From: [redacted]
To: "developmentcontrol@luton.gov.uk"
Cc: [redacted].
Subject: Planning applications 16/01400/OUTEIA and 16/01401/OUTEIA
Date: 27 March 2017 11:45:20
Attachments: image001.jpg
Power Court Luton. (2)..docx
Land Adjacent M1 Junction March 2017).docx

For the attention of [redacted]
Dear [redacted]
I refer to previous Highways England response dated 30 January 2017 to the above planning applications.
The applicant provided Highways England on 02/03/2017 Transport Assessment Addendum Reports (02) relating to Highways England queries and clarifications sought on PBA's first Addendum Repots for Newlands Park and Power Court.
Power Court: AECOM are reviewing the Addendum and providing comments on 31 March 2017. Initial indications are that the outstanding issues can be resolved.
Newlands Park: AECOM AECOM are reviewing the Addendum and providing comments on 21 April 2017.
To enable the applicants consultant to complete these outstanding works Highways England recommend Luton Borough Council do not determine the planning application:
Power Court: before 30 April 2017.
Newlands Park: before 31 May 2017.
Please do not hesitate to contact me should you wish to discuss.
Regards

[redacted]
Highways England | Woodlands | Manton Lane | Bedford | MK41 7LW
Tel: [redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]
Follow Highways England East on Twitter

Developments Affecting Trunk Roads and Special Roads

Highways England Planning Response (HEPR 16-01)
Formal Recommendation to an Application for Planning Permission

From: Martin Fellows
Operations (East)
planningee@highwaysengland.co.uk

To: Luton Borough Council FOA – [redacted]

CC: transportplanning@dft.gsi.gov.uk
growthandplanning@highwaysengland.co.uk

Council's Reference: 16/01401/OUTEIA

Referring to the planning application referenced above, dated 9 September 2016, Outline planning permission with all matters reserved except for access, for mixed use development comprising: office floor space (use class B1), retail floorspace (use class A1), food and beverage – Land Adjacent Junction 10 to 10A, M1, Newlands Road, Luton, notice is hereby given that Highways England's formal recommendation is that we:

~~a) offer no objection;~~

b) ~~recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions~~);

c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);

~~d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Highways Act Section 175B is / is not relevant to this application.[1]

[1] Where relevant, further information will be provided within Annex A.

This represents Highways England formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should you disagree with this recommendation you should consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2015, via transportplanning@dft.gsi.gov.uk.

Signature [redacted] **Date: 27 March 2017**	
Name: [redacted]	**Position:** Assistant Asset Manager
Highways England: Woodlands, Manton Lane Bedford MK41 7LW [redacted]	

Annex A Highways England recommended further assessment required

HIGHWAYS ENGLAND ("we") has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

This response represents our formal recommendations with regard to planning application 16/01401/OUTEIA and has been prepared by [redacted]

Highways England has been collaborating with the developer on pre-application discussions regarding development traffic impact on the Strategic Road Network, M1 junction 10. Highways England will require to review and assess the Transport Assessment supporting the application to determine if there is sufficient capacity for the junction to operate safely or identify mitigation required.

Highways England received Transport Assessment Addendum Reports (02) relating to Highways England queries and clarifications sought on PBA's first Addendum Repots for Newlands Park and Power Court on 2 March 2017. AECOM are currently reviewing the document and expecting to respond 21 April 2017. The following outstanding issues are being reviewed:

- Consideration of the potential for a Park and Ride facility;
- Scope of highway assessment;
- Committed developments and background growth;
- Junction capacity assessments (including AECOM's own assessment, making use of the PBA model, if considered necessary);
- Merge / diverge assessments; and
- Mitigation proposals.

In order for this work to be completed Highways England recommend Luton Borough Council do not grant planning permission before 31 May 2017. Should this work be completed before Highways England will replace this recommendation with one seeking conditions where applicable that will apply in the event of the planning authority granting planning consent.

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Newlands Park Second Addendum Response Review
Date: 21 April 2017 16:16:06
Attachments: TN Newlands Park Second Addendum Response V5.pdf

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[redacted]

Please find attached AECOM's review of the latest response from PBA regarding the Newlands Park development, following on from previous technical note reviews provided by AECOM on the TA and a first response from PBA.

There are a number of recommendations of note throughout the technical note. I think the meeting on Tuesday afternoon will be important to discuss the way forward, hopefully you will have a chance to digest this note before then. I am not in the office on Monday but if you have any questions prior to the meeting on Tuesday please give me a call on Tuesday morning to chat through.

Regards,

[redacted]
Principal Consultant, Transportation
D [redacted]
[redacted]

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Technical Note 03

Project:	**Highways England Spatial Planning Arrangement 2016-2020**	Job No: **60506522 DL005.006**
Subject:	**Newlands Park – TA Second Addendum Review**	
Prepared by:	[redacted]	Date: 13/04/2017
Checked by:	[redacted]	Date: 19/04/2017
Verified by:	[redacted]	Date: 21/04/2017
Approved by:	[redacted]	Date: 21/04/2017

1 Introduction

1.1.1 Peter Brett Associates LLP (PBA) have been commissioned by the Newlands Park developers, 2020 Developments, to provide transportation advice in support of proposals for a mixed use development near M1 Junction 10, adjacent to the M1 and A1081 Airport Way.

1.1.2 This Technical Note (TN) has been prepared by AECOM, on behalf of Highways England (HE), in response to a second Transport Assessment Addendum (TAA) prepared by PBA relating to Newlands Park. The second TAA is dated March 2017 and follows on from a previous TAA dated December 2016 and a TA dated August 2016. The TA was prepared in support of a planning application made to Luton Borough Council (reference 16/01401/OUTEIA). PBA previously partially detailed their proposed approach for the TA, which AECOM reviewed within a number of TNs, dated March, June and July 2016.

1.1.3 The purpose of this TN is to confirm whether or not the previous aspects of AECOM's responses in reviews of the TA and first TAA, dated October 2016 and February 2017 respectively, have been addressed and to conduct a full review of the relevant sections of the second TAA and associated documents to determine whether the potential impact of the proposed development on the strategic road network (SRN) has been reasonably assessed. This includes a review of trip generation, distribution and assignment, as well as junction capacity assessments for the M1 J10 gyratory.

1.1.4 HE is responsible for the monitoring, management and maintenance of the strategic road network (SRN). M1 Junction 10 is located approximately 250m away from the proposed development site and the site's potential impact on the junction has been the primary focus of previous reviews.

2 Parking

2.1.1 PBA stated in the original TAA that Luton Borough Council (LBC) are considering a park and ride site in the vicinity of the proposed development. PBA then stated that as measures encouraging public transport would be provided, shoppers intending to travel to central Luton could effectively 'park and ride' using the proposed development.

2.1.2 AECOM was concerned that people not intending to use the facilities could be attracted to park at the site during peak hours. These trips were not accounted for in the trip generation and distribution process and could result in an additional impact to the highway network in the vicinity of the development, potentially leading to overloading of the car park, with the possibility for vehicles to block back onto the highway network and the SRN. The potential for additional

unofficial park and ride trips at M1 Junction 10 was not accounted for in the TA and therefore was not assessed in the associated modelling. AECOM recommended that details were provided of the parking controls for retail visitors to the site. AECOM also recommended that more information on specific park and ride aspirations for the area was made available, so the impact of these extra trips on the SRN could be accurately assessed. Details regarding whether there would be a requirement to submit a further planning application were also requested.

2.1.3 PBA responded by stating that parking would be charged and for customers of the proposed development's facilities only with signage indicating this. Onward travel from the site to the centre of Luton would be permitted upon proof of purchase of goods/services from the site. Such travel would be charged which, along with car parking charges, is deemed by PBA to be enough of a deterrent for significant numbers of people using the site as a park and ride facility.

2.1.4 PBA also mention that although the site includes space for a potential dedicated park and ride facility, this would need to come forward as part of a separate planning application.

2.1.5 AECOM is satisfied that the proposed measures will deter unofficial park and ride trips and that a separate assessment will be conducted concerning the impact of any potential future dedicated park and ride facility.

3 Highway Impact Assessment

3.1 Scope of the Assessment

3.1.1 AECOM previously acknowledged that a scope of assessment which did not include M1 Junction 11 was previously agreed in a Scoping Note review. However it was recommended that PBA consider undertaking this analysis as the impact of the development was deemed to be better understood.

3.1.2 PBA reiterate that they consider the impact on M1 Junction 11 to be minimal and a full capacity assessment is not required. This assumption was based off a worst case scenario where 90% of office related traffic distributed to and from Dunstable, Houghton Regis and Leighton Buzzard and 15% to and from Luton routed through Junction 11. This showed an impact of 169 vehicles on the southbound on slip in the AM peak and 166 vehicles on the northbound off slip in the PM peak.

3.1.3 AECOM consider that an impact of 160-170 vehicles in a peak hour is not insignificant and has the potential to exacerbate congestion at M1 Junction 11.

3.1.4 PBA state that a more refined assessment methodology which takes into account the opening of the A5-M1 link road and M1 Junction 11A anticipated 71 and 62 additional vehicle trips routing via Junction 11 in the AM and PM peaks respectively. AECOM consider it reasonable to take into account the opening of the new link road and motorway junction. Whilst 60-75 additional trips in a peak hour is still considered a potentially notable impact AECOM consider that in light of the previous agreement that an assessment of Junction 11 was not required and the reduced impact of development trips following the opening of the A5-M1 link road, further assessment of this junction is not required.

3.2 Committed Developments and Background Growth

3.2.1 AECOM previously noted that the factors used for calculating future year base flows were not consistent with those calculated by AECOM using TEMPRO. PBA stated that the reason for this discrepancy was the use of TEMPRO 7.0 growth factors in the original TAA analysis which followed TEMPRO 6.2 growth factors being used in the TA.

3.2.2 AECOM has checked the TEMPRO growth factors listed and can confirm they match with those used in the future year growth calculations.

3.3 Junction Modelling

3.3.1 AECOM has previously provided comments regarding the assessment of the potential operation of M1 Junction 10 following the build out of the development. Some concerns were made regarding the coding of the LinSig model used to assess the junction. These concerns have been considered by PBA within their second TAA.

3.3.2 AECOM previously noted that the Airport Way arm (Arm 4) of the model was coded as free flowing rather than give way, even though this arm is give way in reality. If the JCT intercept and slope values were not used within the model, evidence was requested to support those that were used (potentially in the form of a comparison between modelled and observed queue lengths).

3.3.3 PBA drew attention to the post submission meeting with AECOM in December 2016 where they stated the above point was discussed and agreed. PBA's response drew attention to drastically increased queues on this arm when the arms were coded as AECOM suggested. Given the negligible number of vehicles opposing this arm. PBA do not consider the give way layout to be the key factor in determining queue lengths on this arm. Instead the downstream traffic signals on the southern circulatory are considered to be the main constraint to capacity. Therefore, PBA considers the model as presented is the most realistic assessment of capacity impact and the model validates accurately.

3.3.4 AECOM have reviewed the December 2016 meeting minutes and do not consider that there was a recorded agreement on coding Airport Way as free flowing.

3.3.5 PBA also state that the model in its current form was provided for a review of the nearby approved Napier Park development, on the basis that HE considered it fit for purpose. AECOM did not undertake a review of the model associated with Napier Park, however it is perceivable that the development impact upon the junction was less critical and therefore in this context HE the accuracy of the model was not considered to be as critical.

3.3.6 Whilst AECOM acknowledge that the flow opposing Airport Way is minimal, it is considered that this would be reflected within the modelling results of a give way approach, as there would be limited opposing flow in the model. Therefore, AECOM consider that the original issue on the coding of Airport Way still stands.

3.3.7 AECOM previously raised concern over the speeds of 64kph allocated to lane connectors, which were deemed to be unrealistically high. PBA have reduced the connector speeds to 37kph (23mph) with similar results as to the higher speed, which AECOM can confirm.

3.3.8 AECOM previously found queue length information within the TA appendices, however not all time periods modelled were included for the calibration/validation process to be completed. This was deemed not to have been addressed in the original TAA.

3.3.9 PBA have now provided queue length data for the weekday peaks. AECOM can confirm that the 2016 base models broadly reflect the observed queue lengths, with the currently disputed approach to the coding of Airport Way. AECOM has also undertaken some tests, coding Airport Way as a give-way rather than an unconstrained link (using JCT default intercept and slope values), and considers that this also broadly reflects the observed queuing. The following table compares the observed queues with those from the two different models is summarised below. In the table AWFF stands for Airport Way Free Flow and AWGW stands for Airport Way Give Way.

Table 1: Comparison of observed and modelled queues

Time	M1 Northbound			Airport Way			M1 Southbound		
	Obs.	*Modelled - AWFF*	*Modelled - AWGW*	*Obs.*	*Modelled - AWFF*	*Modelled - AWGW*	*Obs.*	*Modelled - AWFF*	*Modelled - AWGW*
AM Peak	9	14	14	0	0	4	0	0	0
PM Peak	12	19	19	1	0	1	0	1	0

3.3.10 Based on the comparison of queue lengths presented within table 1 above, AECOM consider that the coding of Airport Way as a free flow approach may not be critical in the base scenario. In the absence of further evidence to demonstrate the free flow modelling may not be critical for 'with development', 'future year' scenarios, this is approach is accepted at this time. AECOM do however reserve judgement on this matter pending comparison of the other scenarios.

3.3.11 With regard to the forecast year modelling (2021 opening year), AECOM previously raised concerns regarding the significant queues predicted on the southern circulatory. In reality, this link would be operating with a Degree of Saturation value below 80%, which would require considerably more green time than allocated, taking time away from the M1 northbound off-slip. AECOM found that if the southern circulatory queuing was protected then queuing on the M1 northbound off-slip could significantly increase and stretch back to the mainline carriageway. An alternative proposed approach was to signalise the Airport Way approach to the M1 J10 gyratory. Signal timing priority could be such that queues which develop are on the approach to the junction rather exceeding the circulatory stacking space available, potentially allowing more green time to be allocated to the M1 northbound off-slip.

3.3.12 AECOM previously recommended that the LinSig models should have been updated to accurately reflect the layout of the junction and ensure that the operation of the southern circulatory is protected.

3.3.13 PBA responded by emphasising that the signals were set up in the model to prevent queues on the northbound off slip reaching the M1 mainline. Queues on the circulatory would extend back onto Airport Way. PBA conclude that the impact of the proposed development on the junction is therefore shown to not be severe. AECOM has presented the model outputs for 2021 ('without' and 'with' the proposed development) in Table 2 below, as taken from the models presented by PBA, i.e. no alterations made to ensure that the southern circulatory operates within capacity. The results for the Saturday peak have not been included as the worst operation of the junction is predicted to be in the AM and PM weekday peaks.

Table 2: 2021 M1 Junction 10 model outputs (no adjustment to southern circulatory)

Arm	AM Peak				PM Peak			
	Without Dev.		*With Dev.*		*Without Dev.*		*With Dev.*	
	DoS (%)	*MMQ*	*DoS (%)*	*MMQ*	*DoS (%)*	*MMQ*	*DoS (%)*	*MMQ*
M1 SB	83.8	3	87.6	8	50.1	1	55.9	1
Airport Way	60.4	1	62.0	1	74.6	2	90.2	4
M1 NB	82.0	25	84.8	28	91.5	29	102.7	55
Southern Circ.	82.1	15	97.1	22	97.9	33	110.0	82

3.3.14 The table above demonstrates that even without restricting the queues on the southern circulatory, in the 2021 PM peak significant queues are predicted to build on the M1 northbound approach, which are predicted to increase significantly following the addition of development traffic. The queue of 55 PCUs shown in Table 2 would be unlikely to reach back to the mainline carriageway. However it should be noted that the LinSig User Guide states that where a lane is oversaturated 'the Mean Maximum Queue will be approximately half the final queue at the end of the modelled time period', i.e. the queue at the end of the hour will be double the MMQ output from the model. Therefore in the 2021 PM Peak 'with development' scenario AECOM consider that the M1 northbound approach queue could stretch back to the mainline carriageway, even without adjustments being made to ensure the southern circulatory operates within capacity. AECOM therefore do not agree with PBA that the impact of the proposed development will not be severe on the highway network.

3.3.15 PBA state that they do not consider providing signals on the Airport Way entry arm to be the most favourable mitigation. The roundabout currently has three arms and therefore the numbers of vehicles opposing the Airport Way arm on the eastern circulatory are negligible. Therefore, the impact of vehicles queueing back from the southern circulatory on other movements is deemed by PBA to be negligible. However, if HE consider this to be an appropriate mitigation measure then PBA state the applicant would agree to fund the works to signalise the Airport Way approach to the roundabout. No modelling has been provided to demonstrate the operation of the junction should the Airport Way approach be signalised.

3.3.16 AECOM consider that signalisation of the Airport Way arm could enable the southern circulatory to be protected from excessive queuing whilst also protecting the queue lengths on the northbound off slip arm. However as modelling has not been provided to assess the impact the signalisation could have it has not been possible to quantify the impact or assess whether the restriction of traffic from Airport Way could help improve the operation of the southern circulatory and M1 northbound off-slip. It is recommended that PBA undertake this modelling to determine the impact of the scheme, both on the SRN and on Airport Way, which may experience a significant increase in queuing.

3.3.17 Notwithstanding the above the developers offer to signalise Airport Way entry arm may not be sufficient to mitigate the impact of the proposed development. It is considered possible that whilst this measure may help manage traffic flows it is unlikely to result in an increase in capacity sufficient to accommodate the additional traffic and congestion predicted to be generated by the proposed development. Hence it is recommended that consideration is given to more effective mitigation measures.

3.3.18 AECOM recognise that with the Newlands Park development, as well as others such as Napier Park and Power Court, coming forward, M1 Junction 10 is going to be put under significant pressure in future years, with the junction expected to experience increased capacity issues and queuing. In order to provide sufficient capacity for these developments a larger scale scheme may be required at the junction. HE may wish to consider undertaking a study to identify a potential scheme at the junction that could provide a greater level of long term capacity and reduce queuing on all approaches to the roundabout. AECOM envisage that whilst signalisation of Airport Way may enable some control over the queuing on the southern circulatory and northbound off-slip, this may only be a short term option and a larger scheme may be required going forward to ensure that the junction operation is good enough in the future to enable growth within Luton to come forward.

3.4 Merge / Diverge Assessment

3.4.1 AECOM previously questioned the TEMPRO growth factors used and stated in Table 8.2 of the Addendum Report that did not match those included within the traffic flows spreadsheet. Whilst paragraph 8.5.15 of the TAA indicated that they have been taken from version 7.0 of TEMPRO, AECOM matched the values presented with those from version 6.2. AECOM previously requested clarification on this issue regarding TEMPRO factors in both the TAA and associated spreadsheet.

3.4.2 PBA's response regarding TEMPRO growth factor differences is summarised in Section 3.2.1 of this TN. AECOM can confirm TEMPRO version 7.0 growth factors were used in the future year base flow growth calculations.

3.4.3 AECOM noted that diverge assessments and associated slip road capacities were not provided in the TA or original TAA, which were then requested.

3.4.4 PBA have now undertaken diverge analysis of M1 Junction 10 (northbound and southbound) and Junction 11 (northbound) for 2021.

3.4.5 AECOM has reviewed the 2021 diverge assessment and note that, when compared with the flows in the Appendix C of the first TAA, the Junction 10 northbound and southbound flows seem to have been mislabelled (i.e. those labelled as northbound are actually southbound flows and vice versa). It should also be noted that the flows in the second TAA differ slightly to those in Appendix C on the slip roads (of the order of 20 – 40 vehicles). It is also assumed that the 'Baseline' flows represent Base plus Committed Development excluding Newlands Park and Power Court ('2021 B+C…' in the flows spreadsheet).

3.4.6 The diverge assessments provided indicate that following cumulative (Newlands Park and Power Court) development, the existing diverge layouts will not be consistent with those required to support the background growth and development proposals in all time periods in the 2021 assessment year.

3.4.7 Based on the assessments provided, to meet capacity requirements in the 2021 opening year, a Type E diverge layout would be required for Junction 10 and Junction 11 diverges (both northbound) consisting of 5 lanes upstream and a two lane drop diverge. A Type D diverge would be required for Junction 10 southbound, consisting of a two lane off slip with a ghost island (one lane drop). The requirement identified is in excess of the current provision.

3.4.8 AECOM can confirm that following the addition of development traffic, the impact generated by both the Power Court and Newlands Park developments combined does not result in a need for further upgrade to the diverges over and above the baseline scenario.

3.4.9 To re-iterate AECOM's previous review of the merge assessments, as presented within the previous technical note (dated 2nd February 2017), to meet capacity requirements in the 2021 opening year, Type F merge layouts would be required consisting of 3 lanes upstream, two lane on-slip with ghost island and single lane gain merge.

3.5 Mitigation

3.5.1 PBA previously proposed to mitigate the impact of the development through travel demand management and peak spreading onsite. AECOM then recommended that further details were provided of the measures envisaged.

3.5.2 AECOM stated that use of demand management and peak spreading to reduce the impact of the proposed development on the strategic road network at peak times would be welcomed and further information should be provided to demonstrate how this impact will be reduced and how the junction is predicted to operate with development following the implementation of these measures. It was recommended that in event the development is still predicted to result in an adverse impact to SRN, consideration should be given to additional mitigation measures that may be required to support the development.

3.5.3 PBA state that the capacity results presented within the original TAA demonstrated the proposed development would not have a severe impact on the SRN. This was based on the values listed in Table 3 below. AECOM has not been able to locate or calculate these figures from information provided in the TA or original TAA, therefore confirmation of where these figures were derived is recommended. For the remainder of this TN they will be taken as read.

Table 3: Newlands Park total vehicle trips with 5% Travel Plan reduction.

AM		PM		Sat	
In	Out	In	Out	In	Out
953	280	639	1,191	1,482	1,356

3.5.4 PBA state that vehicle trips generated from the site will be capped at the values presented above using a Monitor and Manage approach through the Travel Plan. Enhanced management strategies will be implemented accordingly if observed traffic levels exceed these levels during the monitoring period.

3.5.5 Contingency measures proposed by PBA as part of the Travel Plan management strategy include:

- Stricter Travel Plan measures to encourage even greater flexibility of office hours;
- Further discounted staff bus/rail tickets;
- Further advertising and participation in Central Bedfordshire and Luton Liftshare;
- Provision of further cycle parking;
- Further prize draws to encourage staff and visitor walking/cycling/public transport trips;
- Further advertising of and promotion of Travel behaviour change initiatives such as travel awareness campaigns, Dr Bike events, cycle training days, and Biker's breakfasts;
- A higher proportion of dedicated car sharing bays;
- A limit on parking spaces provided as the development gets closer to full occupation; and
- Introduction of parking zones allowing certain parking bays to be released onto the network at different times throughout the PM peak period.

3.5.6 However, AECOM dispute PBA's claim that the development will not have a severe impact on the SRN. Table 2 of this TN demonstrates that the impact on the M1 northbound off-slip could be severe and could result in queuing stretching back to the mainline carriageway, even if the flows

are capped to those indicated in table 3. AECOM therefore consider that the impact could be severe and there would be a significant risk to HE if the development were to go ahead based on these conditions.

3.5.7 AECOM acknowledge that the implementation of the additional measures outlined in section 3.5.5 above have the potential to reduce the number of vehicle trips generated by the development further, however AECOM query whether these could have enough of an influence on trips at M1 Junction 10 to ensure that the impact of the remaining trips would not be considered severe.

3.5.8 Furthermore, the 'monitor and manage' approach outlined by PBA does not seem to indicate that restrictions will be placed on development build out should the generation of trips not be reduced sufficiently through the approach. It may be that HE require some kind of condition placed on the build out of development, to restrict further build out once the trip generation has reached a certain level, before further mitigation at Junction 10 is provided. It is recommended that consideration is given to mitigation measures that could be implemented at Junction 10 to protect the operation of the SRN following development, in combination with the provision of sustainable measures. Based upon the assessment undertaken to date the threshold levels identified above, particularly within the weekday PM peak hour, are not sufficient to prevent a severe impact. It is recommended that additional consideration be given to how the PM peak trip generation could be reduced.

3.5.9 In the original TAA PBA indicated that changes in flows expected from the committed A5-M1 link were included within the forecast year flow scenarios. AECOM considered it unclear from the spreadsheets provided what changes were made to reflect this. AECOM then recommended that this was explained further and justification for the flow changes provided.

3.5.10 PBA have subsequently provided the following commentary:

- In terms of the committed A5-M1 link, the spreadsheet reflects this committed scheme by taking account of Highways Agency Inquiry Document No. HA/105/3, Public Inquiry, A5-M1 link, 'Traffic Proof of Evidence'', (November 2011) with specific reference to Figure G-4: 'AADT Flows Core Scenario 2031'.

- The percentage change in 2031 traffic flow, anticipated in Figure G-4, between the with and without committed A5-M1 link was used as a proxy to increase or decrease flow on M1 and Junction 11, accordingly. The percentage change values were included in the spreadsheet under the tab entitled 'A5-M1'. These were then applied as follows to obtain the 2021/2026/2031 Base flows:

- J11 on-slip/off-slip flows increased by 5.21% (i.e. average of 2031 % change arising from the A5-M1 link on Dunstable Rd at J11 two-way flows and the A505 at J11 two-way flows as quoted in the Highways Agency Inquiry Document– i.e. these were -7.81% and 18.23% respectively in 2031);

- South of J10 mainline flows increased by 0.82% (i.e. equals the forecasts in the Inquiry Document for mainline flow change two-way on the M1 south of J10 by 2031);

- North of J10 mainline flows increased by 4.26% (i.e. equals the forecasts in the Inquiry Document for mainline flow change two-way on the M1 north of J10 by 2031); and

- North of J11 mainline flows increased by 12.94% (i.e. equals the forecasts in the Inquiry Document for mainline flow change two-way on the M1 north of J11 by 2031).

3.5.11 With the provision of the link adjustment factors, AECOM is satisfied that the A5-M1 link has been has been taken into account satisfactorily and considers this issue resolved.

4 Conclusion

4.1.1 This Technical Note has documented AECOM's review, on behalf of Highways England of the second Transport Assessment Addendum (TAA) Report relating to the proposed development in Newlands Park, Luton. The second TAA, dated March 2017, has been prepared by PBA in support of an outline planning application for a mixed-use development at Newlands Park.

4.1.2 The purpose of this note is to confirm whether or not the previous aspects of AECOM's responses in a review of the TA and the original TAA dated December 2016 have been addressed and to conduct a full review of the relevant sections of the second TAA and associated documents to determine whether the potential impact of the proposed development on the strategic road network (SRN) has been reasonably assessed.

4.1.3 AECOM has made a number of further comments and recommendations throughout this note, which should be addressed by PBA, in order to ensure the assessment of the impact of the development has been fully assessed. These comments and recommendations have been identified by use of underlined text for ease of reference.

4.1.4 AECOM consider that the key issues and comments arising from the review to be:

- AECOM consider that the models of M1 Junction 10 provided did not sufficiently ensure that the southern circulatory would operate within capacity in the future years and that this could have been demonstrating an artificially optimistic operation of the M1 northbound off-slip, particularly in the 2021 PM peak.

- PBA consider that allowing the queues on the southern circulatory to stretch back along Airport Way is reasonable due to the very small number of vehicles making use of the eastern circulatory. AECOM noted that even without restricting the queues on the southern circulatory, in the 2021 PM peak significant queues are predicted to build on the M1 northbound approach, which are predicted to increase significantly following the addition of development traffic (to 55 PCUs). This queue would be unlikely to reach back to the mainline carriageway.

- However it should be noted that the LinSig User Guide states that where a lane is oversaturated 'the Mean Maximum Queue will be approximately half the final queue at the end of the modelled time period', i.e. the queue at the end of the hour will be double the MMQ output from the model. Therefore in the 2021 PM Peak 'with development' scenario AECOM consider that the M1 northbound approach queue could stretch back to the mainline carriageway, even without adjustments being made to ensure the southern circulatory operates within capacity.

- AECOM therefore do not agree with PBA that the impact of the proposed development will not be severe on the highway network.

- PBA do not consider the signalisation of Airport Way (to restrict the flow of vehicles on to the southern circulatory and allow more green time for the M1 northbound off-slip) to be the most appropriate mitigation, however indicated that if HE consider this to be an appropriate mitigation measure then the applicant would agree to fund the works to signalise the Airport Way approach to the roundabout. No modelling was provided to demonstrate the operation of the junction should the Airport Way approach be signalised. It is recommended that this modelling is undertaken by PBA.

- Notwithstanding the above the developers offer to signalise Airport Way entry arm may not be sufficient to mitigate the impact of the proposed development. It is considered possible that whilst this measure may help manage traffic flows it is unlikely to result in an increase in capacity sufficient to accommodate the additional traffic and congestion

predicted to be generated by the proposed development. Hence it is recommended that consideration is given to more effective mitigation measures

- HE may wish to consider undertaking a study to identify a potential scheme at the junction that could provide a greater level of long term capacity and reduce queuing on all approaches to the roundabout. AECOM envisage that whilst signalisation of Airport Way may enable some control over the queuing on the southern circulatory and northbound off-slip, this may only be a short term option and a larger scheme may be required going forward to ensure that the junction operation is good enough in the future to enable growth within Luton to come forward.

- PBA previously proposed to mitigate the impact of the development through travel demand management and peak spreading onsite. PBA stated within the second TAA that the reduction in trip numbers that could be brought about by these measures (5%) had been used within the modelling that suggested that the impact to the SRN, something which AECOM queried earlier within this conclusion. PBA indicated that through a 'monitor and manage' approach it would be ensured that trip numbers did not exceed those outlined within the second TAA (with a 5% reduction). AECOM consider that the modelling demonstrates that vehicle numbers of this magnitude could have a severe impact on the operation of the SRN.

- It is recommended that consideration is given to mitigation measures that could be implemented at Junction 10 to protect the operation of the SRN following development, in combination with the provision of sustainable measures. Based upon the assessment undertaken to date the threshold levels identified within Table 3 above, particularly within the weekday PM peak hour, are not sufficient to prevent a severe impact. It is recommended that additional consideration be given to how the PM peak trip generation could be reduced.

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Newlands Park - Luton - Planning application 16/01401/OUTEA
Date: 24 April 2017 10:25:20
Attachments: TN Newlands Park Second Addendum Response V5.pdf
image001.jpg

[redacted]
Further to our telephone conversation please find AECOM Technical Note 03 dated 21/04/2017 in response to PBA second Transport Assessment Addendum dated March 2017. Can you please consider and respond.
Please do not hesitate to contact AECOM directly regarding technical issues.
Regards

[redacted]
Highways England | Woodlands | Manton Lane | Bedford | MK41 7LW
Tel: +[redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]
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Get live traffic information at http://www.trafficengland.com or download our apps for free by going to the iTunes store or Google Play store
Customer Contact Centre is available 24/7 on 0300 123 5000 or info@highwaysengland.co.uk

From: [redacted]
To: [redacted]
Subject: RE: Nwlands Park Second Addendum Response Review
Date: 02 May 2017 13:35:14
Attachments: image001.jpg
TN Newlands Park Second Addendum Response V5.docx

[redacted]

As requested please find the document attached.

Regards,

[redacted]

Principal Consultant, Transportation

D [redacted]

[redacted]

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AECOM House
63-77 Victoria Street
St Albans, Herts, AL1 3ER, United Kingdom
T +44-01727-535000
aecom.com

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From: [redacted]
Sent: 02 May 2017 13:15
To: [redacted]
Subject: Nwlands Park Second Addendum Response Review

[redacted]

Can you please forward me Word document of the above.

Thanks

[redacted]

[redacted]

Highways England | Woodlands | Manton Lane | Bedford | MK41 7LW
Tel: [redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]
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Customer Contact Centre is available 24/7 on 0300 123 5000 or info@highwaysengland.co.uk

Highways England Company Limited | General enquiries: 0300 123 5000 |National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF |
https://www.gov.uk/government/organisations/highways-england **|**
info@highwaysengland.co.uk
Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

From: [redacted]
To: [redacted].
Subject: Newlands Park - Luton
Date: 18 April 2017 15:22:38
Attachments: image001.jpg

[redacted]
Can you please take note of the Framework Travel Plan supporting the application when considering “mitigation proposals”. It would be preferable to look at ways in which the demand can be monitored and managed at source as part of a more adaptive mitigation strategy to give HE the comfort it requires going forward. I accept the approach to forecasting (both development and background traffic) is uncertain with lots of ‘worst case’ assumptions being factored into the assessments at outline stage. Therefore, monitoring mechanisms and ongoing assessment that can adapt a mitigation strategy to changing conditions over the phased build out of a scheme may often be the more appropriate way of dealing with development associated impact.
Happy to discuss.
Regards

[redacted]
Highways England | Woodlands | Manton Lane | Bedford | MK41 7LW
Tel: [redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]
Follow Highways England East on Twitter

From:	[redacted]
To:	"developmentcontrol@luton.gov.uk"
Cc:	[redacted]
Subject:	Planning applications 16/01401/OUTEIA
Date:	30 May 2017 08:22:37
Attachments:	Scanned_document.msg image002.jpg

For the attention of [redacted]
Dear [redacted]
I refer to previous Highways England response dated 27 March 2017 to the above planning application.
The applicant met with Highways England on 23/05/2017. The applicant is submitting proposals to mitigate traffic impact on M1 Junction 10 for Highways England. This work is currently in hand.
Please find Highways England recommendation not to determine before 30 June 2017 to enable this work to be completed.
Please do not hesitate to contact me should you wish to discuss.
Regards

[redacted]
Highways England | Woodlands | Manton Lane | Bedford | MK41 7LW
Tel: [redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]
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Customer Contact Centre is available 24/7 on 0300 123 5000 or info@highwaysengland.co.uk

highways england

Developments Affecting Trunk Roads and Special Roads
Highways England Planning Response (HEPR 16-01)
Formal Recommendation to an Application for Planning Permission

From: Martin Fellows
Operations (East)
planningee@highwaysengland.co.uk

To: Luton Borough Council FOA – [redacted]

CC: transportplanning@dft.gsi.gov.uk
growthandplanning@highwaysengland.co.uk

Council's Reference: 16/01401/OUTEIA

Referring to the planning application referenced above, dated 9 September 2016, Outline planning permission with all matters reserved except for access, for mixed use development comprising: office floor space (use class B1), retail floorspace (use class A1), food and beverage – Land Adjacent Junction 10 to 10A, M1, Newlands Road, Luton, notice is hereby given that Highways England's formal recommendation is that we:

~~a) offer no objection;~~

b) ~~recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions~~);

c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);

~~d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Highways Act Section 175B is / is not relevant to this application.[1]

[1] Where relevant, further information will be provided within Annex A.

This represents Highways England formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should you disagree with this recommendation you should consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2015, via transportplanning@dft.gsi.gov.uk.

Signature: [redacted]	Date: 30 May 2017
Name: [redacted]	Position: Assistant Asset Manager
Highways England: Woodlands, Manton Lane Bedford MK41 7LW	
[redacted]	

Annex A Highways England recommended further assessment required

HIGHWAYS ENGLAND ("we") has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

This response represents our formal recommendations with regard to planning application 16/01401/OUTEIA and has been prepared by [redacted]

Highways England has been collaborating with the developer on pre-application discussions regarding development traffic impact on the Strategic Road Network, M1 junction 10. Highways England will require to review and assess the Transport Assessment supporting the application to determine if there is sufficient capacity for the junction to operate safely or identify mitigation required.

Highways England met with the developers and their consultants on 23 May 2017 when agreement was reached the developer submit proposals to mitigate against traffic impact on M1 Junction 10. This work is currently in hand.

In order for this work to be completed Highways England recommend Luton Borough Council do not grant planning permission before 30 June 2017. Should this work be completed before Highways England will replace this recommendation with one recommending conditions where applicable that will apply in the event of the planning authority granting planning consent.

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: M1 Junction 10 - Planning application 16/01401/OUTEIA
Date: 30 May 2017 19:16:44
Attachments: image001.jpg

[redacted] thanks.

Yes the words below are fine.

We plan to issue our response on the 9th as agreed. The meeting was most helpful.

[redacted]

On 30 May 2017, at 07:31, [redacted] wrote:

> [redacted],
> Thank you for meeting with AECOM and myself last week to discuss the above planning application and work done to date. Please see my comments on the holding recommendation for your consideration. Please phone to discuss as I require to formally respond to the LPA later this morning. If you see the need to add/amend then please do so and I will consider.
> ***Highways England met with the developers and their consultants on 23 May 2017 when agreement was reached the developer submit proposals to mitigate against traffic impact on M1 Junction 10. This work is currently in hand.***
> ***In order for this work to be completed Highways England recommend Luton Borough Council do not grant planning permission before 30 June 2017. Should this work be completed before Highways England will replace this recommendation with one recommending conditions where applicable that will apply in the event of the planning authority granting planning consent.***
> Regards
> [redacted]
> [redacted]
> Highways England | Woodlands | Manton Lane | Bedford | MK41 7LW
> **Tel**: [redacted]
> Web: http://www.highways.gov.uk
> GTN: [redacted]
> Follow Highways England East on Twitter
>
> Keep up to date with our roads projects at Highways England East Road Projects
>
> Get live traffic information at http://www.trafficengland.com or download our apps for free by going to the iTunes store or Google Play store

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Newlands Park M1 J10 model files
Date: 09 June 2017 18:18:54
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
Transport Assessment - Addendum Report 03_FINAL.pdf

Good afternoon [redacted],

Following our meeting last month and as agreed, please find attached an updated version of Transport Assessment Addendum 03. This report responds to the most recent transport related comments raised (TN 03), and clarifications sought, by yourselves, with the focus being to put forward and ultimately agree proposals to mitigate against traffic impact on M1 Junction 10. The revisions take into account discussions had on 23rd May 2017.

Please note, whilst this report no longer has draft on it, we are happy to treat this as a draft document with the intention to finalise this document once you have reviewed it and both you and Rio are happy with the content and proposed Management Strategy wording. If you have any comments or require any part of our report to be changed, then please do get in contact with us in the first instance. We can then update this report accordingly rather than providing additional response notes and addendums.

I also attach revised LinSig input files. These runs now include the scenarios whereby 17% of development is taken off M1J10 and the junction is shown to operate with reduced queueing and when combined with no TEMPRO growth the junction is predicted to operate within 100% capacity.

I also attach a drawing as part of the report which outlines a physical mitigation measure to provide a dedicated inside lane to Airport Way traffic on the mainline.

Please give me a call if you have any questions. I look forward to hearing from you.

Kind regards,

[redacted]
Principal Transport Planner
For and on behalf of Peter Brett Associates LLP - Cambridge

t [redacted]
m [redacted]
e [redacted]
w peterbrett.com

From: [redacted]
Sent: 22 May 2017 10:15
To: [redacted]
Cc: [redacted]
Subject: RE: Newlands Park M1 J10 model files

Good morning [redacted]
In advance of tomorrow's meeting, please find attached a PowerPoint presentation and Draft Technical Note 03 for your information. These documents are in response to your Technical Note 03.
We plan to talk through the Power Point and use this as an agenda for the meeting. The Power Point provides a summary of the attached Technical Note and its intention is to guide discussion.
Please note the tech note is currently in draft format for the intention of discussion tomorrow. Following the meeting we plan to update the Tech Note taking account of agreements/discussion had at the meeting and then formally submit in due course.
Kind regards,

[redacted]
Principal Transport Planner
For and on behalf of Peter Brett Associates LLP - Cambridge

t [redacted]
m [redacted]
e [redacted]
w peterbrett.com

From: [redacted]
Sent: 18 April 2017 09:28
To: [redacted]
Cc: [redacted]
Subject: RE: Newlands Park M1 J10 model files
Good morning [redacted]
Please find attached Appendix B which includes for the latest M1 J10 model.
In terms of signalising Airport Way, as per para.3.3.8 of the TAA we do not consider this to be the most favourable mitigation. The roundabout currently has three arms and therefore the number of vehicles passing the Airport Way arm (i.e. on the eastern circulatory) are negligible. We have therefore not modelled this option. Para. 3.3.8 did however state that if HE consider this to be an appropriate mitigation measure that would allow better management of the junction then the applicant would agree to fund the works.
Kind regards,

[redacted]
Principal Transport Planner
For and on behalf of Peter Brett Associates LLP - Cambridge

t [redacted]
m [redacted]
e [redacted]
w peterbrett.com

From: [redacted]
Sent: 13 April 2017 10:36
To: [redacted]
Cc: [redacted]
Subject: Fwd: Newlands Park M1 J10 model files

[redacted] - FYI and action on return
Thanks

[redacted]

Begin forwarded message:

From: "[redacted]
Date: 13 April 2017 at 10:23:26 BST
To: [redacted]
Cc: "[redacted]
[redacted]
Subject: RE: Newlands Park M1 J10 model files

Hi [redacted]
Could you provide the latest models of M1 Junction 10? Also the latest TAA discusses signalisation of Airport Way (section 3.3.8), is there any chance that this scenario was modelled? If yes, could you provide this model as well?
Kind regards,

[redacted]
Consultant, Transport Planning
[redacted]

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St Albans, Hertfordshire, AL1 3ER
T +01727-535000
aecom.com

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From: [redacted]
Sent: 11 April 2017 13:18
To: [redacted])
Cc: [redacted]
Subject: RE: Newlands Park M1 J10 model files
Hi [redacted]

st

In respect of the Newlands Park TAA02, please find model reports as attached (1 two attachments) relating to Appendix B (average and trend line approach to retail trips).
As regards the queue length data referenced in para 3.3.5, this was provided previously within the TA for Newlands Park – attached above to assist. Hope this helps.
Regards

[redacted]

Senior Transport Planner

For and on behalf of Peter Brett Associates LLP - Cambridge

t [redacted]

e [redacted]

w peterbrett.com

From: "[redacted]
Date: 10 April 2017 at 16:27:49 BST
To: [redacted]
Subject: FW: Newlands Park M1 J10 model files

Dear [redacted]
I am in the process of reviewing the second Transport Assessment Addendum Report for Newlands Park (dated 1st March 2017). The report references updated model outputs for M1 Junction 10. Would it be possible to provide these?
Kind regards,

[redacted]

Consultant, Transport Planning

[redacted]

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Development at Newlands Park, Luton.

Transport Assessment – Addendum Report 03 to AECOM / Highways England Comments (Newlands Park M1 J10 TA Second Addendum Review – Tech Note 03)

On behalf of **2020 Developments**

Project Ref: 32444 | Rev: A | Date: June 2017

Office Address: Telford House, Fulbourn, Cambridge CB21 5HB
T: +44 (0)1223 882 000 +44 (0)1223 881 888 E: cambridge@peterbrett.com

Document Control Sheet

Project Name: Newlands Park, Luton

Project Ref: 32444

Report Title: Transport Assessment – Addendum Report 03

Doc Ref: 32444 LTFC Planning Applications – 'Transport Assessment – Addendum Report 03

Date: 9TH June 2017

	Name	Position	Signature	Date
Name	[redacted]	Assistant Transport Planner	[redacted]	11/05/17
Reviewed by	[redacted]	Principal Transport Planner	[redacted]	16/05/17
Approved by	[redacted]	Senior Associate	[redacted]	19/05/17

Revision	Date	Description	Prepared	Reviewed	Approved
FINAL	08/06/17	Update of earlier DRAFT	[redacted]	[redacted]	[redacted]

Contents

Appendices

1 Introduction

1.1 Background to Report

1.1.1 This response, to AECOM/HE comments on Transport Assessment Addendum 02, has been prepared by Peter Brett Associates (PBA), on behalf of 2020 developments, in support of an outline planning application for the development of land adjacent to Junction 10a, Luton.

1.1.2 An outline application (16/01401) was submitted in August 2016 and accompanied by the submission of a full Transport Assessment (TA) also prepared by PBA. Since this submission AECOM (on behalf of Highways England (HE)) provided a response to the TA. PBA, HE and AECOM subsequently met on 12th December 2016 to discuss the first round of comments raised by AECOM. Following this meeting PBA provided an addendum to the TA taking into account the discussions and agreements made at the meeting. AECOM have since provided two technical notes (AECOM TN 02 & 03) with comments responding to two separate Addendum reports produced by PBA (Addendum Reports 01 & 02).

1.1.3 In addition, a meeting was attended by PBA, AECOM and HE on Tuesday 23rd May 2017 to discuss a first draft of this Addendum Report 03, with the intention to agree an appropriate way forward in responding to AECOM's most recent response (TN 03). At this meeting it was agreed that HE would be happy to extend the existing holding recommendation until the end of June 2017, with the intention of then lifting the holding recommendation once PBA submit agreeable proposals to mitigate against traffic impact on M1 Junction 10, specifically in relation to queueing on the northbound off slip (including both demand management and physical measures if required).

1.1.4 This report therefore responds to the most recent transport related comments raised (TN 03), and clarifications sought, by AECOM (on behalf of HE), with the focus being to put forward and ultimately agree proposals to mitigate against traffic impact on M1 Junction 10. AECOM's most recent comments are included in **Appendix A**. **This report should be considered as supplementary to, and to be read alongside the original TA and the TA Addendum. Where any information provided supersedes that contained either in the TA or the TA Addendum, it will be explicitly stated.**

1.2 Report Structure

1.2.1 There were a number of comments and agreements presented in AECOM's most recent response (TN 03). To avoid the provision of an excessively long report and prolonged discussions, PBA do not respond to points already agreed by AECOM within their TN 03. Instead, and as agreed at the meeting held on 23rd May 2017, this note concentrates on the conclusion section within AECOM's TN 03, which summarises the outstanding comments made by AECOM, in the context of the discussions had and agreements made on 23rd May 2017.

2 AECOM Outstanding Comments

2.1 Modelling

2.1.1 HE Comment

"AECOM consider that the models of M1 Junction 10 provided did not sufficiently ensure that the southern circulatory would operate within capacity in the future years and that this could have been demonstrating an artificially optimistic operation of the M1 northbound off-slip, particularly in the 2021 PM peak."

PBA Response

As discussed on Tuesday 23rd May 2017, PBA can confirm the model has been set up to provide additional green time to the northbound off slip to take account of the queue detector loops located on the northbound off slip (located at 50m and 140m set back from the stop line). This, on the ground, would inevitably increase delay and queue lengths on the southern circulatory in order to minimise queueing on the northbound off slip. This arrangement sees the southern circulatory start to operate beyond capacity @ 110%.

A purely theoretical model run which would ignore the detector loops could be undertaken, which would optimise the junction and balance the queues accordingly. However, given the detectors are in place, PBA do not see the value in this test and instead have modelled the junction giving the greatest green time to the northern off slip to match what happens on the ground currently.

Following the discussion of this comment on 23/05/17, PBA understand AECOM and HE now accept the manual changes made to the LinSig model as being a change that results in the more accurate modelling of the junction.

2.1.2 HE Comments

"PBA consider that allowing the queues on the southern circulatory to stretch back along Airport Way is reasonable due to the very small number of vehicles making use of the eastern circulatory. AECOM noted that even without restricting the queues on the southern circulatory, in the 2021 PM peak significant queues are predicted to build on the M1 northbound approach, which are predicted to increase significantly following the addition of development traffic (to 55 PCUs). This queue would be unlikely to reach back to the mainline carriageway.

However, it should be noted that the LinSig User Guide states that where a lane is oversaturated 'the Mean Maximum Queue will be approximately half the final queue at the end of the modelled time period', i.e. the queue at the end of the hour will be double the MMQ output from the model. Therefore, in the 2021 PM Peak 'with development' scenario AECOM consider that the M1 northbound approach queue could stretch back to the mainline carriageway, even without adjustments being made to ensure the southern circulatory operates within capacity.

AECOM therefore do not agree with PBA that the impact of the proposed development will not be severe on the highway network.

PBA previously proposed to mitigate the impact of the development through travel demand management and peak spreading onsite. PBA stated within the second TAA that the reduction in trip numbers that could be brought about by these measures (5%) had been used within the modelling that suggested that the impact to the SRN, something which AECOM queried earlier within this conclusion. PBA indicated that through a

'monitor and manage' approach it would be ensured that trip numbers did not exceed those outlined within the second TAA (with a 5% reduction). AECOM consider that the modelling demonstrates that vehicle numbers of this magnitude could have a severe impact on the operation of the SRN."

PBA Response

At the meeting held on 23/05/17 AECOM and PBA agreed that both parties were using the word severe in different contexts to each other. PBA were referring to the development impact 'not being severe' in the context of Paragraph 32 of the National Planning Policy Framework (NPPF) document. Whereas AECOM were not referring to NPPF but were instead were referring to the scale of development and potential impact being significant prior to mitigation.

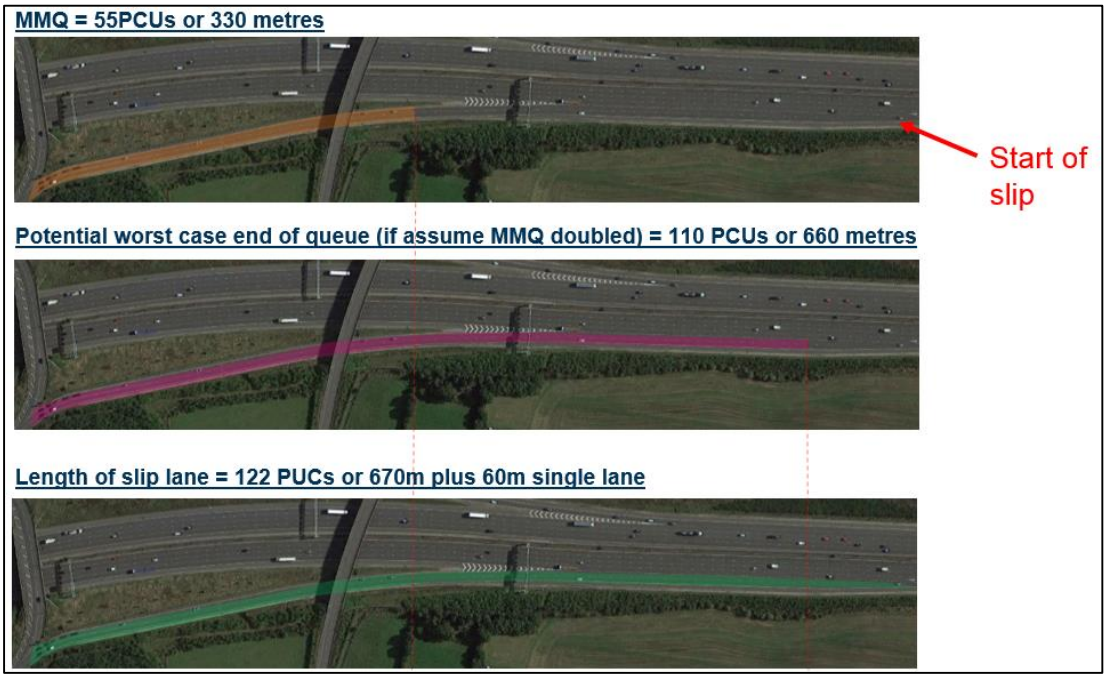
With regard to the other comments made, PBA agree that queues are anticipated to build up on the northbound off slip during the PM peak and that an estimated MMQ of 55 PCUS will not reach back to the mainline carriageway.

PBA also agrees the statement made, regarding the doubling of MMQ, exists within the LinSig User Guide. However, as discussed on 23/05/17, PBA have been in contact with JCT (who developed and maintain junction modelling software LinSig) and from these conversations PBA it is recognised this statement cannot be relied upon for every situation. In the absence of LinSig being able to predict the total end of peak period queue as a quantifiable output, doubling the MMQ provides a high level indication of the potential and absolute worst case total queue. In practice the total queue will be random and will differ each and every cycle/day/week/month and no modelling tool is able to predict this value accurately due to its random nature. And therefore the standard industry tool for quantifying a predicted queue continues to be the MMQ. JCT did however confirm, as stated within the LinSig User Manual, that a Degree of Saturation (DoS) beyond 110% would result in Oversaturated Queueing more frequently (i.e. residual queue left over after each and every cycle), whereas a DoS below 110% would result in Random Queueing occurring more often (i.e. residual queue left over randomly after some cycles).

In this case, as the DoS is not higher than 110%, and therefore oversaturated queueing is not expected to occur every cycle and instead residual queueing at the end of each cycle is much more random (i.e. sometimes it occurs and sometimes not). Therefore, the theoretical methodology of doubling MMQ to obtain the end of period queue would provide an overestimate of the maximum queue. Also, as the slip lanes have queue detector loops (located 50m and 140m from the stop line), it is possible (on the ground) to significantly reduce the risk of residual queueing at the end of each peak period cycle by extending and therefore providing sufficient green time to clear the queue.

Nevertheless, even if this scenario is to occur the queue will only ever reach this maximum length (110 PCUS) at the end of the peak hour and will only occur for a very short period of time. It should also be noted that the two slip lanes are currently each 670m (plus 60m of single slip lane) long and therefore provide sufficient queueing capacity to accommodate 233 PCUs @ 6m PCU lengths (i.e. 1,400m of total queueing length). At the end of the peak hour the total queue 'could' (according to the user guide) therefore reach 220 PCUS (1,320m queueing length), which would still be contained fully within the slip lane and not extend back onto the mainline (i.e. 80m or 13 PCU spare queueing capacity). These queueing lengths are shown in Figure 1.

Figure 1 – Potential queue vs queue length available



It is also worth noting that for 50% of the peak hour the total queue will be less than the Mean Max Queue quoted of 55 PCUs.

In addition, it should be noted that the modelling is based on a set of worst case assumptions, and if for example background traffic growth between 2016 and 2021 (as taken from TEMPRO) is excluded or less than forecast from the model (i.e. only committed development taken into account when determining background traffic growth to avoid double counting) then the MMQ on the northbound off slip drops by up to 23 PCUs (138m) in each lane, leaving a spare queueing capacity of 59 PCUs before impacting on the mainline.

2.2 Mitigation

In the context of NPPF Para. 32, PBA consider the modelling that has been undertaken to date does not demonstrate a severe impact, given that even if the MMQ predicted was doubled, no queuing would be forecast to extend onto the mainline of the M1 and that this is all in the context of a series of worst case assumptions. Despite this, the Applicant is committed to working with HE to provide sufficient assurance that should any greater impact be realised than is forecast then suitable mitigation can be delivered to address the impacts accordingly. Therefore, this section responds to the previous HE/AECOM comments provided and then most importantly set outs the proposed mitigation strategy which has previously been discussed with HE and AECOM on 23/05/17.

2.2.1 HE Comment

"PBA do not consider the signalisation of Airport Way (to restrict the flow of vehicles on to the southern circulatory and allow more green time for the M1 northbound off-slip) to be the most appropriate mitigation, however indicated that if HE consider this to be an appropriate mitigation measure then the applicant would agree to fund the works to signalise the Airport Way approach to the roundabout. No modelling was provided to demonstrate the operation of the junction should the Airport Way approach be signalised. It is recommended that this modelling is undertaken by PBA."

PBA Response

Given that almost all of the traffic using the southern circulatory will come from Airport Way, it is clear to PBA that the implementation of traffic signals on the Airport Way arm will only serve to move the start of the queue back 170 metres from where it currently starts (the signals at the northbound off slip). The Airport Way signals and the existing circulatory signals will need to intelligently talk to each other to make sure the circulatory is not starved of traffic.

The safety implications of this approach would need to be considered if signals are installed on Airport Way as the number of opposing vehicles is so low that Airport Way would be on green almost continuously and therefore when the signals are on red this would be unexpected to regular users of the junction.

In any case during peak periods queues on the circulatory would be expected to extend back onto Airport Way whether signals are installed as stated above or not.

As discussed on 23/05/17 it is PBA's understanding that both AECOM and HE no longer consider the option to signalise the Airport Way arm of the roundabout viable and therefore PBA do not propose to provide the modelling as requested or progress this option further.

2.2.2 HE Comment

"Notwithstanding the above the developers offer to signalise Airport Way entry arm may not be sufficient to mitigate the impact of the proposed development. It is considered possible that whilst this measure may help manage traffic flows it is unlikely to result in an increase in capacity sufficient to accommodate the additional traffic and congestion predicted to be generated by the proposed development. Hence it is recommended that consideration is given to more effective mitigation measures."

PBA Response

On 23/05/17 PBA, HE and AECOM agreed that the signalisation of Airport Way will not offer a significant benefit to capacity and that more cost effective mitigation relating to sustainable transport initiatives and demand management at source should be considered first. Possible Demand Management measures are listed in **Appendix B** along with additional detail relating to a Proposed Mitigation Strategy.

In summary, the following represents the Applicants proposed mitigation Strategy:

1. Annual Monitoring from first occupation of the following (with a Monitoring Report provided to LBC and HE):
    - Trip Generation Trigger - the number of vehicles per hour egressing the site during the PM Peak Hour will be monitored as the average of traffic hours during two weeks in a neutral month (TBC) using Automatic Traffic Counters located at each internal site access.
    - Slip Lane Queue Length Trigger - a queue length survey undertaken on the northbound M1J10 off slip for a period of two weeks in in a neutral month (TBC). The average weekday PM peak maximum queue will be recorded.
2. The following triggers are proposed in combination for further demand management led mitigation beyond measures identified in the Application:
    - Interim Slip Lane Queue is shown to exceed **110 PCUs** across both lanes, **and**

- Traffic being generated by the development in the PM Peak is in excess of the total **outbound trips of 830** as identified and tested in the Transport Assessment with an additional 17% reduction in trips.

If **both** of the above occurrences are observed in any single year, then the Applicant commits to undertake all necessary Demand Management through remedial measures which will be set out in the adopted and approved site wide Travel Plan. These measures will include, but will not limited to, some or all of the measures outlined in Appendix B to ensure that PM Peak traffic generation is brought back to a level equal to or below 1,000 outbound trips in a single PM Peak Hour.

3. By the next monitoring report, should development traffic be in excess of the PM peak trip allowance without a 17% reduction (i.e. **1,000 vehicle trips**), in addition to a **queue of 220 PCUs** (across both lanes) being reached on the northbound off-slip, then the Applicant commits to provide a financial contribution to HE to allow HE to deliver a physical mitigation scheme, which will provide additional resilience to the Northbound off-slip. The proposed scheme is included as drawing 3244/5501/SK001 and is described below:

   - Convert diverge arrangement to match 'DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/6.3 Layout D' – whereby the existing slip lane is extended into the inside lane of the M1 mainline upstream of where the existing slip lane starts. The mainline will be reduced to two dedicated ahead lanes plus one dedicated lane for Airport Way and one lane for both Airport Way and Motorway traffic upstream of Junction 10 (approximately 1 mile from the existing slip), widening back up to four lanes immediately downstream of the slip lane via an inside lane gain. The inside lane will be signed using existing gantries located at 2/3 mile and 1/2 mile upstream of the existing slip lane, with signs stating "A1081 Luton (S) & ✈" in addition to appropriate line markings and road markings stating "A1081 Luton (S)". See drawing 3244/5501/SK001. This arrangement has been determined using future year traffic flows combined with 'DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/5 MW'. Please note the drawing provided is a preliminary design and will need to be progressed through a detailed design process.

   - As an 'add-on' to mitigation measure 3, the narrowing of the mainline to three lanes could be extended downstream of Junction 10, allowing for the J10 northbound on slip to form a dedicated lane gain with an additional merge lane – therefore allowing two on slip lanes with one being unopposed. Given that queuing currently occurs on the mainline during extreme peak periods, caused by vehicles merging onto the mainline in this location, PBA consider this measure will, whilst reducing the number of lanes on the mainline, help mitigate this existing constraint by removing the conflict between the on slip and the mainline.

2.2.3 HE Comment

"HE may wish to consider undertaking a study to identify a potential scheme at the junction that could provide a greater level of long term capacity and reduce queuing on all approaches to the roundabout. AECOM envisage that whilst signalisation of Airport Way may enable some control over the queuing on the southern circulatory and northbound off-slip, this may only be a short term option and a larger scheme may be required going forward to ensure that the junction operation is good enough in the future to enable growth within Luton to come forward.

It is recommended that consideration is given to mitigation measures that could be implemented at Junction 10 to protect the operation of the SRN following development, in combination with the provision of sustainable measures. Based upon the

assessment undertaken to date the threshold levels identified within Table 3 above, particularly within the weekday PM peak hour, are not sufficient to prevent a severe impact. It is recommended that additional consideration be given to how the PM peak trip generation could be reduced. "

PBA Response

AECOM are correct that the PM peak is the peak that is most capacity constrained. The AM and the Saturday scenarios have been shown to work well. The potential to manage traffic in this peak is greater given the measures that can be applied at the origin (within the development). To this end PBA on behalf of the applicant discussed potential demand management mitigation strategies on 23/05/17 with AECOM and HE that reduces the PM peak vehicle generation accordingly. In addition, physical mitigation measures were also discussed.

The measures proposed and the mechanics of monitoring background traffic growth and indeed development traffic have been outlined earlier in this report.

In addition, and in preference to the physical measures proposed earlier in this report, PBA would support HE undertaking a study that considers the longer term performance of this junction and would suggest that any scheme and study needs to be informed by LBC growth assumptions for the corridor and the wider Luton area. In the shorter term PBA feel that it should be acknowledged, as discussed on 23/05/17, that PBA have undertaken assessment using a series of worst case assumptions for the junction and despite these assumptions feel that a severe impact at opening year is still to be demonstrated based on the modelling undertaken. The robustness of the inputs that have been used are as follows:

1. Tempro Growth has been applied in conjunction with committed / pipeline schemes. This effectively means that double counting has taken place along the Airport Way corridor. The Newlands site is allocated and even these trip ends are still included in the Tempro growth despite total gross development traffic being applied on top;

2. Airport growth has been quicker than assumed in Tempro and some growth has therefore already been captured in the November 2015 traffic counts and then reapplied through the application of Tempro

3. It is assumed that every applied for planning parameter is built out to the very maximum

4. It uses average retail trip rates from smaller scale retail development (TRICS) that takes no account of reducing trip rates per m2 based on larger floor areas

5. It assumes no linking of trips between the office and the retail

6. It assumes no changes to travel behaviour over time as a result of different working practices and technologies

7. The office floor space assumptions are based on dense 12m2 occupancy rates throughout with no account taken of different work place densities

8. No account is taken of the applicant's proposal to charge for car parking at the retail.

9. No account is taken of airport public transport investment (MRT from Parkway to Airport)

3 Conclusions & Summary

3.1 Summary

3.1.1 This Addendum report has sought to address the third round of comments received from Highways England / AECOM with regard to the Transport Assessment submitted in support of an Outline Planning application for the development of Newlands Park, Luton.

3.1.2 Each comment has been dealt with in turn in Chapter 2.

3.2 Conclusion

3.2.1 In summary, 2020 Developments consider this site and the associated development proposals to be of critical importance to the future planning and regeneration of Luton.

3.2.2 The transport impacts resulting from the scheme are not severe, in the context of NNPF para. 32, and are more than counter balanced by the important mitigation measures being proposed.

3.2.3 In conclusion, it is considered that the forecast transport impacts arising from this development are not severe, in the context of NNPF para. 32, following the implementation of proposed mitigation measures. Nevertheless, 2020 Developments are committed to continued working with Highways England as part of ongoing post submission discussions to affirm a monitoring strategy. This will include appropriate Conditions and Planning Obligations to initiate Demand Management Measures in the first instance with Physical Mitigation Measures (with the preference being to await a longer term strategic strategy for J10 in order to avoid abortive works) at the point when and if trip generation and queue lengths trigger the need for a Physical Strategy.

3.2.4 Therefore, the following represents[1] the Applicant's proposed mitigation strategy:

1. Annual Monitoring from first occupation of the following (with a Monitoring Report provided to LBC and HE):
    - Trip Generation Trigger - the number of vehicles per hour egressing the site during the PM Peak Hour will be monitored as the average of traffic hours during two weeks in a neutral month (TBC) using Automatic Traffic Counters located at each internal site access.
    - Slip Lane Queue Length Trigger - a queue length survey undertaken on the northbound M1J10 off slip for a period of two weeks in in a neutral month (TBC). The average weekday PM peak maximum queue will be recorded.
2. The following triggers are proposed in combination for further demand management led mitigation beyond measures identified in the Application:
    - Interim Slip Lane Queue is shown to exceed **110 PCUs** across both lanes, **and**
    - Traffic being generated by the development in the PM Peak is in excess of the total **outbound trips of 830** as identified and tested in the Transport Assessment with an additional 17% reduction in trips.

[1] Detailed methodology to be agreed between stakeholders.

If **both** of the above occurrences are observed in any single year, then the Applicant commits to undertake all necessary Demand Management through remedial measures which will be set out in the adopted and approved site wide Travel Plan. These measures will include, but will not limited to, some or all of the measures outlined in Appendix B to ensure that PM Peak traffic generation is brought back to a level equal to or below 1,000 outbound trips in a single PM Peak Hour.

3. By the next monitoring report, should development traffic be in excess of the PM peak trip allowance without a 17% reduction (i.e. **1,000 vehicle trips**), in addition to a **queue of 220 PCUs** (across both lanes) being reached on the northbound off-slip, then the Applicant commits to provide a financial contribution to HE to allow HE to deliver a physical mitigation scheme, which will provide additional resilience to the Northbound off-slip. The proposed scheme is included as drawing 3244/5501/SK001 and is described below:

    - Convert diverge arrangement to match 'DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/6.3 Layout D' – whereby the existing slip lane is extended into the inside lane of the M1 mainline upstream of where the existing slip lane starts. The mainline will be reduced to two dedicated ahead lanes plus one dedicated lane for Airport Way and one lane for both Airport Way and Motorway traffic upstream of Junction 10 (approximately 1 mile from the existing slip), widening back up to four lanes immediately downstream of the slip lane via an inside lane gain. The inside lane will be signed[2] using existing gantries located at 2/3 mile and 1/2 mile upstream of the existing slip lane, with signs stating "A1081 Luton (S) &✈ " in addition to appropriate line markings and road markings stating "A1081 Luton (S)". See drawing 3244/5501/ SK001. This arrangement has been determined using future year traffic flows combined with 'DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/5 MW'. Please note the drawing provided is a preliminary design and will need to be progressed through a detailed design process.

    - As an 'add-on' to mitigation measure 3, the narrowing of the mainline to three lanes could be extended downstream of Junction 10, allowing for the J10 northbound on slip to form a dedicated lane gain with an additional merge lane – therefore allowing two on slip lanes with one being unopposed. Given that queuing currently occurs on the mainline during extreme peak periods, caused by vehicles merging onto the mainline in this location, PBA consider this measure will, whilst reducing the number of lanes on the mainline, help mitigate this existing constraint by removing the conflict between the on slip and the mainline.

[2] See example signs in Appendix D. These signs will need to be designed up in detail but only require a modification to the existing signs located on each respective Gantry currently, rather needing brand new gantries.

Drawings

S

Gantry

Gantry

Gantry

Gantry

Drain

Drain

Def

Def

Def

Electricity Sub Station

O M O

O M O

R P D N N N N R

A1081 Luton (S) & ✕

The NORTH, Luton (C), Dunstable M1

A1081 Luton (S) & ✕

The NORTH, Luton (C), Dunstable M1

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S YS

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Appendix A Highways England Comments

Technical Note 03

Project:	**Highways England Spatial Planning Arrangement 2016-2020**	Job No: **60506522 DL005.006**
Subject:	**Newlands Park – TA Second Addendum Review**	
Prepared by:	[redacted]	Date: 13/04/2017
Checked by:	[redacted]	Date: 19/04/2017
Verified by:	[redacted]	Date: 21/04/2017
Approved by:	[redacted]	Date: 21/04/2017

1 Introduction

1.1.1 Peter Brett Associates LLP (PBA) have been commissioned by the Newlands Park developers, 2020 Developments, to provide transportation advice in support of proposals for a mixed use development near M1 Junction 10, adjacent to the M1 and A1081 Airport Way.

1.1.2 This Technical Note (TN) has been prepared by AECOM, on behalf of Highways England (HE), in response to a second Transport Assessment Addendum (TAA) prepared by PBA relating to Newlands Park. The second TAA is dated March 2017 and follows on from a previous TAA dated December 2016 and a TA dated August 2016. The TA was prepared in support of a planning application made to Luton Borough Council (reference 16/01401/OUTEIA). PBA previously partially detailed their proposed approach for the TA, which AECOM reviewed within a number of TNs, dated March, June and July 2016.

1.1.3 The purpose of this TN is to confirm whether or not the previous aspects of AECOM's responses in reviews of the TA and first TAA, dated October 2016 and February 2017 respectively, have been addressed and to conduct a full review of the relevant sections of the second TAA and associated documents to determine whether the potential impact of the proposed development on the strategic road network (SRN) has been reasonably assessed. This includes a review of trip generation, distribution and assignment, as well as junction capacity assessments for the M1 J10 gyratory.

1.1.4 HE is responsible for the monitoring, management and maintenance of the strategic road network (SRN). M1 Junction 10 is located approximately 250m away from the proposed development site and the site's potential impact on the junction has been the primary focus of previous reviews.

2 Parking

2.1.1 PBA stated in the original TAA that Luton Borough Council (LBC) are considering a park and ride site in the vicinity of the proposed development. PBA then stated that as measures encouraging public transport would be provided, shoppers intending to travel to central Luton could effectively 'park and ride' using the proposed development.

2.1.2 AECOM was concerned that people not intending to use the facilities could be attracted to park at the site during peak hours. These trips were not accounted for in the trip generation and distribution process and could result in an additional impact to the highway network in the vicinity of the development, potentially leading to overloading of the car park, with the possibility for vehicles to block back onto the highway network and the SRN. The potential for additional

unofficial park and ride trips at M1 Junction 10 was not accounted for in the TA and therefore was not assessed in the associated modelling. AECOM recommended that details were provided of the parking controls for retail visitors to the site. AECOM also recommended that more information on specific park and ride aspirations for the area was made available, so the impact of these extra trips on the SRN could be accurately assessed. Details regarding whether there would be a requirement to submit a further planning application were also requested.

2.1.3 PBA responded by stating that parking would be charged and for customers of the proposed development's facilities only with signage indicating this. Onward travel from the site to the centre of Luton would be permitted upon proof of purchase of goods/services from the site. Such travel would be charged which, along with car parking charges, is deemed by PBA to be enough of a deterrent for significant numbers of people using the site as a park and ride facility.

2.1.4 PBA also mention that although the site includes space for a potential dedicated park and ride facility, this would need to come forward as part of a separate planning application.

2.1.5 AECOM is satisfied that the proposed measures will deter unofficial park and ride trips and that a separate assessment will be conducted concerning the impact of any potential future dedicated park and ride facility.

3 Highway Impact Assessment

3.1 Scope of the Assessment

3.1.1 AECOM previously acknowledged that a scope of assessment which did not include M1 Junction 11 was previously agreed in a Scoping Note review. However it was recommended that PBA consider undertaking this analysis as the impact of the development was deemed to be better understood.

3.1.2 PBA reiterate that they consider the impact on M1 Junction 11 to be minimal and a full capacity assessment is not required. This assumption was based off a worst case scenario where 90% of office related traffic distributed to and from Dunstable, Houghton Regis and Leighton Buzzard and 15% to and from Luton routed through Junction 11. This showed an impact of 169 vehicles on the southbound on slip in the AM peak and 166 vehicles on the northbound off slip in the PM peak.

3.1.3 AECOM consider that an impact of 160-170 vehicles in a peak hour is not insignificant and has the potential to exacerbate congestion at M1 Junction 11.

3.1.4 PBA state that a more refined assessment methodology which takes into account the opening of the A5-M1 link road and M1 Junction 11A anticipated 71 and 62 additional vehicle trips routing via Junction 11 in the AM and PM peaks respectively. AECOM consider it reasonable to take into account the opening of the new link road and motorway junction. Whilst 60-75 additional trips in a peak hour is still considered a potentially notable impact AECOM consider that in light of the previous agreement that an assessment of Junction 11 was not required and the reduced impact of development trips following the opening of the A5-M1 link road, further assessment of this junction is not required.

3.2 Committed Developments and Background Growth

3.2.1 AECOM previously noted that the factors used for calculating future year base flows were not consistent with those calculated by AECOM using TEMPRO. PBA stated that the reason for this discrepancy was the use of TEMPRO 7.0 growth factors in the original TAA analysis which followed TEMPRO 6.2 growth factors being used in the TA.

3.2.2 AECOM has checked the TEMPRO growth factors listed and can confirm they match with those used in the future year growth calculations.

3.3 Junction Modelling

3.3.1 AECOM has previously provided comments regarding the assessment of the potential operation of M1 Junction 10 following the build out of the development. Some concerns were made regarding the coding of the LinSig model used to assess the junction. These concerns have been considered by PBA within their second TAA.

3.3.2 AECOM previously noted that the Airport Way arm (Arm 4) of the model was coded as free flowing rather than give way, even though this arm is give way in reality. If the JCT intercept and slope values were not used within the model, evidence was requested to support those that were used (potentially in the form of a comparison between modelled and observed queue lengths).

3.3.3 PBA drew attention to the post submission meeting with AECOM in December 2016 where they stated the above point was discussed and agreed. PBA's response drew attention to drastically increased queues on this arm when the arms were coded as AECOM suggested. Given the negligible number of vehicles opposing this arm. PBA do not consider the give way layout to be the key factor in determining queue lengths on this arm. Instead the downstream traffic signals on the southern circulatory are considered to be the main constraint to capacity. Therefore, PBA considers the model as presented is the most realistic assessment of capacity impact and the model validates accurately.

3.3.4 AECOM have reviewed the December 2016 meeting minutes and do not consider that there was a recorded agreement on coding Airport Way as free flowing.

3.3.5 PBA also state that the model in its current form was provided for a review of the nearby approved Napier Park development, on the basis that HE considered it fit for purpose. AECOM did not undertake a review of the model associated with Napier Park, however it is perceivable that the development impact upon the junction was less critical and therefore in this context HE the accuracy of the model was not considered to be as critical.

3.3.6 Whilst AECOM acknowledge that the flow opposing Airport Way is minimal, it is considered that this would be reflected within the modelling results of a give way approach, as there would be limited opposing flow in the model. Therefore, AECOM consider that the original issue on the coding of Airport Way still stands.

3.3.7 AECOM previously raised concern over the speeds of 64kph allocated to lane connectors, which were deemed to be unrealistically high. PBA have reduced the connector speeds to 37kph (23mph) with similar results as to the higher speed, which AECOM can confirm.

3.3.8 AECOM previously found queue length information within the TA appendices, however not all time periods modelled were included for the calibration/validation process to be completed. This was deemed not to have been addressed in the original TAA.

3.3.9 PBA have now provided queue length data for the weekday peaks. AECOM can confirm that the 2016 base models broadly reflect the observed queue lengths, with the currently disputed approach to the coding of Airport Way. AECOM has also undertaken some tests, coding Airport Way as a give-way rather than an unconstrained link (using JCT default intercept and slope values), and considers that this also broadly reflects the observed queuing. The following table compares the observed queues with those from the two different models is summarised below. In the table AWFF stands for Airport Way Free Flow and AWGW stands for Airport Way Give Way.

Table 1: Comparison of observed and modelled queues

Time	M1 Northbound			Airport Way			M1 Southbound		
	Obs.	*Modelled - AWFF*	*Modelled - AWGW*	*Obs.*	*Modelled - AWFF*	*Modelled - AWGW*	*Obs.*	*Modelled - AWFF*	*Modelled - AWGW*
AM Peak	9	14	14	0	0	4	0	0	0
PM Peak	12	19	19	1	0	1	0	1	0

3.3.10 Based on the comparison of queue lengths presented within table 1 above, AECOM consider that the coding of Airport Way as a free flow approach may not be critical in the base scenario. In the absence of further evidence to demonstrate the free flow modelling may not be critical for 'with development', 'future year' scenarios, this is approach is accepted at this time. AECOM do however reserve judgement on this matter pending comparison of the other scenarios.

3.3.11 With regard to the forecast year modelling (2021 opening year), AECOM previously raised concerns regarding the significant queues predicted on the southern circulatory. In reality, this link would be operating with a Degree of Saturation value below 80%, which would require considerably more green time than allocated, taking time away from the M1 northbound off-slip. AECOM found that if the southern circulatory queuing was protected then queuing on the M1 northbound off-slip could significantly increase and stretch back to the mainline carriageway. An alternative proposed approach was to signalise the Airport Way approach to the M1 J10 gyratory. Signal timing priority could be such that queues which develop are on the approach to the junction rather exceeding the circulatory stacking space available, potentially allowing more green time to be allocated to the M1 northbound off-slip.

3.3.12 AECOM previously recommended that the LinSig models should have been updated to accurately reflect the layout of the junction and ensure that the operation of the southern circulatory is protected.

3.3.13 PBA responded by emphasising that the signals were set up in the model to prevent queues on the northbound off slip reaching the M1 mainline. Queues on the circulatory would extend back onto Airport Way. PBA conclude that the impact of the proposed development on the junction is therefore shown to not be severe. AECOM has presented the model outputs for 2021 ('without' and 'with' the proposed development) in Table 2 below, as taken from the models presented by PBA, i.e. no alterations made to ensure that the southern circulatory operates within capacity. The results for the Saturday peak have not been included as the worst operation of the junction is predicted to be in the AM and PM weekday peaks.

Table 2: 2021 M1 Junction 10 model outputs (no adjustment to southern circulatory)

Arm	AM Peak				PM Peak			
	Without Dev.		*With Dev.*		*Without Dev.*		*With Dev.*	
	DoS (%)	*MMQ*	*DoS (%)*	*MMQ*	*DoS (%)*	*MMQ*	*DoS (%)*	*MMQ*
M1 SB	83.8	3	87.6	8	50.1	1	55.9	1
Airport Way	60.4	1	62.0	1	74.6	2	90.2	4
M1 NB	82.0	25	84.8	28	91.5	29	102.7	55
Southern Circ.	82.1	15	97.1	22	97.9	33	110.0	82

3.3.14 The table above demonstrates that even without restricting the queues on the southern circulatory, in the 2021 PM peak significant queues are predicted to build on the M1 northbound approach, which are predicted to increase significantly following the addition of development traffic. The queue of 55 PCUs shown in Table 2 would be unlikely to reach back to the mainline carriageway. However it should be noted that the LinSig User Guide states that where a lane is oversaturated 'the Mean Maximum Queue will be approximately half the final queue at the end of the modelled time period', i.e. the queue at the end of the hour will be double the MMQ output from the model. Therefore in the 2021 PM Peak 'with development' scenario AECOM consider that the M1 northbound approach queue could stretch back to the mainline carriageway, even without adjustments being made to ensure the southern circulatory operates within capacity. AECOM therefore do not agree with PBA that the impact of the proposed development will not be severe on the highway network.

3.3.15 PBA state that they do not consider providing signals on the Airport Way entry arm to be the most favourable mitigation. The roundabout currently has three arms and therefore the numbers of vehicles opposing the Airport Way arm on the eastern circulatory are negligible. Therefore, the impact of vehicles queueing back from the southern circulatory on other movements is deemed by PBA to be negligible. However, if HE consider this to be an appropriate mitigation measure then PBA state the applicant would agree to fund the works to signalise the Airport Way approach to the roundabout. No modelling has been provided to demonstrate the operation of the junction should the Airport Way approach be signalised.

3.3.16 AECOM consider that signalisation of the Airport Way arm could enable the southern circulatory to be protected from excessive queuing whilst also protecting the queue lengths on the northbound off slip arm. However as modelling has not been provided to assess the impact the signalisation could have it has not been possible to quantify the impact or assess whether the restriction of traffic from Airport Way could help improve the operation of the southern circulatory and M1 northbound off-slip. It is recommended that PBA undertake this modelling to determine the impact of the scheme, both on the SRN and on Airport Way, which may experience a significant increase in queuing.

3.3.17 Notwithstanding the above the developers offer to signalise Airport Way entry arm may not be sufficient to mitigate the impact of the proposed development. It is considered possible that whilst this measure may help manage traffic flows it is unlikely to result in an increase in capacity sufficient to accommodate the additional traffic and congestion predicted to be generated by the proposed development. Hence it is recommended that consideration is given to more effective mitigation measures.

3.3.18 AECOM recognise that with the Newlands Park development, as well as others such as Napier Park and Power Court, coming forward, M1 Junction 10 is going to be put under significant pressure in future years, with the junction expected to experience increased capacity issues and queuing. In order to provide sufficient capacity for these developments a larger scale scheme may be required at the junction. HE may wish to consider undertaking a study to identify a potential scheme at the junction that could provide a greater level of long term capacity and reduce queuing on all approaches to the roundabout. AECOM envisage that whilst signalisation of Airport Way may enable some control over the queuing on the southern circulatory and northbound off-slip, this may only be a short term option and a larger scheme may be required going forward to ensure that the junction operation is good enough in the future to enable growth within Luton to come forward.

3.4 Merge / Diverge Assessment

3.4.1 AECOM previously questioned the TEMPRO growth factors used and stated in Table 8.2 of the Addendum Report that did not match those included within the traffic flows spreadsheet. Whilst paragraph 8.5.15 of the TAA indicated that they have been taken from version 7.0 of TEMPRO, AECOM matched the values presented with those from version 6.2. AECOM previously requested clarification on this issue regarding TEMPRO factors in both the TAA and associated spreadsheet.

3.4.2 PBA's response regarding TEMPRO growth factor differences is summarised in Section 3.2.1 of this TN. AECOM can confirm TEMPRO version 7.0 growth factors were used in the future year base flow growth calculations.

3.4.3 AECOM noted that diverge assessments and associated slip road capacities were not provided in the TA or original TAA, which were then requested.

3.4.4 PBA have now undertaken diverge analysis of M1 Junction 10 (northbound and southbound) and Junction 11 (northbound) for 2021.

3.4.5 AECOM has reviewed the 2021 diverge assessment and note that, when compared with the flows in the Appendix C of the first TAA, the Junction 10 northbound and southbound flows seem to have been mislabelled (i.e. those labelled as northbound are actually southbound flows and vice versa). It should also be noted that the flows in the second TAA differ slightly to those in Appendix C on the slip roads (of the order of 20 – 40 vehicles). It is also assumed that the 'Baseline' flows represent Base plus Committed Development excluding Newlands Park and Power Court ('2021 B+C…' in the flows spreadsheet).

3.4.6 The diverge assessments provided indicate that following cumulative (Newlands Park and Power Court) development, the existing diverge layouts will not be consistent with those required to support the background growth and development proposals in all time periods in the 2021 assessment year.

3.4.7 Based on the assessments provided, to meet capacity requirements in the 2021 opening year, a Type E diverge layout would be required for Junction 10 and Junction 11 diverges (both northbound) consisting of 5 lanes upstream and a two lane drop diverge. A Type D diverge would be required for Junction 10 southbound, consisting of a two lane off slip with a ghost island (one lane drop). The requirement identified is in excess of the current provision.

3.4.8 AECOM can confirm that following the addition of development traffic, the impact generated by both the Power Court and Newlands Park developments combined does not result in a need for further upgrade to the diverges over and above the baseline scenario.

3.4.9 To re-iterate AECOM's previous review of the merge assessments, as presented within the previous technical note (dated 2nd February 2017), to meet capacity requirements in the 2021 opening year, Type F merge layouts would be required consisting of 3 lanes upstream, two lane on-slip with ghost island and single lane gain merge.

3.5 Mitigation

3.5.1 PBA previously proposed to mitigate the impact of the development through travel demand management and peak spreading onsite. AECOM then recommended that further details were provided of the measures envisaged.

3.5.2 AECOM stated that use of demand management and peak spreading to reduce the impact of the proposed development on the strategic road network at peak times would be welcomed and further information should be provided to demonstrate how this impact will be reduced and how the junction is predicted to operate with development following the implementation of these measures. It was recommended that in event the development is still predicted to result in an adverse impact to SRN, consideration should be given to additional mitigation measures that may be required to support the development.

3.5.3 PBA state that the capacity results presented within the original TAA demonstrated the proposed development would not have a severe impact on the SRN. This was based on the values listed in Table 3 below. AECOM has not been able to locate or calculate these figures from information provided in the TA or original TAA, therefore confirmation of where these figures were derived is recommended. For the remainder of this TN they will be taken as read.

Table 3: Newlands Park total vehicle trips with 5% Travel Plan reduction.

AM		PM		Sat	
In	Out	In	Out	In	Out
953	280	639	1,191	1,482	1,356

3.5.4 PBA state that vehicle trips generated from the site will be capped at the values presented above using a Monitor and Manage approach through the Travel Plan. Enhanced management strategies will be implemented accordingly if observed traffic levels exceed these levels during the monitoring period.

3.5.5 Contingency measures proposed by PBA as part of the Travel Plan management strategy include:

- Stricter Travel Plan measures to encourage even greater flexibility of office hours;
- Further discounted staff bus/rail tickets;
- Further advertising and participation in Central Bedfordshire and Luton Liftshare;
- Provision of further cycle parking;
- Further prize draws to encourage staff and visitor walking/cycling/public transport trips;
- Further advertising of and promotion of Travel behaviour change initiatives such as travel awareness campaigns, Dr Bike events, cycle training days, and Biker's breakfasts;
- A higher proportion of dedicated car sharing bays;
- A limit on parking spaces provided as the development gets closer to full occupation; and
- Introduction of parking zones allowing certain parking bays to be released onto the network at different times throughout the PM peak period.

3.5.6 However, AECOM dispute PBA's claim that the development will not have a severe impact on the SRN. Table 2 of this TN demonstrates that the impact on the M1 northbound off-slip could be severe and could result in queuing stretching back to the mainline carriageway, even if the flows

are capped to those indicated in table 3. AECOM therefore consider that the impact could be severe and there would be a significant risk to HE if the development were to go ahead based on these conditions.

3.5.7 AECOM acknowledge that the implementation of the additional measures outlined in section 3.5.5 above have the potential to reduce the number of vehicle trips generated by the development further, however AECOM query whether these could have enough of an influence on trips at M1 Junction 10 to ensure that the impact of the remaining trips would not be considered severe.

3.5.8 Furthermore, the 'monitor and manage' approach outlined by PBA does not seem to indicate that restrictions will be placed on development build out should the generation of trips not be reduced sufficiently through the approach. It may be that HE require some kind of condition placed on the build out of development, to restrict further build out once the trip generation has reached a certain level, before further mitigation at Junction 10 is provided. It is recommended that consideration is given to mitigation measures that could be implemented at Junction 10 to protect the operation of the SRN following development, in combination with the provision of sustainable measures. Based upon the assessment undertaken to date the threshold levels identified above, particularly within the weekday PM peak hour, are not sufficient to prevent a severe impact. It is recommended that additional consideration be given to how the PM peak trip generation could be reduced.

3.5.9 In the original TAA PBA indicated that changes in flows expected from the committed A5-M1 link were included within the forecast year flow scenarios. AECOM considered it unclear from the spreadsheets provided what changes were made to reflect this. AECOM then recommended that this was explained further and justification for the flow changes provided.

3.5.10 PBA have subsequently provided the following commentary:

- In terms of the committed A5-M1 link, the spreadsheet reflects this committed scheme by taking account of Highways Agency Inquiry Document No. HA/105/3, Public Inquiry, A5-M1 link, 'Traffic Proof of Evidence'', (November 2011) with specific reference to Figure G-4: 'AADT Flows Core Scenario 2031'.

- The percentage change in 2031 traffic flow, anticipated in Figure G-4, between the with and without committed A5-M1 link was used as a proxy to increase or decrease flow on M1 and Junction 11, accordingly. The percentage change values were included in the spreadsheet under the tab entitled 'A5-M1'. These were then applied as follows to obtain the 2021/2026/2031 Base flows:

- J11 on-slip/off-slip flows increased by 5.21% (i.e. average of 2031 % change arising from the A5-M1 link on Dunstable Rd at J11 two-way flows and the A505 at J11 two-way flows as quoted in the Highways Agency Inquiry Document– i.e. these were -7.81% and 18.23% respectively in 2031);

- South of J10 mainline flows increased by 0.82% (i.e. equals the forecasts in the Inquiry Document for mainline flow change two-way on the M1 south of J10 by 2031);

- North of J10 mainline flows increased by 4.26% (i.e. equals the forecasts in the Inquiry Document for mainline flow change two-way on the M1 north of J10 by 2031); and

- North of J11 mainline flows increased by 12.94% (i.e. equals the forecasts in the Inquiry Document for mainline flow change two-way on the M1 north of J11 by 2031).

3.5.11 With the provision of the link adjustment factors, AECOM is satisfied that the A5-M1 link has been has been taken into account satisfactorily and considers this issue resolved.

4 Conclusion

4.1.1 This Technical Note has documented AECOM's review, on behalf of Highways England of the second Transport Assessment Addendum (TAA) Report relating to the proposed development in Newlands Park, Luton. The second TAA, dated March 2017, has been prepared by PBA in support of an outline planning application for a mixed-use development at Newlands Park.

4.1.2 The purpose of this note is to confirm whether or not the previous aspects of AECOM's responses in a review of the TA and the original TAA dated December 2016 have been addressed and to conduct a full review of the relevant sections of the second TAA and associated documents to determine whether the potential impact of the proposed development on the strategic road network (SRN) has been reasonably assessed.

4.1.3 AECOM has made a number of further comments and recommendations throughout this note, which should be addressed by PBA, in order to ensure the assessment of the impact of the development has been fully assessed. These comments and recommendations have been identified by use of underlined text for ease of reference.

4.1.4 AECOM consider that the key issues and comments arising from the review to be:

- AECOM consider that the models of M1 Junction 10 provided did not sufficiently ensure that the southern circulatory would operate within capacity in the future years and that this could have been demonstrating an artificially optimistic operation of the M1 northbound off-slip, particularly in the 2021 PM peak.

- PBA consider that allowing the queues on the southern circulatory to stretch back along Airport Way is reasonable due to the very small number of vehicles making use of the eastern circulatory. AECOM noted that even without restricting the queues on the southern circulatory, in the 2021 PM peak significant queues are predicted to build on the M1 northbound approach, which are predicted to increase significantly following the addition of development traffic (to 55 PCUs). This queue would be unlikely to reach back to the mainline carriageway.

- However it should be noted that the LinSig User Guide states that where a lane is oversaturated 'the Mean Maximum Queue will be approximately half the final queue at the end of the modelled time period', i.e. the queue at the end of the hour will be double the MMQ output from the model. Therefore in the 2021 PM Peak 'with development' scenario AECOM consider that the M1 northbound approach queue could stretch back to the mainline carriageway, even without adjustments being made to ensure the southern circulatory operates within capacity.

- AECOM therefore do not agree with PBA that the impact of the proposed development will not be severe on the highway network.

- PBA do not consider the signalisation of Airport Way (to restrict the flow of vehicles on to the southern circulatory and allow more green time for the M1 northbound off-slip) to be the most appropriate mitigation, however indicated that if HE consider this to be an appropriate mitigation measure then the applicant would agree to fund the works to signalise the Airport Way approach to the roundabout. No modelling was provided to demonstrate the operation of the junction should the Airport Way approach be signalised. It is recommended that this modelling is undertaken by PBA.

- Notwithstanding the above the developers offer to signalise Airport Way entry arm may not be sufficient to mitigate the impact of the proposed development. It is considered possible that whilst this measure may help manage traffic flows it is unlikely to result in an increase in capacity sufficient to accommodate the additional traffic and congestion

predicted to be generated by the proposed development. Hence it is recommended that consideration is given to more effective mitigation measures

- HE may wish to consider undertaking a study to identify a potential scheme at the junction that could provide a greater level of long term capacity and reduce queuing on all approaches to the roundabout. AECOM envisage that whilst signalisation of Airport Way may enable some control over the queuing on the southern circulatory and northbound off-slip, this may only be a short term option and a larger scheme may be required going forward to ensure that the junction operation is good enough in the future to enable growth within Luton to come forward.

- PBA previously proposed to mitigate the impact of the development through travel demand management and peak spreading onsite. PBA stated within the second TAA that the reduction in trip numbers that could be brought about by these measures (5%) had been used within the modelling that suggested that the impact to the SRN, something which AECOM queried earlier within this conclusion. PBA indicated that through a 'monitor and manage' approach it would be ensured that trip numbers did not exceed those outlined within the second TAA (with a 5% reduction). AECOM consider that the modelling demonstrates that vehicle numbers of this magnitude could have a severe impact on the operation of the SRN.

- It is recommended that consideration is given to mitigation measures that could be implemented at Junction 10 to protect the operation of the SRN following development, in combination with the provision of sustainable measures. Based upon the assessment undertaken to date the threshold levels identified within Table 3 above, particularly within the weekday PM peak hour, are not sufficient to prevent a severe impact. It is recommended that additional consideration be given to how the PM peak trip generation could be reduced.

Appendix B Proposed Mitigation Strategy Detail

In terms of development trips, a small proportion of vehicles being held back within the development during the PM peak hour would noticeably reduce the queue length. Analysis shows that a 17% reduction in outbound development trips (or 60 fewer development PCUS turning right from Airport Way on to M1 mainline) in the PM peak hour could reduce queues on the northbound off slip and southern circulatory by a further 13 PCUs per lane. If TEMPRO growth is also excluded (i.e. a 2016 Base + Committed Development + Proposed Newlands Park with 17% reduction in outbound trips) then the junction is predicted to operate within 100% capacity and spare queueing capacity of 85 PCUs. The LinSig model outputs showing these results are attached to this report as Appendix C along with the input LinSig files issued as separate files.

Based on the above, and as discussed in Section 2.2, Demand Management will be undertaken to reduce development trip generation and these will be set out in the adopted and approved site wide Travel Plan. These measures will include some or all of the following (in addition to other measures that come to light in due course):

- Directly affect working practices and departure profiles, including
    - Flexible office working allowing staff to arrive early and leave before 1700 and after 1800
    - Flexible office working allowing staff to arrive before 0800 and after 0900
    - Forcibly holding back office traffic between 1700 – 1800
- Gating of exiting traffic to not exceed a maximum cap in any single hour
- Further subsidy of proposed hopper bus service to further incentivise bus use
- Further incentivise car sharing
- Electronic car sharing monitoring using Tress technology

In order to formally and effectively manage demand at source (i.e. within the development) a set of targets will be agreed (a slip lane queue trigger combined with traffic generation monitoring at source). Associated with these targets will be consequential mitigation to be written into a Section 106 Obligation relating to the development that will be undertaken as part of the Travel Plan obligations.

PBA propose the following wording to be included in any Condition and subsequent S106 agreement:

1. A Transport Steering Group (TSG) will be set up to include a forum for co-operative joint working. The TSG will be responsible for reviewing progress against the Travel Plan targets, and developing future transport strategies. The TSG will comprise the Owner, Management Company, the Council and Highways England.

2. The TSG will review the Travel Plan, set up/develop an Annual Monitoring Report and make recommendations about future proposals and corrective actions as development phases are completed and occupied. These recommendations will be based on measures outlined within the final S106 agreement (see below for measures proposed by PBA) and will be submitted to the council and HE who, acting reasonably and in conjunction with each other, will either agree to the proposed approach or make alternative recommendations.

3. Annual monitoring will be undertaken and summarised within an Annual Monitoring Report. The Annual Monitoring Report will be reviewed annually at the meeting of the TSG. In the event that targets are not being met, the TSG shall recommend to the Council that the Owner be required to undertake Demand Management Measures in the first instance and then contribute towards physical mitigation measures if Demand Management Measures are unsuccessful.

4. Annual Monitoring will include:

    - Trip Generation Trigger - the number of vehicles per hour egressing the site during the PM Peak Hour will be monitored as the average of traffic hours during two weeks in a neutral month (TBC) using Automatic Traffic Counters located at each internal site access.

    - Slip Lane Queue Length Trigger - a queue length survey undertaken on the northbound M1J10 off slip for a period of two weeks in in a neutral month (TBC). The average weekday PM peak maximum queue will be recorded.

5. Triggers will be set as follows:

    - Interim Slip Lane Queue Length Trigger – 110 PCUs total across two lanes

    - Maximum Slip Lane Queue Length Trigger – 220 PCUs total across two lanes

    - Interim Trip Generation Trigger – 830 outbound PM trips (estimated total outbound trip generation within TA with 5% Travel Plan reduction plus 17% additional reduction commensurate with junction modelling showing M1J10 operating within 100% capacity)

    - Maximum Trip Generation Trigger – 1,000 outbound PM trips (estimated total outbound trip generation within TA with 5% Travel Plan reduction)

6. If regular monitoring shows the Interim Slip Lane Queue Length Trigger is being exceeded in addition to the Interim Trip Generation Limit, the Owner will review traffic conditions in relation to this target and agree with the council any appropriate and viable Travel Demand Measures in line with that agreed. Travel Demand Measures to mitigate the impact are discussed above but ultimately will include the following options to ensure that PM Peak traffic generation is brought back to a level equal to or below 1,000 outbound trips in a single PM Peak Hour:

    - Further travel demand measures

    - Reduce development rate

    - Delay further phases of development

7. By the next monitoring report, should development traffic be in excess of the maximum PM peak trip allowance in addition to the maximum slip lane queue trigger being reached, the Owner will review traffic conditions in relation to this target and agree with the council any appropriate and viable physical mitigation proposals in line with that agreed. Physical Mitigation Measures could include the following:

    - Convert diverge arrangement to match ‘DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/6.3 Layout D’ – whereby the existing slip lane is extended into the inside lane of the M1 mainline upstream of where the existing slip lane starts. The mainline will be reduced to two dedicated ahead lanes plus one dedicated lane for Airport Way and one lane for both Airport Way and Motorway traffic upstream of

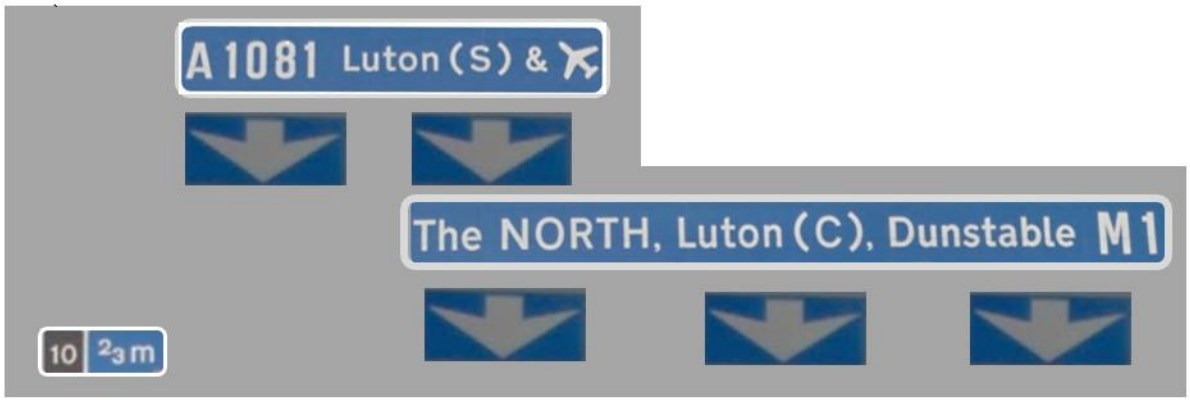
Junction 10 (approximately 1 mile from the existing slip), widening back up to four lanes immediately downstream of the slip lane via an inside lane gain. The inside lane will be signed using existing gantries located at 2/3 mile and 1/2 mile upstream of the existing slip lane, with signs stating “A1081 Luton (S) &✈ ” in addition to appropriate line markings and road markings stating “A1081 Luton (S)”. See drawing 3244/5501/ SK001. This arrangement has been determined using future year traffic flows combined with ‘DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/5 MW’

- As an ‘add-on’ to mitigation measure 3, the narrowing of the mainline to three lanes will be extended downstream of Junction 10, allowing for the J10 northbound on slip to form a dedicated lane gain with an additional merge lane – therefore allowing two on slip lanes with one being unopposed. Given that queuing currently occurs on the mainline during extreme peak periods, caused by vehicles merging onto the mainline in this location, PBA consider this measure will, whilst reducing the number of lanes on the mainline, help mitigate this existing constraint by removing the conflict between the on slip and the mainline.

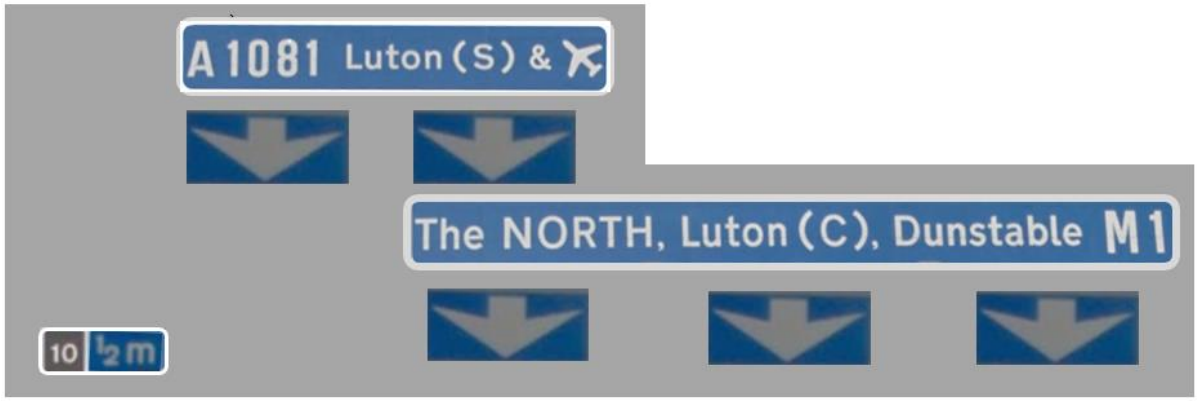
Appendix C LinSig Output Files (see separate file)

Appendix D Example Gantry Signs

Potential modification to Gantry located 2/3 mile from slip lane:



Potential modification to Gantry located ½ mile from slip lane:



From: [redacted]
To: [redacted]
Subject: FW: Newlands Park M1 J10 model files
Date: 12 June 2017 10:54:54
Attachments: Transport Assessment - Addendum Report 03_FINAL.pdf
image007.png
image008.png
image009.png
image010.jpg
image011.jpg
image012.jpg
image013.png
image014.png
image015.png
image016.jpg
image017.jpg
image018.jpg
image019.png
image020.jpg

[redacted]

Please find enclosed PBA Transport Assessment Addendum 03. The developer has offered mitigation as shown in Appendix D – Example Gantry Signs. Appendix B – Proposed Mitigation Strategy Detail sets out the basis.
Highways England have a recommendation "not to determine" which expires on 30 June 2017. Highways England will DRAFT conditions for the LPA and developer for consideration. Can you please consider and discuss if you wish.
Please be aware I only work Monday and Tuesday only.
Regards
[redacted]

From: [redacted]
Sent: 09 June 2017 18:18
To: [redacted]
Cc: [redacted]
Subject: RE: Newlands Park M1 J10 model files
Good afternoon [redacted],
Following our meeting last month and as agreed, please find attached an updated version of Transport Assessment Addendum 03. This report responds to the most recent transport related comments raised (TN 03), and clarifications sought, by yourselves, with the focus being to put forward and ultimately agree proposals to mitigate against traffic impact on M1 Junction 10. The revisions take into account discussions had on 23rd May 2017.
Please note, whilst this report no longer has draft on it, we are happy to treat this as a draft document with the intention to finalise this document once you have reviewed it and both you and [redacted] are happy with the content and proposed Management Strategy wording. If you have any comments or require any part of our report to be changed, then please do get in contact with us in the first instance. We can then update this report accordingly rather than providing additional response notes and addendums.
I also attach revised LinSig input files. These runs now include the scenarios whereby 17% of development is taken off M1J10 and the junction is shown to operate with reduced queueing and when combined with no TEMPRO growth the junction is predicted to operate within 100% capacity.
I also attach a drawing as part of the report which outlines a physical mitigation measure to provide a dedicated inside lane to Airport Way traffic on the mainline.
Please give me a call if you have any questions. I look forward to hearing from you.
Kind regards,
[redacted]
Principal Transport Planner

For and on behalf of Peter Brett Associates LLP - Cambridge

t [redacted]
m [redacted]
e [redacted]
w peterbrett.com

From: [redacted]
Sent: 22 May 2017 10:15
To: [redacted]
Cc: [redacted]
Subject: RE: Newlands Park M1 J10 model files

Good morning [redacted]
In advance of tomorrow's meeting, please find attached a PowerPoint presentation and Draft Technical Note 03 for your information. These documents are in response to your Technical Note 03.
We plan to talk through the Power Point and use this as an agenda for the meeting. The Power Point provides a summary of the attached Technical Note and its intention is to guide discussion. Please note the tech note is currently in draft format for the intention of discussion tomorrow. Following the meeting we plan to update the Tech Note taking account of agreements/discussion had at the meeting and then formally submit in due course.
Kind regards,

[redacted]
Principal Transport Planner
For and on behalf of Peter Brett Associates LLP - Cambridge

t [redacted]
m [redacted]
e [redacted]
w peterbrett.com

From: [redacted]
Sent: 18 April 2017 09:28
To: [redacted]
Cc: [redacted]
Subject: RE: Newlands Park M1 J10 model files

Good morning [redacted]
Please find attached Appendix B which includes for the latest M1 J10 model.
In terms of signalising Airport Way, as per para.3.3.8 of the TAA we do not consider this to be the

most favourable mitigation. The roundabout currently has three arms and therefore the number of vehicles passing the Airport Way arm (i.e. on the eastern circulatory) are negligible. We have therefore not modelled this option. Para. 3.3.8 did however state that if HE consider this to be an appropriate mitigation measure that would allow better management of the junction then the applicant would agree to fund the works.

Kind regards,

[redacted]

Principal Transport Planner

For and on behalf of Peter Brett Associates LLP - Cambridge

t [redacted]

m [redacted]

e [redacted]

w peterbrett.com

From: [redacted]
Sent: 13 April 2017 10:36
To [redacted]
Cc: [redacted]
Subject: Fwd: Newlands Park M1 J10 model files

[redacted] - FYI and action on return

Thanks

[redacted]

Begin forwarded message:

> **From:** [redacted]
> **Date:** 13 April 2017 at 10:23:26 BST
> **To:** [redacted]
> **Cc:** [redacted]
> **Subject: RE: Newlands Park M1 J10 model files**
>
> Hi [redacted]
> Could you provide the latest models of M1 Junction 10? Also the latest TAA discusses signalisation of Airport Way (section 3.3.8), is there any chance that this scenario was modelled? If yes, could you provide this model as well?
> Kind regards,
>
> [redacted]
> Consultant, Transport Planning
> D [redacted]

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AECOM House
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From: [redacted]
Sent: 11 April 2017 13:18
To: [redacted]
Cc: [redacted]
Subject: RE: Newlands Park M1 J10 model files

Hi [redacted]

In respect of the Newlands Park TAA02, please find model reports as attached (1st two attachments) relating to Appendix B (average and trend line approach to retail trips).

As regards the queue length data referenced in para 3.3.5, this was provided previously within the TA for Newlands Park – attached above to assist. Hope this helps.

Regards

[redacted]
Senior Transport Planner
For and on behalf of Peter Brett Associates LLP - Cambridge

t [redacted]
e [redacted]
w peterbrett.com

From: [redacted]
Date: 10 April 2017 at 16:27:49 BST
To: [redacted]
Subject: FW: Newlands Park M1 J10 model files

Dear [redacted]

I am in the process of reviewing the second Transport Assessment Addendum Report for Newlands Park (dated 1st March 2017). The report references updated model outputs for M1 Junction 10. Would it be possible to provide these?

Kind regards,

[redacted]
Consultant, Transport Planning
D +[redacted]
[redacted]

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From: [redacted]
To: "[redacted]"
Subject: Planning application 16/01401/OUTEIA - Newlands Park - Luton
Date: 13 June 2017 09:21:39
Attachments: image001.jpg

[redacted]

Following PBA submission to you dated 19 June 2017 copied to me I have set below down DRAFT conditions that will apply in the event of the LPA granting planning consent. I am unable to include the "Example Gantry Signs – Appendix D figure. If you are able to add it then it can be referred to.
Please add/amend as you see fit. If you devise a better way of setting down the conditions please go ahead. I will then forward in DRAFT form to both the LPA and PBA for comment before formally responding to the LPA. The holding direction expires 30 June 2017. As mentioned at the meeting. I can travel down this Thursday should if you feel it would be beneficial.
Please charge your time to "ad hoc".
Regards

[redacted]

In the event of the planning authority granting planning consent Highways England recommends the following conditions should apply:
1) Prior to first occupation the Framework Travel Plan prepared by PBA dated August 2016 is to be approved in writing by the Local Planning Authority in conjunction with Highways England.
2) Demand Management will be undertaken to reduce development trip generation and these will be set out in the adopted and approved site wide Framework Travel Plan. These measures will include some or all of the following (in addition to other measures that come to light in due course): • Directly affect working practices and departure profiles, including
3) Flexible office working allowing staff to arrive early and leave before 1700 and after 1800
4) Flexible office working allowing staff to arrive before 0800 and after 0900
5) Forcibly holding back office traffic between 1700 – 1800
6) Gating of exiting traffic to not exceed a maximum cap in any single hour
7) Further subsidy of proposed hopper bus service to further incentivise bus use
8) Further incentivise car sharing
9) Electronic car sharing monitoring using Tress technology In order to formally and effectively manage demand at source (i.e. within the development) a set of targets will be agreed (a slip lane queue trigger combined with traffic generation monitoring at source). Associated with these targets will be consequential mitigation to be written into a Section 106 Obligation relating to the development that will be undertaken as part of the Framework Travel Plan obligations.
10) A Transport Steering Group (TSG) will be set up to include a forum for co-operative joint working. The TSG will be responsible for reviewing progress against the Travel Plan targets, and developing future transport strategies. The TSG will comprise the Owner, Management Company, the Council and Highways England.
11) The TSG will review the Travel Plan, set up/develop an Annual Monitoring Report and make recommendations about future proposals and

corrective actions as development phases are completed and occupied. These recommendations will be based on measures outlined within the final S106 agreement and will be submitted to the council and HE who, acting reasonably and in conjunction with each other, will either agree to the proposed approach or make alternative recommendations.
12). Annual monitoring will be undertaken and summarised within an Annual Monitoring Report. The Annual Monitoring Report will be reviewed annually at the meeting of the TSG. In the event that targets are not being met, the TSG shall recommend to the Council that the Owner be required to undertake Demand Management Measures in the first instance and then contribute towards physical mitigation measures if Demand Management Measures are unsuccessful.
13. Annual Monitoring will include:
a) Trip Generation Trigger - the number of vehicles per hour egressing the site during the PM Peak Hour will be monitored as the average of traffic hours during two weeks in a neutral month (TBC) using Automatic Traffic Counters located at each internal site access.
14) Slip Lane Queue Length Trigger - a queue length survey undertaken on the northbound M1J10 off slip for a period of two weeks in in a neutral month (TBC). The average weekday PM peak maximum queue will be recorded.
15. Triggers will be set as follows:
a) Interim Slip Lane Queue Length Trigger – 110 PCUs total across two lanes b) Maximum Slip Lane Queue Length Trigger – 220 PCUs total across two lanes o Interim Trip Generation Trigger – 830 outbound PM trips (estimated total outbound trip generation within TA with 5% Travel Plan reduction plus 17% additional reduction commensurate with junction modelling showing M1J10 operating within 100% capacity) o Maximum Trip Generation Trigger – 1,000 outbound PM trips (estimated total outbound trip generation within TA with 5% Travel Plan reduction) b) If regular monitoring shows the Interim Slip Lane Queue Length Trigger is being exceeded in addition to the Interim Trip Generation Limit, the Owner will review traffic conditions in relation to this target and agree with the council any appropriate and viable Travel Demand Measures in line with that agreed. Travel Demand Measures to mitigate the impact are discussed above but ultimately will include the following options to ensure that PM Peak traffic generation is brought back to a level equal to or below 1,000 outbound trips in a single PM Peak Hour:
c) Further travel demand measures
d) Reduce development rate
e) Delay further phases of development
16) By the next monitoring report, should development traffic be in excess of the maximum PM peak trip allowance in addition to the maximum slip lane queue trigger being reached, the Owner will review traffic conditions in relation to this target and agree with the council any appropriate and viable physical mitigation proposals in line with that agreed. Physical Mitigation Measures could include the following: • Convert diverge arrangement to match 'DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/6.3 Layout D' – whereby the existing slip lane is extended into the inside lane of the M1 mainline upstream of where the existing slip lane starts. The mainline will be reduced to two dedicated ahead lanes plus one dedicated lane for Airport Way and one lane for both Airport Way and Motorway traffic upstream of

Junction 10 (approximately 1 mile from the existing slip), widening back up to four lanes immediately downstream of the slip lane via an inside lane gain. The inside lane will be signed using existing gantries located at 2/3 mile and 1/2 mile upstream of the existing slip lane, with signs stating "A1081 Luton (S) & " in addition to appropriate line markings and road markings stating "A1081 Luton (S)". See drawing 3244/5501/ SK001. This arrangement has been determined using future year traffic flows combined with 'DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/5 MW'
17) As an 'add-on' to mitigation measure 3, the narrowing of the mainline to three lanes will be extended downstream of Junction 10, allowing for the J10 northbound on slip to form a dedicated lane gain with an additional merge lane – therefore allowing two on slip lanes with one being unopposed.

[redacted]
Highways England | Woodlands | Manton Lane | Bedford | MK41 7LW
Tel: [redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]
Follow Highways England East on Twitter

From: [redacted]
To: [redacted]
Subject: RE: Planning application 16/01401/OUTEIA - Newlands Park - Luton
Date: 21 June 2017 10:59:26
Attachments: image001.jpg

[redacted]

Thank you for your email below, apologies for the delay in responding.
We are currently looking through the information provided by PBA and the conditions you suggested and are putting a fee proposal together. There is quite a lot of information to review and I'm sure you agree that for a development this size it is important that we protect the operation of the SRN if it is to come forward.
I am on leave from tomorrow until Tuesday and I anticipate that we will be able to get a fee proposal to you when I return. However I do not think we will be able to respond in time for you to lift you holding direction on 30th June. It is also not clear at this stage whether we may raise some further issues within our review as this is the first time we have seen the slip road and traffic sign proposals, which will need reviewing, as well as the other information provided.
I wanted to make you aware of these concerns as early as possible, to allow you to extend your holding direction and protect Highways England's interests.
Regards,

[redacted]
Principal Consultant, Transportation
D [redacted]
[redacted].

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From: [redacted]
Sent: 13 June 2017 09:22
To: [redacted]
Subject: Planning application 16/01401/OUTEIA - Newlands Park - Luton

[redacted]

Following PBA submission to you dated 19 June 2017 copied to me I have set below down DRAFT conditions that will apply in the event of the LPA granting planning consent. I am unable to include the "Example Gantry Signs – Appendix D figure. If you are able to add it then it can be referred to.
Please add/amend as you see fit. If you devise a better way of setting down the conditions please go ahead. I will then forward in DRAFT form to both the LPA and PBA for comment before formally responding to the LPA. The holding direction expires 30 June 2017. As mentioned at the meeting. I can travel down this Thursday should if you feel it would be beneficial.

Please charge your time to “ad hoc”.
Regards

[redacted]

In the event of the planning authority granting planning consent Highways England recommends the following conditions should apply:

1) Prior to first occupation the Framework Travel Plan prepared by PBA dated August 2016 is to be approved in writing by the Local Planning Authority in conjunction with Highways England.

2) Demand Management will be undertaken to reduce development trip generation and these will be set out in the adopted and approved site wide Framework Travel Plan. These measures will include some or all of the following (in addition to other measures that come to light in due course): • Directly affect working practices and departure profiles, including

3) Flexible office working allowing staff to arrive early and leave before 1700 and after 1800

4) Flexible office working allowing staff to arrive before 0800 and after 0900

5) Forcibly holding back office traffic between 1700 – 1800

6) Gating of exiting traffic to not exceed a maximum cap in any single hour

7) Further subsidy of proposed hopper bus service to further incentivise bus use

8) Further incentivise car sharing

9) Electronic car sharing monitoring using Tress technology In order to formally and effectively manage demand at source (i.e. within the development) a set of targets will be agreed (a slip lane queue trigger combined with traffic generation monitoring at source). Associated with these targets will be consequential mitigation to be written into a Section 106 Obligation relating to the development that will be undertaken as part of the Framework Travel Plan obligations.

10) A Transport Steering Group (TSG) will be set up to include a forum for co-operative joint working. The TSG will be responsible for reviewing progress against the Travel Plan targets, and developing future transport strategies. The TSG will comprise the Owner, Management Company, the Council and Highways England.

11) The TSG will review the Travel Plan, set up/develop an Annual Monitoring Report and make recommendations about future proposals and corrective actions as development phases are completed and occupied. These recommendations will be based on measures outlined within the final S106 agreement and will be submitted to the council and HE who, acting reasonably and in conjunction with each other, will either agree to the proposed approach or make alternative recommendations.

12). Annual monitoring will be undertaken and summarised within an Annual Monitoring Report. The Annual Monitoring Report will be reviewed annually at the meeting of the TSG. In the event that targets are not being met, the TSG shall recommend to the Council that the Owner be required to undertake Demand Management Measures in the first instance and then contribute towards physical mitigation measures if Demand Management Measures are unsuccessful.

13. Annual Monitoring will include:

a) Trip Generation Trigger - the number of vehicles per hour egressing the site during

the PM Peak Hour will be monitored as the average of traffic hours during two weeks in a neutral month (TBC) using Automatic Traffic Counters located at each internal site access.

14) Slip Lane Queue Length Trigger - a queue length survey undertaken on the northbound M1J10 off slip for a period of two weeks in in a neutral month (TBC). The average weekday PM peak maximum queue will be recorded.

15. Triggers will be set as follows:

a) Interim Slip Lane Queue Length Trigger – 110 PCUs total across two lanes

b) Maximum Slip Lane Queue Length Trigger – 220 PCUs total across two lanes o Interim Trip Generation Trigger – 830 outbound PM trips (estimated total outbound trip generation within TA with 5% Travel Plan reduction plus 17% additional reduction commensurate with junction modelling showing M1J10 operating within 100% capacity) o Maximum Trip Generation Trigger – 1,000 outbound PM trips (estimated total outbound trip generation within TA with 5% Travel Plan reduction) b) If regular monitoring shows the Interim Slip Lane Queue Length Trigger is being exceeded in addition to the Interim Trip Generation Limit, the Owner will review traffic conditions in relation to this target and agree with the council any appropriate and viable Travel Demand Measures in line with that agreed. Travel Demand Measures to mitigate the impact are discussed above but ultimately will include the following options to ensure that PM Peak traffic generation is brought back to a level equal to or below 1,000 outbound trips in a single PM Peak Hour: c) Further travel demand measures

d) Reduce development rate

e) Delay further phases of development

16) By the next monitoring report, should development traffic be in excess of the maximum PM peak trip allowance in addition to the maximum slip lane queue trigger being reached, the Owner will review traffic conditions in relation to this target and agree with the council any appropriate and viable physical mitigation proposals in line with that agreed. Physical Mitigation Measures could include the following: • Convert diverge arrangement to match 'DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/6.3 Layout D' – whereby the existing slip lane is extended into the inside lane of the M1 mainline upstream of where the existing slip lane starts. The mainline will be reduced to two dedicated ahead lanes plus one dedicated lane for Airport Way and one lane for both Airport Way and Motorway traffic upstream of Junction 10 (approximately 1 mile from the existing slip), widening back up to four lanes immediately downstream of the slip lane via an inside lane gain. The inside lane will be signed using existing gantries located at 2/3 mile and 1/2 mile upstream of the existing slip lane, with signs stating "A1081 Luton (S) & " in addition to appropriate line markings and road markings stating "A1081 Luton (S)". See drawing 3244/5501/ SK001. This arrangement has been determined using future year traffic flows combined with 'DMRB Volume 6, Section 2, Part 1 TD 22/06 Figure 2/5 MW'

17) As an 'add-on' to mitigation measure 3, the narrowing of the mainline to three lanes will be extended downstream of Junction 10, allowing for the J10 northbound on slip to form a dedicated lane gain with an additional merge lane – therefore allowing two on slip lanes with one being unopposed.

[redacted]
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Customer Contact Centre is available 24/7 on 0300 123 5000 or info@highwaysengland.co.uk

Highways England Company Limited | General enquiries: 0300 123 5000 |National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF | *https://www.gov.uk/government/organisations/highways-england* **|** *info@highwaysengland.co.uk*
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Consider the environment. Please don't print this e-mail unless you really need to.

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Proposed signage change - M1 J10 Luton Airport - Planning application - 16/01401/OUTEIA - land Adjacent to Junction 10 to 10A - Newlands Road, Luton
Date: 26 June 2017 10:16:48
Attachments: image001.jpg
image006.jpg
image007.png

[redacted]
Thank you for the updated version of Transport Assessment Addendum 03 with proposed signage change on the M1. I set below comments received from [redacted] for your consideration. To expedite the process can I ask that you liaise directly with [redacted] on technical matters and copy me in. When [redacted] confirms to me acceptance of a signage scheme supported with a drawing which will be conditioned when Highways England formally respond to the planning application, I will ask Highways England Structures team to review and access if the gantries can accommodate the additional signs.
Highways England will extend the current recommendation to the local planning authority "not to determine" to 14 July 2017.
Please do not hesitate to contact me should you wish to discuss.
Comments from [redacted] below:
Whilst I acknowledge the proposed signs and road marking layouts shown in the Transport Assessment are indicative however, they will need to conform to the relevant standards. In order to assist I have shown a screen shot from IAN 144/16 showing the appropriate signing arrangement for a 'Tiger Tail Ghost Island with Lane Drop and Taper Diverge'. You will see the provision of 'Tiger Tail' signs and sequence/position of all the 'gantry' signs, you should also note there is a 'black box' requirement for signing in TD 22/06 pgh 2.51.
cid:image003.jpg@01D2EACF.9CCFCE40

Based on the information provided I have the following initial comments -
1. The location of the existing gantry's (proposed) do not appear to be correctly positioned from the likely new 'datum' point.
2. The sequence and number of proposed gantry signs are not in-line with IAN 144/TD22.
3. The existing gantry sign frames are unlikely to accommodate the designs shown (unless an unacceptable reduced x-ht was proposed).
4. No Tiger Tail signs shown.
5. It is probably too early to comment in great detail on the sign face design. However, it be worth noting that –
• The size of the 'downward' arrows appear disproportionate to the sign faces;
• The arrows will need to be centred over the traffic lanes;

• Incorporating the arrows within the sign face may reduce overall height of gantry sign (now prescribed in TSRGD 2016); and
• Excessive grey backing board.

6. Road marking layout will need to be reviewed and conform to standards, particularly the ghost island and diverge taper design.
I hope the above comments are helpful. If you need any further advice please do not hesitate to contact me.
Please note any response must be copied both to this email address as well as my HE email account.
Regards

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From:	[redacted]
To:	"developmentcontrol@luton.gov.uk"
Cc:	[redacted]
Subject:	Planning applications 16/01401/OUTEIA
Date:	29 June 2017 12:05:48
Attachments:	Land Adjacent M1 Junction 10. (Final).docx image001.jpg

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For the attention of [redacted]
Dear [redacted]
I refer to previous Highways England response dated 30 May 2017 to the above planning application.
Highways England received and is currently reviewing and considering mitigation proposed which comprise Travel Plan, Traffic Demand measures and highway improvements. Highways England require to satisfy itself the gantry signing proposed complies with standards. This work is in hand.
Please find Highways England recommendation not to determine before 30 June 2017 to enable this work to be completed.
Please do not hesitate to contact me should you wish to discuss.
Regards

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