

APPLEGREEN PLC

DEADLINE 6 SUBMISSION

relating to

**M42 Junction 6
Development Consent Order Application**

COMMENTS ON RESPONSES RECEIVED AT DEADLINE 5

11th October 2019

Applegreen provides the following response to comments received at Deadline 5 in respect of Applegreen's answers to two of the Examining Authority's second set of Written Questions :

ExQ2 ref:	Response Submitted by:	The Applicant's comments of Applegreen's answer to the question:	Applegreen plc Response
2.1.4.	The Applicant	<p>At Deadline 4, the Applicant submitted evidence of nine junctions that currently exist on the Strategic Road Network in England which operate using uni-directional slip roads, with an additional junction currently progressing through the planning process (A30 Chiverton to Carland Cross). See the Applicant's response to ExAQ 2.1.4 [REP4-010/Volume 8.58].</p> <p>Contrary to Applegreen's assertion, TD 22/06 is not prescriptive in terms of defining the appropriate layout under certain circumstances or conditions. Section 5.4 of DMRB TD22/06 stated:</p> <p><i>"Among the aspects of design which should be taken into account and included in a decision framework are:</i></p> <ul style="list-style-type: none"> • <i>efficiency;</i> • <i>safety;</i> • <i>consistency;</i> • <i>location;</i> • <i>maintenance;</i> • <i>environmental effects;</i> • <i>land take;</i> • <i>capital cost;</i> • <i>economic assessment;</i> • <i>provision for non-motorised users (this should be assessed using TA 91 (DMRB 5.2.4) and HD 42 (DMRB 5.2.5))"</i> <p>Design standards therefore offer the flexibility for an appropriate layout to be determined based upon a balanced assessment of the criteria listed above. The Applicant has demonstrated through detailed assessments against the criteria noted above that the</p> 	<p>In the comments on the Applicant's responses to ExA's Second Round of Questions, Applegreen identified that three of the nine junctions identified by the Applicant are not on the motorway network and are therefore not relevant. All of the six existing motorway junctions identified provide connections to the local road network on both sides of the motorway. As identified in Applegreen's response to 2.1.4 of the second written questions, the proposed Junction 5a only provides connection on one side of the motorway allowing the provision of a free-flow junction. The Applicant has not identified any junctions on the English motorway network which have uni-directional slip roads and connect to the local road network to one side of the motorway, that are built as dumb-bell junctions. In Applegreen's response to 1.0.10, it was identified that all junctions currently on the English motorway network which have uni-directional slip roads and connect to the local road network to one side of the motorway take the form of free-flow junctions.</p> <p>The Applicant identifies three benefits of providing 2-way movement over the M42, which in short are that: it provides an opportunity for vehicles to turnaround safely; provides a potential improvement in journey times for traffic officers/emergency services to reach live lane incidents; and adds resilience in the event of an incident on the southbound merge and southbound carriageway, which would require this slip road to be closed temporarily.</p> <p>Whilst all three statements may be factually correct, it is questionable whether they justify the provision of an inappropriate junction form, particularly when considered against the additional capital cost of the dumb-bell arrangement, the environmental effects of the dumb-bell arrangement, in particular the impact on the ancient woodland which the Applicant accepts would be less with the free-</p>

dumb-bell layout is the optimal arrangement. Whilst this layout is not the most common junction arrangement presented in TD 22/06, it is not a departure from standard. The absence of north-facing slip roads on this dumb-bell junction layout is unlikely to cause confusion to motorists.

The Applicant has provided a 2-way movement over the M42 as this will provide the following benefits:

- opportunity for vehicles, including those unauthorised to use the motorway network, to turnaround safely;
- potential improvement in journey times for Traffic Officers and Emergency Services to reach live-lane incidents by adding an extra turnaround location on the M42; and
- improved resilience in the event of an incident on the southbound merge slip road and southbound carriageway, which would require this slip road to be temporarily closed.

Furthermore, a single-way crossing over the M42 will preclude any opportunities to connect additional road infrastructure with Junction 5A in the future, and so precludes any opportunities for future development aspirations to connect with the SRN, unless significant disruption and abortive works are carried out to Junction 5A and the adjacent road network.

The free-flow restricted layout presented by Applegreen in their response to ExAQ 2.1.4 [REP4-025] also suffers from this lack of flexibility. This is recognised by TD 22/06 section 5.19 which identifies this as a limitation of a free-flow layout, referred to in TD 22/06 as a “trumpet” interchange:

“The three way ‘trumpet’ interchange (Figure 5/4.2d) should be designed to enable future conversion to a four way without alteration if this is considered a possibility. It has a 2 way slip road which requires careful design for safety. Figure 5/4.2e shows a three way interchange with restricted movement. This enables high vehicle speeds to be maintained with low land take, but it requires a costly skew structure and prohibits any future conversion”.

flow proposal and the impacts of the dumb-bell arrangement on efficiency and safety. In relation to the last two issues, the dumb-bell arrangement will require vehicles to slow down and introduce conflicts where vehicles are required to give-way, whereas with a free-flow arrangement, vehicles will be able to maintain a constant speed and, because all vehicles will be travelling in the same direction, there will be a much lower potential for vehicular conflict.

The Applicant’s comment regarding the preclusion of future development aspirations to connect with the SRN is not accepted as there are no planned infrastructure or development proposals to the west of the M42 that would require a motorway connection at Junction 5A. In the unlikely event of a proposal coming forward in the future, the promoter/developer of the scheme would need to make the necessary changes to the layout of Junction 5A if a connection to the motorway at this junction was considered an integral part of the scheme.

The Applicant comments that the free-flow arrangement presented previously by Applegreen suffers from a lack of flexibility and that this is recognised by TD 22/06 section 5.19 which identifies this is a limitation of a free-flow layout, referred to in TD 22/06 as a “trumpet” interchange:

“The three way “trumpet” interchange (Figure 5/4.2d) should be designed to enable future conversion to a four way without alteration if this is considered a possibility. It has a 2 way slip road which requires careful design for safety. Figure 5/4.2e shows a three way interchange with restricted movement. This enables high vehicle speeds to be maintained with low land take, but it requires a costly skew structure and prohibits any future conversion”.

TD 22/06 was superseded by CD 122 in August 2019. The Applicant acknowledges this and notes that the ‘updates to this standard do not change or affect the points made in this response’.

It should however be noted that the shaded sections in the extract from TD 22/06 shown above, have been removed from CD 122. This is significant because it removes any reference to the future conversion of the junction implying that this

		<p>The Applicant notes that the relevant design standard, TD 22/06 has been updated and is now referred to as CD122. The Applicant notes that the updates to this standard do not change or affect the points made in this response.</p>	<p>is no longer a material consideration when deciding on the most appropriate junction form.</p> <p>Applegreen maintains, as per its DL4 response to the EXA's question 2.1.5, 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>In summary, the disbenefits of the providing a dumbbell arrangement, and hence accommodating north facing slip roads and the MSA, over a free flow junction without the additional slip roads / MSA, include:</p> <ul style="list-style-type: none"> • An increased loss of ancient woodland; • Reduced junction capacity (summarised further subsequently); • Greater capital cost; • Increased vehicle conflict; • The introduction of a significantly sub-standard weaving length between Junction 5A and 6; • 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; • The need to raise Solihull Road overbridge by circa 4m in height; • Increased environmental impacts in terms of lighting, vehicle noise and emissions; and • A greater area of inappropriate development in the Green Belt.
2.1.5.	The Applicant	<p>The Applicant does not agree with all the conclusions that Applegreen has reached in the assessment of the different junction layouts. The Applicant's own views have been articulated in the response to the second round of questions [REF] and are not repeated here.</p> <p>In two areas, however the differences are more fundamental, and the Applicant considers that the approach taken by Applegreen is fundamentally flawed, in particular:</p>	<p>The Applicant has identified two areas where it suggests the approach taken by Applegreen is 'fundamentally flawed'.</p> <p>In the first point, the Applicant states that Applegreen's position is that economic growth will be encouraged by precluding any connections between future development and Junction 5A. This is not Applegreen's position. Applegreen's position is that providing a connection to an MSA would reduce available capacity</p>

	<ul style="list-style-type: none"> • Applegreen’s assessment of the impact on economic growth appears to be based upon the idea that economic growth will be encouraged by precluding any connections between future development and Junction 5A. • In addition, in relation to the safety impacts, Applegreen’s assessment of the schemes takes no account of the different vehicular speeds. 	<p>at the junction to accommodate future economic growth in the area. In its response, the Applicant appears to be equating the MSA to economic growth.</p> <p>The reality is that one of the 4 primary DCO Scheme objectives is to increase the capacity of the junction to (our emphasis): <i>“Encourage economic growth: To improve access to key businesses and <u>support economic growth in the area from the new HS2 Birmingham interchange station and connectivity to Birmingham Airport</u>”</i>. There is no objective to serve the MSA, nor any inference that it represents the sort of economic growth the scheme aims to support. Further, in seeking to accommodate the MSA (even with a segregated left-turn lane from the northbound off-slip directly into the MSA), the Applicant’s modelling demonstrates that the junction exceeds the 0.85 RFC threshold (with a 6% MSA turn in rate) and goes as high as a RFC of 1.05 (with an 8% MSA turn in rate). Ultimately, in order to achieve an acceptable level of capacity (albeit without the support of robust microsimulation modelling), the Applicant has had to modify the junction and incorporate partial signalisation. There can be no doubt that the Applicant’s efforts to accommodate the MSA have a clear adverse impact on the objective of supporting the defined economic growth through the creation of capacity in Junction 6.</p> <p>In the second point, the Applicant states that in relation to safety impacts Applegreen has not taken account of different vehicle speeds. Whilst it is accepted that vehicle speeds will be higher in the free flow arrangement, all vehicles will be travelling in the same direction. This reduces the potential for vehicular conflicts which are a feature of a dumb-bell arrangement at the point where one traffic stream is forced to give way to the priority traffic stream. During periods of maintenance when highway workers are exposed to live traffic lanes, standard speed restrictions would be imposed to protect highway workers from excessive speeds.</p>
--	--	---