

## 3 Country Region

### 3.1 Colne Valley (CFA<sub>7</sub>)

#### Colne Valley (CFA<sub>7</sub>) SES<sub>3</sub> and AP<sub>4</sub> revised scheme changes

- 3.1.1 The original scheme in this area is as described in section 7.3 of the main TA. This has since been amended by the SES and AP<sub>2</sub> scheme described in section 3.1 of the SES and AP<sub>2</sub> TA.
- 3.1.2 The principal SES<sub>3</sub> and AP<sub>4</sub> revised scheme changes of relevance to traffic and transport in the assessment of this area are:
- SES<sub>3</sub>-007-004 the revised construction assumptions relating to the use of M25 slip roads and routing of construction traffic in the Colne Valley area.
  - The following AP<sub>4</sub> amendments have the potential to change the construction traffic vehicle trips by road within CFA<sub>7</sub>:
    - AP<sub>4</sub>-006-002 additional land required for the amended sustainable placement proposals in CFA<sub>6</sub> and CFA<sub>7</sub> and realignment of footpath U50
    - AP<sub>4</sub>-006-004 additional land required for the provision of a haul road through Uxbridge Golf Course. This road is located on the boundary of CFAs 6 and 7 and its impacts on the wider highway network are reported in CFA 6
    - AP<sub>4</sub>-009-001 extension to the Chiltern tunnel from Mantle's Wood portal to South Heath green tunnel north portal and associated works in CFA<sub>9</sub>
- 3.1.3 Additional traffic surveys have been undertaken at the following junctions and on sections of highway in the Colne Valley area to supplement the information reported in the main TA and SES and AP<sub>2</sub> TA:
- A<sub>412</sub> Denham Avenue/ Old Rectory Lane;
  - A<sub>412</sub> Denham Avenue/ Moorfield Road; and
  - A<sub>412</sub> Denham Way/ Chalfont Road.
- 3.1.4 A change to the workforce trip assignment has been made on the A<sub>40</sub> (between A<sub>412</sub> Denham Way and A<sub>413</sub>) and the A<sub>412</sub> within this area, resulting in a change in all vehicle construction trips. However, the changes in forecast traffic flows are less than four car/LGV two-way trips a day (12 hour) and is not considered to have a substantial impact upon the main TA and SES and AP<sub>2</sub> TA.
- 3.1.5 Additional construction excavated material is generated at the Chiltern tunnel main compound by the extension of the Chiltern tunnel amendment. This material is to be routed via Chalfont Lane and the M25 temporary slip lanes. This additional material will not increase daily construction traffic. It will, however, will extend the duration of the movement of excavated material at this location from approximately one year to approximately four years.

- 3.1.6 The revisions to construction routes in the Colne Valley area, relating to the use of the dedicated M25 slip roads by HGV construction traffic. The M25 slip lanes are to be used as a construction route for HGVs generated by: the Chiltern tunnel main compound/Chiltern tunnel south portal (rail systems), the Colne Valley viaduct main compound, the Colne Valley viaduct north embankment satellite compound, the Colne Valley viaduct north launch satellite compound and the Colne Valley viaduct laydown satellite compound. It is assumed that 50% of HGV traffic from the remaining two compounds in the Colne Valley area (Colne Valley viaduct jetty storage and Colne Valley viaduct storage satellite compounds) will use the temporary M25 slips (and then Chalfont Lane, the A412 Denham Way and Moorfield/Moorhall Road), with the remaining 50% using the M40, A40, A412 Denham Way and Moorfield/Moorhall Road.
- 3.1.7 The supplementary traffic data and the changes to construction routes, relating to the use of the dedicated M25 slip roads by HGV construction traffic, lead to a number of changes to the traffic and transport assessment in the Colne Valley (CFA7) area reported in the main TA and SES and AP2 TA, and these are described later in this chapter. Noted changes to paragraphs are in relation to the main TA or the SES and AP2 TA.
- 3.1.8 The changes to the sustainable placement areas within CFA7 affect traffic and transport. Although material will be moved on haul roads within the worksites, a temporary crossing of Harvil Road is required. In addition, PRoW U50 will be temporarily diverted around the southern stockpile area.
- 3.1.9 The northern extent of the proposed haul route through Uxbridge Golf Course (AP4-006-004) will result in PRoW U50 being crossed by the haul road.
- 3.1.10 As with the SES and AP2 TA, impacts upon the A40 Western Avenue, the B467 Swakeleys Road and Harvil Road are solely reported in CFA 6.

### Assessment methodology

- 3.1.11 The assessment methodology is as described in Section 7.2 of the main TA.

### Existing baseline

- 3.1.12 Baseline conditions in this area are as described in Section 5.9 of the main TA and in the SES and AP2 TA, updated by the additional traffic survey data.

### Future baseline

- 3.1.13 Future baseline conditions are as described in Section 7.3 of the main TA and in the SES and AP2 TA, updated by the additional traffic survey data.

### Construction description

#### *Construction trip assumptions*

- 3.1.14 Table 7-7 of the main TA is amended. The average-peak daily two-way HGV trips generated by the Chiltern tunnel main compound/Chiltern tunnel south portal (rail systems), compound is 490-1050, compared to 860-920 in the main TA scheme and 580-1060 as reported in the SES and AP2 TA. Car/LGV trips are also amended from 350-370 in the SES and AP2 TA to 350-430. The changes are due to the proposed Chiltern Tunnel extension amendment in CFA9 (AP4-009-001).

### *Construction lorry routes*

3.1.15 Paragraph 7.3.50 of the main TA is changed so that relevant bullet points be replaced with those below.

- 'Colne Valley viaduct main compound will be accessed via M25, the temporary M25 slip roads and Chalfont Lane';
- 'Colne Valley viaduct storage satellite compound will be accessed via M40, A40, A412 Denham Way/North Orbital Road and Moorhall Road, or via M25, the temporary M25 slip roads, Chalfont Lane and A412 Denham Way/North Orbital Road';
- 'Colne Valley viaduct jetty storage satellite compound will be accessed via M40, A40, A412 Denham Way/North Orbital Road and Moorhall Road, or via M25, the temporary M25 slip roads, Chalfont Lane and A412 Denham Way/North Orbital Road';
- 'Colne Valley viaduct laydown satellite compound will be accessed via the temporary M25 slip roads, Chalfont Lane and A412 Denham Way/North Orbital Road';
- 'Colne Valley viaduct north launch satellite compound will be accessed via the temporary M25 slip roads, Chalfont Lane and A412 Denham Way/North Orbital Road';
- Colne Valley viaduct north embankment satellite compound will be accessed via the temporary M25 slip roads, Chalfont Lane and A412 Denham Way/North Orbital Road'; and
- 'Chiltern tunnel main construction compound and Chiltern tunnel south portal (rail systems) satellite compound will be accessed via the temporary M25 slip roads, Chalfont Lane and A412 Denham Way/North Orbital Road'.

### *PRoW closures and diversions*

3.1.16 Table 7-9 of the main TA is also changed to add the following PRoW, which is subject to temporary diversion under the AP4 revised scheme, due to additional land required for the amended sustainable placement proposals in CFA6 and CFA7 and realignment of footpath U50 (AP4-006-002). In addition, a controlled crossing will be provided for Footpath U50 across the proposed haul road through Uxbridge Golf Course (AP4-006-004).

Table 7-9: Colne Valley temporary footpath, cycleway and bridleway closures and diversions – partial replacement

| PRoW/ pedestrian route | Location        | Location (chainage) | Diversion length (Approx.) | Reason for diversion and diversion route   |
|------------------------|-----------------|---------------------|----------------------------|--|
| Footpath U50           | South Harefield | 25+400              | 350m                       | Additional land required for amended sustainable placement proposals in CFA6 and CFA7.<br>Temporary diversion around the edge of the temporary material stockpile and Harvil Road. |

## Assessment of construction impacts

### Highway network

- 3.1.17 Changes to forecast traffic flows, primarily due to the revision to construction routes for HGVs (but also as a result of the AP4 revised scheme) are presented in the following sections. Other than revisions to the baseline as necessary arising from the new survey information, there are no changes to other forecast flows presented in the main TA and SES and AP2 TA.
- 3.1.18 The main changes due to the revision to construction route assumptions compared to the relevant SES and AP2 TA are:
- A412 Denham Way (between A40 and satellite compounds) and the A40 (between M40 J1 and A412 Denham Way) - decrease in HGV construction vehicles by approximately 35 two-way trips a day;
  - A412 Denham Way /North Orbital Road (between satellite compounds and Chalfont Lane) - increase in HGV construction vehicles by approximately 35 two-way trips a day;
  - A412 Denham Way /North Orbital Road (north of Chalfont Lane) and A405 Denham Way /North Orbital Road (north of A412) - decrease in HGV construction vehicles by approximately 55 two-way trips a day;
  - M25 junction 16 to 17 - increase in HGV construction vehicles by approximately 160 two-way trips a day (south of temporary slip roads); and
  - M25 temporary slip lanes - increase in HGV construction vehicles by approximately 40 a day, on each slip lane.
- 3.1.19 It should be noted that the 'A412 Denham Way/ North Orbital Road (south of satellite compounds)' link has been revised and split into two separate links: 'A412 Denham Way /North Orbital Road (between satellite compounds and Denham Green Lane)' and ' A412 Denham Way /North Orbital Road (between Moorfield Rd and Denham Green Lane)'.

### Strategic road network

- 3.1.20 Table 7-10 and 7-11 of the main TA (and accounting for changes presented in the SES and AP2 TA) are replaced by the following tables.

### SES<sub>3</sub> and AP<sub>4</sub> ES Appendix TR-001-000 (CFA7)

Table 7-2: Colne Valley strategic road network construction traffic flows (vehicles) - AM peak

| Location   | Direction     | 2012 baseline | 2021 baseline | 2021 with HS2 construction traffic |      | With HS2 actual change from 2021 baseline |      | With HS2 % change from 2021 baseline |      |
|--|---------------|---------------|---------------|------------------------------------|------|---|------|--------------------------------------|------|
|  |               | All vehicles  | All vehicles  | All vehicles                       | HGVs | All vehicles                              | HGVs | All vehicles                         | HGVs |
| M25 Junction 17  | AC Offslip    | 930           | 995           | 1017                               | 62   | 22  | 0    | 2%                                   | 0%   |
|  | CW Offslip    | 343           | 367           | 511                                | 153  | 144                                       | 132  | 39%                                  | 617% |
|  | AC Onslip     | 527           | 564           | 697                                | 148  | 133                                       | 132  | 24%                                  | 823% |
|  | CW Onslip     | 524           | 561           | 561                                | 9    | 0   | 0    | 0%                                   | 0%   |
| M25 Junction 16 to 17 (north of temp slip roads)   | AC J17 to J16 | 4681          | 5009          | 5142                               | 611  | 133                                       | 132  | 3%                                   | 28%  |
|  | CW J16 to J17 | 5102          | 5459          | 5603                               | 688  | 144                                       | 132  | 3%                                   | 24%  |
| M25 Junction 16 to 17 (south of temp slip roads)   | AC J17 to J16 | 4681          | 5009          | 5076                               | 546  | 67  | 67   | 1%                                   | 14%  |
|  | CW J16 to J17 | 5102          | 5459          | 5537                               | 623  | 78  | 67   | 1%                                   | 12%  |
| A40 (between Denham Roundabout and A412)   | NB            | 2077          | 2681          | 2755                               | 69   | 74  | 4    | 3%                                   | 6%   |
|  | SB            | 1785          | 2176          | 2184                               | 180  | 8   | 4    | 0%                                   | 2%   |
| A40, between the A412 Denham Way and the A413<br><br>(Note: new link in SES and AP2 TA with a 10% or more change in all veh or HGV peak hour flow) | EB            | 884           | 1349          | 1355                               | 32   | 6   | 2    | 0%                                   | 8%   |
|  | WB            | 1164          | 1822          | 1834                               | 27   | 12  | 2    | 1%                                   | 10%  |

SES3 and AP4 ES Appendix TR-001-000 (CFA7)

| Location   | Direction | 2012 baseline | 2021 baseline | 2021 with HS2 construction traffic |              | With HS2 actual change from 2021 baseline |              | With HS2 % change from 2021 baseline |     |
|--|-----------|---------------|---------------|------------------------------------|--------------|---|--------------|--------------------------------------|-----|
|  |           | All vehicles  | All vehicles  | HGVs                               | All vehicles | HGVs                                      | All vehicles | HGVs                                 |     |
| A412 Denham Way (between A40 and Moorfield Road)   | NB        | 953           | 953           | 1015                               | 42           | 62  | 1            | 7%                                   | 4%  |
|  | SB        | 1293          | 1284          | 1286                               | 107          | 2   | 1            | 0%                                   | 1%  |
| A412 Denham Way /North Orbital Road (between Moorfield Rd and Denham Green Lane)   | NB        | 354           | 388           | 443                                | 10           | 56  | 1            | 14%                                  | 16% |
|  | SB        | 551           | 603           | 611                                | 17           | 8   | 1            | 1%                                   | 9%  |
| A412 Denham Way /North Orbital Road (between satellite compounds and Denham Green Lane)<br>(‘A412 Denham Way/ North Orbital Road (south of satellite compounds)’ in main TA) | NB        | 354           | 388           | 449                                | 10           | 62  | 1            | 16%                                  | 16% |
|  | SB        | 551           | 603           | 757                                | 19           | 154                                       | 3            | 26%                                  | 19% |
| A412 Denham Way/ North Orbital Road (north of satellite compounds)   | NB        | 354           | 388           | 401                                | 16           | 13  | 7            | 3%                                   | 78% |
|  | SB        | 551           | 603           | 817                                | 24           | 214                                       | 9            | 35%                                  | 54% |
| A412 Denham Way/ North Orbital Road  | NB        | 418           | 458           | 458                                | 18           | 0   | 0            | 0%                                   | 0%  |
|  | SB        | 715           | 783           | 844                                | 31           | 61  | 0            | 8%                                   | 0%  |
| A405 Denham Way/ North Orbital Road  | NB        | 739           | 807           | 807                                | 25           | 0   | 0            | 0%                                   | 0%  |
|  | SB        | 1169          | 1277          | 1310                               | 78           | 33  | 0            | 3%                                   | 0%  |

SES<sub>3</sub> and AP<sub>4</sub> ES Appendix TR-001-000 (CFA7)

Table 7-3: Colne Valley strategic road network construction traffic flows (vehicles) - PM peak

| Location   | Direction     | 2012 baseline | 2021 baseline | 2021 with HS2 construction traffic |      | With HS2 actual change from 2021 baseline |      | With HS2 % change from 2021 baseline |       |
|--|---------------|---------------|---------------|------------------------------------|------|---|------|--------------------------------------|-------|
|  |               | All vehicles  | All vehicles  | All vehicles                       | HGVs | All vehicles                              | HGVs | All vehicles                         | HGVs  |
| M25 Junction 17  | AC Offslip    | 499           | 524           | 524                                | 21   | 0   | 0    | 0%                                   | 0%    |
|  | CW Offslip    | 300           | 315           | 438                                | 135  | 123                                       | 122  | 39%                                  | 972%  |
|  | AC Onslip     | 221           | 232           | 366                                | 132  | 134                                       | 122  | 58%                                  | 1295% |
|  | CW Onslip     | 648           | 680           | 702                                | 4    | 22  | 0    | 3%                                   | 0%    |
| M25 Junction 16 to 17 (north of temp slip roads)   | AC J17 to J16 | 5028          | 5279          | 5413                               | 463  | 134                                       | 122  | 3%                                   | 36%   |
|  | CW J16 to J17 | 6285          | 6599          | 6722                               | 534  | 123                                       | 122  | 2%                                   | 30%   |
| M25 Junction 16 to 17 (south of temp slip roads)   | AC J17 to J16 | 5028          | 5279          | 5352                               | 402  | 73  | 61   | 1%                                   | 18%   |
|  | CW J16 to J17 | 6285          | 6599          | 6661                               | 473  | 62  | 61   | 1%                                   | 15%   |
| A40 (between Denham Roundabout and A412)   | NB            | 2180          | 2368          | 2374                               | 64   | 6   | 3    | 0%                                   | 4%    |
|  | SB            | 1238          | 1285          | 1358                               | 56   | 73  | 3    | 6%                                   | 5%    |
| A40, between the A412 Denham Way and the A413<br><br>(Note: new link in SES and AP2 TA with a 10% or more change in all veh or HGV peak hour flow) | EB            | 518           | 527           | 538                                | 16   | 11  | 2    | 2%                                   | 14%   |
|  | WB            | 1884          | 2110          | 2116                               | 24   | 6   | 2    | 0%                                   | 9%    |

SES3 and AP4 ES Appendix TR-001-000 (CFA7)

| Location   | Direction | 2012 baseline | 2021 baseline | 2021 with HS2 construction traffic |      | With HS2 actual change from 2021 baseline |      | With HS2 % change from 2021 baseline |      |
|--|-----------|---------------|---------------|------------------------------------|------|---|------|--------------------------------------|------|
|  |           | All vehicles  |               | All vehicles                       | HGVs | All vehicles                              | HGVs | All vehicles                         | HGVs |
| A412 Denham Way (between A40 and Moorfield Road)   | NB        | 990           | 979           | 979                                | 44   | 1   | 0    | 0%                                   | 1%   |
|  | SB        | 1050          | 1081          | 1142                               | 43   | 61  | 0    | 6%                                   | 1%   |
| A412 Denham Way /North Orbital Road (between Moorfield Rd and Denham Green Lane)   | NB        | 596           | 657           | 664                                | 5    | 7   | 0    | 1%                                   | 10%  |
|  | SB        | 433           | 477           | 532                                | 4    | 55  | 0    | 11%                                  | 12%  |
| A412 Denham Way /North Orbital Road (between satellite compounds and Denham Green Lane)<br><br>(‘A412 Denham Way/ North Orbital Road (south of satellite compounds)’ in main TA) | NB        | 596           | 657           | 684                                | 5    | 27  | 0    | 4%                                   | 10%  |
|  | SB        | 433           | 477           | 552                                | 5    | 75  | 1    | 16%                                  | 27%  |
| A412 Denham Way/ North Orbital Road (north of satellite compounds)   | NB        | 596           | 657           | 740                                | 7    | 83  | 2    | 13%                                  | 46%  |
|  | SB        | 433           | 477           | 500                                | 7    | 22  | 3    | 5%                                   | 74%  |
| A412 Denham Way/ North Orbital Road  | NB        | 810           | 893           | 954                                | 13   | 61  | 0    | 7%                                   | 0%   |
|  | SB        | 412           | 454           | 454                                | 10   | 0   | 0    | 0%                                   | 0%   |
| A405 Denham Way/ North Orbital Road  | NB        | 977           | 1072          | 1105                               | 14   | 33  | 0    | 3%                                   | 0%   |
|  | SB        | 723           | 793           | 793                                | 30   | 0   | 0    | 0%                                   | 0%   |



- 3.1.21 A revision to construction route assumptions within the area has primarily resulted in a decrease in forecast HGV construction traffic on the A<sub>412</sub> Denham Way /North Orbital Road (between A<sub>40</sub> and satellite compounds; and north of Chalfont Lane), the A<sub>40</sub> (between M<sub>40</sub> J1 and A<sub>412</sub> Denham Way) and the A<sub>405</sub> Denham Way /North Orbital Road (north of the A<sub>412</sub>). It has also resulted in an increase in forecast HGV construction traffic on the A<sub>412</sub> Denham Way /North Orbital Road (between satellite compounds and Chalfont Lane) and M<sub>25</sub> between junctions 16 and 17. The changes in flows have also accounted for the minor changes due to the AP<sub>4</sub> revised scheme.
- 3.1.22 Table 7-12 of the main TA is replaced. The revision to construction route assumptions and the AP<sub>4</sub> revised scheme have resulted in an increase in construction traffic using the temporary slip roads during construction, in comparison to the SES scheme.

Table 7-12: Colne Valley 2021 M<sub>25</sub> temporary slip road construction traffic flows

| Location   | Direction | Total veh (HGVs) |
|--|-----------|------------------|
| M <sub>25</sub> anti-clockwise (Temporary offslip to revised scheme compounds) | AM peak   | 74               |
|  | PM peak   | 64               |
| M <sub>25</sub> clockwise (Temporary onslip to revised scheme compounds)       | AM peak   | 74               |
|  | PM peak   | 64               |

### Junction capacity

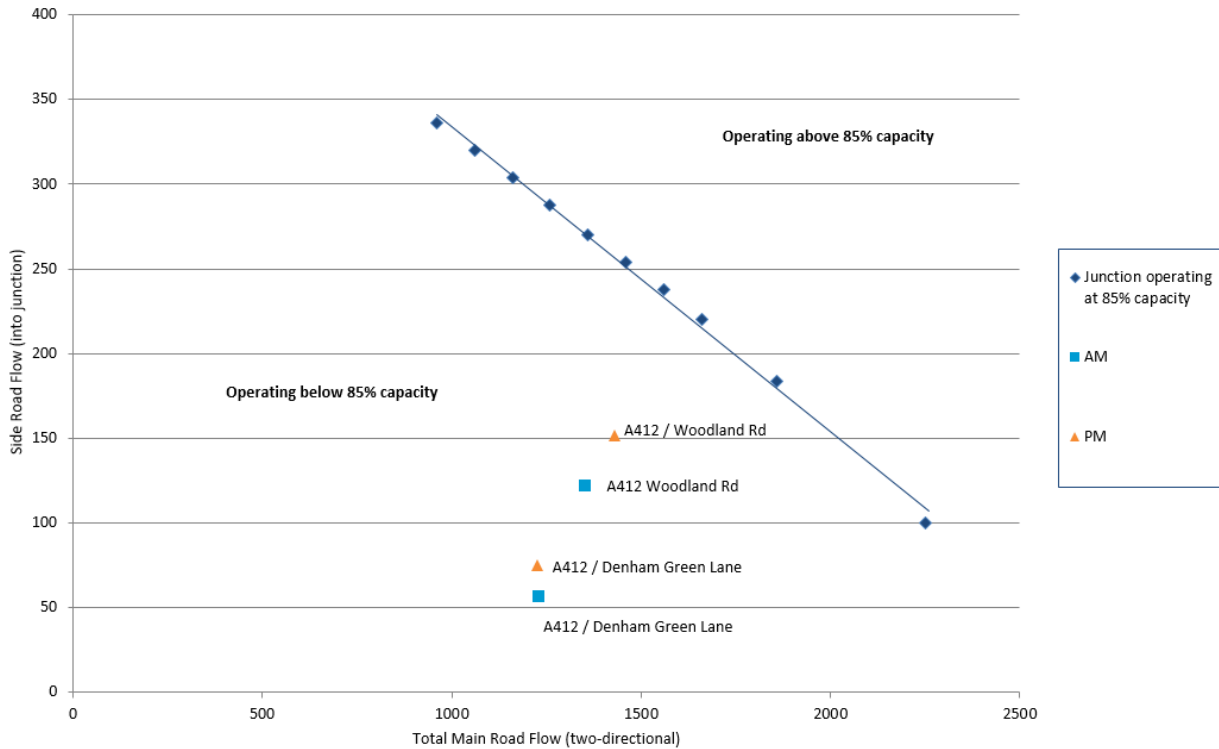
- 3.1.23 The assessment of junctions where additional traffic surveys were undertaken in 2015 have been reviewed.
- 3.1.24 The A<sub>412</sub> North Orbital Road with Denham Green Lane and A<sub>412</sub> Denham Way with Woodland Road priority junctions have been re-assessed based upon the traffic flows for the SES<sub>3</sub> and AP<sub>4</sub> revised scheme. Table 7-15 of the SES and AP<sub>2</sub> TA (which updated the main TA) is changed by the following table.

Table 7-15: Colne Valley priority junction flows – partial replacement

| Junction   | 2021 With HS <sub>2</sub> construction traffic |                       |                       |                       |
|--|--|-----------------------|-----------------------|-----------------------|
|  | AM peak  |                       | PM peak               |                       |
|  | Main road flow (PCUs)                          | Side road flow (PCUs) | Main road flow (PCUs) | Side road flow (PCUs) |
| A <sub>412</sub> North Orbital Road /Denham Green Lane | 1229   | 57                    | 1226                  | 75                    |
| A <sub>412</sub> Denham Way /Woodland Road             | 1350   | 122                   | 1431                  | 152                   |

- 3.1.25 Figure 7-2 in the SES and AP<sub>2</sub> TA (which updated the figure in the main TA) is replaced by the following figure.

Figure 7-2: Colne Valley priority junction assessment 2021



- 3.1.26 This indicates that the A<sub>412</sub> North Orbital Road/Denham Green Lane and A<sub>412</sub> Denham Way/Woodland Road junctions fall below the 'threshold' of capacity during both the AM and PM peaks and are forecast to operate within their theoretical capacity during construction of the SES<sub>3</sub> and AP<sub>4</sub> revised scheme. As a result, it is not considered necessary to assess these individually with junction assessment software.
- 3.1.27 Using the supplementary survey data, additional assessment of the A<sub>412</sub> Denham Avenue/Chalfont Road junction has been carried out, using industry standard software (two models were required for assessment of this junction). The results are shown in Table 7-15.1 and Table 7-15.2 and update the assessment within the main TA and SES and AP<sub>2</sub> TA for this junction.
- 3.1.28 The modelling results indicate that the A<sub>412</sub> Denham Avenue/Chalfont Road junction will operate within capacity during construction, during both the AM and PM peak periods. This updates the assessment within the main TA and SES and AP<sub>2</sub> TA (paragraph 3.1.21 in the SES and AP<sub>2</sub> TA) for this junction, which indicated that construction traffic may potentially cause additional intermittent traffic congestion and delay in the AM peak period.

## SES<sub>3</sub> and AP<sub>4</sub> ES Appendix TR-001-000 (CFA7)

Table 7-15.1: Forecast baseline and construction scenario performance at A412 Denham Avenue/Chalfont Road junction

| 0800-09:00            | 2021 baseline  |                 |           | 2021 with HS2 construction traffic |                 |           |
|-----------------------|----------------|-----------------|-----------|------------------------------------|-----------------|-----------|
| Approach (from)       | Flow (All PCU) | Flow/capacity % | Max queue | Flow (All PCU)                     | Flow/capacity % | Max queue |
| A412 Denham Way South | 516            | 0%              | 0         | 516                                | 0%              | 0         |
| Chalfont Road         | 302            | 49%             | 1         | 346                                | 56%             | 1         |
| A412 Denham Way North | 975            | 0%              | 0         | 1036                               | 0%              | 0         |
| Total                 | N/A            | 49%             | N/A       | N/A                                | 56%             | N/A       |
| 17:00-18:00           | 2021 baseline  |                 |           | 2021 with HS2 construction traffic |                 |           |
| Approach (from)       | Flow (all PCU) | Flow/capacity % | Max queue | Flow (all PCU)                     | Flow/capacity % | Max queue |
| A412 Denham Way South | 976            | 0%              | 0         | 1037                               | 0%              | 0         |
| Chalfont Road         | 249            | 52%             | 1         | 275                                | 59%             | 2         |
| A412 Denham Way North | 660            | 0%              | 0         | 660                                | 0%              | 0         |
| Total                 | N/A            | 52%             | N/A       | N/A                                | 59%             | N/A       |

Table 7-15.2: Forecast baseline and construction scenario performance at A412 Denham Avenue/Chalfont Road junction (Maple Lodge Close)

| 0800-09:00                         | 2021 baseline  |                 |           | 2021 with HS2 construction traffic |                 |           |
|------------------------------------|----------------|-----------------|-----------|------------------------------------|-----------------|-----------|
| Approach (from)                    | Flow (All PCU) | Flow/capacity % | Max queue | Flow (All PCU)                     | Flow/capacity % | Max queue |
| Denham Way N Right Ahead Left      | 1173           | 72%             | 14        | 1264                               | 77%             | 15        |
| Denham Way S Right Ahead Left      | 530            | 37%             | 6         | 530                                | 37%             | 6         |
| Maple Lodge Close Right Ahead Left | 58             | 36%             | 2         | 58                                 | 36%             | 2         |
| Total                              | N/A            | 72%             | N/A       | N/A                                | 77%             | N/A       |
| 17:00-18:00                        | 2021 baseline  |                 |           | 2021 with HS2 construction traffic |                 |           |
| Approach (from)                    | Flow (all PCU) | Flow/capacity % | Max queue | Flow (all PCU)                     | Flow/capacity % | Max queue |
| Denham Way N Right Ahead Left      | 981            | 57%             | 7         | 1019                               | 58%             | 7         |
| Denham Way S Right Ahead Left      | 969            | 68%             | 18        | 1030                               | 73%             | 20        |
| Maple Lodge Close Right Ahead Left | 82             | 53%             | 3         | 82                                 | 53%             | 3         |
| Total                              | N/A            | 68%             | N/A       | N/A                                | 73%             | N/A       |

- 3.1.29 Using the supplementary survey data, assessment of the A412 Denham Avenue/Old Rectory Lane and A412 Denham Avenue/Moorfield Road junctions has been undertaken. The results are shown in Table 7-15.3 and Table 7-15.4.
- 3.1.30 The modelling results indicate that the A412 Denham Avenue/Old Rectory Lane junction will operate within capacity during construction of the revised scheme in the AM peak, with the highest percentage of flow to capacity at 84% on the Denham Avenue (south) arm. Within the PM peak, however, the highest percentage of flow to capacity is 90% on the Denham Avenue (south) arm, which indicates that the junction may experience intermittent traffic congestion and delay during the evening peak, during construction. However, there is no substantial difference in operation following addition of revised scheme construction traffic, with the junction also forecast to operate over capacity in the 2021 baseline.
- 3.1.31 The modelling results indicate that the A412 Denham Avenue/Moorfield Road junction will operate over capacity during construction of the revised scheme during both the AM peak and PM peak, with the highest percentage of flow to capacity at 108% and 113% on the Moorfield Road arm, respectively. However, although there is an increase of up to 11% in the flow to capacity ratio, the junction is forecast to operate over capacity in the 2021 baseline.

Table 7-15.3: Forecast baseline and construction scenario performance at A412 Denham Avenue/Old Rectory Lane junction

| <b>0800-09:00</b>                 | <b>2021 baseline</b>  |                        |                  | <b>2021 with HS2 construction traffic</b> |                        |                  |
|-----------------------------------|-----------------------|------------------------|------------------|---|------------------------|------------------|
| <b>Approach (from)</b>            | <b>Flow (All PCU)</b> | <b>Flow/capacity %</b> | <b>Max queue</b> | <b>Flow (All PCU)</b>                     | <b>Flow/capacity %</b> | <b>Max queue</b> |
| A412 Denham Ave North Right Ahead | 1403                  | 82%                    | 28               | 1406                                      | 82%                    | 29               |
| Old Rectory Lane Left Right       | 138                   | 79%                    | 6                | 138                                       | 79%                    | 6                |
| A412 Denham Ave South Ahead Left  | 1201                  | 79%                    | 30               | 1266                                      | 84%                    | 34               |
| Total                             | N/A                   | 82%                    | N/A              | N/A                                       | 84%                    | N/A              |
| <b>17:00-18:00</b>                | <b>2021 baseline</b>  |                        |                  | <b>2021 with HS2 construction traffic</b> |                        |                  |
| <b>Approach (from)</b>            | <b>Flow (all PCU)</b> | <b>Flow/capacity %</b> | <b>Max queue</b> | <b>Flow (all PCU)</b>                     | <b>Flow/capacity %</b> | <b>Max queue</b> |
| A412 Denham Ave North Right Ahead | 1130                  | 74%                    | 24               | 1192                                      | 78%                    | 27               |
| Old Rectory Lane Left Right       | 311                   | 89%                    | 14               | 311                                       | 89%                    | 14               |
| A412 Denham Ave South Ahead Left  | 1174                  | 90%                    | 38               | 1175                                      | 90%                    | 38               |
| Total                             | N/A                   | 90%                    | N/A              | N/A                                       | 90%                    | N/A              |

## SES<sub>3</sub> and AP<sub>4</sub> ES Appendix TR-001-000 (CFA7)

Table 7-15.4: Forecast baseline and construction scenario performance at A<sub>412</sub> Denham Avenue with Moorfield Road

| 0800-09:00                   | 2021 baseline  |                 |           | 2021 with HS2 construction traffic |                 |           |
|------------------------------|----------------|-----------------|-----------|------------------------------------|-----------------|-----------|
| Approach (from)              | Flow (All PCU) | Flow/capacity % | Max queue | Flow (All PCU)                     | Flow/capacity % | Max queue |
| North Orbital Rd Ahead Left  | 821            | 99%             | 31        | 801                                | 107%            | 50        |
| South Orbital Rd Right Ahead | 963            | 99%             | 22        | 1100                               | 107%            | 55        |
| Moorfield Rd Left Right      | 491            | 99%             | 20        | 495                                | 108%            | 33        |
| Total                        | N/A            | 99%             | N/A       | N/A                                | 108%            | N/A       |
| 17:00-18:00                  | 2021 baseline  |                 |           | 2021 with HS2 construction traffic |                 |           |
| Approach (from)              | Flow (all PCU) | Flow/capacity % | Max queue | Flow (all PCU)                     | Flow/capacity % | Max queue |
| North Orbital Rd Ahead Left  | 832            | 101%            | 36        | 857                                | 112%            | 69        |
| South Orbital Rd Right Ahead | 1027           | 100%            | 24        | 1102                               | 109%            | 64        |
| Moorfield Rd Left Right      | 501            | 103%            | 26        | 513                                | 113%            | 43        |
| Total                        | N/A            | 103%            | N/A       | N/A                                | 113%            | N/A       |

3.1.32 The A<sub>412</sub> Denham Way/ Chalfont Lane and A<sub>412</sub> Denham Way/A<sub>405</sub> North Orbital Road/ A<sub>412</sub> Uxbridge Road junctions have been re-modelled, based upon adjusted traffic flows within CFA7 as a result of the SES<sub>3</sub> changes (including revised construction traffic route assumptions) and the AP<sub>4</sub> revised scheme, Table 7-16 and Table 7-17 of the SES and AP<sub>2</sub> TA are replaced by those below.

3.1.33 There is no substantial change to the result of the assessment carried out and reported in the main TA and SES and AP<sub>2</sub> TA, whereby the modelling results indicate that both the A<sub>412</sub> Denham Way/ Chalfont Lane and A<sub>412</sub> Denham Way/A<sub>405</sub> North Orbital Road/ A<sub>412</sub> Uxbridge Road junctions will operate within capacity during construction.

Table 7-16: Forecast baseline and construction scenario performance at A<sub>412</sub> Denham Way/Chalfont Lane junction

| 0800-09:00           | 2021 baseline  |                 |           | 2021 with HS2 construction traffic |                 |           |
|----------------------|----------------|-----------------|-----------|------------------------------------|-----------------|-----------|
| Approach (from)      | Flow (All PCU) | Flow/capacity % | Max queue | Flow (All PCU)                     | Flow/capacity % | Max queue |
| Chalfont Lane (E)    | 239            | 29%             | 1         | 239                                | 31%             | 1         |
| A <sub>412</sub> (S) | 476            | 32%             | 1         | 494                                | 33%             | 1         |
| Chalfont Lane (W)    | 87             | 13%             | 1         | 105                                | 16%             | 0         |
| A <sub>412</sub> (N) | 814            | 47%             | 1         | 875                                | 51%             | 1         |
| Total                | N/A            | 47%             | N/A       | N/A                                | 51%             | N/A       |

SES3 and AP4 ES Appendix TR-001-000 (CFA7)

| 17:00-18:00       | 2021 baseline  |                  |           | 2021 with HS2 construction traffic |                  |           |
|-------------------|----------------|------------------|-----------|------------------------------------|------------------|-----------|
| Approach (from)   | Flow (all PCU) | Flow/ capacity % | Max queue | Flow (all PCU)                     | Flow/ capacity % | Max queue |
| Chalfont Lane (E) | 371            | 36%              | 1         | 371                                | 37%              | 1         |
| A412 (S)          | 906            | 63%              | 2         | 985                                | 68%              | 2         |
| Chalfont Lane (W) | 53             | 13%              | 1         | 71                                 | 19%              | 0         |
| A412 (N)          | 464            | 26%              | 1         | 464                                | 26%              | 0         |
| Total             | N/A            | 63%              | N/A       | N/A                                | 68%              | N/A       |

Table 7-17: Forecast baseline and construction scenario performance at A412 Denham Way/ A405 North Orbital Road/ A412 Uxbridge Road

| 0800-09:00              | 2021 baseline  |                  |           | 2021 with HS2 construction traffic |                  |           |
|-------------------------|----------------|------------------|-----------|------------------------------------|------------------|-----------|
| Approach (from)         | Flow (All PCU) | Flow/ capacity % | Max queue | Flow (All PCU)                     | Flow/ capacity % | Max queue |
| A412 (N) Uxbridge Road  | 939            | 50%              | 1         | 967                                | 52%              | 1         |
| A412 (S) Denham Way     | 476            | 19%              | 1         | 476                                | 19%              | 0         |
| A405 North Orbital Road | 1355           | 53%              | 2         | 1388                               | 54%              | 1         |
| Total                   | N/A            | 53%              | N/A       | N/A                                | 54%              | N/A       |

| 17:00-18:00             | 2021 baseline  |                  |           | 2021 with HS2 construction traffic |                  |           |
|-------------------------|----------------|------------------|-----------|------------------------------------|------------------|-----------|
| Approach (from)         | Flow (all PCU) | Flow/ capacity % | Max queue | Flow (all PCU)                     | Flow/ capacity % | Max queue |
| A412 (N) Uxbridge Road  | 668            | 29%              | 1         | 668                                | 29%              | 1         |
| A412 (S) Denham Way     | 1489           | 56%              | 2         | 1550                               | 59%              | 2         |
| A405 North Orbital Road | 823            | 34%              | 1         | 823                                | 36%              | 1         |
| Total                   | N/A            | 56%              | N/A       | N/A                                | 59%              | N/A       |

*Pedestrians, cyclists and equestrians*

3.1.34 Table 7-19 of the main TA is amended to add the following PRow which is subject to diversion under the AP4 revised scheme, due to additional land required for the amended sustainable placement proposals in CFA6 and CFA7 and temporary realignment of footpath U50 (AP4-006-002).

3.1.35 In addition, Footpath U50 will be crossed by the proposed haul road through Uxbridge Golf Course (AP4-006-004). A controlled crossing will be provided for Footpath U50 across the haul road.

Table 7-19: Colne Valley summary of P<sub>RoW</sub> severance (construction)

| <b>P<sub>RoW</sub></b> | <b>Location</b> | <b>Location (chainage)</b> | <b>Construction Activity</b>                              | <b>Temporary Diversion Route</b>   | <b>Daily Users</b> | <b>Maximum Diversion Length</b> | <b>Maximum Diversion Journey Time (nearest minute)</b> |
|------------------------|-----------------|----------------------------|---|--|--------------------|---------------------------------|--|
| Footpath U50           | South Harefield | 25+400                     | Amended sustainable placement proposals in CFA6 and CFA7. | Temporary diversion around the edge of the temporary material stockpile and Harvil Road. | Up to 200          | 350m                            | 5 mins   |

### Operation description and assessment of operation impacts

- 3.1.36 There is no change to section 7.3 of the main TA with regard to the assessment of the original scheme during operation.