

Travel Plans – the Potential is Realised

Evidence from the Highways Agency's ITB Programme

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TRL

Outline of Presentation



- The HA's Influencing Travel Behaviour Programme
- Outlining the ITB Monitoring Work
- Evaluation Results/Key findings
- Future Strategy

The Challenge

- Traffic grown by 80% in 20 years
- PSA Congestion Target
- Air quality & climate change focus
- More development and growth areas
- Future road schemes



The primary functions of the Highways Agency are to operate, maintain and improve the network and support delivery of wider Government objectives.

Influencing Travel Behaviour Programme



- Exploit voluntary “smarter choices” initiatives
- Protect future performance through Spatial Planning for new developments
- Manage demand within planned capacity;
- “Predict and Manage” - replaces “Predict and Provide”;

Voluntary Travel Plan Schemes



Progress So Far.....

- Targeted Network hotspots
- Joint partnership working - LHAs, employers – business case
- Demonstrate Behavioural change
- Trip/Behavioural Monitoring

Area Travel Plan Initiatives



travel plan clusters

Whiteley Area Travel Plan (ATP)

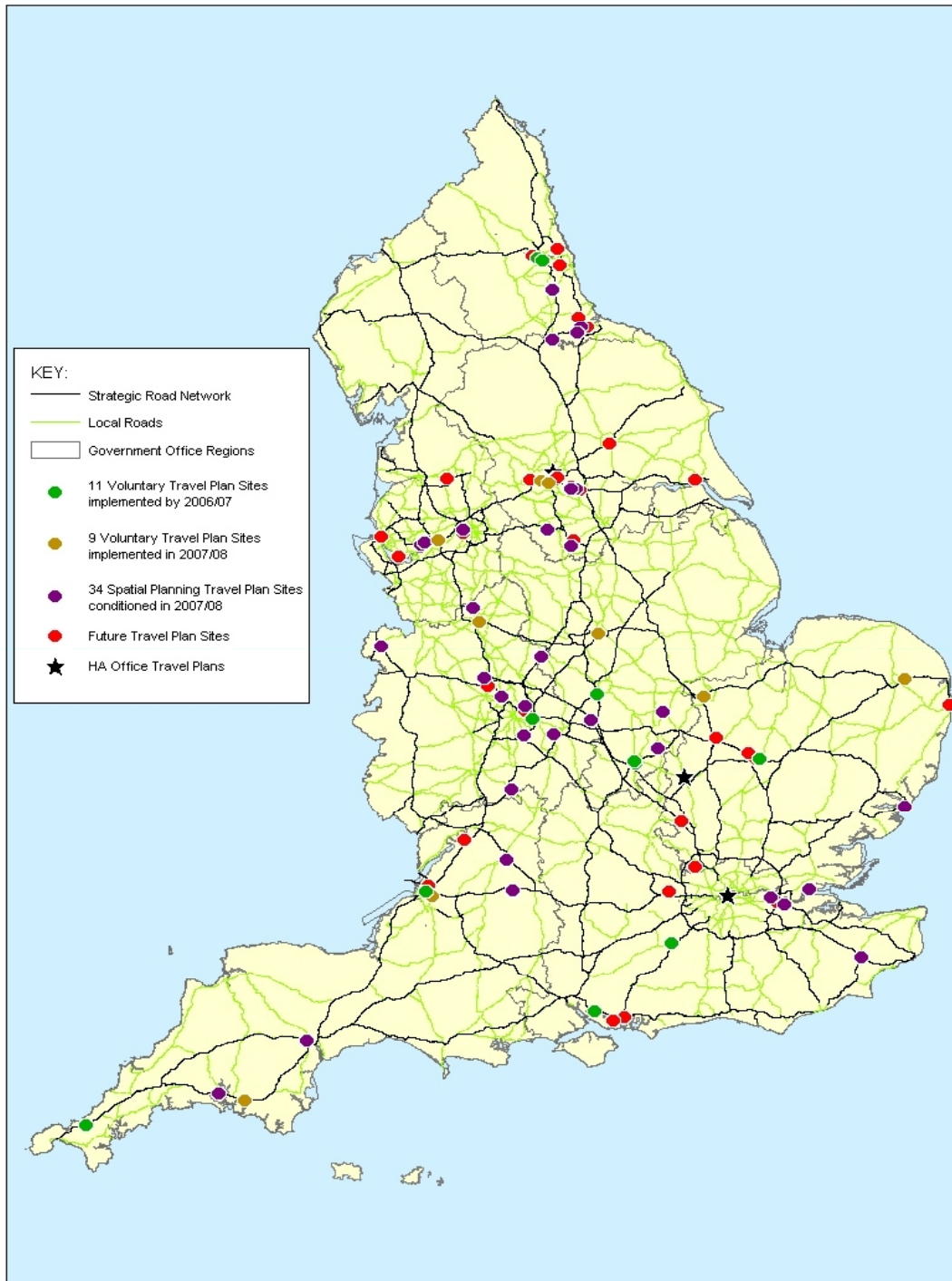
Your employers have teamed up with the Highways Agency and Hampshire County Council to develop the Whiteley Area Travel Plan (ATP) and improve your journey to work.

my journey | benefits | more info | contact us

WHITELEY area travel plan

- HOME
- HOW DOES IT WORK
- BENEFITS
- MORE INFORMATION
- PARTNERS
- THE PROJECT
- PLAN MY JOURNEY
- FAQs
- CONTACTS
- GETTING INVOLVED
- TRANSPORT OPTIONS INTERACTIVE MAP
- TRAVEL SURVEY
- ONLINE COMMENTS FORM
- DISCUSSION GROUPS
- SUPPLY STAFF POSTCODE DATA

PLAN MY JOURNEY | Public Transport Information | Cycling to work Sustrans NCN | Walking to work | Car Sharing | Whiteley Car Club | Special offers



Growth of the ITB Programme

20 Voluntary Travel Plans implemented

34 Spatial Planning Travel Plan sites conditioned

HA Staff Travel Plans

Impact to Date

- Voluntary Travel Plans
 - **1,100 companies** involved nationwide
 - **100,000 employees**
- Spatial Planning
 - **266 hectares**, total occupied space of **2.43 million square metres**



Business Case



- Business Plan 2007/08
- Develop appraisal methodology
- Enable comparison with conventional on-network measures
- Determine contribution to HA objectives

Monitoring Strategy

“**Outcomes**, not measures”

- Travel surveys
- Trip counts “factory gate”
- Junction counts
- Strategic network (TRADS)
- Baseline, Year 1, Year 2



Calculating Trip Savings

- Required to monetise benefits
- Data collection pre-/post ATP:
 - Employee numbers
 - Person and vehicle trips per mode
 - Proportion car use (SOV, car sharing)
 - Car occupancy
 - Peak spread (AM peak hour/peak period)

Appraisal Methodology



- NATA (> £5m)
- PAR (>£250k)
- **ShortPAR (< £250K)** – “first principles” calculation of economic benefits of a single location scheme
 - Time savings + VOC (part of CO₂ estimation)
- **Link based Spreadsheet (TRL)** – based on COBA relationships
- **Enable BCR comparison with conventional alternative TDM measures**
 - **Assumptions about streams of benefits and costs**

Link Based Spreadsheet



Splits network into series of links

Turning movements modelled: -

- Signalised junctions
- Merges
- Minor to major left turns
- Minor to major right turns
- Major to minor right turns

(Roundabouts modelled as minor to major left turns)

Key Data Required



- Number of Trips saved (in peak hour)
- Spatial Distribution of Trips
- Impact of saved trips on Network

Calculating Trips Saved



- Occupancy surveys – monitor all persons entering site and vehicle occupancy - preferred
- Travel Survey data – sample size issues

Forecasting Before and After ATP Scenarios



Option 1

Compare “before” and “after” surveys and compare them – issues with separating growth and external influences

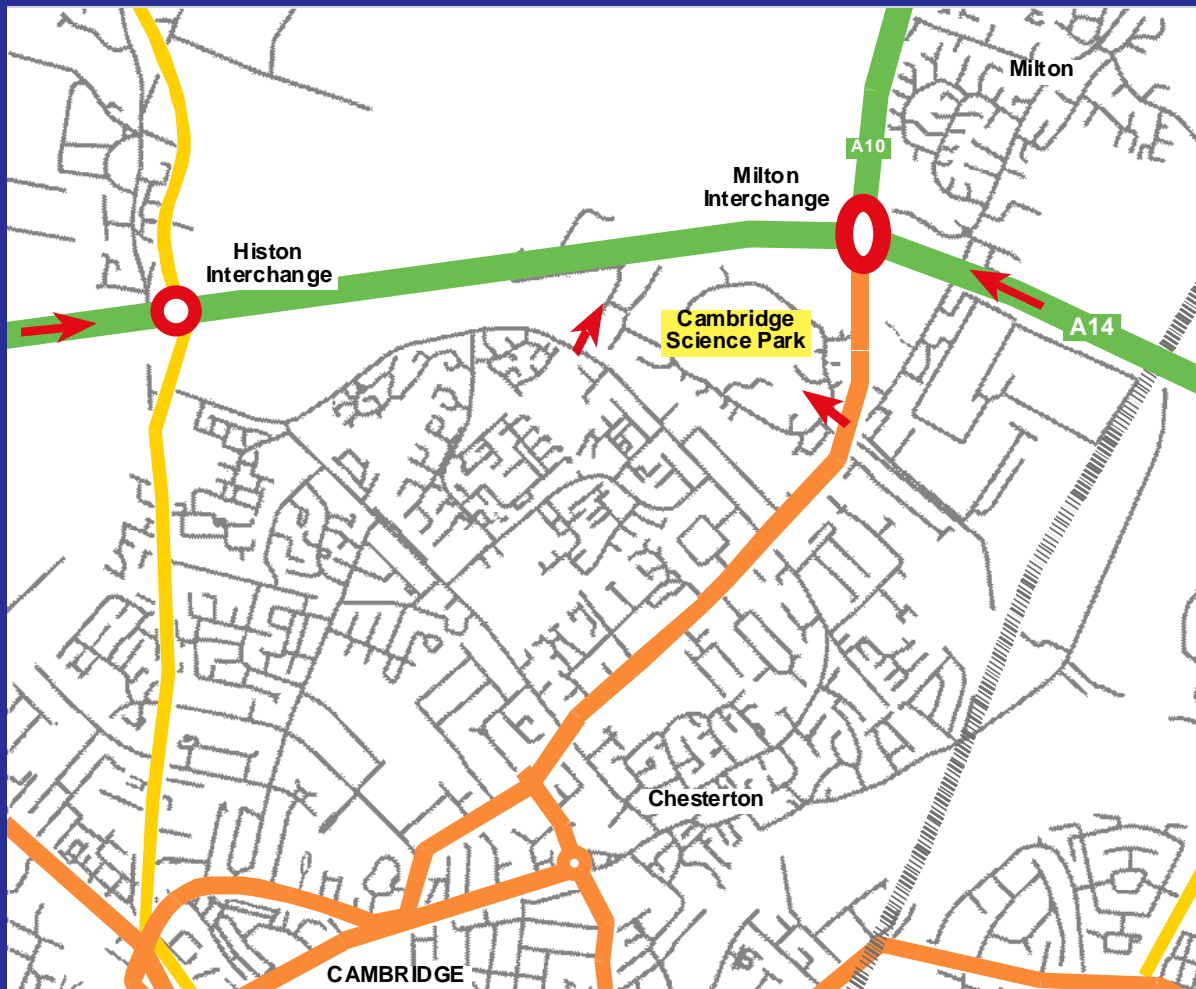
Option 2

As above but concentrate on “after” monitoring and estimate benefits by taking off measured changes in site’s car travel - better estimate of impact and eliminates external influences –but..

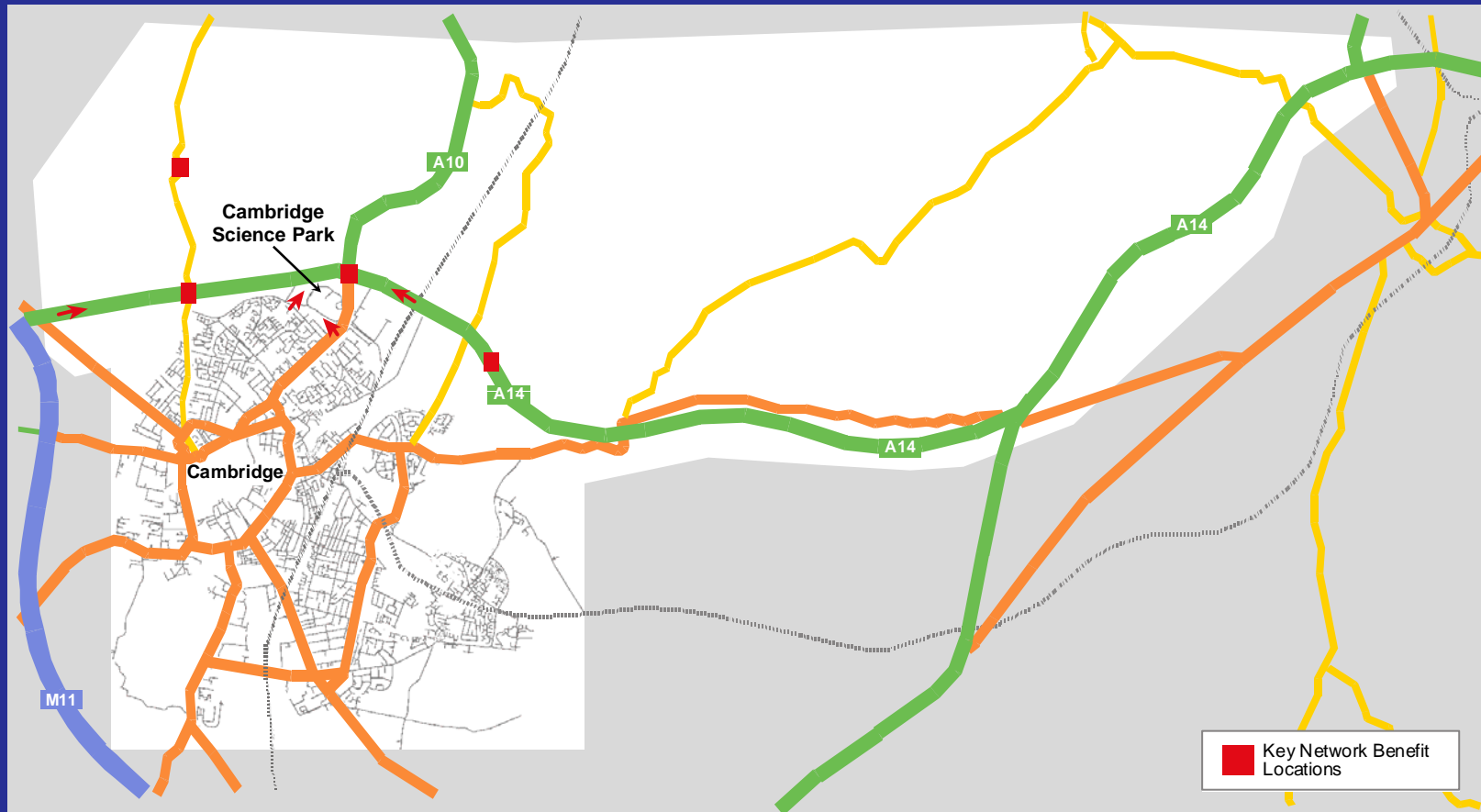
Cambridge Science Park Example



Local Monitoring at Cambridge



Network Monitoring at Cambridge



Sensitivity Analysis



- Cambridge Science Park – “SATURN” Traffic Assignment Model
- Compared SATURN results with ShortPAR “Link Based Spreadsheet”
- Very similar results for same area

Barriers to Successful Monitoring

- Employee turnover
- New developments in the area
- Changes to site infrastructure/access
- Identical year-on-year monitoring methods
- Response rates to travel surveys (need both traffic and travel surveys)

Sites Evaluated



Site and location	Peak hour saved trips	% LHA roads	Annual Benefits (£K)
Barclaycard, Northampton A45 Northants	No (Estimate)	95.3	294
Solent Business Park M27 Whiteley, Hampshire	52	62.9	133
Northampton General Hospital, A45 Northants	76	34.0	67
Cambridge Science Park A14	88	68.6	207
Team Valley Gateshead A1	No (Estimate)	57.0	51
Fifth Avenue Gateshead A1	No (Estimate)		45

Monitoring Results



	SOV Redn %	Active Travel %+	Car Share %+	CO2 Saving (Tonnes)
Cambridge Science Park A14	1	-1.3*	1.2	187
Whiteley – Hampshire M27	12	=5	14.5	86
Northampton General Hospital A45	10	3	3	109

* Some employers onsite had significant increase

Evaluation Results

	Trips Saved (Peak Hr)	Annual Benefit	Benefit: Cost Ratio
Cambridge Science Park	88	£207k	13:1
Whiteley – Hampshire	52	£133k	3.7:1
Northampton General Hospital A45	76	£67k	5.5:1

• Value of benefit is heavily dependent on levels of congestion

Journey Time Reduction



ATP Site	SRN JT Reduction
Northampton Barclaycard	-1.0%
Whiteley	-7.3%
Cambridge Science Park	-5.6%
Team Valley	-8.8%

Areas of Uncertainty

Some sites implemented early 2007

Benefits sensitive to: -

- Extent of existing congestion
- Assumptions about saturation flows
- Number of Saved Trips (derived from limited traffic surveys)
- Assumed scheme life – 5 years
- Rise and decline of saved trips

Benefits Exclude



- **Homeworking**
- **Peak Spreading**

Benefit Spread



- **5-6% HA Journey Time** reduction
- **Junctions with HA Network**
- **Main SRN Links - 22.5% of total journey time saving (Cambridge)**
- **Local Authority Roads**

Lessons Learnt

But not all schemes successful...

- Long term commitment between stakeholders is key;
- Co-ordination of the ATP in the long term can be an issue – particularly in voluntary travel plans;
- Comprehensive and consistent data collection is crucial to building the business case.

Benefit Summary



- **Quantifies PSA Target Contribution**

Benefit Summary



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- **Low cost and quick to implement**

Benefit Summary



- Quantifies PSA Target Contribution
- Low cost/quick to implement
- **Promotes Sustainable Travel (DfT Objective)**

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- **Wider LHA Benefits**

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- Wider LHA Benefits
- **Air Quality (AQMA)**
(Grove Park, University West of England)

Benefit Summary



- Quantifies PSA Target Contribution
- Low cost/quick to implement
- Promotes Sustainable Travel (DfT Objective)
- Wider LHA Benefits
- Air Quality (AQMAAs)
- **BCRs Compare very well with conventional schemes/TDMs**

Other Benefits

- Employers' reputation (CSR)
- Productivity gains
- Staff morale and turnover
- Parking/fleet management
- Health – walking and cycling

Mainstreaming

- **36 Vol schemes in CSR Period**
- **8 2008/09**
- **14 2009/10**
- **14 2010/11**

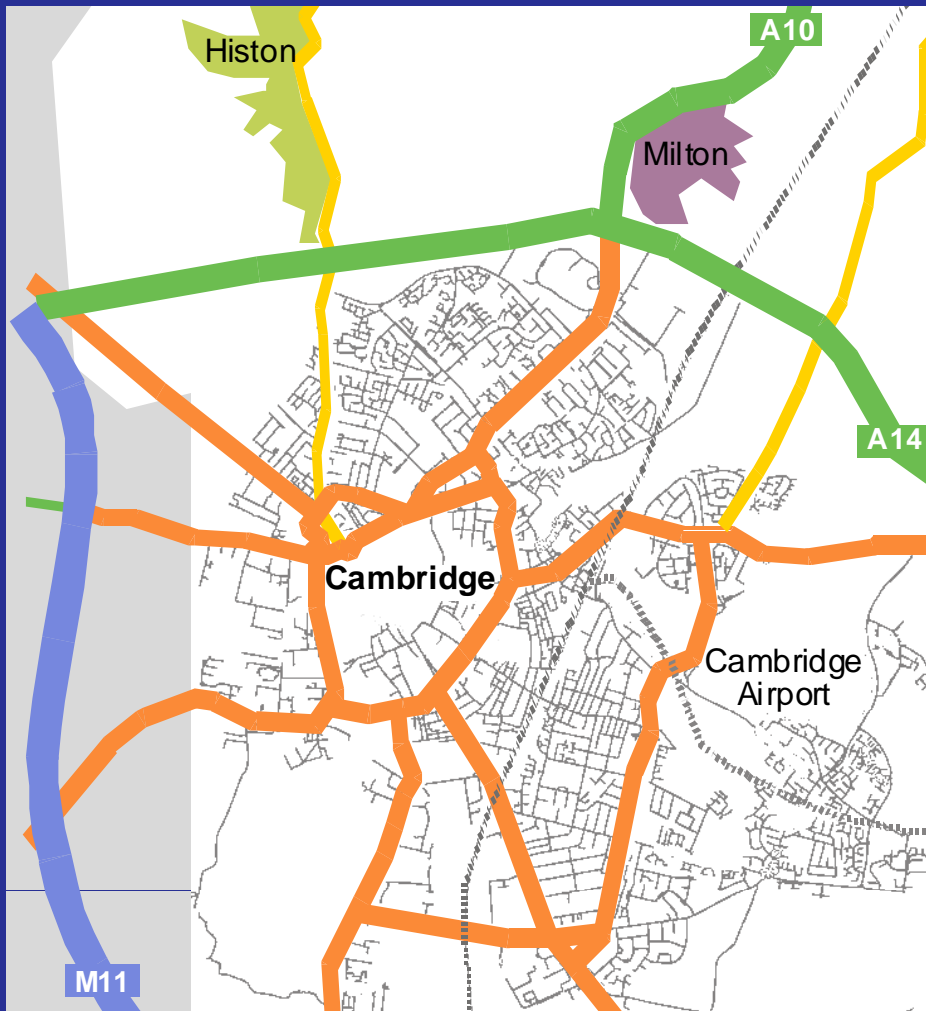
- **100 by 2010/11 (Total of Voluntary and Spatial Planning)**

Future Strategy



- Focus on **High Quality/Outcome Schemes** to maximise impact and benefits
- Develop robust **Partnerships with LHAs and Businesses** – increase commitment & cost sharing arrangements to provide **Supporting Infrastructure** (e.g. Bus links/services, cycle facilities)
- Provide **Incentives/priorities!**
- Use voluntary experience to influence high quality **Spatial Planning** schemes

Increasing the scale....



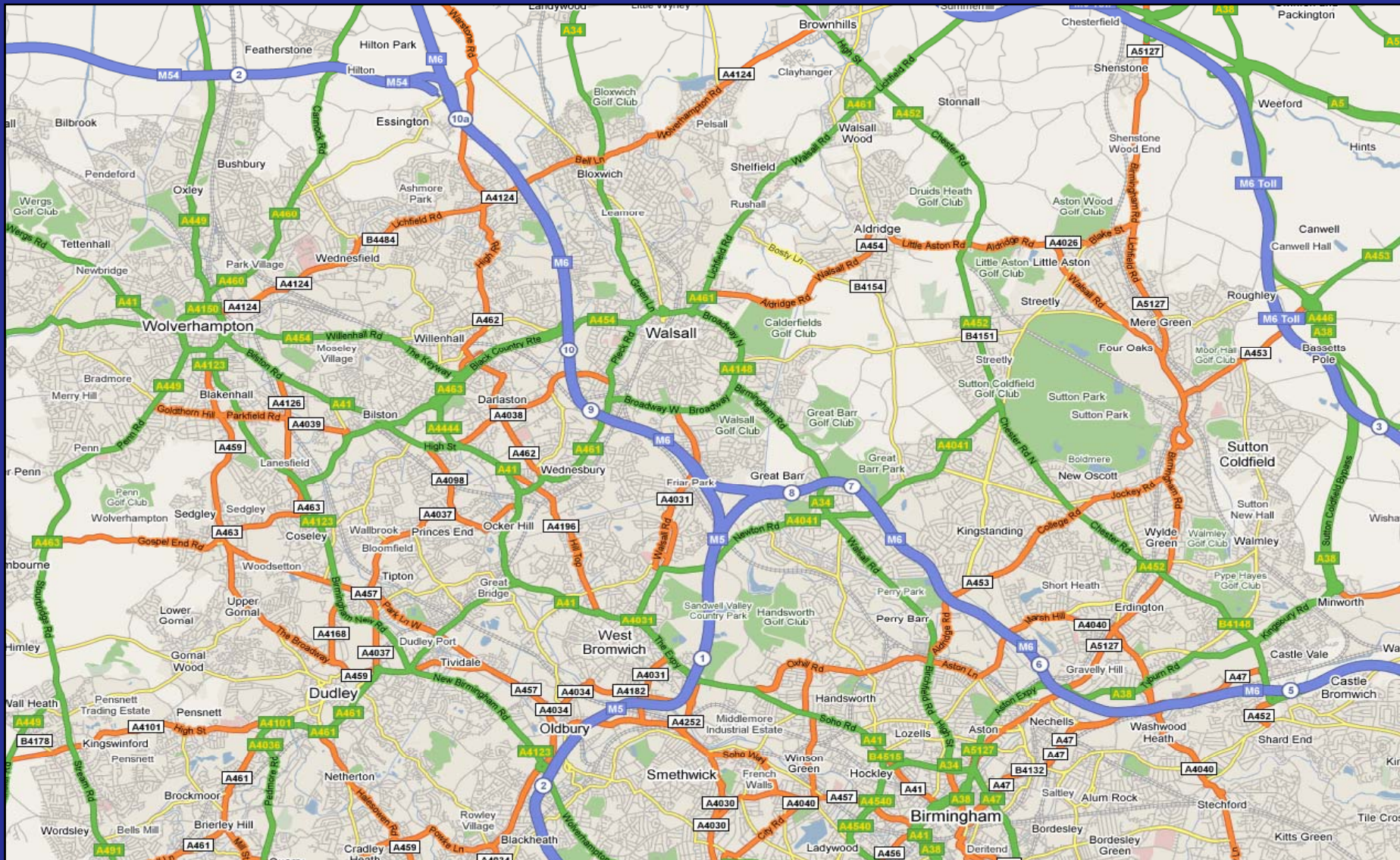
Greater trip (PSA) impact,
still modest cost

But...
What levels of
concentration achievable

How scalable is ATP
model?

- Personalised journey planning
- Residential travel plans for new development
- School travel plans
- Airport travel plans

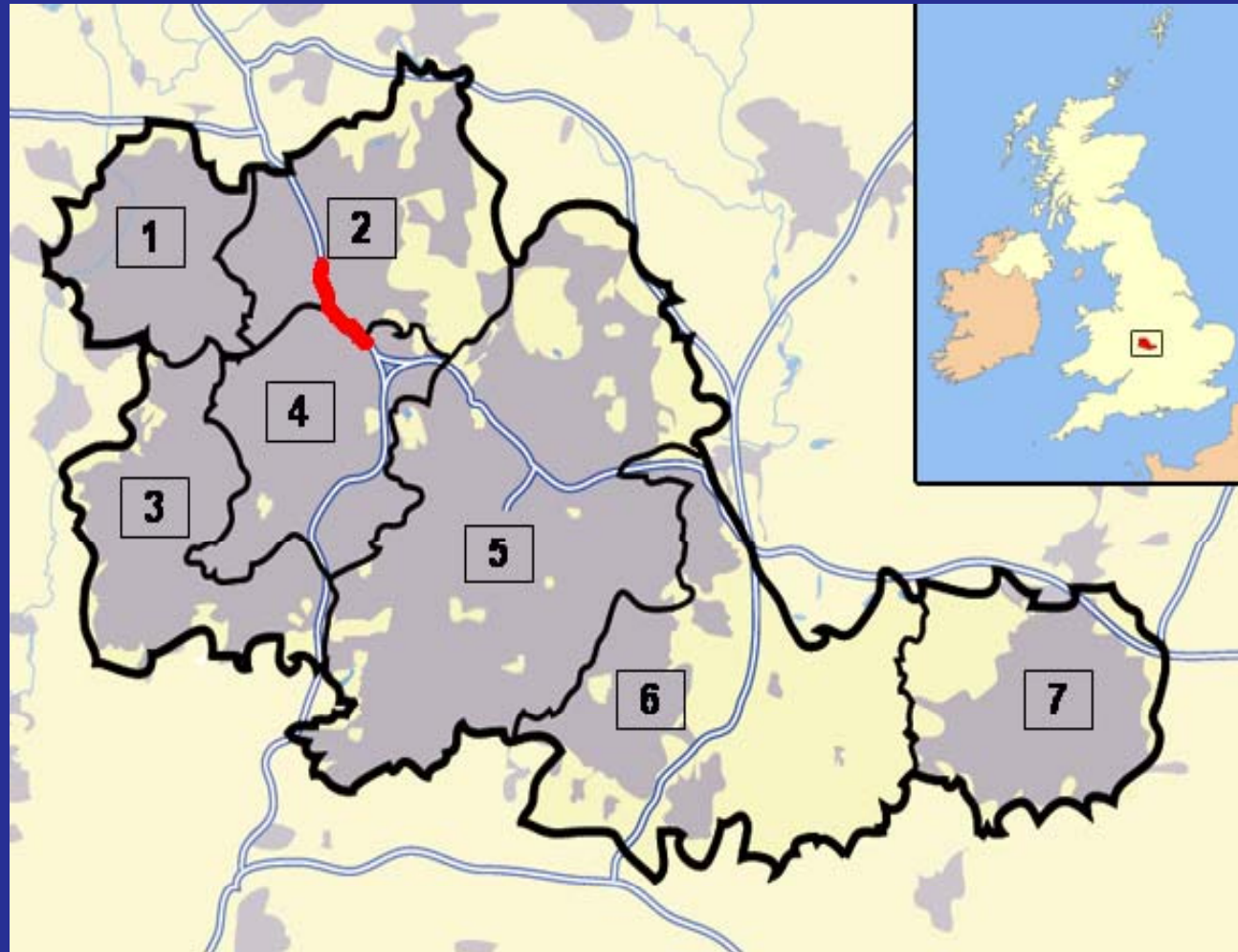
Corridor Scheme (M6 J9-10)



Corridor Scheme (M6 J9-10)



- 1 – Wolverhampton
- 2 – Walsall MBC
- 3 – Dudley MBC
- 4 – Sandwell MBC
- 5 – Birmingham CC
- 6 – Solihull MBC
- 7 – Coventry CC



Managing New Capacity

Offering Choice



We will look into the feasibility of: -

- High Occupancy Vehicle (HOV) Lanes
 - Tolled Lanes
- Or combinations of these (HOT) where car sharers can use at no cost but solo drivers would pay

M62/606 HOV Lane Introduced 2008

Locking in the Benefits



Summary

- **Quantified tangible benefits**
- **Correlation with Smarter Choices Report**
- **Inform Spatial Planning schemes**
- **Agreed future strategy to maximise benefits**
- **Combine with on-network measures to incentivise Sustainable Travel**

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