Particulate matter (PM) plays an important role in human health, air quality and climate. While primary particles are directly emitted from anthropogenic and natural sources, secondary particles are formed by gas to particle conversion and multiphase chemical reactions. Its formation mechanisms, composition and properties of secondary organic aerosol (SOA) remain uncertain and its contribution to total PM is poorly quantified. In this study we investigate contribution of SOA to total PM concentration. The CSIRO Atmospheric Pollution Model-Chemical Transport Model (TAPM-CTM) is employed to estimate SOA from different sources of anthropogenic emissions such as motor vehicles, industrial and domestic sources and natural emissions such as sea salt, biogenic emissions and fires. SOA mass was calculated from condensation of oxidated compounds based on the volatility basis set. Source specific SOA contribution is obtained by tracking SOA concentration generated from each emission source. The year 2005 was chosen for the simulation period where SOA has been estimated indirectly using a modification of the elemental carbon tracer method at the Bayside Air Quality Station (BAQS) at Aspendale in Melbourne. Modelled SOA contribution is compared with BAQS measurement for summer and winter months.