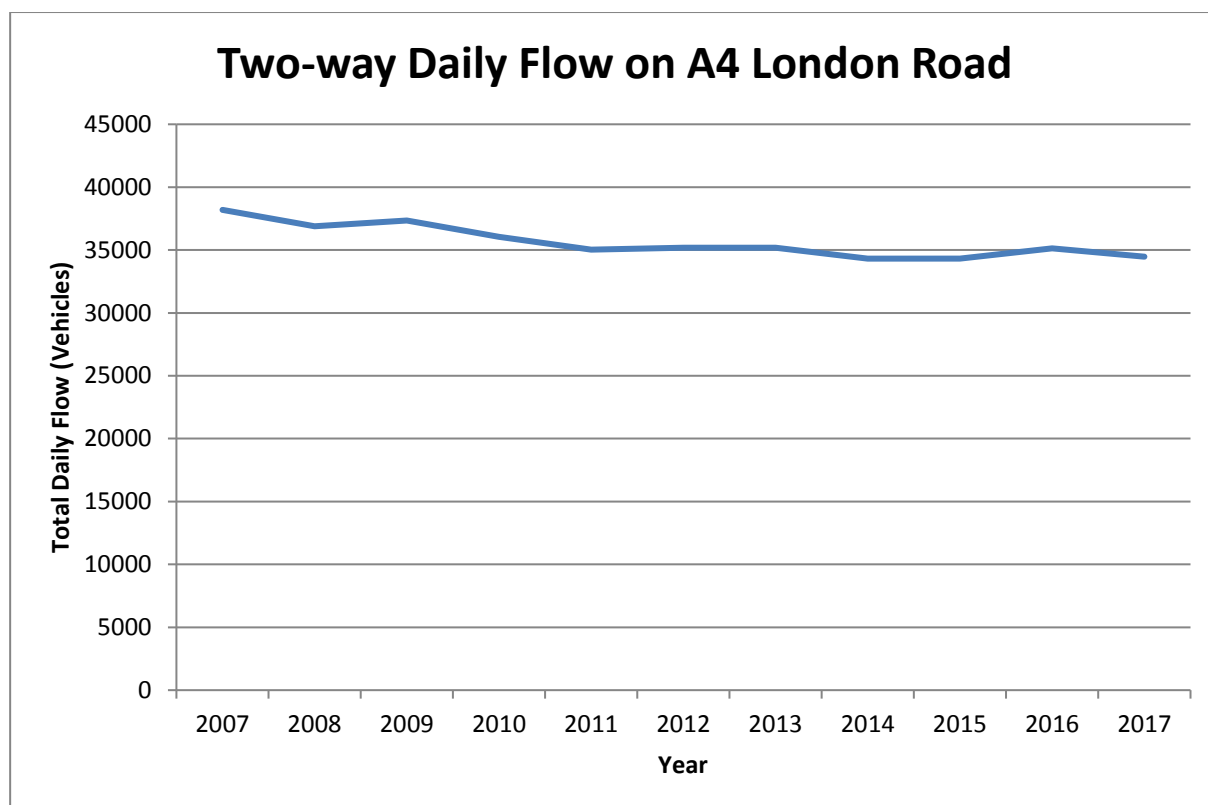
- 9.4.26 The A4 London Road is the main strategic route for vehicles travelling to and from Reading town centre to the east and the provides a link to the M4 junction 10. It is heavily constrained comprising two narrow lanes for traffic travelling towards central Reading and a single narrow lane exiting towards the A3290. The A4/A329 Cemetery Junction is a pinch point along the route.
- 9.4.27 **Figure 9.15** illustrates existing traffic conditions which have been informed by on site observations, on line typical traffic data and traffic surveys.

Figure 9.15: Existing Highway Network



- 9.4.28 Peak period journey times between the A2390 and Reading Station range from 7 to 24 minutes east bound and 9 to 24 minutes westbound. This shows there is currently significant variations in journey time due to congestion which will severely limit the potential for future growth on the corridor and the attractiveness of using public transport as opposed to the private car.
- 9.4.29 RBC has installed a permanent automatic traffic counter on London Road to the west of the A4/A3290 junction. This shows that two-way daily traffic flows on the A4 London Road are in the region of 35,000 vehicles. **Figure 9.16** shows the average daily flow over the last ten years. The daily traffic flows show that traffic flows at this site appear to have fallen over the period, but stabilised between 2014 and 2017. This may be due to either inaccuracies of the automatic counter with the heavy congestion, or as a result of increasing traffic conflicts causing a reduction in capacity, rather than demand reducing.

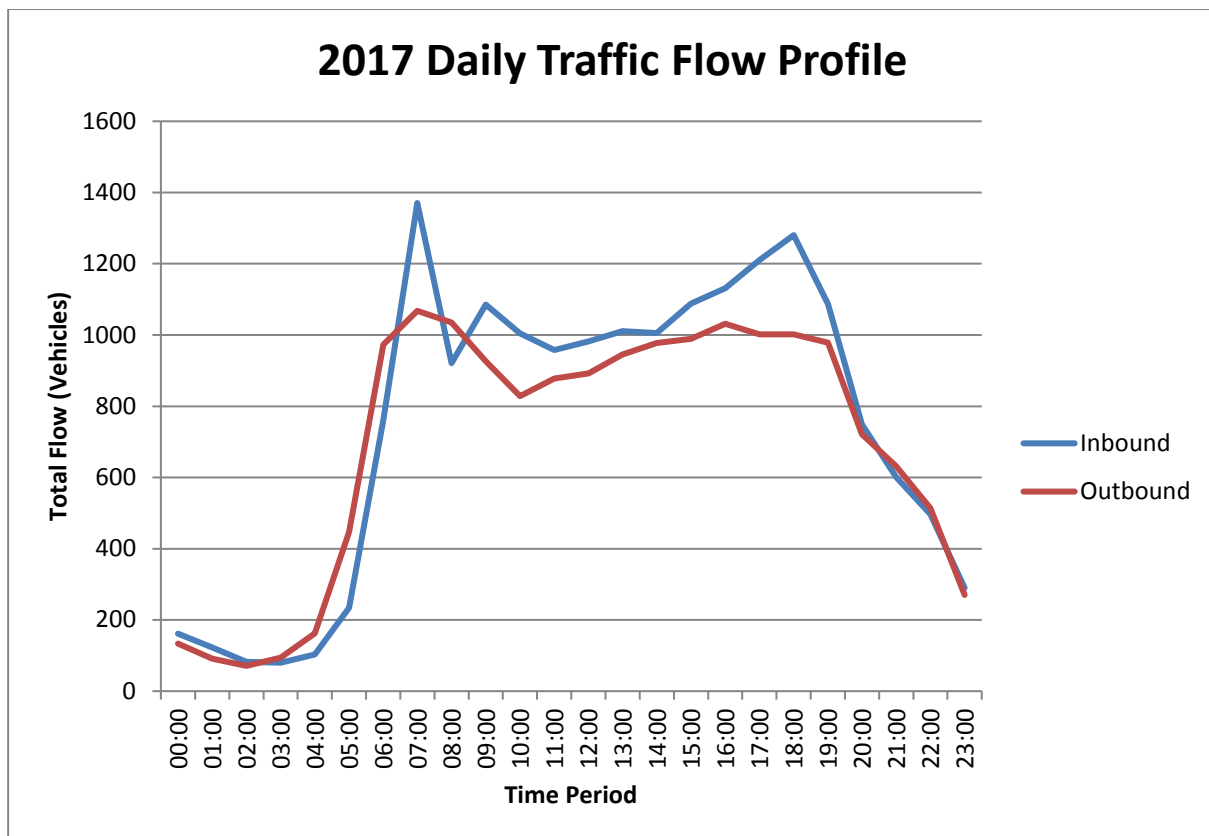
Figure 9.16: Two Way Flow on A4 London Road between Cemetery Junction and the A3290



(NB: No data available for 2013 – 2012 data used)

- 9.4.30 **Figure 9.17** shows the profile of the daily traffic flow in 2017. This shows that peak spreading has occurred with traffic only reducing between 10:00–12:00, then gradually increasing towards an extended evening peak period.

Figure 9.17: Daily Traffic Profile on A4 London Road



9.4.31 These daily profiles, alongside known congestion and observed queues, indicate that the corridor is operating at, or over capacity during the majority of the day. Traffic queues can reach 300–550 vehicles exiting Reading in the peak periods and between 60–200 vehicles entering Reading in the peak periods.

9.4.32 A queue survey of westbound traffic along Napier Road from Tesco to Reading Bridge Roundabout was undertaken on Thursday 21st, Saturday 23rd and Sunday 24th of September 2017. The purpose of the survey is to gain an understanding of the queueing on Napier Road to determine any potential delays to buses using this route in the future to travel from the East MRT to Reading Station.

Personal Injury Collisions

Classification

9.4.33 The collisions are classed into three categories, definitions of which are provided below:

- **Slight injury:** An injury of a minor character such as a sprain (including neck whiplash injury), bruise or cut which are not judged to be severe, or slight shock requiring roadside attention. This definition includes injuries not requiring medical treatment.
- **Serious injury:** An injury for which a person is detained in hospital as an “in-patient”, or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushings, burns (excluding friction burns), severe cuts, severe general shock requiring medical treatment and injuries causing death 30 or more days after the accident.
- **Fatal injury:** An injury which causes death either immediately or any time up to 30 days after the accident.

Reading Borough – Collision Data

- 9.4.34 A summary of the annual rolling collision data (March to February) is provided below in **Table 9.12**. The personal injury collision (PIC) data covers the study areas on London Road east of Cemetery Junction, Kings Road adjacent to Reading College and Napier Road.

Table 9.12: Summary of Collision Data within Reading Borough Council.

Casualty	Severity of Casualty	Year Beginning					
		2012/3	2013/4	2014/5	2015/6	2016/7	Total
Total	Fatal	0	0	0	0	0	0
	Serious	1	6	2	2	3	13
	Slight	13	24	19	14	14	84
	Total	14	30	21	16	17	97
Pedestrian	Fatal	0	0	0	0	0	0
	Serious	1	4	1	1	0	7
	Slight	2	4	8	4	3	21
	Total	3	8	9	5	3	28
Cyclist	Fatal	0	0	0	0	0	0
	Serious	0	0	0	0	2	2
	Slight	4	3	4	3	3	17
	Total	4	3	4	3	5	19

- 9.4.35 **Table 9.12** shows that during the 60-month period between 01/02/2010 and 31/01/2015 there were 97 collisions resulting in 13 (13%) serious injury and 84 (87%) slight injuries. There were no fatal collisions.
- 9.4.36 Over the entire five-year period, 48% (47) of collisions involved a pedestrian or a cyclist, resulting in 9 serious injuries, 38 slight injuries and no fatal collisions.
- 9.4.37 In some locations, a high number of accidents occur in a small area. Further analysis of these accident clusters is carried out to determine if there is a common cause and to identify if highway layout is a cause. The accident cluster analysis is provided in **Appendix D.2**.

Wokingham – Collision Data

- 9.4.38 A summary of the annual rolling collision data (March to February) is provided below in **Table 9.13**. The PIC data covers the study area on the A3290 between the site access and the junction between the A3290 and London Road.

Table 9.13: Summary of Collision Data within Reading Borough Council.

Casualty	Severity of Casualty	Year Beginning					
		2012/13	2013/14	2014/15	2015/16	2016/17	Total
Total	Fatal	0	0	0	0	0	0
	Serious	1	0	1	0	0	2
	Slight	4	3	2	1	0	10
	Total	5	3	3	1	0	12
Pedestrian	Fatal	0	0	0	0	0	0
	Serious	0	0	0	0	0	0
	Slight	0	0	0	0	0	0
	Total	0	0	0	0	0	0
Cyclist	Fatal	0	0	0	0	0	0
	Serious	1	0	1	0	0	2
	Slight	0	0	0	0	0	0
	Total	1	0	1	0	0	2

9.4.39 **Table 9.13** shows that during the 60 month period between 01/02/2012 and 31/01/2016 there were 12 collisions resulting in two (17%) serious injury and ten (83%) slight injuries. There were no fatal collisions.

9.4.40 Over the entire five-year period, 17% (two) of collisions involved a pedestrian or a cyclist, resulting in two serious injuries and no slight injuries or fatal collisions.

9.4.41 In some locations, a high number of accidents occur in a small area. Further analysis of these accident clusters is carried out to determine if there is a common cause and to identify if highway layout is a cause. The accident cluster analysis is provided in **Appendix D.2**.

Sensitive Receptors

9.4.42 Likely sensitive receptors located within the study area have been identified and are shown, together with their sensitivity rating, in **Table 9.14**.

Table 9.14: Sensitivity Receptors

Sensitivity Rating	Link	Receptor	Description
Low	L1	Site Access	Open Space
	L2	Thames Valley Park Drive	No building frontage, large footpath
	L3	A3290 between Site Access and A4	No building frontage, large footpath
	L4	A4 London Road South of Shepards Hill	Residential roads run parallel to the main road on either side
	L9	Woodlands Avenue	No building frontage, large footpath
	L18	A329 Forbury Road between Kings Road and Kenavon Drive	No building frontage
	L20	Vastern Road Rail Bridge	No building frontage, separated footway
	L23	New East MRT Scheme Route	Open Space
Medium	L5	A4 London Road east of Cemetery Junction	Residential frontage with wide pavements
	L6	A4 London Road west of Cemetery Junction	Busy Road with residential frontage
	L7	Pitts Lane	Residential frontage with wide pavements and verges
	L8	Church Road	Residential frontage with wide pavements and verges
	L10	Whitegates Lane	Residential frontage with wide pavements and verges
	L11	Palmer Park Avenue	Adjacent to Palmer Park
	L12	Wokingham Road adjacent to Palmer Park	Adjacent to Palmer Park
	L16	A329 Queens Road	Commercial and residential frontage, wide footpath
	L17	A329 Kings Road adjacent to Gas Works Road	Commercial frontage, busy road
	L19	A329 Forbury Road between Kenavon Drive and Vastern Road	No building frontage, adjacent to Forbury Gardens
	L21	Vastern Road	Residential frontage with wide pavements
	L22	Napier Road	Commercial frontage, adjacent to Kings Meadow
High	L13	Crescent Road	Adjacent to UTC Reading
	L14	Erleigh Road	Adjacent to Royal Berkshire Hospital and Retirement Homes
	L15	A329 Kings Road adjacent to Reading College	Busy road, adjacent to Reading College

Baseline Evolution

- 9.4.43 The scheme will support enhanced accessibility and continued sustainable growth in Reading and Wokingham Boroughs and the wider area by relieving forecast increase in travel demand along the heavily congested A4 corridor. This corridor provides access to existing residential, employment and educational sites, as well as Reading town centre, Reading railway station and substantial planned development in Wokingham Borough and Reading town centre.

- 9.4.44 Without this high quality public transport, walk and cycle corridor, the forecast demand in travel would not be able to access Reading as the only available option would be the congested A4 London Road corridor which cannot accommodate further peak demand. Therefore, development to the east would not be fully realised and in turn economic growth of the area would be adversely affected.
- 9.4.45 The scheme is the first element of RBC's longer term transport strategy aspirations to deliver other sustainable transport schemes such as a third Thames crossing and park and rides to the north and south east. Without this first element, the wider visions will not be realised.

9.5 Construction Phase Assumptions

Assessment of Construction Effects

- 9.5.1 At this stage, it should be recognised that there is limited information available on the proposed construction works as there are a number of details that are yet to be finalised. The transport and access effects of the construction of the proposed development will be dependent on various factors including: the final programme and phasing of construction works, import/export/re-use of materials and construction processes adopted.
- 9.5.2 Consequently, a qualitative assessment has been made of the likely significant transport and access effects of the proposed construction works. This has been based on an estimation of reasonable worst-case conditions and has sought to consider those aspects of the construction works that could lead to significant effects. The assessment has drawn upon PBA's experience of assessing the environmental effects of similar developments.
- 9.5.3 Suitable management and control measures have been identified, which it is proposed should be incorporated into a Construction Environmental Management Plan (CEMP) to manage the construction works.

Construction Vehicle Movements

- 9.5.4 It is anticipated that site clearance will commence in October 2019 and construction of the East MRT will commence in March 2020 (including enabling works and utility diversions), with completion expected in Spring 2023. Given the length of the East MRT the development is likely to be implemented in phases and therefore construction is unlikely to be undertaken at any one location through the construction period.
- 9.5.5 The peak construction traffic environmental impact is expected to result from the following activities, and there is the potential for several activities to be undertaken over the same time period:
- Full height embankment construction
 - Assembling main bridge beams involving 250t+ installation crane
 - Deck pouring
 - Road surfacing
- 9.5.6 It should be noted that this is a worst case, as works are intended to be phased where possible. The embankment being constructed to full height is expected to have the most significant impact on the transport networks. This is due to the volumes of fill material being imported on site. It is estimated that a delivery rate of 15 to 20 tonnes per hour are required to meet the programme. The Bridge deck construction is not expected to progress until the embankment construction has been completed, because of the volume of vehicle movements.
- 9.5.7 Several operations may occur in parallel. The Bridge deck construction will commence in parallel with carriageway drainage, formation and subsequent road construction operations,

which requires additional operatives to be on site for these specialist activities, together with an increase in the number of HGV movements to deliver the necessary quantities of materials.

9.5.8 The construction traffic generation has been determined on the basis of the number of operatives and management staff required on the site and the quantities of materials to be imported through the duration of the works. A number of assumptions have been made:

- 8-wheel haulage lorries, with 20 tonne capacity, will be used for transporting bulk earthwork materials to and from the site;
- Other deliveries will be made using different sized vehicles, including articulated HGVs for larger and bulk items;
- Deliveries will be limited to off-peak periods to avoid disruption in peak periods, 09:30 – 16:30;
- Space will be provided within the site to accommodate delivery vehicles so that they are not waiting on the public highway;
- There will be various points for unloading and storing materials on the site;
- Vehicle turnaround to be deemed as 15 minutes, i.e. 4 loads per hour at two points = 8 two-way trips per hour;
- Adequate on-site parking will be provided for all operatives and staff; and
- Vehicle sharing and use of public transport amongst operatives and site management is anticipated and will be encouraged

9.5.9 This will result in a maximum of 60 two-way HGV movements per day or 8 HGV trips per hour during the construction period. This is peak traffic movements rather than a typical level of traffic, particularly regarding deliveries.

Construction Worker Vehicle Movements

9.5.10 The construction process will require work being undertaken in several different areas at the same time, utilising a range of skills from general labourers and skilled operatives through to professionals and managers. It is envisaged that workers will originate from a variety of areas and that some will travel together to and from the site.

9.5.11 It is estimated that the peak construction period would require up to 50 operatives and management staff on the site. Based on PBA's experience of similar developments, a number of these trips will be shared because of the distances travelled by operatives and the fact that they often travel together from their depots rather than from home. On this basis, we have estimated that a workforce of 50 would equate to 38 vehicle trips arriving before 08:00 and

leaving after 18:00. These times will vary however, because of the reduced hours of daylight in the winter.

9.5.12 In summary, as a worst-case assessment, the total construction traffic generated will be:

- 38 vehicle trips of the employees, before and after peak hours (before 08:00 and after 18:00 subject to the time of year); and
- 60 two-way HGV movements per day (8 two-way HGV movements per hour)

9.5.13 On a typical day, the total construction traffic generated will be:

- 20-25 vehicle trips of the employees, before and after peak hours (before 08:00 and after 18:00 subject to the time of year); and
- 5-10 two-way HGV movements per day

Construction Vehicle Routes

9.5.14 The construction vehicles accessing the eastern section of the site will be routed from the M4 in the south of Reading via the A3290 (m) which the site is located adjacent too. Vehicles accessing the western section of the site will be routed from the M4 via the A33 and Vastern Road to Napier Road which the site is located adjacent to. Vehicles will be discouraged from accessing the site via A roads north of Reading unless necessary.

9.6 Embedded Mitigation

Construction Environmental Management Plan

9.6.1 One important element to control any adverse environmental effects arising during the construction phase of the proposed development will be the implementation of a CEMP, which will be agreed with WBC and RBC prior to commencement of construction. The CEMP will outline the arrangements and management practices to adopt in order to reduce the environmental effects of construction.

9.6.2 As no contractor has been appointed yet, the CEMP will need to be reviewed once the construction methodologies and techniques to be employed are confirmed. The CEMP will outline the following transport-specific details:

- Site Logistics;
- Working Hours;
- Maintaining Access;
- General Site layout, including accesses and routes;
- Construction traffic; and
- Designated access routes.

9.6.3 Further details regarding the CEMP can be found in Chapter 5.

9.7 Potential Effects, Mitigation and Residual Effects

Construction Effects

9.7.1 The construction of the proposed development will result in a peak of approximately 8 two-way HGV trips per hour to and from the site if the identified combination of construction activities

were to occur in parallel, i.e. worst case. Through a construction management plan, HGV movements will be restricted to take place between 09:30 and 16:30, outside the peak hours.

- 9.7.2 For the majority of the year, 38 construction worker trips are expected to arrive at the site before the AM peak hour (by 08:00), and to leave the site after the PM peak hour (after 18:00). Therefore, there are expected to be no/minimal vehicle trips to or from the site in the peak hours.
- 9.7.3 Due to reduced daylight hours in the winter, construction worker trips may vary. At worst case the construction workers would arrive during the AM peak flow and leave at PM peak flow. The baseline two traffic flow on the A3290 is 1721 in the AM and 924 in the PM (as shown in **Table 9.19**). An additional 38 vehicles would result in an increase in traffic flow of 2% in the AM and 4% in the PM, which is less than 10% and is therefore not significant.
- 9.7.4 The low volume of construction trips will not result in any significant effects on severance, driver delay, pedestrian delay and amenity, or accidents and road safety.
- 9.7.5 The suggested threshold guidance for pedestrian fear and intimidation, as shown in **Table 9.6**, proposes a slight adverse effect on fear and intimidation, if average 18-hour HGV flows are in the region of 1,200 to 2,000.
- 9.7.6 The construction of the proposed development will generate approximately 60 two-way HGV trips per day, which falls well below the suggested threshold shown in **Table 9.6**. As a result, it is expected that the construction vehicle movements of the proposed development will have an insignificant effect on pedestrian fear and intimidation.

Potential Operational Effects – Scenario 1

- 9.7.7 Scenario 1 assesses the effect of the East MRT Scheme if the TVP P&R is not delivered. This assessment is of the operational effects for a typical weekday in the year of 2021 for Scenario 1.

Scenario 1 –East MRT Scheme Traffic Flows

- 9.7.8 The changes in traffic flows are included in **Table 9.15** and **Table 9.16**.
- 9.7.9 It is assumed that at peak flow times, which are between 6:00 to 9:00 in the morning and 15:00 to 18:00 in the afternoon, there will be 17 buses per hour in each direction on the East MRT Scheme Route, and between 9:00 and 15:00 there will be 10 buses per hour in each direction

Table 9.15: Scenario 1 AM and PM Peak Flows

Link	Link Name	2021 AM Peak Flow			2021 PM Peak Flow		
		Baseline	Proposed Scheme	% Change	Baseline	Proposed Scheme	% Change
1	Site Access	0	34	N/A	0	34	N/A
2	Thames Valley Park Drive	1721	1756	2%	914	924	1%
3	A3290 between Site Access and A4	1721	1744	1%	914	912	0%
4	A4 London Road South of Shepards Hill	1508	1516	1%	1592	1593	0%
5	A4 London Road east of Cemetery Junction	2298	2315	1%	1700	1676	-1%
6	A4 London Road west of Cemetery Junction	1754	1757	0%	2225	2218	0%
7	Pitts Lane	1193	1181	-1%	1162	1193	3%
8	Church Road	1103	1111	1%	1156	1174	2%
9	Woodlands Avenue	841	841	0%	1138	1148	1%
10	Whitegates Lane	328	333	2%	304	316	4%
11	Palmer Park Avenue	618	607	-2%	527	528	0%
12	Wokingham Road adjacent to Palmer Park	1178	1189	1%	1470	1474	0%
13	Crescent Road	1110	1087	-2%	820	811	-1%
14	Erleigh Road	673	643	-4%	922	880	-5%
15	A329 Kings Road adjacent to Reading College	1627	1618	-1%	1599	1582	-1%
16	A329 Queens Road	2578	2573	0%	2777	2793	1%
17	A329 Kings Road adjacent to Gas Works Road	2412	2414	0%	2394	2421	1%
18	A329 Forbury Road between Kings Road and Kenavon Drive	2450	2432	-1%	2408	2379	-1%
19	A329 Forbury Road between Kenavon Drive and Vastern Road	2328	2310	-1%	2425	2397	-1%
20	Vastern Road Rail Bridge	2288	2283	0%	2429	2427	0%
21	Vastern Road	2076	2075	0%	2131	2126	0%
22	Napier Road	235	268	14%	153	186	22%
23	New East MRT Scheme Route	0	34	N/A	0	34	N/A

Table 9.16: Scenario 1 Total 24 Hour Flows

Link	Link Name	Total 24 Hour Flow		
		Baseline	Proposed Scheme	% Change
1	Site Access	0	324	N/A
2	Thames Valley Park Drive	9802	9992	2%
3	A3290 between Site Access and A4	9802	9872	1%
4	A4 London Road South of Shepards Hill	24428	24489	0%
5	A4 London Road east of Cemetery Junction	30353	30246	0%
6	A4 London Road west of Cemetery Junction	32988	32940	0%
7	Pitts Lane	19042	19306	1%
8	Church Road	18559	18794	1%
9	Woodlands Avenue	16623	16729	1%
10	Whitegates Lane	5110	5263	3%
11	Palmer Park Avenue	6696	6670	0%
12	Wokingham Road adjacent to Palmer Park	22125	22235	0%
13	Crescent Road	11102	10946	-1%
14	Erleigh Road	9785	9356	-4%
15	A329 Kings Road adjacent to Reading College	30090	29855	-1%
16	A329 Queens Road	49876	50008	0%
17	A329 Kings Road adjacent to Gas Works Road	45027	45330	1%
18	A329 Forbury Road between Kings Road and Kenavon Drive	43778	43341	-1%
19	A329 Forbury Road between Kenavon Drive and Vastern Road	43048	42620	-1%
20	Vastern Road Rail Bridge	43245	43174	0%
21	Vastern Road	38755	38693	0%
22	Napier Road	2990	3308	11%
23	New East MRT Scheme Route	0	324	N/A

9.7.10 As shown in **Table 9.15** and **Table 9.16** no links experience a change in flow rate of greater than 30% as a result of Scenario 1. The maximum change in flow in link 22 is 22% during the PM peak. The change in flow in all remaining links is below 10% for this scenario.

9.7.11 Links 1 and 23 will be built as part of the proposed scheme and therefore have no flow during the Baseline situation.

Driver Delay

9.7.12 The SATURN model of the area surrounding the site has been used to assess the likely impact of the proposed East MRT Scheme on the surrounding links.

9.7.13 The links that experience a change in flow of greater than 30% are assessed in addition to high sensitivity links that experience a flow of more than 10%.

9.7.14 The access (L1) and the New East MRT Scheme (L23) each experience a change in flow of greater than 30% as they currently do not have any flow. No high sensitivity links are identified with a greater than 10% change in flow.

L1: Access

9.7.15 The East MRT Scheme has been assessed from the existing roundabout on the A3290. **Table 9.17** shows the modelled impacts of driver delay at the access.

Table 9.17: Scenario 1 –Driver Delay at the Access

Peak Hour	Baseline Delay (Seconds)	Proposed Scheme Delay (Seconds)	Difference (Seconds)	Magnitude of Impact
08:00-09:00	N/A	20	N/A	N/A
17:00-18:00	N/A	15	N/A	N/A

9.7.16 As the access does not currently exist, there is no flow in the Baseline situation. There is therefore no impact on driver delay compared to the Baseline situation.

L23: New East MRT Scheme

9.7.17 As there is currently no junction at the location where the proposed East MRT Scheme joins Napier Road and no flow on the New East MRT Scheme, there is no impact driver delay on the link.

Overall

9.7.18 The impact on driver delay on the proposed links is considered to be negligible on all links with a change in flow of less than 30% and less than 10% on high sensitivity links. The driver delay on the access and new East MRT Scheme Route are minimal. It is therefore considered that overall the development will have a **negligible** effect on driver delay.

Public Transport Delay

9.7.19 The Reading Transport SATURN Model (RTM) has been used to understand any potential journey time savings the East MRT scheme would deliver. The public transport delay is assessed from the A3290 London Road Roundabout to Reading Railway Station. The existing route for public transport is via London Road, Kings Road, Forbury Road, South East Station

Interchange. The new proposed route for public transport is via A3290, East MRT Scheme, Napier Road, Northern Station Interchange.

L23: New East MRT Scheme

- 9.7.20 The new East MRT Scheme provides a journey saving time of between 4 minutes and 7 minutes at AM and PM peak flow in comparison to the existing route. This is a significant journey time saving and is considered **major beneficial**.

Overall

- 9.7.21 The East MRT Scheme provides a significant reduction in public transport journey time between the A3290 London Road Roundabout and Reading Town Centre and Railway Station. Therefore, the overall effect of the development on Public Transport Delay is considered to be **major beneficial**.

Severance

- 9.7.22 The assessment of severance has identified that, with two exceptions (L1 –Access and L23 – New East MRT Scheme Route), the change in flow on links is below 30%. Such changes in flow are **not significant** with respect to severance.
- 9.7.23 The assessment has not identified any high sensitivity links with a change in flow rate of greater than 10% as a result of the scenario.

L1: Access

- 9.7.24 L1 is part of the new MRT route and therefore does not have a vehicle flow in the Baseline situation. L1 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. Buses using this route are rerouted from Kings Road and London Road. On this basis, it is considered appropriate to judge the effect of the traffic on this link in comparison to the traffic utilising L5 and L15 (London Road east of Cemetery Junction and Kings Road adjacent to Reading College). The Proposed Scheme situation causes a reduction in the number of vehicles on L5 and L15. The demand for crossing is also expected to be limited in this location as the MRT route is between a railway line and the River Thames. Therefore, the effect in terms of severance is considered to be **minor beneficial**.

L23: New East MRT Scheme Route

- 9.7.25 L23 is part of the new MRT route and therefore does not have a vehicle flow in the Baseline situation. L23 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. Buses using this route are rerouted from Kings Road and London Road. On this basis, it is considered appropriate to judge the effect of the traffic on this link in comparison to the traffic utilising L5 and L15 (London Road east of Cemetery Junction and Kings Road adjacent to Reading College). The Proposed Scheme situation causes a reduction in the number of vehicles on L5 and L15. The demand for crossing is also expected to be limited in this location as the route is at high level along most of its length. Pedestrians and cyclists will not need to cross the route when on the riverside footpath, and will be able to walk/cycle under the route at riverside level. The route does not therefore cause any significant severance, but provides a new pedestrian route and cycle route into the town centre. The route is a short direct well lit, in comparison to the existing alternatives. Therefore, the effect in terms of severance is considered to be **major beneficial**.

Overall

- 9.7.26 The links for which severance is not negligible are the new links to be constructed as part of the scheme. The proposed East MRT Scheme is located at high level between the River Thames and a rail line and is a mainly undeveloped area and as a result the severance at this

location is negligible. Severance is reduced on the L5 and L15 links as a result of the Proposed Scheme situation. In addition, the scheme includes walking and cycling routes alongside the proposed East MRT Scheme, reducing severance between the east of Reading the Town Centre, where the existing routes are narrow, stepped, shared, adjacent to busy traffic and/or unlit. Therefore, the overall effect of the development on severance is considered to be **major beneficial**.

Pedestrian and Cyclist Delay and Amenity

- 9.7.27 The assessment of pedestrian and cyclist delay and amenity has identified that, with two exceptions (L1 and L23), the change in flow on links is below 30%. Such changes in flow give rise to not significant effect with respect to Pedestrian and Cyclist Delay and Amenity.
- 9.7.28 The assessment has not identified any high sensitivity links with a change in flow rate of greater than 10% as a result of the scenario.

L1: Access

- 9.7.29 L1 has been assessed as this will be a new link. L1 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. This is significantly less than 800 vehicles per hour. In addition, the East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic. As a consequence, the effect in terms of pedestrian and cyclist delay and amenity is considered to be **minor beneficial**.

L23: New East MRT Scheme

- 9.7.30 L23 has been assessed as this will be a new link. L23 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. This is significantly less than 800 vehicles per hour. In addition, the East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic which provides a segregated, wide, lit relatively flat, direct route into Reading town centre from the east. As a consequence, the effect in terms of pedestrian and cyclist delay and amenity is considered to be **major beneficial**.

Overview

- 9.7.31 The effect of the development on Pedestrian and Cyclist Delay and Amenity has been shown to be an improvement for all of the assessed links. This is either due to a small change in the number of vehicles using the links or the total hourly flow of vehicles being less than the threshold of 800 per hour. Additionally, the East MRT Scheme includes new pedestrian and cycle which will reduce cyclist and pedestrian delay.
- 9.7.32 Overall therefore, the effect of the development on pedestrian delay and amenity is considered to be **major beneficial**.

Fear and Intimidation

- 9.7.33 A number of factors are considered in determining changes in the level of fear and intimidation experienced by pedestrians and cyclists, including changes in traffic volumes, its HGV proportion, its speed and its proximity to people.
- 9.7.34 The assessment has not identified any high sensitivity links with a change in flow rate of greater than 10% as a result of the scenario. The total number of HGVs on MRT route per 24 hour period is 324 which is significantly less than the threshold of 1,000 per 18 hour period.
- 9.7.35 The proposed East MRT Scheme reduces the number of buses on Kings Road and London Road which are roads with a high number of pedestrians. Buses are instead rerouted along the East MRT Scheme via lower sensitivity roads.

9.7.36 The East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic. The pedestrian and cycle route is alongside the East MRT Scheme which has significantly fewer vehicles and HGVs in comparison to the alternative London Road Kings Road route.

9.7.37 The effect on pedestrian fear and intimidation is **major beneficial**.

Accidents and Road Safety

9.7.38 The accident data is analysed in all links where there is a 10% or more change in traffic flow at AM or PM peak flow or in average flow over 24 hours. For this scenario, Napier Road (L22) is the only analysed link which shows a change in vehicle flow rate of greater than 10%. Full details of the collision data analysis is provided in **Section 0**.

9.7.39 Prediction of the effects of the proposed development on accidents and road safety is generally considered by identifying any changes where greater or less conflict might occur. Changes in traffic volumes and vehicle speeds have an effect on accidents and road safety.

9.7.40 Although Napier Road will experience an increase traffic flow, this could lead to slower vehicle speeds, which may reduce the number and/or severity of accidents.

9.7.41 It is considered that the change in vehicle flow due to the proposed scheme could potentially increase the risk of accidents. This increase is likely to be small, as the increases in traffic flows are low in comparison to baseline traffic flows. Over the last 60 months on Napier Road only two collisions have been recorded in the Personal Injury Collision data, which is low in comparison to all of the other roads which were assessed.

9.7.42 When considering the overall scheme, the development will deliver walking and cycling improvements, bus service improvements, and new junctions designed to meet highway standards, which could lead to road safety improvements, particularly in terms of vulnerable road users. The new segregated wide lit foot/cycleway will provide a safe route for these users.

9.7.43 Therefore, in terms of accidents and road safety, the overall effect of the proposed development is to be **minor beneficial**.

Potential Operational Effects – Scenario 2

9.7.44 Scenario 2 assesses the effect of the East MRT Scheme and TVP P&R combined.

Scenario 2 –East MRT Scheme and TVP P&R Traffic Flows

9.7.45 The changes in traffic flows are presented in **Tables 9.18** and **9.19**.

9.7.46 It is assumed that at peak flow times, which are between 6:00 to 9:00 in the morning and 15:00 to 18:00 in the afternoon, there will be 17 buses per hour in each direction on the East MRT Scheme. Between 9:00 and 15:00 there will be 10 buses per hour in each direction.

9.7.47 It is assumed that all 260 the spaces in the TVP P&R are in use. Vehicles are assumed to enter the TVP P&R in the morning between 7:00 and 10:00 with a peak flow of 151 vehicles between 8:00 and 9:00. Vehicles are assumed to leave the TVP P&R in the afternoon between 16:00 and 19:00 with a peak flow of 151 vehicles between 17:00 and 18:00.

Table 9.18: Scenario 2 AM and PM Peak Flows

Link	Link Name	2021 AM Peak Flow			2021 PM Peak Flow		
		Baseline	Proposed Scheme	% Change	Baseline	Proposed Scheme	% Change
1	Site Access	0	185	N/A	0	185	N/A
2	Thames Valley Park Drive	1721	1763	2%	914	925	1%
3	A3290 between Site Access and A4	1721	1902	11%	914	1061	16%
4	A4 London Road South of Shepards Hill	1508	1525	1%	1592	1596	0%
5	A4 London Road east of Cemetery Junction	2298	2144	-7%	1700	1521	-11%
6	A4 London Road west of Cemetery Junction	1754	1637	-7%	2225	2230	0%
7	Pitts Lane	1193	1180	-1%	1162	1170	1%
8	Church Road	1103	1109	1%	1156	1172	1%
9	Woodlands Avenue	841	850	1%	1138	1141	0%
10	Whitegates Lane	328	333	2%	304	313	3%
11	Palmer Park Avenue	618	608	-2%	527	527	0%
12	Wokingham Road adjacent to Palmer Park	1178	1193	1%	1470	1471	0%
13	Crescent Road	1110	1090	-2%	820	813	-1%
14	Erleigh Road	673	657	-2%	922	892	-3%
15	A329 Kings Road adjacent to Reading College	1627	1618	-1%	1599	1443	-10%
16	A329 Queens Road	2578	2565	-1%	2777	2833	2%
17	A329 Kings Road adjacent to Gas Works Road	2412	2408	0%	2394	2317	-3%
18	A329 Forbury Road between Kings Road and Kenavon Drive	2450	2434	-1%	2408	2410	0%
19	A329 Forbury Road between Kenavon Drive and Vastern Road	2328	2313	-1%	2425	2426	0%
20	Vastern Road Rail Bridge	2288	2284	0%	2429	2454	1%
21	Vastern Road	2076	2068	0%	2131	2165	2%
22	Napier Road	235	268	14%	153	186	22%
23	New East MRT Scheme Route	0	34	N/A	0	34	N/A

Table 9.19: Scenario 2 Total 24 hour flows

Link	Link Name	Total 24 Hour Flow		
		Baseline	Proposed Scheme	% Change
1	Site Access	0	878	N/A
2	Thames Valley Park Drive	9802	10025	2%
3	A3290 between Site Access and A4	9802	10437	6%
4	A4 London Road South of Shepards Hill	24428	24579	1%
5	A4 London Road east of Cemetery Junction	30353	29530	-3%
6	A4 London Road west of Cemetery Junction	32988	32987	0%
7	Pitts Lane	19042	19040	0%
8	Church Road	18559	18762	1%
9	Woodlands Avenue	16623	16710	1%
10	Whitegates Lane	5110	5230	2%
11	Palmer Park Avenue	6696	6662	-1%
12	Wokingham Road adjacent to Palmer Park	22125	22230	0%
13	Crescent Road	11102	10980	-1%
14	Erleigh Road	9785	9519	-3%
15	A329 Kings Road adjacent to Reading College	30090	29706	-1%
16	A329 Queens Road	49876	50377	1%
17	A329 Kings Road adjacent to Gas Works Road	45027	45503	1%
18	A329 Forbury Road between Kings Road and Kenavon Drive	43778	43689	0%
19	A329 Forbury Road between Kenavon Drive and Vastern Road	43048	42951	0%
20	Vastern Road Rail Bridge	43245	43468	1%
21	Vastern Road	38755	39053	1%
22	Napier Road	2990	3308	11%
23	New East MRT Scheme Route	0	324	N/A

- 9.7.48 As shown in **Table 9.18** and **Table 9.19** no links experience a change in flow rate of greater than 30% as a result of Scenario 2. Links 3 and 22 experience an increase in flow rate of between 10% and 30%. Links 5 and 15 experience a reduction in flow rate of between 10% and 30%. The change in flow in all remaining links is below 10% for this scenario.
- 9.7.49 Links 1 and 23 will be built as part of the proposed scheme and therefore do not currently exist and have no flow during the Baseline situation.

Driver Delay

- 9.7.50 The SATURN model of the area surrounding the site and the data from the TVP P&R TA have been used to assess the likely impact of the proposed East MRT Scheme and TVP P&R on the surrounding links.
- 9.7.51 The links that experience a change in flow of greater than 30% are assessed in addition to high sensitivity links that experience a flow of more than 10%.
- 9.7.52 The access (L1) and the New East MRT Scheme (L23) each experience a change in flow of greater than 30% as they currently do not have any flow. Kings Road adjacent to Reading College is a high sensitivity link are identified with a greater than 10% change in flow.

L1: Access

- 9.7.53 The East MRT Scheme has been assessed from the existing roundabout on the A3290. **Table 9.20** shows the modelled impacts of driver delay at the access.

Table 9.20: Scenario 1 – Driver Delay at the Access

Peak Hour	Baseline Delay (Seconds)	Proposed Scheme Delay (Seconds)	Difference (Seconds)	Magnitude of Impact
08:00-09:00	N/A	20	N/A	N/A
17:00-18:00	N/A	18	N/A	N/A

- 9.7.54 As the access does not currently exist there is no flow in the Baseline situation. There is therefore no impact on driver delay compared to the Baseline situation.

L15: Kings Road

- 9.7.55 Kings Road experiences a reduction in vehicle flow as a result of the Proposed Scheme situation. There is therefore a reduction in traffic flow and driver delay as a result of the Proposed Scheme situation.

L23: New East MRT Scheme Route

- 9.7.56 As there is currently no junction at the location where the proposed East MRT Scheme Route joins Napier Road and no flow on the New East MRT Scheme Route, there is no impact driver delay on the link.

Overall

- 9.7.57 The impact on driver delay on the proposed links is considered to be negligible on all links with a change in flow of less than 30% and less than 10% high sensitivity links with a change in flow of less than 10%. The driver delay on the access and new East MRT Scheme Route are both minimal. There is a reduction in driver delay on Kings Road as a result of the

development. It is therefore considered that overall the effect of the development will **not significant**.

Public Transport Delay

- 9.7.58 The Reading Transport SATURN Model (RTM) has been used to understand any potential journey time savings the East MRT Scheme would deliver. The public transport delay is assessed from the A3290 London Road Roundabout to Reading Railway Station. The existing route for public transport is via London Road, Kings Road, Forbury Road, South East Station Interchange. The new proposed route for public transport is via A3290, East MRT Scheme Route, Napier Road, Northern Station Interchange.

L23: New East MRT Scheme Route

- 9.7.59 The new East MRT Scheme Route provides a journey saving time of between 4 minutes and 7 minutes at AM and PM peak flow in comparison to the existing route. This is a significant journey time saving and is considered **major beneficial**.

Overall

- 9.7.60 The East MRT Scheme provides a significant reduction in public transport journey time between the A3290 London Road Roundabout and Reading Town Centre and Railway Station. Therefore, the overall effect of the development on Public Transport Delay is considered to be **major beneficial**.

Severance

- 9.7.61 As outlined within the methodology section of this chapter, severance is defined as the perceived division of a community that may arise when a road traffic link runs through an existing settlement. This can occur when a road becomes too heavily trafficked, making crossing the road difficult for pedestrians or cyclists.
- 9.7.62 The assessment of severance has identified that, with two exceptions (L1 – Access and L23 – New East MRT Scheme), the change in flow on links is below 30%. Such changes in flow are **not significant** with respect to severance.
- 9.7.63 The vehicle flow rate along Kings Road reduces by 10% as a result of the scenario. As Kings Road is a high sensitivity link the effect of the scenario on this link has been assessed in accordance with Rule 2.

L1: Access

- 9.7.64 L1 is part of the new MRT route and therefore does not have a vehicle flow in the Baseline situation. L1 will be subject to a two-way flow of 185 vehicles in the AM and PM peak hours. Buses using this route are rerouted from Kings Road and London Road. On this basis, it is considered appropriate to judge the effect of the traffic on this link in comparison to the traffic utilising L5 and L15 (London Road east of Cemetery Junction and Kings Road adjacent to Reading College). The Proposed Scheme situation causes a reduction in the number of vehicles on L5 and L15. The demand for crossing is also expected to be limited in this location as the MRT route is between a railway line and the River Thames. Therefore, the effect in terms of severance is considered to be **minor beneficial**.

L15: Kings Road

- 9.7.65 As a result of the scenario the traffic flow along Kings Road is reduced during the peak AM, PM and total flow over 24 hours. A reduction in flow within Kings Road is an improvement to the current situation in terms of severance.

L23: New Easy MRT Scheme

- 9.7.66 L23 is part of the new MRT route and therefore does not have a vehicle flow in the Baseline situation. L23 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. Buses using this route are rerouted from Kings Road and London Road. On this basis, it is considered appropriate to judge the effect of the traffic on this link in comparison to the traffic utilising L5 and L15 (London Road east of Cemetery Junction and Kings Road adjacent to Reading College). The Proposed Scheme situation causes a reduction in the number of vehicles on L5 and L15. The demand for crossing is also expected to be limited in this location as the route is at high level along most of its length. Pedestrians and cyclists will not need to cross the route when on the riverside footpath, and will be able to walk/cycle under the route at riverside level. The route does not therefore cause any significant severance, but provides a new pedestrian route and cycle route into the town centre. The route is a short direct well lit, in comparison to the existing alternatives. Therefore, the effect in terms of severance is considered to be **major beneficial**.

Overall

- 9.7.67 The links for which severance is not negligible are the new links to be constructed as part of the scheme. The proposed East MRT Scheme is located at high level between the River Thames as a result the severance at this location is negligible. Severance is reduced on the L5 and L15 links as a result of the Proposed Scheme situation. In addition, the scheme includes walking and cycling routes alongside the proposed East MRT Scheme, reducing severance between the east of Reading and the Town Centre where the existing routes are narrow, shared, stepped, adjacent to busy traffic and/or unlit. Therefore, the overall effect of the development on severance is considered to be **major beneficial**.

Pedestrian and Cyclist Delay and Amenity

- 9.7.68 The assessment of pedestrian and cyclist delay and amenity has identified that, with two exceptions (L1 and L23), the change in flow on links is below 30%. Such changes in flow give rise to not significant effect with respect to Pedestrian and Cyclist Delay and Amenity.
- 9.7.69 The vehicle flow rate along Kings Road reduces by 10% as a result of the scenario. As Kings Road is a high sensitivity link the effect of the scenario on this link will be assessed in accordance with Rule 2.

L1: Access

- 9.7.70 L1 has been assessed as this will be a new link. L1 will be subject to a two-way flow of 185 vehicles in the AM and PM peak hours. This is significantly less than 800 vehicles per hour. In addition, the East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic. As a consequence, the effect in terms of pedestrian and cyclist delay and amenity is considered to be **minor beneficial**.

L15: Kings Road

- 9.7.71 Kings Road experiences a 10% reduction in traffic flow during this scenario. This will reduce the pedestrian and cyclist delay and amenity which is an improvement compared to the existing situation.

L23: New East MRT Scheme

- 9.7.72 L23 has been assessed as this will be a new link. L23 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. This is significantly less than 800 vehicles per hour. In addition, the East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic which provides a segregated, wide, lit relatively flat, direct route into

Reading town centre from the east. As a consequence, the effect in terms of pedestrian and cyclist delay and amenity is considered to be **major beneficial**.

Overview

- 9.7.73 The effect of the development on Pedestrian and Cyclist Delay and Amenity has been shown to be an improvement for all of the assessed links. This is either due to a small change in the number of vehicles using the links or the total hourly flow of vehicles being less than the threshold of 800 per hour. Additionally, the East MRT Scheme includes new pedestrian and cycle routes which will reduce cyclist and pedestrian delay.
- 9.7.74 Overall therefore, the effect of the development on pedestrian delay and amenity is considered to be **major beneficial**.

Fear and Intimidation

- 9.7.75 A number of factors are considered in determining changes in the level of fear and intimidation experienced by pedestrians and cyclists, including changes in traffic volumes, its HGV proportion, its speed and its proximity to people.
- 9.7.76 The assessment has not identified any high sensitivity links with a change in flow rate of greater than 10% as a result of the scenario. The total number of HGVs on new proposed MRT route per 24 hour period is 324 which is significantly less than the threshold of 1000 per 18 hour period.
- 9.7.77 The proposed East MRT Scheme reduces the number of buses on Kings Road and London Road which are roads with a high number of pedestrians. Buses are instead rerouted along the East MRT Scheme via lower sensitivity roads.
- 9.7.78 The East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic. The pedestrian and cycle route is alongside the East MRT Scheme which has significantly fewer vehicles and HGVs in comparison to the alternative London Road Kings Road route.
- 9.7.79 The effect on pedestrian fear and intimidation is **major beneficial**.

Accidents and Road Safety

- 9.7.80 The accident data is analysed in all links where there is a 10% or more change in traffic flow at AM or PM peak flow or in average flow over 24 hours. For this scenario, A3290 between Site Access and A4 (L3), A4 London Road east of Cemetery Junction (L5), A329 Kings Road adjacent to Reading College (L15) and Napier Road (L22) are the only analysed links which shows a change in vehicle flow rate of greater than 10%. Full details of the collision data analysis are provided in **Section 0**.
- 9.7.81 Prediction of the effects of the proposed scheme on accidents and road safety is generally considered by identifying any changes where greater or less conflict might occur. Changes in traffic volumes and vehicle speeds have an effect on accidents and road safety.
- 9.7.82 The **A3290 between Site Access and A4** will experience an increase in traffic flow as a result of the East MRT Scheme and TVP P&R. It is considered that the change in vehicle flow due to the proposed development could potentially increase the risk of accidents on the A3290. This increase is likely to be small, as the increases in traffic flows are low in comparison to baseline traffic flows. The Personal Injury Collision data did not include records

of any collisions over the last 60 months either on assessed section of the A3290 or on the roundabout which the proposed access site will be accessed from.

- 9.7.83 **London Road** east of Cemetery Junction experiences a reduction in traffic flows as a result of the proposed East MRT Scheme and TVP P&R. This section of London Road is currently very busy, especially at peak times. It is considered that the reduction in vehicle flow will reduce the risk accidents on the road.
- 9.7.84 **Kings Road** adjacent to Reading College experiences a reduction in traffic flows as a result of the proposed East MRT Scheme and TVP P&R. This section of Kings Road is currently very busy, especially at peak times. The number of vehicles travelling west along the bus lane of Kings Road is significantly reduced by the development. Vehicles travelling along this section of road were in particular involved in collisions at the junction between Kings Road and London Road. It is considered that the reduction in vehicle flow will reduce the risk accidents on the road.
- 9.7.85 Although **Napier Road** will experience an increase traffic flow, this could lead to slower vehicle speeds, which may reduce the number and/or severity of accidents. It is considered that the change in vehicle flow due to the proposed development could potentially increase the risk of accidents on Napier Road. This increase is likely to be small, as the increases in traffic flows are low in comparison to baseline traffic flows. Over the last 60 months on Napier Road only 2 collisions have been recorded in the Personal Injury Collision data which is low in comparison to all of the other roads which were assessed.
- 9.7.86 When considering the overall scheme, the development will deliver walking and cycling improvements, bus service improvements, and new junctions designed to meet highway standards, which could lead to road safety improvements, particularly in terms of vulnerable road users. The new segregated wide lit foot/cycleway will provide a safe route for these users.
- 9.7.87 Therefore, in terms of accidents and road safety, the overall effect of the proposed development is to be **minor beneficial**.

Operational Potential Effects – Scenario 3

- 9.7.88 Scenario 3 assesses the effect of including the East MRT Scheme with the committed TVP P&R in place in **Tables 9.21** and **9.22**. This section presents the assessment of the operational effects for a typical weekday in the year of 2021 for scenario 3.

Scenario 3 – Effect of East MRT Scheme with TVP Park and Ride in Place

- 9.7.89 It is assumed that at peak flow times, which are between 6:00 to 9:00 in the morning and 15:00 to 18:00 in the afternoon, there will be 17 buses per hour in each direction on the East MRT Scheme and between 9:00 and 15:00 there will be 10 buses per hour in each direction.
- 9.7.90 It is assumed that all 277 the spaces in the TVP P&R are in use. Vehicles are assumed to enter the TVP P&R in the morning between 7:00 and 10:00 with a peak flow of 151 vehicles between 8:00 and 9:00. Vehicles are assumed to leave the TVP P&R in the afternoon between 16:00 and 19:00 with a peak flow of 151 vehicles between 17:00 and 18:00.

Table 9-21: Scenario 3 AM and PM peak flows

Link	Link Name	2021 AM Peak Flow			2021 PM Peak Flow		
		Baseline	Proposed Scheme	% Change	Baseline	Proposed Scheme	% Change
1	Site Access	151	185	23%	151	185	23%
2	Thames Valley Park Drive	1721	1763	2%	914	925	1%
3	A3290 between Site Access and A4	1872	1902	2%	1065	1061	0%
4	A4 London Road South of Shepards Hill	1508	1525	1%	1592	1596	0%
5	A4 London Road east of Cemetery Junction	2147	2144	0%	1549	1521	-2%
6	A4 London Road west of Cemetery Junction	1603	1637	2%	2225	2230	0%
7	Pitts Lane	1193	1180	-1%	1162	1170	1%
8	Church Road	1103	1109	1%	1156	1172	1%
9	Woodlands Avenue	841	850	1%	1138	1141	0%
10	Whitegates Lane	328	333	2%	304	313	3%
11	Palmer Park Avenue	618	608	-2%	527	527	0%
12	Wokingham Road adjacent to Palmer Park	1178	1193	1%	1470	1471	0%
13	Crescent Road	1110	1090	-2%	820	813	-1%
14	Erleigh Road	673	657	-2%	922	892	-3%
15	A329 Kings Road adjacent to Reading College	1627	1618	-1%	1448	1443	0%
16	A329 Queens Road	2578	2565	-1%	2777	2833	2%
17	A329 Kings Road adjacent to Gas Works Road	2412	2408	0%	2243	2317	3%
18	A329 Forbury Road between Kings Road and Kenavon Drive	2450	2434	-1%	2408	2410	0%
19	A329 Forbury Road between Kenavon Drive and Vastern Road	2328	2313	-1%	2425	2426	0%
20	Vastern Road Rail Bridge	2288	2284	0%	2429	2454	1%
21	Vastern Road	2076	2068	0%	2131	2165	2%
22	Napier Road	235	268	14%	153	186	22%
23	New East MRT Scheme Route	0	34	N/A	0	34	N/A

Table 9.22: Scenario 3 Total 24 hour flow

Link	Link Name	Total 24 Hour Flow		
		Baseline	Proposed Scheme	% Change
1	Site Access	554	878	58%
2	Thames Valley Park Drive	9802	10025	2%
3	A3290 between Site Access and A4	10356	10437	1%
4	A4 London Road South of Shepards Hill	24428	24579	1%
5	A4 London Road east of Cemetery Junction	29799	29530	-1%
6	A4 London Road west of Cemetery Junction	32711	32987	1%
7	Pitts Lane	19042	19040	0%
8	Church Road	18559	18762	1%
9	Woodlands Avenue	16623	16710	1%
10	Whitegates Lane	5110	5230	2%
11	Palmer Park Avenue	6696	6662	-1%
12	Wokingham Road adjacent to Palmer Park	22125	22230	0%
13	Crescent Road	11102	10980	-1%
14	Erleigh Road	9785	9519	-3%
15	A329 Kings Road adjacent to Reading College	29813	29706	0%
16	A329 Queens Road	49876	50377	1%
17	A329 Kings Road adjacent to Gas Works Road	44750	45503	2%
18	A329 Forbury Road between Kings Road and Kenavon Drive	43778	43689	0%
19	A329 Forbury Road between Kenavon Drive and Vastern Road	43048	42951	0%
20	Vastern Road Rail Bridge	43245	43468	1%
21	Vastern Road	38755	39053	1%
22	Napier Road	2990	3308	11%
23	New East MRT Scheme Route	0	324	N/A

9.7.91 As shown in **Table 9.21** and **Table 9.22** link 1 experiences an increase in flow rate of greater than 30% as a result of Scenario 3. Link 22 experiences an increase in flow rate of up to 22%

during the PM peak flow. The change in flow in all remaining links is below 10% for this scenario.

- 9.7.92 Link 23 will be built as part of the East MRT Scheme and therefore is not build as part of the TVP P&R and has no flow during the Baseline situation.

Driver Delay

- 9.7.93 The SATURN model of the area surrounding the site has been used to assess the likely impact of the proposed East MRT Scheme on the surrounding links.
- 9.7.94 The links that experience a change in flow of greater than 30% are assessed in addition to high sensitivity links that experience a flow of more than 10%.
- 9.7.95 The site access (L1) and the New East MRT Scheme (L23) each experience a change in flow of greater than 30%. No high sensitivity links are identified with a greater than 10% change in flow.

L1: Access

- 9.7.96 The East MRT Scheme will be accessed from the existing roundabout on the A3290. **Table 9.23** shows the modelled impacts of driver delay at the access.

Table 9.23: Scenario 1 – Driver Delay at the Access

Peak Hour	Baseline Delay (Seconds)	Proposed Scheme Delay (Seconds)	Difference (Seconds)	Magnitude of Impact
08:00-09:00	0	20	+20	Small
17:00-18:00	3	15	+12	Negligible

- 9.7.97 With the TVP P&R included in the Baseline situation the East MRT Scheme causes a small magnitude impact during the AM peak flow and a negligible impact during the PM peak flow.

L23: New East MRT Scheme Route

- 9.7.98 As there is currently no junction at the location where the proposed East MRT Scheme joins Napier Road and no flow on the New East MRT Scheme, there is no impact driver delay on the link.

Overall

- 9.7.99 The impact of driver delay on the proposed links is considered to be negligible on all links with a change in flow of less than 30% and less than 10% on high sensitivity links. The driver delay on the new East MRT Scheme are minimal. The East MRT Scheme has a small effect on the driver delay on site access. It is therefore considered that overall the development will have a **negligible** effect on driver delay.

Public Transport Delay

- 9.7.100 The Reading Transport SATURN Model (RTM) has been used to understand any potential journey time savings the East MRT Scheme would deliver. The public transport delay is assessed from the A3290 London Road Roundabout to Reading Railway Station. The existing route for public transport is via London Road, Kings Road, Forbury Road, South East Station

Interchange. The new proposed route for public transport is via A3290, East MRT Scheme Route, Napier Road, Northern Station Interchange.

L23: New East MRT Scheme

- 9.7.101 The new East MRT Scheme provides a journey saving time of between 4 minutes and 7 minutes at AM and PM peak flow in comparison to the existing route.
- 9.7.102 The public transport journey time saving is reduced further between the TVP P&R and Reading Railway Station as a result of the East MRT Scheme. This is because the TVP P&R is located along the route of the A3290 London Road Roundabout and Reading Railway Station. This is a significant journey time saving and is considered **major beneficial**.

Overall

- 9.7.103 The East MRT Scheme provides a significant reduction in public transport journey time between the A3290 London Road Roundabout and Reading Town Centre and Railway Station. Therefore, the overall effect of the development on Public Transport Delay is considered to be **major beneficial**.

Severance

- 9.7.104 As outlined within the methodology section of this chapter, severance is defined as the perceived division of a community that may arise when a road traffic link runs through an existing settlement. This can occur when a road becomes too heavily trafficked, making crossing the road difficult for pedestrians or cyclists.
- 9.7.105 The assessment of severance has identified that, with two exceptions (L1 – Access and L23 – New East MRT Scheme Route), the change in flow on links is below 30%. Such changes in flow are **not significant** with respect to severance.
- 9.7.106 The assessment has not identified any high sensitivity links with a change in flow rate of greater than 10% as a result of the scenario.

L1: Access

- 9.7.107 L1 is part of the new MRT route which will provide access to both the TVP P&R and the East MRT Scheme during the Proposed Scheme situation and provide access to the TVP P&R during the Baseline situation. During the Baseline situation the MRT route will be subject to a two-way peak flow of 151 vehicles in the AM and PM peak hours. During the Proposed Scheme situation, the MRT route will be subject to a two-way peak flow of 185 vehicles in the AM and PM peak hours. This results in a 23% increase in flow from the Proposed Scheme situation.
- 9.7.108 Buses using this route are rerouted from Kings Road and London Road. On this basis, it is considered appropriate to judge the effect of the traffic on this link in comparison to the traffic utilising L5 and L15 (London Road east of Cemetery Junction and Kings Road adjacent to Reading College). The Proposed Scheme situation causes a reduction in the number of vehicles on L5 and L15. The demand for crossing is also expected to be limited in this location as the MRT route is between a railway line and the River Thames. Therefore, the effect in terms of severance is considered to be **minor beneficial**.

L23: New East MRT Scheme

- 9.7.109 L23 is part of the new MRT route and therefore does not have a vehicle flow in the Baseline situation. L23 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. Buses using this route are rerouted from Kings Road and London Road. On this basis, it is considered appropriate to judge the effect of the traffic on this link in comparison to the traffic

utilising L5 and L15 (London Road east of Cemetery Junction and Kings Road adjacent to Reading College). The Proposed Scheme situation causes a reduction in the number of vehicles on L5 and L15. The demand for crossing is also expected to be limited in this location as the route is at high level along most of its length. Pedestrians and cyclists will not need to cross the route when on the riverside footpath, and will be able to walk/cycle under the route at riverside level. The route does not therefore cause any significant severance, but provides a new pedestrian route and cycle route into the town centre. The route is a short direct well lit, in comparison to the existing alternatives. Therefore, the effect in terms of severance is considered to be **major beneficial**.

Overall

9.7.110 The links for which severance is not negligible are the new links to be constructed as part of the scheme. The proposed East MRT Scheme is located at high level between the River Thames and a rail line and is a mainly undeveloped area and as a result the severance at this location is negligible. Severance is reduced on the L5 and L15 links as a result of the Proposed Scheme situation. In addition, the scheme includes walking and cycling routes alongside the proposed East MRT Scheme, reducing severance between the east of Reading the Town Centre, where the existing routes are narrow, stepped, shared, adjacent to busy traffic and/or unlit. Therefore, the overall effect of the development on severance is considered to be **major beneficial**.

Pedestrian and Cyclist Delay and Amenity

9.7.111 The assessment of pedestrian and cyclist delay and amenity has identified that, with two exceptions (L1 and L23), the change in flow on links is below 30%. Such changes in flow give rise to not significant effect with respect to Pedestrian and Cyclist Delay and Amenity.

9.7.112 The assessment has not identified any high sensitivity links with a change in flow rate of greater than 10% as a result of the scenario.

L1: Access

9.7.113 L1 has been assessed as this will be a new link. L1 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. This is significantly less than 800 vehicles per hour. In addition, the East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic. As a consequence, the effect in terms of pedestrian and cyclist delay and amenity is considered to be **minor beneficial**.

L23: New East MRT Scheme

9.7.114 L23 has been assessed as this will be a new link. L23 will be subject to a two-way flow of 34 vehicles in the AM and PM peak hours. This is significantly less than 800 vehicles per hour. In addition, the East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic which provides a segregated, wide, lit relatively flat, direct route into Reading town centre from the east. As a consequence, the effect in terms of pedestrian and cyclist delay and amenity is considered to be **major beneficial**.

Overview

9.7.115 The effect of the development on Pedestrian and Cyclist Delay and Amenity has been shown to be an improvement for all of the assessed links. This is either due to a small change in the number of vehicles using the links or the total hourly flow of vehicles being less than the threshold of 800 per hour. Additionally, the East MRT Scheme Route includes new pedestrian and cycle which will reduce cyclist and pedestrian delay.

9.7.116 Overall therefore, the effect of the development on pedestrian delay and amenity is considered to be **major beneficial**.

Fear and Intimidation

- 9.7.117 A number of factors are considered in determining changes in the level of fear and intimidation experienced by pedestrians and cyclists, including changes in traffic volumes, its HGV proportion, its speed and its proximity to people.
- 9.7.118 The assessment has not identified any high sensitivity links with a change in flow rate of greater than 10% as a result of the scenario. The total number of HGVs on new proposed MRT route per 24 hour period is 324 which is significantly less than the threshold of 1000 per 18 hour period.
- 9.7.119 The proposed East MRT Scheme reduces the number of buses on Kings Road and London Road which are roads with a high number of pedestrians. Buses are instead rerouted along the East MRT Scheme via lower sensitivity roads.
- 9.7.120 The East MRT Scheme includes designated pedestrian and cycle routes separate from vehicle traffic. The pedestrian and cycle route is alongside the East MRT Scheme which has significantly fewer vehicles and HGVs in comparison to the alternative London Road Kings Road route.
- 9.7.121 The effect on pedestrian fear and intimidation is **major beneficial**.

Accidents and Road Safety

- 9.7.122 The accident data is analysed in all links where there is a 10% or more change in traffic flow at AM or PM peak flow or in average flow over 24 hours. For this scenario, Napier Road (L22) is the only analysed link which shows a change in vehicle flow rate of greater than 10%. Full details of the collision data analysis is provided in **Section 0**.
- 9.7.123 Prediction of the effects of the proposed development on accidents and road safety is generally considered by identifying any changes where greater or less conflict might occur. Changes in traffic volumes and vehicle speeds have an effect on accidents and road safety.
- 9.7.124 Although Napier Road will experience an increase traffic flow, this could lead to slower vehicle speeds, which may reduce the number and/or severity of accidents.
- 9.7.125 It is considered that the change in vehicle flow due to the proposed scheme could potentially increase the risk of accidents. This increase is likely to be small, as the increases in traffic flows are low in comparison to baseline traffic flows. Over the last 60 months on Napier Road only two collisions have been recorded in the Personal Injury Collision data, which is low in comparison to all of the other roads which were assessed.
- 9.7.126 When considering the overall scheme, the development will deliver walking and cycling improvements, bus service improvements, and new junctions designed to meet highway standards, which could lead to road safety improvements, particularly in terms of vulnerable road users. The new segregated wide lit foot/cycleway will provide a safe route for these users.
- 9.7.127 Therefore, in terms of accidents and road safety, the overall effect of the proposed development is to be **minor beneficial**.

9.8 Mitigation & Enhancement

- 9.8.1 No mitigation has been identified as being required during the operation of the proposed East MRT Scheme.

9.9 Residual Effects

- 9.9.1 This section summarises the residual environmental effects of the construction and operational phases of the proposed development following the implementation of mitigation measures, as outlined in **Section 9.7** above. A summary of residual construction and operational effects is included in **Table 9.24** below.

Construction

- 9.9.2 No significant adverse effects resulting from the construction of the proposed development have been identified.

Operation

- 9.9.3 No significant adverse effects arising from the development have been identified.
- 9.9.4 **Table 9.24** summarises the residual effects.

Table 9.24: Summary of Residual Effects

Sensitivity Rating	Duration (Temporary/Permanent)	Significance
Construction		
Severance	Temporary	Not Significant
Pedestrian and cyclist delay and amenity	Temporary	Not Significant
Fear and Intimidation	Temporary	Not Significant
Accidents and Road Safety	Temporary	Not Significant
Operation – Scenario 1		
Driver Delay	Permanent	Not Significant
Public Transport Delay	Permanent	Major Beneficial
Severance	Permanent	Major Beneficial
Pedestrian and cyclist delay and amenity	Permanent	Major Beneficial
Fear and Intimidation	Permanent	Major Beneficial
Accidents and Road Safety	Permanent	Minor Beneficial
Operation – Scenario 2		
Driver Delay	Permanent	Not Significant
Public Transport Delay	Permanent	Major Beneficial
Severance	Permanent	Major Beneficial
Pedestrian and cyclist delay and amenity	Permanent	Major Beneficial
Fear and Intimidation	Permanent	Major Beneficial
Accidents and Road Safety	Permanent	Minor Beneficial
Operation – Scenario 3		
Driver Delay	Permanent	Not Significant
Public Transport Delay	Permanent	Major Beneficial
Severance	Permanent	Major Beneficial
Pedestrian and cyclist delay and amenity	Permanent	Major Beneficial
Fear and Intimidation	Permanent	Major Beneficial
Accidents and Road Safety	Permanent	Minor Beneficial

9.10 Monitoring

9.10.1 On the basis that the construction and operational phases do not result in adverse residual effects, there is no requirement for monitoring with respect to transport and traffic impacts.
Summary

9.10.2 The effect of the East MRT Scheme has been assessed through three scenarios:

- East MRT Scheme only;
- East MRT Scheme and TVP P&R combined; and

- East MRT Scheme with TVP P&R in baseline.
- 9.10.3 The East MRT Scheme provides benefits across many of the assessment criteria and has no significant effect on the remaining assessment criteria.
- 9.10.4 It has been identified that during the construction phase the East MRT Scheme has no significant impact on severance, pedestrian and cyclist delay and amenity, fear and intimidation and accidents and road safety.
- 9.10.5 The East MRT Scheme has a major beneficial effect on public transport delay, as it provides significant journey time savings. The East MRT Scheme provides an alternative route from the A3290 London Road Roundabout to the Reading Railway Station.
- 9.10.6 It has been demonstrated that the East MRT Scheme will have a major beneficial on severance, as a result of reducing traffic flows on London Road and Kings Road which have residential and commercial frontage. The buses are routed via the East MRT Scheme Route which is located at high level between the River Thames and a railway line, which is a mainly undeveloped area, therefore resulting in a negligible effect on severance in this location.
- 9.10.7 The East MRT Scheme has been shown to have a major benefit on pedestrian and cyclist delay and amenity for all of the assessed scenarios. There is either a minimal change in vehicle flow rate or a total of less than 800 vehicles using each of the links within the study area as a result of the East MRT Scheme. Additionally, the East MRT Scheme includes new pedestrian and cycle routes which will reduce cyclist and pedestrian delay. The East MRT Scheme provides a major benefit to fear and intimidation, as buses using London Road and Kings Road are rerouted along the East MRT Scheme. The East MRT Scheme includes cycle and pedestrian routes, therefore offers a route which is separate to traffic.

10 Air Quality

10.1 Introduction

- 10.1.1 This chapter documents the assessment of the likely significant effects of the proposed development with respect to air quality and has been prepared by PBA.
- 10.1.2 The proposed development has the potential to adversely affect air quality during both the construction phase and operational phase. The main air pollutants of concern related to construction are dust and fine particulate matter (PM₁₀), and for road traffic they are nitrogen dioxide (NO₂) and fine particulate matter (PM₁₀ and PM_{2.5}).
- 10.1.3 During the construction period, the increase in heavy duty vehicles (HDVs) movements on the road network will be below the threshold of 25 movements per day on an Air Quality Management Area (AQMA) for an assessment to be necessary according to Environmental Protection UK (EPUK) and IAQM guidance. The expected increase in HDV movements on Napier Road, is approximately 5 to 10 HDV movements per day. The construction traffic impacts on human health receptors in the area are considered to be insignificant, and have therefore been scoped out of this assessment.
- 10.1.4 For ecological receptors, the criteria for an assessment to be undertaken is a change in traffic of more than 1,000 vehicles per day or 250 HDVs on a road within 200 m of a designated habitat (conservation of habitats and species regulations 2017), in accordance with Highways England Design Manual for Roads and Bridges (DMRB) HA207/07 guidance and Natural England (Ref 10.1 and Ref 10.2). There are no designated habitats, under the Habitats Regulations, in close proximity to the proposed development or close to roads with a predicted traffic level increase above 1,000 daily vehicles.
- 10.1.5 The assessment has been prepared taking into account relevant local and national guidance and regulations.
- 10.1.6 In accordance with Regulation 18(5) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, as amended, a statement outlining the relevant expertise and qualifications of competent experts appointed to prepare this Environmental Statement (ES) is provided in **Appendix A.5**.

10.2 Policy Context

The Air Quality Strategy (2007)

- 10.2.1 The Air Quality Strategy (2007) establishes the policy framework for ambient air quality management and assessment in the UK (Ref 10.3). The primary objective is to ensure that everyone can enjoy a level of ambient air quality which poses no significant risk to health or quality of life. The Strategy sets out the National Air Quality Objectives (NAQOs) and Government policy on achieving these objectives.
- 10.2.2 Part IV of the Environment Act 1995 introduced a system of Local Air Quality Management (LAQM) (Ref 10.4). This requires local authorities to regularly and systematically review and assess air quality within their boundary, and appraise development and transport plans against these assessments. The relevant NAQOs for LAQM are prescribed in the Air Quality (England) Regulations 2000 (Ref 10.5) and the Air Quality (Amendment) (England) Regulations 2002 (Ref 10.6).
- 10.2.3 Where an objective is unlikely to be met, the local authority must designate an Air Quality Management Area (AQMA) and draw up an Air Quality Action Plan (AQAP) setting out the measures it intends to introduce in pursuit of the objectives within its AQMA.