Folkstone & Hythe Core Strategy Review,

including proposed new settlement at Otterpool

Highways England without prejudice suggestions for a way forward regarding the assessment and mitigation of the Plan and Proposals

BACKGROUND:

Highways England have been working with Folkstone & Hythe Council and the promoters of the Otterpool new settlement in order to agree how to assess and mitigate the plan and proposals in accordance with national transport and planning policy.

The work has fully acknowledged the importance of the plan and proposals, the support being provided by government to the new settlement and the need for the plan and proposals to be agreed and implemented as soon as possible.

To-date the evidence provided has clearly demonstrated that the plan/proposals would have an impact on the following parts of the Strategic Road Network

- M20J11
- M20J12/13
- A20/A260

It is accepted that the evidence has been at the coarser end of the modelling spectrum and that more sophisticated modelling could show a reduced (but not eradicated) level of impact. However, in the time available it appears unlikely that a completely new round and form of modelling could be produced, assessed and agreed.

Therefore, in a spirit of collaboration and co-operation, Highways England have carefully explored what can be achieved within the bounds set by the Design Manual for Roads and Bridges and the WebTag etc requirements for modelling in the time available.

SUMMARY OF HIGHWAYS ENGLAND SUGGESTIONS

In summary it is believed that

1. **M20J11** – with an additional sensitivity test to consider the impact of any J11 closure, it is considered that the current design may be capable of being agreed by highways England from both a design and operational perspective.

2. **M20J12/13** – with an additional round of modelling to more firmly deduce flow rates, it is considered that modelling may be able to support a relatively minor set of works to the junctions that would fully comply with DMRB and should

not require any departures (other than reconfirming existing departures in accordance with normal practice).

It should be noted that our suggested way forward DOES NOT involve any official reclassification of the M20 as we have been informed in the strongest terms that, based on national policy and its application, this would not be acceptable.

Instead, DMRB does allow us to, as a desk exercise only to consider, and in proscribed circumstances, a motorway using the standards used for an all-purpose trunk road. In this case instead of a 2 lane rural motorway, we can relax the standard to consider it against standards for a rural 2 lane all-purpose trunk road.

3. **A20/A260** – further assessment is required to consider all elements of the junction and nearby KCC junctions holistically. However, it is considered that this work can be achieved, and any resultant mitigation identified simply and quickly.

The remainder of this paper sets out in full our technical assessment and suggestions.

Once the Council and their advisors have had the opportunity to consider our suggestions, we would welcome a teleconference to run through everything to ensure complete understanding and agreement with regards to the work the Council needs to undertake and its timetable.

We can then prepare a joint note for the CSR Examination Inspectors.

If for any reason either the Council does not wish to follow our suggestions and/or it is found that the updated modelling evidence cannot support the suggested potential design solutions, then it will remain the Council's responsibility to lead on alternative solutions to fully mitigate the CSR/ Otterpool impacts on the SRN.

Either way, we stand ready to assist in the quest to facilitate the delivery of the CSR and Otterpool.

Geometric DMRB Led Design Considerations on Impacts at M20 J12 to 13

The relevant DMRB standards that apply to any physical changes to the existing M20 Motorway between junctions 12 and 13 (slip roads (merge / diverges) and link are governed by:

- CD 109 'Highway Link Design'

- CD 122 ‘Geometric design of grade separated junctions’ including ‘England National Application Annex to CD 122 Geometric design of grade separated junctions,

- CD 127 ‘Cross-sections and headrooms’

CD 122 para E/1.1 permits the use of the National Application Annex to CD 122 when modifying existing motorways, with the exception of smart motorway and expressway schemes. In this instance M20 is rural Motorway between J12 and J13 and is not a smart motorway or expressway.

Applying the full design requirements of CD122 is not practicable as the existing weaving lengths (400m coast bound & 660m London bound) are already a departure from the CD122 para 4.5 requirement of 2km for Motorways. In addition, cross sectional width is restricted and in the context of the Otterpool development and hence Folkstone and Hythe Local Plan strategic allocations major highway works to meet the full CD 122 requirements is totally unaffordable in the development context. It is therefore considered that it is completely impracticable to comply with the requirements of CD122.

With the above noted, the requirements and advice in section E/1 can used to modifying this section of the existing M20 motorway.

Weaving lengths (CD 122 4.2, 4.3 and 4.5)

The unavoidable issue with M20 J12 to J13 is the separation distance between the two junctions. As indicated above the weaving length between the two junctions is already a departure from the main requirements of CD 122 (2km).

However, in modifying existing motorway sections, para E/1.8 requires the minimum weaving length to be provided to be equal to or greater than the existing provision. Accordingly, the first critical element is modifying M20 J12 to J13 is to maintain or improve the current weaving lengths (400m coast bound & 660m London bound).

In addition, where the weaving length on an existing motorway is less than the length derived from CD 122 Figure 4.6b which is the case for M20 J12 to J13, options for reducing weaving should be assessed and implemented where practicable for example *‘One option for reducing weaving length is introducing dedicated lanes between junctions’.* Due to the cost and restricted cross section corridor Highways England can be satisfied that such a provision is not practicable.

Accordingly, the requirement shall be to maintain or improve the weaving distances between the junctions.

HE WITHOUT PREJUDICE SUGGESTIONS FOR WAY FORWARD

Merge layouts (CD 122 3.12 and 3.21)

E/1.3 CD 122 para 3.12 shall be used to derive the appropriate merge layout; however, for existing motorways, the derived merge layout can be amended by only one of the following options:

1) the road class in CD 122 Table 3.21 can be relaxed to 'rural all-purpose 120kph';

or

2) the CD 122 layout can be substituted as described below:

a) Layout D can be used instead of Layout E1 and E2;

b) Layout B or A1 can be used instead of Layout C;

c) Layout A1 can be used instead of Layout B;

or

3) where no lane gains are to be introduced the CD 122 layout can be substituted as described below:

a) Layout B can be used instead of Layout D;

b) Layout C or Layout E3 (see Figure E/1.3) can be used instead of Layout E1 and E2.

Figure E/1.3 Layout E Option 3 - ghost island merge with auxiliary lane

NOTE The combination of a reduction in road class and a substitute layout is not permitted.

E/1.3.1 Where the road class is reduced, the design parameters may be a combination of 'rural all-purpose

120kph' and 'rural motorway' standard to maximise the capacity of the merge layout.

M20 J12 Coast bound Merge

Subject to modelling it appears that traffic demands necessitate a change in Merge arrangement from a Type A Taper Merge to a Type D Lane Gain in accordance with Table 3.12b CD122.

The existing Merge slip road length from the gyratory carriageway is measured as 355m to the back of the merge nosing. Accordingly, the length of this could be reduced due to the long connector section to the start of the near straight section behind the nosing (near straight length required is 115m table 3.21).

With the above noted and in accordance with E/1.3 CD 122 para 3.12 3(a) Layout B Parallel Merge can be used instead of Layout D Lane Gain.

M20 J13 London bound Merge

Subject to modelling it appears that traffic demands necessitate a change in Merge arrangement from a Type A Taper Merge to a Type E Option 1 lane gain with ghost island offside merge in accordance with Table 3.12b CD122.

The option to replace the Type E 1 merge with Type C ghost island merge or Type E3 ghost island merge with auxiliary lane would be permissible in accordance with E/1.3 CD 122 para 3.12 3(b). Subject to modelling further consideration of a change to a Type C layout should be explored further although either option would seem to necessitate some widening to the nearside of the existing carriageway alignment.

Diverge layouts (CD 122 3.26 and 3.31)

E/1.5 CD 122 3.26 shall be used to derive the appropriate diverge layout; however, for existing motorways, the derived diverge layout can be amended by relaxing the road class in CD 122 Table 3.31 to 'rural all-purpose 120kph'.

E/1.5.1 Where the road class is reduced, the design parameters may be a combination of 'rural all-purpose 120kph' and 'rural motorway' standard to maximise the capacity of the diverge layout.

M20 J12 London bound Diverge

The existing diverge length from the back of the nosing to the giveway line to the gyratory carriageway is measured as 370m. This is longer than is required by CD122 and could be reduced in overall length subject to modelling outputs.

With the above point noted and in combination with the relaxation permitted by reducing the road class in CD 122 Table 3.31 to 'rural all-purpose 120kph' it should be possible to provide a compliant diverge arrangement probably.

M20 J13 coast bound Diverge

The existing diverge length from the back of the nosing to the giveway line to the gyratory carriageway is measured as 310m. This is longer than is required by CD122 and could be reduced in overall length subject to modelling outputs.

With the above point noted and in combination with the relaxation permitted by reducing the road class in CD 122 Table 3.31 to 'rural all-purpose 120kph' it should be possible to provide a compliant diverge arrangement probably.

Geometric Summary J12 to J13

On balance and subject to further modelling it would appear that there is a real likelihood that there is a deliverable solution to the issues of traffic impacts resulting from the Otterpool strategic allocation at M20 J12 to J13. The reduction is slip road lengths as described above and subject to modelling would only be necessary where the required changes to the respective Merge Diverge layouts shorten the existing weaving lengths in between.

Transport Modelling Current Position

Junction 11

The modelling and mitigation is agreed for the roundabout and the merges and diverges with the exception of the eastbound off slip due to queueing back issues associated with Eurotunnel operations on a regular basis.

ACTION: Further modelling is required to assess impacts over the wider network should conditions on the M20 require the closure of Junction 11. This will require the assessment of impacts at M20 Junctions 10a and 12 that would be used as diversion routes. The aim will be to demonstrate that any rerouting would not result in any unacceptable capacity or safety concerns.

Junctions 12 to 13

Assessment to date initially showed that the M20 would require a lane gain in both directions. Subsequent refinement of the flows to remove double counting of trips indicates the likely requirement for lane gains in both directions although there is some inconsistency between flows presented for Junction 12 and Junction 13. The westbound flows show more strongly the need for a lane gain with 3766 vehicles per hour at the J12 diverge and 4103 at the J13 merge.

ACTION: Given that there is some inconsistency in the count data at the two junctions and the approach used to date has been simplistic, there is a case for further refinement of the forecasting and assessment of development traffic. HE has discussed with Folkestone Hythe the possibility of refinement based upon trip internalisation and reconsideration of potential origins and destinations of trips.

ACTION: Mitigation has been agreed for the southern roundabout at Junction 13. Costs and safety assessment/DMRB compliance checks have yet to be agreed.

A20/A260 Spitfire Way, A260 Canterbury Road/Alkham Valley Road, A20/Alkham Valley Road

The three junctions have been assessed in isolation. Looking at the individual modelling at each of the junctions it appears that nil-detriment may be achieved with the proposed mitigation at each junction. The modelling of the A260 Spitfire Way

roundabout shows long queues along the eastbound off slip at the end of the Core Strategy Review period. The modelling with mitigation at the A20/A260 Spitfire way junction shows that with mitigation there would be a residual queue back along the eastbound off slip road into the tunnel although the queue length would be shorter than a scenario without the additional Core Strategy Review development traffic.

Additionally, the modelling of each junction in isolation is too simplistic as there is a capacity constraint southbound for the A260 Canterbury Road with peak hour flows on this link in excess of the single lane carriageway capacity. This would lead to queues back onto the roundabout that would impede the operation of the Spitfire Way roundabout, invalidating the findings of the individual junction models.

ACTION: The conclusion is that further assessment is necessary to address these issues. Further refinement of the traffic flows may assist in this regard.