

# 8. Air Quality & Dust

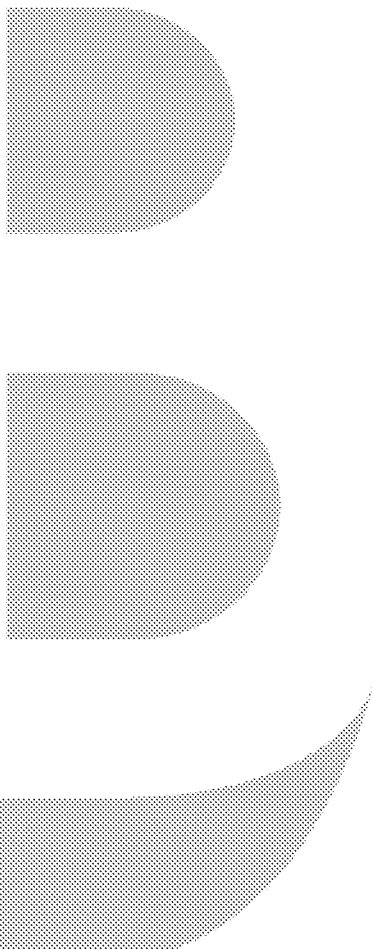
- 8.1 IAQM Dust Guidance
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## Appendix 8.1

### IAQM Dust Guidance

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## Appendix C – IAQM

### Step 1 – Screening the need for a Detailed Assessment

An assessment will normally be required where there are:

- ✧ 'Human receptors' within 350m of the site boundary; or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s); and/or
- ✧ 'Ecological receptors' within 50m of the site boundary; or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).

Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is “negligible”.

### Step 2A – Define the Potential Dust Emission Magnitude

The following are examples of how the potential dust emission magnitude for different activities can be defined. (Note that not all the criteria need to be met for a particular class). Other criteria may be used if justified in the assessment.

**Table 2A: Examples of Human Receptor Sensitivity to Construction Phase Impacts**

| Dust Emission Magnitude | Activity                                                                                                                                                                                               |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Large                   | Demolition<br>>75,000m <sup>3</sup> building demolished, dusty material (e.g. concrete), on-site crushing/screening, demolition >12m above ground level                                                |
|                         | Earthworks<br>>110,000m <sup>2</sup> site area, dusty soil type (e.g. clay),<br>>10 earth moving vehicles active simultaneously,<br>>6m high bunds formed, >100,000 tonnes material moved              |
|                         | Construction<br>>75,000m <sup>3</sup> building volume, on site concrete batching, sandblasting                                                                                                         |
|                         | Trackout<br>>50 HDVs out / day, dusty surface material (e.g. clay), >100m unpaved roads                                                                                                                |
| Medium                  | Demolition<br>12,000 - 75,000m <sup>3</sup> building demolished, dusty material (e.g. concrete)<br>10-20m above ground level                                                                           |
|                         | Earthworks<br>18,000 - 110,000m <sup>2</sup> site area, moderately dusty soil (e.g. silt), 5-10 earth moving vehicles active simultaneously, 4m - 8m high bunds, 20,000 -100,000 tonnes material moved |
|                         | Construction<br>12,000 - 75,000m <sup>3</sup> building volume, dusty material e.g. concrete, on-site concrete batching                                                                                 |
|                         | Trackout<br>20 - 50 HDVs out / day, moderately dusty surface material (e.g. clay), 50 -100m unpaved roads                                                                                              |

| Dust Emission Magnitude | Activity                                                                                                                                                                                                              |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Small                   | Demolition<br><12,000m <sup>3</sup> building demolished, non-dusty material (e.g. metal cladding), <10m above ground level, work during wetter months                                                                 |
|                         | Earthworks<br><18,000m <sup>2</sup> site area, soil with large grain size (e.g. sand), <5 earth moving vehicles active simultaneously, <3m high bunds, <20,000 tonnes material moved, earthworks during wetter months |
|                         | Construction<br><12,000m <sup>3</sup> , non-dusty material (e.g. metal cladding or timber)                                                                                                                            |
|                         | Trackout<br><20 HDVs out / day, non-dusty soil, < 50m unpaved roads                                                                                                                                                   |

### Step 2B – Define the Sensitivity of the Area

The tables below present the IAQM assessment methodology to determine the sensitivity of the area to dust soiling, human health and ecological impacts respectively. The IAQM guidance provides guidance to allow the sensitivity of individual receptors to dust soiling and health effects to assist in the assessment of the overall sensitivity of the study area.

**Table 2Ba: Sensitivity of the Area to Dust Soiling Effects**

| Receptor Sensitivity | Number of Receptors | Distance from the Source (m) |        |        |      |
|----------------------|---------------------|------------------------------|--------|--------|------|
|                      |                     | <20                          | <50    | <100   | <350 |
| High                 | >100                | High                         | High   | Medium | Low  |
|                      | 10-100              | High                         | Medium | Low    | Low  |
|                      | 1-10                | Medium                       | Low    | Low    | Low  |
| Medium               | >1                  | Medium                       | Low    | Low    | Low  |
| Low                  | >1                  | Low                          | Low    | Low    | Low  |

**Table 2Bb: Sensitivity of the Area to Human Health Impacts**

| Receptor Sensitivity | Annual Mean PM10 Concentration (µg/m <sup>3</sup> ) | Number of Receptors | Distance from the Source (m) |      |        |        |      |
|----------------------|-----------------------------------------------------|---------------------|------------------------------|------|--------|--------|------|
|                      |                                                     |                     | <20                          | <50  | <100   | <200   | <350 |
| High                 | >32                                                 | >100                | High                         | High | High   | Medium | Low  |
|                      |                                                     | 10-100              | High                         | High | Medium | Low    | Low  |

| Receptor Sensitivity | Annual Mean PM10 Concentration (µg/m3) | Number of Receptors | Distance from the Source (m) |        |        |      |      |
|----------------------|----------------------------------------|---------------------|------------------------------|--------|--------|------|------|
|                      |                                        |                     | <20                          | <50    | <100   | <200 | <350 |
|                      | 28-32                                  | 1-10                | High                         | Medium | Low    | Low  | Low  |
|                      |                                        | >100                | High                         | High   | Medium | Low  | Low  |
|                      |                                        | 10-100              | High                         | Medium | Low    | Low  | Low  |
|                      | 24-28                                  | 1-10                | High                         | Medium | Low    | Low  | Low  |
|                      |                                        | >100                | High                         | Medium | Low    | Low  | Low  |
|                      |                                        | 10-100              | High                         | Medium | Low    | Low  | Low  |
|                      | <24                                    | 1-10                | Medium                       | Low    | Low    | Low  | Low  |
|                      |                                        | >100                | Medium                       | Low    | Low    | Low  | Low  |
|                      |                                        | 10-100              | Low                          | Low    | Low    | Low  | Low  |
|                      |                                        | 1-10                | Low                          | Low    | Low    | Low  | Low  |
|                      |                                        | >10                 | High                         | Medium | Low    | Low  | Low  |
|                      |                                        | 1-10                | Medium                       | Low    | Low    | Low  | Low  |
| Medium               | >32                                    | >10                 | High                         | Medium | Low    | Low  | Low  |
|                      |                                        | 1-10                | Medium                       | Low    | Low    | Low  | Low  |
|                      | 28-32                                  | >10                 | Medium                       | Low    | Low    | Low  | Low  |
|                      |                                        | 1-10                | Low                          | Low    | Low    | Low  | Low  |
|                      | 24-28                                  | >10                 | Low                          | Low    | Low    | Low  | Low  |
|                      |                                        | 1-10                | Low                          | Low    | Low    | Low  | Low  |
|                      | <24                                    | >10                 | Low                          | Low    | Low    | Low  | Low  |
|                      |                                        | 1-10                | Low                          | Low    | Low    | Low  | Low  |
| Low                  | -                                      | >1                  | Low                          | Low    | Low    | Low  | Low  |

**Table 2Bc: Sensitivity of the Area to Ecological Impacts**

| Receptor Sensitivity | Distance from the Sources (m) |        |
|----------------------|-------------------------------|--------|
|                      | <20                           | <50    |
| High                 | High                          | Medium |
| Medium               | Medium                        | Low    |
| Low                  | Low                           | Low    |

### Step 2C – Define the Risk of Impacts

The dust emissions magnitude determined at Step 2A should be combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts without mitigation applied. For those cases where the risk category is 'negligible' no mitigation measures beyond those required by legislation will be required.

**Table 2C: Risk of Dust Impacts**

| Sensitivity of surrounding area    | Dust Emission Magnitude |             |             |
|------------------------------------|-------------------------|-------------|-------------|
|                                    | Large                   | Medium      | Small       |
| <b>Demolition</b>                  |                         |             |             |
| <b>High</b>                        | High Risk               | Medium Risk | Medium Risk |
| <b>Medium</b>                      | High Risk               | Medium Risk | Low Risk    |
| <b>Low</b>                         | Medium Risk             | Low Risk    | Negligible  |
| <b>Earthworks and Construction</b> |                         |             |             |
| <b>High</b>                        | High Risk               | Medium Risk | Low Risk    |
| <b>Medium</b>                      | Medium Risk             | Medium Risk | Low Risk    |
| <b>Low</b>                         | Low Risk                | Low Risk    | Negligible  |
| <b>Trackout</b>                    |                         |             |             |
| <b>High</b>                        | High Risk               | Medium Risk | Low Risk    |
| <b>Medium</b>                      | Medium Risk             | Low Risk    | Negligible  |
| <b>Low</b>                         | Low Risk                | Low Risk    | Negligible  |

### Step 3 –Site Specific Mitigation

Having determined the risk categories for each of the four activities it is possible to determine the site-specific measures to be adopted. These measures will be related to whether the site is considered to be a low, medium or high-risk site. The IAQM guidance details the mitigation measures required for high, medium and low risk sites as determined in **Step 2C**.

### Step 4 – Determine Significant Effects

Once the risk of dust impacts has been determined in **Step 2C** and the appropriate dust mitigation measures identified in **Step 3**, the final step is to determine whether there are significant effects arising from the construction phase. For almost all construction activities, the application of effective mitigation should prevent any significant effects occurring to sensitive receptors and therefore the residual effect will normally be negligible.

## Appendix 8.2

### Traffic Data

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B

B

## Appendix D - Traffic Data

Table D-1 – 2019 Baseline traffic data

| Link ID | Road Name                                               | AADT    | %HDV  | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|---------|-------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 1       | A27 Bognor Regis and Arundel                            | 28523.0 | 7.55% | 112.6       | 0.155                                     | 0.014                                      | 0.008                                       |
| 2       | A27 Bognor Regis and Arundel                            | 28523.0 | 7.55% | 112.6       | 0.155                                     | 0.014                                      | 0.008                                       |
| 3       | A27 between A29 near Bognor Regis                       | 38234.0 | 6.80% | 112.6       | 0.207                                     | 0.018                                      | 0.011                                       |
| 4       | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 14392.9 | 9.10% | 64.3        | 0.059                                     | 0.007                                      | 0.004                                       |
| 5       | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 14392.9 | 9.10% | 64.3        | 0.059                                     | 0.007                                      | 0.004                                       |
| 6       | A29 Shripney Road                                       | 32979.3 | 2.00% | 20          | 0.177                                     | 0.014                                      | 0.008                                       |
| 7       | A29 Westergate Street (South of Site Access)            | 12650.0 | 5.00% | 20          | 0.080                                     | 0.006                                      | 0.004                                       |
| 8       | Hook Lane                                               | 2865.9  | 1.00% | 20          | 0.014                                     | 0.001                                      | 0.001                                       |
| 9       | A29 Westergate Street (South of Site Access)            | 12650.0 | 5.00% | 20          | 0.080                                     | 0.006                                      | 0.004                                       |
| 10      | Hook Lane                                               | 2865.9  | 1.00% | 48.2        | 0.010                                     | 0.001                                      | 0.001                                       |
| 11      | B2233 Nyton Road (Between Oving Road and A29)           | 12934.0 | 2.62% | 48.2        | 0.049                                     | 0.005                                      | 0.003                                       |
| 12      | B2233 Nyton Road (Between Oving Road and A29)           | 12934.0 | 2.62% | 20          | 0.072                                     | 0.006                                      | 0.003                                       |
| 13      | A29 Nyton Road                                          | 21616.0 | 5.75% | 20          | 0.142                                     | 0.010                                      | 0.006                                       |
| 14      | A29 Shripney Road                                       | 32979.3 | 2.00% | 20          | 0.177                                     | 0.014                                      | 0.008                                       |
| 15      | A29 Shripney Road                                       | 32979.3 | 2.00% | 64.3        | 0.114                                     | 0.013                                      | 0.008                                       |
| 16      | A29 Fontwell Avenue (North Memorial Roundabout)         | 14097.1 | 4.65% | 20          | 0.088                                     | 0.006                                      | 0.004                                       |
| 17      | B2233 Barnham Road                                      | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 18      | A27 (W of Fontwell Roundabout)                          | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 19      | A27 (W of Fontwell Roundabout)                          | 13121.3 | 6.50% | 20          | 0.092                                     | 0.004                                      | 0.003                                       |
| 20      | A27 (W of Fontwell Roundabout)                          | 13121.3 | 6.50% | 20          | 0.092                                     | 0.004                                      | 0.003                                       |
| 21      | A27 between A29 and A285                                | 20811.2 | 6.50% | 20          | 0.145                                     | 0.006                                      | 0.004                                       |
| 22      | A259 Charles Purley Way                                 | 16753.6 | 1.40% | 64.3        | 0.057                                     | 0.007                                      | 0.004                                       |
| 23      | B2233 Barnham Road                                      | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 24      | A29 Westergate Street (South of Site Access)            | 12650.0 | 5.00% | 48.2        | 0.052                                     | 0.006                                      | 0.003                                       |
| 25      | A29 Westergate Street (South of Site Access)            | 12650.0 | 5.00% | 48.2        | 0.052                                     | 0.006                                      | 0.003                                       |
| 26      | A29 Westergate Street (South of Site Access)            | 12650.0 | 5.00% | 48.2        | 0.052                                     | 0.006                                      | 0.003                                       |
| 27      | A259 Charles Purley Way                                 | 16753.6 | 1.40% | 64.3        | 0.057                                     | 0.007                                      | 0.004                                       |
| 28      | A259 Charles Purley Way                                 | 16753.6 | 1.40% | 64.3        | 0.057                                     | 0.007                                      | 0.004                                       |
| 29      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 14392.9 | 9.10% | 64.3        | 0.059                                     | 0.007                                      | 0.004                                       |
| 30      | B2233 Barnham Road                                      | 10427.7 | 2.62% | 20          | 0.058                                     | 0.005                                      | 0.003                                       |
| 31      | A27 (W of Fontwell Roundabout)                          | 13121.3 | 6.50% | 20          | 0.092                                     | 0.004                                      | 0.003                                       |
| 32      | Church Lane                                             | 852.0   | 2.00% | 20          | 0.005                                     | 0.000                                      | 0.000                                       |
| 33      | B2233 Barnham Road                                      | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 34      | Ivy Lane                                                | 1422.0  | 0.00% | 20          | 0.007                                     | 0.001                                      | 0.000                                       |
| 35      | A29 Westergate Street (North of Site Access)            | 12751.0 | 5.00% | 20          | 0.081                                     | 0.006                                      | 0.004                                       |

| Link ID | Road Name                                               | AADT    | %HDV  | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|---------|-------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 36      | A29 Westergate Street (North of Site Access)            | 12751.0 | 5.00% | 48.2        | 0.053                                     | 0.006                                      | 0.003                                       |
| 37      | Meadow Way                                              | 310.0   | 1.38% | 20          | 0.002                                     | 0.000                                      | 0.000                                       |
| 38      | A29 Westergate Street (North of Site Access)            | 12751.0 | 5.00% | 48.2        | 0.053                                     | 0.006                                      | 0.003                                       |
| 39      | A29 Westergate Street (South of Site Access)            | 12650.0 | 5.00% | 48.2        | 0.052                                     | 0.006                                      | 0.003                                       |
| 40      | Hook Lane                                               | 2865.9  | 1.00% | 48.2        | 0.010                                     | 0.001                                      | 0.001                                       |
| 41      | A29 Westergate Street (South of Site Access)            | 12650.0 | 5.00% | 20          | 0.080                                     | 0.006                                      | 0.004                                       |
| 42      | A29 Fontwell Avenue (North Memorial Roundabout)         | 14097.1 | 4.65% | 48.2        | 0.058                                     | 0.006                                      | 0.004                                       |
| 43      | A27 (W of Fontwell Roundabout)                          | 13121.3 | 6.50% | 112.6       | 0.077                                     | 0.004                                      | 0.003                                       |
| 44      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 14392.9 | 9.10% | 20          | 0.110                                     | 0.007                                      | 0.005                                       |
| 45      | A27 (W of Fontwell Roundabout)                          | 20475.5 | 7.20% | 112.6       | 0.120                                     | 0.006                                      | 0.004                                       |
| 46      | Arundel Rndbt1                                          | 18791.0 | 7.40% | 20          | 0.134                                     | 0.009                                      | 0.006                                       |
| 47      | Arundel Rndbt4                                          | 20599.0 | 7.30% | 20          | 0.146                                     | 0.010                                      | 0.006                                       |
| 48      | Arundel Rndbt3                                          | 22623.0 | 7.20% | 20          | 0.160                                     | 0.011                                      | 0.007                                       |
| 49      | A27 between A29 near Bognor Regis                       | 38234.0 | 6.80% | 20          | 0.265                                     | 0.019                                      | 0.011                                       |
| 50      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 20          | 0.000                                     | -                                          | 0.000                                       |
| 51      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 20          | 0.000                                     | -                                          | 0.000                                       |
| 52      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 48.2        | 0.000                                     | -                                          | 0.000                                       |
| 53      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 48.2        | 0.000                                     | -                                          | 0.000                                       |
| 54      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 20          | 0.000                                     | -                                          | 0.000                                       |
| 55      | Realigned A29 (South of Site Access)                    | 0.0     | 0.00% | 20          | 0.000                                     | -                                          | 0.000                                       |
| 56      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 20          | 0.000                                     | -                                          | 0.000                                       |
| 57      | Realigned A29 (South of Site Access)                    | 0.0     | 0.00% | 20          | 0.000                                     | -                                          | 0.000                                       |
| 58      | Site Access Road                                        | 38.0    | 0.00% | 48.2        | 0.000                                     | 0.000                                      | 0.000                                       |
| 59      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 20          | 0.000                                     | -                                          | 0.000                                       |
| 60      | Realigned A29 (South of Site Access)                    | 0.0     | 0.00% | 48.2        | 0.000                                     | -                                          | 0.000                                       |
| 61      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 48.2        | 0.000                                     | -                                          | 0.000                                       |
| 62      | Realigned A29 (South of Site Access)                    | 0.0     | 0.00% | 48.2        | 0.000                                     | -                                          | 0.000                                       |
| 63      | Realigned A29 (South of Site Access)                    | 0.0     | 0.00% | 48.2        | 0.000                                     | -                                          | 0.000                                       |
| 64      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 14392.9 | 9.10% | 20          | 0.110                                     | 0.007                                      | 0.005                                       |
| 65      | A29 Shripney Road                                       | 32979.3 | 2.00% | 20          | 0.177                                     | 0.014                                      | 0.008                                       |
| 66      | B2233 Barnham Road                                      | 10427.7 | 2.62% | 20          | 0.058                                     | 0.005                                      | 0.003                                       |
| 67      | B2233 Barnham Road                                      | 10427.7 | 2.62% | 20          | 0.058                                     | 0.005                                      | 0.003                                       |
| 68      | Realigned A29 (North of Site Access)                    | 0.0     | 0.00% | 48.2        | 0.000                                     | -                                          | 0.000                                       |
| 69      | A29 Nyton Road                                          | 21616.0 | 5.75% | 20          | 0.142                                     | 0.010                                      | 0.006                                       |

| Link ID | Road Name                                       | AADT    | %HDV  | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|-------------------------------------------------|---------|-------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 70      | A29 Westergate Street (North of Site Access)    | 12751.0 | 5.00% | 48.2        | 0.053                                     | 0.006                                      | 0.003                                       |
| 71      | Ivy Lane                                        | 1422.0  | 0.00% | 48.2        | 0.005                                     | 0.001                                      | 0.000                                       |
| 72      | Ivy Lane                                        | 1422.0  | 0.00% | 48.2        | 0.005                                     | 0.001                                      | 0.000                                       |
| 73      | A29 Westergate Street (North of Site Access)    | 12751.0 | 5.00% | 48.2        | 0.053                                     | 0.006                                      | 0.003                                       |
| 74      | A29 Westergate Street (South of Site Access)    | 12650.0 | 5.00% | 20          | 0.080                                     | 0.006                                      | 0.004                                       |
| 75      | Meadow Way                                      | 310.0   | 1.38% | 20          | 0.002                                     | 0.000                                      | 0.000                                       |
| 76      | Meadow Way                                      | 310.0   | 1.38% | 48.2        | 0.001                                     | 0.000                                      | 0.000                                       |
| 77      | A29 Fontwell Avenue (North Memorial Roundabout) | 14097.1 | 4.65% | 48.2        | 0.058                                     | 0.006                                      | 0.004                                       |
| 78      | A259 Charles Purley Way                         | 16753.6 | 1.40% | 64.3        | 0.057                                     | 0.007                                      | 0.004                                       |
| 79      | A259 Rowan Way                                  | 12906.0 | 8.48% | 20          | 0.096                                     | 0.007                                      | 0.004                                       |
| 80      | A259 Rowan Way                                  | 12906.0 | 8.48% | 20          | 0.096                                     | 0.007                                      | 0.004                                       |
| 81      | Gladius Way                                     | 12906.0 | 3.48% | 80.4        | 0.047                                     | 0.005                                      | 0.003                                       |
| 82      | Gladius Way                                     | 12906.0 | 3.48% | 20          | 0.075                                     | 0.006                                      | 0.003                                       |
| 83      | Gladius Way                                     | 12906.0 | 3.48% | 20          | 0.075                                     | 0.006                                      | 0.003                                       |
| 84      | Site Access Road                                | 38.0    | 0.00% | 48.2        | 0.000                                     | 0.000                                      | 0.000                                       |
| 85      | B2233 Barnham Road                              | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 86      | B2233 Barnham Road                              | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 87      | A29 Westergate Street (North of Site Access)    | 12751.0 | 5.00% | 20          | 0.081                                     | 0.006                                      | 0.004                                       |
| 88      | A29 Westergate Street (North of Site Access)    | 12751.0 | 5.00% | 20          | 0.081                                     | 0.006                                      | 0.004                                       |
| 89      | A29 Westergate Street (South of Site Access)    | 12650.0 | 5.00% | 20          | 0.080                                     | 0.006                                      | 0.004                                       |
| 90      | A29 Shripney Road                               | 32979.3 | 2.00% | 20          | 0.177                                     | 0.014                                      | 0.008                                       |
| 91      | A29 Shripney Road                               | 32979.3 | 2.00% | 64.3        | 0.114                                     | 0.013                                      | 0.008                                       |
| 92      | A29 Shripney Road                               | 32979.3 | 2.00% | 64.3        | 0.114                                     | 0.013                                      | 0.008                                       |
| 93      | Church Lane                                     | 852.0   | 2.00% | 20          | 0.005                                     | 0.000                                      | 0.000                                       |
| 94      | B2233 Nyton Road (Between Oving Road and A29)   | 12934.0 | 2.62% | 20          | 0.072                                     | 0.006                                      | 0.003                                       |
| 95      | B2233 Nyton Road (South of A27)                 | 11136.3 | 2.46% | 48.2        | 0.042                                     | 0.005                                      | 0.003                                       |
| 96      | B2233 Nyton Road (South of A27)                 | 11136.3 | 2.46% | 20          | 0.061                                     | 0.005                                      | 0.003                                       |
| 97      | Oving Road                                      | 4947.9  | 1.42% | 48.2        | 0.018                                     | 0.002                                      | 0.001                                       |
| 98      | Oving Road                                      | 4947.9  | 1.42% | 20          | 0.026                                     | 0.002                                      | 0.001                                       |
| 99      | Oving Road                                      | 4947.9  | 1.42% | 20          | 0.026                                     | 0.002                                      | 0.001                                       |
| 100     | A27 Bognor Regis and Arundel                    | 28523.0 | 7.55% | 20          | 0.204                                     | 0.014                                      | 0.009                                       |
| 101     | A27 Bognor Regis and Arundel                    | 28523.0 | 7.55% | 112.6       | 0.155                                     | 0.014                                      | 0.008                                       |
| 102     | A27 Bognor Regis and Arundel                    | 28523.0 | 7.55% | 112.6       | 0.155                                     | 0.014                                      | 0.008                                       |
| 103     | A27 between A29 and A285                        | 20811.2 | 6.50% | 112.6       | 0.122                                     | 0.006                                      | 0.004                                       |
| 104     | A27 between A29 and A285                        | 20811.2 | 6.50% | 112.6       | 0.122                                     | 0.006                                      | 0.004                                       |
| 105     | A27 between A29 and A285                        | 20811.2 | 6.50% | 20          | 0.145                                     | 0.006                                      | 0.004                                       |
| 106     | A27 (W of Fontwell Roundabout)                  | 20475.5 | 7.20% | 112.6       | 0.120                                     | 0.006                                      | 0.004                                       |
| 107     | A27 (W of Fontwell Roundabout)                  | 13121.3 | 6.50% | 112.6       | 0.077                                     | 0.004                                      | 0.003                                       |
| 108     | A27 (W of Fontwell Roundabout)                  | 13121.3 | 6.50% | 112.6       | 0.077                                     | 0.004                                      | 0.003                                       |
| 109     | A27 (W of Fontwell Roundabout)                  | 13121.3 | 6.50% | 20          | 0.092                                     | 0.004                                      | 0.003                                       |
| 110     | A27 (W of Fontwell Roundabout)                  | 13121.3 | 6.50% | 112.6       | 0.077                                     | 0.004                                      | 0.003                                       |
| 111     | A27 (W of Fontwell Roundabout)                  | 13121.3 | 6.50% | 20          | 0.092                                     | 0.004                                      | 0.003                                       |

| Link ID | Road Name                                               | AADT    | %HDV  | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|---------|-------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 112     | A27 (W of Fontwell Roundabout)                          | 13121.3 | 6.50% | 112.6       | 0.077                                     | 0.004                                      | 0.003                                       |
| 113     | A27 (W of Fontwell Roundabout)                          | 13121.3 | 6.50% | 112.6       | 0.077                                     | 0.004                                      | 0.003                                       |
| 114     | B2233 Nyton Road (South of A27)                         | 11136.3 | 2.46% | 20          | 0.061                                     | 0.005                                      | 0.003                                       |
| 115     | A27 between A29 and A285                                | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 116     | A27 between A29 and A285                                | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 117     | A27 between A29 and A285                                | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 118     | A27 between A29 and A285                                | 20475.5 | 7.20% | 112.6       | 0.120                                     | 0.006                                      | 0.004                                       |
| 119     | A27 between A29 and A285                                | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 120     | A27 between A29 and A285                                | 20475.5 | 7.20% | 112.6       | 0.120                                     | 0.006                                      | 0.004                                       |
| 121     | A27 between A29 and A285                                | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 122     | A27 between A29 and A285                                | 20475.5 | 7.20% | 112.6       | 0.120                                     | 0.006                                      | 0.004                                       |
| 123     | A27 between A29 and A285                                | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 124     | A27 between A29 and A285                                | 20475.5 | 7.20% | 112.6       | 0.120                                     | 0.006                                      | 0.004                                       |
| 125     | A27 between A29 and A285                                | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 126     | B2233 Barnham Road                                      | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 127     | B2233 Barnham Road                                      | 10427.7 | 2.62% | 20          | 0.058                                     | 0.005                                      | 0.003                                       |
| 128     | B2233 Barnham Road                                      | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 129     | B2233 Barnham Road                                      | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 130     | B2233 Barnham Road                                      | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 131     | B2233 Barnham Road                                      | 10427.7 | 2.62% | 48.2        | 0.040                                     | 0.004                                      | 0.002                                       |
| 132     | Hook Lane                                               | 2865.9  | 1.00% | 48.2        | 0.010                                     | 0.001                                      | 0.001                                       |
| 133     | Oving Road                                              | 4947.9  | 1.42% | 20          | 0.026                                     | 0.002                                      | 0.001                                       |
| 134     | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 14392.9 | 9.10% | 64.3        | 0.059                                     | 0.007                                      | 0.004                                       |
| 135     | A27 (W of Fontwell Roundabout)                          | 20475.5 | 7.20% | 20          | 0.146                                     | 0.006                                      | 0.004                                       |
| 136     | Arundel Rndbt2                                          | 24693.0 | 7.00% | 20          | 0.173                                     | 0.012                                      | 0.007                                       |
| 137     | A29 Nyton Road                                          | 21616.0 | 5.75% | 20          | 0.142                                     | 0.010                                      | 0.006                                       |
| 138     | A259 Rowan Way                                          | 12906.0 | 8.48% | 20          | 0.096                                     | 0.007                                      | 0.004                                       |
| 139     | A259 Rowan Way                                          | 12906.0 | 8.48% | 20          | 0.096                                     | 0.007                                      | 0.004                                       |
| 140     | Gladius Way                                             | 12906.0 | 3.48% | 80.4        | 0.047                                     | 0.005                                      | 0.003                                       |
| 141     | B2233 Nyton Road (Between Oving Road and A29)           | 12934.0 | 2.62% | 20          | 0.072                                     | 0.006                                      | 0.003                                       |
| 142     | A29 East of Fontwell East Roundabout                    | 17877.2 | 7.75% | 20          | 0.129                                     | 0.009                                      | 0.005                                       |
| 143     | A29 East of Fontwell East Roundabout                    | 17877.2 | 7.75% | 96.5        | 0.078                                     | 0.008                                      | 0.005                                       |
| 144     | A27 between A29 near Bognor Regis                       | 38234.0 | 6.80% | 20          | 0.265                                     | 0.019                                      | 0.011                                       |

**Table D-2 – 2038 Without Proposed Development traffic data**

| Link ID | Road Name                                               | AADT     | %HDV  | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|----------|-------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 1       | A27 Bognor Regis and Arundel                            | 32264.2  | 7.55% | 112.6       | 0.049                                     | 0.014                                      | 0.008                                       |
| 2       | A27 Bognor Regis and Arundel                            | 32264.2  | 7.55% | 112.6       | 0.049                                     | 0.014                                      | 0.008                                       |
| 3       | A27 between A29 near Bognor Regis                       | 43877.7  | 6.80% | 112.6       | 0.067                                     | 0.019                                      | 0.010                                       |
| 4       | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 16817.9  | 9.08% | 64.3        | 0.020                                     | 0.008                                      | 0.004                                       |
| 5       | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 16817.9  | 9.08% | 64.3        | 0.020                                     | 0.008                                      | 0.004                                       |
| 6       | A29 Shripney Road                                       | 36117.5  | 2.00% | 20          | 0.062                                     | 0.014                                      | 0.008                                       |
| 7       | A29 Westergate Street (South of Site Access)            | 14326.4  | 5.00% | 20          | 0.028                                     | 0.006                                      | 0.003                                       |
| 8       | Hook Lane                                               | 5400     | 1.00% | 20          | 0.009                                     | 0.002                                      | 0.001                                       |
| 9       | A29 Westergate Street (South of Site Access)            | 14326.4  | 5.00% | 20          | 0.028                                     | 0.006                                      | 0.003                                       |
| 10      | Hook Lane                                               | 5400     | 1.00% | 48.2        | 0.006                                     | 0.002                                      | 0.001                                       |
| 11      | B2233 Nyton Road (Between Oving Road and A29)           | 14517.1  | 2.62% | 48.2        | 0.018                                     | 0.006                                      | 0.003                                       |
| 12      | B2233 Nyton Road (Between Oving Road and A29)           | 14517.1  | 2.62% | 20          | 0.026                                     | 0.006                                      | 0.003                                       |
| 13      | A29 Nyton Road                                          | 24518.06 | 5.75% | 20          | 0.049                                     | 0.011                                      | 0.006                                       |
| 14      | A29 Shripney Road                                       | 36117.54 | 2.00% | 20          | 0.062                                     | 0.014                                      | 0.008                                       |
| 15      | A29 Shripney Road                                       | 36117.54 | 2.00% | 64.3        | 0.040                                     | 0.014                                      | 0.008                                       |
| 16      | A29 Fontwell Avenue (North Memorial Roundabout)         | 9475     | 2.13% | 20          | 0.016                                     | 0.004                                      | 0.002                                       |
| 17      | B2233 Barnham Road                                      | 11069.02 | 2.62% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 18      | A27 (W of Fontwell Roundabout)                          | 14878.2  | 6.60% | 20          | 0.033                                     | 0.004                                      | 0.002                                       |
| 19      | A27 (W of Fontwell Roundabout)                          | 23270.0  | 6.00% | 20          | 0.051                                     | 0.006                                      | 0.004                                       |
| 20      | A27 (W of Fontwell Roundabout)                          | 23270.0  | 6.00% | 20          | 0.051                                     | 0.006                                      | 0.004                                       |
| 21      | A27 between A29 and A285                                | 23463.1  | 6.50% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 22      | A259 Charles Purley Way                                 | 17337.5  | 1.45% | 64.3        | 0.019                                     | 0.006                                      | 0.004                                       |
| 23      | B2233 Barnham Road                                      | 11069.02 | 2.62% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 24      | A29 Westergate Street (South of Site Access)            | 14326.4  | 5.00% | 48.2        | 0.018                                     | 0.006                                      | 0.003                                       |
| 25      | A29 Westergate Street (South of Site Access)            | 14326.4  | 5.00% | 48.2        | 0.018                                     | 0.006                                      | 0.003                                       |
| 26      | A29 Westergate Street (South of Site Access)            | 14326.4  | 5.00% | 48.2        | 0.018                                     | 0.006                                      | 0.003                                       |
| 27      | A259 Charles Purley Way                                 | 17337.5  | 1.45% | 64.3        | 0.019                                     | 0.006                                      | 0.004                                       |
| 28      | A259 Charles Purley Way                                 | 17337.5  | 1.45% | 64.3        | 0.019                                     | 0.006                                      | 0.004                                       |
| 29      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 16817.9  | 9.08% | 64.3        | 0.020                                     | 0.008                                      | 0.004                                       |
| 30      | B2233 Barnham Road                                      | 11069.0  | 2.62% | 20          | 0.020                                     | 0.004                                      | 0.002                                       |
| 31      | A27 (W of Fontwell Roundabout)                          | 32264.2  | 7.55% | 20          | 0.051                                     | 0.006                                      | 0.004                                       |
| 32      | Church Lane                                             | 32264.2  | 7.55% | 20          | 0.002                                     | 0.000                                      | 0.000                                       |

| Link ID | Road Name                                               | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 33      | B2233 Barnham Road                                      | 11069.0 | 2.6% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 34      | Ivy Lane                                                | 1596.1  | 0.0% | 20          | 0.003                                     | 0.001                                      | 0.000                                       |
| 35      | A29 Westergate Street (North of Site Access)            | 15439.7 | 5.0% | 20          | 0.030                                     | 0.006                                      | 0.004                                       |
| 36      | A29 Westergate Street (North of Site Access)            | 15439.7 | 5.0% | 48.2        | 0.020                                     | 0.006                                      | 0.003                                       |
| 37      | Meadow Way                                              | 347.9   | 1.4% | 20          | 0.001                                     | 0.000                                      | 0.000                                       |
| 38      | A29 Westergate Street (North of Site Access)            | 15439.7 | 5.0% | 48.2        | 0.020                                     | 0.006                                      | 0.003                                       |
| 39      | A29 Westergate Street (South of Site Access)            | 14326.4 | 5.0% | 48.2        | 0.018                                     | 0.006                                      | 0.003                                       |
| 40      | Hook Lane                                               | 5400.0  | 1.0% | 48.2        | 0.006                                     | 0.002                                      | 0.001                                       |
| 41      | A29 Westergate Street (South of Site Access)            | 14326.4 | 5.0% | 20          | 0.028                                     | 0.006                                      | 0.003                                       |
| 42      | A29 Fontwell Avenue (North Memorial Roundabout)         | 9475.0  | 2.1% | 48.2        | 0.012                                     | 0.004                                      | 0.002                                       |
| 43      | A27 (W of Fontwell Roundabout)                          | 23270.0 | 6.0% | 112.6       | 0.039                                     | 0.005                                      | 0.003                                       |
| 44      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 16817.9 | 9.1% | 20          | 0.038                                     | 0.008                                      | 0.004                                       |
| 45      | A27 (W of Fontwell Roundabout)                          | 14878.2 | 6.6% | 112.6       | 0.025                                     | 0.004                                      | 0.002                                       |
| 46      | Arundel Rndbt1                                          | 21282.0 | 7.0% | 20          | 0.045                                     | 0.009                                      | 0.005                                       |
| 47      | Arundel Rndbt4                                          | 23597.0 | 6.9% | 20          | 0.049                                     | 0.010                                      | 0.006                                       |
| 48      | Arundel Rndbt3                                          | 25697.0 | 7.0% | 20          | 0.054                                     | 0.011                                      | 0.006                                       |
| 49      | A27 between A29 near Bognor Regis                       | 43877.7 | 6.8% | 20          | 0.091                                     | 0.019                                      | 0.011                                       |
| 50      | Realigned A29 (North of Site Access)                    | 25799.5 | 0.0% | 20          | 0.040                                     | 0.009                                      | 0.005                                       |
| 51      | Realigned A29 (North of Site Access)                    | 25799.5 | 0.0% | 20          | 0.040                                     | 0.009                                      | 0.005                                       |
| 52      | Realigned A29 (North of Site Access)                    | 25799.5 | 0.0% | 48.2        | 0.030                                     | 0.009                                      | 0.005                                       |
| 53      | Realigned A29 (North of Site Access)                    | 25799.5 | 0.0% | 48.2        | 0.030                                     | 0.009                                      | 0.005                                       |
| 54      | Realigned A29 (North of Site Access)                    | 25799.5 | 0.0% | 20          | 0.040                                     | 0.009                                      | 0.005                                       |
| 55      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 20          | 0.033                                     | 0.007                                      | 0.004                                       |
| 56      | Realigned A29 (North of Site Access)                    | 25799.5 | 0.0% | 20          | 0.040                                     | 0.009                                      | 0.005                                       |
| 57      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 20          | 0.033                                     | 0.007                                      | 0.004                                       |
| 58      | Site Access Road                                        | 38.0    | 0.0% | 48.2        | 0.000                                     | 0.000                                      | 0.000                                       |
| 59      | Realigned A29 (North of Site Access)                    | 25799.5 | 0.0% | 20          | 0.040                                     | 0.009                                      | 0.005                                       |
| 60      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 48.2        | 0.023                                     | 0.007                                      | 0.004                                       |
| 61      | Realigned A29 (North of Site Access)                    | 25799.5 | 0.0% | 48.2        | 0.030                                     | 0.009                                      | 0.005                                       |
| 62      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 48.2        | 0.023                                     | 0.007                                      | 0.004                                       |
| 63      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 48.2        | 0.023                                     | 0.007                                      | 0.004                                       |
| 64      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 16817.9 | 9.1% | 20          | 0.038                                     | 0.008                                      | 0.004                                       |
| 65      | A29 Shripney Road                                       | 36117.5 | 2.0% | 20          | 0.062                                     | 0.014                                      | 0.008                                       |
| 66      | B2233 Barnham Road                                      | 11069.0 | 2.6% | 20          | 0.020                                     | 0.004                                      | 0.002                                       |

| Link ID | Road Name                                       | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|-------------------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 67      | B2233 Barnham Road                              | 11069.0 | 2.6% | 20          | 0.020                                     | 0.004                                      | 0.002                                       |
| 68      | Realigned A29 (North of Site Access)            | 25799.5 | 0.0% | 48.2        | 0.030                                     | 0.009                                      | 0.005                                       |
| 69      | A29 Nyton Road                                  | 24518.1 | 5.7% | 20          | 0.049                                     | 0.011                                      | 0.006                                       |
| 70      | A29 Westergate Street (North of Site Access)    | 15439.7 | 5.0% | 48.2        | 0.020                                     | 0.006                                      | 0.003                                       |
| 71      | Ivy Lane                                        | 1596.1  | 0.0% | 48.2        | 0.002                                     | 0.001                                      | 0.000                                       |
| 72      | Ivy Lane                                        | 1596.1  | 0.0% | 48.2        | 0.002                                     | 0.001                                      | 0.000                                       |
| 73      | A29 Westergate Street (North of Site Access)    | 15439.7 | 5.0% | 48.2        | 0.020                                     | 0.006                                      | 0.003                                       |
| 74      | A29 Westergate Street (South of Site Access)    | 14326.4 | 5.0% | 20          | 0.028                                     | 0.006                                      | 0.003                                       |
| 75      | Meadow Way                                      | 347.9   | 1.4% | 20          | 0.001                                     | 0.000                                      | 0.000                                       |
| 76      | Meadow Way                                      | 347.9   | 1.4% | 48.2        | 0.000                                     | 0.000                                      | 0.000                                       |
| 77      | A29 Fontwell Avenue (North Memorial Roundabout) | 9475.0  | 2.1% | 48.2        | 0.012                                     | 0.004                                      | 0.002                                       |
| 78      | A259 Charles Purley Way                         | 17337.5 | 1.4% | 64.3        | 0.019                                     | 0.006                                      | 0.004                                       |
| 79      | A259 Rowan Way                                  | 14651.7 | 8.5% | 20          | 0.032                                     | 0.007                                      | 0.004                                       |
| 80      | A259 Rowan Way                                  | 14651.7 | 8.5% | 20          | 0.032                                     | 0.007                                      | 0.004                                       |
| 81      | Gladius Way                                     | 14485.7 | 3.5% | 80.4        | 0.016                                     | 0.006                                      | 0.003                                       |
| 82      | Gladius Way                                     | 14485.7 | 3.5% | 20          | 0.026                                     | 0.006                                      | 0.003                                       |
| 83      | Gladius Way                                     | 14485.7 | 3.5% | 20          | 0.026                                     | 0.006                                      | 0.003                                       |
| 84      | Site Access Road                                | 38.0    | 0.0% | 48.2        | 0.000                                     | 0.000                                      | 0.000                                       |
| 85      | B2233 Barnham Road                              | 11069.0 | 2.6% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 86      | B2233 Barnham Road                              | 11069.0 | 2.6% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 87      | A29 Westergate Street (North of Site Access)    | 15439.7 | 5.0% | 20          | 0.030                                     | 0.006                                      | 0.004                                       |
| 88      | A29 Westergate Street (North of Site Access)    | 15439.7 | 5.0% | 20          | 0.030                                     | 0.006                                      | 0.004                                       |
| 89      | A29 Westergate Street (South of Site Access)    | 14326.4 | 5.0% | 20          | 0.028                                     | 0.006                                      | 0.003                                       |
| 90      | A29 Shripney Road                               | 36117.5 | 2.0% | 20          | 0.062                                     | 0.014                                      | 0.008                                       |
| 91      | A29 Shripney Road                               | 36117.5 | 2.0% | 64.3        | 0.040                                     | 0.014                                      | 0.008                                       |
| 92      | A29 Shripney Road                               | 36117.5 | 2.0% | 64.3        | 0.040                                     | 0.014                                      | 0.008                                       |
| 93      | Church Lane                                     | 956.3   | 2.0% | 20          | 0.002                                     | 0.000                                      | 0.000                                       |
| 94      | B2233 Nyton Road (Between Oving Road and A29)   | 14517.1 | 2.6% | 20          | 0.026                                     | 0.006                                      | 0.003                                       |
| 95      | B2233 Nyton Road (South of A27)                 | 12093.1 | 2.5% | 48.2        | 0.015                                     | 0.005                                      | 0.003                                       |
| 96      | B2233 Nyton Road (South of A27)                 | 12093.1 | 2.5% | 20          | 0.021                                     | 0.005                                      | 0.003                                       |
| 97      | Oving Road                                      | 6112.5  | 1.4% | 48.2        | 0.007                                     | 0.002                                      | 0.001                                       |
| 98      | Oving Road                                      | 6112.5  | 1.4% | 20          | 0.010                                     | 0.002                                      | 0.001                                       |
| 99      | Oving Road                                      | 6112.5  | 1.4% | 20          | 0.010                                     | 0.002                                      | 0.001                                       |
| 100     | A27 Bognor Regis and Arundel                    | 32264.2 | 7.6% | 20          | 0.069                                     | 0.014                                      | 0.008                                       |
| 101     | A27 Bognor Regis and Arundel                    | 32264.2 | 7.6% | 112.6       | 0.049                                     | 0.014                                      | 0.008                                       |
| 102     | A27 Bognor Regis and Arundel                    | 32264.2 | 7.6% | 112.6       | 0.049                                     | 0.014                                      | 0.008                                       |
| 103     | A27 between A29 and A285                        | 23463.1 | 6.5% | 112.6       | 0.039                                     | 0.006                                      | 0.003                                       |
| 104     | A27 between A29 and A285                        | 23463.1 | 6.5% | 112.6       | 0.039                                     | 0.006                                      | 0.003                                       |
| 105     | A27 between A29 and A285                        | 23463.1 | 6.5% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 106     | A27 (W of Fontwell Roundabout)                  | 14878.2 | 6.6% | 112.6       | 0.025                                     | 0.004                                      | 0.002                                       |

| Link ID | Road Name                                               | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 107     | A27 (W of Fontwell Roundabout)                          | 23270.0 | 6.0% | 112.6       | 0.039                                     | 0.005                                      | 0.003                                       |
| 108     | A27 (W of Fontwell Roundabout)                          | 23270.0 | 6.0% | 112.6       | 0.039                                     | 0.005                                      | 0.003                                       |
| 109     | A27 (W of Fontwell Roundabout)                          | 23270.0 | 6.0% | 20          | 0.051                                     | 0.006                                      | 0.004                                       |
| 110     | A27 (W of Fontwell Roundabout)                          | 23270.0 | 6.0% | 112.6       | 0.039                                     | 0.005                                      | 0.003                                       |
| 111     | A27 (W of Fontwell Roundabout)                          | 23270.0 | 6.0% | 20          | 0.051                                     | 0.006                                      | 0.004                                       |
| 112     | A27 (W of Fontwell Roundabout)                          | 23270.0 | 6.0% | 112.6       | 0.039                                     | 0.005                                      | 0.003                                       |
| 113     | A27 (W of Fontwell Roundabout)                          | 23270.0 | 6.0% | 112.6       | 0.039                                     | 0.005                                      | 0.003                                       |
| 114     | B2233 Nyton Road (South of A27)                         | 12093.1 | 2.5% | 20          | 0.021                                     | 0.005                                      | 0.003                                       |
| 115     | A27 between A29 and A285                                | 23087.1 | 7.2% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 116     | A27 between A29 and A285                                | 23087.1 | 7.2% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 117     | A27 between A29 and A285                                | 23087.1 | 7.2% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 118     | A27 between A29 and A285                                | 23087.1 | 7.2% | 112.6       | 0.039                                     | 0.006                                      | 0.003                                       |
| 119     | A27 between A29 and A285                                | 23087.1 | 7.2% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 120     | A27 between A29 and A285                                | 23087.1 | 7.2% | 112.6       | 0.039                                     | 0.006                                      | 0.003                                       |
| 121     | A27 between A29 and A285                                | 23087.1 | 7.2% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 122     | A27 between A29 and A285                                | 23087.1 | 7.2% | 112.6       | 0.039                                     | 0.006                                      | 0.003                                       |
| 123     | A27 between A29 and A285                                | 23087.1 | 7.2% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 124     | A27 between A29 and A285                                | 23087.1 | 7.2% | 112.6       | 0.039                                     | 0.006                                      | 0.003                                       |
| 125     | A27 between A29 and A285                                | 23087.1 | 7.2% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 126     | B2233 Barnham Road                                      | 11069.0 | 2.6% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 127     | B2233 Barnham Road                                      | 11069.0 | 2.6% | 20          | 0.020                                     | 0.004                                      | 0.002                                       |
| 128     | B2233 Barnham Road                                      | 11069.0 | 2.6% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 129     | B2233 Barnham Road                                      | 11069.0 | 2.6% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 130     | B2233 Barnham Road                                      | 11069.0 | 2.6% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 131     | B2233 Barnham Road                                      | 11069.0 | 2.6% | 48.2        | 0.014                                     | 0.004                                      | 0.002                                       |
| 132     | Hook Lane                                               | 5400.0  | 1.0% | 48.2        | 0.006                                     | 0.002                                      | 0.001                                       |
| 133     | Oving Road                                              | 6112.5  | 1.4% | 20          | 0.010                                     | 0.002                                      | 0.001                                       |
| 134     | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 16817.9 | 9.1% | 64.3        | 0.020                                     | 0.008                                      | 0.004                                       |
| 135     | A27 (W of Fontwell Roundabout)                          | 14878.2 | 6.6% | 20          | 0.033                                     | 0.004                                      | 0.002                                       |
| 136     | Arundel Rndbt2                                          | 28080.0 | 6.9% | 20          | 0.059                                     | 0.012                                      | 0.007                                       |
| 137     | A29 Nyton Road                                          | 24518.1 | 5.7% | 20          | 0.049                                     | 0.011                                      | 0.006                                       |
| 138     | A259 Rowan Way                                          | 14651.7 | 8.5% | 20          | 0.032                                     | 0.007                                      | 0.004                                       |
| 139     | A259 Rowan Way                                          | 14651.7 | 8.5% | 20          | 0.032                                     | 0.007                                      | 0.004                                       |
| 140     | Gladius Way                                             | 14485.7 | 3.5% | 80.4        | 0.016                                     | 0.006                                      | 0.003                                       |
| 141     | B2233 Nyton Road (Between Oving Road and A29)           | 14517.1 | 2.6% | 20          | 0.026                                     | 0.006                                      | 0.003                                       |
| 142     | A29 East of Fontwell East Roundabout                    | 20550.0 | 6.2% | 20          | 0.042                                     | 0.009                                      | 0.005                                       |

| Link ID | Road Name                            | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|--------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 143     | A29 East of Fontwell East Roundabout | 20550.0 | 6.2% | 96.5        | 0.026                                     | 0.009                                      | 0.005                                       |
| 144     | A27 between A29 near Bognor Regis    | 43877.7 | 6.8% | 20          | 0.091                                     | 0.019                                      | 0.011                                       |

**Table D-3 – 2038 With Proposed Development traffic data**

| Link ID | Road Name                                               | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 1       | A27 Bognor Regis and Arundel                            | 17079.0 | 7.5% | 112.6       | 0.026                                     | 0.007                                      | 0.004                                       |
| 2       | A27 Bognor Regis and Arundel                            | 17079.0 | 7.5% | 112.6       | 0.026                                     | 0.007                                      | 0.004                                       |
| 3       | A27 between A29 near Bognor Regis                       | 44610.6 | 6.8% | 112.6       | 0.068                                     | 0.019                                      | 0.010                                       |
| 4       | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 17092.5 | 9.1% | 64.3        | 0.020                                     | 0.008                                      | 0.004                                       |
| 5       | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 17092.5 | 9.1% | 64.3        | 0.020                                     | 0.008                                      | 0.004                                       |
| 6       | A29 Shripney Road                                       | 36698.6 | 2.0% | 20          | 0.063                                     | 0.014                                      | 0.008                                       |
| 7       | A29 Westergate Street (South of Site Access)            | 15288.4 | 5.0% | 20          | 0.030                                     | 0.006                                      | 0.004                                       |
| 8       | Hook Lane                                               | 5400.0  | 1.0% | 20          | 0.009                                     | 0.002                                      | 0.001                                       |
| 9       | A29 Westergate Street (South of Site Access)            | 15288.4 | 5.0% | 20          | 0.030                                     | 0.006                                      | 0.004                                       |
| 10      | Hook Lane                                               | 5400.0  | 1.0% | 48.2        | 0.006                                     | 0.002                                      | 0.001                                       |
| 11      | B2233 Nyton Road (Between Oving Road and A29)           | 15199.4 | 2.6% | 48.2        | 0.019                                     | 0.006                                      | 0.003                                       |
| 12      | B2233 Nyton Road (Between Oving Road and A29)           | 15199.4 | 2.6% | 20          | 0.027                                     | 0.006                                      | 0.003                                       |
| 13      | A29 Nyton Road                                          | 24908.1 | 5.7% | 20          | 0.050                                     | 0.011                                      | 0.006                                       |
| 14      | A29 Shripney Road                                       | 36698.6 | 2.0% | 20          | 0.063                                     | 0.014                                      | 0.008                                       |
| 15      | A29 Shripney Road                                       | 36698.6 | 2.0% | 64.3        | 0.041                                     | 0.014                                      | 0.008                                       |
| 16      | A29 Fontwell Avenue (North Memorial Roundabout)         | 9587.0  | 5.0% | 20          | 0.019                                     | 0.004                                      | 0.002                                       |
| 17      | B2233 Barnham Road                                      | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 18      | A27 (W of Fontwell Roundabout)                          | 15041.2 | 6.6% | 20          | 0.033                                     | 0.004                                      | 0.002                                       |
| 19      | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 20      | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 21      | A27 between A29 and A285                                | 23626.1 | 6.5% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 22      | A259 Charles Purley Way                                 | 17449.5 | 1.4% | 64.3        | 0.019                                     | 0.007                                      | 0.004                                       |
| 23      | B2233 Barnham Road                                      | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 24      | A29 Westergate Street (South of Site Access)            | 15288.4 | 5.0% | 48.2        | 0.020                                     | 0.006                                      | 0.003                                       |
| 25      | A29 Westergate Street (South of Site Access)            | 15288.4 | 5.0% | 48.2        | 0.020                                     | 0.006                                      | 0.003                                       |
| 26      | A29 Westergate Street (South of Site Access)            | 15288.4 | 5.0% | 48.2        | 0.020                                     | 0.006                                      | 0.003                                       |
| 27      | A259 Charles Purley Way                                 | 17449.5 | 1.4% | 64.3        | 0.019                                     | 0.007                                      | 0.004                                       |
| 28      | A259 Charles Purley Way                                 | 17449.5 | 1.4% | 64.3        | 0.019                                     | 0.007                                      | 0.004                                       |
| 29      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 17092.5 | 9.1% | 64.3        | 0.020                                     | 0.008                                      | 0.004                                       |
| 30      | B2233 Barnham Road                                      | 11682.0 | 2.6% | 20          | 0.021                                     | 0.005                                      | 0.003                                       |
| 31      | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 32      | Church Lane                                             | 956.3   | 2.0% | 20          | 0.002                                     | 0.000                                      | 0.000                                       |

| Link ID | Road Name                                               | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 33      | B2233 Barnham Road                                      | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 34      | Ivy Lane                                                | 1596.1  | 0.0% | 20          | 0.003                                     | 0.001                                      | 0.000                                       |
| 35      | A29 Westergate Street (North of Site Access)            | 17150.7 | 5.0% | 20          | 0.033                                     | 0.007                                      | 0.004                                       |
| 36      | A29 Westergate Street (North of Site Access)            | 17150.7 | 5.0% | 48.2        | 0.022                                     | 0.007                                      | 0.004                                       |
| 37      | Meadow Way                                              | 347.9   | 1.4% | 20          | 0.001                                     | 0.000                                      | 0.000                                       |
| 38      | A29 Westergate Street (North of Site Access)            | 17150.7 | 5.0% | 48.2        | 0.022                                     | 0.007                                      | 0.004                                       |
| 39      | A29 Westergate Street (South of Site Access)            | 15288.4 | 5.0% | 48.2        | 0.020                                     | 0.006                                      | 0.003                                       |
| 40      | Hook Lane                                               | 5400.0  | 1.0% | 48.2        | 0.006                                     | 0.002                                      | 0.001                                       |
| 41      | A29 Westergate Street (South of Site Access)            | 15288.4 | 5.0% | 20          | 0.030                                     | 0.006                                      | 0.004                                       |
| 42      | A29 Fontwell Avenue (North Memorial Roundabout)         | 9587.0  | 5.0% | 48.2        | 0.012                                     | 0.004                                      | 0.002                                       |
| 43      | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 112.6       | 0.040                                     | 0.006                                      | 0.003                                       |
| 44      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 17092.5 | 9.1% | 20          | 0.038                                     | 0.008                                      | 0.004                                       |
| 45      | A27 (W of Fontwell Roundabout)                          | 15041.2 | 6.6% | 112.6       | 0.025                                     | 0.004                                      | 0.002                                       |
| 46      | Arundel Rndbt1                                          | 21671.0 | 7.0% | 20          | 0.045                                     | 0.010                                      | 0.005                                       |
| 47      | Arundel Rndbt4                                          | 24020.0 | 6.9% | 20          | 0.050                                     | 0.011                                      | 0.006                                       |
| 48      | Arundel Rndbt3                                          | 26136.0 | 7.0% | 20          | 0.055                                     | 0.012                                      | 0.006                                       |
| 49      | A27 between A29 near Bognor Regis                       | 44610.6 | 6.8% | 20          | 0.093                                     | 0.020                                      | 0.011                                       |
| 50      | Realigned A29 (North of Site Access)                    | 25799.5 | 1.0% | 20          | 0.042                                     | 0.010                                      | 0.005                                       |
| 51      | Realigned A29 (North of Site Access)                    | 25799.5 | 1.0% | 20          | 0.042                                     | 0.010                                      | 0.005                                       |
| 52      | Realigned A29 (North of Site Access)                    | 25799.5 | 1.0% | 48.2        | 0.031                                     | 0.010                                      | 0.005                                       |
| 53      | Realigned A29 (North of Site Access)                    | 25799.5 | 1.0% | 48.2        | 0.031                                     | 0.010                                      | 0.005                                       |
| 54      | Realigned A29 (North of Site Access)                    | 25799.5 | 1.0% | 20          | 0.042                                     | 0.010                                      | 0.005                                       |
| 55      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 20          | 0.033                                     | 0.007                                      | 0.004                                       |
| 56      | Realigned A29 (North of Site Access)                    | 25799.5 | 1.0% | 20          | 0.042                                     | 0.010                                      | 0.005                                       |
| 57      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 20          | 0.033                                     | 0.007                                      | 0.004                                       |
| 58      | Site Access Road                                        | 3756.0  | 1.0% | 48.2        | 0.004                                     | 0.001                                      | 0.001                                       |
| 59      | Realigned A29 (North of Site Access)                    | 25799.5 | 1.0% | 20          | 0.042                                     | 0.010                                      | 0.005                                       |
| 60      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 48.2        | 0.023                                     | 0.007                                      | 0.004                                       |
| 61      | Realigned A29 (North of Site Access)                    | 25799.5 | 1.0% | 48.2        | 0.031                                     | 0.010                                      | 0.005                                       |
| 62      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 48.2        | 0.023                                     | 0.007                                      | 0.004                                       |
| 63      | Realigned A29 (South of Site Access)                    | 18151.0 | 3.5% | 48.2        | 0.023                                     | 0.007                                      | 0.004                                       |
| 64      | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 17092.5 | 9.1% | 20          | 0.038                                     | 0.008                                      | 0.004                                       |
| 65      | A29 Shripney Road                                       | 36698.6 | 2.0% | 20          | 0.063                                     | 0.014                                      | 0.008                                       |
| 66      | B2233 Barnham Road                                      | 11682.0 | 2.6% | 20          | 0.021                                     | 0.005                                      | 0.003                                       |

| Link ID | Road Name                                       | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|-------------------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 67      | B2233 Barnham Road                              | 11682.0 | 2.6% | 20          | 0.021                                     | 0.005                                      | 0.003                                       |
| 68      | Realigned A29 (North of Site Access)            | 25799.5 | 1.0% | 48.2        | 0.031                                     | 0.010                                      | 0.005                                       |
| 69      | A29 Nyton Road                                  | 24908.1 | 5.7% | 20          | 0.050                                     | 0.011                                      | 0.006                                       |
| 70      | A29 Westergate Street (North of Site Access)    | 17150.7 | 5.0% | 48.2        | 0.022                                     | 0.007                                      | 0.004                                       |
| 71      | Ivy Lane                                        | 1596.1  | 0.0% | 48.2        | 0.002                                     | 0.001                                      | 0.000                                       |
| 72      | Ivy Lane                                        | 1596.1  | 0.0% | 48.2        | 0.002                                     | 0.001                                      | 0.000                                       |
| 73      | A29 Westergate Street (North of Site Access)    | 17150.7 | 5.0% | 48.2        | 0.022                                     | 0.007                                      | 0.004                                       |
| 74      | A29 Westergate Street (South of Site Access)    | 15288.4 | 5.0% | 20          | 0.030                                     | 0.006                                      | 0.004                                       |
| 75      | Meadow Way                                      | 347.9   | 1.4% | 20          | 0.001                                     | 0.000                                      | 0.000                                       |
| 76      | Meadow Way                                      | 347.9   | 1.4% | 48.2        | 0.000                                     | 0.000                                      | 0.000                                       |
| 77      | A29 Fontwell Avenue (North Memorial Roundabout) | 9587.0  | 5.0% | 48.2        | 0.012                                     | 0.004                                      | 0.002                                       |
| 78      | A259 Charles Purley Way                         | 17449.5 | 1.4% | 64.3        | 0.019                                     | 0.007                                      | 0.004                                       |
| 79      | A259 Rowan Way                                  | 14715.7 | 8.5% | 20          | 0.032                                     | 0.007                                      | 0.004                                       |
| 80      | A259 Rowan Way                                  | 14715.7 | 8.5% | 20          | 0.032                                     | 0.007                                      | 0.004                                       |
| 81      | Gladius Way                                     | 14549.7 | 3.5% | 80.4        | 0.016                                     | 0.006                                      | 0.003                                       |
| 82      | Gladius Way                                     | 14549.7 | 3.5% | 20          | 0.027                                     | 0.006                                      | 0.003                                       |
| 83      | Gladius Way                                     | 14549.7 | 3.5% | 20          | 0.027                                     | 0.006                                      | 0.003                                       |
| 84      | Site Access Road                                | 3756.0  | 1.0% | 48.2        | 0.004                                     | 0.001                                      | 0.001                                       |
| 85      | B2233 Barnham Road                              | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 86      | B2233 Barnham Road                              | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 87      | A29 Westergate Street (North of Site Access)    | 17150.7 | 5.0% | 20          | 0.033                                     | 0.007                                      | 0.004                                       |
| 88      | A29 Westergate Street (North of Site Access)    | 17150.7 | 5.0% | 20          | 0.033                                     | 0.007                                      | 0.004                                       |
| 89      | A29 Westergate Street (South of Site Access)    | 15288.4 | 5.0% | 20          | 0.030                                     | 0.006                                      | 0.004                                       |
| 90      | A29 Shripney Road                               | 36698.6 | 2.0% | 20          | 0.063                                     | 0.014                                      | 0.008                                       |
| 91      | A29 Shripney Road                               | 36698.6 | 2.0% | 64.3        | 0.041                                     | 0.014                                      | 0.008                                       |
| 92      | A29 Shripney Road                               | 36698.6 | 2.0% | 64.3        | 0.041                                     | 0.014                                      | 0.008                                       |
| 93      | Church Lane                                     | 956.3   | 2.0% | 20          | 0.002                                     | 0.000                                      | 0.000                                       |
| 94      | B2233 Nyton Road (Between Oving Road and A29)   | 15199.4 | 2.6% | 20          | 0.027                                     | 0.006                                      | 0.003                                       |
| 95      | B2233 Nyton Road (South of A27)                 | 12775.4 | 2.5% | 48.2        | 0.016                                     | 0.005                                      | 0.003                                       |
| 96      | B2233 Nyton Road (South of A27)                 | 12775.4 | 2.5% | 20          | 0.022                                     | 0.005                                      | 0.003                                       |
| 97      | Oving Road                                      | 6224.5  | 1.4% | 48.2        | 0.007                                     | 0.002                                      | 0.001                                       |
| 98      | Oving Road                                      | 6224.5  | 1.4% | 20          | 0.010                                     | 0.002                                      | 0.001                                       |
| 99      | Oving Road                                      | 6224.5  | 1.4% | 20          | 0.010                                     | 0.002                                      | 0.001                                       |
| 100     | A27 Bognor Regis and Arundel                    | 17079.0 | 7.5% | 20          | 0.036                                     | 0.008                                      | 0.004                                       |
| 101     | A27 Bognor Regis and Arundel                    | 17079.0 | 7.5% | 112.6       | 0.026                                     | 0.007                                      | 0.004                                       |
| 102     | A27 Bognor Regis and Arundel                    | 17079.0 | 7.5% | 112.6       | 0.026                                     | 0.007                                      | 0.004                                       |
| 103     | A27 between A29 and A285                        | 23626.1 | 6.5% | 112.6       | 0.040                                     | 0.006                                      | 0.003                                       |
| 104     | A27 between A29 and A285                        | 23626.1 | 6.5% | 112.6       | 0.040                                     | 0.006                                      | 0.003                                       |
| 105     | A27 between A29 and A285                        | 23626.1 | 6.5% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 106     | A27 (W of Fontwell Roundabout)                  | 15041.2 | 6.6% | 112.6       | 0.025                                     | 0.004                                      | 0.002                                       |

| Link ID | Road Name                                               | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|---------------------------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 107     | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 112.6       | 0.040                                     | 0.006                                      | 0.003                                       |
| 108     | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 112.6       | 0.040                                     | 0.006                                      | 0.003                                       |
| 109     | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 110     | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 112.6       | 0.040                                     | 0.006                                      | 0.003                                       |
| 111     | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 20          | 0.052                                     | 0.006                                      | 0.004                                       |
| 112     | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 112.6       | 0.040                                     | 0.006                                      | 0.003                                       |
| 113     | A27 (W of Fontwell Roundabout)                          | 23840.0 | 6.0% | 112.6       | 0.040                                     | 0.006                                      | 0.003                                       |
| 114     | B2233 Nyton Road (South of A27)                         | 12775.4 | 2.5% | 20          | 0.022                                     | 0.005                                      | 0.003                                       |
| 115     | A27 between A29 and A285                                | 23496.1 | 7.2% | 20          | 0.053                                     | 0.006                                      | 0.004                                       |
| 116     | A27 between A29 and A285                                | 23496.1 | 7.2% | 20          | 0.053                                     | 0.006                                      | 0.004                                       |
| 117     | A27 between A29 and A285                                | 23496.1 | 7.2% | 20          | 0.053                                     | 0.006                                      | 0.004                                       |
| 118     | A27 between A29 and A285                                | 23496.1 | 7.2% | 112.6       | 0.039                                     | 0.006                                      | 0.004                                       |
| 119     | A27 between A29 and A285                                | 23496.1 | 7.2% | 20          | 0.053                                     | 0.006                                      | 0.004                                       |
| 120     | A27 between A29 and A285                                | 23496.1 | 7.2% | 112.6       | 0.039                                     | 0.006                                      | 0.004                                       |
| 121     | A27 between A29 and A285                                | 23496.1 | 7.2% | 20          | 0.053                                     | 0.006                                      | 0.004                                       |
| 122     | A27 between A29 and A285                                | 23496.1 | 7.2% | 112.6       | 0.039                                     | 0.006                                      | 0.004                                       |
| 123     | A27 between A29 and A285                                | 23496.1 | 7.2% | 20          | 0.053                                     | 0.006                                      | 0.004                                       |
| 124     | A27 between A29 and A285                                | 23496.1 | 7.2% | 112.6       | 0.039                                     | 0.006                                      | 0.004                                       |
| 125     | A27 between A29 and A285                                | 23496.1 | 7.2% | 20          | 0.053                                     | 0.006                                      | 0.004                                       |
| 126     | B2233 Barnham Road                                      | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 127     | B2233 Barnham Road                                      | 11682.0 | 2.6% | 20          | 0.021                                     | 0.005                                      | 0.003                                       |
| 128     | B2233 Barnham Road                                      | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 129     | B2233 Barnham Road                                      | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 130     | B2233 Barnham Road                                      | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 131     | B2233 Barnham Road                                      | 11682.0 | 2.6% | 48.2        | 0.014                                     | 0.005                                      | 0.002                                       |
| 132     | Hook Lane                                               | 5400.0  | 1.0% | 48.2        | 0.006                                     | 0.002                                      | 0.001                                       |
| 133     | Oving Road                                              | 6224.5  | 1.4% | 20          | 0.010                                     | 0.002                                      | 0.001                                       |
| 134     | A29 Fontwell Avenue (South of Fontwell West Roundabout) | 17092.5 | 9.1% | 64.3        | 0.020                                     | 0.008                                      | 0.004                                       |
| 135     | A27 (W of Fontwell Roundabout)                          | 15041.2 | 6.6% | 20          | 0.033                                     | 0.004                                      | 0.002                                       |
| 136     | Arundel Rndbt2                                          | 28559.0 | 6.9% | 20          | 0.060                                     | 0.013                                      | 0.007                                       |
| 137     | A29 Nyton Road                                          | 24908.1 | 5.7% | 20          | 0.050                                     | 0.011                                      | 0.006                                       |
| 138     | A259 Rowan Way                                          | 14715.7 | 8.5% | 20          | 0.032                                     | 0.007                                      | 0.004                                       |
| 139     | A259 Rowan Way                                          | 14715.7 | 8.5% | 20          | 0.032                                     | 0.007                                      | 0.004                                       |
| 140     | Gladius Way                                             | 14549.7 | 3.5% | 80.4        | 0.016                                     | 0.006                                      | 0.003                                       |
| 141     | B2233 Nyton Road (Between Oving Road and A29)           | 15199.4 | 2.6% | 20          | 0.027                                     | 0.006                                      | 0.003                                       |
| 142     | A29 East of Fontwell East Roundabout                    | 20824.6 | 6.3% | 20          | 0.042                                     | 0.009                                      | 0.005                                       |

| Link ID | Road Name                            | AADT    | %HDV | Speed (kph) | NO <sub>x</sub> Emission Factors (g/km/s) | PM <sub>10</sub> Emission Factors (g/km/s) | PM <sub>2.5</sub> Emission Factors (g/km/s) |
|---------|--------------------------------------|---------|------|-------------|-------------------------------------------|--------------------------------------------|---------------------------------------------|
| 143     | A29 East of Fontwell East Roundabout | 20824.6 | 6.3% | 96.5        | 0.026                                     | 0.009                                      | 0.005                                       |
| 144     | A27 between A29 near Bognor Regis    | 44610.6 | 6.8% | 20          | 0.093                                     | 0.020                                      | 0.011                                       |

## Appendix 8.3

### Model Input & Verification

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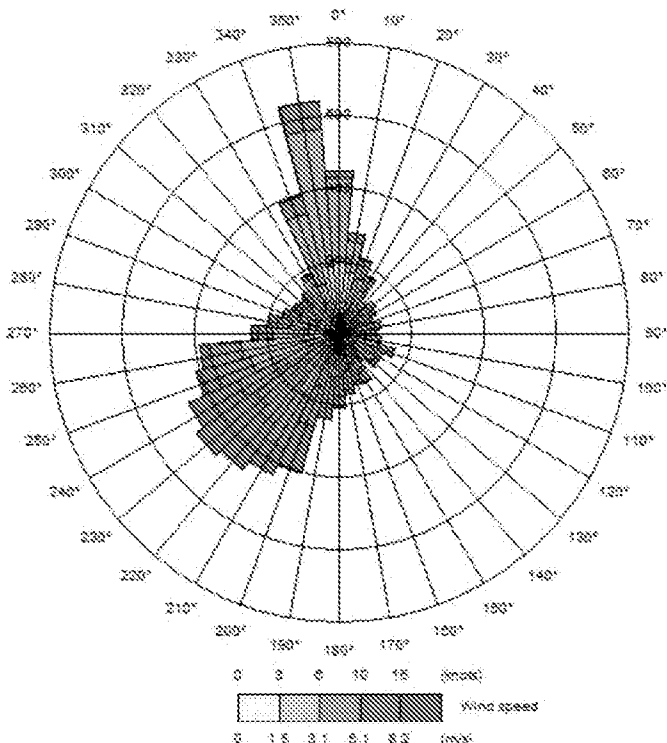
B

B



## Appendix E – Model Inputs and Verification

Table E-1 – Model Inputs

| Input                                   | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Traffic data and emissions rates</b> | <p>Traffic data was supplied by WSP Transport Consultants. Data was provided as AADT, % HDV component of the AADT, and average speed / speed limit per road link.</p> <p>NO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> emissions factors were calculated for the assessment years 2019 and 2038 using Defra's Emissions Factors Toolkit (EFT), version 11.0. As 2038 emissions factors are not currently available for LAQM assessment purposes, 2030 emissions factors have been used within the assessment.</p> <p>EFT settings: area = 'England (not London)'; traffic format = 'Basic Split'; road type = Urban (not London).</p> |
| <b>Road geometry</b>                    | All model links aligned to the carriageway centreline using OS mapping, set to true road width (kerb to kerb/edge of travelled lanes), road heights set to zero.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Meteorological data</b>              |  <p>Shoreham with cloud cover from Thorney Island meteorological station 2019</p> <p>Parameters include hourly sequential format: Julian date, hour, wind speed (m/s), wind direction (degrees from north), cloud cover (oktas), surface temperature (Celsius).</p> <p>Meteorological site surface roughness length = 0.2m</p> <p>Meteorological site minimum Monin-Obukhov length = 30m</p>                                                                                                                                                              |
| <b>Dispersion Site Parameters</b>       | <p>Dispersion site latitude: 50.8°</p> <p>Dispersion site surface roughness length = 0.5m</p> <p>Dispersion site minimum Monin-Obukhov length = 30m</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



| Input                            | Notes                                                                                                                                                                                                                                                                                      |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Background concentrations</b> | From Defra 1x1km mapped datasets for 2019 and 2030 (as a proxy for 2038).<br>(2018-reference case background maps for NO <sub>x</sub> , NO <sub>2</sub> , PM <sub>10</sub> and PM <sub>2.5</sub> )                                                                                         |
| <b>Receptors</b>                 | Discrete human receptors, see <b>Table 3-3</b> and <b>Figure B.3</b> .                                                                                                                                                                                                                     |
| <b>Model outputs</b>             | Annual mean NO <sub>x</sub> , PM <sub>10</sub> and PM <sub>2.5</sub> concentrations at receptor points.                                                                                                                                                                                    |
| <b>Post-processing</b>           | Verification (discussed below) with adjustment of road source contributions of annual mean NO <sub>x</sub> , PM <sub>10</sub> and PM <sub>2.5</sub> (to address systematic model error).                                                                                                   |
|                                  | NO <sub>x</sub> to NO <sub>2</sub> conversion using Defra's calculator version 8.1.                                                                                                                                                                                                        |
|                                  | Compliance with the 24-hour mean AQS for PM <sub>10</sub> has been determined using the following empirical equation given in LAQM.TG(22) guidance:<br><br>Number of 24-hour mean exceedances of 50µg/m <sup>3</sup> = -18.5 + 0.00145 × (annual mean) <sup>3</sup> + (206 ÷ annual mean). |

## Model Verification

The comparison of modelled concentrations with local monitored concentrations is a process termed 'verification'. Model verification investigates the discrepancies between modelled and measured concentrations, which can arise due to the presence of inaccuracies and/or uncertainties in model input data, modelling and monitoring data assumptions. The following are examples of potential causes of such discrepancy:

- Estimates of background pollutant concentrations;
- Meteorological data uncertainties;
- Traffic data uncertainties;
- Model input parameters, such as 'roughness length'; and
- Overall limitations of the dispersion model.

### NO<sub>2</sub>

Most NO<sub>2</sub> is produced in the atmosphere by the reaction of nitric oxide (NO) with ozone. It is therefore most appropriate to verify the model in terms of the primary pollutant emissions of nitrogen oxides (NO<sub>x</sub> = NO + NO<sub>2</sub>), in line with the guidance provided within LAQM.TG(22).

As discussed in the methodology section, the most recent suitable data available for model verification purposes is 2019 data. The model has therefore been run to predict the 2019 annual mean road-NO<sub>x</sub> contribution at ten roadside diffusion tubes within the modelled road network. The model outputs of road-NO<sub>x</sub> have been compared with the 'measured' road-NO<sub>x</sub>, which was determined from the NO<sub>2</sub> concentrations measured using diffusion tubes at the monitoring locations, utilising the NO<sub>x</sub> from NO<sub>2</sub> calculator provided by Defra and the relevant NO<sub>2</sub> background concentrations (from the Defra background maps).

The data used in the verification process are presented in **Table E-2**. The locations of the A29 monitoring sites are also illustrated in **Figure B.4** and contained within the report. Monitoring sites A29 x 4 & A29 x 11 were not used in the verification process due to overgrown vegetation at the latter monitoring site and traffic data being significantly lower than the initial study for site A29 x 4.

The data show that the model was under-predicting at all locations. As the percentage difference between monitored and modelled concentrations was greater than 25% at all monitoring sites, it is necessary to calculate an adjustment factor to apply to the model outputs to improve the accuracy of the predictions.

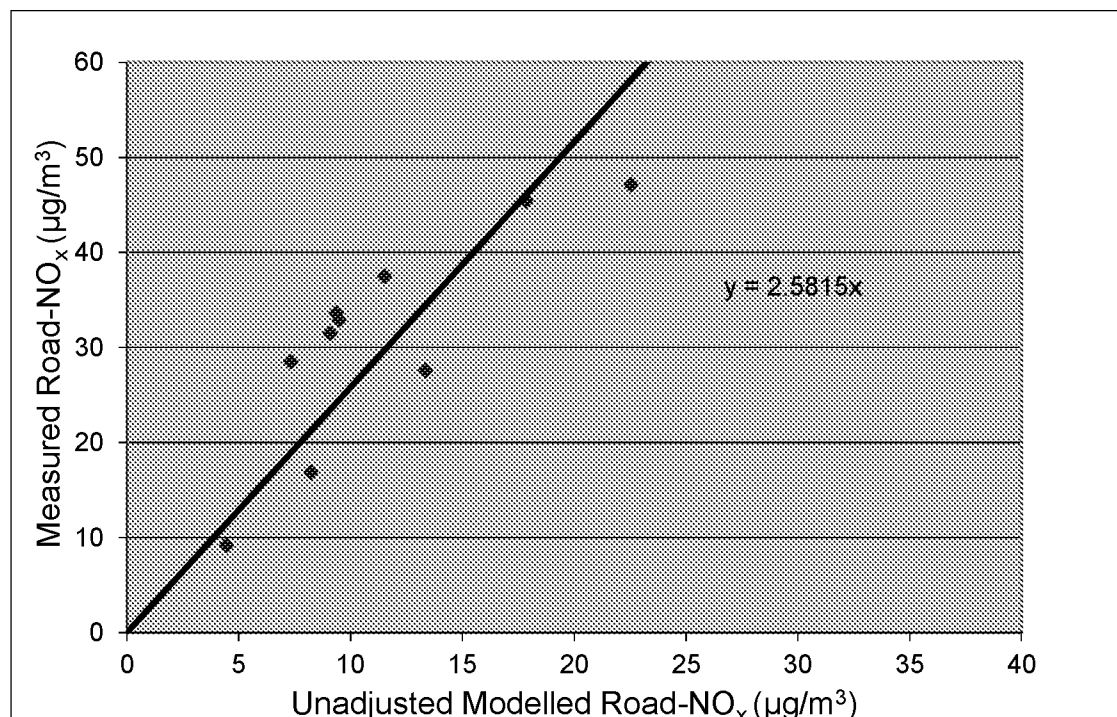


**Table E-1 – Data used in model verification (unadjusted).**

| Monitoring Site | Measured Annual Mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> ) | Background NO <sub>2</sub> (µg/m <sup>3</sup> ) | Measured Road-NO <sub>x</sub> (µg/m <sup>3</sup> ) (from NO <sub>x</sub> :NO <sub>2</sub> calculator) | Modelled Road-NO <sub>x</sub> (µg/m <sup>3</sup> ) | Ratio |
|-----------------|-------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------|
| A29 x 1         | 22.32                                                                   | 7.7                                             | 27.6                                                                                                  | 13.35                                              | 2.07  |
| A29 x 2         | 16.82                                                                   | 7.7                                             | 16.83                                                                                                 | 8.23                                               | 2.04  |
| A29 x 3         | 25.40                                                                   | 8.2                                             | 32.88                                                                                                 | 9.48                                               | 3.47  |
| A29 x 5         | 25.75                                                                   | 8.2                                             | 33.61                                                                                                 | 9.36                                               | 3.59  |
| A29 x 6         | 32.00                                                                   | 8.1                                             | 47.07                                                                                                 | 22.54                                              | 2.09  |
| A29 x 7         | 31.60                                                                   | 8.5                                             | 45.41                                                                                                 | 17.84                                              | 2.55  |
| A29 x 8         | 25.00                                                                   | 8.5                                             | 31.5                                                                                                  | 9.08                                               | 3.47  |
| A29 x 9         | 27.87                                                                   | 8.5                                             | 37.44                                                                                                 | 11.52                                              | 3.25  |
| A29 x 10        | 13.53                                                                   | 8.5                                             | 9.16                                                                                                  | 4.45                                               | 2.06  |
| A29 x 12        | 13.53                                                                   | 8.5                                             | 28.49                                                                                                 | 7.32                                               | 3.89  |

The road-NO<sub>x</sub> adjustment factor was determined as the slope of the best fit line between the 'measured' road contribution and the model derived road contribution, forced through zero (**Figure E-1**). An overall factor of 2.58 was calculated.

**Figure E-1 - Comparison of Measured Road-NO<sub>x</sub> with Unadjusted Modelled Road-NO<sub>x</sub>.**





This factor was then applied to the modelled road-NO<sub>x</sub> concentration for each of the applicable A29 monitoring sites to provide adjusted modelled road-NO<sub>x</sub> concentrations. The total NO<sub>2</sub> concentrations were then determined by inputting the adjusted modelled road-NO<sub>x</sub> concentrations and the background NO<sub>2</sub> concentrations into the NO<sub>x</sub> to NO<sub>2</sub> calculator.

Following application of the adjustment factor, the level of under-prediction was significantly reduced such that the percentage difference between the monitored and adjusted-modelled NO<sub>2</sub> concentrations was less than 20% at all but one diffusion tube (A29 x 12), which is acceptable in line with LAQM.TG(22). At tube A29 x 12, following the application of the adjustment factor, the model over-predicted concentrations by 37%. However, this site was retained in the verification process as its inclusion resulted in a slightly higher verification factor and therefore a more conservative approach to the assessment.

## PM<sub>10</sub> and PM<sub>2.5</sub>

There are no local PM<sub>10</sub> or PM<sub>2.5</sub> monitoring data against which the model could be verified. Consequently, the verification factor determined above for adjusting the road-NO<sub>x</sub> contribution has been applied to the predicted road-PM<sub>10</sub> and road-PM<sub>2.5</sub> contributions, consistent with guidance set out in LAQM.TG(22).

## Model Uncertainty

An evaluation of model performance has been undertaken to establish confidence in model results. LAQM.TG(22) identifies a number of statistical procedures that are appropriate to evaluate model performance and assess the uncertainty. These include:

- Root mean square error (RMSE);
- Fractional bias (FB); and
- Correlation coefficient (CC).

These parameters estimate how the model results agree or diverge from the observations. These calculations can be carried out prior to, and after adjustment, or based on different options for adjustment, and can provide useful information on model improvement. A brief for explanation of each statistic is provided in **Table E-3**, and further details can be found in Box 7.21 of LAQM.TG(22).

**Table E-3 – Methods for describing model uncertainty**

| Statistical Parameter | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Ideal Value |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| RMSE                  | <p>RMSE is used to define the average error or uncertainty of the model. The units of RMSE are the same as the quantities compared.</p> <p>If the RMSE values are higher than 25% of the AQS being assessed, it is recommended that the model inputs and verification should be revisited in order to make improvements.</p> <p>For example, if the model predictions are for the annual mean NO<sub>2</sub> AQS of 40µg/m<sup>3</sup>, if an RMSE of 10µg/m<sup>3</sup> or above is determined for a model it is advised to revisit the model parameters and model verification.</p> <p>Ideally an RMSE within 10% of the air quality objective would be derived, which equates to 4µg/m<sup>3</sup> for the annual mean NO<sub>2</sub> AQS.</p> | 0.01        |
| FB                    | <p>FB is used to identify if the model shows a systematic tendency to over or under predict.</p> <p>FB values vary between +2 and -2 and has an ideal value of zero. Negative values suggest a model over-prediction and positive values suggest a model under-prediction.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.00        |



| Statistical Parameter | Comments                                                                                                                                                                                                                                                                                        | Ideal Value |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| CC                    | <p>CC is used to measure the linear relationship between predicted and observed data. A value of zero means no relationship and a value of 1 means absolute relationship.</p> <p>This statistic can be particularly useful when comparing a large number of model and observed data points.</p> | 1.00        |

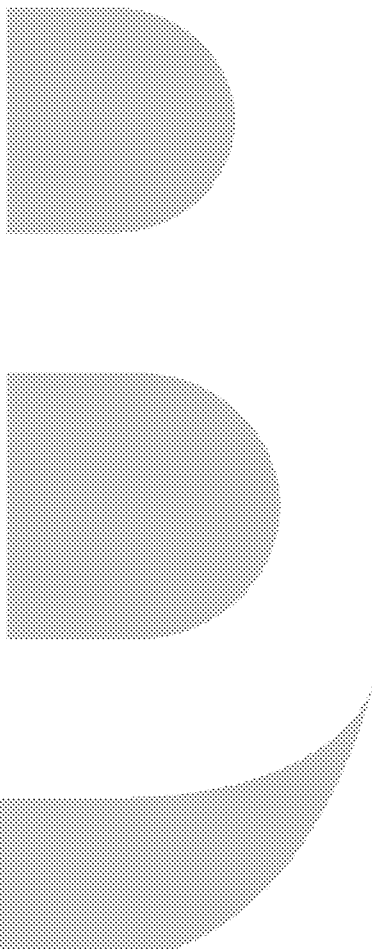
To assess the uncertainty of a model, the RMSE is the simplest parameter to calculate providing an estimate of the average error of the model in the same units as the modelled predictions. It is also often easier to interpret the RMSE than the other statistical parameters and therefore it has been calculated in this assessment to understand the model uncertainty.

The RMSE value calculated after verification was  $3.7\mu\text{g}/\text{m}^3$ . This is within the ideal range of 10% for model performance and therefore, in accordance with LAQM.TG22, the final predictions are considered to be robust.

## Appendix 8.4

### Model Results

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## Appendix F – Model Results

Table F-1 – Annual mean NO<sub>2</sub> concentrations (µg/m<sup>3</sup>)

| Receptor ID | Receptor Name                             | Annual Mean NO <sub>2</sub> Concentrations (µg/m <sup>3</sup> ) |                                   |                                |             |                          |                       |
|-------------|-------------------------------------------|-----------------------------------------------------------------|-----------------------------------|--------------------------------|-------------|--------------------------|-----------------------|
|             |                                           | 2019 Baseline                                                   | 2038 Without Proposed Development | 2038 With Proposed Development | 2038 Change | % Change Relative to AQS | 2038 Impact Magnitude |
| R1          | Residential property at Westergate Street | 21.1                                                            | 11.3                              | 11.7                           | 0.4         | 1.0                      | Negligible            |
| R2          | Residential property at Barnham Road      | 23.1                                                            | 11.9                              | 12.2                           | 0.3         | 1.0                      | Negligible            |
| R3          | Residential property at Nyton Road        | 28.0                                                            | 13.9                              | 14.4                           | 0.5         | 1.0                      | Negligible            |
| R4          | Residential property at Westergate Street | 25.6                                                            | 13.1                              | 13.6                           | 0.5         | 1.0                      | Negligible            |
| R5          | Residential property at Westergate Street | 21.3                                                            | 11.6                              | 11.9                           | 0.3         | 1.0                      | Negligible            |
| R6          | Residential property at Barnham Road      | 13.1                                                            | 8.9                               | 9.0                            | 0.1         | 0.0                      | Negligible            |
| R7          | Residential property at Barnham Road      | 13.5                                                            | 10.4                              | 10.5                           | 0.1         | 0.0                      | Negligible            |
| R8          | Residential property at Westergate Street | 16.3                                                            | 9.5                               | 9.6                            | 0.1         | 0.0                      | Negligible            |
| R9          | Residential property at Nyton Road        | 19.6                                                            | 10.4                              | 10.6                           | 0.2         | 1.0                      | Negligible            |

| Receptor ID | Receptor Name                             | Annual Mean NO <sub>2</sub> Concentrations (µg/m <sup>3</sup> ) |                                         |                                   |                |                             |                          |
|-------------|-------------------------------------------|-----------------------------------------------------------------|-----------------------------------------|-----------------------------------|----------------|-----------------------------|--------------------------|
|             |                                           | 2019<br>Baseline                                                | 2038 Without<br>Proposed<br>Development | 2038 With Proposed<br>Development | 2038<br>Change | % Change Relative to<br>AQS | 2038 Impact<br>Magnitude |
| R10         | Residential property at Arundel Road      | 31.8                                                            | 15.3                                    | 15.4                              | 0.1            | 0.0                         | Negligible               |
| R11         | Travelodge Hotel at Fontwell Avenue       | 24.5                                                            | 12.2                                    | 12.3                              | 0.1            | 0.0                         | Negligible               |
| R12         | Residential property at Fontwell Avenue   | 16.7                                                            | 9.9                                     | 10.0                              | 0.1            | 0.0                         | Negligible               |
| R13         | Residential property at Church Lane       | 12.7                                                            | 8.5                                     | 8.5                               | 0.0            | 0.0                         | Negligible               |
| R14         | Residential property at Hook Lane         | 13.1                                                            | 8.9                                     | 8.9                               | 0.0            | 0.0                         | Negligible               |
| R15         | Residential property at Arundel Road      | 36.8                                                            | 17.2                                    | 17.4                              | 0.2            | 1.0                         | Negligible               |
| R16         | Residential property at Westergate Street | 22.3                                                            | 11.9                                    | 12.4                              | 0.5            | 1.0                         | Negligible               |
| R17         | Residential property at Westergate Street | 22.3                                                            | 11.7                                    | 12.0                              | 0.3            | 1.0                         | Negligible               |
| R18         | Residential property at Westergate Street | 18.5                                                            | 10.4                                    | 10.6                              | 0.2            | 1.0                         | Negligible               |
| R19         | Residential property at Shripney Road     | 35.8                                                            | 17.4                                    | 17.5                              | 0.1            | 0.0                         | Negligible               |

| Receptor ID              | Receptor Name                               | Annual Mean NO <sub>2</sub> Concentrations (µg/m <sup>3</sup> ) |                                         |                                   |                |                             |                          |
|--------------------------|---------------------------------------------|-----------------------------------------------------------------|-----------------------------------------|-----------------------------------|----------------|-----------------------------|--------------------------|
|                          |                                             | 2019<br>Baseline                                                | 2038 Without<br>Proposed<br>Development | 2038 With Proposed<br>Development | 2038<br>Change | % Change Relative to<br>AQS | 2038 Impact<br>Magnitude |
| R20                      | Eastergate Church of England Primary School | 11.4                                                            | 8.0                                     | 8.0                               | 0.0            | 0.0                         | Negligible               |
| R21                      | Ormiston Six Villages Academy               | 12.4                                                            | 8.3                                     | 8.4                               | 0.1            | 0.0                         | Negligible               |
| R22                      | Residential property at Access Road         | 13.2                                                            | 8.5                                     | 9.6                               | 1.1            | 3.0                         | Negligible               |
| R23                      | Residential property at Access Road         | 13.3                                                            | 8.5                                     | 9.6                               | 1.1            | 3.0                         | Negligible               |
| FR1                      | Future Receptor 1                           |                                                                 |                                         | 8.9                               |                |                             |                          |
| FR2                      | Future Receptor 2                           |                                                                 |                                         | 8.6                               |                |                             |                          |
| FR3                      | Future Receptor 3                           |                                                                 |                                         | 8.6                               |                |                             |                          |
| FR4                      | Future Receptor 4                           |                                                                 |                                         | 8.4                               |                |                             |                          |
| FR5                      | Future Receptor 5                           |                                                                 |                                         | 8.0                               |                |                             |                          |
| FR6                      | Future Receptor 6                           |                                                                 |                                         | 8.1                               |                |                             |                          |
| Results rounded to 1.d.p |                                             |                                                                 |                                         |                                   |                |                             |                          |
| N/A = not applicable     |                                             |                                                                 |                                         |                                   |                |                             |                          |

**Table F-1 – Impacts on annual mean PM<sub>10</sub> concentrations (µg/m<sup>3</sup>)**

| Receptor ID | Receptor Name                             | Annual Mean PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> ) |                                         |                                   |                |                                 |                          |
|-------------|-------------------------------------------|------------------------------------------------------------------|-----------------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|
|             |                                           | 2019<br>Baseline                                                 | 2038 Without<br>Proposed<br>Development | 2038 With Proposed<br>Development | 2038<br>Change | 2038% Change<br>Relative to AQS | 2038 Impact<br>Magnitude |
| R1          | Residential property at Westergate Street | 16.4                                                             | 15.6                                    | 15.9                              | 0.3            | 1.0                             | Negligible               |
| R2          | Residential property at Barnham Road      | 16.0                                                             | 14.9                                    | 15.0                              | 0.1            | 0.0                             | Negligible               |
| R3          | Residential property at Nyton Road        | 17.2                                                             | 16.4                                    | 16.6                              | 0.2            | 1.0                             | Negligible               |
| R4          | Residential property at Westergate Street | 16.7                                                             | 16.0                                    | 16.2                              | 0.2            | 1.0                             | Negligible               |
| R5          | Residential property at Westergate Street | 15.9                                                             | 15.1                                    | 15.3                              | 0.2            | 1.0                             | Negligible               |
| R6          | Residential property at Barnham Road      | 14.7                                                             | 13.8                                    | 13.8                              | 0.0            | 0.0                             | Negligible               |
| R7          | Residential property at Barnham Road      | 13.8                                                             | 14.0                                    | 14.1                              | 0.1            | 0.0                             | Negligible               |
| R8          | Residential property at Westergate Street | 15.6                                                             | 14.9                                    | 14.9                              | 0.0            | 0.0                             | Negligible               |
| R9          | Residential property at Nyton Road        | 15.6                                                             | 14.7                                    | 14.8                              | 0.1            | 0.0                             | Negligible               |

| Receptor ID | Receptor Name                             | Annual Mean PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> ) |                                         |                                   |                |                                 |                          |
|-------------|-------------------------------------------|------------------------------------------------------------------|-----------------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|
|             |                                           | 2019<br>Baseline                                                 | 2038 Without<br>Proposed<br>Development | 2038 With Proposed<br>Development | 2038<br>Change | 2038% Change<br>Relative to AQS | 2038 Impact<br>Magnitude |
| R10         | Residential property at Arundel Road      | 15.9                                                             | 14.8                                    | 14.9                              | 0.1            | 0.0                             | Negligible               |
| R11         | Travelodge Hotel at Fontwell Avenue       | 15.5                                                             | 14.6                                    | 14.6                              | 0.0            | 0.0                             | Negligible               |
| R12         | Residential property at Fontwell Avenue   | 15.1                                                             | 14.1                                    | 14.2                              | 0.1            | 0.0                             | Negligible               |
| R13         | Residential property at Church Lane       | 14.3                                                             | 13.4                                    | 13.4                              | 0.0            | 0.0                             | Negligible               |
| R14         | Residential property at Hook Lane         | 14.8                                                             | 14.4                                    | 14.4                              | 0.0            | 0.0                             | Negligible               |
| R15         | Residential property at Arundel Road      | 16.8                                                             | 15.5                                    | 15.5                              | 0.0            | 0.0                             | Negligible               |
| R16         | Residential property at Westergate Street | 16.7                                                             | 16.1                                    | 16.3                              | 0.2            | 1.0                             | Negligible               |
| R17         | Residential property at Westergate Street | 16.0                                                             | 15.1                                    | 15.3                              | 0.2            | 1.0                             | Negligible               |
| R18         | Residential property at Westergate Street | 16.0                                                             | 15.1                                    | 15.3                              | 0.2            | 1.0                             | Negligible               |
| R19         | Residential property at Shripney Road     | 19.2                                                             | 18.2                                    | 18.3                              | 0.1            | 0.0                             | Negligible               |

| Receptor ID              | Receptor Name                               | Annual Mean PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> ) |                                         |                                   |                |                                 |                          |
|--------------------------|---------------------------------------------|------------------------------------------------------------------|-----------------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|
|                          |                                             | 2019<br>Baseline                                                 | 2038 Without<br>Proposed<br>Development | 2038 With Proposed<br>Development | 2038<br>Change | 2038% Change<br>Relative to AQS | 2038 Impact<br>Magnitude |
| R20                      | Eastergate Church of England Primary School | 14.1                                                             | 13.2                                    | 13.2                              | 0.0            | 0.0                             | Negligible               |
| R21                      | Ormiston Six Villages Academy               | 14.3                                                             | 13.3                                    | 13.3                              | 0.0            | 0.0                             | Negligible               |
| R22                      | Residential property at Access Road         | 14.9                                                             | 14.0                                    | 14.6                              | 0.6            | 2.0                             | Negligible               |
| R23                      | Residential property at Access Road         | 14.9                                                             | 14.0                                    | 14.6                              | 0.6            | 2.0                             | Negligible               |
| FR1                      | Future Receptor 1                           |                                                                  |                                         | 14.2                              |                |                                 |                          |
| FR2                      | Future Receptor 2                           |                                                                  |                                         | 14.1                              |                |                                 |                          |
| FR3                      | Future Receptor 3                           |                                                                  |                                         | 14.1                              |                |                                 |                          |
| FR4                      | Future Receptor 4                           |                                                                  |                                         | 14.0                              |                |                                 |                          |
| FR5                      | Future Receptor 5                           |                                                                  |                                         | 14.2                              |                |                                 |                          |
| FR6                      | Future Receptor 6                           |                                                                  |                                         | 14.3                              |                |                                 |                          |
| Results rounded to 1.d.p |                                             |                                                                  |                                         |                                   |                |                                 |                          |
| N/A = not applicable     |                                             |                                                                  |                                         |                                   |                |                                 |                          |

**Table F-2 – Impacts on daily mean PM<sub>10</sub> concentrations (µg/m<sup>3</sup>)**

| Receptor ID | Receptor Name                             | Days with 24-hour PM <sub>10</sub> concentrations >50µg/m <sup>3</sup> |                                         |                                   |               |
|-------------|-------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|-----------------------------------|---------------|
|             |                                           | 2019<br>Baseline                                                       | 2038 Without<br>Proposed<br>Development | 2038 With Proposed<br>Development | Change (days) |
| <b>R1</b>   | Residential property at Westergate Street | 0                                                                      | 0                                       | 0                                 | 0             |
| <b>R2</b>   | Residential property at Barnham Road      | 0                                                                      | 0                                       | 0                                 | 0             |
| <b>R3</b>   | Residential property at Nyton Road        | 1                                                                      | 0                                       | 0                                 | 0             |
| <b>R4</b>   | Residential property at Westergate Street | 1                                                                      | 0                                       | 0                                 | 0             |
| <b>R5</b>   | Residential property at Westergate Street | 0                                                                      | 0                                       | 0                                 | 0             |
| <b>R6</b>   | Residential property at Barnham Road      | 0                                                                      | 0                                       | 0                                 | 0             |
| <b>R7</b>   | Residential property at Barnham Road      | 0                                                                      | 0                                       | 0                                 | 0             |
| <b>R8</b>   | Residential property at Westergate Street | 0                                                                      | 0                                       | 0                                 | 0             |
| <b>R9</b>   | Residential property at Nyton Road        | 0                                                                      | 0                                       | 0                                 | 0             |

| Receptor ID | Receptor Name                             | Days with 24-hour PM <sub>10</sub> concentrations >50µg/m <sup>3</sup> |                                         |                                   |               |
|-------------|-------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|-----------------------------------|---------------|
|             |                                           | 2019<br>Baseline                                                       | 2038 Without<br>Proposed<br>Development | 2038 With Proposed<br>Development | Change (days) |
| R10         | Residential property at Arundel Road      | 0                                                                      | 0                                       | 0                                 | 0             |
| R11         | Travelodge Hotel at Fontwell Avenue       | 0                                                                      | 0                                       | 0                                 | 0             |
| R12         | Residential property at Fontwell Avenue   | 0                                                                      | 0                                       | 0                                 | 0             |
| R13         | Residential property at Church Lane       | 0                                                                      | 0                                       | 0                                 | 0             |
| R14         | Residential property at Hook Lane         | 0                                                                      | 0                                       | 0                                 | 0             |
| R15         | Residential property at Arundel Road      | 1                                                                      | 0                                       | 0                                 | 0             |
| R16         | Residential property at Westergate Street | 1                                                                      | 0                                       | 0                                 | 0             |
| R17         | Residential property at Westergate Street | 0                                                                      | 0                                       | 0                                 | 0             |
| R18         | Residential property at Westergate Street | 0                                                                      | 0                                       | 0                                 | 0             |
| R19         | Residential property at Shripney Road     | 3                                                                      | 2                                       | 2                                 | 0             |

| Receptor ID | Receptor Name                               | Days with 24-hour PM <sub>10</sub> concentrations >50µg/m <sup>3</sup> |                                         |                                   |               |
|-------------|---------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|-----------------------------------|---------------|
|             |                                             | 2019<br>Baseline                                                       | 2038 Without<br>Proposed<br>Development | 2038 With Proposed<br>Development | Change (days) |
| R20         | Eastergate Church of England Primary School | 0                                                                      | 0                                       | 0                                 | 0             |
| R21         | Ormiston Six Villages Academy               | 0                                                                      | 0                                       | 0                                 | 0             |
| R22         | Residential property at Access Road         | 0                                                                      | 0                                       | 0                                 | 0             |
| R23         | Residential property at Access Road         | 0                                                                      | 0                                       | 0                                 | 0             |
| FR1         | Future Receptor 1                           | 0                                                                      | 0                                       | 0                                 | 0             |
| FR2         | Future Receptor 2                           | 0                                                                      | 0                                       | 0                                 | 0             |
| FR3         | Future Receptor 3                           | 0                                                                      | 0                                       | 0                                 | 0             |
| FR4         | Future Receptor 4                           | 0                                                                      | 0                                       | 0                                 | 0             |
| FR5         | Future Receptor 5                           | 0                                                                      | 0                                       | 0                                 | 0             |
| FR6         | Future Receptor 6                           | 0                                                                      | 0                                       | 0                                 | 0             |

Table F-3 – Impacts on annual mean PM<sub>2.5</sub> concentrations (µg/m<sup>3</sup>)

| Receptor ID | Receptor Name                             | Annual Mean PM <sub>2.5</sub> Concentrations (µg/m <sup>3</sup> ) |                                   |                                |             |                              |                       |
|-------------|-------------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------------------------------|-------------|------------------------------|-----------------------|
|             |                                           | 2019 Baseline                                                     | 2038 Without Proposed Development | 2038 With Proposed Development | 2038 Change | 2038% Change Relative to AQS | 2038 Impact Magnitude |
| R1          | Residential property at Westergate Street | 10.6                                                              | 9.9                               | 10.0                           | 0.1         | 1.0                          | Negligible            |
| R2          | Residential property at Barnham Road      | 10.5                                                              | 9.6                               | 9.7                            | 0.1         | 1.0                          | Negligible            |
| R3          | Residential property at Nyton Road        | 10.9                                                              | 10.2                              | 10.3                           | 0.1         | 1.0                          | Negligible            |
| R4          | Residential property at Westergate Street | 10.7                                                              | 10.0                              | 10.1                           | 0.1         | 1.0                          | Negligible            |
| R5          | Residential property at Westergate Street | 10.3                                                              | 9.6                               | 9.7                            | 0.1         | 1.0                          | Negligible            |
| R6          | Residential property at Barnham Road      | 9.7                                                               | 8.9                               | 8.9                            | 0.0         | 0.0                          | Negligible            |
| R7          | Residential property at Barnham Road      | 9.3                                                               | 9.2                               | 9.2                            | 0.0         | 0.0                          | Negligible            |
| R8          | Residential property at Westergate Street | 9.9                                                               | 9.2                               | 9.2                            | 0.0         | 0.0                          | Negligible            |
| R9          | Residential property at Nyton Road        | 9.9                                                               | 9.1                               | 9.2                            | 0.1         | 1.0                          | Negligible            |

| Receptor ID | Receptor Name                             | Annual Mean PM <sub>2.5</sub> Concentrations (µg/m³) |                                   |                                |             |                              |                       |
|-------------|-------------------------------------------|------------------------------------------------------|-----------------------------------|--------------------------------|-------------|------------------------------|-----------------------|
|             |                                           | 2019 Baseline                                        | 2038 Without Proposed Development | 2038 With Proposed Development | 2038 Change | 2038% Change Relative to AQS | 2038 Impact Magnitude |
| R10         | Residential property at Arundel Road      | 10.3                                                 | 9.4                               | 9.4                            | 0.0         | 0.0                          | Negligible            |
| R11         | Travelodge Hotel at Fontwell Avenue       | 10.3                                                 | 9.5                               | 9.5                            | 0.0         | 0.0                          | Negligible            |
| R12         | Residential property at Fontwell Avenue   | 10.0                                                 | 9.2                               | 9.2                            | 0.0         | 0.0                          | Negligible            |
| R13         | Residential property at Church Lane       | 9.5                                                  | 8.8                               | 8.8                            | 0.0         | 0.0                          | Negligible            |
| R14         | Residential property at Hook Lane         | 9.4                                                  | 8.9                               | 8.9                            | 0.0         | 0.0                          | Negligible            |
| R15         | Residential property at Arundel Road      | 11.3                                                 | 10.1                              | 10.2                           | 0.1         | 1.0                          | Negligible            |
| R16         | Residential property at Westergate Street | 10.6                                                 | 10.0                              | 10.1                           | 0.1         | 1.0                          | Negligible            |
| R17         | Residential property at Westergate Street | 10.4                                                 | 9.6                               | 9.7                            | 0.1         | 1.0                          | Negligible            |
| R18         | Residential property at Westergate Street | 10.3                                                 | 9.6                               | 9.6                            | 0.0         | 0.0                          | Negligible            |
| R19         | Residential property at Shripney Road     | 12.4                                                 | 11.4                              | 11.4                           | 0.0         | 0.0                          | Negligible            |

| Receptor ID              | Receptor Name                               | Annual Mean PM <sub>2.5</sub> Concentrations (µg/m <sup>3</sup> ) |                                   |                                |             |                              |                       |
|--------------------------|---------------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------------------------------|-------------|------------------------------|-----------------------|
|                          |                                             | 2019 Baseline                                                     | 2038 Without Proposed Development | 2038 With Proposed Development | 2038 Change | 2038% Change Relative to AQS | 2038 Impact Magnitude |
| R20                      | Eastergate Church of England Primary School | 9.4                                                               | 8.7                               | 8.7                            | 0.0         | 0.0                          | Negligible            |
| R21                      | Ormiston Six Villages Academy               | 9.5                                                               | 8.7                               | 8.7                            | 0.0         | 0.0                          | Negligible            |
| R22                      | Residential property at Access Road         | 9.7                                                               | 8.9                               | 9.3                            | 0.4         | 2.0                          | Negligible            |
| R23                      | Residential property at Access Road         | 9.7                                                               | 9.0                               | 9.3                            | 0.3         | 2.0                          | Negligible            |
| FR1                      | Future Receptor 1                           |                                                                   |                                   | 9.1                            |             |                              |                       |
| FR2                      | Future Receptor 2                           |                                                                   |                                   | 9.0                            |             |                              |                       |
| FR3                      | Future Receptor 3                           |                                                                   |                                   | 9.0                            |             |                              |                       |
| FR4                      | Future Receptor 4                           |                                                                   |                                   | 8.9                            |             |                              |                       |
| FR5                      | Future Receptor 5                           |                                                                   |                                   | 8.8                            |             |                              |                       |
| FR6                      | Future Receptor 6                           |                                                                   |                                   | 8.8                            |             |                              |                       |
| Results rounded to 1.d.p |                                             |                                                                   |                                   |                                |             |                              |                       |
| N/A = not applicable     |                                             |                                                                   |                                   |                                |             |                              |                       |