Since the introduction of the London congestion charge more than a decade ago, the case for the effective management of town and city traffic flows has risen steadily up the local authority agenda.

And the reasons are easy to understand: Government budgets are tight and roads are reaching capacity. Road users are greatly impacted by congestion and as a result industry suffers.

As these macro trends accelerate, many cities and towns are embracing congestion charging schemes to improve system-wide traffic flow, reduce traffic congestion and minimise carbon emissions while optimising the use of limited road infrastructure.

By strategically developing a “zone” of Automatic Number Plate Recognition (ANPR) cameras around urban centres and charging for entering or exiting the zone the result is freer-moving traffic and a reduction in air pollution and noise for city dwellers and workers. It also means less stress for the motorist, the principal victims of traffic snarl-ups.

A congestion fee program involves charging a rate that varies based on the roadway used and the time of day. 3M ANPR technology, when used in a congestion fee charging application, provides accurate and timely information to identify and charge vehicles. These systems may also complement or validate RFID technology, which is often used in congestion fee applications.
The 3M solution

At the heart of 3M’s congestion charging solution is 3M ANPR technology based on fixed-site ANPR cameras. Each camera consists of one colour camera plus a monochrome camera for the lanes of traffic being monitored. The cameras provide high-quality digital images of the whole vehicle to the ANPR software, which reads and records each number plate.

Largest city congestion charge scheme

Since 2006 3M ANPR technology has been used in the London Congestion Charging Zone (CCZ), and the London Low Emissions Zone (LEZ).

More than 500 ANPR cameras replaced an original ANPR installation to provide an enforcement infrastructure for the congestion charge zone. The cameras record images of vehicles entering, driving within or leaving the central zone while the ANPR software checks each number plate against the Transport for London (TfL) database.

The success of the 3M ANPR solution saw implementation extended in 2008 to the Low Emission Zone (LEZ), a traffic pollution charge targeting older, heavy diesel-engine vehicles. The 3M ANPR cameras check vehicle records against vehicle emissions compliance data and exemptions, discounts and payments records.

3M ANPR technology has contributed significantly to reducing London congestion. TfL figures (2013) show traffic levels over the past 10 years have gone down by 10.2% with corresponding falls in nitrous oxide, CO2 and particulate matter. The amount of traffic entering central London during charging hours is also down by around 20% with upwards of £150 million raised for public transport improvements.