

**Table 5.3d**  
**Annual Average Concentrations of Nitrogen Dioxide ( $\mu\text{gm}^{-3}$ )**

AQMS	1997	Increment	Total
Central/Western	58	3.5	61.5
Mong Kok	85	5.2	90.2
Sha Tin	49	6.8	55.8
Yuen Long	61	10.2	71.2
Tsuen Wan	68	3.1	71.1
Kwai Chung	49	6.9	55.9
Sham Shui Po	71	4.1	75.1
Kwun Tong	74	6.0	80.0
Tai Po	50	0.6	50.6

The assessment indicates that the predicted air quality under this scenario is likely to deteriorate at all AQMS. Air quality is predicted to remain approximately the same as in 1997 at Tai Po. The most significant deterioration is predicted at the Yuen Long AQMS, where annual average concentration of nitrogen dioxide is predicted to increase by about 17%, relative to levels observed in 1997. Levels at Sha Tin and Kwai Chung are predicted to increase by 14%. Non-compliance with the AQO is only anticipated at the Mong Kok AQMS, although for the reasons given above, this conclusion needs to be treated with a degree of caution and it should also be noted that the station was already out of compliance in 1997.

Figure 5.3a presents a contour map of the predicted changes in annual average concentrations of nitrogen dioxide on a territory-wide basis. The figure indicates a general increase in concentrations ( $>5\mu\text{gm}^{-3}$ ) in the western half of the SAR. Such increases are predicted to be particularly marked in the vicinity of Tsuen Wan, Tuen Mun and Yuen Long and Sheung Shui with increases in the range of 5 to  $7.5\mu\text{gm}^{-3}$  anticipated. Smaller ( $\sim 2.5\mu\text{gm}^{-3}$ ) increases are predicted across most of Hong Kong. Reductions in concentrations are predicted to occur in the southern tip of Kowloon, the central part of Hong Kong Island and most of Lamma Island. These reductions are anticipated to be by between 1 and  $5\mu\text{gm}^{-3}$ . Similar reductions are also predicted in an area south-east of Sha Tin. These predictions are considered to be attributable to the relatively slow growth in traffic volumes due to limited space for new infrastructure and the introduction of tighter emission standards for vehicles. Those areas in which generalised increases in nitrogen dioxide levels are anticipated are typically subject to a rate of vehicle growth that negates the improvements anticipated due to the introduction of more stringent vehicle emission standards. Areas in which improvements are anticipated are typically already highly congested and hence the rate of traffic growth is not anticipated to be particularly significant. This allows the improvements associated with tighter vehicle emission standards to be realised.

It should be noted that this scenario is included in the analysis in order to represent the upper bound conditions and is therefore considered to be representative of the worst case. Nevertheless, even under these severe conditions, improved vehicle emission standards will still result in beneficial impacts to air quality in some areas.