Crossrail West

Iver Station Transport Assessment

Network Rail
June 2012

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1 INTRODUCTION

1.1 OVERVIEW

1.1.1 This report provides an updated assessment of the potential transport impact of the proposed 'Crossrail' scheme at Iver railway station, in South Buckinghamshire. Since a previous transport assessment (TA) for Iver was submitted, in September 2006, some key parameters have changed that may affect the potential impact of Crossrail. This report takes account of those changes.

1.1.2 In overview, the main parameters that have changed are as follows:

- The base pattern of passenger demand and mode choice, accessing Iver Station;
- The accident trends on roads accessing the station;
- The rail service characteristics associated with Crossrail at Iver; and
- The forecasts of passenger demand at Iver with Crossrail at 2016.

1.1.3 The purpose of the assessment is to review, re-assess and identify the scale of any potential transport impacts arising from the implementation of Crossrail, at Iver station and to propose initiatives to mitigate any significant adverse effects. The report constitutes an input to a revised Environmental Design Statement.

1.2 BACKGROUND

1.2.1 The context for the report is set out below.

Iver Station

1.2.2 Iver station is located on the Great Western Railway main line, to the west of London Paddington and to the east of Reading. It lies just to the west of the M25 orbital motorway and slightly north of the M4 motorway, but has no direct road link to either motorway.

1.2.3 Iver is equidistant from its closest stations, namely West Drayton, 5km to the east and Langley, 5km to the west.

1.2.4 **Figure 1.1** shows the general location of Iver station.

Crossrail Scheme

1.2.5 Crossrail will provide a new railway service connecting Berkshire with Essex, through Greater and Central London. It will entail a combination of on-line improvements to existing aboveground infrastructure, a new underground line through the City, overhead electrification, new, longer and more frequent trains and extended

platforms at key stations. The route will run between Maidenhead, in the west and Shenfield, in the east, through Paddington and Stratford. It will also have spur connections with Heathrow Airport in west London and Abbey Wood in South East London.

1.2.6 Network Rail (NR) is overseeing the design, assessment and commissioning of 'On Network Works' for the existing track and station elements of the Crossrail project, on behalf of Crossrail Limited (CRL). NR appointed Amey to progress the preferred option engineering design, to GRIP 4 compliance (i.e. 'single option development') and to prepare a new Environmental Design Statement (EDS), for the following route sections:

- Thorney Lane Bridge Track Lowering – Remit T1.6; and
- West Drayton to Iver Loop and Iver Station Platforms – Remit T1.7.

1.2.7 The transport assessment for Iver station is part of the scope of services for these route sections. An updated EDS is required under this commission, because the previous Crossrail proposal for overhead electrification has been modified.

1.2.8 Previously, the proposal was to replace the Thorney Lane South road bridge over the railway at Iver. Instead, the scheme has been modified to retain the existing bridge, but implement track lowering and modification of station platforms, to enable electrification.

Crossrail Policy on Scheme Impact Mitigation

1.2.9 There are three aspects of policy set out by Crossrail, which are relevant to the Iver station impact appraisal. These are described in Information Papers to accompany the original Environmental Statement submitted in February 2005.

1.2.10 Information Paper H1, 'Timetabling and Growth', indicates a Crossrail policy of ensuring that rail users are no worse off as a consequence of the scheme. The aim is to provide sufficient standard of rail service, in 2016, to accommodate new patronage associated with the scheme, but not to handle background growth in demand arising from outside factors.

1.2.11 Information Paper E1, 'Passenger Car Parking', suggests that existing parking provision at stations within the Crossrail scheme will be fully occupied by background demand before the scheme is introduced. This may require mitigation outside of the scheme. No new parking capacity will be provided as part of the scheme, because it is intended that new passengers should access the stations by sustainable, non-car, modes.

1.2.12 Information Paper E2, 'Cycle Carriage and Cycle Parking', follows the sustainable access theme and proposes that new cycle parking and transit facilities will be provided on stations and trains, as part of the Crossrail scheme.

Iver Station Transport Assessment 2006

1.2.13 The previous assessment of Crossrail impact at Iver examined weekday AM peak conditions in 2004 and predicted passenger demand arising from the scheme at 2016. Principal findings from the assessment were as follows:

- Base year AM peak 3-hour passenger demand comprised 100 boarding and 50 alighting;
- Of the AM boarding passengers, 66% accessed the station on foot and 34% by car park and ride;
- Of the AM alighting passengers, 100% travelled on foot;
- No AM boarding or alighting passengers travelled by bicycle or car drop-off or pick-up;
- Forecast background passenger demand at 2016, without Crossrail, showed no change from the 2001 base;
- Forecast passenger demand at 2016, with Crossrail, also showed no change from the 2001 base;
- There would be no adverse impact from introduction of Crossrail services at Iver; and
- There would be no need for any interventions to mitigate the impact of Crossrail at Iver.

1.3 SCOPE OF REVISED TRANSPORT ASSESSMENT 2011

1.3.1 The appraisal scenario for this TA remains the same as previously, i.e. weekday AM peak, at scheme opening year 2016. However, it is based upon the latest 2016 passenger forecasts, with and without the Crossrail scheme, which have been updated and interpolated by CRL from the 'Crossrail Suburban Demand Forecasts' for 2026. These 2016 forecasts supersede those in the previous TA.

1.3.2 In its scope, the revised 2011 transport assessment (TA) addresses the same issues covered in 2006. This is to enable straightforward comparison between the current and previous situations.

1.3.3 First, there is a summary of existing transport conditions around Iver station, in terms of infrastructure, rail and bus services, weekday travel patterns, car parking, network performance, and road safety.

1.3.4 Second, there is an outline of expected background conditions at 2016 in the weekday AM peak period without the Crossrail scheme, in terms of potential land use changes, background growth of travel demand and change in numbers of rail passengers.

1.3.5 Third, there is a comparative analysis of expected conditions at 2016, with Crossrail in operation. This takes account of the proposed scheme improvements and any increase in predicted rail passenger demand above the background level. It also considers the suitability of transport access arrangements around Iver station.

1.3.6 Finally, there is an assessment of what mitigation, if any, could resolve adverse impacts of Crossrail, at Iver.

2 EXISTING CONDITIONS AT IVER STATION

2.1 INTRODUCTION

2.1.1 The previous transport assessment for Iver station was compiled in 2006, since when travel conditions are very likely to have changed, because of the following:

- Evolving patterns of land use and location of housing and employment in Greater London and the South East;
- Changes in population size and demography; and
- Changes in transport infrastructure and travel patterns, across a variety of modes.

2.1.2 As travel conditions are likely to have changed since 2006, a new survey of the situation at 2011 was undertaken.

2.1.3 We have observed travel conditions at Iver station during peak periods on a typical weekday. This section gives a summary of existing transport infrastructure, land use and travel patterns near to the station.

2.2 TRANSPORT INFRASTRUCTURE

2.2.1 Iver station is located on the northern edge of Richings Park, a 'tertiary' residential settlement in South Buckinghamshire. It is separated from Iver village, a 'secondary' settlement 1km to the north, by a belt of industrial and open land and the Grand Union Canal, which runs parallel with and to the north of the railway.

Highway Access

2.2.2 Richings Park has three main highway access routes, namely:

- North Park / Richings Way – an unclassified, 30/40mph, single 2-lane all-purpose carriageway, connecting with Langley, to the west;
- Thorney Mill Road – an unclassified, 40mph, single 2-lane all-purpose carriageway, connecting with West Drayton, to the east; and
- Thorney Lane (South and North) – an unclassified, 30/40mph, single 2-lane all-purpose carriageway, connecting with Iver, to the north.

2.2.3 The residential area of Richings Park lies to the north of Richings Way and to the west of Thorney Lane South. It is dissected by several, 30mph, residential streets, all of which have frontage accesses. Of these five streets, the following have unregulated kerbside parking: Syke Cluan; Syke Ings; Wellesley Avenue (south) and Somerset Way.

2.2.4 The railway station is accessed from Bathurst Walk, which runs westwards as a minor road from the priority 'T' junction with Thorney Lane South. Bathurst Walk has some commercial frontages and sections of regulated kerbside parking. Bathurst Walk Intersects with Wellesley Avenue (north and south) and constitutes the major road of the 4-arm priority junction. The northern arm of Wellesley Avenue forms a dead-end access for Iver Station and has a mix of regulated and unregulated kerbside parking.

2.2.5 There are five key junctions that handle sufficient traffic to experience potential operational impacts from passenger movements to and from Iver station. These junctions are as follows:

- Junction 1 – Wellesley Avenue / Bathurst Walk (4-arm major/minor priority);
- Junction 2 – Thorney Lane South / Bathurst Walk (3-arm major/minor priority);
- Junction 3 – Thorney Lane South / Bison Concrete Works Access (3-arm major/minor priority);
- Junction 4 – Thorney Lane North / Court Lane (3-arm major/minor priority); and
- Junction 5 – Thorney Lane South / Richings Way (3-arm mini roundabout).

Rail Access

2.2.6 Iver station lies about 23km to the west of Paddington, central London and about 15km east of Maidenhead, Berkshire. Its closest stations are West Drayton, about 5km to the east and Langley, about 5km to the west.

2.2.7 First Great Western operates all train services that stop at Iver. There are currently two to three trains per hour, each way, which stop during weekday peak times (7am-10am and 4pm-7pm). This gives a service-headway of 20-30 minutes each way. There are fewer trains serving Iver than either Langley or West Drayton, which both have a peak service frequency of four trains per hour, each way.

Bus Access

2.2.8 Access by bus at Richings Park and Iver station is very limited. There is one service, 583, which is operated by Redline and which runs between Langley and Uxbridge, via Richings Park and Iver. There are three buses each way during a weekday off-peak, which stop near to Iver station. No peak-time buses serve the station.

2.2.9 The only other weekday bus operation in the area is service 58, provided by First Group, which runs between Langley and Uxbridge, via Iver and Iver Heath. There is a half-hourly frequency, each way, on this route.

Pedestrian and Cyclist Access

2.2.10 There are reasonably good pedestrian facilities in Richings Park, which provide access to and from Iver station. All residential streets within the estate have footways on both sides, which enable residents to walk to Wellesley Avenue North, which leads to the station. However, Wellesley Avenue North has limited and disconnected pedestrian facilities immediately outside the station. Access on foot, here, is hampered at peak times by fully occupied kerbside car parking, which obstructs part of the footways. There are also numerous vehicle turning movements and a lack of crossing facilities.

2.2.11 Walk access on the main external routes, to and from Richings Park, is possible, as each road has a continuous footway on one side.

2.2.12 There are no dedicated facilities for cyclists in Richings Park. Within the estate, cyclists mix with vehicles on street and have to manoeuvre around parked cars. On the external routes, cycling is made difficult by the volume of heavy goods vehicles (HGV) that use the roads.

2.2.13 There is a dedicated pedestrian and cyclists route between Iver station and Thorney Lane South, which runs between Bathurst Walk and the railway.

2.2.14 All roads in the local area have street lighting.

Car Parking

2.2.15 No provision is made for off-street car parking at Iver station, for park and ride journeys. However, there is unregulated space available on most of the residential streets to the south of the station, in Richings Park. **Figure 2.1** shows the location of the various stretches of kerbside, on street, car parking space around Richings Park. A summary of the current, on-street car parking regulations and the potential capacity is given in **Table 2.1**.

Street Name	Parking Location	Current On-Street Regulations	Kerb Length (m)	Max. Number of Spaces	Min. Number of Spaces
				Max: (Assumes: 7.0m per vehicle; but 14.0m per vehicle south of Bathurst Walk, to allow for accesses)	Min: (Assumes: 7.0m per vehicle but 14.0m per vehicle south of Bathurst Walk, to allow for accesses; and max. 5-min walk time, i.e. 360m)
Wellesley Avenue	Outside Iver Station – North and South Sides	Unrestricted	77m x2	22	22
Wellesley Avenue	North of Bathurst Wa k – East Side	Unrestricted	42m	6	6
Wellesley Avenue	North of Bathurst Wa k – West Side	2-Hour Max Stay (9am-5pm)	42m	6	6
Bathurst Walk	East of Wellesley Avenue – North Side	Unrestricted	162m	0	0
Bathurst Walk	East of Wellesley Avenue – South Side	2-Hour Max Stay (9am-5pm)	18m	3	3
Bathurst Walk	East of Wellesley Avenue – South Side	Unrestricted	118m	17	17
Bathurst Walk	Between Wellesley Avenue and Syke Ings – North Side	No Parking Mon-Fri 11am – 12 Noon	62m	9	9
Bathurst Walk	Between Wellesley Avenue and Syke Ings – South Side	2-Hour Max Stay (9am-5pm)	63m	9	9
Bathurst Walk	Between Syke Ings and Syke Cluan – North Side	Unrestricted	128m	18	18

Street Name	Parking Location	Current On-Street Regulations	Kerb Length (m)	Max. Number of Spaces	Min. Number of Spaces
Bathurst Walk	Between Syke Ings and Syke Cluan – South Side	Unrestricted	113m	16	16
Bathurst Walk	West of Syke Cluan – North Side	Unrestricted	68m	10	10
Bathurst Walk	West of Syke Cluan – South Side	Unrestricted	68m	0	0
Syke Cluan	South of Bathurst Wa k – West Side	Unrestricted	535m	38	26
Syke Cluan	South of Bathurst Wa k – East Side	Unrestricted	535m	0	0
Syke Ings	South of Bathurst Wa k – West Side	Unrestricted	499m	36	26
Syke Ings	South of Bathurst Wa k – East Side	Unrestricted	499m	0	0
Wellesley Avenue	South of Bathurst Wa k – West Side	Unrestricted	490m	0	0
Wellesley Avenue	South of Bathurst Wa k – East Side	Unrestricted	515m	37	26
Somerset Way	South of Wellesley Avenue – North Side	Unrestricted	356m	25	25
Somerset Way	South of Wellesley Avenue – South Side	Unrestricted	356m	0	0
All Roads			Total On-Street Parking Spaces	252	219

Table 2.1: Available On Street Car Parking Supply at Iver Station

2.2.16 In Table 2.1 we have judged that, on most streets, parking can only be accommodated on one side of the road, otherwise the passage of vehicles would be obstructed. The kerbside spaces that we assume to be inaccessible are indicated by a zero value for 'Number of Spaces'. The space required for one parked vehicle is assumed to be 7.0m per vehicle on Bathurst Walk and Wellesley Avenue, next to the station. However, this space is increased to 14.0m per vehicle, on roads south of Bathurst walk, to allow for property accesses.

2.2.17 A maximum and minimum number of potential on-street parking spaces has been calculated in Table 2.1. The maximum includes all residential streets in Richings Park, whilst the minimum includes streets within 360m distance, or a 5-minute walk time, from Iver station.

2.2.18 We estimate that the total on-street parking capacity is between a maximum of 252 spaces and a minimum of 219 spaces.

Iver Station Layout

2.2.19 There are five railway tracks through Iver station. Express trains run on main lines one and two, nearest to the entrance. Platforms one and two are not, therefore, used by passengers. Stopping trains use relief lines three and four. Platforms three and four are, therefore, the only operational platforms. Freight trains use goods line five, which is furthest from the entrance.

2.2.20 Access to and from the station and between platforms is on foot. There is a footbridge linking all platforms, but no facilities for disabled access. The two access routes at the station are from Wellesley Avenue (north) and from Thorney Lane South.

2.2.21 Parking for bicycles is provided at the station entrance, where there is a rack with capacity to hold 10 cycles.

2.3 TRAVEL MOVEMENTS

2.3.1 A survey was undertaken on Tuesday 28th June 2011, during peak periods (7am-10am and 4pm-7pm), to monitor numbers of passengers using Iver station. We recorded passenger movements at both the Wellesley Avenue (north) and Thorney Lane South accesses. The following data were collected at the station entrance:

- Number of passengers arriving from Wellesley Avenue and from Thorney Lane South, before boarding trains, categorised by pedestrians and cyclists;

- Number of passengers departing to Wellesley Avenue and to Thorney Lane South, after alighting from trains, categorised by pedestrians and cyclists; and
- Partial vehicle registrations of cars parked on-street, on Wellesley Avenue, Bathurst Walk, Somerset Way, Syke Cluan and Syke Ings, at four times of day (06:30, 10:30, 15:30 and 19:30), for estimating durations of stay and, hence, numbers of park and ride trips.

2.3.2 Results from the PM period survey were distorted by bad weather conditions, which caused delays to trains leaving London. We have therefore based the Crossrail impact assessment on AM peak conditions, as was done in the 2006 TA.

2.3.3 Our findings from the passenger and parking survey are summarised below.

Passenger Volumes

2.3.4 **Table 2.2** shows the volume of passengers using Iver station during the weekday AM period, 7am-10am, in 2011.

Movement	User Type	To/From Wellesley Av	To/From Thorney La	All Movements
Boarding	Pedestrian	68	18	86
	Vehicle Drop-Off	6	0	6
	Park and Ride	68	0	68
	Cyclist	1	4	5
Alighting	Pedestrian	20	29	49
	Vehicle Drop-Off	0	0	0
	Park and Ride	0	0	0
	Cyclist	1	1	2
All Movements	Pedestrian	88	47	135
	Vehicle Drop-Off	6	0	6
	Park and Ride	68	0	68
	Cyclist	2	5	7

Table 2.2: Weekday AM Passenger Movements at Iver Station - 2011

2.3.5 There were 216 passengers using Iver station during the AM 3-hour period. Of these, 165 (76%) were boarding trains and 51 (24%) were alighting.

2.3.6 Amongst 165 boarding passengers, there were 86 (52%) who walked 68 (41%) who used park and ride, six (4%) who were dropped off and five (3%) who cycled.

2.3.7 Most AM passengers accessed the station via Wellesley Avenue (76%), whilst a smaller proportion (24%) travelled via the footway joining Thorney Lane South.

2.3.8 The profile of existing passenger demand during the AM 3-hour period has been analysed. In the morning, the proportion of 3-hour total demand arising during the busiest peak hour is 51% (7am-8am), with 28% occurring 8am-9am and 21% occurring 9am-10am.

2.3.9 The current observed peak hour pattern of movements (7am-8am) comprises 89 boarding, 20 alighting and 109 passengers in total.

2.3.10 We have compared the observed 2011 AM passenger movements at Iver with those recorded in 2004 and summarised in the 2006 TA. The comparison is provided in **Table 2.3**.

		2004 Survey		**2011 Survey**	
Movement	**User Type**	**No. Passengers**	**% Passengers**	**No. Passengers**	**% Passengers**
Boarding	Pedestrian	66	66.0%	86	52.1%
	Vehicle Drop-Off	0	0.0%	6	3.6%
	Park and Ride	34	34.0%	68	41.2%
	Cyclist	0	0.0%	5	3.0%
	All	100	100.0%	165	100.0%
Alighting	Pedestrian	50	100.0%	49	96.1%
	Vehicle Drop-Off	0	0.0%	0	0.0%
	Park and Ride	0	0.0%	0	0.0%
	Cyclist	0	0.0%	2	3.9%
	All	50	100.0%	51	100.0%
All Movements	Pedestrian	116	77.3%	135	62.5%
	Vehicle Drop-Off	0	0.0%	6	2.8%
	Park and Ride	34	22.7%	68	31.5%
	Cyclist	0	0.0%	7	3.2%
	All	150	100.0%	216	100.0%

Table 2.3: Comparison of Weekday AM Passenger Movements at Iver for 2004 and 2011

2.3.11 Findings in Table 2.2 indicate that AM demand has increased by 44%, from 150 to 216 passengers, 2-way, at Iver station, between 2004 and 2011. The proportion of park and ride users amongst AM boarding passengers has increased from 34% to 41%.

2.3.12 Volumes of passenger movements in the PM 3-hour period, 4pm-7pm, in 2011, are shown in **Table 2.4**.

Movement	User Type	To/From Wellesley Av	To/From Thorney La	All Movements
Boarding	Pedestrian	33	28	67
	Vehicle Drop-Off	5	0	5
	Park and Ride	0	0	0
	Cyclist	1	2	3
Alighting	Pedestrian	75	9	84
	Vehicle Drop-Off	0	0	0
	Park and Ride	0	0	0
	Cyclist	1	2	3
All Movements	Pedestrian	108	37	145
	Vehicle Drop-Off	5	0	5
	Park and Ride	0	0	0
	Cyclist	2	4	6

Table 2.4: Weekday PM Passenger Movements at Iver Station - 2011

[Note: PM passenger movements were distorted by bad weather causing train delays and cancellations]

2.3.13 The profile of existing passenger demand during the PM 3-hour period has been analysed. In the evening, the proportion of 3-hour total demand arising during the busiest peak hour is 40% (5pm-6pm), with 31% occurring 4pm-5pm and 30% occurring 6pm-7pm.

Park and Ride Trips

2.3.14 By recording vehicle registrations of cars parked on street and matching their presence across various survey times, we were able to estimate the pattern of park and ride users at Iver station. Details were recorded at the start and end of the AM

peak 3-hour period and again at the start and end of the PM 3-hour period. We made assumptions regarding the trip purpose of parked vehicles, as summarised in **Table 2.5**.

Vehicle Present On-Street at Surveyed Times				
06:30	**10:30**	**15:30**	**19:30**	**Assumed Trip Purpose**
Yes	Yes	Yes	Yes	Resident
No	Yes	Yes	No	Commute
Yes	No	No	Yes	Resident
Yes	Yes	Yes	No	Resident
No	Yes	Yes	Yes	Commute
Yes	Yes	No	No	Resident
No	No	Yes	Yes	Resident

Table 2.5: Assumed Trip Purpose of Vehicles Parked On-Street (Weekday 2011)

2.3.15 Any parked vehicles that were observed at only one survey time, were assumed to be short-stay visitors to local premises. Our assumptions in Table 2.5, regarding journey purposes, may give a slight under-estimate of commuters' park and ride trips, as some rail users may park their vehicles on street before 6.30am.

2.3.16 **Table 2.6** provides a summary of observed on-street car park use around Richings Park.

Trip Purpose	No. Parked Vehicles	% of Total On-Street Parking
Residential (all-day)	44	18
Commuter	68	27
Residential (part-day)	29	12
Visitors (short-stay)	107	43
Total	248	100

Table 2.6: Number of Vehicles Parked On-Street, by Purpose (Weekday 2011)

2.3.17 From the findings in Table 2.6, it can be seen that there are around 68 commuter, park and ride trips using Iver station on a typical weekday, constituting about 27% of all parked vehicles over a 13-hour period.

2.3.18 **Table 2.7** shows the streets (referenced in Figure 2.1 and Table 2.1) that handle the highest volume of park and ride trips during a typical weekday, in decreasing order of volume.

Street Reference	Location	No. Commuter Vehicles
A	Wellesley Avenue at station	17
K	Wellesley Avenue South of Bathurst Walk	14
C	Bathurst Walk East of Wellesley Avenue	10
J	Syke Ings South of Bathurst Walk	7
G	Bathurst Walk between Syke Ings and Syke Cluan	6
L	Somerset Way South of Wellesley Avenue	6
B	Wellesley Avenue North of Bathurst Walk	5
E	Bathurst Walk between Wellesley Avenue and Syke Ings	3
D	Wellesley Avenue / Bathurst Walk Junction	0
F	Syke Ings / Bathurst Walk Junction	0
H	Bathurst Walk West of Syke Ings	0
I	Syke Cluan South of Bathurst Walk	0

Table 2.7: Streets with Highest Number of Park and Ride Trips (Weekday 2011)

2.3.19 From Table 2.7, it is apparent that most commuter vehicles, used for park and ride, are left on roads without parking restrictions, closest to the station. On the top three most heavily used streets, within about 200m or three minutes' walk from the station, there are 41 commuter vehicles (60% of all park and ride trips).

2.3.20 The streets that handle the highest proportion of park and ride commuter trips is shown in **Table 2.8**, in decreasing order of percentage commuter use.

Street Reference	Location	% Commuter Vehicles
A	Wellesley Avenue at station	77
G	Bathurst Walk between Syke Ings & Syke Cluan	67
K	Wellesley Avenue South of Bathurst Walk	38
C	Bathurst Walk East of Wellesley Avenue	33
B	Wellesley Avenue North of Bathurst Walk	28
J	Syke Ings South of Bathurst Walk	25
L	Somerset Way South of Wellesley Avenue	12
E	Bathurst Walk between Wellesley Avenue and Syke Ings	9
D	Wellesley Avenue / Bathurst Walk Junction	0
F	Syke Ings / Bathurst Walk Junction	0
H	Bathurst Walk West of Syke Ings	0
I	Syke Cluan South of Bathurst Walk	0

Table 2.8: Streets with Highest Percentage of Park and Ride Trips (Weekday 2011)

2.3.21 Not surprisingly, roads adjacent to the station have a very high proportion of parked vehicles making commuter trips. Wellesley Avenue, outside the station has 77% of parked cars making commuter journeys, which restricts space available for passenger drop-off.

Traffic Flows

2.3.22 Historic traffic flow counts have been used to inform the Iver transport assessment. No new surveys were carried out, because surveys by South Buckinghamshire District Council indicate that there has been negligible change in local traffic flows in recent years. Their 'Annual Monitoring Report 2009/2010' suggests that across 12 sites there was a 2.9% fall in traffic flow volume from 2007 to 2009.

2.3.23 We have estimated current flow volumes at five key road junctions, near to Iver station, by using previous 2004 counts factored to a 2011 base and by then applying accepted traffic growth rates. The appropriate traffic growth parameters are taken from the TEMPRO planning database and from the National Transport Model (NTM). The factors are shown in **Table 2.9**.

		Traffic Growth Factor: Average Weekday (from 2004 to 2011)				
Source of Traffic Growth	**Traffic Growth Detail**	**Motor Cycle**	**Car and Taxi**	**Light Goods Vehicle**	**Heavy Goods Vehicle**	**Public Service Vehicle**
TEMPRO 6.2	S Bucks Area: 11UE8 Iver/Iver Heath	1.0565	1.0565	—	—	—
NTM 1.1	Area: London	—	—	1.1706	1.0346	1.1758

Table 2.9: Traffic Growth Factors (2004 – 2011)

2.3.24 **Figure 2.2** shows 2011 base year traffic flows at the five key junctions in Richings Park. Flows are shown for the weekday AM peak hour 8am-9am. Current total traffic inflows at the five junctions are as follows:

- Junction 1 – 220 vehicles per hour;
- Junction 2 – 724 vehicles per hour;
- Junction 3 – 991 vehicles per hour;
- Junction 4 – 1009 vehicles per hour; and
- Junction 5 – 1132 vehicles per hour.

2.4 HIGHWAY NETWORK PERFORMANCE

2.4.1 We have compared the AM peak traffic flows in Richings Park with available link and junction capacities, to determine if the highway network operates effectively and with flows within capacity. All road links have ample spare capacity for the current traffic demand, when compared with link capacities calculated according to Design Manual for Roads and Bridges (DfT Volume 5, Section 1, Part 3, TA46/97 and TA79/99).

2.4.2 Junction operation has been assessed using TRL analysis programs: PICADY for major/minor priority layouts and ARCADY for roundabout layouts. All five junctions perform satisfactorily with flows well within capacity. **Table 2.10** indicates the maximum AM peak ratio of turning flow to capacity (RFC) at each junction, taking account of all traffic movements.

Junction Reference	Maximum AM RFC (%) Busiest Turning Movement
Junction 1 – Wellesley Avenue / Bathurst Walk	13.1%
Junction 2 – Thorney Lane South / Bathurst Walk	19.6%
Junction 3 – Thorney Lane South / Bison Works Access	7.6%
Junction 4 – Thorney Lane North / Court Lane	13.5%
Junction 5 – Thorney Lane South / Richings Way	50.5%

Table 2.10: Performance of Key Road Junctions – AM Peak 2011

2.4.3 Each of the junctions operates satisfactorily, with traffic flows well within capacity. The busiest junction is at Thorney Lane South / Richings Park roundabout, which currently has a maximum RFC of 51%. There are no significant traffic queues or delays at any of the junctions.

2.5 ROAD ACCIDENTS

2.5.1 An examination has been made of the current road safety situation near to Iver station. We obtained injury accident records from Buckinghamshire CC, covering all roads in the Richings Park area, for a 5-year period 2006-2010, inclusive. The extent of the analysis covers all roads within Richings Park, together with Richings Way west of Thorney Lane South, as far as the golf course and Thorney Lane, as far north as Ridgeway Trading Estate. The extent of the analysis is shown in **Figure 2.3**. A summary of injury accidents, by year and severity is provided in **Table 2.11**.

	Number of Injury Accidents by Severity			
Year	**Slight**	**Serious**	**Fatal**	**All Severities**
2006	2	0	0	2
2007	7	1	1	9
2008	3	0	0	3
2009	4	0	0	4
2010	2	2	0	4
5-Year Total	18	3	1	22

Table 2.11: Recorded Injury Accidents 2006 – 2010, Inclusive

2.5.2 There has been an average of 4.4 injury accidents per year over the five years to 2010, with a below-average occurrence each year since 2008. This is a relatively low rate of accidents across the 2km area of analysis. The majority of accidents, 82%, entailed slight casualties only, with 14% serious and 5% fatal.

2.5.3 Most of the recorded accidents arose on Richings Way and North Park, away from the area of influence of Iver station traffic. On the critical roads used for accessing the station, namely Bathurst Walk, Wellesley Avenue and Thorney Lane, there were nine injury accidents in five years, giving a low average rate of 1.8 accidents per year. Of these, 89% were slight casualties, 11% serious and 0% fatal.

2.5.4 We consider that there is not currently a significant injury accident problem in the study area. Of the nine accidents on the critical streets, five occurred on the works accesses at Bison Concrete and Court Lane, to the north of the railway and away from the station access routes.

3 BACKGROUND CONDITIONS AT 2016

3.1 INTRODUCTION

3.1.1 The assessment of Crossrail impact is for scheme opening year 2016. It is necessary to understand the 'background' transport conditions that will prevail at opening, before the scheme is introduced. This section predicts likely passenger demand and traffic flows that will arise without Crossrail at 2016.

3.2 2016 RAIL SERVICES WITHOUT CROSSRAIL

3.2.1 It is uncertain whether or not there would be a significant change in passenger or freight train movements at Iver, or any change in wider rail infrastructure, without Crossrail. We assume, therefore, that service quality, capacity and frequency would remain the same as at 2011, as described in paragraph 2.2.7.

3.3 2016 PASSENGER DEMAND WITHOUT CROSSRAIL

3.3.1 Forecasts of passenger demand at Iver, at 2016, have been derived from the 'Crossrail Suburban Demand Forecasts' for 2026.

3.3.2 **Table 3.1** shows the predicted change in background demand in the AM period 7am-10am, at 2016, compared with original demand at 2001.

	AM Passenger Trip Movements			
Trip Direction	**2001 Observed**	**2016 Forecast**	**Change 2016-2001**	**% Change 2016 from 2001**
Boarding	100	230	+130	+130%
Alighting	50	40	-10	-20%
2-Way	150	270	+120	+80%

Table 3.1: Forecast Passenger Demand at Iver, 2016 without Crossrail

3.3.3 The forecasts predict that there will be an 80% increase in passengers at Iver by AM 2016, without Crossrail. This change will comprise a 130% increase in boarding passengers and a 20% decrease in alighting passengers.

New Background Passenger Demand – AM Peak Hour 2016

3.3.4 We have assessed how many additional passengers will use Iver station during the busiest AM peak hour, in 2016, without the Crossrail scheme. Assuming the same

profile of AM 3-hour demand as at present, there will be 51% of new demand during the peak hour, equating to +66 passengers boarding and -5 passengers alighting, in the peak hour.

3.3.5 We estimate that the additional 66 boarding passengers in the AM peak at 2016 will be spread amongst the current 2-3 peak-hour trains at Iver. This will give an additional demand of between 22 and 33 passengers per train, before Crossrail is introduced.

3.3.6 If we apply the current modal split to the peak hour boarding passengers, there will be a division of 2016 non-Crossrail demand between modes as shown in **Table 3.2**.

		New 2016 AM Peak Hour Demand Without Crossrail	
Movement	**User Type**	**No. Passengers**	**% Passengers**
Boarding	Pedestrian	34	52.1%
	Vehicle Drop-Off	2	3.6%
	Park and Ride	27	41.2%
	Cyclist	2	3.0%
	All	66	100.0%

Table 3.2: Modal Split of New AM Peak Hour Passengers without Crossrail

3.3.7 It can be seen from Table 3.2 that there would be an AM peak hour increase in car traffic arriving at Iver station of 29 vehicles, in 2016 without Crossrail. Most of these vehicles (27) will represent park and ride trips, whereby cars will park in unregulated on-street spaces. This traffic would disperse over several different routes accessing Richings Park and would be unlikely to concentrate at any particular junction.

3.4 2016 Traffic Movements Without Crossrail

3.4.1 We have predicted background growth in traffic flows on roads around Richings Park, without Crossrail in operation. Growth is assumed to be in line with TEMPRO and NTM forecasts.

3.4.2 **Table 3.3** shows growth factors that have been applied to 2011 existing traffic flows, in order to derive 2016 background flows.

		Traffic Growth Factor: Average Weekday (from 2004 to 2011)				
Source of Traffic Growth	**Traffic Growth Detail**	**Motor Cycle**	**Car and Taxi**	**Light Goods Vehicle**	**Heavy Goods Vehicle**	**Public Service Vehicle**
TEMPRO 6.2	S Bucks Area: 11UE8 Iver/Iver Heath	1.0333	1.0333	—	—	—
NTM 1.1	Area: London	—	—	1.1170	1.0281	1.0970

Table 3.3: Traffic Growth Factors (2011 – 2016)

3.4.3 The predicted background flows at the five key junctions close to Iver station are shown in **Figure 3.1** for the weekday AM peak hour 8am-9am, 2016. These forecast total traffic inflows at the five junctions, without Crossrail, are as follows:

- Junction 1 – 229 vehicles per hour; (+4.1% increase from 2011);
- Junction 2 – 747 vehicles per hour; (+3.2% increase from 2011);
- Junction 3 – 1025 vehicles per hour; (+3.4% increase from 2011);
- Junction 4 – 1041 vehicles per hour; (+3.2% increase from 2011); and
- Junction 5 – 1182 vehicles per hour; (+4.4% increase from 2011).

3.4.4 On average there is expected to be an increase in AM background traffic flows of around +3.5% from 2011 to 2016, without Crossrail.

3.4.5 Further to the above increase in AM peak hour traffic flows, there will be around 29 additional cars arising from new boarding passengers at 2016. It is not expected that these additional cars will have any impact upon network operation.

3.5 IMPACT AT 2016 WITHOUT CROSSRAIL

3.5.1 The increase in rail demand at Iver, of around 33 passengers per train in the AM peak hour, could occupy a significant amount of capacity on the existing train service, without Crossrail in place. However, the demand is unlikely to exceed current capacity.

3.5.2 We judge that the small increase in overall background traffic at 2016, without Crossrail, will not have a significant impact in terms of on-street parking, network operation, congestion, delay or safety.

3.6 LAND USE PLANNING CONTEXT

3.6.1 We have reviewed potential land use plans for the vicinity of Iver, to determine if there are changes that may affect travel patterns at Iver station. Policies are contained in the South Buckinghamshire Local Development Framework Core Strategy Development Plan Document (adopted February 2011). This Development Plan covers the period to 2026.

3.6.2 In terms of residential development, there is a target increase of 2,200 to 2,800 new homes across South Buckinghamshire District, to 2026. Of these, some 1,150 homes, in total, are planned across secondary zones (which include Iver Heath and Iver), tertiary zones (which include Richings Park) and rural zones (which include Wood lane Close). However, no specific housing allocations are designated for Iver, Iver Heath, Richings Park, or South of Iver Opportunity Area, which are the localities closest to Iver station.

3.6.3 In terms of employment development, the Development Plan Core Policy 16 identifies four sites within the South of Iver opportunity Area, where changes within the designated employment land use could be considered. These sites are as follows:

- Court Lane (Green Belt land, on the east side of Thorney Lane South);
- Thorney Business Park (formerly Bison Cement, on the west side of Thorney Lane South);
- Ridgeway Trading Estate (on the west side of Thorney Lane North); and
- Aggregate Industries (on the north side of Thorney Mill Road).

3.6.4 The core policy for all four of these sites is to preclude residential development and to consider only changes to employment uses that would result in a reduction in heavy goods vehicle movements, when compared with current traffic volumes.

3.6.5 Overall, there are no significant land use policies, or site proposals, within the Development Plan that are expected to give rise to significant changes in trip patterns at Iver station.

4 IMPACT OF CROSSRAIL AT 2016

4.1 INTRODUCTION

4.1.1 We have interpreted the growth in passenger demand that is expected at Iver, once Crossrail is in operation. We have then assessed whether, or not, it will have a significant impact on local transport conditions. This section summarises the likely impacts.

4.2 2016 RAIL AND STATION INFRASTRUCTURE WITH CROSSRAIL

4.2.1 Crossrail scheme engineering modifications are planned at Iver, but these are not expected to affect the service level or passenger demand at the station. These modifications are understood to include:

- Lowering of the track and platforms to accommodate overhead electrification equipment beneath Thorney Lane Bridge;
- Enhancement of the goods loop between Iver and West Drayton; and
- Undetermined improvements to the station layout, passenger facilities and access arrangements.

4.2.2 There are not expected to be major changes to station layout or passenger facilities at Iver station, as noted in the Network Rail press release of 17th May 2011, which indicated that on the section west of Paddington, at Iver:

- The station already meets most Crossrail requirements; and
- Platform extensions will be introduced.

4.3 2016 RAIL SERVICES WITH CROSSRAIL

4.3.1 CRL will introduce new rolling stock, comprising 10-car, 200m-length, electric trains for the Crossrail service. The new trains will require extension of platforms 1, 2, 3 and 4 at Iver station.

4.3.2 The proposed service headway will vary along different sections of the route, but will provide a minimum increase in frequency of peak-time trains stopping at Iver, from 2-3 trains per hour at present to 4 trains per hour with Crossrail. The scheme will give a peak, service headway of 15 minutes at Iver.

4.3.3 On the basis of the original Crossrail Environmental Statement, 2005 (Route Window W14, Iver Station, Table 14.1) and evidence in the Crossrail Business Case Update, July 2011 (Table 1), it is anticipated that Crossrail will reduce the travel time between Iver and central London by around 20 minutes. This time saving will partly be a

consequence of faster journey time, but also a reflection of improved service connectivity within the City Centre.

4.4 2016 Passenger Demand With Crossrail

4.4.1 Forecasts of passenger demand at Iver, once Crossrail has been built, are contained in 'Crossrail Suburban Demand Forecasts' for 2026. These forecasts have been interpreted to give equivalent, with-scheme demand at 2016.

4.4.2 **Table 4.1** shows the estimated change in demand in the AM period 7am-10am, compared with the no Crossrail situation at 2016.

	AM Passenger Trip Movements			
Trip Direction	**2016 Forecast without Crossrail**	**2016 Forecast with Crossrail**	**Change with Crossrail – without Crossrail**	**% Change with Crossrail – without Crossrail**
Boarding	230	370	+140	+61%
Alighting	40	60	+20	+50%
2-Way	270	430	+160	+59%

Table 4.1: Forecast Passenger Demand at Iver, 2016 with Crossrail

4.4.3 The forecasts predict that Crossrail will cause a 59% increase in passengers at Iver, in the AM period, compared with the no-scheme situation at 2016. This change will comprise a 61% increase in boarding passengers and a 50% increase in alighting passengers.

New Crossrail Passenger Demand – AM Peak Hour 2016

4.4.4 Following from the analysis of additional AM peak hour passengers at 2016, without Crossrail, (see paragraphs 3.2.4 to 3.2.7), we have predicted how many new peak hour passengers will use Iver station with the Crossrail scheme. Assuming the same profile of AM 3-hour demand as at present, there will be 51% of new demand during the peak hour, equating to +71 passengers boarding and +10 passengers alighting, in the peak hour. The proportion of passengers travelling in the peak hour may, in reality, be less than 51%, as more frequent rail services are likely to result in a more even spread of demand.

Total New Passenger Demand – AM Peak Hour 2016

4.4.5 The total new AM peak hour passenger movements at 2016, comprising background plus Crossrail demand will be as follows:

- Boarding: without Crossrail (+66) + with Crossrail (+71) = +137;
- Alighting: without Crossrail (-5) + with Crossrail (+10) = +5;
- Total 2-way: without Crossrail (+61) + with Crossrail (+81) = +142;

4.4.6 In the AM peak hour at 2016, 137 new boarding passengers will be spread amongst the proposed, 4 peak-hour trains at Iver. This will give an additional demand, above existing, of 34 passengers per 10-car train, or 3-4 passengers per carriage, once Crossrail is operating.

4.4.7 If we apply the current modal split to the peak hour boarding passengers, there will be a division of total new 2016 demand between modes as shown in **Table 4.2**.

		New 2016 AM Peak Hour Demand With Crossrail	
Movement	**User Type**	**No. Passengers**	**% Passengers**
Boarding	Pedestrian	71	52.1%
	Vehicle Drop-Off	5	3.6%
	Park and Ride	56	41.2%
	Cyclist	4	3.0%
	All	137	100.0%

Table 4.2: Modal Split of New AM Peak Hour Passengers with Crossrail

4.4.8 Table 4.2 indicates that there would be an AM peak hour increase in car traffic arriving at Iver station of 61 vehicles, in 2016 with Crossrail. Most of these vehicles (56) will be park and ride trips, with cars parking in unregulated on-street spaces. This traffic would disperse over several routes and would be unlikely to concentrate at any particular junction.

Total Passenger Demand – AM Peak Hour 2016

4.4.9 Total AM peak hour demand at Iver, with existing and new 2016 passenger numbers combined, will be as follows:

- Boarding: existing (89) + without Crossrail (+66) + with Crossrail (+71) = 226;
- Alighting: existing (20) + without Crossrail (-5) + with Crossrail (+10) = 25;
- Total 2-way: existing (109) + without Crossrail (+61) + with Crossrail (+81) = 251;

4.4.10 We calculate that, overall, there will be 226 boarding passengers in the AM peak hour at 2016.

Total Parking Demand – AM Period 2016

4.4.11 We have estimated the total 2016 car parking demand at Iver, with Crossrail, by taking the predicted 3-hour AM total passenger demand, from Table 4.1, and applying the existing modal split. Results are as shown in **Table 4.3**.

		Total 2016 AM 3-Hour Demand With Crossrail	
Movement	**User Type**	**No. Passengers**	**% Passengers**
Boarding	Pedestrian	193	52.1%
	Vehicle Drop-Off	13	3.6%
	Park and Ride	152	41.2%
	Cyclist	11	3.0%
	All	370	100.0%

Table 4.3: Modal Split of Total AM Passengers with Crossrail

4.4.12 Overall, at 2016, we calculate that there will be around 152 cars seeking park and ride opportunities at Iver.

4.4.13 Demand for cycle parking is expected to be relatively low, amounting to some 11 spaces at 2016, if current patterns of mode share continue.

4.5 2016 Traffic Movements Without Crossrail

4.5.1 We have analysed the possible increase in traffic flows that could occur at key junctions in Richings Park, if Crossrail is implemented. Background flows for the AM peak hour, at 2016, have been taken from Figure 3.1, as summarised in paragraph 3.4.3. To these flows, we have added the expected new passenger movements that are likely to access the station by car, as summarised in paragraph 4.3.8. Our assumed distribution of the 61 cars arriving at Richings Park is as shown in **Figure 4.1**, as percentages and in **Figure 4.2**, as vehicles.

4.5.2 The assumed distribution of car arrivals at Richings Park is based on our judgement of the likely spread of demand and use of parking at adjacent stations. The percentage distribution is as follows:

- 40% from Iver and Iver Heath (i.e. from North);
- 30% from West Drayton (i.e. from East); and
- 30% from Langley (i.e. from West).

4.5.3 **Figure 4.3** shows the predicted AM peak hour (8am-9am) traffic flows at five key junctions at 2016, with Crossrail demand included.

4.5.4 Forecast total traffic inflows at the five junctions, with Crossrail, are as follows:

- Junction 1 – 290 vehicles per hour; (+26.6% increase from 2016 no Crossrail);
- Junction 2 – 790 vehicles per hour; (+5.8% increase from 2016 no Crossrail);
- Junction 3 – 1050 vehicles per hour; (+2.4% increase from 2016 no Crossrail);
- Junction 4 – 1066 vehicles per hour; (+2.4% increase from 2016 no Crossrail); and
- Junction 5 – 1200 vehicles per hour; (+1.5% increase from 2016 no Crossrail).

4.5.5 There would be a much greater increase in traffic at the Wellesley Avenue / Bathurst Walk junction, than elsewhere, because most park and ride movements would converge at this point. The predicted increase of 27% is a 'worst-case' estimate, since many cars would probably park on street before reaching this junction.

4.6 IMPACT AT 2016 WITH CROSSRAIL

Highway Operation

4.6.1 Operation of the key road junctions at 2016 AM peak, with Crossrail, has been assessed using PICADY and ARCADY. **Table 4.4** shows the maximum AM peak ratio of turning flow to capacity (RFC) at each junction, taking account of all traffic movements.

Junction Reference	**Maximum AM RFC (%)** **Busiest Turning Movement**
Junction 1 – Wellesley Avenue / Bathurst Walk	16.6%
Junction 2 – Thorney Lane South / Bathurst Walk	20.5%
Junction 3 – Thorney Lane South / Bison Works Access	8.5%
Junction 4 – Thorney Lane North / Court Lane	15.1%
Junction 5 – Thorney Lane South / Richings Way	53.8%

Table 4.4: Performance of Key Road Junctions – AM Peak 2016 with Crossrail

4.6.2 It is clear from Table 4.4 that traffic flows associated with the Crossrail scheme at Iver will not have an adverse impact on network performance. All key junctions would

experience maximum RFC well below 100%, which indicates considerable spare capacity. The highest turn RFC would be 54% at the Thorney Lane / Richings Way roundabout

Road Safety

4.6.3 We do not consider that an additional 61 vehicles accessing Richings Park during the AM peak hour at 2016 will have a significant impact upon road safety. There is not an existing accident problem on roads adjacent to the station, so the small increase in traffic will not have an adverse effect.

Car and Cycle Parking

4.6.4 With Crossrail, there could be around 152 cars seeking park and ride opportunities at Iver. In Table 2.1, we estimated that the total amount of on-street unregulated parking capacity, available in Richings Park, is between 219 and 252 spaces, depending upon walking time. Therefore, the maximum parking demand at 2016 could occupy between 60% and 69% of the available capacity.

4.6.5 It is likely that such a significant demand for on-street parking will be an issue for local residents. However, as there is very little regulation of parking on roads around the station, this demand is unlikely to have an adverse effect upon safety, transport access, or infringement.

4.6.6 Demand for cycle parking is expected to be relatively low, amounting to some 11 spaces at 2016, if current patterns of mode share continue. This demand is slightly in excess of the current 10-space cycle rack at Iver station.

4.6.7 It is expected that cycle storage facilities at Iver station will be upgraded as part of the Crossrail scheme, in line with the On-Network Functional Requirements (ONFR1076), as defined by CRL. The guidelines require cycle storage to be provided in accordance with best practice, which will entail renewing the facility. However, significant extra cycle storage capacity should not be needed, given that forecast cycling demand will barely exceed the current storage limit.

Rail Demand and Capacity

4.6.8 We estimate that, with Crossrail, there will be an AM peak hour demand of 226 boarding passengers. They will be spread amongst 4 peak-hour trains at Iver. This will give a total demand of 56 passengers per 10-car train, or 5-6 passengers per carriage, once Crossrail is introduced.

4.6.9 We judge that the total AM peak hour passenger demand can be accommodated by the proposed Crossrail service.

5 THE NEED FOR MITIGATION OF CROSSRAIL IMPACTS

5.1 INTRODUCTION

5.1.1 This appraisal has examined current travel patterns and available infrastructure around Iver rail station, at 2011. It has considered likely changes in background travel movements at 2016 and estimated the additional and overall demand and capacity associated with the Crossrail scheme.

5.1.2 We have assessed the likely impact of Crossrail, in terms of highway operation, car parking, road safety and rail passenger demand and capacity.

5.2 SIGNIFICANCE OF CROSSRAIL IMPACTS

5.2.1 The findings from the appraisal do not indicate that Crossrail will have a significant adverse impact at Iver station.

5.2.2 The highway network and junctions are likely to perform satisfactorily, with AM peak flows within available capacity. Road safety is unlikely to worsen as a consequence of the small traffic increase associated with the scheme.

5.2.3 There will be a fairly large demand for on-street car parking, once Crossrail is operational. This demand can be accommodated within the available unregulated spaces on residential roads in Richings Park. Nevertheless, it may be necessary to allay residents' concerns about increased parking activity.

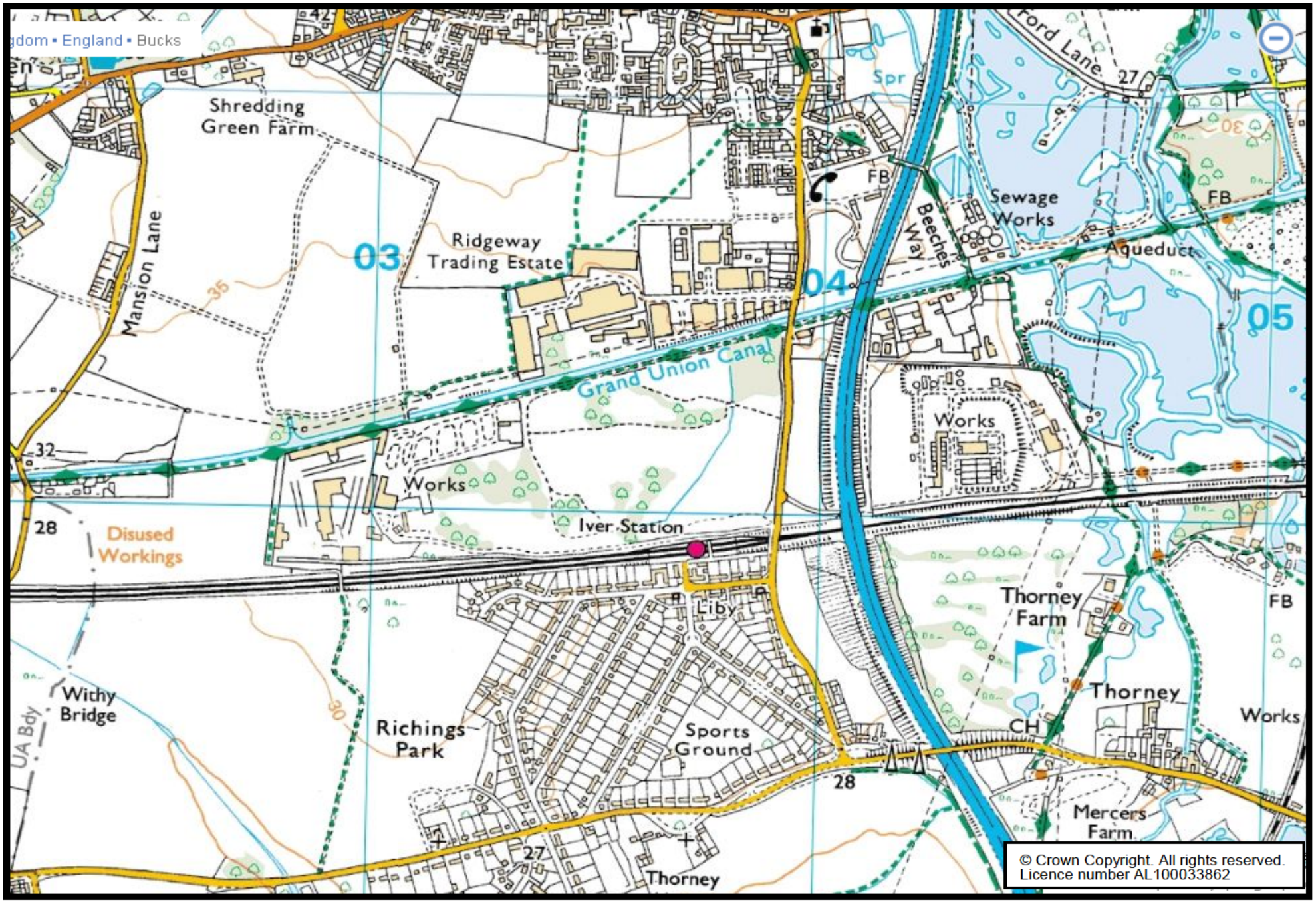
5.2.4 It should be possible for the proposed scheme to handle the expected passenger demand arising from Crossrail at Iver.

5.3 NEED FOR MITIGATION

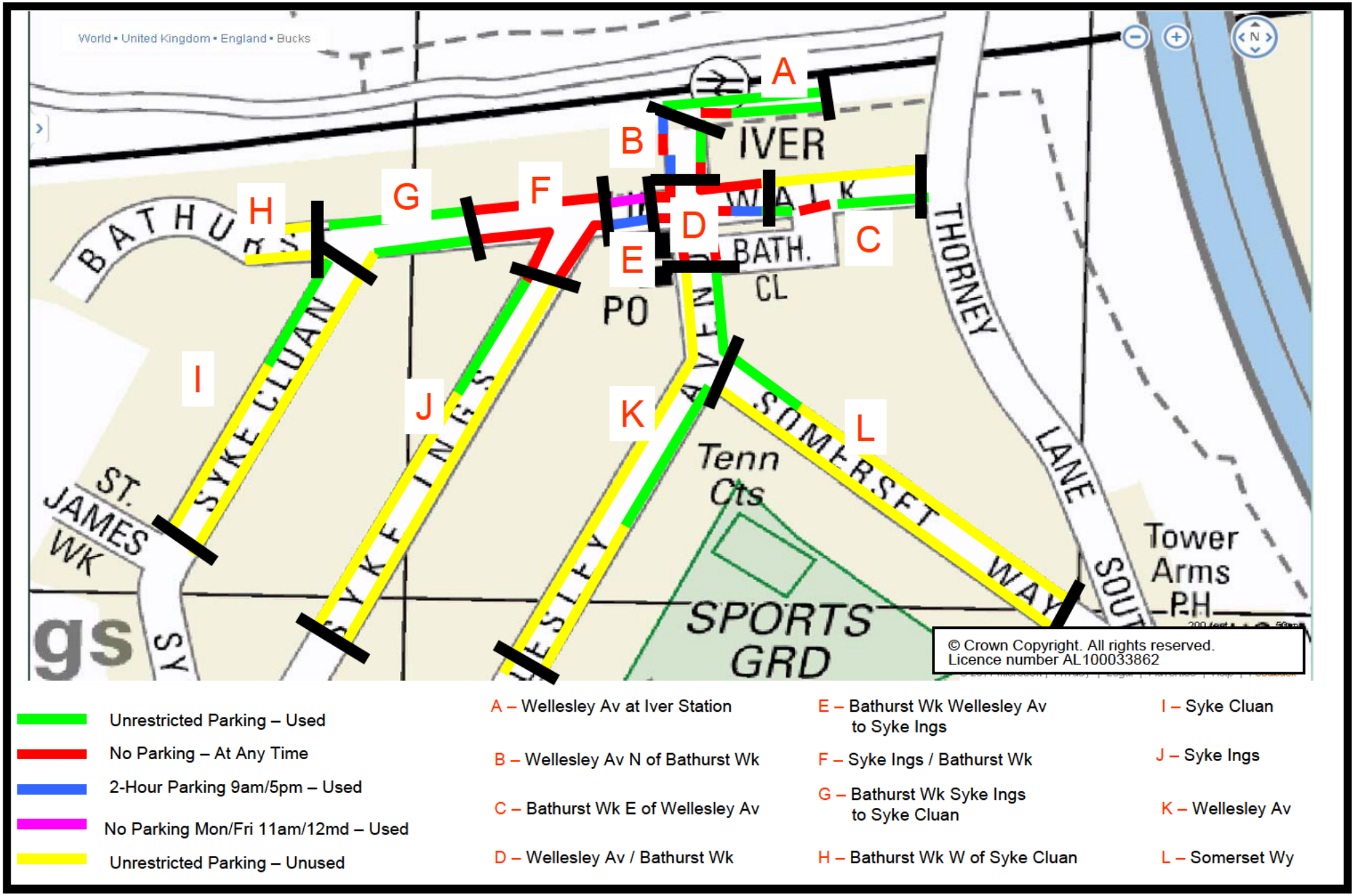
5.3.1 On the basis of this appraisal, we do not consider that there will be a need for any mitigation of the impacts of the Crossrail scheme at Iver station.

5.3.2 It is possible that there could be some displacement of passenger demand between adjacent stations on the Crossrail scheme (i.e. between Iver, Langley and West Drayton), depending upon available car parking spaces, parking regulations and bus and cycling facilities. It is beyond the scope of this appraisal to consider such displacement, but the interaction may need to be considered in due course.

APPENDIX A - FIGURES



Location of Iver Railway Station, South Buckinghamshire **Figure 1.1**



On Street Car Parking at Iver Railway Station, South Buckinghamshire **Figure 2.1**

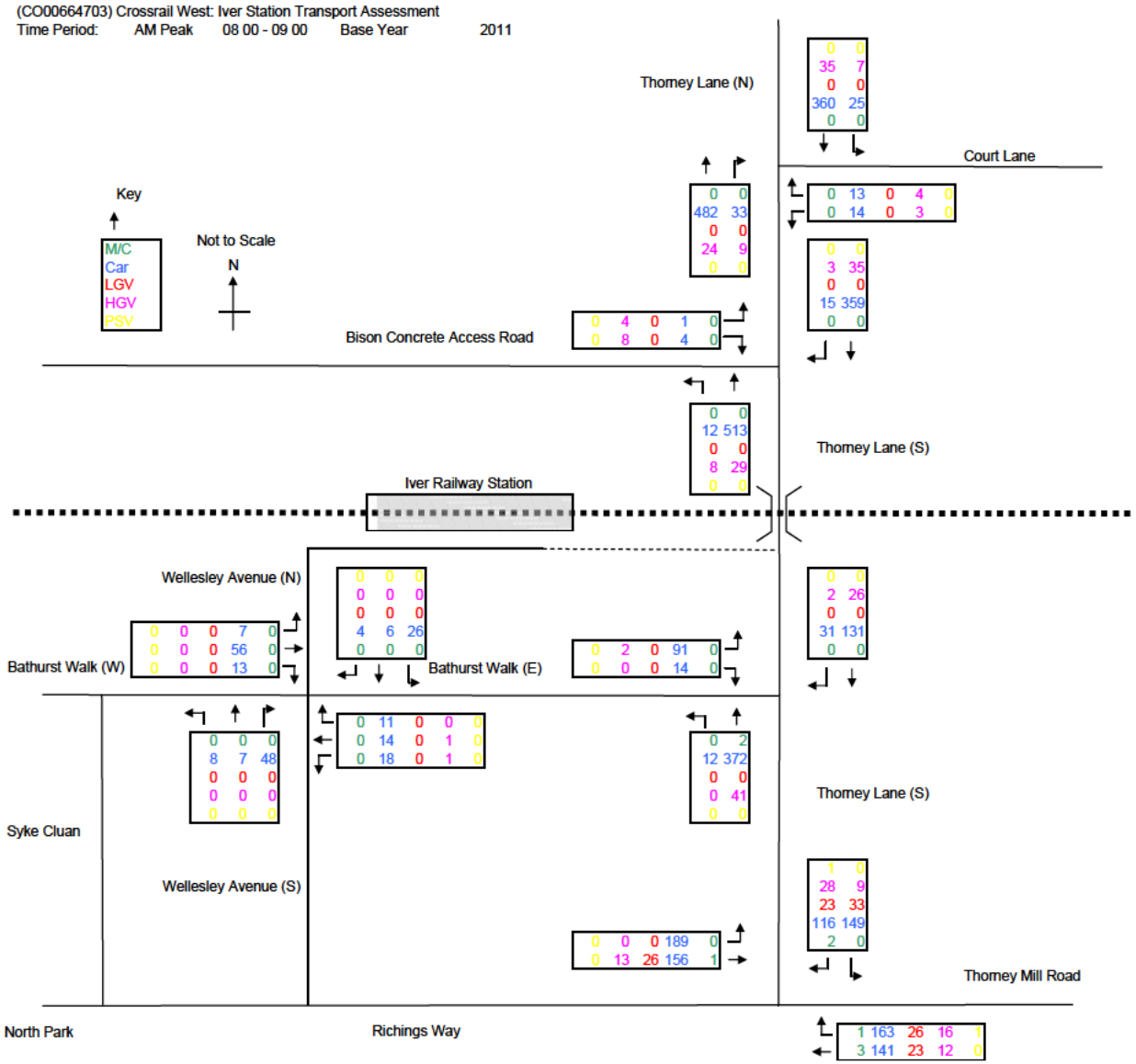
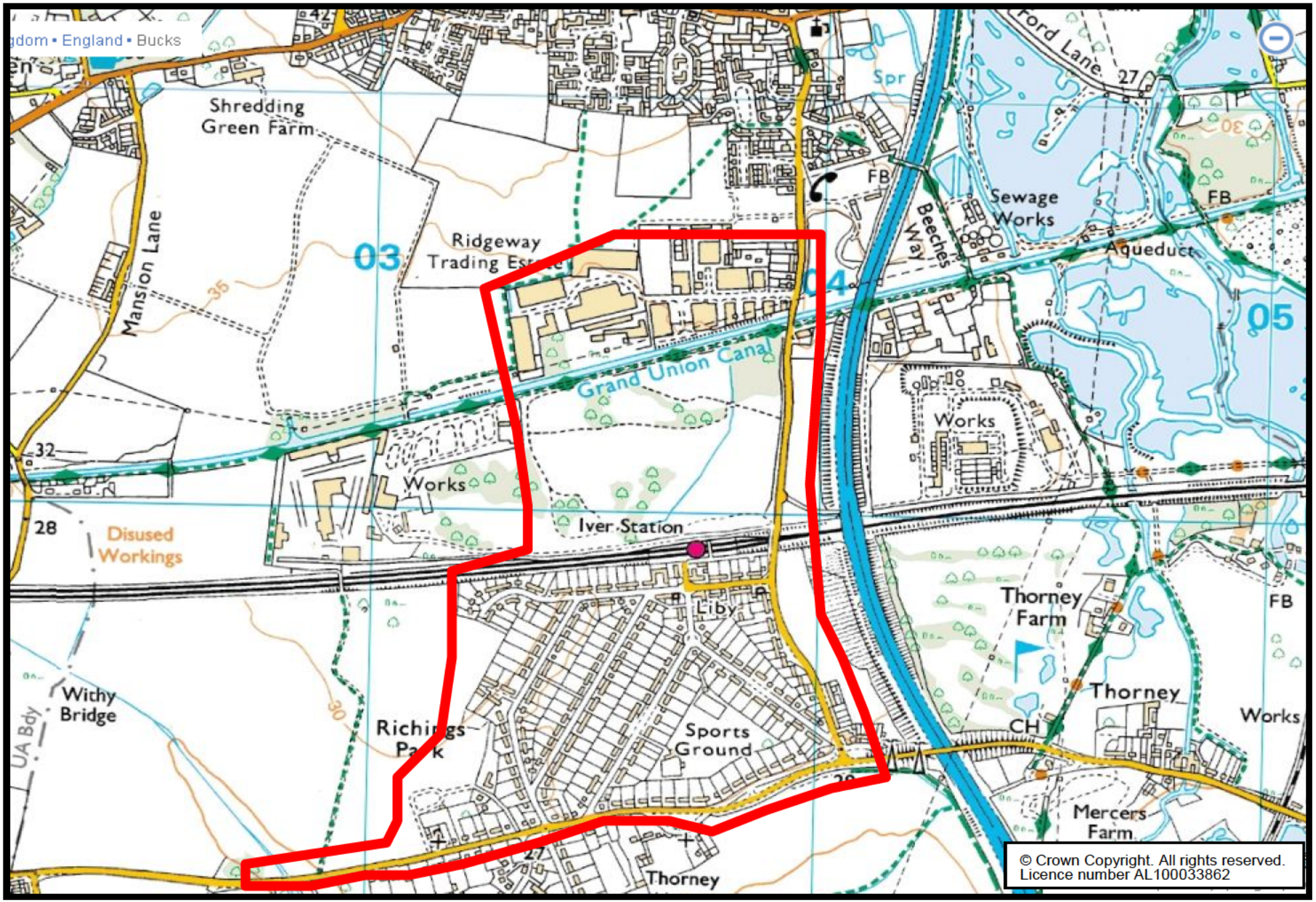

(CO00664703) Crossrail West: Iver Station Transport Assessment
Time Period: AM Peak 08 00 - 09 00 Base Year 2011
Key
M/C
Car
LGV
HGV
PSV
Not to Scale
N
Thorney Lane (N)
Court Lane
Bison Concrete Access Road
Thorney Lane (S)
Iver Railway Station
Wellesley Avenue (N)
Bathurst Walk (W)
Bathurst Walk (E)
Thorney Lane (S)
Syke Cluan
Wellesley Avenue (S)
Thorney Mill Road
North Park
Richings Way

Figure 2.2



Extent of Injury Accident Analysis 2006-2010 **Figure 2.3**

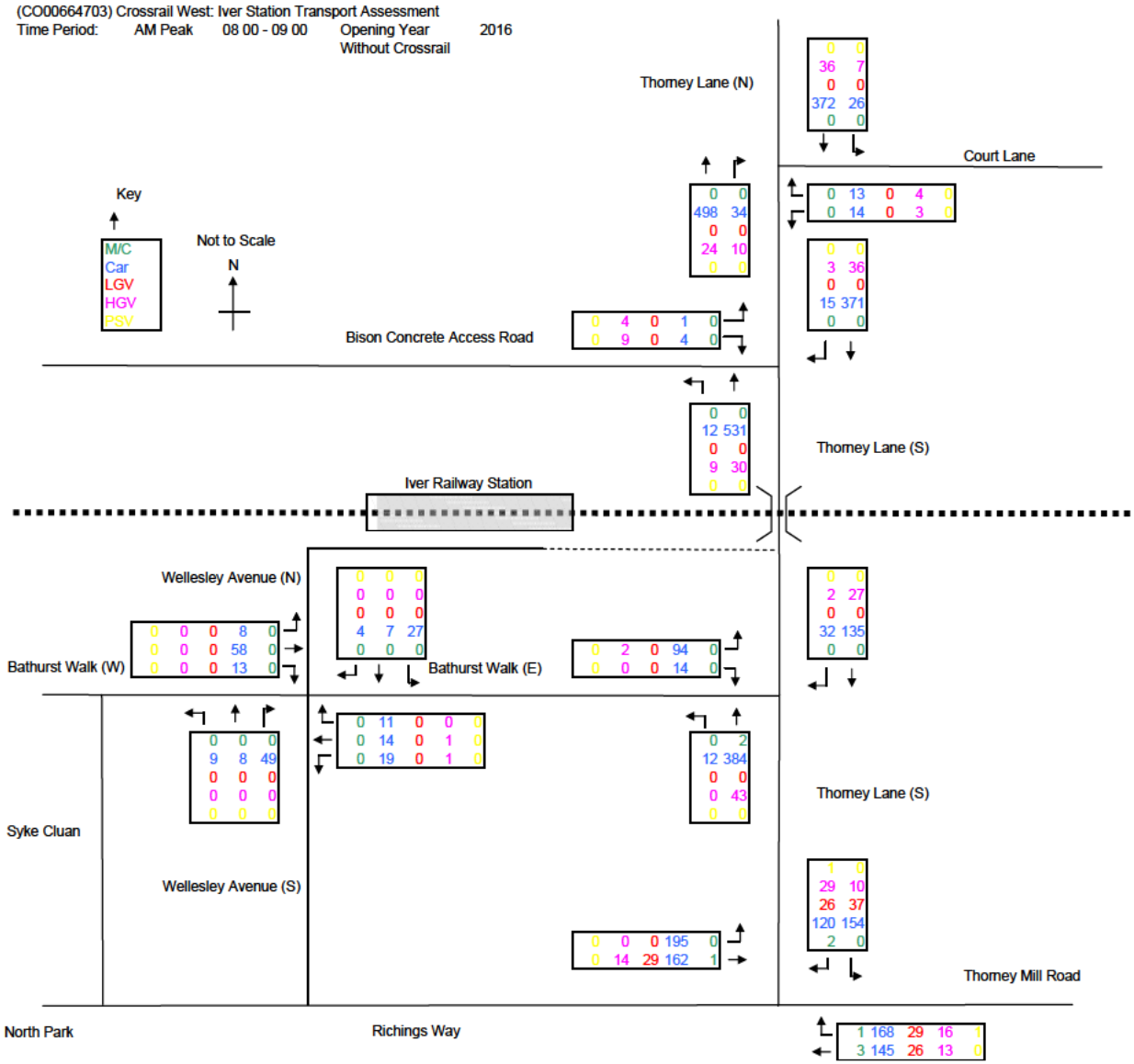

(CO00664703) Crossrail West: Iver Station Transport Assessment
Time Period: AM Peak 08 00 - 09 00 Opening Year 2016
Without Crossrail
Key
M/C
Car
LGV
HGV
PSV
Not to Scale
N
Thorney Lane (N)
Court Lane
Bison Concrete Access Road
Thorney Lane (S)
Iver Railway Station
Wellesley Avenue (N)
Bathurst Walk (W)
Bathurst Walk (E)
Thorney Lane (S)
Syke Cluan
Wellesley Avenue (S)
Thorney Mill Road
North Park
Richings Way

Figure 3.1

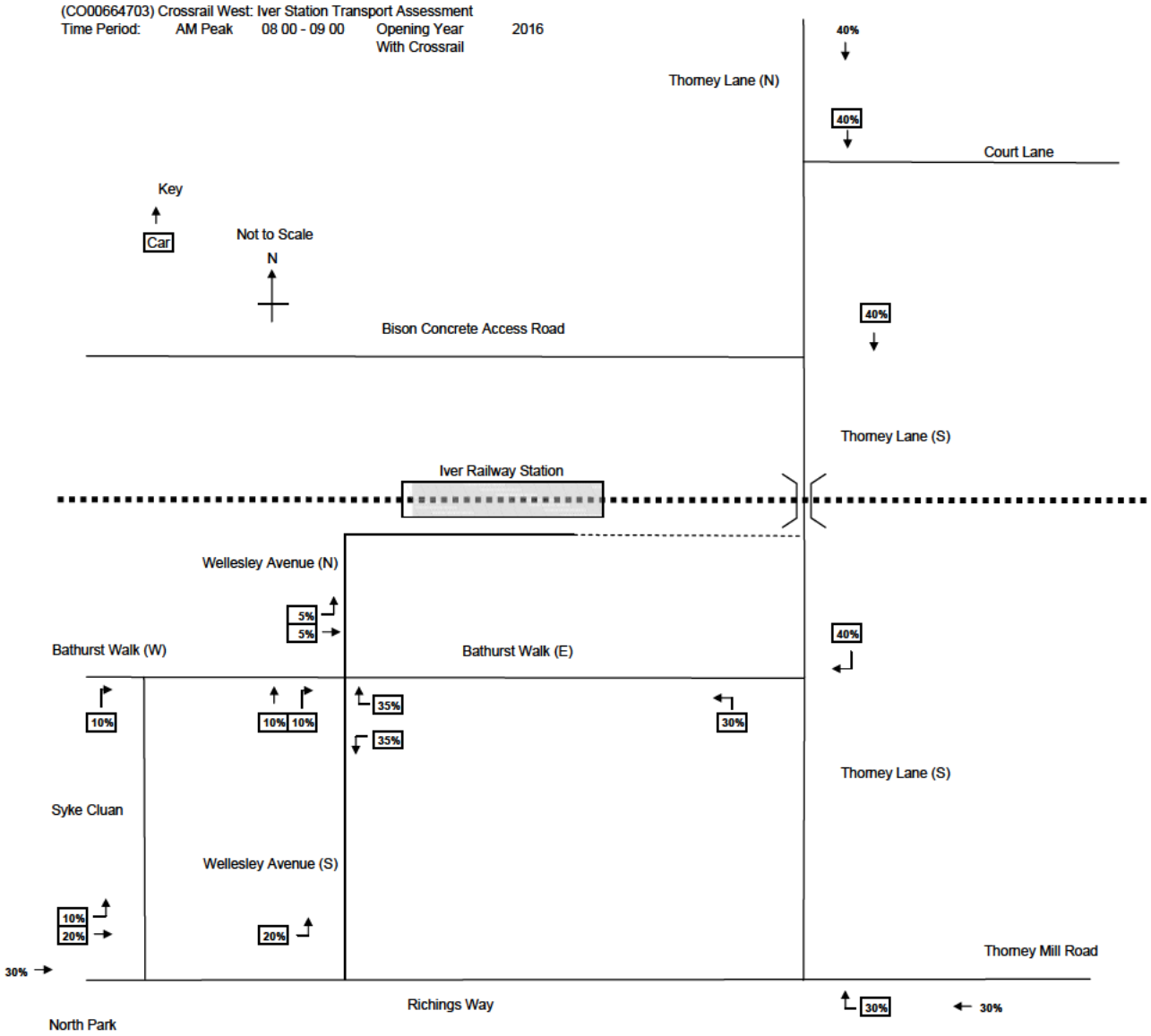

(CO00664703) Crossrail West: Iver Station Transport Assessment
Time Period: AM Peak 08 00 - 09 00 Opening Year With Crossrail 2016
Key
Car
Not to Scale
N
Thorney Lane (N)
Court Lane
Bison Concrete Access Road
Thorney Lane (S)
Iver Railway Station
Wellesley Avenue (N)
Bathurst Walk (W)
Bathurst Walk (E)
Thorney Lane (S)
Syke Cluan
Wellesley Avenue (S)
Thorney Mill Road
Richings Way
North Park
40%
5%
10%
35%
30%
20%

Figure 4.1

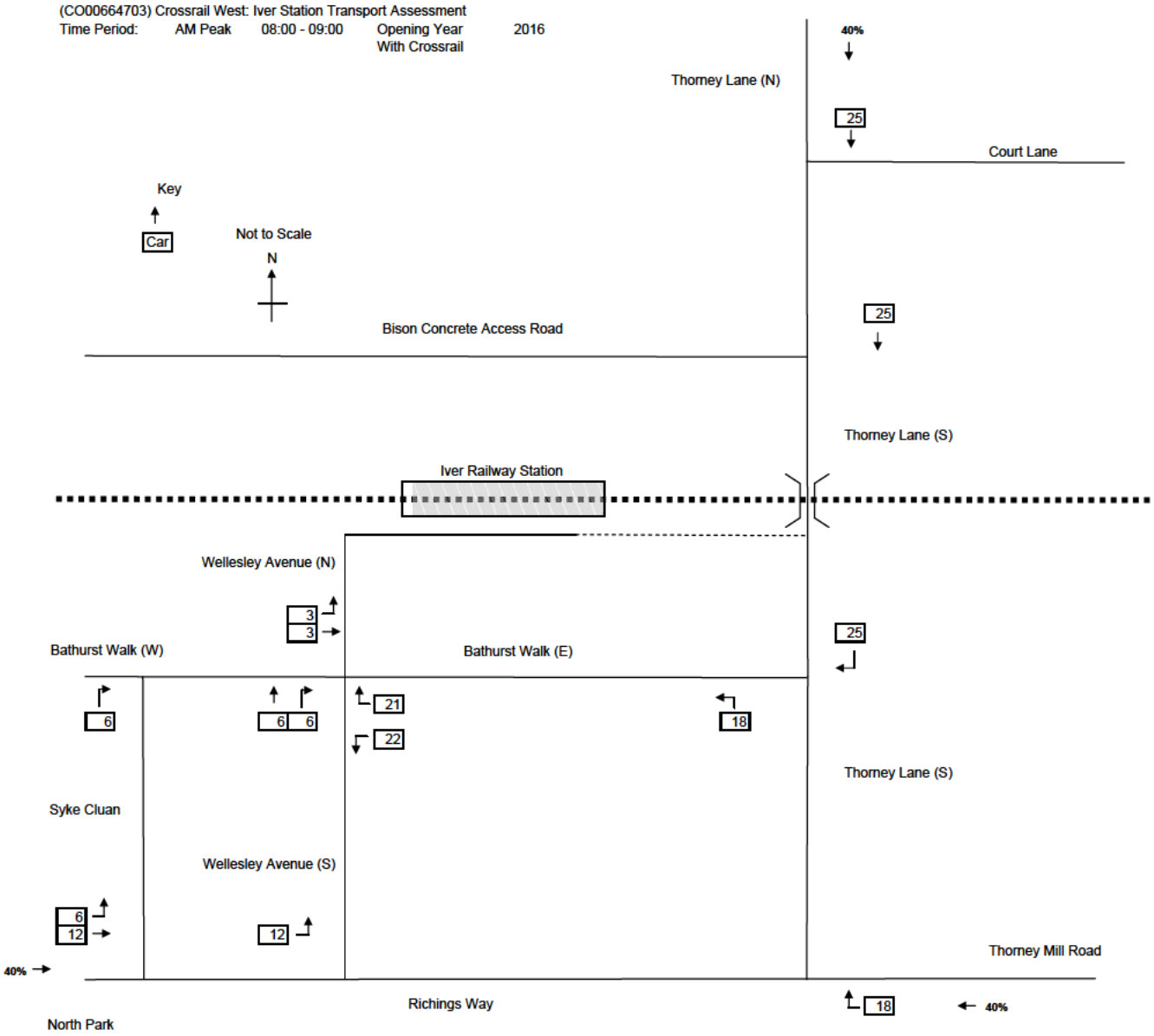
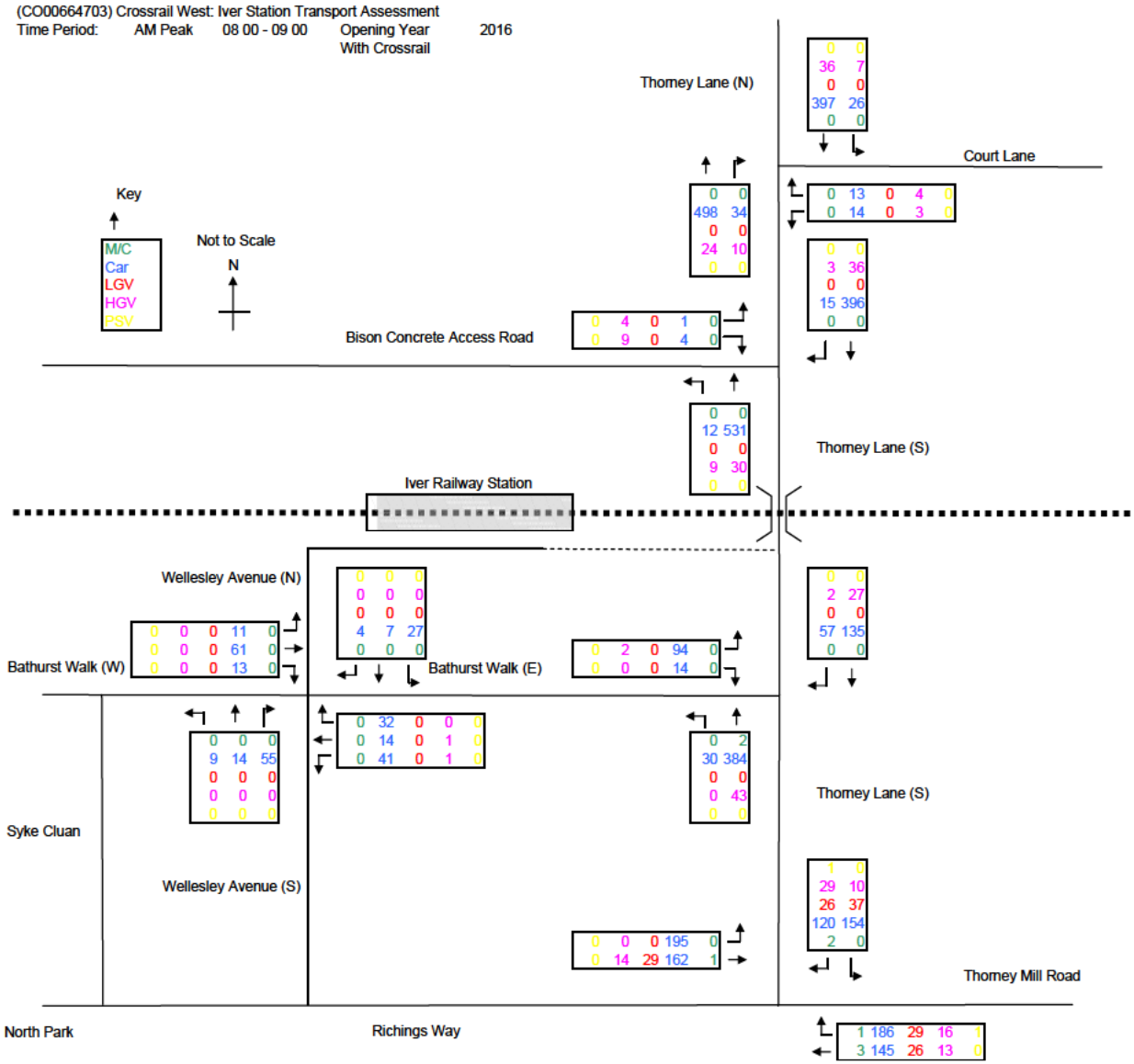

(CO00664703) Crossrail West: Iver Station Transport Assessment
Time Period: AM Peak 08:00 - 09:00 Opening Year With Crossrail 2016
Key
Car
Not to Scale
N
Thorney Lane (N)
40%
25
Court Lane
Bison Concrete Access Road
25
Thorney Lane (S)
Iver Railway Station
Wellesley Avenue (N)
3
3
Bathurst Walk (W)
Bathurst Walk (E)
25
6
6
6
21
22
18
Thorney Lane (S)
Syke Cluan
Wellesley Avenue (S)
6
12
12
Thorney Mill Road
40%
Richings Way
18
40%
North Park

Figure 4.2


(CO00664703) Crossrail West: Iver Station Transport Assessment
Time Period: AM Peak 08 00 - 09 00 Opening Year With Crossrail 2016
Key
M/C
Car
LGV
HGV
PSV
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Thorney Lane (N)
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Bathurst Walk (W)
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Thorney Lane (S)
Syke Cluan
Wellesley Avenue (S)
Thorney Mill Road
North Park
Richings Way

Figure 4.3