

# Appendix H

## Air Quality Impact Assessment

## Air Quality Operational Impact Assessment – Pollutant Concentrations

### **IAQM Dust Emission Magnitude Classification**

Under the UK Institute of Air Quality Management (IAQM) document dust emission magnitudes are estimated according to the scale of works being carried out and other considerations such as meteorology, types of material being used, or general construction methodology. The IAQM guidance provides examples to aid classification, as presented in the following excerpt from IAQM:

The dust emission magnitude is based on the scale of the anticipated works and should be classified as Small, Medium, or Large. The following are examples of how the potential dust emission magnitude for different activities can be defined. Note that, in each case, not all the criteria need to be met, and that other criteria may be used if justified in the assessment:

Demolition: Example definitions for demolition are:

- Large: Total building volume  $>50,000\text{m}^3$ , potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities  $>20\text{m}$  above ground level;
- Medium: Total building volume  $20,000\text{m}^3 - 50,000\text{m}^3$ , potentially dusty construction material, demolition activities  $10\text{-}20\text{m}$  above ground level; and
- Small: Total building volume  $<20,000\text{m}^3$ , construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities  $<10\text{m}$  above ground, demolition during wetter months.

Earthworks: Earthworks will primarily involve excavating material, haulage, tipping and stockpiling.

This may also involve levelling the site and landscaping. Example definitions for earthworks are:

- Large: Total site area  $>10,000\text{m}^2$ , potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size),  $>10$  heavy earth moving vehicles active at any one time, formation of bunds  $>8\text{m}$  in height, total material moved  $>100,000$  tonnes
- Medium: Total site area  $2,500\text{m}^2 - 10,000\text{m}^2$ , moderately dusty soil type (e.g. silt),  $5\text{-}10$  heavy earth moving vehicles active at any one time, formation of bunds  $4\text{m} - 8\text{m}$  in height, total material moved  $20,000$  tonnes –  $100,000$  tonnes
- Small: Total site area  $<2,000\text{m}^2$  – soil type with large grain size, e.g. sand,  $<5$  heavy earth moving vehicles at one time, formation of bunds  $<4\text{m}$  in height, total material moved  $<20,000$  tonnes, earthworks during wetter months.

Construction: The key issues when determining the potential dust emission magnitude during the construction phase include the size of the building(s)/infrastructure, method of construction, construction materials, and duration of build. Example definitions for construction are:

- Large: Total building volume  $>100,000\text{m}^3$ , on site concrete batching, sandblasting
- Medium: Total building volume  $25,000\text{m}^3 - 100,000\text{m}^3$ , potentially dusty construction material (e.g. concrete), on site concrete batching
- Small: Total building volume  $<25,000\text{m}^3$ , construction material with low potential for dust release (e.g. metal cladding or timber).

Trackout: Factors which determine the dust emission magnitude are vehicle size, vehicle speed, vehicle numbers, geology and duration. As with all other potential sources, professional judgement must be applied when classifying trackout into one of the dust emission magnitude categories. Example definitions for trackout are:

- Large:  $>50$  truck ( $>3.5\text{t}$ ) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length  $>100\text{m}$
- Medium:  $10\text{-}50$  truck ( $>3.5\text{t}$ ) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length  $50\text{m} - 100\text{m}$
- Small:  $<10$  truck ( $>3.5\text{t}$ ) outward movements in any one day, surface material with low potential for dust release, unpaved road length  $<50\text{m}$ .

## Air Quality Operational Impact Assessment - Traffic forecast inputs

Table 10-1 summarises the traffic data used for this assessment.

Table 10-1: Traffic forecast data

Road Section	Direction	Opening Year (2026)				10 Years After Opening (2036)				Grade <sup>6</sup> (%)	Road Length (m)
		AADT	Traffic Mix (%)		Peak Hour Speed (km/h)	AADT	Traffic Mix (%)		Peak Hour Speed (km/h)		
			Light	Heavy			Light	Heavy			
Before exit ramp to Singleton	Northbound	12,124	85	15	94.3	13,889	84	16	94.0	3.7	650
	Southbound	13,293	85	15	93.6	15,462	84	16	93.1	3.3	650
Main Alignment 1	Northbound	8326	85	15	90.5	9515	84	16	90.0	2.6	3800
	Southbound	6163	85	15	89.2	7151	84	16	88.7	0.9	3800
Main Alignment 2	Northbound	11,683	87	13	90.0	13,218	86	14	89.6	2.0	990
	Southbound	9900	87	13	87.5	11,124	86	14	86.9	0.6	990
Main Alignment 3	Northbound	5985	84	16	89.5	6830	84	16	88.8	2.5	1850
	Southbound	8203	84	16	90.4	9363	84	16	89.9	-2.4	1850
Main Alignment with Climbing Lane	Northbound <sup>1</sup>	958	0	100	87.0	1,093	0	100	86.3	4.3	1800
	Northbound <sup>2</sup>	5,027	100	0	89.5	5,737	100	0	88.8	4.3	1800
	Southbound <sup>3</sup>	8,203	84	16	90.4	9,363	84	16	89.9	-1.9	1800
After exit ramp to Magpie Street	Northbound	9304	84	16	74.2	10,705	84	16	73.9	1.7	1127
	Southbound	10,651	84	16	75.8	12,283	84	16	75.3	2.6	1127
Exit ramp to Singleton	Northbound	3412	98	2	56.1	3697	98	2	56.1	5.0	833
Southbound to NEH	Southbound	4495	98	2	55.0	4820	98	2	54.9	0.5	467
Entry ramp from Putty Rd	Northbound	3376	91	9	54.8	3683	91	9	54.8	2.5	727
Exit ramp to Putty Rd	Southbound	3715	91	9	44.5	3973	91	9	44.2	0.3	715
Gowrie Gate exit ramp to roundabout	Northbound	5717	93	7	64.0	6408	92	8	62.2	2.2	290
Gowrie Gate entry ramp onto Bypass	Southbound	1696	93	7	50.9	1782	92	8	50.9	3.0	342
Exit ramp to Magpie Street	Southbound <sup>4</sup>	1439	83	17	56.6	1573	83	17	56.3	3.7	1139
Entry ramp from Magpie Street	Southbound <sup>5</sup>	4037	83	17	56.0	4660	83	17	55.9	1.7	603

<sup>1</sup> Northbound climbing lane. Traffic numbers assumed equal to total northbound traffic numbers in Main Alignment 3 with all heavy vehicles using the climbing lane.  
<sup>2</sup> Northbound lane adjacent to climbing lane. Traffic numbers assumed equal to total northbound traffic numbers in Main Alignment 3 with all light vehicles using this lane.  
<sup>3</sup> Southbound traffic numbers assumed equal to total southbound traffic numbers in Main Alignment 3.  
<sup>4</sup> Eastbound on Magpie Street  
<sup>5</sup> Westbound on Magpie Street  
<sup>6</sup> Based on steepest uphill grade for section of road examined

## Air Quality Operational Impact Assessment – Pollutant Concentrations

Table 10-2: Predicted CO 1-Hour Maximum Concentration (mg/m<sup>3</sup>)

Distance from Road (m)	2026 Predicted Concentration (mg/m <sup>3</sup> )			2036 Predicted Concentration (mg/m <sup>3</sup> )			Criteria (mg/m <sup>3</sup> )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>Before exit ramp to Singleton</b>							
At kerb (0 m)	4.8	0.8	5.6	5.4	0.8	6.2	30
10 m from kerb	1.9	0.8	2.7	2.1	0.8	2.9	30
20 m from kerb	1.3	0.8	2.1	1.5	0.8	2.3	30
30 m from kerb	1.1	0.8	1.9	1.2	0.8	2.0	30
40 m from kerb	1	0.8	1.8	1	0.8	1.8	30
50 m from kerb	0.9	0.8	1.7	0.9	0.8	1.7	30
<b>Main Alignment 1</b>							
At kerb (0 m)	1.7	0.8	2.5	1.9	0.8	2.7	30
10 m from kerb	0.7	0.8	1.5	0.8	0.8	1.6	30
20 m from kerb	0.5	0.8	1.3	0.5	0.8	1.3	30
30 m from kerb	0.4	0.8	1.2	0.4	0.8	1.2	30
40 m from kerb	0.3	0.8	1.1	0.4	0.8	1.2	30
50 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	30
<b>Main Alignment 2</b>							
At kerb (0 m)	2	0.8	2.8	2.2	0.8	3.0	30
10 m from kerb	0.8	0.8	1.6	0.8	0.8	1.6	30
20 m from kerb	0.5	0.8	1.3	0.6	0.8	1.4	30
30 m from kerb	0.4	0.8	1.2	0.5	0.8	1.3	30
40 m from kerb	0.4	0.8	1.2	0.4	0.8	1.2	30
50 m from kerb	0.3	0.8	1.1	0.4	0.8	1.2	30
<b>Main Alignment 3</b>							
At kerb (0 m)	1.1	0.8	1.9	1.2	0.8	2.0	30
10 m from kerb	0.4	0.8	1.2	0.5	0.8	1.3	30
20 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	30
30 m from kerb	0.2	0.8	1.0	0.3	0.8	1.1	30
40 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	30
50 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	30
<b>Main Alignment with Climbing Lane</b>							
At kerb (0 m)	1.3	0.8	2.1	1.4	0.8	2.2	30
10 m from kerb	0.6	0.8	1.4	0.6	0.8	1.4	30
20 m from kerb	0.4	0.8	1.2	0.5	0.8	1.3	30
30 m from kerb	0.3	0.8	1.1	0.4	0.8	1.2	30
40 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	30
50 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	30

Distance from Road (m)	2026 Predicted Concentration (mg/m <sup>3</sup> )			2036 Predicted Concentration (mg/m <sup>3</sup> )			Criteria (mg/m <sup>3</sup> )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>After exit ramp to Magpie Street</b>							
At kerb (0 m)	1.0	0.8	1.8	1.2	0.8	2.0	30
10 m from kerb	0.4	0.8	1.2	0.5	0.8	1.3	30
20 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	30
30 m from kerb	0.2	0.8	1.0	0.3	0.8	1.1	30
40 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	30
50 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	30
<b>Exit ramp to Singleton</b>							
At kerb (0 m)	0.1	0.8	0.9	0.1	0.8	0.9	30
10 m from kerb	0	0.8	0.8	0	0.8	0.8	30
20 m from kerb	0	0.8	0.8	0	0.8	0.8	30
30 m from kerb	0	0.8	0.8	0	0.8	0.8	30
40 m from kerb	0	0.8	0.8	0	0.8	0.8	30
50 m from kerb	0	0.8	0.8	0	0.8	0.8	30
<b>Southbound to NEH</b>							
At kerb (0 m)	0.1	0.8	0.9	0.1	0.8	0.9	30
10 m from kerb	0	0.8	0.8	0	0.8	0.8	30
20 m from kerb	0	0.8	0.8	0	0.8	0.8	30
30 m from kerb	0	0.8	0.8	0	0.8	0.8	30
40 m from kerb	0	0.8	0.8	0	0.8	0.8	30
50 m from kerb	0	0.8	0.8	0	0.8	0.8	30
<b>Entry ramp from Putty Rd</b>							
At kerb (0 m)	0.1	0.8	0.9	0.1	0.8	0.9	30
10 m from kerb	0	0.8	0.8	0	0.8	0.8	30
20 m from kerb	0	0.8	0.8	0	0.8	0.8	30
30 m from kerb	0	0.8	0.8	0	0.8	0.8	30
40 m from kerb	0	0.8	0.8	0	0.8	0.8	30
50 m from kerb	0	0.8	0.8	0	0.8	0.8	30
<b>Exit ramp to Putty Rd</b>							
At kerb (0 m)	0	0.8	0.8	0	0.8	0.8	30
10 m from kerb	0	0.8	0.8	0	0.8	0.8	30
20 m from kerb	0	0.8	0.8	0	0.8	0.8	30
30 m from kerb	0	0.8	0.8	0	0.8	0.8	30
40 m from kerb	0	0.8	0.8	0	0.8	0.8	30
50 m from kerb	0	0.8	0.8	0	0.8	0.8	30
<b>Gowrie Gate exit ramp to roundabout</b>							
At kerb (0 m)	0.2	0.8	1.0	0.2	0.8	1.0	30

Distance from Road (m)	2026 Predicted Concentration (mg/m <sup>3</sup> )			2036 Predicted Concentration (mg/m <sup>3</sup> )			Criteria (mg/m <sup>3</sup> )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
10 m from kerb	0.1	0.8	0.9	0.1	0.8	0.9	30
20 m from kerb	0.1	0.8	0.9	0	0.8	0.8	30
30 m from kerb	0	0.8	0.8	0	0.8	0.8	30
40 m from kerb	0	0.8	0.8	0	0.8	0.8	30
50 m from kerb	0	0.8	0.8	0	0.8	0.8	30
<b>Gowrie Gate entry ramp onto Bypass</b>							
At kerb (0 m)	0	0.8	0.8	0	0.8	0.8	30
10 m from kerb	0	0.8	0.8	0	0.8	0.8	30
20 m from kerb	0	0.8	0.8	0	0.8	0.8	30
30 m from kerb	0	0.8	0.8	0	0.8	0.8	30
40 m from kerb	0	0.8	0.8	0	0.8	0.8	30
50 m from kerb	0	0.8	0.8	0	0.8	0.8	30
<b>Exit ramp to Magpie Street</b>							
At kerb (0 m)	0	0.8	0.8	0	0.8	0.8	30
10 m from kerb	0	0.8	0.8	0	0.8	0.8	30
20 m from kerb	0	0.8	0.8	0	0.8	0.8	30
30 m from kerb	0	0.8	0.8	0	0.8	0.8	30
40 m from kerb	0	0.8	0.8	0	0.8	0.8	30
50 m from kerb	0	0.8	0.8	0	0.8	0.8	30
<b>Entry ramp from Magpie Street</b>							
At kerb (0 m)	0.1	0.8	0.9	0.1	0.8	0.9	30
10 m from kerb	0	0.8	0.8	0	0.8	0.8	30
20 m from kerb	0	0.8	0.8	0	0.8	0.8	30
30 m from kerb	0	0.8	0.8	0	0.8	0.8	30
40 m from kerb	0	0.8	0.8	0	0.8	0.8	30
50 m from kerb	0	0.8	0.8	0	0.8	0.8	30

Table 10-3: Predicted CO 8-Hour Maximum Concentration (mg/m<sup>3</sup>)

Distance from Road (m)	2026 Predicted Concentration (mg/m <sup>3</sup> )			2036 Predicted Concentration (mg/m <sup>3</sup> )			Criteria (mg/m <sup>3</sup> )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>Before exit ramp to Singleton</b>							
At kerb (0 m)	3.3	0.8	4.1	3.8	0.8	4.6	10
10 m from kerb	1.3	0.8	2.1	1.5	0.8	2.3	10
20 m from kerb	0.9	0.8	1.7	1	0.8	1.8	10
30 m from kerb	0.8	0.8	1.6	0.8	0.8	1.6	10
40 m from kerb	0.7	0.8	1.5	0.7	0.8	1.5	10
50 m from kerb	0.6	0.8	1.4	0.7	0.8	1.5	10

Distance from Road (m)	2026 Predicted Concentration (mg/m <sup>3</sup> )			2036 Predicted Concentration (mg/m <sup>3</sup> )			Criteria (mg/m <sup>3</sup> )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>Main Alignment 1</b>							
At kerb (0 m)	1.2	0.8	2.0	1.4	0.8	2.2	10
10 m from kerb	0.5	0.8	1.3	0.5	0.8	1.3	10
20 m from kerb	0.3	0.8	1.1	0.4	0.8	1.2	10
30 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	10
40 m from kerb	0.2	0.8	1.0	0.3	0.8	1.1	10
50 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	10
<b>Main Alignment 2</b>							
At kerb (0 m)	1.4	0.8	2.2	1.5	0.8	2.3	10
10 m from kerb	0.5	0.8	1.3	0.6	0.8	1.4	10
20 m from kerb	0.4	0.8	1.2	0.4	0.8	1.2	10
30 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	10
40 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	10
50 m from kerb	0.2	0.8	1.0	0.3	0.8	1.1	10
<b>Main Alignment 3</b>							
At kerb (0 m)	0.8	0.8	1.6	0.9	0.8	1.7	10
10 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	10
20 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	10
30 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	10
40 m from kerb	0.1	0.8	0.9	0.2	0.8	1.0	10
50 m from kerb	0.1	0.8	0.9	0.1	0.8	0.9	10
<b>Main Alignment with Climbing Lane</b>							
At kerb (0 m)	0.9	0.8	1.7	1.0	0.8	1.8	10
10 m from kerb	0.4	0.8	1.2	0.5	0.8	1.3	10
20 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	10
30 m from kerb	0.2	0.8	1.0	0.3	0.8	1.1	10
40 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	10
50 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	10
<b>After exit ramp to Magpie Street</b>							
At kerb (0 m)	0.7	0.8	1.5	0.8	0.8	1.6	10
10 m from kerb	0.3	0.8	1.1	0.3	0.8	1.1	10
20 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	10
30 m from kerb	0.2	0.8	1.0	0.2	0.8	1.0	10
40 m from kerb	0.1	0.8	0.9	0.2	0.8	1.0	10
50 m from kerb	0.1	0.8	0.9	0.1	0.8	0.9	10
<b>Exit ramp to Singleton</b>							
At kerb (0 m)	0.1	0.8	0.9	0.1	0.8	0.9	10
10 m from kerb	0	0.8	0.8	0	0.8	0.8	10

Distance from Road (m)	2026 Predicted Concentration (mg/m <sup>3</sup> )			2036 Predicted Concentration (mg/m <sup>3</sup> )			Criteria (mg/m <sup>3</sup> )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
20 m from kerb	0	0.8	0.8	0	0.8	0.8	10
30 m from kerb	0	0.8	0.8	0	0.8	0.8	10
40 m from kerb	0	0.8	0.8	0	0.8	0.8	10
50 m from kerb	0	0.8	0.8	0	0.8	0.8	10
<b>Southbound to NEH</b>							
At kerb (0 m)	0	0.8	0.8	0	0.8	0.8	10
10 m from kerb	0	0.8	0.8	0	0.8	0.8	10
20 m from kerb	0	0.8	0.8	0	0.8	0.8	10
30 m from kerb	0	0.8	0.8	0	0.8	0.8	10
40 m from kerb	0	0.8	0.8	0	0.8	0.8	10
50 m from kerb	0	0.8	0.8	0	0.8	0.8	10
<b>Entry ramp from Putty Rd</b>							
At kerb (0 m)	0	0.8	0.8	0	0.8	0.8	10
10 m from kerb	0	0.8	0.8	0	0.8	0.8	10
20 m from kerb	0	0.8	0.8	0	0.8	0.8	10
30 m from kerb	0	0.8	0.8	0	0.8	0.8	10
40 m from kerb	0	0.8	0.8	0	0.8	0.8	10
50 m from kerb	0	0.8	0.8	0	0.8	0.8	10
<b>Exit ramp to Putty Rd</b>							
At kerb (0 m)	0	0.8	0.8	0	0.8	0.8	10
10 m from kerb	0	0.8	0.8	0	0.8	0.8	10
20 m from kerb	0	0.8	0.8	0	0.8	0.8	10
30 m from kerb	0	0.8	0.8	0	0.8	0.8	10
40 m from kerb	0	0.8	0.8	0	0.8	0.8	10
50 m from kerb	0	0.8	0.8	0	0.8	0.8	10
<b>Gowrie Gate exit ramp to roundabout</b>							
At kerb (0 m)	0.1	0.8	0.9	0.1	0.8	0.9	10
10 m from kerb	0.1	0.8	0.9	0	0.8	0.8	10
20 m from kerb	0	0.8	0.8	0	0.8	0.8	10
30 m from kerb	0	0.8	0.8	0	0.8	0.8	10
40 m from kerb	0	0.8	0.8	0	0.8	0.8	10
50 m from kerb	0	0.8	0.8	0	0.8	0.8	10
<b>Gowrie Gate entry ramp</b>							
At kerb (0 m)	0	0.8	0.8	0	0.8	0.8	10
10 m from kerb	0	0.8	0.8	0	0.8	0.8	10
20 m from kerb	0	0.8	0.8	0	0.8	0.8	10
30 m from kerb	0	0.8	0.8	0	0.8	0.8	10
40 m from kerb	0	0.8	0.8	0	0.8	0.8	10



Distance from Road (m)	2026 Predicted Concentration (mg/m <sup>3</sup> )			2036 Predicted Concentration (mg/m <sup>3</sup> )			Criteria (mg/m <sup>3</sup> )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
50 m from kerb	0	0.8	0.8	0	0.8	0.8	10
<b>Exit ramp to Magpie Street</b>							
At kerb (0 m)	0	0.8	0.8	0	0.8	0.8	10
10 m from kerb	0	0.8	0.8	0	0.8	0.8	10
20 m from kerb	0	0.8	0.8	0	0.8	0.8	10
30 m from kerb	0	0.8	0.8	0	0.8	0.8	10
40 m from kerb	0	0.8	0.8	0	0.8	0.8	10
50 m from kerb	0	0.8	0.8	0	0.8	0.8	10
<b>Entry ramp from Magpie Street</b>							
At kerb (0 m)	0.1	0.8	0.9	0	0.8	0.8	10
10 m from kerb	0	0.8	0.8	0	0.8	0.8	10
20 m from kerb	0	0.8	0.8	0	0.8	0.8	10
30 m from kerb	0	0.8	0.8	0	0.8	0.8	10
40 m from kerb	0	0.8	0.8	0	0.8	0.8	10
50 m from kerb	0	0.8	0.8	0	0.8	0.8	10

Table 10-4: Predicted NO<sub>2</sub> 1-Hour Maximum Concentration (µg/m<sup>3</sup>)

Distance from Road (m)	2026 Predicted Concentration (µg/m <sup>3</sup> )			2036 Predicted Concentration (µg/m <sup>3</sup> )			Criteria (µg/m <sup>3</sup> )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>Before exit ramp to Singleton</b>							
At kerb (0 m)	30.6	34.9	65.5	29.5	34.9	64.4	246
10 m from kerb	18.4	34.9	53.3	17.4	34.9	52.3	246
20 m from kerb	17.3	34.9	52.2	16.3	34.9	51.2	246
30 m from kerb	14.1	34.9	49.0	13.3	34.9	48.2	246
40 m from kerb	12.3	34.9	47.2	11.5	34.9	46.4	246
50 m from kerb	11	34.9	45.9	10.3	34.9	45.2	246
<b>Main Alignment 1</b>							
At kerb (0 m)	15.1	34.9	50.0	14.8	34.9	49.7	246
10 m from kerb	9	34.9	43.9	8.8	34.9	43.7	246
20 m from kerb	8.4	34.9	43.3	8.2	34.9	43.1	246
30 m from kerb	6.9	34.9	41.8	6.7	34.9	41.6	246
40 m from kerb	5.9	34.9	40.8	5.7	34.9	40.6	246
50 m from kerb	5.3	34.9	40.2	5.1	34.9	40.0	246
<b>Main Alignment 2</b>							
At kerb (0 m)	23.5	34.9	58.4	23.2	34.9	58.1	246
10 m from kerb	14.2	34.9	49.1	13.8	34.9	48.7	246
20 m from kerb	13.3	34.9	48.2	12.9	34.9	47.8	246
30 m from kerb	10.8	34.9	45.7	10.5	34.9	45.4	246

Distance from Road (m)	2026 Predicted Concentration (µg/m³)			2036 Predicted Concentration (µg/m³)			Criteria (µg/m³)
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
40 m from kerb	9.4	34.9	44.3	9.1	34.9	44.0	246
50 m from kerb	8.4	34.9	43.3	8.1	34.9	43.0	246
<b>Main Alignment 3</b>							
At kerb (0 m)	10.0	34.9	44.9	9.2	34.9	44.1	246
10 m from kerb	5.8	34.9	40.7	5.3	34.9	40.2	246
20 m from kerb	5.3	34.9	40.2	4.8	34.9	39.7	246
30 m from kerb	4.3	34.9	39.2	3.9	34.9	38.8	246
40 m from kerb	3.7	34.9	38.6	3.4	34.9	38.3	246
50 m from kerb	3.3	34.9	38.2	3.0	34.9	37.9	246
<b>Main Alignment with Climbing Lane</b>							
At kerb (0 m)	15	34.9	49.9	14.3	34.9	49.2	246
10 m from kerb	9.8	34.9	44.7	9.2	34.9	44.1	246
20 m from kerb	9.2	34.9	44.1	8.6	34.9	43.5	246
30 m from kerb	7.5	34.9	42.4	7.0	34.9	41.9	246
40 m from kerb	6.5	34.9	41.4	6.0	34.9	40.9	246
50 m from kerb	5.7	34.9	40.6	5.3	34.9	40.2	246
<b>After exit ramp to Magpie Street</b>							
At kerb (0 m)	22.9	34.9	57.8	21.8	34.9	56.7	246
10 m from kerb	13.8	34.9	48.7	13.0	34.9	47.9	246
20 m from kerb	12.9	34.9	47.8	12.1	34.9	47.0	246
30 m from kerb	10.5	34.9	45.4	9.9	34.9	44.8	246
40 m from kerb	9.1	34.9	44.0	8.5	34.9	43.4	246
50 m from kerb	8.1	34.9	43.0	7.6	34.9	42.5	246
<b>Exit ramp to Singleton</b>							
At kerb (0 m)	1.9	34.9	36.8	1.3	34.9	36.2	246
10 m from kerb	1.1	34.9	36.0	0.7	34.9	35.6	246
20 m from kerb	1	34.9	35.9	0.7	34.9	35.6	246
30 m from kerb	0.8	34.9	35.7	0.5	34.9	35.4	246
40 m from kerb	0.7	34.9	35.6	0.5	34.9	35.4	246
50 m from kerb	0.6	34.9	35.5	0.4	34.9	35.3	246
<b>Southbound to NEH</b>							
At kerb (0 m)	1.1	34.9	36.0	0.7	34.9	35.6	246
10 m from kerb	0.6	34.9	35.5	0.4	34.9	35.3	246
20 m from kerb	0.5	34.9	35.4	0.3	34.9	35.2	246
30 m from kerb	0.4	34.9	35.3	0.3	34.9	35.2	246
40 m from kerb	0.4	34.9	35.3	0.2	34.9	35.1	246
50 m from kerb	0.3	34.9	35.2	0.2	34.9	35.1	246
<b>Entry ramp from Putty Rd</b>							

Distance from Road (m)	2026 Predicted Concentration (µg/m³)			2036 Predicted Concentration (µg/m³)			Criteria (µg/m³)
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
At kerb (0 m)	3.5	34.9	38.4	3.0	34.9	37.9	246
10 m from kerb	2	34.9	36.9	1.7	34.9	36.6	246
20 m from kerb	1.8	34.9	36.7	1.6	34.9	36.5	246
30 m from kerb	1.5	34.9	36.4	1.3	34.9	36.2	246
40 m from kerb	1.3	34.9	36.2	1.1	34.9	36.0	246
50 m from kerb	1.1	34.9	36.0	1.0	34.9	35.9	246
<b>Exit ramp to Putty Rd</b>							
At kerb (0 m)	2.1	34.9	37.0	1.7	34.9	36.6	246
10 m from kerb	1.2	34.9	36.1	1.0	34.9	35.9	246
20 m from kerb	1.1	34.9	36.0	0.9	34.9	35.8	246
30 m from kerb	0.9	34.9	35.8	0.7	34.9	35.6	246
40 m from kerb	0.7	34.9	35.6	0.6	34.9	35.5	246
50 m from kerb	0.7	34.9	35.6	0.5	34.9	35.4	246
<b>Gowrie Gate exit ramp to roundabout</b>							
At kerb (0 m)	4.3	34.9	39.2	4.2	34.9	39.1	246
10 m from kerb	2.4	34.9	37.3	2.3	34.9	37.2	246
20 m from kerb	2.2	34.9	37.1	2.1	34.9	37.0	246
30 m from kerb	1.8	34.9	36.7	1.7	34.9	36.6	246
40 m from kerb	1.5	34.9	36.4	1.5	34.9	36.4	246
50 m from kerb	1.3	34.9	36.2	1.3	34.9	36.2	246
<b>Gowrie Gate entry ramp onto Bypass</b>							
At kerb (0 m)	1.7	34.9	36.6	1.5	34.9	36.4	246
10 m from kerb	1	34.9	35.9	0.9	34.9	35.8	246
20 m from kerb	0.9	34.9	35.8	0.8	34.9	35.7	246
30 m from kerb	0.7	34.9	35.6	0.7	34.9	35.6	246
40 m from kerb	0.6	34.9	35.5	0.6	34.9	35.5	246
50 m from kerb	0.6	34.9	35.5	0.5	34.9	35.4	246
<b>Exit ramp to Magpie Street</b>							
At kerb (0 m)	3.4	34.9	38.3	3.1	34.9	38.0	246
10 m from kerb	2.1	34.9	37.0	1.9	34.9	36.8	246
20 m from kerb	1.9	34.9	36.8	1.7	34.9	36.6	246
30 m from kerb	1.5	34.9	36.4	1.4	34.9	36.3	246
40 m from kerb	1.3	34.9	36.2	1.2	34.9	36.1	246
50 m from kerb	1.2	34.9	36.1	1.1	34.9	36.0	246
<b>Entry ramp from Magpie Street</b>							
At kerb (0 m)	5.8	34.9	40.7	5.5	34.9	40.4	246
10 m from kerb	3.3	34.9	38.2	3.1	34.9	38.0	246
20 m from kerb	3	34.9	37.9	2.8	34.9	37.7	246

Distance from Road (m)	2026 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			2036 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			Criteria ( $\mu\text{g}/\text{m}^3$ )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
30 m from kerb	2.4	34.9	37.3	2.3	34.9	37.2	246
40 m from kerb	2.1	34.9	37.0	2.0	34.9	36.9	246
50 m from kerb	1.8	34.9	36.7	1.7	34.9	36.6	246

Table 10-5: Predicted NO<sub>2</sub> Annual Average Concentration ( $\mu\text{g}/\text{m}^3$ )

Distance from Road (m)	2026 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			2036 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			Criteria ( $\mu\text{g}/\text{m}^3$ )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>Before exit ramp to Singleton</b>							
At kerb (0 m)	6.1	15.9	22.0	5.9	15.9	21.8	62
10 m from kerb	3.7	15.9	19.6	3.5	15.9	19.4	62
20 m from kerb	3.5	15.9	19.4	3.3	15.9	19.2	62
30 m from kerb	2.8	15.9	18.7	2.7	15.9	18.6	62
40 m from kerb	2.5	15.9	18.4	2.3	15.9	18.2	62
50 m from kerb	2.2	15.9	18.1	2.1	15.9	18.0	62
<b>Main Alignment 1</b>							
At kerb (0 m)	3	15.9	18.9	3	15.9	18.9	62
10 m from kerb	1.8	15.9	17.7	1.8	15.9	17.7	62
20 m from kerb	1.7	15.9	17.6	1.6	15.9	17.5	62
30 m from kerb	1.4	15.9	17.3	1.3	15.9	17.2	62
40 m from kerb	1.2	15.9	17.1	1.1	15.9	17.0	62
50 m from kerb	1.1	15.9	17.0	1.0	15.9	16.9	62
<b>Main Alignment 2</b>							
At kerb (0 m)	4.7	15.9	20.6	4.6	15.9	20.5	62
10 m from kerb	2.8	15.9	18.7	2.8	15.9	18.7	62
20 m from kerb	2.7	15.9	18.6	2.6	15.9	18.5	62
30 m from kerb	2.2	15.9	18.1	2.1	15.9	18.0	62
40 m from kerb	1.9	15.9	17.8	1.8	15.9	17.7	62
50 m from kerb	1.7	15.9	17.6	1.6	15.9	17.5	62
<b>Main Alignment 3</b>							
At kerb (0 m)	2.0	15.9	17.9	1.8	15.9	17.7	62
10 m from kerb	1.2	15.9	17.1	1.1	15.9	17.0	62
20 m from kerb	1.1	15.9	17.0	1.0	15.9	16.9	62
30 m from kerb	0.9	15.9	16.8	0.8	15.9	16.7	62
40 m from kerb	0.7	15.9	16.6	0.7	15.9	16.6	62
50 m from kerb	0.7	15.9	16.6	0.6	15.9	16.5	62
<b>Main Alignment with Climbing Lane</b>							
At kerb (0 m)	3	15.9	18.9	2.9	15.9	18.8	62

Distance from Road (m)	2026 Predicted Concentration (µg/m³)			2036 Predicted Concentration (µg/m³)			Criteria (µg/m³)
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
10 m from kerb	2	15.9	17.9	1.8	15.9	17.7	62
20 m from kerb	1.8	15.9	17.7	1.7	15.9	17.6	62
30 m from kerb	1.5	15.9	17.4	1.4	15.9	17.3	62
40 m from kerb	1.3	15.9	17.2	1.2	15.9	17.1	62
50 m from kerb	1.1	15.9	17.0	1.1	15.9	17.0	62
<b>After exit ramp to Magpie Street</b>							
At kerb (0 m)	4.6	15.9	20.5	4.4	15.9	20.3	62
10 m from kerb	2.8	15.9	18.7	2.6	15.9	18.5	62
20 m from kerb	2.6	15.9	18.5	2.4	15.9	18.3	62
30 m from kerb	2.1	15.9	18.0	2.0	15.9	17.9	62
40 m from kerb	1.8	15.9	17.7	1.7	15.9	17.6	62
50 m from kerb	1.6	15.9	17.5	1.5	15.9	17.4	62
<b>Exit ramp to Singleton</b>							
At kerb (0 m)	0.4	15.9	16.3	0.3	15.9	16.2	62
10 m from kerb	0.2	15.9	16.1	0.1	15.9	16.0	62
20 m from kerb	0.2	15.9	16.1	0.1	15.9	16.0	62
30 m from kerb	0.2	15.9	16.1	0.1	15.9	16.0	62
40 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
50 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
<b>Southbound to NEH</b>							
At kerb (0 m)	0.2	15.9	16.1	0.1	15.9	16.0	62
10 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
20 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
30 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
40 m from kerb	0.1	15.9	16.0	0	15.9	15.9	62
50 m from kerb	0.1	15.9	16.0	0	15.9	15.9	62
<b>Entry ramp from Putty Rd</b>							
At kerb (0 m)	0.7	15.9	16.6	0.6	15.9	16.5	62
10 m from kerb	0.4	15.9	16.3	0.3	15.9	16.2	62
20 m from kerb	0.4	15.9	16.3	0.3	15.9	16.2	62
30 m from kerb	0.3	15.9	16.2	0.3	15.9	16.2	62
40 m from kerb	0.3	15.9	16.2	0.2	15.9	16.1	62
50 m from kerb	0.2	15.9	16.1	0.2	15.9	16.1	62
<b>Exit ramp to Putty Rd</b>							
At kerb (0 m)	0.4	15.9	16.3	0.3	15.9	16.2	62
10 m from kerb	0.2	15.9	16.1	0.2	15.9	16.1	62
20 m from kerb	0.2	15.9	16.1	0.2	15.9	16.1	62
30 m from kerb	0.2	15.9	16.1	0.1	15.9	16.0	62

Distance from Road (m)	2026 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			2036 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			Criteria ( $\mu\text{g}/\text{m}^3$ )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
40 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
50 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
<b>Gowrie Gate exit ramp to roundabout</b>							
At kerb (0 m)	0.9	15.9	16.8	0.8	15.9	16.7	62
10 m from kerb	0.5	15.9	16.4	0.5	15.9	16.4	62
20 m from kerb	0.4	15.9	16.3	0.4	15.9	16.3	62
30 m from kerb	0.4	15.9	16.3	0.3	15.9	16.2	62
40 m from kerb	0.3	15.9	16.2	0.3	15.9	16.2	62
50 m from kerb	0.3	15.9	16.2	0.3	15.9	16.2	62
<b>Gowrie Gate entry ramp onto Bypass</b>							
At kerb (0 m)	0.3	15.9	16.2	0.3	15.9	16.2	62
10 m from kerb	0.2	15.9	16.1	0.2	15.9	16.1	62
20 m from kerb	0.2	15.9	16.1	0.2	15.9	16.1	62
30 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
40 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
50 m from kerb	0.1	15.9	16.0	0.1	15.9	16.0	62
<b>Exit ramp to Magpie Street</b>							
At kerb (0 m)	0.7	15.9	16.6	0.6	15.9	16.5	62
10 m from kerb	0.4	15.9	16.3	0.4	15.9	16.3	62
20 m from kerb	0.4	15.9	16.3	0.3	15.9	16.2	62
30 m from kerb	0.3	15.9	16.2	0.3	15.9	16.2	62
40 m from kerb	0.3	15.9	16.2	0.2	15.9	16.1	62
50 m from kerb	0.2	15.9	16.1	0.2	15.9	16.1	62
<b>Entry ramp from Magpie Street</b>							
At kerb (0 m)	1.2	15.9	17.1	1.1	15.9	17.0	62
10 m from kerb	0.7	15.9	16.6	0.6	15.9	16.5	62
20 m from kerb	0.6	15.9	16.5	0.6	15.9	16.5	62
30 m from kerb	0.5	15.9	16.4	0.5	15.9	16.4	62
40 m from kerb	0.4	15.9	16.3	0.4	15.9	16.3	62
50 m from kerb	0.4	15.9	16.3	0.3	15.9	16.2	62

Table 10-6: Predicted PM<sub>10</sub> 24-Hour Maximum Concentration ( $\mu\text{g}/\text{m}^3$ ) – Bold entries denote exceedance of criteria

Distance from Road (m)	2026 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			2036 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			Criteria ( $\mu\text{g}/\text{m}^3$ )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>Before Exit Ramp to Singleton</b>							
At kerb (0 m)	15.1	46.3	<b>61.4</b>	16.3	46.3	<b>62.6</b>	50
10 m from kerb	6.1	46.3	<b>52.4</b>	6.4	46.3	<b>52.7</b>	50
20 m from kerb	4.3	46.3	<b>50.6</b>	4.5	46.3	<b>50.8</b>	50

Distance from Road (m)	2026 Predicted Concentration (µg/m³)			2036 Predicted Concentration (µg/m³)			Criteria (µg/m³)
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
30 m from kerb	3.5	46.3	49.8	3.6	46.3	49.9	50
40 m from kerb	3.0	46.3	49.3	3.2	46.3	49.5	50
50 m from kerb	2.7	46.3	49.0	2.8	46.3	49.1	50
<b>Main Alignment 1</b>							
At kerb (0 m)	8.9	46.3	<b>55.2</b>	9.7	46.3	<b>56.0</b>	50
10 m from kerb	3.6	46.3	49.9	4.0	46.3	<b>50.3</b>	50
20 m from kerb	2.6	46.3	48.9	2.8	46.3	49.1	50
30 m from kerb	2.1	46.3	48.4	2.3	46.3	48.6	50
40 m from kerb	1.8	46.3	48.1	2.0	46.3	48.3	50
50 m from kerb	1.6	46.3	47.9	1.8	46.3	48.1	50
<b>Main Alignment 2</b>							
At kerb (0 m)	12.2	46.3	<b>58.5</b>	13.4	46.3	<b>59.7</b>	50
10 m from kerb	5	46.3	<b>51.3</b>	5.4	46.3	<b>51.7</b>	50
20 m from kerb	3.5	46.3	49.8	3.8	46.3	<b>50.1</b>	50
30 m from kerb	2.9	46.3	49.2	3.1	46.3	49.4	50
40 m from kerb	2.5	46.3	48.8	2.7	46.3	49.0	50
50 m from kerb	2.2	46.3	48.5	2.4	46.3	48.7	50
<b>Main Alignment 3</b>							
At kerb (0 m)	7.9	46.3	<b>54.2</b>	8.6	46.3	<b>54.9</b>	50
10 m from kerb	3.3	46.3	49.6	3.6	46.3	49.9	50
20 m from kerb	2.3	46.3	48.6	2.5	46.3	48.8	50
30 m from kerb	1.9	46.3	48.2	2.1	46.3	48.4	50
40 m from kerb	1.7	46.3	48.0	1.8	46.3	48.1	50
50 m from kerb	1.5	46.3	47.8	1.6	46.3	47.9	50
<b>Main Alignment with Climbing Lane</b>							
At kerb (0 m)	8.1	46.3	<b>54.4</b>	8.8	46.3	55.1	50
10 m from kerb	3.6	46.3	49.9	3.9	46.3	50.2	50
20 m from kerb	2.6	46.3	48.9	2.8	46.3	49.1	50
30 m from kerb	2.2	46.3	48.5	2.3	46.3	48.6	50
40 m from kerb	1.9	46.3	48.2	2.0	46.3	48.3	50
50 m from kerb	1.7	46.3	48.0	1.8	46.3	48.1	50
<b>After exit ramp to Magpie Street</b>							
At kerb (0 m)	12	46.3	<b>58.3</b>	12.8	46.3	<b>59.1</b>	50
10 m from kerb	4.9	46.3	<b>51.2</b>	5.1	46.3	<b>51.4</b>	50
20 m from kerb	3.4	46.3	49.7	3.6	46.3	49.9	50
30 m from kerb	2.8	46.3	49.1	2.9	46.3	49.2	50
40 m from kerb	2.4	46.3	48.7	2.5	46.3	48.8	50
50 m from kerb	2.2	46.3	48.5	2.3	46.3	48.6	50

Distance from Road (m)	2026 Predicted Concentration (µg/m³)			2036 Predicted Concentration (µg/m³)			Criteria (µg/m³)
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>Exit Ramp to Singleton</b>							
At kerb (0 m)	1.9	46.3	48.2	2.0	46.3	48.3	50
10 m from kerb	0.7	46.3	47.0	0.7	46.3	47.0	50
20 m from kerb	0.5	46.3	46.8	0.5	46.3	46.8	50
30 m from kerb	0.4	46.3	46.7	0.4	46.3	46.7	50
40 m from kerb	0.3	46.3	46.6	0.4	46.3	46.7	50
50 m from kerb	0.3	46.3	46.6	0.3	46.3	46.6	50
<b>Southbound to NEH</b>							
At kerb (0 m)	2.1	46.3	48.4	2.3	46.3	48.6	50
10 m from kerb	0.8	46.3	47.1	0.8	46.3	47.1	50
20 m from kerb	0.6	46.3	46.9	0.6	46.3	46.9	50
30 m from kerb	0.4	46.3	46.7	0.5	46.3	46.8	50
40 m from kerb	0.4	46.3	46.7	0.4	46.3	46.7	50
50 m from kerb	0.3	46.3	46.6	0.4	46.3	46.7	50
<b>Entry Ramp from Putty Rd</b>							
At kerb (0 m)	2.3	46.3	48.6	2.4	46.3	48.7	50
10 m from kerb	0.9	46.3	47.2	0.9	46.3	47.2	50
20 m from kerb	0.6	46.3	46.9	0.6	46.3	46.9	50
30 m from kerb	0.5	46.3	46.8	0.5	46.3	46.8	50
40 m from kerb	0.4	46.3	46.7	0.4	46.3	46.7	50
50 m from kerb	0.4	46.3	46.7	0.4	46.3	46.7	50
<b>Exit Ramp to Putty Rd</b>							
At kerb (0 m)	2.3	46.3	48.6	2.4	46.3	48.7	50
10 m from kerb	0.9	46.3	47.2	0.9	46.3	47.2	50
20 m from kerb	0.6	46.3	46.9	0.6	46.3	46.9	50
30 m from kerb	0.5	46.3	46.8	0.5	46.3	46.8	50
40 m from kerb	0.4	46.3	46.7	0.4	46.3	46.7	50
50 m from kerb	0.4	46.3	46.7	0.4	46.3	46.7	50
<b>Gowrie Gate Exit Ramp to roundabout</b>							
At kerb (0 m)	3.4	46.3	49.7	3.8	46.3	50.1	50
10 m from kerb	1.3	46.3	47.6	1.4	46.3	47.7	50
20 m from kerb	0.9	46.3	47.2	0.9	46.3	47.2	50
30 m from kerb	0.7	46.3	47.0	0.8	46.3	47.1	50
40 m from kerb	0.6	46.3	46.9	0.7	46.3	47.0	50
50 m from kerb	0.5	46.3	46.8	0.6	46.3	46.9	50
<b>Gowrie Gate Entry Ramp onto Bypass</b>							
At kerb (0 m)	1.1	46.3	47.4	1.2	46.3	47.5	50
10 m from kerb	0.5	46.3	46.8	0.5	46.3	46.8	50



Distance from Road (m)	2026 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			2036 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			Criteria ( $\mu\text{g}/\text{m}^3$ )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
20 m from kerb	0.3	46.3	46.6	0.3	46.3	46.6	50
30 m from kerb	0.3	46.3	46.6	0.3	46.3	46.6	50
40 m from kerb	0.2	46.3	46.5	0.2	46.3	46.5	50
50 m from kerb	0.2	46.3	46.5	0.2	46.3	46.5	50
<b>Exit Ramp to Magpie Street</b>							
At kerb (0 m)	1.4	46.3	47.7	1.4	46.3	47.7	50
10 m from kerb	0.6	46.3	46.9	0.6	46.3	46.9	50
20 m from kerb	0.4	46.3	46.7	0.4	46.3	46.7	50
30 m from kerb	0.3	46.3	46.6	0.3	46.3	46.6	50
40 m from kerb	0.3	46.3	46.6	0.3	46.3	46.6	50
50 m from kerb	0.2	46.3	46.5	0.2	46.3	46.5	50
<b>Entry Ramp from Magpie Street</b>							
At kerb (0 m)	3.2	46.3	49.5	3.5	46.3	49.8	50
10 m from kerb	1.2	46.3	47.5	1.3	46.3	47.6	50
20 m from kerb	0.8	46.3	47.1	0.9	46.3	47.2	50
30 m from kerb	0.7	46.3	47.0	0.7	46.3	47.0	50
40 m from kerb	0.6	46.3	46.9	0.6	46.3	46.9	50
50 m from kerb	0.5	46.3	46.8	0.5	46.3	46.8	50

Table 10-7: Predicted PM<sub>10</sub> Annual Average Concentration ( $\mu\text{g}/\text{m}^3$ )

Distance from Road (m)	2026 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			2036 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			Criteria ( $\mu\text{g}/\text{m}^3$ )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
<b>Before Exit Ramp to Singleton</b>							
At kerb (0 m)	6.1	26.8	32.9	6.5	26.8	33.3	25
10 m from kerb	2.4	26.8	29.2	2.6	26.8	29.4	25
20 m from kerb	1.7	26.8	28.5	1.8	26.8	28.6	25
30 m from kerb	1.4	26.8	28.2	1.5	26.8	28.3	25
40 m from kerb	1.2	26.8	28.0	1.3	26.8	28.1	25
50 m from kerb	1.1	26.8	27.9	1.1	26.8	27.9	25
<b>Main Alignment 1</b>							
At kerb (0 m)	3.6	26.8	30.4	3.9	26.8	30.7	25
10 m from kerb	1.5	26.8	28.3	1.6	26.8	28.4	25
20 m from kerb	1	26.8	27.8	1.1	26.8	27.9	25
30 m from kerb	0.8	26.8	27.6	0.9	26.8	27.7	25
40 m from kerb	0.7	26.8	27.5	0.8	26.8	27.6	25
50 m from kerb	0.6	26.8	27.4	0.7	26.8	27.5	25
<b>Main Alignment 2</b>							
At kerb (0 m)	4.9	26.8	31.7	5.4	26.8	32.2	25

Distance from Road (m)	2026 Predicted Concentration (µg/m³)			2036 Predicted Concentration (µg/m³)			Criteria (µg/m³)
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
10 m from kerb	2	26.8	28.8	2.2	26.8	29.0	25
20 m from kerb	1.4	26.8	28.2	1.5	26.8	28.3	25
30 m from kerb	1.1	26.8	27.9	1.2	26.8	28.0	25
40 m from kerb	1	26.8	27.8	1.1	26.8	27.9	25
50 m from kerb	0.9	26.8	27.7	1.0	26.8	27.8	25
<b>Main Alignment 3</b>							
At kerb (0 m)	3.2	26.8	30.0	3.4	26.8	30.2	25
10 m from kerb	1.3	26.8	28.1	1.4	26.8	28.2	25
20 m from kerb	0.9	26.8	27.7	1.0	26.8	27.8	25
30 m from kerb	0.8	26.8	27.6	0.8	26.8	27.6	25
40 m from kerb	0.7	26.8	27.5	0.7	26.8	27.5	25
50 m from kerb	0.6	26.8	27.4	0.6	26.8	27.4	25
<b>Main Alignment with Climbing Lane</b>							
At kerb (0 m)	3.2	26.8	30.0	3.5	26.8	30.3	25
10 m from kerb	1.5	26.8	28.3	1.5	26.8	28.3	25
20 m from kerb	1.1	26.8	27.9	1.1	26.8	27.9	25
30 m from kerb	0.9	26.8	27.7	0.9	26.8	27.7	25
40 m from kerb	0.8	26.8	27.6	0.8	26.8	27.6	25
50 m from kerb	0.7	26.8	27.5	0.7	26.8	27.5	25
<b>After exit ramp to Magpie Street</b>							
At kerb (0 m)	4.8	26.8	31.6	5.1	26.8	31.9	25
10 m from kerb	1.9	26.8	28.7	2.1	26.8	28.9	25
20 m from kerb	1.4	26.8	28.2	1.4	26.8	28.2	25
30 m from kerb	1.1	26.8	27.9	1.2	26.8	28.0	25
40 m from kerb	1.0	26.8	27.8	1.0	26.8	27.8	25
50 m from kerb	0.9	26.8	27.7	0.9	26.8	27.7	25
<b>Exit Ramp to Singleton</b>							
At kerb (0 m)	0.7	26.8	27.5	0.8	26.8	27.6	25
10 m from kerb	0.3	26.8	27.1	0.3	26.8	27.1	25
20 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
30 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
40 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
50 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
<b>Southbound to NEH</b>							
At kerb (0 m)	0.9	26.8	27.7	0.9	26.8	27.7	25
10 m from kerb	0.3	26.8	27.1	0.3	26.8	27.1	25
20 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
30 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25

Distance from Road (m)	2026 Predicted Concentration (µg/m³)			2036 Predicted Concentration (µg/m³)			Criteria (µg/m³)
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
40 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
50 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
Entry Ramp from Putty Rd							
At kerb (0 m)	0.9	26.8	27.7	0.9	26.8	27.7	25
10 m from kerb	0.3	26.8	27.1	0.4	26.8	27.2	25
20 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
30 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
40 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
50 m from kerb	0.1	26.8	26.9	0.2	26.8	27.0	25
Exit Ramp to Putty Rd							
At kerb (0 m)	0.9	26.8	27.7	0.9	26.8	27.7	25
10 m from kerb	0.3	26.8	27.1	0.4	26.8	27.2	25
20 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
30 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
40 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
50 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
Gowrie Gate Exit Ramp to roundabout							
At kerb (0 m)	1.4	26.8	28.2	1.5	26.8	28.3	25
10 m from kerb	0.5	26.8	27.3	0.6	26.8	27.4	25
20 m from kerb	0.3	26.8	27.1	0.4	26.8	27.2	25
30 m from kerb	0.3	26.8	27.1	0.3	26.8	27.1	25
40 m from kerb	0.2	26.8	27.0	0.3	26.8	27.1	25
50 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
Gowrie Gate Entry Ramp onto Bypass							
At kerb (0 m)	0.5	26.8	27.3	0.5	26.8	27.3	25
10 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
20 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
30 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
40 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
50 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
Exit Ramp to Magpie Street							
At kerb (0 m)	0.6	26.8	27.4	0.6	26.8	27.4	25
10 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
20 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
30 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
40 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
50 m from kerb	0.1	26.8	26.9	0.1	26.8	26.9	25
Entry Ramp from Magpie Street							

Distance from Road (m)	2026 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			2036 Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )			Criteria ( $\mu\text{g}/\text{m}^3$ )
	Incremental	Background	Cumulative	Incremental	Background	Cumulative	
At kerb (0 m)	1.3	26.8	28.1	1.4	26.8	28.2	25
10 m from kerb	0.5	26.8	27.3	0.5	26.8	27.3	25
20 m from kerb	0.3	26.8	27.1	0.4	26.8	27.2	25
30 m from kerb	0.3	26.8	27.1	0.3	26.8	27.1	25
40 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25
50 m from kerb	0.2	26.8	27.0	0.2	26.8	27.0	25