emitted from diesel vehicles. The roadside air quality is also influenced by surrounding buildings which form "street canyons" and so limit the dispersion of pollutants emitted from traffic. In addition, the main emission sources are located very close to the sensitive receivers (eg pedestrians, street level shops) which further limits the potential for pollutant dispersion. Nevertheless, the future deterioration of roadside air quality is not envisaged to be as significant as general air quality due to limited traffic growth potential in developed urban areas compared to developing new towns and improved vehicle emissions control standards (eg Euro III). Other measures such as introduction of LPG taxis and heavier fines on smoky vehicles will further enhance the roadside air quality.

The most effective way to tackle roadside air quality is to eliminate or reduce the emission sources. This can be achieved by "zero emissions" vehicles eg electric vehicles, trolley buses or controlling the number of vehicles using the roads. Alternatively, in some instances it may be possible to separate the sources from sensitive receivers by means such as areas restrictions, enclosed pedestrian walkways. This will not reduce the overall pollutant emissions from traffic but may provide a partial local relief in heavily polluted areas. Air quality mitigation measures are further discussed in Chapter 8 of this report.

It is evident that even under a scenario in which stringent vehicle emission standards are assumed, traffic represents a significant source of pollutants in many areas. Nevertheless, it is evident that other sources may also be important and it is acknowledged that these may be located both within and outside the SAR and hence would require control by the HKSAR Government and north of the boundary.

A detailed analysis of air quality monitoring and meteorological data has indicated that daily average concentrations of RSP are two to three times greater when the prevailing winds have a northerly component. Table 5.3z summarises the results of this analysis.

Table 5.3z
Effects of Wind Direction on Ambient Daily Average Concentrations of RSP (μgm^{-3}) at the Sha Tin AQMS

Wind direction	Average concentration	Standard deviation
Northerly	65	26
North-easterly	58	26
Southerly/south-westerly	26	7

The relative contribution of vehicle emissions to the ambient levels of pollutants in the SAR can therefore be expected to decline significantly during the winter monsoon period and to increase significantly during the summer monsoon period.