

Tag Unit 3.3.4 - Regional Emissions

Impact of Preferred Scheme

- 1.1. Assessment of the 'Preferred Scheme' has been carried out quantitatively based on changes in traffic flows on the modelled road network. The assessment has been carried out by comparing the differences in total emissions across the modelled area. The overall predicted effects for the Preferred Scheme are assessed as **slight adverse**.
- 1.2. Initial assessment results (under review) are presented in paragraph 1.26.1, which indicate that regional emissions across the whole network will increase between the Do Minimum and Preferred Scheme scenarios due to a predicted increase in traffic on the modelled road network.

Impact of Next Best Alternative

- 1.3. A qualitative assessment of the Next Best Alternative effect on regional emissions has been carried as traffic data for this scenario are unavailable. It would be expected that the Next Best Alternative would create changes in traffic flows around the city of Leeds similar to those presented within the transport model produced for the Preferred Scheme. The overall effects for the Next Best Alternative are described as **slight adverse**.
- 1.4. Overall, regional emissions are expected to be higher in the Next Best Alternative compared to the Preferred Scheme. When the bus is utilising its diesel generator emissions of NO_x, PM₁₀, carbon monoxide (CO) and total hydrocarbons (THC) would occur. It would be expected that these emissions would provide a greater contribution to regional emissions than those associated with electricity production required to power the trolleybus for the Preferred Scheme.

Impact of Lower Cost Alternative

- 1.5. A qualitative assessment of the 'Lower Cost Alternative' effects on regional emissions has been carried as traffic data for this scenario is unavailable. It would be expected that the Lower Cost Alternative would create changes in traffic flows around the city of Leeds similar to those presented within the transport model produced for the Preferred Scheme. The overall effects for the Low Cost Alternative are assessed as **slight adverse**.
- 1.6. Overall, regional emissions are expected to be higher in the Lower Cost Alternative compared to the Preferred Scheme. As the option comprises diesel powered buses, emissions of NO_x, PM₁₀, CO and THCs would be emitted over and above those emitted from the Preferred Scheme and Next Best Alternative. It would be expected

that these emissions would provide a greater contribution to regional emission than those associated with electricity production required to power the trolleybus for the Preferred Scheme.

1. REGIONAL AIR QUALITY - Strategy and Plan Level: Worksheet

1.1. Methodology

The regional emissions objective for the three options , 'preferred', 'next best' and 'lower cost' have been undertaken following a quantitative and qualitative approach.

Assessment of the 'preferred option' has been carried out quantitatively based on changes in traffic flows on the modelled road network. The assessment has been carried out by comparing the differences in total emissions across the modelled area. Traffic data have been provided by SDG.

Assessment of the regional emissions associated with the 'next best option' and 'lower cost option' has been carried out qualitatively as traffic data for these scenarios was unavailable at the time of reporting. It is intended that further more detailed assessment will be undertaken as part of the Environmental Impact Assessment, when more extensive traffic data should be made available.

A summary of the findings for this assessment are presented in the main body of the MSBC text in Chapter 13.

1.2. Preferred Option – Quantitative Assessment

Option Name: Preferred Option Tonnes per year	Present Year:2008		Future Year:2016		
	Do-Minimum		Do-Something	Do-Something compared with	
	Present	Future	Future	Present Do-Min	Future Do-Min
NO _x	3,012.1	3,129.7	3,134.6	122.5	4.9
PM ₁₀	124.7	203.7	204.1	79.4	0.4
CO	4481.0	5,463.0	5,478.6	997.6	15.6
THC	529.7	598.8	600.8	71.1	2

Data Sources: Traffic data provided by SDG. Emissions calculated using DMRB model 1.03c

1.3. Next Best Alternative – Qualitative Assessment

A qualitative assessment of the 'next best alternative's' effect on regional emissions has been carried as traffic data for this scenario are unavailable. It would be expected that the 'next best alternative' would create changes in traffic flows around the city of Leeds similar to those presented within the transport model produced for the 'preferred option'.

Overall, regional emissions are expected to be higher in the 'next best alternative' compared to the 'preferred option'. When the bus is utilising its diesel generator emissions of NO_x, PM₁₀, carbon monoxide (CO) and total hydrocarbons (THC) would occur. It would be expected that these emissions would provide a greater contribution to regional emissions than those associated with electricity production required to power the trolleybus for the 'preferred option'.

1.4. Lower Cost Alternative – Qualitative Assessment

A qualitative assessment of the 'lower cost alternative' effects on regional emissions has been carried as traffic data for this scenario is unavailable. It would be expected that the 'lower cost alternative' would create changes in traffic flows around the city of Leeds similar to those presented within the transport model produced for the 'preferred option'.

Overall, regional emissions are expected to be higher in the 'lower cost alternative' compared to the 'preferred option'. As the option comprises diesel powered buses, emissions of NO_x, PM₁₀, CO and THCs would be emitted over and above those emitted from the 'preferred option' and 'next best alternative'. It would be expected that these emissions would provide a greater contribution to regional emission than those associated with electricity production required to power the trolleybus for the 'preferred option'.