

Redevelopment of the Former Peel Centre, Colindale

Transport Statement Addendum

May 2015



PC16

TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	DESCRIPTION OF PROPOSALS	2
3	EXISTING TRIP GENERATION	5
4	FUTURE TRIP GENERATION – MPS SITE.....	9
5	RESIDENTIAL TRIP GENERATION	10
6	TOTAL TRIP GENERATION	13
7	HIGHWAY ASSESSMENT	15
8	PUBLIC TRANSPORT IMPACT ASSESSMENT – BUS AND LUL.....	23
9	PARKING STRATEGY	38
10	CONSTRUCTION	42
11	DRAFT TRAVEL PLAN FRAMEWORK.....	44
12	SUMMARY AND CONCLUSIONS	45

TABLES

TABLE 3-1 - WORKPLACE ZONE COMPARISON (ALL MODES)	7
TABLE 3-2 - WORKPLACE ZONE COMPARISON (PT & WALK).....	7
TABLE 5-1 - FUTURE RESIDENTIAL FLATS - MULTI-MODAL TRIP RATE	10
TABLE 5-2 - FUTURE RESIDENTIAL FLATS - MULTI-MODAL TRIPS	10
TABLE 5-3 - FUTURE RESIDENTIAL HOUSES - MULTI-MODAL TRIP RATE.....	11
TABLE 5-4 - FUTURE RESIDENTIAL HOUSES - MULTI-MODAL TRIPS	11
TABLE 5-5 – TOTAL RESIDENTIAL TRIPS – ALL MODES – FLATS AND HOUSES.....	11
TABLE 6-1 – SUMMARY OF TOTAL DEVELOPMENT TRIPS – PROPOSED DEVELOPMENT LAND USES (RESIDENTIAL, COMMERCIAL AND PRIMARY SCHOOL INCLUDING SERVICING TRIPS)	13
TABLE 6-2 – SUMMARY OF TOTAL TRIPS – MPS AND PROPOSED DEVELOPMENT (INCLUDING SERVICING).....	13
TABLE 6-3 – SUMMARY OF TOTAL TRIPS – NET CHANGE PROPOSED DEVELOPMENT TRIPS LESS EXTANT TRIPS INCLUDING SERVICING TRIPS	14
TABLE 7-1 - SUMMARY OF CHANGE TO TRAFFIC FLOWS FOR RIGHT TURN LANE OF COLINDALE AVENUE.....	15
TABLE 7-2 - 2026 (COMMITTED) LINK ASSESSMENT - AM PEAK HOUR	16
TABLE 7-3 - 2026 (COMMITTED) LINK ASSESSMENT - PM PEAK HOUR.....	16
TABLE 7-4 - 2026 (AAP) LINK ASSESSMENT - AM PEAK HOUR	17
TABLE 7-5 - 2026 (AAP) LINK ASSESSMENT - PM PEAK HOUR	17
TABLE 7-6 - BASELINE SENSITIVITY TEST VERSION OF 2014 TA TABLE 15.1: 2026 (COMMITTED) LINK ASSESSMENT – AM.....	18
TABLE 7-7 - BASELINE SENSITIVITY TEST VERSION OF 2014 TA TABLE 15.2: 2026 (COMMITTED) LINK ASSESSMENT – PM.....	19
TABLE 7-8 - D USE SENSITIVITY TEST TABLE 15.1: 2026 (COMMITTED) LINK ASSESSMENT – AM.....	20
TABLE 7-9 - D USE SENSITIVITY TEST TABLE 15.2: 2026 (COMMITTED) LINK ASSESSMENT – PM.....	20
TABLE 7-10 - A41 WATFORD WAY / AERODROME ROAD SIGNAL JUNCTION - 2026 JUNCTION CAPACITY ANALYSIS RESULTS - BASE AND WITH DEVELOPMENT WITH 2012 SIGNAL TIMINGS - AM & PM PEAKS.....	21
TABLE 8-1 - TOTAL DEVELOPMENT BUS TRIPS BY ROUTE.....	23
TABLE 8-2 – ADDITIONAL PASSENGERS PER BUS	24
TABLE 8-3 – 2026 COMMITTED DEVELOPMENT	25
TABLE 8-4 – 2026 COMMITTED DEVELOPMENT WITH PROPOSED DEVELOPMENT	26
TABLE 8-5 – 2026 FULL CAAP.....	27
TABLE 8-6 – 2026 FULL CAAP WITH DEVELOPMENT.....	28
TABLE 8-7 - LUL TRIPS EXPECTED IN 2026.....	29
TABLE 8-8 - LUL TRIPS EXPECTED IN 2026.....	29
TABLE 8-9 - PEAK HOUR INCREASES FROM 2012 DATA WITH 2026 SCENARIOS.....	30
TABLE 8-10 - FUTURE DIRECTIONAL PEAK HOUR TRIPS	30
TABLE 8-11 - INCREASES TO EACH TRAIN	31

TABLE 8-12 - AM LOADING	31
TABLE 8-13 - PM LOADING	31
TABLE 8-14 - COLINDALE STATION 2026 COMMITTED GATELINE REQUIREMENT ...	32
TABLE 8-15 - COLINDALE STATION 2026 COMMITTED WITH PROPOSED DEVELOPMENT GATELINE REQUIREMENT	33
TABLE 8-16 - COLINDALE STATION 2026 FULL CAAP	34
TABLE 8-17 - COLINDALE STATION 2026 FULL CAAP WITH PROPOSED DEVELOPMENT	35
TABLE 8-18 - CAPACITY PER STAIRCASE	36
TABLE 8-19 - CAPACITY REMAINING PER STAIRCASE	36
TABLE 9-1 - CYCLE PARKING REQUIRED AND PROVISION FOR DETAILED COMPONENT (STAGE 1).....	39
TABLE 9-2 - CYCLE PARKING REQUIREMENT FOR OUTLINE COMPONENTS (STAGES 2 AND 3).....	40
TABLE 10-1 – SUMMARY OF PEAK CONSTRUCTION VEHICLE DEMANDS (TWO- WAY MOVEMENTS).....	42
TABLE 11-1 - AVERAGE AM (0800-0900) AND PM (1730-1830) PEAK HOUR MODE SPLIT TARGET	44

FIGURES

FIGURE 3-1 - WORKPLACE ZONE LOCATIONS	6
---	---

APPENDICES

A P P E N D I X A RESPONSES WITH TFL AND LBB

APPENDIX A-1 TFL RESPONSES

APPENDIX A-2 LBB RESPONSES

APPENDIX A-3 CONFIRMATION OF EXISTING MPS OPERATION

A P P E N D I X B PEEL LINK

APPENDIX B-1 PEEL LINK – FEASIBILITY PAPER – DEC 2014

APPENDIX B-2 PEEL LINK REQUIREMENT NOTE – DEC 2014

A P P E N D I X C TRIP GENERATION

APPENDIX C-1 RESIDENTIAL TRIP GENERATION

APPENDIX C-2 TOTAL TRIP GENERATION

A P P E N D I X D HIGHWAY ASSESSMENTS

APPENDIX D-1 UPDATED HIGHWAY LINK ASSESSMENT

APPENDIX D-2 MPS SENSITIVITY TEST

APPENDIX D-3 D USE METHODOLOGY NOTE

APPENDIX D-4 D USE SENSITIVITY TEST

APPENDIX D-5 A41 LINSIG RESULTS

A P P E N D I X E BUS AND LUL ASSESSMENTS

APPENDIX E-1 UPDATED BUS ASSESSMENT

APPENDIX E-2 UPDATED LUL ASSESSMENT

A P P E N D I X F PARKING STRATEGY

APPENDIX F-1 PARKING CALCULATIONS

APPENDIX F-2 SUMMARY TABLE

APPENDIX F-3 PARKING ALLOCATION

APPENDIX F-4 CYCLE PARKING

A P P E N D I X G CONSTRUCTION ASSESSMENT

1

INTRODUCTION

- 1.1.1 The comprehensive Transport Assessment and Travel Plan documents for the Peel Centre have been submitted as part of the planning application (LBB Ref: H/04753/14) for the redevelopment of part of the Metropolitan Police Service (MPS) Peel Centre Site in Colindale. The masterplanning proposals that have been developed by the project team on behalf of the applicant (Redrow Homes) have evolved in consultation with officers from the London Borough of Barnet (LBB), Greater London Authority, Transport for London (TfL) and MPS since November 2013. TfL were also present at key Senior Stakeholder and GLA meetings for the project throughout the pre-application period (November 2013 – July 2014) where the overall masterplan developments were presented and discussed to officers.
- 1.1.2 This Addendum to the Transport Assessment formally submits the further information provided in response to comments from LBB and TfL in post-application discussions and provides further information on minor amendments to the Proposed Development. The further information and minor amendments are not significant and do not materially alter the conclusions of the 2014 TA which remain robust and relevant. The post submission correspondence and negotiations between TfL, LBB and the project team are included in Appendix A1 and A2 respectively.
- 1.1.3 This document provides an update to the chapters in the submitted 2014 TA where items are confirmed, analysis reviewed and changes to tables/figures have been made as a result of scheme changes. There are no changes to Chapters 1 – 5, 8, 11, 12, 14, 17 and 18 of the TA and this report includes the following:
- Chapter 2 – Description of Proposals (update of Chapter 6 of the 2014 TA);
 - Chapter 3 – Existing Trip Generation – MPS site (update of Chapter 7 of the 2014 TA);
 - Chapter 4 – Future Trip Generation – MPS site (update of Chapter 9 of the 2014 TA);
 - Chapter 5 – Residential Trip Generation – Proposed Development (update of Chapter 10 of the 2014 TA);
 - Chapter 6 – Total Trip Generation (update of Chapter 13 of the 2014 TA);
 - Chapter 7 – Highway Assessment (update of Chapter 15 of the 2014 TA);
 - Chapter 8 – Public Transport Assessment (update of Chapter 16 of the 2014 TA);
 - Chapter 9 – Parking Strategy (update of Chapter 19 of the 2014 TA);
 - Chapter 10 – Construction (update of Chapter 20 of the 2014 TA);
 - Chapter 11 – Draft Travel Plan Framework (update of Chapter 21 of the 2014 TA); and
 - Chapter 12 – Summary and Conclusions (update of Chapter 22 of the 2014 TA)

2

DESCRIPTION OF PROPOSALS

2.1 GENERAL

- 2.1.1 This chapter provides a summary of the minor amendments to the Proposed Development relevant to transport and access further to the post planning discussions. The overall development quantum and mix of land uses are unchanged, many of the points provide confirmation of proposals further to discussions with LBB and TfL. The points identified are a summary of the points raised by the officers.

2.2 PEEL LINK

- 2.2.1 The Peel Link is proposed to be a cycle and pedestrian route. As part of the discussions with LBB, it was confirmed that the proposed pedestrian route on the Peel Link between the Site and Colindeep Lane would provide sufficient headroom beneath the railway structure with between 2.25 and 2.4m for pedestrians. Supporting documentation on the Peel Link Feasibility and the Requirement for the Peel Link has been prepared for LBB and these are presented in Appendix B. Updated drawings in Appendix A of the note submitted are included in drawings 70001368-GA-06-D and 70001368-GA-08-E. The only change to these drawings is the inclusion of the latest masterplan base.

2.3 CYCLE ACCESS AND PARKING

CYCLE ROUTES

- 2.3.1 The improvements to the Aerodrome Road/eastern site access will include a new crossing island which may be used by cyclists to connect between the Peel Centre and Beaufort Park. There are also proposals to introduce new pedestrian islands on Aerodrome Road close to Heritage Avenue as part of improvements proposed by Beaufort Park.
- 2.3.2 The internal cycle routes within the Peel Centre are not proposed to be two-way Sustrans cycle lanes – The cycle ‘routes’ within the Site are the new streets that will be shared with other road users. These streets are designed to contain vehicle speeds as described within Section 6 of the 2014 TA.
- 2.3.3 The development will not include any continuous shared cycleway/footways on primary roads within the Peel Centre Site. The routes are proposed to be on-street and shared with other road users which will be travelling at slow speed. The internal roads within the development are forecast to experience low levels of traffic and therefore the roads will be ideal for cyclists.
- 2.3.4 Details of the updated cycle parking are summarised in Section 10.2.

2.4 VEHICULAR ACCESS AND STREET HIERARCHY

- 2.4.1 The correspondence with LBB identified that the roads within the Site are proposed to be designed for low speeds but there is no proposal to introduce 20mph speed limits across the Site.

- 2.4.2 Traffic flows on the internal streets will be low and as such the probability of a vehicle seeking to pass a cyclist at the same time as a vehicle approaches from the opposite direction is very small. This is a very different situation from traffic flow on, say, Aerodrome Road or Colindale Avenue. There was a deliberate strategy to create a wider main street (Primary Route) to contrast with a narrower street typology (secondary route), and given the low traffic flows, the design approach is considered appropriate.
- 2.4.3 TfL refer to 7m wide internal roads being 'too wide' for shared cycle & motorized vehicle movements. The Design Standards consultation draft Chapter 5, Street Design, shows 7m carriageway and a potential solution to introduce some 0.5m margin strips. The applicant is not intending to introduce centre line markings and would seek to avoid road markings within the internal streets other than the main access junctions with Aerodrome Road. The applicant is prepared to introduce this half metre margin on the Primary Routes where the 'lane width' is greater than 3m.
- 2.4.4 The Tertiary roads within the Site have not been designed to accommodate bus routes therefore additional road width is not required.
- 2.4.5 The LBB Highways review has requested changes to the width of the right turn lanes on two of the new junctions proposed on Aerodrome Road to improve space available for inbound vehicle movements into the Site. The design of the streets is in line with MFS2 which is the correct design guidance for these mixed use streets which provide both a movement and place function with pedestrians crossing and frontage activity. The updated access layouts have included a review to ensure consistent through-lane widths and are presented on **WSP Drawings 70001368-GA-03-F, 70001368-GA-0-I and 70001368-GA-05-H** provided with this Addendum TA.

2.5 COLINDALE AVENUE

- 2.5.1 LBB have requested the provision of a new zebra crossing on Colindale Avenue. Whilst the applicant does not consider a new crossing is required as many opportunities for crossing Colindale Avenue will be afforded by the new scheme, in order to reach agreement, a crossing has nevertheless been proposed. The new zebra crossing has been designed just south west of the Booth Road access to assist pedestrians and cyclists passing through the Site to connect to the Booth Road. The crossing is compatible with the landscape strategy for the street as the Belisha beacons would be located within 450mm of the kerb and some 2.1m in height with the 300mm light on top. The trees within the central reserve would be located centrally (1.75m from kerb) with a 4.5m clearance to underside of canopy in accordance with the Design Principles Document. The Belisha Beacons will therefore be visible to drivers, and sufficient visibility is provided for pedestrians.
- 2.5.2 LBB have indicated that the northern footway of Colindale Avenue may need to be widened to accommodate a new application (not yet submitted) for offices on Graham Park. The design implications of providing a 3m width on the northern footway of Colindale Avenue has been provided in WSP Drawing **70001368-GA-23-A**, if this is required to enable the LBB Council Offices scheme to be implemented. However the 3m wide footway is not necessary to deliver the current committed, AAP and Peel Centre schemes. Therefore approval of the highways arrangement should be based on the arrangement without the 3m widening in case the funding is not available at the time the scheme illustrated on drawings **70001368-GA-04-I and 70001368-GA-05-H** needs to be implemented. Funding to account for the additional construction and land costs associated with the 3m footway arrangement would be payable by the developer requiring that additional width. .

2.6 CAR PARKING

- 2.6.1 The update of the proposed car parking is set out in Section 10.1 later in this report.

2.7 **SERVICE AND REFUSE ACCESS**

2.7.1 TfL requested confirmation on the proposed servicing for the development Site. One point in particular was that the main access to the MPS site will be accessed from the primary access route within the Site which connects to Aerodrome Road and not directly from Aerodrome Road as per the existing arrangements. This proposal has been presented to the design team and as part of the pre-application engagement with LBB and TfL. The access road leading to the proposed MPS site is in the approximate location of an existing priority junction serving the eastern portion of the existing MPS facility and connects to Aerodrome Road. Existing gates and crossovers onto Aerodrome Road are nevertheless retained for occasional/emergency use, or where operational circumstances require, in accordance with existing arrangements.

2.7.2 The masterplan has been developed to provide a network of roads to serve the Site that will keep the main traffic flows away from the commercial area where there will be more pedestrian activity. The proposed servicing for the smaller retail units is to be carried out at street level so that all the units may operate independently without the need to be part of a central service area (e.g. operate in the manner of a typical 'high street'). The quantum of servicing trips associated with the smaller retail units will be low with some 10 vehicle arrivals in the AM peak when demand on the local on-street car parking is low and there is spare capacity on the local roads. The servicing and refuse access arrangements for the Site remain as outlined in the 2014 TA.

2.8 **SUMMARY - DESCRIPTION OF PROPOSALS**

2.8.1 Details of a number of the infrastructure proposals have been provided to LBB & TfL to confirm matters. The information provides clarification of headroom for pedestrians along the Peel Link, cycle access, proposed infrastructure within the Site, connections to local routes, clarification of the proposed internal streets and confirmation of the proposed MPS and site wide servicing . The details will not materially affect the findings in the submitted 2014 TA.

3

EXISTING TRIP GENERATION

3.1 MPS TRIPS – SUMMARY OF TA ANALYSIS

3.1.1 The analysis for the existing MPS site was set out in the Trip Generation Technical Note (Sept 2012) and was used as part of the approved the MPS New Operations and Training Centre application. The key issues raises in post-submission discussions are set out below:

- At the time of the 2012 MPS traffic surveys, the Police site was only operating at 70-75% of the full capacity which was confirmed by MOPAC at that time and subsequent confirmation has been provided to LBB & TfL and is provided in Appendix A3;
- Trip numbers (person and surveyed vehicle trips) are from 2012 surveys;
- The details provided in the MPS New Operations and Training Centre Transport Statement identified that the number of MPS trips to the new building would remain the same as the 2012 surveys, but the document also stated that the Site was not operating at full capacity. MPS are therefore only planning for their current operations and sizing their future building accordingly at this stage. Clearly if their requirements were to increase in the future and the Redrow scheme had been implemented MPS would need to secure permission for additional buildings to accommodate this additional demand.
- Given the size of the site and the car parking available on the whole MPS site, there is every reason that the site could operate at full capacity with its current lawful use if the Redrow Proposed Development were to fail and the disposal of the site not completed. Therefore in this situation the existing buildings can be fully occupied without the need for planning permission and this properly reflects the 'situation that would otherwise prevail' if the development were not to proceed in the future year of assessment.

3.1.2 The Applicant is firmly of the view that the baseline should include the MPS site fully occupied in the Baseline in 2026 without the redevelopment of the Site, however a sensitivity test was conducted, as referred to in Section 7.

3.1.3 The mode split for the MPS trips has been derived from the most appropriate information available. The MPS consider surveys of their staff movements are very sensitive and the 2007 Estate Travel Survey is considered by the MPS to be a reasonable indication of the current travel patterns for their staff.

3.2 MPS TRIPS – RAIL SENSITIVITY

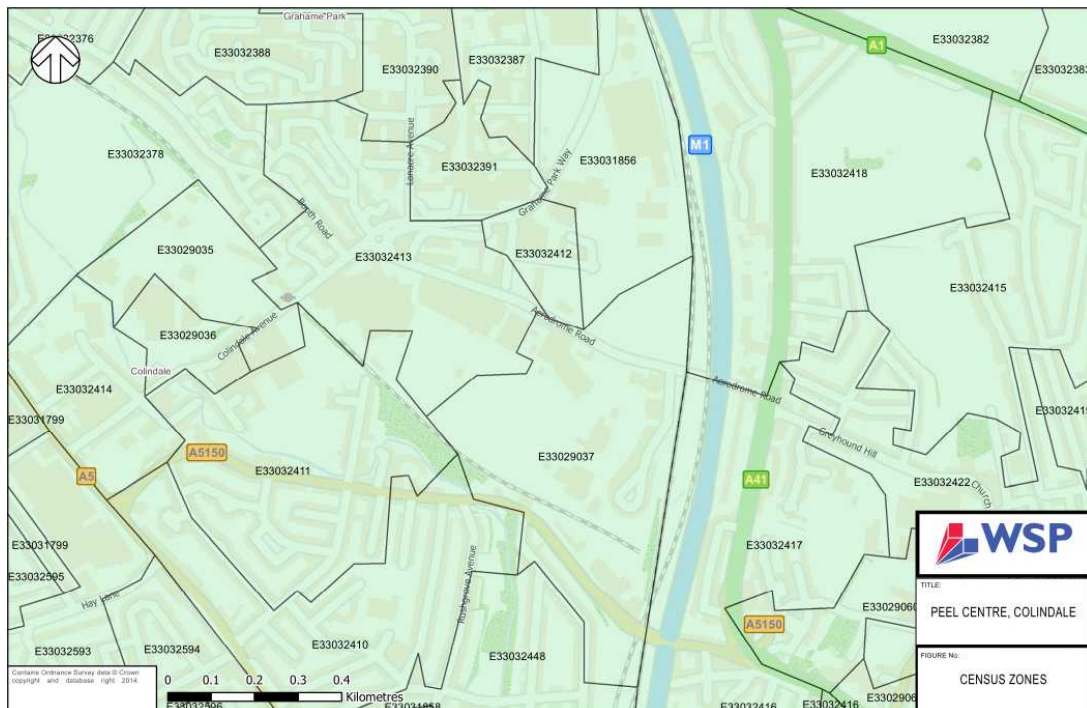
3.2.1 It was recognised in the 2014 TA that rail trips would need to be assigned to a local mode to access the rail network. The rail connections to/from Mill Hill by bus were assumed to be similar to the proportion of trips accessed by LUL to stations further afield via the Northern Line (e.g. Euston, King’s Cross St Pancras, London Bridge, Charing Cross and Waterloo). This was why an assumed 50/50 split of the rail trips to bus and LUL was estimated in the 2014 TA to take into consideration the local mode share for travellers coming from further afield by train. The split of local mode between LUL and Bus journeys would not necessarily reflect the typical mode split for commuter trips.

3.2.2 As a sensitivity test, should the rail final mode trips be split in a proportion of 65% LUL and 35% bus, there would be a change in the order of an additional 22 existing MPS trips which would be added to the LUL network and an additional 22 bus trips removed from the network during the peak hour. This level of change is not considered to significantly impact on the analysis prepared for the TA.

3.3 MPS WORK PLACE TRIPS – CENSUS ANALYSIS

3.3.1 As part of the post-application discussions, TfL refer to the 2011 Census Workplace Zones E33029037 and E33032413 for the MPS Work Place trips analysis. The appropriate 2011 Census dataset to understand work travel is ‘WP703EW Method of travel to work (2001 specification) (Workplace population)’ – see Figure 3-1.

Figure 3-1 - Workplace Zone Locations



3.3.2

Tables 3-1 and 3-2 below summarise data for these two workplace zones. The locations of the zones are also shown below. Note Workplace Zone E33029037 contains some 1645 people travelling to work and E33032413 contains some 304. The MPS Future Transport Strategy document identified some 1090 staff commuters as indicated in Table 9.4 of the 2014 TA, so roughly half the number of employees in these zones. Other workers from these zones would have potentially different patterns from the MPS employees.

Table 3-1 - Workplace Zone Comparison (All Modes)

	2011 Census			Existing Daily Journey to Work	Existing All Journey Purpose Peak Hour
	E33029037	E33032413	Weighted Average		
Underground, etc.	8%	24%	11%	12% ¹	21% ¹
Train	7%	6%	7%	- ¹	- ¹
Bus or coach	5%	10%	5%	8% ¹	14% ¹
Taxi or minicab	0%	1%	0%	-	-
Motorcycle	1%	1%	1%	4%	1%
Driving a car or van	72%	46%	68%	64%	52%
Passenger in a car	2%	5%	2%	2%	2%
Bicycle	1%	1%	1%	4%	1%
On foot	3%	6%	3%	5%	9%

¹ Journeys with main mode as train have been assigned a final mode for travel to Colindale of either bus or underground

Table 3-2 - Workplace Zone Comparison (PT & Walk)

	2011 Census			Existing Daily Journey to Work	Existing All Journey Purpose Peak Hour
	E33029037	E33032413	Weighted Average		
Underground, etc.	36%	53%	41%	48% ¹ (28% ²)	48% ¹ (28% ²)
Train	32%	14%	27%	- ¹ (40% ²)	- ¹ (40% ²)
Bus or coach	20%	21%	20%	32% ¹ (12% ²)	32% ¹ (12% ²)
On foot	12%	12%	12%	20%	20%

¹ Journeys with main mode as train have been assigned a final mode for travel to Colindale of either bus or underground.

² Main mode share before reassignment to final mode for travel to Colindale

3.3.3

As indicated above, it is worth noting that the data from the 2011 Census is not necessarily directly applicable to all activity at the MPS site, and not the peak hour proportions. Travel to the MPS site will include people traveling to and from work, trainees travelling to and from the training elements and operational activity; this will not be reflected in the 2011 Census data.

3.3.4

In Table 3-1 it can be seen that whilst there are some differences between proportions in the modes, the proportions are generally similar, and this may be the influence of other workers in the area. It can be seen that the peak hour all-purpose proportions are a little more different but as already indicated are not directly comparable. In Table 3-2 the combined LUL and Rail totals 68% in the Census whilst the percentage for existing journey to work was 28% LUL and 40% Rail, so summing to 68% before reassignment of rail mode to local access mode. The LUL/Rail totals therefore are identical although the subsequent split is a little different.

3.3.5

The 2014 TA mode split reflects recent observed data for peak hours and is understandably different to data for journeys to work throughout the day.

3.3.6

The conclusion that is drawn from this comparison is that whilst the review of the Census data is useful and shows there are similarities in the figures, the MPS specific Journey to Work survey data represents the best available information to establish existing MPS travel patterns. The empirical surveys in 2012 establish total person and vehicle trips and the MPS data is only being used for non-car mode.

3.4 MPS SENSITIVITY TEST

- 3.4.1 Notwithstanding the applicant's judgement that the appropriate Do Minimum scenario is the situation where the MPS site is fully occupied, a sensitivity test has been undertaken with the current 70-75% occupancy of the MPS in the Do Minimum scenario for 2026 to compare to the 2026 Do Something scenario. The full details of the MPS Sensitivity Test analysis are provided in the Chapter 7 – Highways Assessment of this Addendum to the TA.

3.5 SUMMARY – EXISTING TRIP GENERATION

- 3.5.1 The existing trip generation for the MPS has been assumed to have the potential to be operating at full capacity. Confirmation has been provided by the MPS that at the time of the surveys the site was operating at 70-75%. Nevertheless to provide further comfort to LBB and TfL, a sensitivity test of the future base situation where the MPS site is operating at 70-75% rather than 100% has been prepared for further highway analysis.
- 3.5.2 The analysis for the existing situation also provided supporting details of the mode share associated with MPS training trips and the assumptions in the 2014 TA are considered to be robust. A summary of workplace Census data has also been provided to support information provided in the 2014 TA.
- 3.5.3 The clarification of the MPS operations and the additional information on the Existing Trip Generation will not introduce any significant change to the findings presented in the submitted Transport Assessment.

4

FUTURE TRIP GENERATION – MPS SITE

- 4.1.1 The details for the approach to the MPS existing and extant demands have been set out in previous pre-application Technical Notes and the approved MPS Transport Statement for the New Operations and Training Centre. As outlined earlier in this response document and in details submitted to TfL and LBB as part of the pre-application process, the MPS site was determined to be operating at 70-75% of the full capacity in 2012 and until the site is formally disposed of, the site has the potential to be re-occupied at full capacity. This has been taken into consideration as part of the analysis for the Redrow scheme. Confirmation of the observed site operation in 2012 has been provided by MPS and is included in Appendix A3.

4.2 **SUMMARY – FUTURE TRIP GENERATION – MPS SITE**

- 4.2.1 The clarification of the Future Trip Generation for the MPS operations will not introduce any significant change to the findings presented in the submitted transport assessment.

5

RESIDENTIAL TRIP GENERATION

5.1.1 The discussions on the residential trip generation have focussed on the mode split of the public transport journeys. The overall trip generation rates have been discussed and agreed in advance of the August 2014 planning submission for the Former Peel Centre Site. The mode split analysis has only introduced a change in the Bus, London Underground and walking demands and has not impacted on the highway based trips. The most recent analysis prepared on mode split is summarised in this section as well as updated tables that may have changed from the 2014 TA due to input errors in the submitted information.

5.2 MODE SPLIT

5.2.1 Following a check on the application of LTDS data to the non-car mode split, there was an error in the spreadsheet – the updated multi-modal trip rate (Table 10.5 of 2014 TA) and trip generation (Table 10.6 of 2014 TA) for flats are shown in Table 5-1 and Table 5-2.

Table 5-1 - Future Residential Flats - Multi-Modal Trip Rate

Mode	AM Peak Hr			PM Peak Hr		
	In	Out	Total	In	Out	Total
Car Driver	0.05	0.16	0.20	0.12	0.06	0.18
Car Passenger	0.01	0.03	0.03	0.03	0.00	0.03
Motorcycle	0.00	0.00	0.00	0.00	0.00	0.00
Bicycle	0.01	0.01	0.02	0.01	0.03	0.04
Taxi	0.00	0.00	0.00	0.00	0.00	0.00
Walk	0.04	0.17	0.21	0.12	0.07	0.19
LUL	0.02	0.10	0.12	0.07	0.04	0.11
Bus	0.02	0.08	0.10	0.06	0.04	0.10
Total Person	0.14	0.55	0.68	0.42	0.25	0.67

Table 5-2 - Future Residential Flats - Multi-Modal Trips

Mode	AM Peak Hr			PM Peak Hr		
	In	Out	Total	In	Out	Total
Car Driver	126	435	561	341	161	503
Car Passenger	19	73	93	87	10	96
Motorcycle	0	0	0	13	0	13
Bicycle	17	34	51	29	92	121
Taxi	0	0	0	0	0	0
Walk	106	480	585	340	205	545
LUL	61	276	337	196	118	314
Bus	52	238	290	168	102	270
Total Person	381	1536	1917	1175	688	1864

5.2.2 The updated multi-modal trip rate (Table 10.11 for 2014 TA) and trip generation (Table 10.12 of 2014 TA) is shown in Table 5-3 and Table 5-4 below.

Table 5-3 - Future Residential Houses - Multi-Modal Trip Rate

Mode	AM Peak Hr			PM Peak Hr		
	In	Out	Total	In	Out	Total
Car Driver	0.14	0.33	0.46	0.25	0.25	0.50
Car Passenger	0.02	0.22	0.24	0.14	0.12	0.26
Motorcycle	0.00	0.04	0.04	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00	0.00	0.00	0.00
Taxi	0.00	0.00	0.00	0.00	0.01	0.01
Walk	0.08	0.26	0.34	0.09	0.11	0.21
LUL	0.04	0.15	0.19	0.05	0.07	0.12
Bus	0.04	0.13	0.17	0.05	0.06	0.10
Total Person	0.32	1.12	1.44	0.59	0.62	1.21

Table 5-4 - Future Residential Houses - Multi-Modal Trips

Mode	AM Peak Hr			PM Peak Hr		
	In	Out	Total	In	Out	Total
Car Driver	13	32	46	25	24	49
Car Passenger	2	22	24	14	12	26
Motorcycle	0	4	4	0	0	0
Bicycle	0	0	0	0	0	0
Taxi	0	0	0	0	1	1
Walk	8	26	33	9	11	21
LUL	4	15	19	5	7	12
Bus	4	13	17	5	6	10
Total Person	32	111	142	58	61	120

5.2.3 There have been slight changes due to rounding in the original 2014 TA but there is not overall change in the general residential trip predications. The revisions to the residential trip generation for the 2014 TA have not introduced any changes to the residential service vehicle generation.

5.2.4 The subsequent total residential trip generation (Table 10.14 of the 2014 TA) is summarised in Table 5-5.

Table 5-5 – Total Residential Trips – All Modes – Flats and Houses

Mode	AM Peak Hr			PM Peak Hr		
	In	Out	Total	In	Out	Total
Car Driver	140 (9)	468 (9)	607 (18)	366 (2)	186 (2)	552 (4)
Car Passenger	22	95	116	101	22	123
Motorcycle	0	4	4	13	0	13
Bicycle	17	34	51	29	92	121
LUL	65	291	356	201	125	326
Bus	56	250	306	173	107	280
Walk	113	505	618	349	217	566
Total Person	413	1647	2060	1233	750	1983

- 5.2.5 As part of the TfL post-application discussions, TfL officers have challenged the all journey purpose approach submitted in the 2014 TA using LTDS and have presented a Census Hybrid approach to the residential modal split which increases the mode split for public transport trips and significantly reduces walk trips. TfL's Census Hybrid Method assumes almost all peak hour trips have a work journey purpose and have applied a Work Mode share to these trips. WSP have undertaken analysis to demonstrate that the All Journey Purpose approach can be corroborated by a number of methodologies whereas the TfL approach cannot be accepted by the WSP. WSP's analysis and the review of the TfL approach are provided in Appendix C.
- 5.2.6 A response letter and technical paper submitted to TfL in February 2015 (provided in Appendix A1 – page 293 - 305) sets out a review of trip generation and mode split based on a variety of statistical databases and focuses on the most recent Census and London Travel Demand Survey (LTDS) information. This analysis built upon the December submission that demonstrated that the work trips within LTDS data is directly comparable to Census and as such the All Journey Purpose data can be relied upon. The result of the more comprehensive analysis is set out in Tables 1 & 2 of the letter response to TfL dated 11th February (in Appendix A1 – page 296) with a full technical assessment that was submitted with the letter to TfL.
- 5.2.7 The most recent correspondence from TfL dated 28th April 2015 identifies their current position that they consider a higher proportion of LUL trips will be predicted based on the TfL Census Hybrid methodology which assumes almost all peak trips have a work mode share. The TfL approach has not been accepted by the Redrow team who consider the All journey Purpose method more appropriate for the residential development in this location.

5.3 **SUMMARY – RESIDENTIAL TRIP GENERATION**

- 5.3.1 The discussions with TfL have resulted in detailed appraisal of the mode share assumptions for the proposed residential uses. In WSP's professional view, the TfL approach is based on little significant justification, erroneously assumes almost all peak hour trips have a work journey purpose and therefore provides a bias towards LUL and Bus journeys. The use of the TfL Hybrid approach has been used as a sensitivity test for Bus and LUL impact but the approach is not accepted by the WSP team or the applicant.

6

TOTAL TRIP GENERATION

- 6.1.1 The revision to a number of the residential trip generation tables as set out in Chapter 5 has required updates to the summary tables presented in Chapter 13 of the 2014 TA.
- 6.1.2 A sensitivity test has been undertaken on child yield figures for the site in response to comments from LBB. These sensitivity test figures have been considered in connection with the school trip generation which utilised the child yield figures to determine the number of trips drawn from within the site. The higher child yield figures would increase the trips drawn from within the site and reduce the external trip attraction. Therefore the increased child yield if this materialises would increase number of children walking to school and decrease travel by car or public transport. It can be concluded that our initial assessment is robust and no updates to the school trip generation chapter are required.

6.2 SUMMARY OF TRIPS

- 6.2.1 With the changes to residential trips, the updated number of trips generated from the proposed development land uses is summarised in Table 6-1 (Table 13.5 in the 2014 TA). The table was initially revised in the LBB response dated 23rd October 2014 and this has been subsequently updated to reflect discussions with TfL in December 2014.

Table 6-1 – Summary of Total Development Trips – Proposed Development Land Uses (Residential, Commercial and Primary School including servicing trips)

Mode	AM Peak Hr			PM Peak Hr		
	In	Out	Total	In	Out	Total
Car Driver	235 (23)	514 (23)	749 (46)	486 (4)	273 (4)	759 (8)
Car Passenger	83	99	183	181	75	256
Motorcycle	0	4	4	13	0	13
Bicycle	46	47	93	36	103	139
LUL	97	313	409	259	184	443
Bus	226	299	525	260	199	459
Walk	519	642	1161	555	434	989
Total Person (inc servicing)	1230	1942	3171	1792	1269	3066

- 6.2.2 The predicted development trips for the Site (Table 13.6 of the 2014 TA) is summarised in Table 6-2

Table 6-2 – Summary of Total Trips – MPS and Proposed Development (including servicing)

Mode	AM Peak Hr			PM Peak Hr		
	In	Out	Total	In	Out	Total
Car Driver	273	554	827	504	291	794
Car Passenger	125	102	227	183	83	267
Motorcycle	82	9	91	19	16	35
Bicycle	128	52	181	42	119	160
LUL	344	329	672	275	231	507
Bus	391	309	700	271	231	502
Walk	622	649	1271	562	453	1016
Total Person (inc servicing)	1966	2004	3969	1856	1424	3279

6.2.3 The resultant development trips (Table 13.7 of the 2014 TA) is summarised in Table 6-3.

Table 6-3 – Summary of Total Trips – Net Change Proposed Development Trips Less Extant Trips including servicing trips

Mode	AM Peak Hr			PM Peak Hr		
	In	Out	Total	In	Out	Total
Car Driver	-220	457	237	451	140	591
Car Passenger	110	100	210	182	79	261
Motorcycle	69	3	72	19	14	33
Bicycle	115	52	167	42	114	156
LUL	98	319	416	256	205	461
Bus	227	303	529	258	213	471
Walk	520	645	1164	554	442	997
Total Person	919	1879	2798	1763	1209	2972

6.3 SUMMARY – TOTAL TRIP GENERATION

6.3.1 The changes to the trip generation demands for the residential uses have resulted in a change to the overall total trip demands for the Site. These are updated in this section and presented on the tables.

7

HIGHWAY ASSESSMENT

7.1 SATURN REVIEW

7.1.1 The discussions with TfL set out the need to clarify the SATURN assessment carried out as part of the highway assessment for the 2014 TA. The points related to the traffic routing for the Peel Centre and the MPS site, changes on the network due to through trips across the local road network and a sensitivity test on the predicted level of MPS extant trips. The submitted information is provided in a response to TfL dated 22nd December 2015 (see Appendix A1 – page 269 - 283) and this information has been accepted by TfL in an e-mail dated 29th April 2015.

7.2 2026 COMMITTED DEVELOPMENT ASSESSMENT

7.2.1 At the junction of Edgware Road and Colindale Avenue, there has a minor change the traffic flows at the Colindale Avenue approach from those presented in the 2014 TA. The right turn flows from Colindale Avenue to Edgware Road have been updated to reflect the broken link in the SATURN output spreadsheet, The updated committed base flows and the with development flows are summarised in Table 7-1 below.

Table 7-1 - Summary of change to traffic flows for right turn lane of Colindale Avenue

	As initial TA		Updated flows		As initial TA		Updated flows	
	2026 Committed	2026 Committed with Proposed Dev	2026 Committed	2026 Committed with Proposed Dev	2026 CAAP	2026 CAAP with Proposed Dev	2026 CAAP	2026 CAAP with Proposed Dev
Colindale Avenue – Right turn lane flow – AM peak	0	-7	76	107	0	-7	79	114
Colindale Avenue – Right turn lane flow – PM peak	0	-29	26	0	0	-29	33	18

7.2.2 The change to the committed development flow essentially increases the baseline but it may be noted that the additional development traffic in each scenario is minimal.

7.2.3 As a result of the revisions outlined in Table 7-1 above, the first two lines of the following tables have been updated to reflect the change in link flows – Tables 15.1 and 15.2 (Committed) and Tables 15.11 and 15.12 (AAP).

Table 7-2 - 2026 (Committed) Link Assessment - AM Peak Hour

	2026 Committed		2026 Committed with Proposed Dev		Net Change		Two Way Net Change	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	Veh	%
1. Edgware Road (north of Colindale Avenue)	1285	674	1264	706	-21	32	12	1%
2. Colindale Av (south)	769	387	693	412	-75	24	-51	-4%
3. Colindale Av (north)	814	859	638	963	-175	105	-71	-4%
4. Grahame Park Way	754	818	845	783	91	-34	57	4%
5. Aerodrome Road	779	518	672	641	-107	123	16	1%
6. Greyhound Hill	278	186	306	185	27	-2	26	6%
7. Watford Way	1946	1854	1824	1902	-122	48	-75	-2%
8. Edgware Road (south of Colindale Avenue)	1451	1221	1500	1224	49	2	52	2%
9. Colindeep Lane	746	721	757	636	12	-84	-73	-5%
11. Aerodrome Road (East)	731	857	779	654	49	-203	-154	-10%
12. Aerodrome Road (West)	809	686	624	947	-185	261	76	5%

Table 7-3 - 2026 (Committed) Link Assessment - PM Peak Hour

	2026 Committed		2026 Committed with Proposed Dev		Net Change		Two Way Net Change	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	Veh	%
1. Edgware Road (north of Colindale Avenue)	927	973	937	947	10	-26	-16	-1%
2. Colindale Av (south)	667	379	692	346	25	-33	-8	-1%
3. Colindale Av (north)	943	858	1067	820	124	-39	85	5%
4. Grahame Park Way	935	695	903	733	-32	38	6	0%
5. Aerodrome Road	748	947	804	939	55	-8	47	3%
6. Greyhound Hill	291	234	292	239	1	5	6	1%
7. Watford Way	1876	1777	1895	1777	19	0	19	1%
8. Edgware Road (south of Colindale Avenue)	1070	1404	1054	1409	-16	6	-10	0%
9. Colindeep Lane	823	534	822	539	-1	5	5	0%
11. Aerodrome Road (East)	828	947	834	975	6	28	34	2%
12. Aerodrome Road (West)	784	827	1035	819	251	-8	244	15%

Table 7-4 - 2026 (AAP) Link Assessment - AM Peak Hour

	2026 Full AAP		2026 Full AAP with Proposed Dev		Net Change		Two Way Net Change	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	Veh	%
1. Edgware Road (north of Colindale Avenue)	1254	638	1228	676	-26	38	11	1%
2. Colindale Av (south)	820	401	780	444	-40	43	4	0%
3. Colindale Av (north)	788	892	775	972	-13	80	68	4%
4. Grahame Park Way	819	868	930	795	110	-73	38	2%
5. Aerodrome Road	768	542	673	630	-95	88	-7	-1%
6. Greyhound Hill	257	186	290	183	33	-2	31	7%
7. Watford Way	1987	1881	1839	1923	-148	42	-106	-3%
8. Edgware Road (south of Colindale Avenue)	1403	1206	1433	1216	29	10	40	2%
9. Colindeep Lane	718	738	737	649	19	-89	-70	-5%
11. Aerodrome Road (East)	733	893	780	644	47	-249	-202	-12%
12. Aerodrome Road (West)	681	673	667	940	-14	267	254	19%

Table 7-5 - 2026 (AAP) Link Assessment - PM Peak Hour

	2026 Full AAP		2026 Full AAP with Proposed Dev		Net Change		Two Way Net Change	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	Veh	%
1. Edgware Road (north of Colindale Avenue)	885	942	862	903	-23	-38	-61	-3%
2. Colindale Av (south)	668	386	680	362	12	-24	-12	-1%
3. Colindale Av (north)	959	917	1103	951	144	34	178	10%
4. Grahame Park Way	934	719	893	757	-41	39	-2	0%
5. Aerodrome Road	763	948	822	982	59	34	93	5%
6. Greyhound Hill	282	239	273	249	-9	11	1	0%
7. Watford Way	1900	1813	1938	1838	38	25	63	2%
8. Edgware Road (south of Colindale Avenue)	1075	1414	1076	1435	1	21	22	1%
9. Colindeep Lane	870	487	917	460	48	-27	21	2%
11. Aerodrome Road (East)	841	966	851	1017	10	51	61	3%
12. Aerodrome Road (West)	782	831	1021	835	239	4	243	15%

7.3 MPS SENSITIVITY TEST

7.3.1 TfL have suggested another baseline is modelled alongside the current base of the 100% occupation – this would include the current level of activity with the unoccupied space remaining unoccupied in the future baseline scenario.

7.3.2 The sensitivity test has been undertaken with the current 70-75% occupancy of the MPS in the Do Minimum scenario for 2026 to compare to the 2026 Do Something scenario. The comparison assumes the MPS site with the 2012 surveyed level of activity remains unchanged in 2026 without the redevelopment of the Site. The 'Baseline Sensitivity Test' tables 4.7 (version of 2014 TA Table 15.1 (AM Peak)) and 4.8 (version of 2014 TA Table 15.2 (PM Peak)) with the 70-75% occupancy in the Do Minimum scenario and differences are included below, with the comparison tables in Appendix C.

Table 7-6 - Baseline Sensitivity Test Version of 2014 TA Table 15.1: 2026 (Committed) Link Assessment – AM

	2026 Committed MPS 70/75% occ		2026 Committed with Proposed Dev		Net Change		Two Way Net Change		Difference to 2014 TA 100% MPS occupancy	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	Veh	%	Veh	%
1. Edgware Road (north of Colindale Ave)	1279	597	1264	592	-15	-5	-20	-1%	6	0.3%
2. Colindale Av (south)	769	307	693	298	-75	-10	-85	-8%	4	0.3%
3. Colindale Av (north)	792	859	638	963	-154	104	-50	-3%	20	1.2%
4. Grahame Park Way	759	800	845	783	86	-16	69	4%	12	0.8%
5. Aerodrome Road	742	524	672	641	-70	117	46	4%	30	2.4%
6. Greyhound Hill	278	186	306	185	27	-2	26	6%	0	0.0%
7. Watford Way	1902	1858	1824	1902	-79	44	-34	-1%	41	1.1%
8. Edgware Road (south of Colindale Ave)	1447	1226	1500	1224	54	-2	51	2%	0	0.0%
9. Colindeep Lane	741	673	757	636	17	-37	-20	-1%	52	3.5%
11. Aerodrome Road (East)	731	800	779	654	48	-146	-97	-6%	57	3.4%
12. Aerodrome Road (West)	773	705	624	947	-149	243	94	6%	18	1.3%

Table 7-7 - Baseline Sensitivity Test Version of 2014 TA Table 15.2: 2026 (Committed) Link Assessment – PM

	2026 Committed MPS 70/75% occ		2026 Committed with Proposed Dev		Net Change		Two Way Net Change		Difference to 2014 TA 100% MPS occupancy	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	Veh	%	Veh	%
1. Edgware Road (north of Colindale Ave)	927	946	937	918	11	-28	-17	-1%	1	0.1%
2. Colindale Av (south)	667	349	692	318	25	-31	-6	-1%	5	0.4%
3. Colindale Av (north)	948	848	1067	820	119	-29	90	5%	5	0.3%
4. Grahame Park Way	925	695	903	733	-22	38	16	1%	10	0.6%
5. Aerodrome Road	758	929	804	939	46	10	56	3%	9	0.5%
6. Greyhound Hill	286	234	292	239	6	6	12	2%	6	1.1%
7. Watford Way	1875	1781	1895	1777	20	-4	16	0%	-4	-0.1%
8. Edgware Road (south of Colindale Ave)	1065	1403	1054	1409	-11	6	-5	0%	6	0.2%
9. Colindeep Lane	823	532	822	539	0	7	7	1%	2	0.2%
11. Aerodrome Road (East)	826	947	834	975	8	29	37	2%	2	0.1%
12. Aerodrome Road (West)	793	810	1035	819	242	9	251	16%	7	0.5%

7.3.3 As can be from the updated tables above, the largest difference in link flow from the Do Minimum scenario with 70-75% occupancy compared to the 100% occupancy is an increase of 3.5% in the AM Peak and an increase of 1.1% in the PM Peak. As a result, the impact of modelling the MPS at 70-75% occupancy is minimal at a strategic level and therefore no additional capacity assessments will be required. Notwithstanding the Sensitivity Test undertaken in this regard the Applicant is firmly of the view that the baseline should include the MPS site fully occupied in the Baseline in 2026 without the redevelopment of the Site.

7.4 D USE SENSITIVITY TEST

7.4.1 An assessment has been undertaken assuming a 1500sqm Medical Centre and 1000sqm Health and Fitness centre and further sensitivity test has been run as requested by TfL using the CAAP Saturn model to test whether the additional vehicle trips added onto the network as new would have a material effect. A technical note attached to this response in Appendix D sets out some trip attraction estimates before existing trips and trip linkage are taken into account.

7.4.2 It can be seen that the network balance is maintained and vehicle trips running through the local area are displaced and there is very little net change in the local area. It is considered that the potential D class uses that could be accommodated on the Site would have minimal effect on overall travel demand for the Site, especially given that the town centre foodstore travel demand will include trips for other facilities within that town centre embedded within that travel demand.

Table 7-8 - D Use Sensitivity Test Table 15.1: 2026 (Committed) Link Assessment – AM

	2026 Committed		2026 Committed with Proposed Dev plus D use trips		Net Change		Two Way Net Change		Difference to 2014 TA Table 15.1	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	Veh	%	Veh	%
1. Edgware Road (north of Colindale Ave)	1285	598	1267	593	-17	-5	-22	-1%	4	0.2%
2. Colindale Av (south)	769	311	699	300	-70	-11	-81	-8%	8	0.7%
3. Colindale Av (north)	814	859	649	964	-164	105	-59	-4%	12	0.7%
4. Grahame Park Way	754	818	848	790	95	-27	67	4%	10	0.7%
5. Aerodrome Road	779	518	673	640	-106	123	17	1%	1	0.0%
6. Greyhound Hill	278	186	303	185	25	-2	24	5%	-2	-0.5%
7. Watford Way	1946	1854	1824	1903	-122	48	-73	-2%	2	0.0%
8. Edgware Road (south of Colindale Ave)	1451	1221	1501	1225	50	4	54	2%	2	0.1%
9. Colindeep Lane	746	721	758	637	12	-83	-71	-5%	1	0.1%
11. Aerodrome Road (East)	731	857	779	655	48	-202	-154	-10%	1	0.0%
12. Aerodrome Road (West)	809	686	642	954	-167	268	100	7%	24	1.6%

Table 7-9 - D Use Sensitivity Test Table 15.2: 2026 (Committed) Link Assessment – PM

	2026 Committed		2026 Committed with Proposed Dev plus D use trips		Net Change		Two Way Net Change		Difference to 2014 TA Table 15.2	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	Veh	%	Veh	%
1. Edgware Road (north of Colindale Ave)	927	947	938	918	11	-28	-18	-1%	1	0.0%
2. Colindale Av (south)	667	353	693	319	26	-35	-9	-1%	2	0.2%
3. Colindale Av (north)	943	858	1073	827	130	-32	98	5%	13	0.7%
4. Grahame Park Way	935	695	912	738	-22	43	20	1%	14	0.9%
5. Aerodrome Road	748	947	803	940	55	-7	47	3%	0	0.0%
6. Greyhound Hill	291	234	292	239	1	5	6	1%	0	0.0%
7. Watford Way	1876	1777	1897	1779	21	2	22	1%	3	0.1%
8. Edgware Road (south of Colindale Ave)	1070	1404	1055	1410	-15	6	-9	0%	1	0.1%
9. Colindeep Lane	823	534	823	540	0	6	5	0%	1	0.0%
11. Aerodrome Road (East)	828	947	833	975	6	28	34	2%	0	0.0%
12. Aerodrome Road (West)	784	827	1047	839	263	12	275	17%	32	2.0%

7.5 JUNCTION CAPACITY ANALYSIS

7.5.1 As requested by TfL, the LINSIG of the A41 Watford Way/Aerodrome Road junction was re-run with current 2012 signal timings rather than the optimised signal timings. Table 7-10 below summarises the results of the Committed vs Committed with Development LINSIG run with 2012 signal timings but optimised in the Future to reflect the predicted demands. The same timings were applied to the Future with development scenario. The full analysis and LINSIG printouts submitted to TfL are provided in Appendix A1 (page 149 – 267).

Table 7-10 - A41 Watford Way / Aerodrome Road Signal Junction - 2026 Junction Capacity Analysis Results - Base and with Development with 2012 signal timings - AM & PM Peaks

Arm	AM Peak				PM Peak			
	2026 Committed		2026 Committed with Proposed Dev		2026 Committed		2026 Committed with Proposed Dev	
	DoS	Mean Max Queue (pcu)	DoS	Mean Max Queue (pcu)	DoS	Mean Max Queue (pcu)	DoS	Mean Max Queue (pcu)
A41 Watford Way (N) – Left & Ahead	52%	14	52%	14	51%	13	51%	13
A41 Watford Way (N) - Ahead	52%	14	52%	14	51%	14	52%	14
A41 Watford Way (N) – Ahead	52%	15	53%	15	53%	15	52%	15
A41 Watford Way (N) – U-turn / Right	115%	41	106%	27	101%	20	103%	22
Greyhound Hill Ahead & Left	25%	2	25%	2	31%	3	33%	4
Greyhound Hill Right	34%	4	34%	4	41%	5	41%	5
A41 Watford Way (S) – Left & Ahead	66%	20	62%	18	65%	19	67%	20
A41 Watford Way (S) – Ahead	66%	21	62%	19	66%	20	67%	20
A41 Watford Way (S) – Ahead	66%	21	62%	19	66%	21	67%	21
A41 Watford Way (S) – Right	29%	3	29%	3	25%	2	24%	2
Aerodrome Road Left & Ahead	131%	67	140%	82	114%	48	115%	50
Aerodrome Road Ahead & Right	131%	66	140%	82	114%	48	115%	50

7.5.2 The additional LINSIG analysis does not significantly alter the initial findings provided in the 2014 TA. There will be a slight worsening in junction performance with the proposed development in particular the Aerodrome Road approach in the AM peak. It should be noted that this is balanced out by the slight improvement in the operation of Watford Way right turn into Aerodrome Road which occurs due to a reduction in inbound vehicle trips due to a reduced MPS demand.

7.6 **LBB HIGHWAY REVIEW – WIDENING OF TURNING LANE WIDTHS ON AERODROME ROAD**

7.6.1 As previously mentioned, the findings of the LBB Highways review has requested changes to the width of the right turn lane at the site access junction on Aerodrome Road close to the roundabout with Colindale Avenue. The resulting changes will improve the predicted operation of the junctions and so it has not been considered necessary to provide updated junction assessments for the Addendum TA. It is considered that the analysis for the site access junctions presented in the 2014 TA show the junctions will operate satisfactorily and present the worst case assessment.

7.7 **SUMMARY – HIGHWAY ASSESSMENT**

7.7.1 The discussions with TfL & LBB have required amendments to traffic flows on the immediate highway network serving the Site to reflect updates in the committed development flows on the southern end of Colindale Avenue, a sensitivity test of the future operation of the MPS site (70-75% occupied rather than 100% occupied for the future base situation) and additional traffic flows associated with the potential 'D class' uses on the Former Peel Centre Site. In addition, a revision of the LINSIG analysis has been carried out to reflect 2012 optimised traffic signal timings at the A41 Watford Way/Aerodrome Road junction.

7.7.2 In summary, the analysis provided with the revised highway analysis does not significantly alter the original findings presented in the submitted 2014 TA.

8

PUBLIC TRANSPORT IMPACT ASSESSMENT – BUS AND LUL

8.1 BUS ASSESSMENT

8.1.1 It was requested by TfL that a 1 hour peak bus assessment was undertaken to understand the impacts of the development on the peak hour bus network. This analysis applies the three hour peak to one our peak conversion factors in the Transport for London Station Planning Standards and Guidance, (0.48 in the AM peak and 0.39 in the PM peak) to the BODS data. The development trips are taken directly from the bus trip generation for each peak hour as set out in the Transport Assessment.

8.1.2 Following a review of the spreadsheets, it was noted that St Marys C of E High School was also accessible by bus route 186 East which runs along Aerodrome Road, and therefore trips have been apportioned between the two services according to frequency. A further amendment has been made to the spreadsheet as it was identified that committed trips in the Grahame Park Way area (Zone 1) were assumed to use the 324 service in error and this has been corrected. Furthermore, there were some minor amendments to the bus assessment following a review of MPS occupancy assuming each scenario.

8.1.3 The total bus trips by route arising from the Proposed Development (Table 16.26 of the 2014 TA) is summarised in **Table 8-1** and additional passengers per bus summarised in **Table 8-2**.

Table 8-1 - Total Development Bus Trips by Route

		Time period	AM Peak Hour	PM Peak Hour
113	N	In	24	6
		Out	31	8
	S	In	19	29
		Out	25	17
186	E	In	17	31
		Out	50	27
	W	In	32	27
		Out	18	19
204	N	In	30	33
		Out	23	24
	S	In	24	43
		Out	65	40
303	N	In	25	17
		Out	30	17
	S	In	5	10
		Out	6	4
324	E	In	15	7
		Out	18	3
	W	In	18	10
		Out	21	9

Table 8-2 – Additional Passengers per Bus

		Time period	AM Peak Hour	PM Peak Hour
113	N	In	4	1
		Out	5	1
	S	In	3	5
		Out	4	3
186	E	In	3	6
		Out	10	5
	W	In	6	5
		Out	4	4
204	N	In	5	6
		Out	4	4
	S	In	4	7
		Out	11	7
303	N	In	6	4
		Out	7	4
	S	In	1	3
		Out	1	1
324	E	In	5	2
		Out	6	1
	W	In	6	3
		Out	7	3

8.1.4

Tables 8-3 to 8-6 overleaf summarise the future spare capacity – Tables 16.35 – 16.38 of the TA.

Table 8-3 – 2026 Committed Development

		Time period	Bus Loading		Future Spare Capacity	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
113	N	In	49	57	39%	29%
		Out	51	49	36%	39%
	S	In	57	35	28%	56%
		Out	69	40	13%	50%
186	E	In	37	29	54%	63%
		Out	55	28	31%	65%
	W	In	18	39	77%	51%
		Out	22	32	72%	60%
204	N	In	30	30	62%	63%
		Out	33	23	58%	71%
	S	In	29	31	64%	62%
		Out	48	27	39%	66%
303	N	In	16	17	67%	67%
		Out	29	16	43%	69%
	S	In	16	15	69%	71%
		Out	19	11	62%	77%
324	E	In	15	15	70%	69%
		Out	23	13	55%	74%
	W	In	29	30	41%	40%
		Out	38	25	24%	50%

Table 8-4 – 2026 Committed Development with Proposed Development

		Time period	Bus Loading		Future Spare Capacity	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
113	N	In	53	58	34%	28%
		Out	57	50	29%	37%
	S	In	61	40	24%	50%
		Out	73	43	8%	46%
186	E	In	40	36	50%	55%
		Out	65	33	19%	58%
	W	In	25	45	69%	44%
		Out	26	36	67%	55%
204	N	In	35	35	56%	56%
		Out	37	27	53%	66%
	S	In	33	38	59%	53%
		Out	59	34	26%	58%
303	N	In	23	21	55%	58%
		Out	36	20	28%	60%
	S	In	17	17	67%	66%
		Out	20	13	60%	75%
324	E	In	20	18	60%	65%
		Out	29	14	43%	71%
	W	In	35	34	30%	33%
		Out	45	28	10%	44%

Table 8-5 – 2026 Full CAAP

		Time period	Bus Loading		Future Spare Capacity	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
113	N	In	49	56	39%	30%
		Out	52	48	35%	40%
	S	In	58	31	28%	61%
		Out	70	35	13%	56%
186	E	In	37	22	54%	73%
		Out	56	22	30%	73%
	W	In	19	33	77%	59%
		Out	23	29	71%	64%
204	N	In	31	21	61%	74%
		Out	35	19	56%	76%
	S	In	30	19	63%	76%
		Out	56	18	31%	78%
303	N	In	17	12	67%	76%
		Out	33	12	34%	76%
	S	In	16	9	67%	81%
		Out	20	9	60%	81%
324	E	In	16	12	68%	77%
		Out	27	12	47%	77%
	W	In	30	25	39%	50%
		Out	42	23	15%	55%

Table 8-6 – 2026 Full CAAP with Development

		Time period	Bus Loading		Future Spare Capacity	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
113	N	In	53	57	34%	29%
		Out	57	50	28%	38%
	S	In	61	36	24%	55%
		Out	74	38	8%	53%
186	E	In	40	28	49%	65%
		Out	66	27	17%	66%
	W	In	25	38	69%	52%
		Out	26	33	67%	59%
204	N	In	36	27	55%	67%
		Out	39	23	51%	71%
	S	In	34	26	58%	67%
		Out	66	24	17%	69%
303	N	In	23	16	54%	68%
		Out	40	16	19%	68%
	S	In	18	12	65%	76%
		Out	21	10	57%	79%
324	E	In	21	14	58%	72%
		Out	33	13	35%	74%
	W	In	36	28	27%	44%
		Out	49	26	2%	49%

8.1.5 Although the CAAP with Development scenario shows some routes are approaching capacity, funding to provide additional bus services may be secured to address short term capacity constraints by future developments. These tables do not allow for additional bus services which may be/have been secured from committed and cumulative developments. This would further increase available capacity relative to the data presented above. It is worth noting that any development funding would allow the extra buses to be introduced sooner than they would be if their introduction was delayed until the demand was sufficient for those extra buses to be financially viable.

8.1.6 Full details of the bus assessment are included in Appendix E.

8.2 BUS STOP PROVISION – AERODROME ROAD

8.2.1 The post application discussions with LBB have included a review of the location the existing bus stops on Aerodrome Road and how they will be able to tie in with the future Peel Centre requirements. The highways plan has identified that the eastern end of Aerodrome Road (under the railway bridge), be relocated closer to the Peel Centre access road to maximise accessibility to the bus services for the future development as well as residents in Beaufort Park. The proposed arrangement will allow vehicles to pass buses at the bus stop if necessary.

8.2.2 The provision of the Aerodrome Road bus stops at the western end of the Site has been adjusted and located slightly further to the west of the existing bus flags, to allow appropriate crossing facilities to be incorporated into the scheme design. The final location of the stops can be determined further to consultation with TfL as part of the final design process.

8.3 LUL ASSESSMENT

8.3.1 Following the review of trip generation and methodology for the LUL assessment, the revised Tables 16.41 and 16.42 of the 2014 TA are summarised in Table 8-7 and Table 8-8.

Table 8-7 - LUL Trips Expected in 2026

	2026 Committed				2026 Committed with Proposed Dev			
	AM		PM		AM		PM	
	In	Out	In	Out	In	Out	In	Out
Residential	145	645	446	277	210	936	647	401
School	5	1	2	5	11	2	4	13
Office	14	1	1	14	14	1	1	14
Met Police	67	3	5	7	68	9	2	28
Total	230	649	454	303	302	947	654	456

Table 8-8 - LUL Trips Expected in 2026

	2026 Full CAAP				2026 CAAP with Proposed Dev			
	AM		PM		AM		PM	
	In	Out	In	Out	In	Out	In	Out
Residential	196	874	604	375	261	1165	806	500
School	15	2	5	17	22	3	7	26
Office	58	3	3	58	58	3	3	58
Met Police	67	3	5	7	68	9	2	28
Total	335	882	617	457	408	1180	818	612

8.3.2

The 2012 flows remain the same and using these updated LUL trip generation, Table 8-9 summarises the peak hour increases relative to 2012 (Table 16.44 of the 2014 TA) and Table 8-10 sets out the future directional peak hour trips (Table 16.45 of the 2014 TA).

Table 8-9 - Peak Hour Increases from 2012 Data with 2026 Scenarios

		Entry (Outbound)		Exit (Inbound)	
		To North	To South	From South	From North
AM	2026 Committed	13	637	172	58
	2026 Committed with Proposed Dev	18	929	226	76
	2026 Full CAAP	17	864	251	84
	2026 Full CAAP with Proposed Dev	23	1157	306	103
PM	2026 Committed	19	283	436	18
	2026 Committed with Proposed Dev	29	427	628	26
	2026 Full CAAP	29	428	593	24
	2026 Full CAAP with Proposed Dev	39	573	786	32

Table 8-10 - Future Directional Peak Hour Trips

		Entry (Outbound)		Exit (Inbound)	
		To North	To South	From South	From North
AM	2026 Committed	39	1951	556	187
	2026 Committed with Proposed Dev	44	2243	610	205
	2026 Full CAAP	43	2178	635	213
	2026 Full CAAP with Proposed Dev	49	2471	690	232
PM	2026 Committed	56	828	1190	49
	2026 Committed with Proposed Dev	66	972	1382	57
	2026 Full CAAP	66	973	1347	55
	2026 Full CAAP with Proposed Dev	76	1118	1540	63

8.3.3

As a result, the future train loading (Table 16.47 of the 2014 TA) is summarised in Table 8-11.

Table 8-11 - Increases to Each Train

		Entry (Outbound)		Exit (Inbound)	
		To North	To South	From South	From North
AM	2026 Committed	1	29	8	3
	2026 Committed with Proposed Dev	1	42	10	3
	2026 Full CAAP	1	39	11	4
	2026 Full CAAP with Proposed Dev	1	53	14	5
PM	2026 Committed	1	13	20	1
	2026 Committed with Proposed Dev	1	19	29	1
	2026 Full CAAP	1	19	27	1
	2026 Full CAAP with Proposed Dev	2	26	36	1

8.3.4

The resultant loading on the Northern Line (Tables 16.48 and 16.49 of the 2014 TA) is summarised in Table 8-12 and Table 8-13.

Table 8-12 - AM Loading

	Scenario	Loading	Spare Capacity
Colindale to Hendon Central	2012	3701	78%
	2026 (Full CAAP with Dev)	4858	71%
Chalk Farm to Camden Town	2012	8797	48%
	2026 (Full CAAP with Dev)	9954	41%

Table 8-13 - PM Loading

	Scenario	Loading	Spare Capacity
Camden Town to Chalk Farm	2012	6572	61%
	2026 (Full CAAP with Dev)	7358	57%
Hendon Central to Colindale	2012	2508	85%
	2026 (Full CAAP with Dev)	3294	81%

8.3.5 As can be seen, there is still sufficient capacity on the Northern Line for the forecast trips as a result of Proposed Development and with the full CAAP.

8.3.6 The station gateline capacity has been re-assessed, and the following tables below summarise Tables 16.51 to 16.54 of the 2014 TA.

Table 8-14 - Colindale Station 2026 Committed Gateline Requirement

		AM	PM	
Entry	Peak 3 hour entry flow	4156	2226	
	Peak hour entry flow (48% AM, 39% PM)	1994.84	868.19	
	Peak 15 min entry flow (27% AM, 26% PM)	538.61	234.41	
	Peak 5 min entry flow (40%)	215.44	93.76	
	Number of entry gates needed	1.72	0.75	
	Rounded-up number of entry gates	2	1	
Exit	Platform 1 - NB	Peak 3 hour alighting load	1373	2959
		Peak hour alighting load (48% AM, 39% PM)	659.03	1154.08
		Peak 15 min alighting load (27% AM, 26% PM)	177.94	300.06
		Train headway	2.7	2.7
		Alighting load	32.03	54.01
	Platform 2 - SB	Peak 3 hour alighting load	353	205
		Peak hour alighting load (48% AM, 39% PM)	169.28	79.82
		Peak 15 min alighting load (27% AM, 26% PM)	45.71	20.75
		Train headway	2.7	2.7
		Alighting load	8.23	3.74
	Total alighting load (including 25% increase to busiest platform)		48.26	71.25
	Number of exit gates needed		0.97	1.42
	Rounded-up number of exit gates		1	2
	Total number of gates (Total+1)		4	4

Table 8-15 - Colindale Station 2026 Committed with Proposed Development Gateline Requirement

		AM	PM	
Entry	Peak 3 hour entry flow	4777	2619	
	Peak hour entry flow (48% AM, 39% PM)	2292.77	1021.30	
	Peak 15 min entry flow (27% AM, 26% PM)	619.05	275.75	
	Peak 5 min entry flow (40%)	247.62	110.30	
	Number of entry gates needed	1.98	0.88	
	Rounded-up number of entry gates	2	1	
Exit	Platform 1 - NB	Peak 3 hour alighting load	1506	3414
		Peak hour alighting load (48% AM, 39% PM)	722.88	1331.32
		Peak 15 min alighting load (27% AM, 26% PM)	195.18	346.14
		Train headway	2.7	2.7
		Alighting load	35.13	62.31
	Platform 2 - SB	Peak 3 hour alighting load	370	263
		Peak hour alighting load (48% AM, 39% PM)	177.50	102.62
		Peak 15 min alighting load (27% AM, 26% PM)	47.92	26.68
		Train headway	2.7	2.7
		Alighting load	8.63	4.80
	Total alighting load (including 25% increase to busiest platform)		52.54	82.68
	Number of exit gates needed		1.05	1.65
	Rounded-up number of exit gates		2	2
	Total number of gates (Total+1)		5	4

Table 8-16 - Colindale Station 2026 Full CAAP

		AM	PM	
Entry	Peak 3 hour entry flow	4640	2621	
	Peak hour entry flow (48% AM, 39% PM)	2227.01	1022.27	
	Peak 15 min entry flow (27% AM, 26% PM)	601.29	276.01	
	Peak 5 min entry flow (40%)	240.52	110.41	
	Number of entry gates needed	1.92	0.88	
	Rounded-up number of entry gates	2	1	
Exit	Platform 1 - NB	Peak 3 hour alighting load	1567	3330
		Peak hour alighting load (48% AM, 39% PM)	752.13	1298.65
		Peak 15 min alighting load (27% AM, 26% PM)	203.08	337.65
		Train headway	2.7	2.7
		Alighting load	36.55	60.78
	Platform 2 - SB	Peak 3 hour alighting load	378	252
		Peak hour alighting load (48% AM, 39% PM)	181.26	98.42
		Peak 15 min alighting load (27% AM, 26% PM)	48.94	25.59
		Train headway	2.7	2.7
		Alighting load	8.81	4.61
	Total alighting load (including 25% increase to busiest platform)	54.50	80.58	
	Number of exit gates needed	1.09	1.61	
	Rounded-up number of exit gates	2	2	
	Total number of gates (Total+1)		5	4

Table 8-17 - Colindale Station 2026 Full CAAP with Proposed Development

		AM	PM	
Entry	Peak 3 hour entry flow	5260	3019	
	Peak hour entry flow (48% AM, 39% PM)	2524.94	1177.38	
	Peak 15 min entry flow (27% AM, 26% PM)	681.73	317.89	
	Peak 5 min entry flow (40%)	272.69	127.16	
	Number of entry gates needed	2.18	1.02	
	Rounded-up number of entry gates	3	2	
Exit	Platform 1 - NB	Peak 3 hour alighting load	1702	3787
		Peak hour alighting load (48% AM, 39% PM)	816.87	1476.78
		Peak 15 min alighting load (27% AM, 26% PM)	220.56	383.96
		Train headway	2.7	2.7
		Alighting load	39.70	69.11
	Platform 2 - SB	Peak 3 hour alighting load	395	311
		Peak hour alighting load (48% AM, 39% PM)	189.59	121.33
		Peak 15 min alighting load (27% AM, 26% PM)	51.19	31.55
		Train headway	2.7	2.7
		Alighting load	9.21	5.68
	Total alighting load (including 25% increase to busiest platform)		58.84	92.07
	Number of exit gates needed		1.18	1.84
	Rounded-up number of exit gates		2	2
	Total number of gates (Total+1)		6	5

- 8.3.7 Following this analysis, there is no additional gate capacity required in the Committed Development with Peel Centre Development. For the Full CAAP (which adds another 2287 dwellings) with Peel Centre development, there is a requirement for one additional gate.
- 8.3.8 There are transformational works to be undertaken in 2015 in line with the removal of ticket windows. With the current provision of 5 gatelines at Colindale Station, the additional demands predicted by the full CAAP development (including the Peel Centre) would require an extra gate to be provided at the station. It would be expected that other developments would contribute proportionately to the additional gateline provision as well as the Peel Centre.
- 8.3.9 In post-application discussions with TfL, there was a station capacity issue raised surrounding staircase capacity. Following this, we have conducted a static stair capacity assessment using the Transport for London Station Planning Standards and Guidelines (2012).

8.3.10 The presence of the central handrail removes 0.3m of the stair width, so calculations have been completed using a usable width of 1.77m which relates to the top 6 or so steps only on the main flights. The calculations have also been undertaken based on 28 passengers per minute per metre width which relates to the mid-point of Fruin Level of Service C. Fruin Level of Service (LOS) C ranges from 23 to 33 ppm, and calculating based on 28 gives a good initial understanding of performance. Fruin Level of Service C is also used for design of new facilities, but in assessing existing facilities, the LUL network often experiences Fruin Level D and E at peak times. Fruin Level D ranges from 33 to 43 ppm with an average figure of 38ppm.

8.3.11 There are two stairways that access platform level, and the southern stairway will have greater initial demand as more platform sits south of this stairway than the northern stairway. As demand for the stairway increases passengers will choose to use the northern stairway to minimise their journey time and access to and from the platform more quickly.

Table 8-18 - Capacity per staircase

Width of stair (m)	1.77
Capacity per metre (passengers)	28
Stairwell capacity per minute (passengers)	50
Stairwell capacity per 5 minutes (passengers)	248

Table 8-19 - Capacity remaining per staircase

	Peak 5 minute entry/exit flows	Stair Capacity
2012	210	42%
2026 Committed	305	62%
2026 Committed with Proposed Dev	345	70%
2026 Full CAAP	341	69%
2026 Full CAAP with Proposed Dev	381	77%
Railplan	354	72%

8.3.12 Table 8-19 shows that using this simple static analysis the existing stairs have sufficient capacity to accommodate anticipated demand with full CAAP development and Peel Centre. This static analysis also assumes that the stairways are two-way in operation. The mid-point figure quoted above for Fruin LOS C of 28 ppm is for two way operation. Where there is a dominant tidal flow then the stairway will tend towards one way operation, when a mid-point figure for Fruin LOS C will be 35ppm.

8.3.13 Based on the above analysis, the stairways within the station would operate with an acceptable level of service. TfL have responded to this point in their letter dated 28th April 2015 and consider there will be un-even split of trips between the northern and southern staircases, therefore creating congestion on the southern stairs. TfL have identified that they will carry out their own Legion modelling as part of the Colindale Station study. However it is reasonable to assume that if there is some congestion on one stair that passengers will transfer to the other available stair where capacity exists. It is important that any further modelling undertaken by TfL realistically represents passenger behaviour.

8.4 **SUMMARY – PUBLIC TRANSPORT IMPACT ASSESSMENT – BUS & LUL**

8.4.1 Following the changes to the residential trip generation and changes in MPS and bus assignments, as well as the 1 hour peak bus assessment, it can be concluded that there is still capacity on the bus services for both the committed and CAAP scenarios.

8.4.2 There are also no issues with capacity on the Northern Line with the increased number of people per train service. With committed development and the Peel Centre the proposed station gateline would operate within capacity. It was noted that in the full CAAP with development scenario that a further gate is required, however this threshold was only reached with the addition of a number of dwellings across the full CAAP scenario. There are no issues with staircase capacity using the static assessment, however TfL are undertaking on-going pedestrian analysis as part of the Colindale Station study to understand impacts on the specific staircases serving the LUL platform.

9

PARKING STRATEGY

9.1 CAR PARKING - GENERAL

- 9.1.1 Following a post-submission review of the Residential Parking Demand with amended unit numbers and changes to affordable housing/private rented provision, as highlighted in Section 19.3 of the 2014 TA, the car parking demand will be less than 0.77 parking spaces per dwelling and more than 0.65 parking spaces per dwelling, and thus the mid-point demand of 0.71 parking spaces per dwelling has been used. It is therefore currently anticipated that 2053 residential parking spaces will be required across the Site.
- 9.1.2 An updated parking schedule has been prepared that reflects the revised provision of spaces with the increased basement parking in Stage 2 (reducing basement parking in Stage 3), this is included in Appendix F. The distribution of car parking across the Site has been balanced, and there are sufficient spaces to accommodate demand.
- 9.1.3 It has also been confirmed that a temporary car parking facility will be provided for Stage 1.
- 9.1.4 The post application discussions with TfL & LBB confirmed that 70 school spaces designated for pick-up and drop-off will not be shared with residents.

9.2 RETAIL CAR PARKING

- 9.2.1 The size of the proposed retail basement car park matches the expected demand based on the trip analysis and is below the London Plan maximum standards and therefore wholly in accordance with planning policy. The proposed size and type of the supermarket in the 2014 TA would serve the local residential areas as well as the future Peel Centre Site residents. The car park access for the retail use is provided off Aerodrome Road from the internal development road network and is unlikely to introduce any significant impact on the local public transport interchange on Colindale Avenue.

9.3 MOTORCYCLE PARKING

- 9.3.1 Although there is no policy requirement for motorcycle parking provision, there is a review of motorcycle parking feasibility across the Site currently being undertaken. There is an anticipated 42 motorcycle parking spaces to be provided in Stage 1 across the podium parking, and further spaces can be accommodated to serve Stages 2 and 3.
- 9.3.2 Our estimates that are based on the relationship between car registrations and motorcycle registrations across London highlight that only 30 are necessary so the level of provision is more than adequate.
- 9.3.3 A review of motorcycle parking across the outline stages will be conducted at a later stage to ensure adequate provision.

9.4 ELECTRIC CAR CHARGING POINTS

- 9.4.1 The 2014 TA provides details of the proposed electric car charging provision for the development which will accord with the London Plan Policy. The report states in para 20.2.20 that provision will be made for 20% of spaces to be provided with electric car charging points on occupation and the potential for a further 20% provision in the future. It would be expected that the details of the Electric Car Charging Strategy would be included as a planning condition

9.5 CYCLE PARKING

RESIDENTIAL CYCLE PARKING

9.5.1 Cycle parking in the submitted application was in line with the Draft FALP (January 2014) – these have since been updated in September 2014 with a decreased cycle parking requirement for 1 bedroom dwellings, and the changes are highlighted in **Table 9-1** and **9-2** below. The Code for Sustainable Homes (CfSH) cycle parking requirement for 2 credits is also shown in this table.

Table 9-1 - Cycle Parking Required and Provision for Detailed Component (Stage 1)

	Block	Residential Mix					Total	CfSH Requirement	FALP (Sept 14) Requirement		FALP (Jan 14, standard used in application)	Provision
		Studio	1 bed	2 bed	3 bed	4 bed			Long-stay	Visitor		
Stage 1	H	2	43	64	17		126	207	207	3	250	207
	J	6	12	24	24		66	114	114	2	126	114
	K	4	12	24	24		64	112	112	2	124	112
	L	1	4	12	5		22	39	39	1	43	39
	M		7	15	30	10	62	137	117	2	124	137
	N	1	4	12	5		22	39	39	1	43	39
	P	3	22	34	26	11	96	189	167	2	189	189
	Q	3	22	34	26	11	96	189	167	2	189	189
	R	6	15	35	7		63	105	105	2	120	105
	S	12	12	28	10		62	100	100	2	112	100
	T		27	35	10		72	117	117	2	144	117
	U	0	54	60	23		137	220	220	3	274	220
		Total						888	1568	1504	22	1738

Table 9-2 - Cycle Parking Requirement for Outline Components (Stages 2 and 3)

	Block	Residential Mix					Total	CfSH Requirement	FALP (Sept 14) Requirement	
		Studio	1 bed	2 bed	3 bed	4 bed			Long-stay	Visitor
Stage 2	A	40	60	60	20		180	260	260	5
	B	35	65	65	25		190	280	280	5
	C	25	150	95	30		300	425	425	8
	D	5	65	60	15		145	220	220	4
	E	5	30	45	5	5	90	155	145	2
	F	20	65	65	45		195	305	305	5
	G	5	5	20	20	10	60	130	110	2
	Total						1160	1775	1745	29
Stage 3	V	30	20	90	30		170	290	290	4
	W	30	12	100	30		172	302	302	4
	X	30	10	125	32		197	354	354	5
	Y		5	120	25		150	295	295	4
	Z	10	25	90	38		163	291	291	4
	Total						852	1532	1532	21

VISITOR CYCLE PARKING

- 9.5.2 The quantum of short term (visitor) cycle parking identified in the 2014 TA was based on the standards set out in adopted FALP (1 space per 40 units) and will amount to 73 residential visitor spaces to be provided within the public realm.
- 9.5.3 The TfL comments provided in October 2014 stated that the retail cycle parking provision was considered to be generous. There is the potential for the various non-residential uses to be consolidated to provide a lower overall number of cycle parking for visitors to account for cross visitation between retail/commercial uses. The provision of 88 visitor cycle parking spaces for the A3 retail use (3500sqm) has been based on the adopted FALP standards.

9.6 SUMMARY – PARKING STRATEGY

CAR PARKING

- 9.6.1 Following a post-submission review of the Residential Parking Demand with amended unit numbers and changes to affordable housing/private rented provision, as highlighted in Section 19.3 of the 2014 TA, the car parking demand will be less than 0.77 parking spaces per dwelling and more than 0.65 parking spaces per dwelling, and thus the mid-point demand of 0.71 parking spaces per dwelling has been used. It is therefore currently anticipated that 2053 residential parking spaces will be required across the Site. The distribution of car parking across the Site has been evened out and it is considered that the provision will satisfy the predicted car parking demand.
- 9.6.2 The level of car parking proposed on the Site has been forecast based on empirical evidence of car ownership levels by size of dwelling and also using local census output data. The level of car parking proposed on the Site as a whole (2053 spaces) is greater than that calculated using the minimum levels derived from LBB policy DM17 (1904 spaces). The demand based assessment has been undertaken to derive the proposed allocations by block, and this can be included within the Car Parking Management Plan for the Site. The level of parking demand can be monitored as the scheme progresses and reviewed to ensure that the distribution of spaces accords with actual demand as the scheme progresses.
- 9.6.3 The temporary car parking arrangement during the build out of phases has been confirmed to ensure that a ratio of 0.71 per unit is provided close the development areas

MOTORCYCLE PARKING

- 9.6.4 Confirmation has been provided that the scheme will accommodate some 42 motorcycle parking spaces across the first stage. Our estimates that are based on the relationship between car registrations and motorcycle registrations across London highlight that only 30 are necessary so the level of provision is more than adequate.
- 9.6.5 A review of motorcycle parking across the outline stages will be conducted at a later stage to ensure adequate provision.

CYCLE PARKING

- 9.6.6 The cycle parking provision for the development has been reviewed and adjusted to reflect the latest provisions set out in the recently adopted London Plan (FALP) – March 2015.

GENERAL - PARKING

- 9.6.7 The overall changes to the car parking strategy have strengthened the car/motorcycle and cycle parking proposals for the development.

10 CONSTRUCTION

10.1 CONSTRUCTION VEHICLE GENERATION

10.1.1 Following a minor update to the residential floor areas in the detailed stage blocks, the construction assessment has been updated and the revised tables are provide in Appendix G. The construction vehicle movements are based on the existing methodology, however Table 10-1 below provides an updated summary of the construction vehicles likely to enter/exit the Site over the main construction periods (an update to Table 20.1 of the 2014 TA).

Table 10-1 – Summary of peak construction vehicle demands (two-way movements)

Year / Vehicle Demands	2018	2020	2022	2024
HGVs per month	4381	1118	3169	336
Construction staff cars per month	4889	2012	2990	605
TOTAL monthly demand	9270	3130	6159	941
HGVs per day	184	47	133	14
Construction staff cars per day	205	84	125	25
TOTAL daily demand	389	131	258	39

10.1.2 Following these updates, it can be concluded that there are negligible changes to the construction assessment.

10.2 CONSTRUCTION TRAFFIC IN ES

10.2.1 The indicative construction programme presented in the ES is now expected to be delayed by up to a year relative to the original submission. The effect of this is to shift the construction stage assessment time slices and the operational assessment date of completion back by some 12 months.

10.2.2 The original indicative construction programme anticipated completion in 2025. However, the assessment of Effects Once the Proposed Development is Completed and Occupied presented in the ES was undertaken for 2026 to reflect the Local Plan and available traffic model horizon year. The original assessment (including the assessment of Cumulative Effects presented in the ES therefore remains valid. Conclusions and assessment of significance would not change.

10.2.3 The data used in the assessment of Effects during Demolition and Construction would change slightly, but not materially (less than 5% change in the base in each time slice). In the non-cumulative assessment, the level of traffic included in the baseline in each time slice would change slightly, but not materially or perceptibly. The absolute impact of the development would remain the same and the relative (percentage) impact would change slightly, but not materially. Conclusions and assessment of significance would not change.

10.2.4 For the assessment of Cumulative Effects, the ES stated “*Given the scale of cumulative change between the Current Operation (2012 to 2014) and the Future Baseline 2026 (as considered in the Effects Once the Proposed Development is Completed and Occupied section), the effects arising during construction are in all instances less significant. No further assessment has therefore been undertaken.*” This statement remains valid in the context of the revised indicative construction programme. Conclusions and assessment of significance would not change.

11

DRAFT TRAVEL PLAN FRAMEWORK

11.1 RESIDENTIAL MODE SPLIT UPDATE

11.1.1 Following an update to the residential trip generation for non-car modes as highlighted in Chapter 5 above, there is an update to Table A1 in Appendix A of the Draft Travel Plan Framework, summarising the mode split target for the residential element of the scheme. The updated mode splits are included in Table 11-1 below.

Table 11-1 - Average AM (0800-0900) and PM (1730-1830) Peak Hour Mode Split Target

Mode	Target Mode Split (AM)	Target Mode Split (PM)
Underground	17%	16%
Bus	15%	14%
Taxi	0%	0%
Car Driver	29%	28%
Car Passenger	6%	6%
Motorcycle	0%	1%
Bicycle	2%	6%
Walk	30%	29%
Total Person	100%	100%

12 SUMMARY AND CONCLUSIONS

12.1.1 This addendum to the 2014 Transport Assessment which formally submits the further information provided in response to comments from LBB and TfL post application and provides a commentary on minor amendments to the Proposed Development. The further information and minor amendments are not significant and do not materially alter the conclusions of the 2014 which remain robust and relevant.

12.2 SUMMARY - DESCRIPTION OF PROPOSALS

12.2.1 Details of a number of the infrastructure proposals have been provided to confirm matters. The information provides clarification of headroom for pedestrians along the Peel Link, cycle access, proposed infrastructure within the Site, connections to local routes, clarification of the proposed internal streets and confirmation of the proposed MPS and site wide servicing. The details will not materially affect the findings in the submitted 2014 TA.

12.3 SUMMARY – EXISTING TRIP GENERATION

12.3.1 The existing trip generation for the MPS has been assumed to have the potential to be operation at full capacity. Confirmation has been provided by the MPS that at the time of the surveys the site was operating at 70-75%. A sensitivity test of the future base situation where the MPS site is operation at 70-75% rather than 100% has been prepared for further highway analysis.

12.3.2 The analysis for the existing situation also provided supporting details of the mode share associated with MPS training trips and the assumptions in the 2014 TA are considered to be robust. A summary of workplace Census data has also been provided to support information provided in the 2014 TA.

12.3.3 The clarification of the MPS operations and the additional information on the Existing Trip Generation will not introduce any significant change to the findings presented in the submitted Transport Assessment.

12.4 SUMMARY – FUTURE TRIP GENERATION – MPS SITE

12.4.1 The MPS site was determined to be operating at 70-75% of the full capacity in 2012 and until the Site is formally disposed of, the Site has the potential to be re-occupied at full capacity. This has been taken into consideration as part of the analysis for the Redrow scheme. Confirmation of the observed site operation in 2012 has been provided by MPS.

12.4.2 The clarification of the Future Trip Generation for the MPS operations will not introduce any significant change to the findings presented in the submitted transport assessment.

12.5 **SUMMARY – RESIDENTIAL TRIP GENERATION**

12.5.1 The detailed TfL response paper submitted in February 2015 (provided in Appendix A1) sets out a review of trip generation and mode split based on a variety of statistical databases and focuses on the most recent Census and London Travel Demand Survey (LTDS) information. The discussions with TfL have resulted in detailed appraisal of the mode share assumptions for the proposed residential uses. In WSP's professional view, the TfL Census Hybrid method is based on little significant justification and provides a bias towards LUL and Bus journeys because it assumes almost all trips have a work journey purpose. The use of the TfL Census Hybrid method has been used as sensitivity test for Bus and LUL impact but it is not accepted by the WSP team. The WSP approach has been supported by a number of other verifiable sources of data and recognises all journey purposes within the peak hour. As such the All Journey Purpose approach represents a more realistic assessment of demand by mode.

12.6 **SUMMARY – TOTAL TRIP GENERATION**

12.6.1 The changes to the trip generation demands for the residential uses have resulted in a change to the overall total trip demands for the Site. These are updated in this section and presented on the tables.

12.7 **SUMMARY – HIGHWAY ASSESSMENT**

12.7.1 The discussions with TfL & LBB have required amendments to traffic flows on the immediate highway network serving the Site to reflect updates in the committed development flows on the southern end of Colindale Avenue, a sensitivity test of the future operation of the MPS site (70-75% occupied rather than 100% occupied for the future base situation) and additional traffic flows associated with the potential 'D class' uses on the Former Peel Centre Site. In addition, a revision of the LINSIG analysis has been carried out to reflect 2012 optimised traffic signal timings at the A41 Watford Way/Aerodrome Road junction.

12.7.2 In summary, the analysis provided with the revised highway analysis does not significantly alter the original findings presented in the submitted 2014 TA.

12.8 **SUMMARY – PUBLIC TRANSPORT IMPACT ASSESSMENT – BUS & LUL**

12.8.1 Following the changes to the residential trip generation and changes in MPS and bus assignments, as well as the 1 hour peak bus assessment, it can be concluded that there is capacity on the bus services for both the committed and CAAP scenarios.

12.8.2 There are also no issues with capacity on the Northern Line with the increased number of people per train service. It was noted that in the CAAP with development scenario that a further gate is required, however this threshold was reached with the addition of a number of dwellings across the full CAAP scenario.

12.9 **SUMMARY – PARKING STRATEGY**

CAR PARKING

- 12.9.1 Following a post-submission review of the Residential Parking Demand with amended unit numbers and changes to affordable housing/private rented provision, as highlighted in Section 19.3 of the TA, the car parking demand will be less than 0.77 parking spaces per dwelling and more than 0.65 parking spaces per dwelling, and thus the mid-point demand of 0.71 parking spaces per dwelling has been used. It is therefore currently anticipated that 2053 residential parking spaces will be required across the Site. The distribution of car parking across the Site has been balanced and it is considered that the provision will satisfy the predicted car parking demand.
- 12.9.2 The temporary car parking arrangement during the build out of phases has been confirmed to ensure that a ratio of 0.71 per unit is provided close to the development areas

MOTORCYCLE PARKING

- 12.9.3 Confirmation has been proved that the scheme will accommodate some 42 motorcycle parking spaces across the development and further spaces in Stages 2 and 3.

CYCLE PARKING

- 12.9.4 The cycle parking provision for the development has been reviewed and adjusted to reflect the latest provisions set out in the recently adopted London Plan (FALP) – March 2015.

GENERAL - PARKING

- 12.9.5 The overall changes to the car parking strategy have strengthened the car/motorcycle and cycle parking proposals for the development.

12.10 **SUMMARY – CONSTRUCTION**

- 12.10.1 Following minor alterations to the residential floorspace, it can be concluded that there are negligible changes to the construction assessment.

12.11 **CONCLUSION**

- 12.11.1 The Transport Assessment has been discussed with LBB and TfL as part of the post planning submission negotiations. The key topics identified in above have been reviewed and re-assessed to reflect the discussions. These have been set out in the Addendum TA with supporting technical papers and LBB/TfL correspondence. The assessments and changes to proposed transport infrastructure identified in this Addendum TA document will not significantly change the overall findings of the submitted Transport Assessment.
- 12.11.2 In conclusion, the Proposed Development of complies with current policies and will enable future residents, employees and visitors the opportunity to access the Site by a variety of travel modes. The Proposed Development will introduce improvements to the local highway network and enhance connections for non-car modes. The Proposed Development will allow the existing secure MPS site to be opened up and create more direct connections to the LUL Station at Colindale for local residential areas and the introduction of the Peel Link , the Colindale Avenue Improvements and new crossing on Aerodrome Road will enhance the existing infrastructure.
- 12.11.3 The analysis provided with the 2014 TA and within this Addendum TA demonstrates that the Proposed Development can be accommodated within the local transport network and will enhance the pedestrian and cycle network by allowing the existing secure MPS site to be opened up and create more direct connections to Colindale LUL station and local bus stops. The connectivity to local residential areas will be improved with the introduction of the Peel Link, the Colindale Avenue Improvements and new crossings on Aerodrome Road.