$PM_{2.5}$ (annual mean)

For both the community and RWR receptors, the annual mean PM_{10} concentration from GRAL was added to a fixed background $PM_{2.5}$ concentration (8 µg/m^3) to give the total annual mean concentration.

For both types of receptor the annual mean $PM_{2.5}$ concentration during the modelled year was compared with the corresponding air quality criterion.

$PM_{2.5}$ (maximum 24-hour mean)

The approaches used for $PM_{2.5}$ were essentially the same as those used for PM_{10}. For the statistical method the 98th percentile 24-hour mean background $PM_{2.5}$ concentration was 18.9 µg/m^3. The comparison between the methods is shown in Figure 8-22. As with PM_{10}, the results of the statistical method are clearly very dependent on the assumption concerning the background concentration.

For both types of receptor the maximum 24-hour $PM_{2.5}$ concentration during the modelled year was compared with the corresponding air quality criterion.

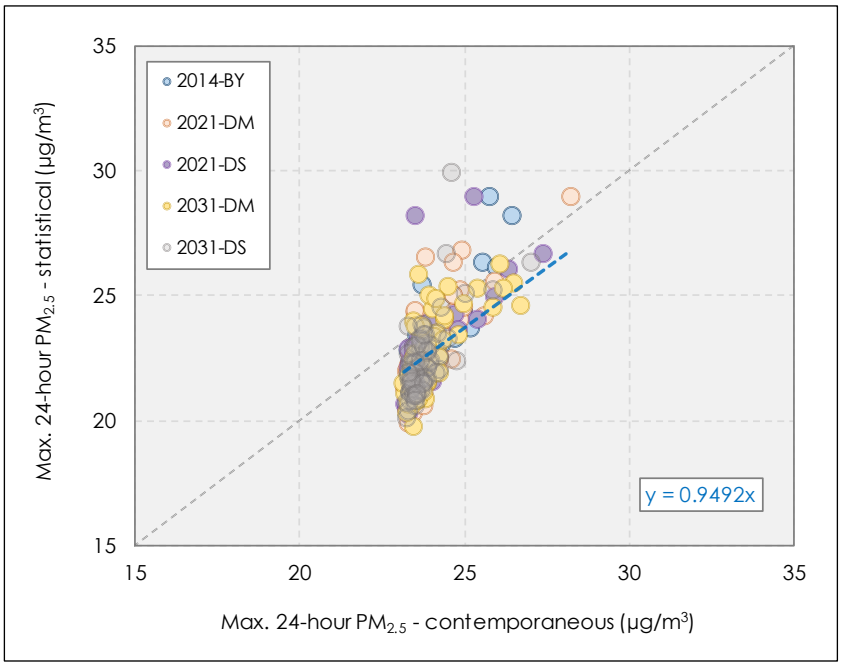

Figure 8-22 Comparison between statistical and contemporaneous approaches for calculating maximum one-hour $PM_{2.5}$ at community receptors (note that axes do not start at zero)

Air toxics

For both the community and RWR receptors, the THC concentrations from GRAL were converted to concentrations for specific air toxics using vehicle exhaust emission speciation profiles. The speciation profiles for the compounds of interest were taken from the GMR emission inventory methodology (NSW EPA, 2012b), and are given in Table 8-23. EPA provides profiles for petrol light-duty vehicles (cars and LCVs) running on petrol with no ethanol (E0) and petrol with 10 per cent ethanol (E10), as well as diesel vehicles (the profiles are the same for light-duty and heavy-duty diesel vehicles).