

SimSub Meeting



HOT lanes and freeway management

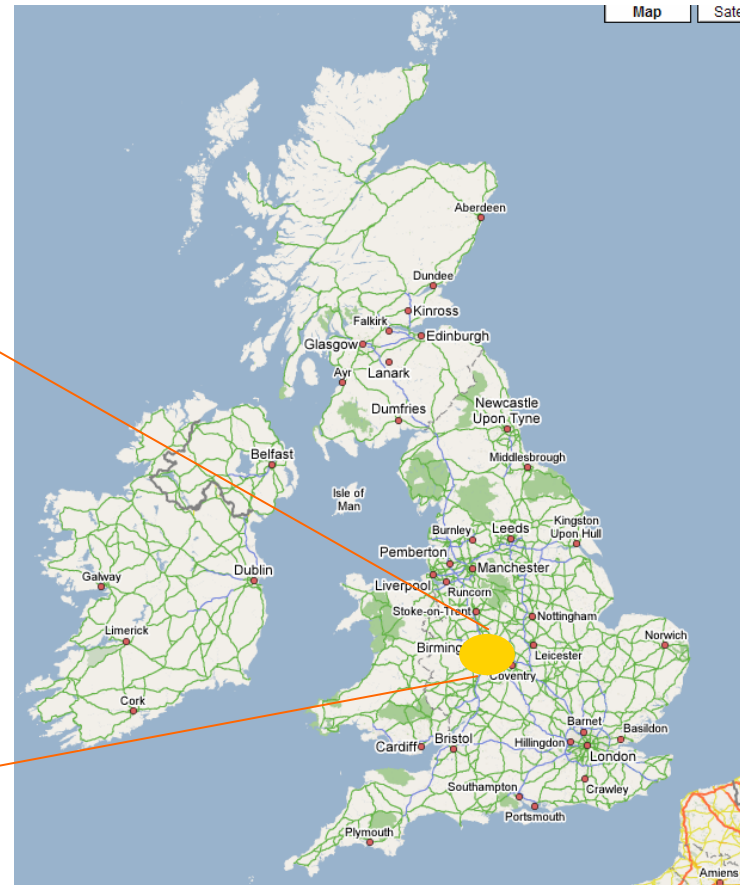
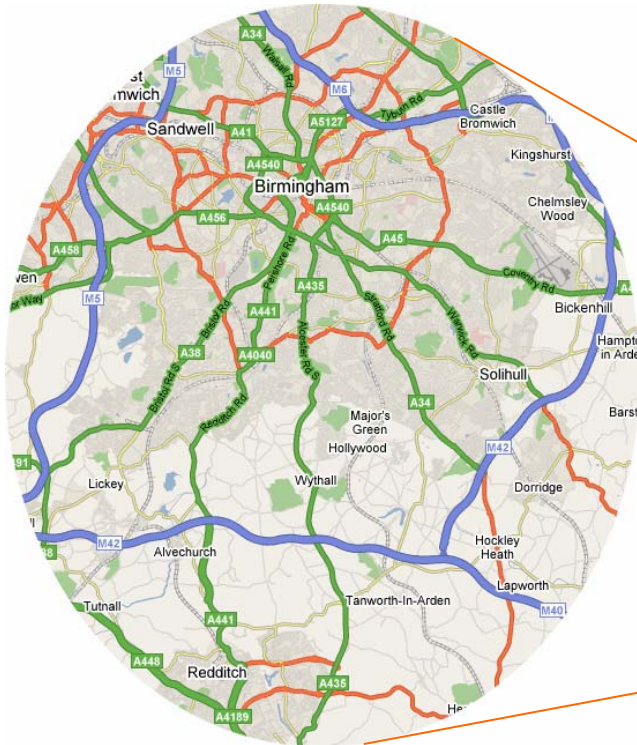
Pete Sykes SIAS Ltd

SimSub Meeting



- **Three (rapid) examples**
 - **M42 ATM**
 - **Hard shoulder running and incident management**
 - **Extendable to HOT**
 - **Diadem**
 - **Demand prediction & price elasticity**
 - **M90 / A90 Southbound HOV Priority**
 - **HOV(T) lanes with co-development of P&C**

M42 ATM Project



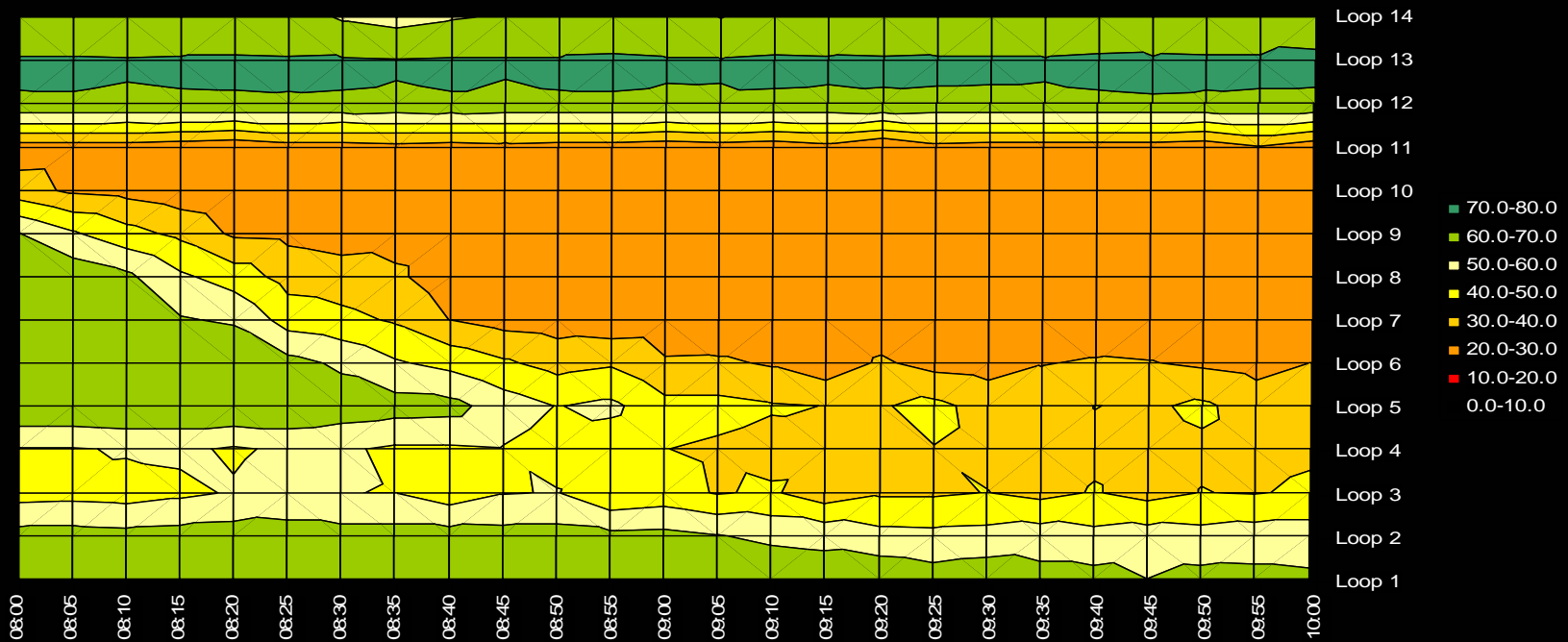
M42 ATM Project



- Advanced Traffic Management
 - Queue protection
 - MIDAS
 - Controlled motorways
 - Hard shoulder management
 - Incident management
- Hardware
 - Vehicle detectors
 - Loops
 - CCTV cameras
 - Variable message signs

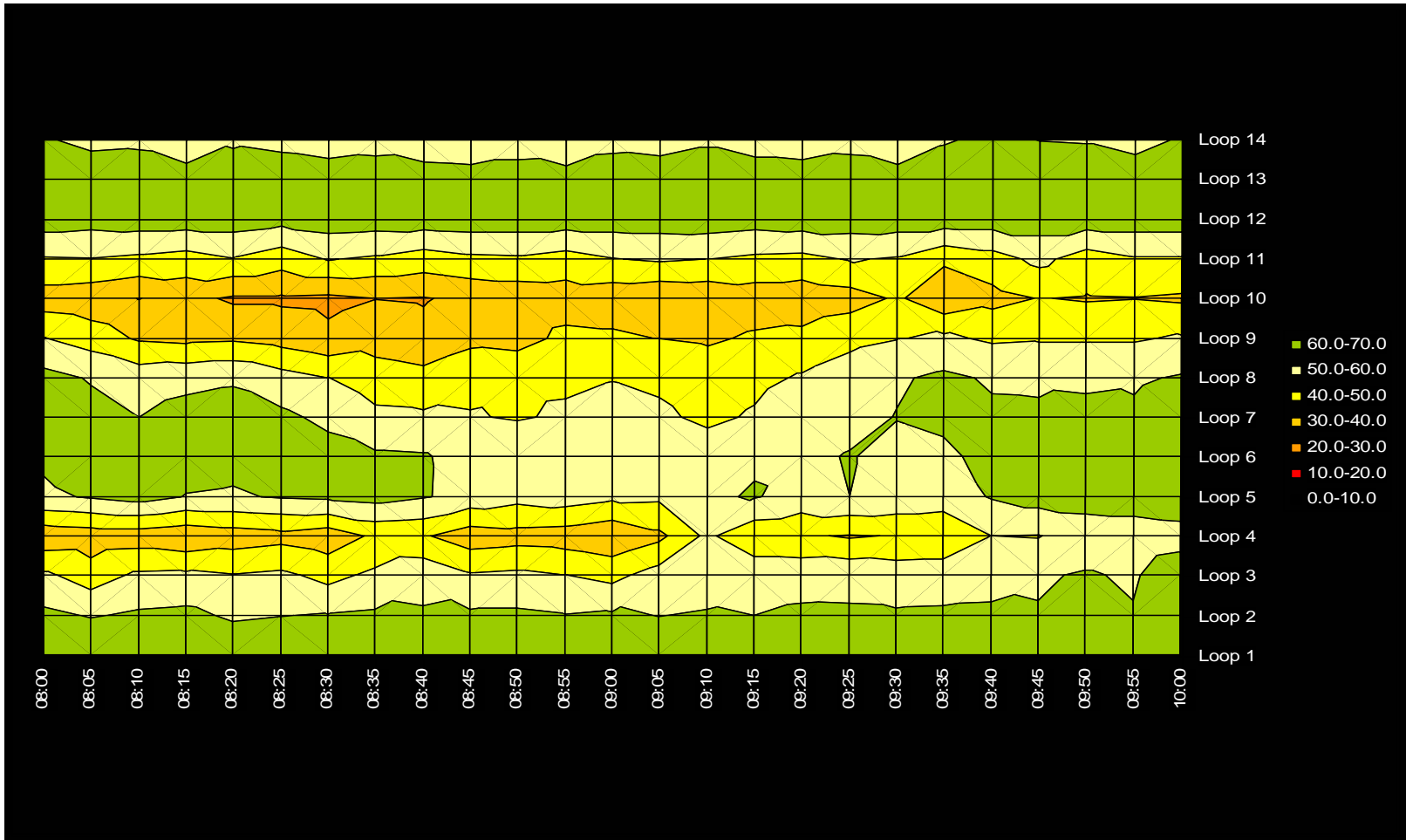


Queue Protection Base loop speeds



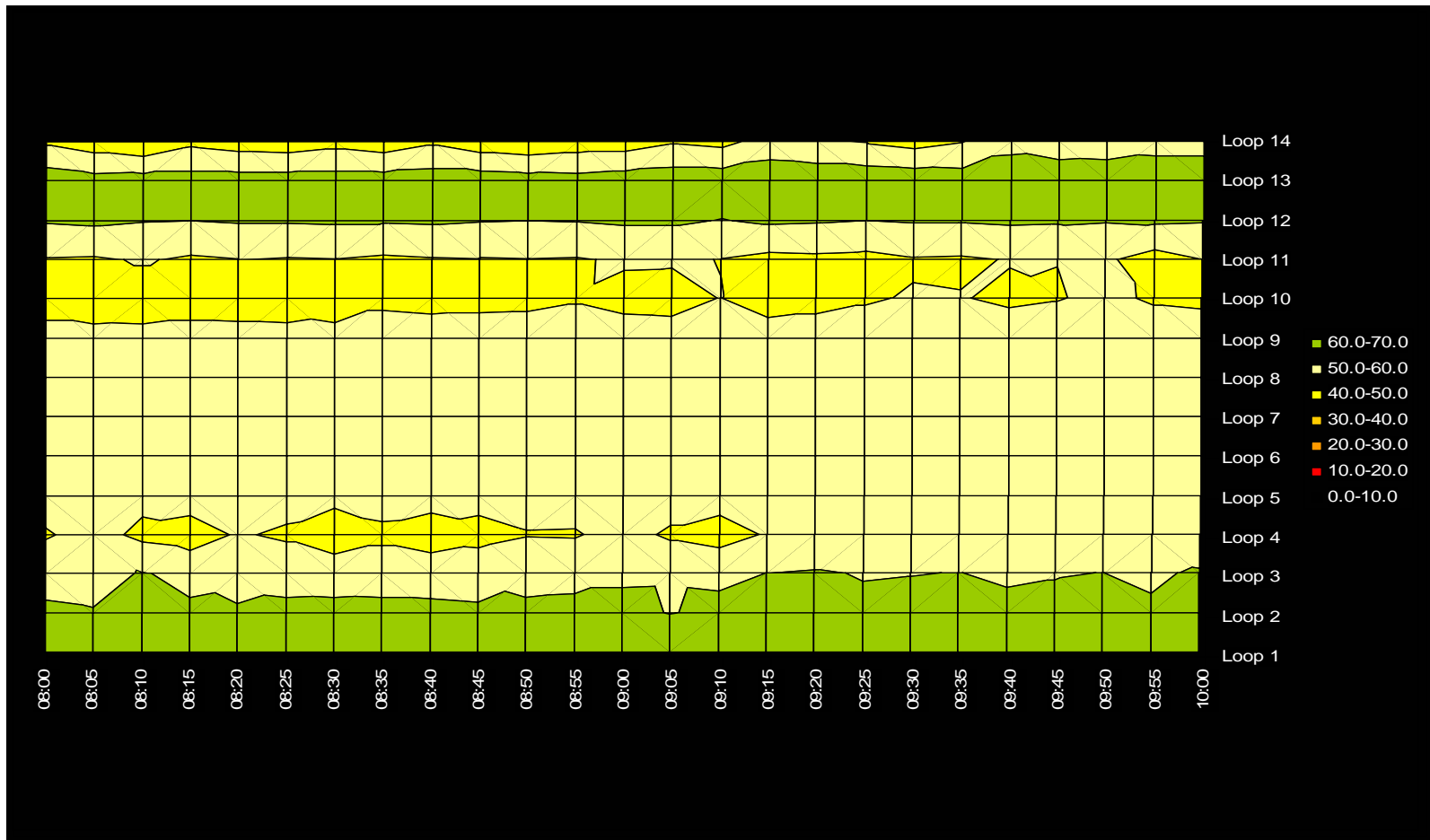
Queue Protection

Loop speeds with MIDAS and Controlled Motorways

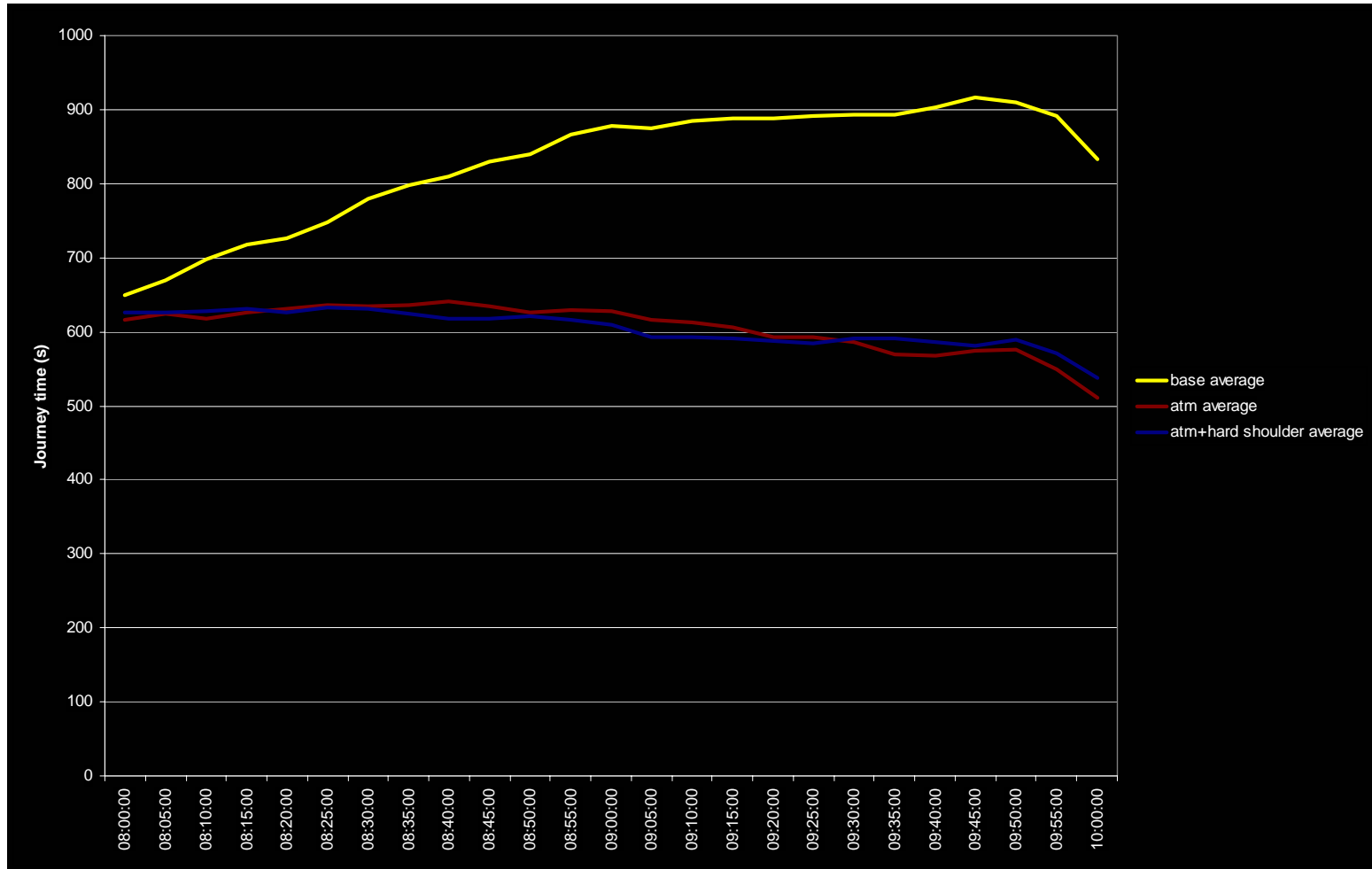


Hard Shoulder Management

Loop speeds with hard shoulder open



Queue Protection Journey times



HOT Lanes



- Tools are there – proven in hard shoulder running case
 - Use ITS to signify HOT lane
 - Restrict lane to HOV or SOV(willing to pay)
 - Use S-Paramics ITS response profile to describe proportion of vehicles using the HOT lane
 - Adjust proportion according to relative levels of toll and benefit
 - How to define adjustment - Ah! ?



- Sponsored by the HA
 - Peak spreading
 - Modal split
 - Price elasticity w.r.t tolls

SIAS is creating a link to S-Paramics

And Finally Queensferry Cross - Forth Corridor



Planning Objectives

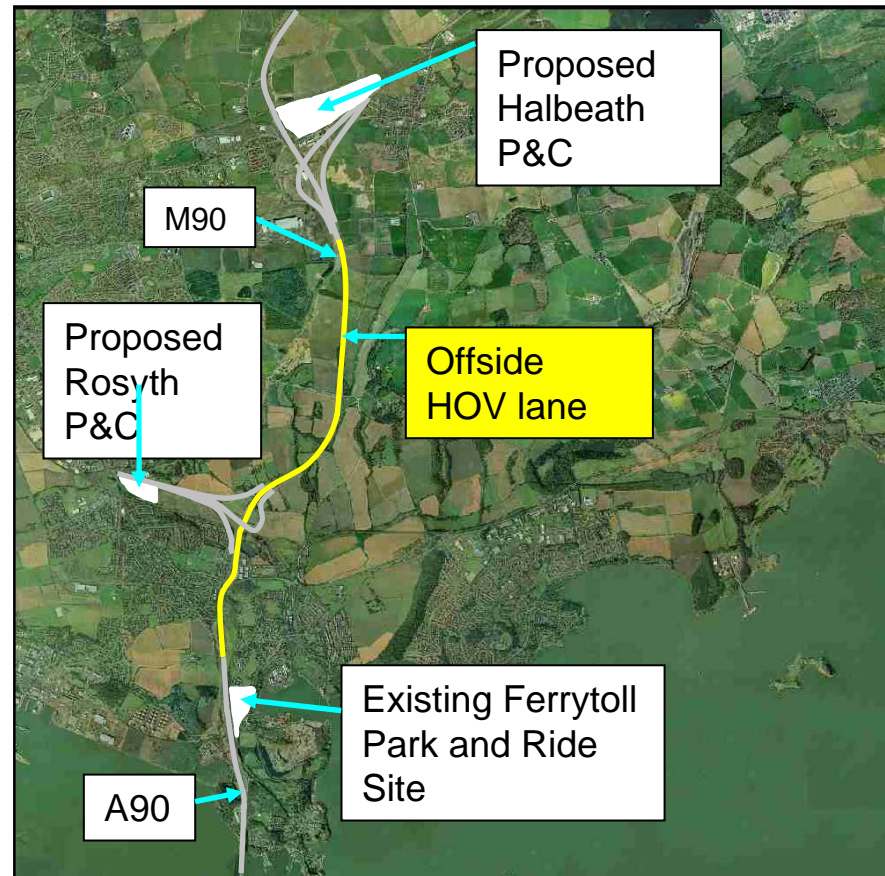


- Reduce the number of people commuting in single occupancy vehicles
- Maximise public transport provision and achieve public transport integration
 - Setting of Mode split, HOV use and elasticity is external
 - Model used to test different options under different demand scenarios

Option Development

Offside Option

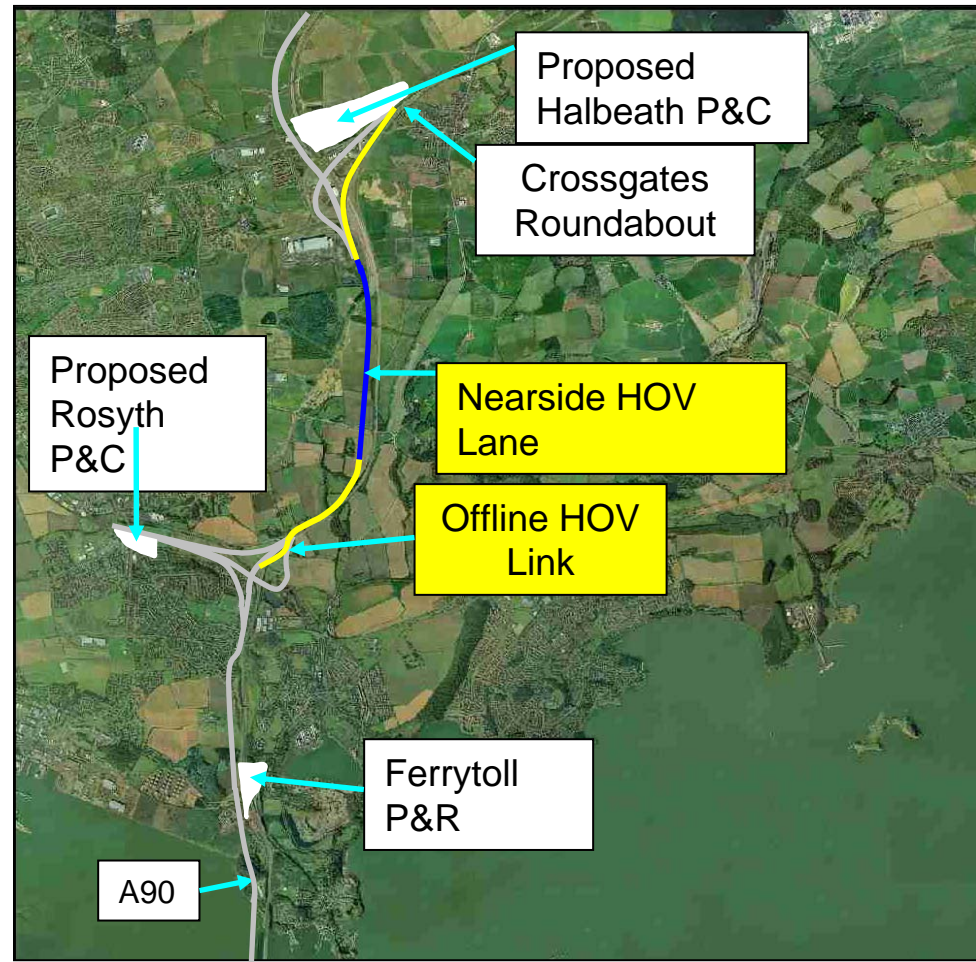
- Operation
 - Offside HOV
 - ITS management
 - Hard Shoulder Running
 - 50mph



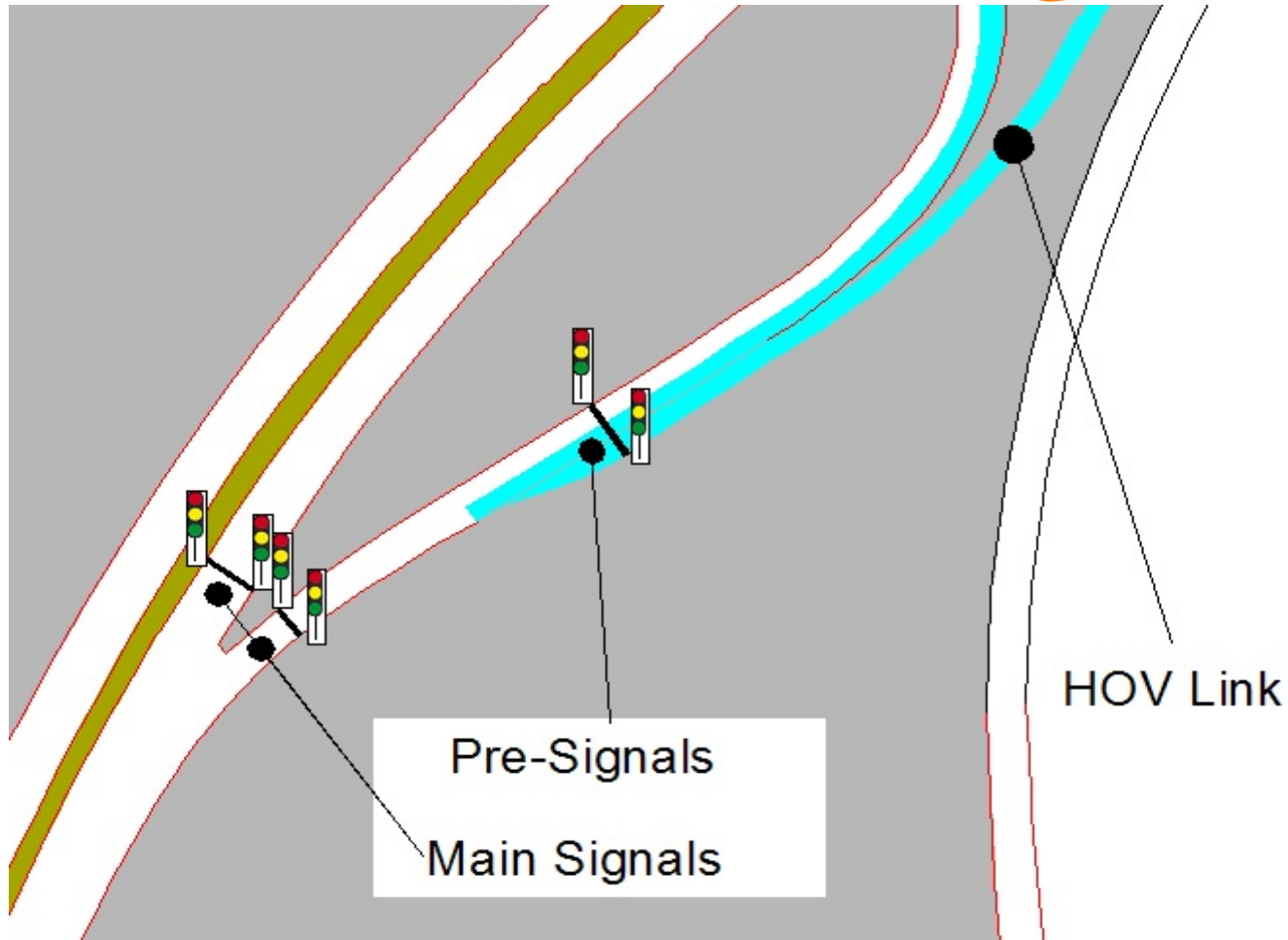
Option Development

Nearside Option

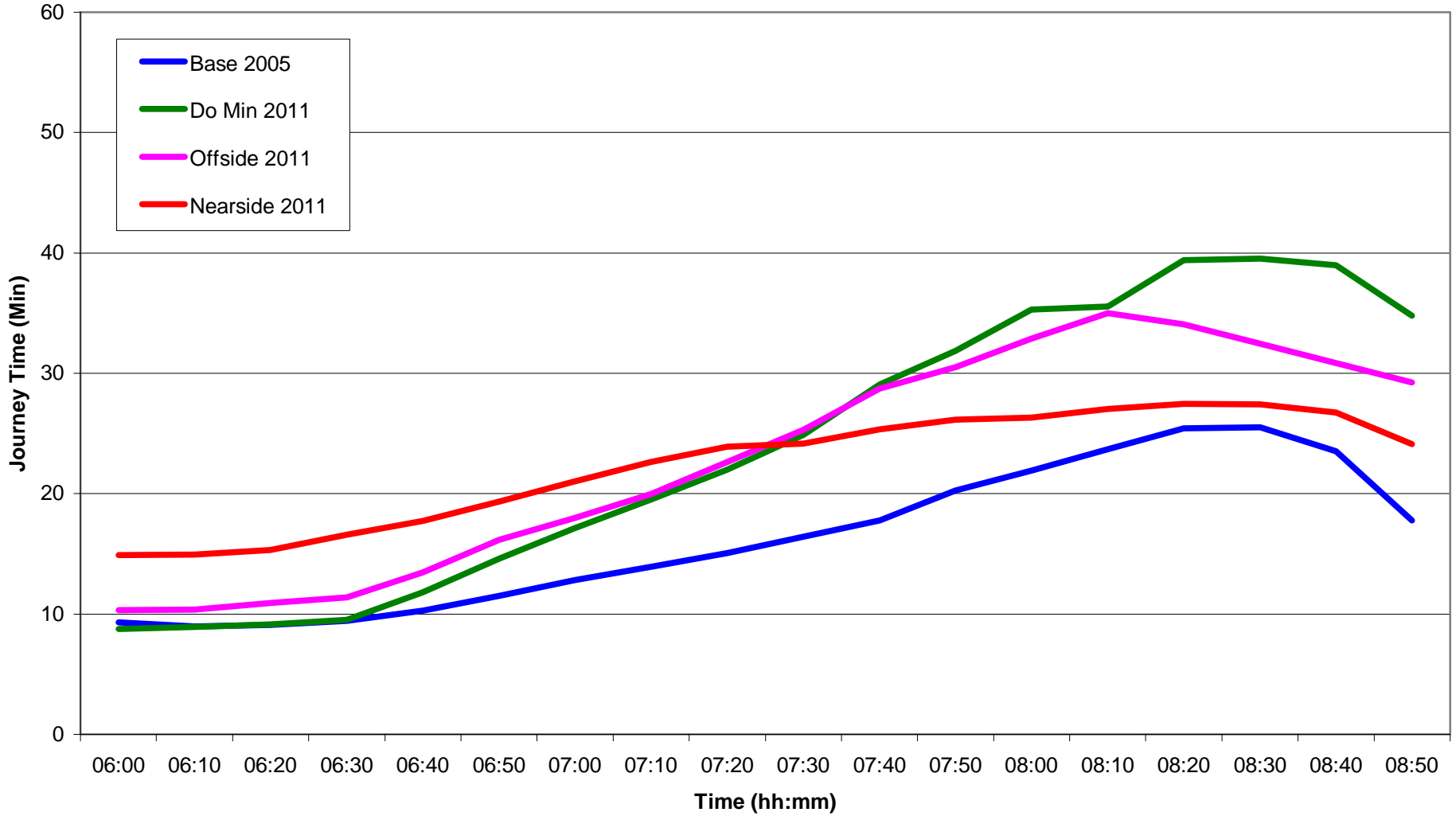
- Nearside HOV
 - Junctions
 - Slip link



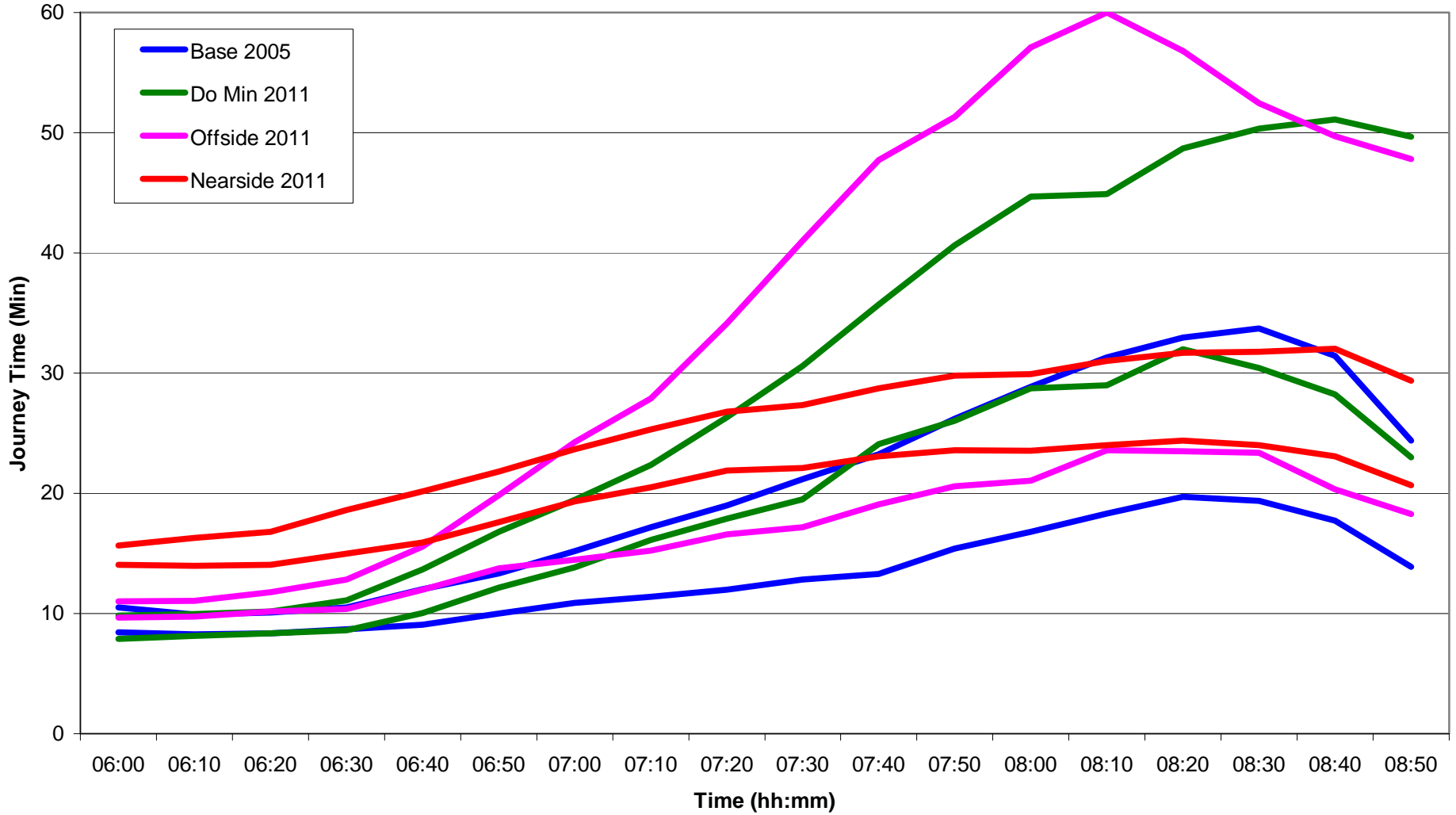
HOV Merge Detail



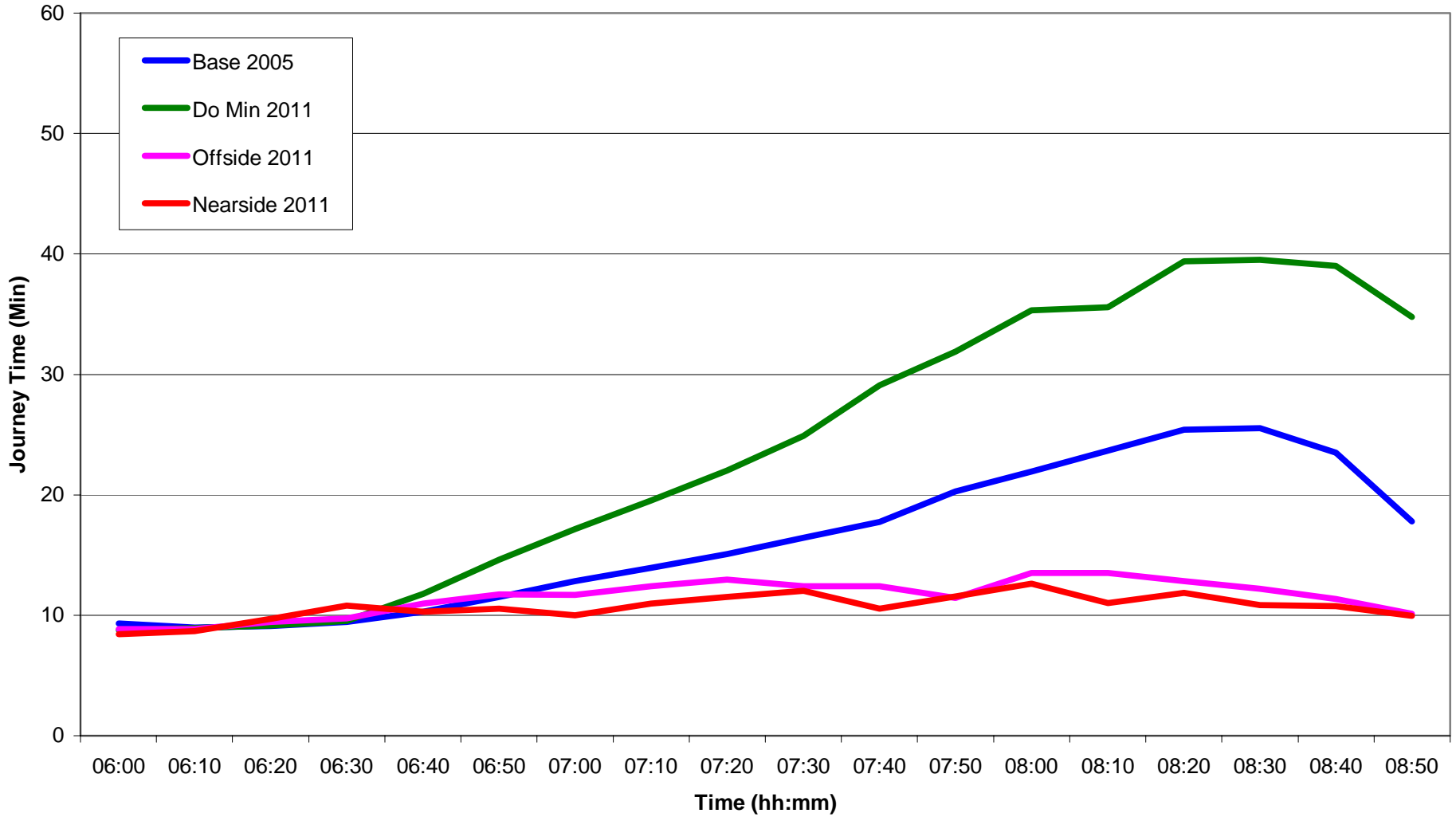
Mean Journey Time (Single Occupancy Vehicles)



Journey Time Reliability (Single Occupancy Vehicles)



Mean Journey Time (High Occupancy Vehicles)



Journey Time Reliability (High Occupancy Vehicles)

