

Route Optimisation Technology

Route optimisation technology is producing huge energy savings throughout the road transport industry the world over. Where such technology is employed savings have been produced in distances travelled, with greater load consolidation and on-time performances regularly reported.

At its simplest route optimisation technology can include GPS devices in individual trucks with additional features, including up to date traffic updates. While this method may only reduce potential emissions by 1% for long distance trucking due to the limited route options, it has the potential to reduce distance in urban settings by 5% to 10% producing savings of up to \$1,400 per truck per year (Carbon War Room, 2012). Such GPS devices start at about \$400 with monthly service fees of \$20-\$40 meaning road transport operators can experience full payback within six months.

Route Optimisation is also being used to limit the amount of trucking journeys that are undertaken carrying no cargo. Roughly a quarter of all road freight transport journeys in Australia are undertaken empty and reducing this percentage would produce significant emission savings for Australian road transport operators.

Greater savings can be accomplished by purchasing and operating a central dispatch route optimisation software that tracks all vehicles in a fleet. While the emission saving potential depends on the type of fleet and location, this technology can produce big benefits for companies.

In Context

In 2014 UPS detailed how they were able to save 5.6 million litres of fuel and 14,000 metric tonnes of CO2 emissions over 10,000 routes by introducing their route optimisation technology called Orion. This system uses algorithms and fleet telematics to determine how drivers should pick up and deliver packages.

Road Optimisation

As well as employing route optimisation technology into trucks, transport planners are also producing savings from introducing route optimisation programmes into their signal coordination and other traffic management initiatives.

In Auckland, New Zealand in 2012, traffic engineers employed a number of route optimisation programmes into three particular routes based on a number of factors including:

- Perceived benefits to the region.
- Opportunity to coordinate with other projects along the route that can be more cost effectively tied in with the Signal Route Optimisation work.
- Urgent requests –e.g.: give way rule change effects, strategic changes to network operations, special vehicle lanes.
- New developments.
- New infrastructure.
- Special events (e.g. Rugby World Cup).

These measures along one route alone (Symonds Rd) saved over the course of a year 234,052 travel time hours, 1,005 tonnes of CO2 emissions and 402,429 litres of fuel. The total cost of the program over three routes was NZD \$200,000 but created a benefit of NZD \$7.59 million over the first year (Auckland Transport, 2012).

