

# Appraisal Summary Table

# M25 J5 – 7 Section 2 - Stage 1

|               |                                       | <b>Description:</b> Existing hard shoulders used as a running lane during peak demand - Dynamic Use of Hard Shoulder (DHS) Base                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Problems:</b> Additional lane capacity required                                                                                                                                                                           | <b>Present Value of Costs to Public Accounts £79.5m</b> |                                                      |                    |                    |
|---------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------|--------------------|--------------------|
| OBJECTIVE     | SUB-OBJECTIVE                         | QUALITATIVE IMPACTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | QUANTITATIVE ASSESSMENT                                                                                                                                                                                                      |                                                         | ASSESSMENT                                           |                    |                    |
| ENVIRONMENT   | <b>Noise</b>                          | Reduction in number of people annoyed caused by slight reduction in noise (1.1 dB(A)) due to influence of DHS. One property will experience noise levels above 68 dB L <sub>Aeq</sub> . Nighttime noise not assessed but likely to be unchanged or a negligible decrease in noise level.                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No. of people annoyed:<br>Without scheme: 334<br>With scheme: 295                                                                                                                                                            |                                                         | Change in population annoyed = -39<br>NPV £1,457,453 |                    |                    |
|               | <b>Local Air Quality</b>              | Concentrations remain below the objective with or without the Scheme. Increased traffic will increase emissions of NOx by 6.9% and PM <sub>10</sub> by 14.2% in opening year. Scheme will affect two AQMAs. Up to 20 properties within the NO <sub>2</sub> AQMA will experience increases up to 4.3%. One property within the PM <sub>10</sub> AQMA will experience an increase of 2.1%. Overall, the Scheme will increase exposure to both pollutants.                                                                                                                                                                                                                                                                                     | Properties with improved PM <sub>10</sub> = 30, worse PM <sub>10</sub> = 139, no change in PM <sub>10</sub> = 0. Properties with improved NO <sub>2</sub> = 0, worse NO <sub>2</sub> = 169, no change in NO <sub>2</sub> = 0 |                                                         | PM <sub>10</sub> =10.5<br>NO <sub>2</sub> =19.3      |                    |                    |
|               | <b>Greenhouse Gases</b>               | Increased carbon generation associated with increased traffic flows                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Change in tonnes carbon over 60yr period = 745,333. Change in tonnes carbon in opening yr = 7,008                                                                                                                            |                                                         | £-21,422,406                                         |                    |                    |
|               | <b>Landscape</b>                      | The loss of some highway planting which would not be replaced, & the provision of additional gantries would significantly alter the landscape character of the Kent Downs and Surrey Hills AONBs through which the motorway passes. Score is precautionary as exact location of gantries and effect on existing vegetation unknown.                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                              |                                                         | Large Adverse                                        |                    |                    |
|               | <b>Townscape</b>                      | No townscape features affected as settlements are generally separated from the M25 by environmental features.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                              |                                                         | Neutral                                              |                    |                    |
|               | <b>Heritage of Historic Resources</b> | Registered Parks and Garden of Combe Bank (Grade II* listing) and Titsey Place (Grade II listing) experience slight increase in physical separation of the designations, which are already bisected by the M25. Gantries would adversely affect the setting of Titsey Place RP&G to a greater degree than Combe Bank. The setting of 1 listed building adversely affected (South Lodge – Grade II). Score is precautionary as landscape.                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                              |                                                         | Moderate Adverse                                     |                    |                    |
|               | <b>Biodiversity</b>                   | Minor water quality impacts to Godstone Pond SSSI, watercourses and adjacent waterbodies as the drainage system will not be upgraded. Neutral impacts to protected species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                              |                                                         | Slight Adverse                                       |                    |                    |
|               | <b>Water Environment</b>              | Minor increases in soluble pollutants in all rivers from increased traffic flows which may not be contained within existing measures. Potential increase in unacceptable risk of pollution by accidental spillage to all rivers. Existing treatment and storage system may not be adequate to cope with proposed increases in runoff resulting from climate change.                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                              |                                                         | Moderate Adverse                                     |                    |                    |
|               | <b>Physical Fitness</b>               | The option will have no effect on the activity duration of pedestrians, cyclists or equestrians because there are no direct changes to existing NMU facilities or routes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                              |                                                         | Neutral                                              |                    |                    |
|               | <b>Journey Ambience</b>               | Large beneficial effects resulting from reduced congestion and improved journey times affecting large numbers of road users                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                              |                                                         | Large Beneficial                                     |                    |                    |
| SAFETY        | <b>Accidents</b>                      | Reductions in the number of accidents are forecast based on the empirical data showing managed motorways to have an accident rate 15% lower than the rate for the existing dual three lane carriageway.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Accidents – 1130<br>Serious Inj. - 100                                                                                                                                                                                       | Deaths – 17<br>Slight Inj. – 1821                       | PVB £45.9m                                           |                    |                    |
|               | <b>Security</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                              |                                                         |                                                      |                    |                    |
| ECONOMY       | <b>Public Accounts</b>                | The Stage 1 Appraisal has been based on the use of the Highways Agency's spreadsheet method for assessing and comparing dynamic use of the hard shoulder as a running lane with the widening of the motorway to a dual four lane layout with hard shoulders. This shows benefits to users of £560.7m, comprising changes in travel time, queuing and merge delays, and vehicle operating costs. Delays to traffic during MM-DHS implementation and subsequent maintenance work were not assessed. Implementation costs have been estimated to lie within the range £106.6m to £181.1m, with the most likely figure being £143.9m. It is forecast that the scheme will result in a gain to government of £64.4m from additional tax revenue. |                                                                                                                                                                                                                              |                                                         | PVC                                                  | £79.5m             | £143.9m            |
|               | <b>TEE: Business &amp; Transport</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                              |                                                         | PVB<br>NPV                                           | £606.6m<br>£527.1m | £671.0m<br>£527.1m |
|               | <b>TEE: Consumers</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                              |                                                         | BCR                                                  | 7.63               | BKR 4.66           |
|               | <b>Reliability</b>                    | Incident-related reliability impacts have not been assessed at Stage 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                              |                                                         |                                                      |                    |                    |
|               | <b>Wider Economic Impacts</b>         | The scheme is not located within a regeneration area. The Wider Economic Impacts have not been assessed at Stage 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                              |                                                         |                                                      |                    |                    |
| ACCESSIBILITY | <b>Option values</b>                  | The increased capacity of the M25 is unlikely to result in any significant changes to the existing transport system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                              |                                                         | Neutral                                              |                    |                    |
|               | <b>Severance</b>                      | No change in numbers affected as no new roads and no changes in routes affecting access to community facilities. Changes in traffic flow on routes surrounding M25 will not be significant in terms of potential for severance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                              |                                                         | Neutral                                              |                    |                    |
|               | <b>Access to the Transport System</b> | The increased capacity of the M25 is unlikely to have any significant impacts on the availability of public transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                              |                                                         | Neutral                                              |                    |                    |
| INTEGRATION   | <b>Transport Interchange</b>          | The increased capacity of the M25 would not provide any new opportunities for passenger or freight interchange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                              |                                                         | Neutral                                              |                    |                    |
|               | <b>Land-Use Policy</b>                | Beneficial effects on policies related to transport improvements in particular congestion and journey time reliability and sustainable development. Adverse effects focussed on landscape, biodiversity, water quality and flood risk policies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                              |                                                         | Adverse                                              |                    |                    |
|               | <b>Other Government Policies</b>      | Balance of policies helped and policies hindered. Improvements to regional competitiveness and safety improvements balanced with adverse climate change related, air quality and cultural heritage effects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                              |                                                         | Neutral                                              |                    |                    |