

From: [Nick Roberts](#)
To: [M42 Junction 6](#)
Cc: [Eugene Moore](#)
Subject: M42 Junction 6 Improvement - Applegreen plc Deadline 4 Submission
Date: 16 August 2019 13:29:09
Attachments: [image002.png](#)
[Applegreen DL4 Submission - Responses to ExO2 final.pdf](#)

Dear Case Team

We write on behalf of Applegreen plc pursuant to Deadline 4 for the examination of the above project. Our registration identification number is 20022311.

Our current Deadline 4 submission comprises the attached (single) document, which responds to the Panel's second written questions.

Please note that we intend to make a further Deadline 4 submission prior to the deadline date of 2nd September 2019.

We trust that is all in order and would be grateful for confirmation of receipt of this email.

Regards,

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Director



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APPLEGREEN PLC

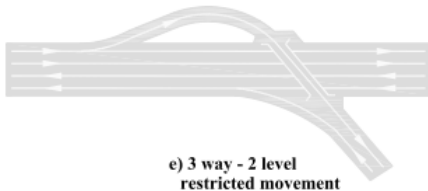
DEADLINE 4 SUBMISSION

relating to

**M42 Junction 6
Development Consent Order Application**

RESPONSES TO EXAMINING AUTHORITY'S SECOND WRITTEN QUESTIONS

16th August 2019

ExQ2 ref:	Question to:	Question:	Applegreen plc Response
2.1.4.	The Applicant, SMBC, WCC, Extra MSA Solihull Ltd and Applegreen plc	<p>MSA and junction 5a</p> <p>It is evident from DMRB TD 22/06 figure 5/2 that the dumb-bell arrangement proposed would normally offer connections to 2-directional slip roads (in this case, N and S facing slips). How many junctions on English motorways are laid out in a dumb-bell arrangement but only with uni-directional slip roads?</p>	<p>It is correct that DMRB TD 22/06 Figure 5/2 illustrates a dumb-bell arrangement connecting to 2 directional slip roads. However, crucially, it also illustrates two connections to the wider road network either side of the motorway. In such circumstances the use of a dumb-bell arrangement might be an appropriate solution. However, the situation in respect of the DCO Scheme at Junction 5A is materially different, in that the DCO scheme requires it to:</p> <ul style="list-style-type: none"> • Only serve uni-directional slip roads; and • Only provide a single connection to the wider road network i.e. the Link Road to the Clock Interchange. <p>In such circumstances, the appropriate form of junction is shown at DMRB TD 22/06 figure 5/4.2e (reproduced below)</p> <div data-bbox="1406 715 1832 906" style="text-align: center;">  <p>e) 3 way - 2 level restricted movement</p> </div> <p>(See Paragraph 5.19)</p> <p>Figure 5/4.2 Typical Layouts of Interchanges</p> <p>This is demonstrably the most appropriate arrangement for the circumstance that will arise at Junction 5A, where there is only one route for drivers to follow on leaving or joining the motorway.</p> <p>As per Applegreen’s response to ExQ1 (the Examining Authority’s first written questions) question 1.0.10, following a review of all the “M” roads in England, a total of 19 junctions with uni-directional slip roads and a connection to a single road were identified. Every one of these was a free flow arrangement (as per DMRB TD 22/06 figure 5/4.2e) and none comprised a dumb bell layout.</p>

			<p>Finally, it is also notable that the DCO Scheme Junction 5A dumb bell arrangement also incorporates a double lane width overbridge providing for 2-way movement over the M42, which is not required for the DCO Scheme i.e. the DCO Scheme does not require any east to west movement over the M42.</p>
2.1.5.	<p>The Applicant, SMBC, WCC, Extra MSA Solihull Ltd and Applegreen plc</p>	<p>MSA and junction 5a Please revisit and reassess the advantages claimed for the proposed dumb-bell design for junction 5a in the answer to ExQ1.0.10 in relation to the free-flow design suggested by Applegreen in their Technical Note appended to REP3-024. Since a consequence of the proposed design necessitates the widening of the western roundabout and a section of the link road in order to accommodate MSA traffic, please include all those alterations in the reassessment (particularly, the additional lanes and the additional span of Solihull Road Bridge required). In the light of that reassessment, does the published layout in the dDCO provide the optimum junction arrangement and meet the scheme objectives as defined in the Planning Statement?</p>	<p>The DCO Scheme objectives are set out in Section 3.5 of the Planning Statement. Paragraph 3.5.1 identifies the two strategic requirements in line with the Roads Investment Strategy (RIS). These are:</p> <ul style="list-style-type: none"> • <i>increasing capacity, providing improved journey time reliability and reducing congestion at the M42 Junction 6 and for better movement of traffic on and off the A45; and</i> • <i>unlocking the potential for economic growth in the surrounding area, delivering ahead of the need for growth from HS2 and the surrounding developments.</i> <p>Paragraph 3.5.2 sets out that the scheme has four specific objectives, namely:</p> <ol style="list-style-type: none"> a) Making the network safer: Promote reliable and safe operation of the road Network. The specific measures to improve safety are identified as: ... <i>providing additional capacity, reducing driver stress and enabling safer access to and from the motorway.</i> b) Support the smooth flow of traffic: Increase the capacity of the junction supporting smoother flow of traffic around the M42 Junction 6. c) Encourage economic growth: To improve access to key businesses and support economic growth in the area from the new HS2 Birmingham interchange station and connectivity to Birmingham Airport. d) Helping cyclists, walkers and other vulnerable users of the Network: To replace or re-route existing severed links and provide new routes. <p>Finally paragraph 3.5.3 identifies four secondary objectives:</p> <ol style="list-style-type: none"> a) Deliver better environmental outcomes: The Scheme will mitigate and compensate its biodiversity impacts. b) Improve user satisfaction: Seek to minimise disruption and road closures during construction. c) Achieving real efficiency: The scheme should aim to match or improve the allocated budget within the category of £250m to £500m as defined in the RIS investment plan commitments. d) Keeping the network in good condition: Replace pavement associated with SRN connection points at Junction 6. <p>It is noted that avoiding precluding the provision of a MSA at Junction 5A is not listed as either a primary or secondary scheme objective.</p> <p>Whilst the scheme objectives are crystal clear, it is noted that Appendix 4 of the Planning Statement (the Junction 5A Technical Note / Design Rationale) seemingly references a further, vague objective. Paragraph 3.17 of</p>

Appendix 4 states: *“The application for planning consent for the MSA was submitted to Solihull Metropolitan Borough Council in June 2015. This precedes the M42 Junction 6 Improvement Scheme non-statutory consultation which began in December 2016. It is therefore an objective to ensure that, where practicable, the design of Junction 5A would not preclude the MSA scheme from being delivered if authorised, following the implementation of the Scheme”.*

With regard to this new ‘objective’ it is submitted:

- This is not a DCO Scheme objective, but merely a consideration to be taken into account where practicable and where it does not undermine the achievement of the real DCO Scheme objectives.
- It relates to a third party proposal which is not a certain or committed development.
- That in so far as the need to provide a new MSA on the M42 is concerned, due regard should have been given to the presence of the alternative M42 MSA proposal at Junction 4, which has no interface / conflict with the DCO Scheme or its primary and secondary objectives.

The extent to which the proposed dumb-bell junction and the alternative free-flow layout are each compatible with, and best meet, the DCO Scheme objectives (as defined in Section 3.5 of the Planning Statement) are set out in the table below.

PRIMARY SCHEME OBJECTIVES	
DUMB BELL ARRANGEMENT	FREE FLOW ARRANGEMENT
Objective: Making the network safer: Promote reliable and safe operation of the road Network – specifically by way of: providing additional capacity, reducing driver stress and enabling safer access to and from the motorway	
<ul style="list-style-type: none"> • Provides additional capacity by removing traffic from Junction 6 	<ul style="list-style-type: none"> • Provides additional capacity by removing traffic from Junction 6
<ul style="list-style-type: none"> • Includes roundabouts which will (with or without any MSA) ultimately become the primary constraining factor on capacity through the junction 	<ul style="list-style-type: none"> • Has no roundabouts that could constrain capacity
<ul style="list-style-type: none"> • The dumb bell arrangement allows the junction to be used to facilitate ‘U’ turns on the motorway, with 	<ul style="list-style-type: none"> • The free flow arrangement prevents the junction being used to facilitate ‘U’ turns on the motorway, with such

			such movements adding an element of delay for other vehicles using the junction.	movements adding an element of delay for other vehicles using the junction.
			<ul style="list-style-type: none"> Facilitates the potential provision of a MSA and its associated north facing slip roads, which would result in a reduction in safety by: <ul style="list-style-type: none"> Introducing a sub-standard weaving length between Junction 5A and 6 Necessitating the introduction of variable operating systems on a relatively short length of motorway, with DHS between Junction 3a and Junction 5, ALR between Junction 5 and Junction 6 and DHS between Junction 6 and Junction 7 Any safety benefits associated with the MSA itself could be delivered via the alternative Junction 4 MSA proposal, which requires no such departures 	<ul style="list-style-type: none"> Precludes the development of an MSA and the associated reduction in safety The safety benefits associated with a MSA can be delivered via the alternative Junction 4 MSA proposal
			<ul style="list-style-type: none"> Facilitates the potential provision of a MSA served via Junction 5A, which would materially reduce the capacity in the junction and increase congestion potential, directly in conflict with the primary scheme objective, with consequential increased potential for driver delay frustration leading to driver stress 	<ul style="list-style-type: none"> Precludes the development of an MSA and the associated reduction in Junction 5A capacity and congestion potential; and associated driver stress
			<ul style="list-style-type: none"> Driver stress (as defined in DMRB Volume 11) associated with the proposed dumb-bell would also include drivers needing to consider their routing through the roundabouts, with multiple lanes on the roundabout approach, and needing to take account for potential conflicting traffic movements. 	<ul style="list-style-type: none"> With the free-flow alternative drivers would not encounter the stress related occurrences associated with the dumb bell arrangement
			Objective: Support the smooth flow of traffic	
			<ul style="list-style-type: none"> The proposed dumb-bell arrangement would not lead to the smooth flow of traffic through Junction 5A owing to the stop lines and conflicting traffic movements that would occur at the roundabouts and which would introduce a disruption to vehicular flow 	<ul style="list-style-type: none"> The free-flow alternative has no stop lines or conflicting traffic movements. It would also have materially less potential for congestion. Accordingly, it would result in the far smoother flow of traffic through Junction 5A

<p>Objective: Encourage economic growth through improving access to key businesses and in the area from the new HS2 Birmingham interchange station and connectivity to Birmingham Airport.</p>				
<ul style="list-style-type: none"> Facilitates the potential provision of a MSA served via Junction 5A, which would materially reduce the capacity in the junction and increase congestion potential, directly in conflict with the primary scheme objective of maximising capacity in the Junction 6 area to best deliver the maximum economic growth and connectivity 			<ul style="list-style-type: none"> Precludes the development of an MSA and the associated reduction in Junction 5A capacity and congestion potential; and therefore better meets the primary scheme objective of maximising capacity in the Junction 6 area to best deliver the maximum economic growth and connectivity 	
<p>Objective: Helping cyclists, walkers and other vulnerable users of the Network</p>				
<ul style="list-style-type: none"> Junction 5A does not serve these user groups. However, the height and alignment of Solihull Road proposed in the DCO scheme dumb bell arrangement would require the closure of Solihull Road during construction, requiring that vulnerable users of this road to divert onto alternative routes Results in an increased gradient on Solihull Road overbridge (to 5.6% on the eastern approach) which is less amenable to vulnerable road users. 			<ul style="list-style-type: none"> Junction 5A does not serve these user groups. However, the lower height and location further north that could be achieved with the free flow alternative would allow Solihull Road to remain open for vulnerable users of this road during construction of the new bridge No requirement to materially steep the gradient on Solihull Road overbridge 	
<p>SECONDARY SCHEME OBJECTIVES</p>				
<p>Objective: Deliver better environmental outcomes</p>				
<ul style="list-style-type: none"> Impacts on Asbury's Copse Ancient Woodland to the west of the M42 and the south of Solihull Road 			<ul style="list-style-type: none"> As per the Applegreen Technical Note (appended to REP3-024), the alignment and level of Solihull Road that could be achieved with the free flow alternative would mean that no earthworks would be required to the south of the existing Solihull Road corridor to support Solihull Road and there would, therefore, be no impact on the northern edge of the Ancient Woodland The overall loss on Ancient Woodland would be materially reduced 	

		<ul style="list-style-type: none"> • The provision of extra lanes to serve the MSA and the associated additional span of Solihull Road overbridge, appears to have significant potential to further increase the impact on the Ancient Woodland, although this cannot be fully determined / quantified in the absence of a design incorporating these features. 	<ul style="list-style-type: none"> • There are no additional lanes and no further widening of the span of Solihull Road overbridge; and thus no potential for further impact on the Ancient Woodland.
		<ul style="list-style-type: none"> • The requirement for the slip roads to be higher than the motorway mainline where they pass under Solihull Road means that the new Solihull Road bridge will have to be significantly higher than at present. It is judged that the road bridge would be a minimum of circa 4m higher than at present with a degree of associated visual impact. 	<ul style="list-style-type: none"> • With the free flow alternative the proposed slip roads would be kept at the same level as the motorway mainline meaning that the clearance from the mainline would determine the height of the bridge. This also allows Solihull Road to be aligned further north without needing to be higher.
		<ul style="list-style-type: none"> • The dumb bell arrangement would require all northbound traffic leaving the M42 to slow down and possibly stop at the give-way line on the western roundabout before negotiating the roundabout and accelerating to join the link to the A45. This would result in greater vehicle noise and emissions than free flowing traffic. 	<ul style="list-style-type: none"> • With the free flow alternative traffic would progress through the junction without the need to stop or negotiate roundabouts. There are associated environmental benefits arising from vehicles not having to slow down, stop and accelerate away from the junction, including in respect of aerial emissions and noise. The benefits would be material in the context of the number of vehicles expected to use this route i.e. 28,436 AADT in 2041 (Figure 7.6 of DCO Transport Assessment).
		<ul style="list-style-type: none"> • The dual roundabouts would require extensive lighting with increased lux levels 	<ul style="list-style-type: none"> • There would be no roundabout lighting required
		<ul style="list-style-type: none"> • Would have no significant impact on Brickhill village, Brickhill Meadows SSSI or the overhead power cables 	<ul style="list-style-type: none"> • Would have no greater impact than the DCO dumb bell scheme on Brickhill village, Brickhill Meadows SSSI or the overhead power cables
		<ul style="list-style-type: none"> • Would result in a greater area of inappropriate development in the Green Belt 	<ul style="list-style-type: none"> • Would result in a materially smaller area of inappropriate development in the Green Belt
		<p>Objective: Improve user satisfaction: Seek to minimise disruption and road closures during construction</p>	
		<ul style="list-style-type: none"> • Would require Solihull Road to close during construction 	<ul style="list-style-type: none"> • Would allow Solihull Road to remain open during construction

			<ul style="list-style-type: none"> • Would facilitate the potential development of an MSA at Junction 5A. If an MSA was ever to secure planning permission, in all probability this would occur a significant time after the granting of the DCO and the commencement of the DCO build contract. Hence, construction of the MSA could not commence until the DCO construction has finished. Accordingly, the additional works required to build out Junction 5A to accommodate the MSA requirements would impact directly on the operation of the DCO Scheme. 	<ul style="list-style-type: none"> • Would preclude the provision of an MSA at Junction 5A and any associated disruption of the DCO scheme operation whilst the MSA highway works are constructed.
Objective: Achieving real efficiency: match or improve on the allocated budget cost				
			<ul style="list-style-type: none"> • The cost of the Junction 5A dumb bell solution includes: <ul style="list-style-type: none"> ○ A double lane width overbridge providing for 2-way movement over the M42, which is not required for the DCO Scheme i.e. the DCO Scheme does not require any east to west movement over the M42 ○ Two roundabouts ○ A significant area of built development ○ Full roundabout lighting ○ Increasing the height of Solihull Road overbridge ○ Increasing the span of Solihull Road overbridge ○ Additional lanes on the slip roads ○ Significant earthworks associated with the above • The cost would be materially greater than the free flow arrangement 	<ul style="list-style-type: none"> • The cost of the Junction 5A free flow solution, when compared to the dumb bell includes: <ul style="list-style-type: none"> ○ A junction motorway overbridge which need only cater for traffic travelling in a single direction and therefore can be less wide ○ No roundabouts or associated roundabout lighting ○ Less built development ○ The replacement Solihull Road overbridge would remain closer to its existing height ○ More simple slip roads by virtue of there not being multiple land options approaching and passing around the roundabouts and no stop lines ○ Less earthworks • The cost would be materially less than the dumb bell arrangement and could make a significant contribution towards improving on the allocated budget cost
Objective: Keeping the network in good condition				
			<ul style="list-style-type: none"> • Includes a large area of pavement that needs to be maintained on the SRN exacerbated by increased vehicle stopping, starting and turning. 	<ul style="list-style-type: none"> • Requires a smaller area of pavement to be maintained on the SRN and the free flow arrangement would not be subject to the same extent of wearing through vehicle stopping, starting and turning.

			<p>Based on the forgoing analysis, it can be seen that a free flow arrangement at Junction 5A better meets each and every one of the DCO Scheme objectives (both primary and secondary) than the currently proposed dumb bell arrangement.</p> <p>There can be no material doubt that the current dumb bell proposal is being promoted by the applicant for the sole reason of not precluding the development of a MSA at Junction 5A and the associated provision of north facing slip roads. This decision to not preclude the MSA is not a DCO Scheme objective and has been shown to hinder, or conflict with, the Scheme best achieving its real and important objectives.</p>
2.1.6.	Applegreen plc	<p>MSA and junction 5a Unless otherwise confidential, please name the consultant responsible for the free-flow design set out in the Technical Note appended to REP3-024</p>	<p>Applegreen has a large multi-disciplinary team working on the planning application for its Shirley MSA at M42 junction 4 and related matters. All of these organisations are clearly identified in the application documentation. The consultant that produced the free-flow design (set out in the Technical Note appended to REP3-024) is AECOM, who have worked on the junction 4 MSA project since 2006.</p>
2.1.7.	The Applicant, SMBC, WCC, Extra MSA Solihull Ltd and Applegreen plc	<p>MSA and junction 5a In answer to ExQ1.0.4, it is indicated that an agreed mitigation measure to off-set the operational impacts of north facing slip roads at the proposed junction 5a is the upgrade of the M42 'smart motorway' to an 'all lanes running' regime from the 'dynamic hard shoulder running regime' currently in place. Can this agreement be confirmed? Who will finance that work? And, will it be implemented only if the MSA materialises or is it anticipated as part of a planned programme to accommodate other elements of future growth?</p>	<p>Highways England has confirmed to Applegreen (in writing dated 13/08/19) that it has no planned programme to convert M42 Junction 5 – 6 from the existing Dynamic Hard Shoulder running (DHS) to All Lane Running (ALR), for capacity or any other operational purposes. It has stated that the only proposal to permit such conversion is dependent upon the Extra MSA (at the proposed Junction 5A) being granted planning permission.</p> <p>The reason that ALR would be introduced as part of the Extra MSA scheme is as a mitigation measure for the sub-standard weaving length between the proposed north facing slip roads at Junction 5A and the south facing slips roads at Junction 6. The introduction of ALR changes the way the length of the weaving section is calculated, with ALR operation giving a longer weaving length than is calculated for DHR. In reality the two sets of slip roads are still the same distance apart and a DHS motorway operating with the hard shoulder open is not dissimilar to an ALR motorway.</p> <p>The introduction of ALR for a short distance within a smart motorway, operating for its remaining length as DHS, brings additional safety risks, not least driver confusion as a result of a change in operating modes. The safety assessment undertaken by Extra's transport consultant determined that the hazard level of ALR between junction 5 and junction 6 would be 102% when compared to the existing DHS operation, or 2% worse than the current situation.</p>
2.9.3.	The Applicant, Arden Hotel, Applegreen PLC,	<p>Traffic variability It may well be that the promised explanation of how the various traffic models relate to each other will also</p>	<p>Applegreen is not providing a response to this question as it relies on information which the Applicant must provide in the first instance. Applegreen reserves the right to comment on that response.</p>

	<p>Birmingham International Airport, The Motorcycle Museum, Extra MSA Solihull Limited, Genting Solihull Limited, NEC Limited, SMBC and WCC</p>	<p>provide the answer to this question. However, at first glance from the answer given to ExQ1.11.8, it would appear that the OM accommodates much of the traffic at the upper limit of the variations envisaged in the LAM, the flows in South Way being some 19% higher in the OM than those in the LAM during the AM peak and some 54% higher in the OM than those in the LAM during the PM peak. Please explain how the situations being modelled can be taken to be comparable. Moreover, if the absence of queues in the OM at 2041 (as shown in Figure 7.8, APP-174) encompasses the variation evident in the LAM, how does the OM address the inherent variability of the traffic at junction 6 on the M42?</p>	
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