

Case Study

M42 Active Traffic Management (ATM)

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Drivers facing increasing challenges:

- Traffic set to rise by 29% by 2010 in UK
- Causes of congestion
 - road works 10%
 - accidents 25%
 - volume of traffic 65%



M42 Active Traffic Management Pilot

Aims

The primary aim of the M42 ATM pilot is to cut congestion and improve the reliability of journeys with controlled use of the hard shoulder to increase capacity during congested periods.



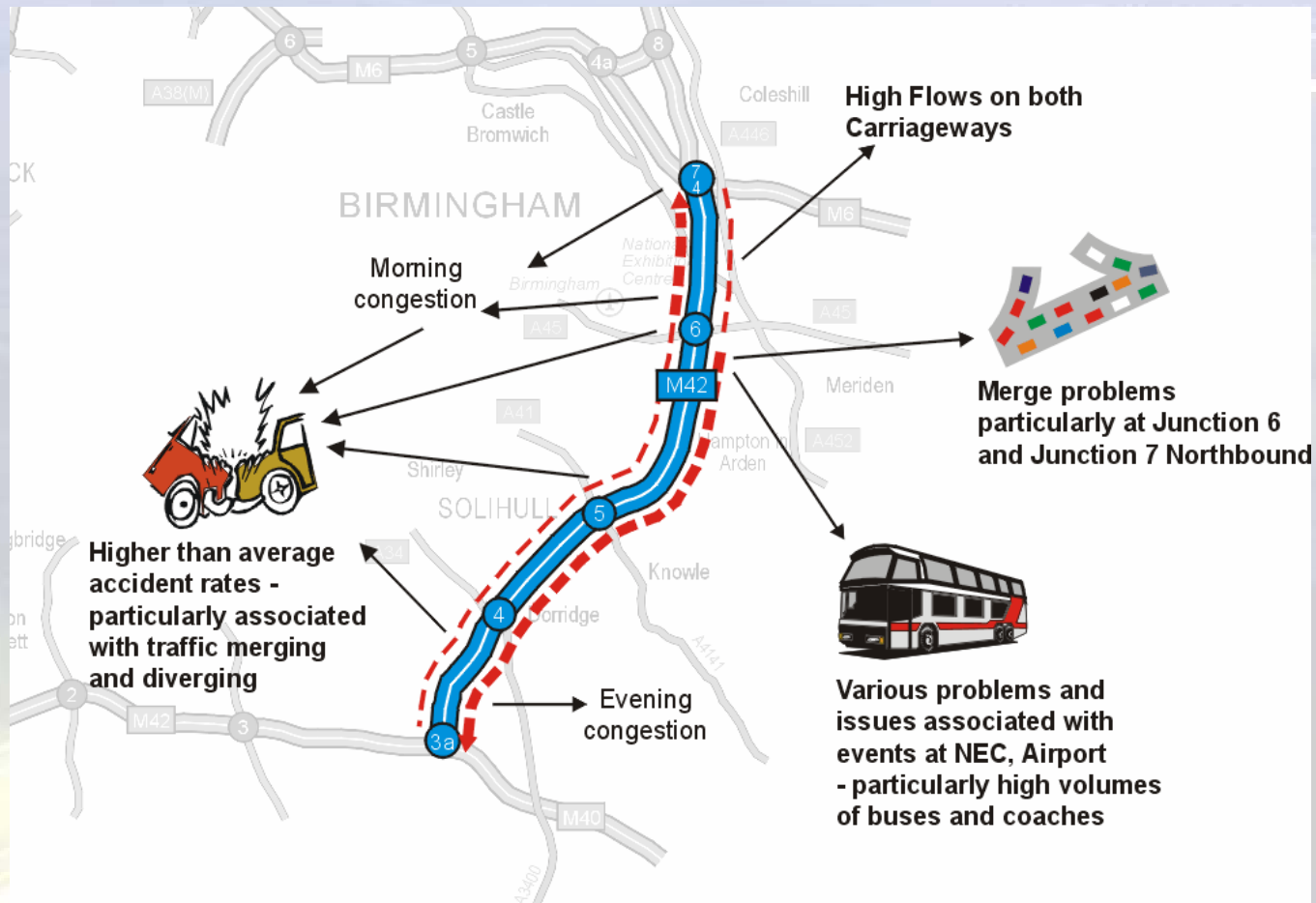
Building On Best Practice

- M25 Controlled Motorways scheme – mandatory speed limits in response to traffic conditions
- Motorway Incident Detection Automatic Signalling (MIDAS)
- Use of the hard shoulder during peak periods (Netherlands) below right.
- Tidal flow schemes (Hanover, Germany) and A38 (M) Birmingham



Why Pilot ATM on M42?

Problems and issues of this road



CCTV camera

Lighting Columns

MS4 driver
Information panel

Fixed direction
signing

CEC cabinet

Lane specific
signals

Emergency
Roadside Telephone

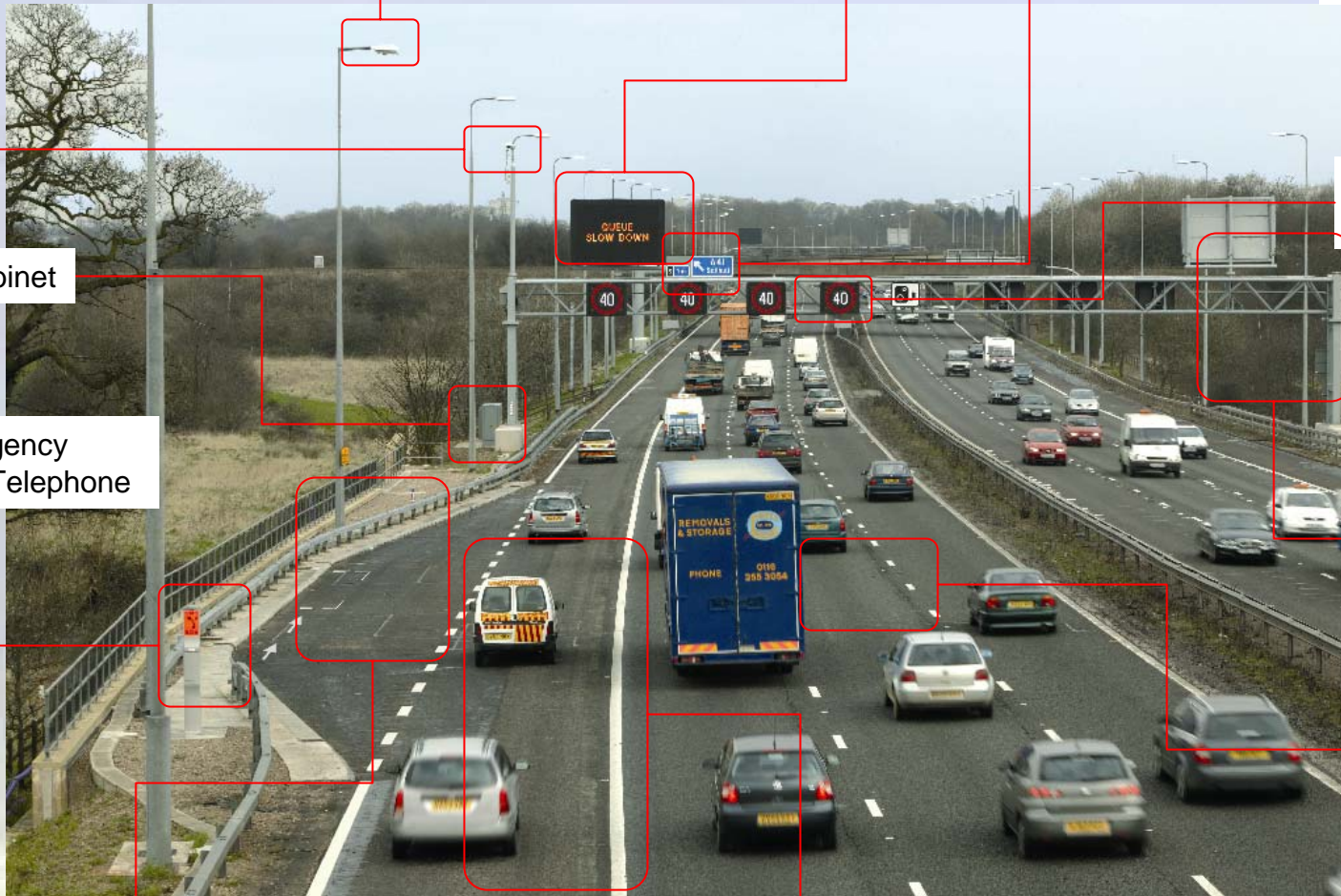
Lightweight
Gantries

MIDAS

Emergency Refuge

Continue

Hard Shoulder
running





Hard Shoulder Running

- Use of hard shoulder as running lane under controlled conditions
- Dynamically used to relieve congestion and manage incidents
- Used with mandatory speed limits
- Maximum speed 50mph (80kph)
- Only between junctions

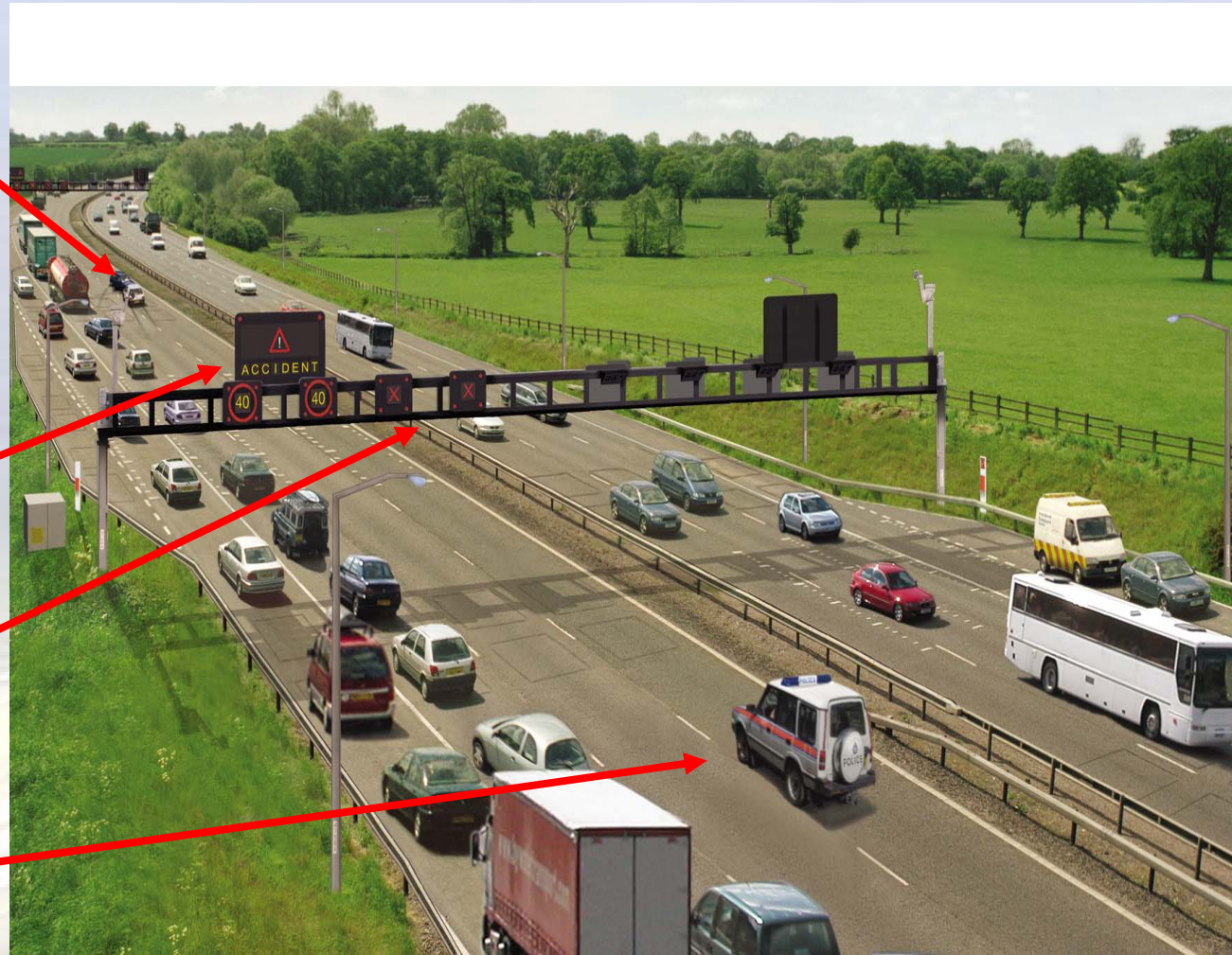
A New Driving Experience

←BACK



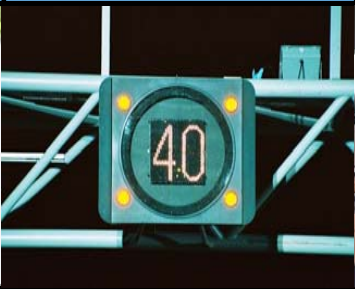




What will happen during an incident?

- Detection technology will alert ATM operators to incidents
- Incident support units and traffic officers will respond
- Message signs will warn drivers
- Operators will verify and close lanes to protect the incident
- Emergency services will access via closed lanes



How long to deliver ?

| •Summer 2003 | •Winter 2004 | •Late Spring 2005 | • November 2005 | • September 2006 |
|--|---|---|---|---|
|  |  |  |  |  |
| <ul style="list-style-type: none"> •construction started | <ul style="list-style-type: none"> •J3a-5 infrastructure complete | <ul style="list-style-type: none"> •J5-7 infrastructure complete •three lane advisory variable speed limits | <ul style="list-style-type: none"> •controlled motorway •three lane mandatory variable speed limits | <ul style="list-style-type: none"> •controlled use of hard shoulder |

Early results of Hard Shoulder running

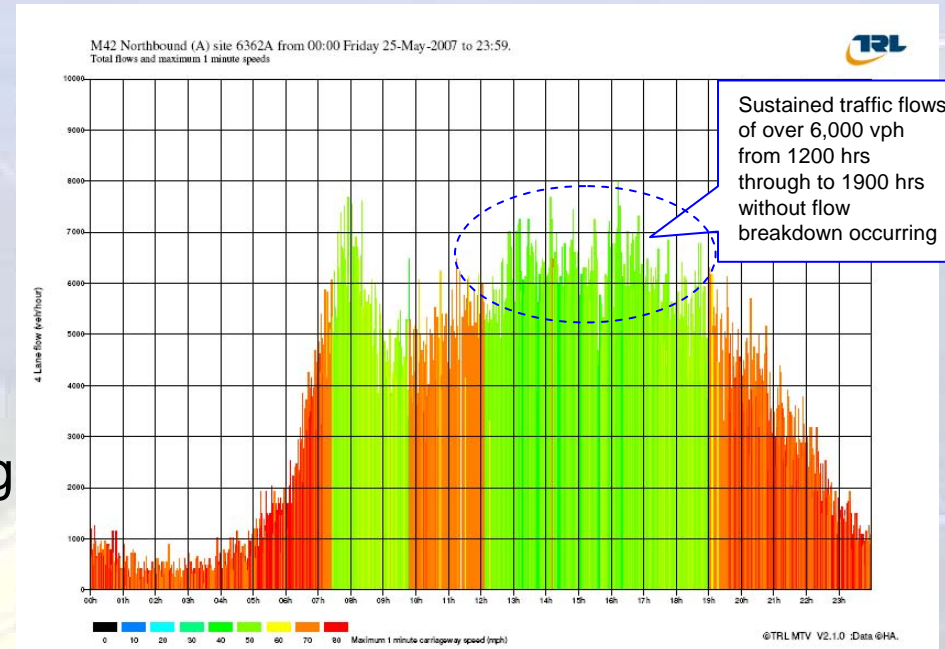
Very promising:

- Large reduction in delays / journey times
- Average journey time has improved by up to 30% in worst PM peak
- 13-15% of traffic is using the hard shoulder
- Fewer vehicles experience speeds of less than 45mph and 25mph
- Significantly reduced variability during weekdays

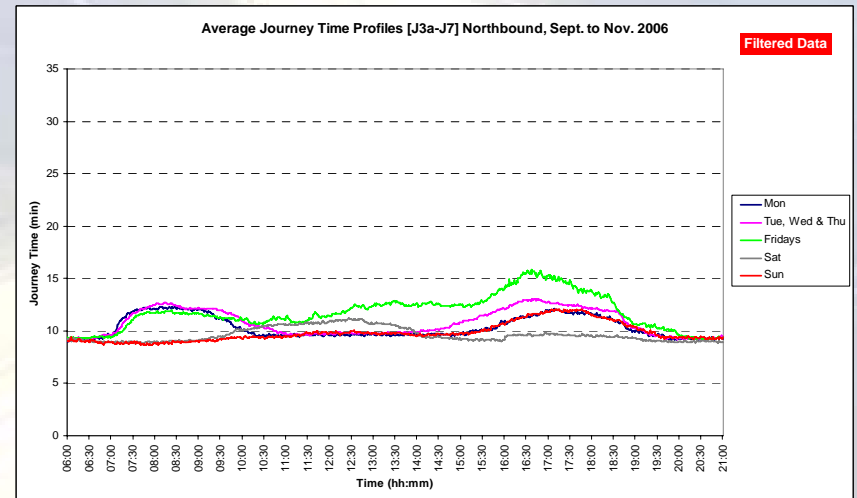
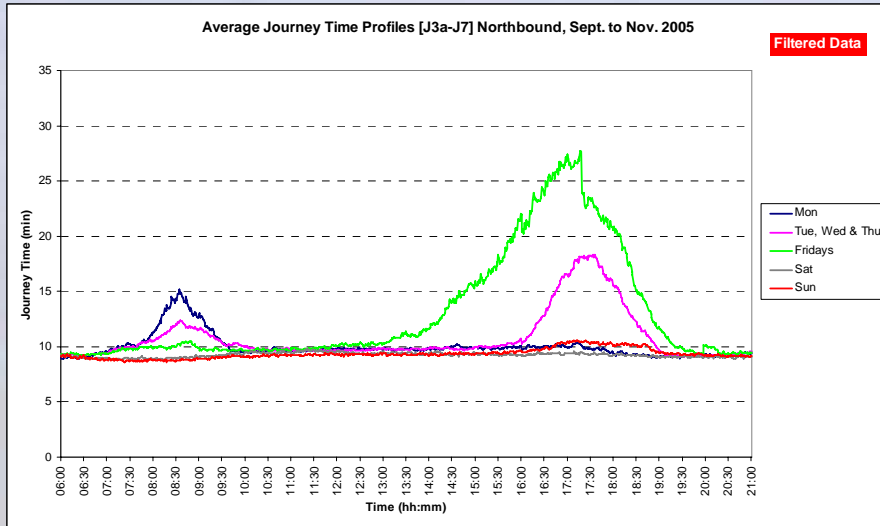


Hard Shoulder Running - early experience

- Peak throughput has increased by up to 13%
- Working well even in poor weather conditions
- Timely opening has a noticeable effect on traffic flows and smoothing
- Breakdowns have been dealt with swiftly and without risk to travellers



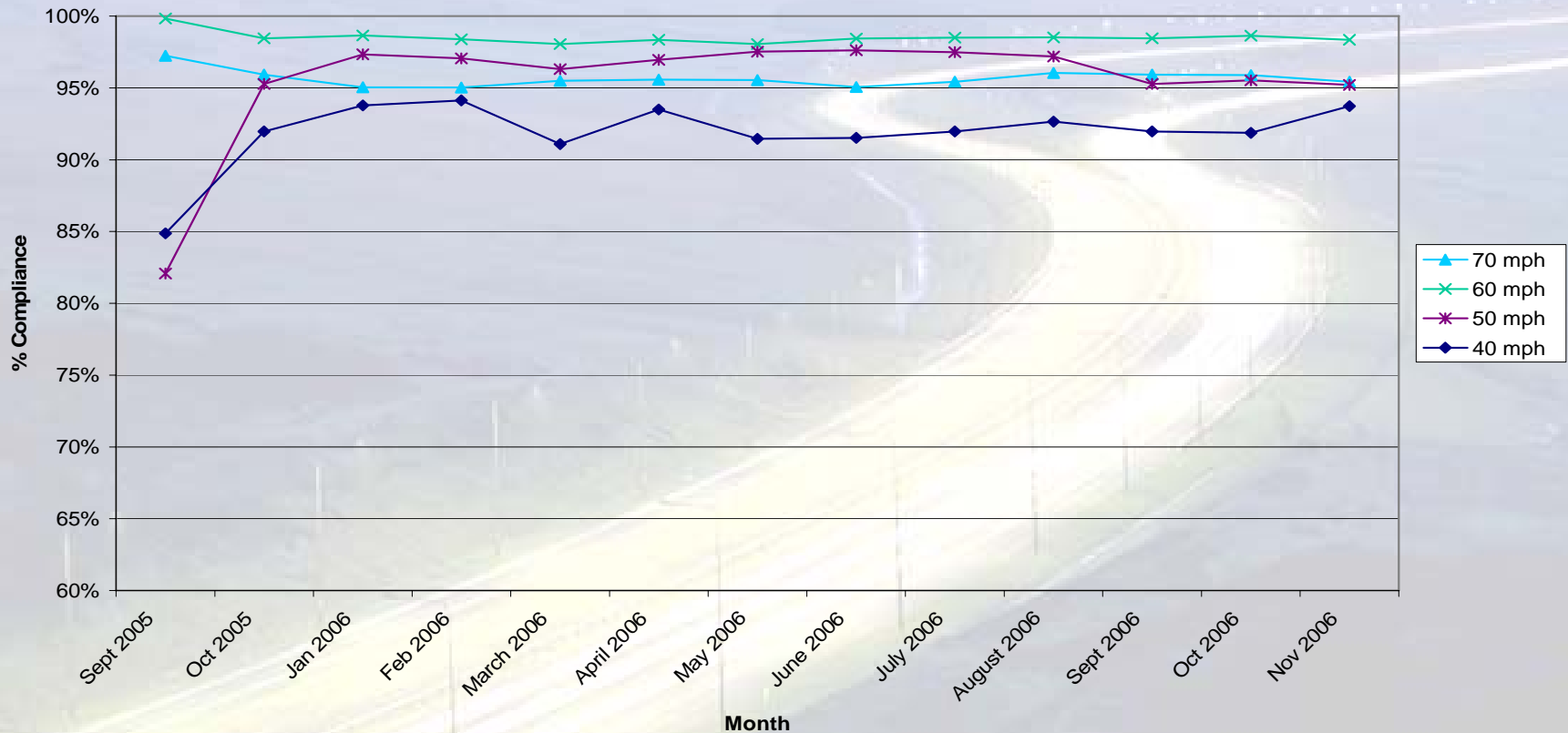
Key indicators – Journey times



Increased flows and reduced journey times suggests that 4 Lane Variable Speed Limits (4LVSL) is delivering real benefits

Compliance with speed limits

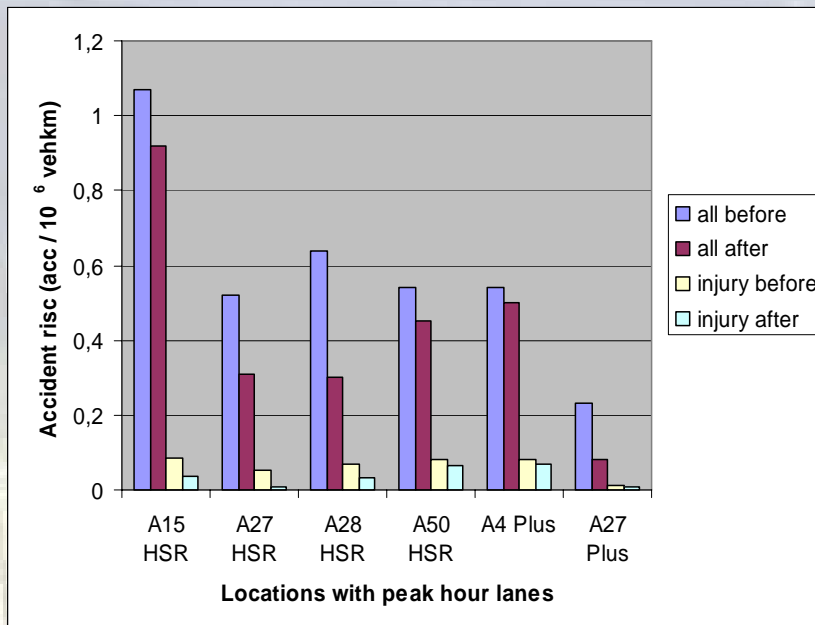
ACPO Average Compliance On The Main Carriageway
(September - October 2005 & January - November 2006)



On average, compliance with 50mph, 60mph and 70mph speed limits is 95% or better.

Other Indicators...

- Noise Reduction
- Speeds and Flows more even
- Too early to report on safety but the Dutch experience is positive



Last 3 years of safety data:

- 13% fewer accidents
- 19% less injuries
- 28% reduced accident risk
- 43% injury risk

Driver Reaction Survey - Results

- 93% of participants who had used the hard shoulder felt that the instructions for using the hard shoulder were clear
- 84% felt confident using the hard shoulder as a running lane.
- Only 2% of those questioned had avoided using it altogether.
- 68% said that they felt more informed about traffic conditions
- 60% said it should be implemented elsewhere on the motorway network.



In Summary

Active Traffic Management

- Helps to alleviate congestion and improve the driving experience on the Network
- Combines tried and tested technology, infrastructure and procedures to make best use of the available road space
- Improves the detection of and response to incidents, reducing delays and improving safety
- Is not as expensive as widening

...safer roads, reliable journeys, informed travellers