

# How Effective are Area Travel Plans?

## Evidence from the Highways Agency's ATP Programme

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TRL

Please note actual presentation at the Conference may  
differ slightly from this set of slides

# Outline of Presentation

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

# The Challenge in 2005

- 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 manage traffic, tackle congestion, provide information to road users and improve safety and journey time reliability, whilst respecting and minimising the adverse impact on the environment.

# Drivers for ITB

- **Agency's PSA Target**
- **Eddington**
- **DfT - Towards a Sustainable Transport System – (in devt.)**
- **Smarter Choices**
- **Planning Circular (2/2007)**

## A Solution – An ITB Programme

- Influencing Travel Behaviour through Area Travel Plans
  - Exploit voluntary “smarter choices” initiatives;
  - Manage demand within planned capacity;
  - “Predict and Manage” - replaces “Predict and Provide”;

# The Growth of the ITB Programme

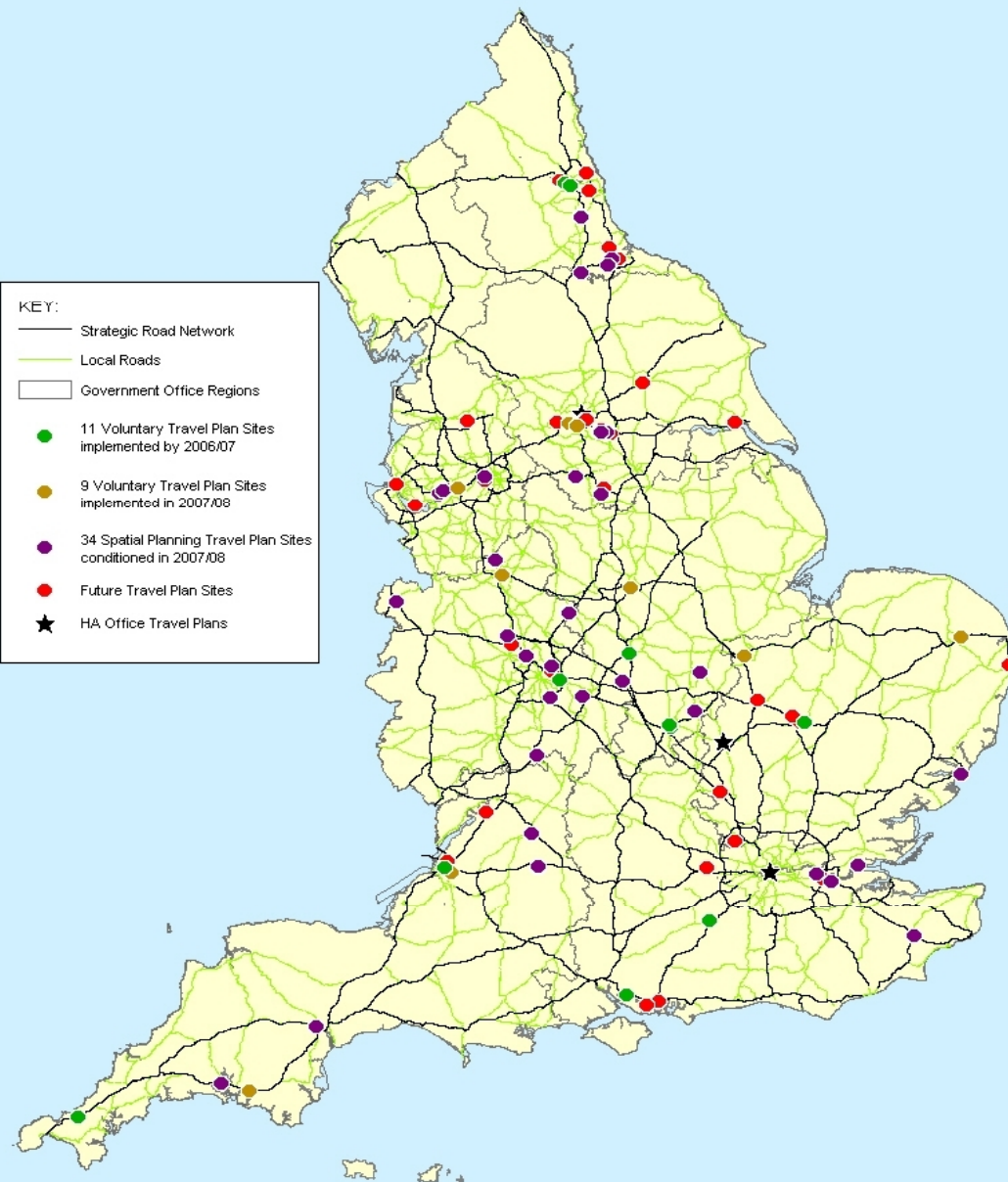
2006/07

11 Voluntary Travel  
Plans implemented

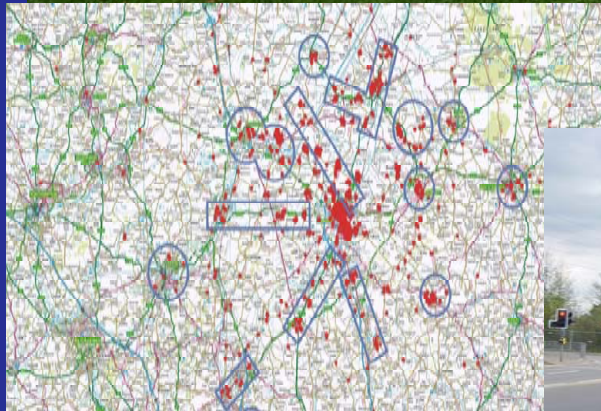
2007/08

9 Voluntary Travel  
Plans implemented

34 Spatial Planning  
Travel Plan sites  
conditioned



# 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

# Voluntary Travel Plan Schemes

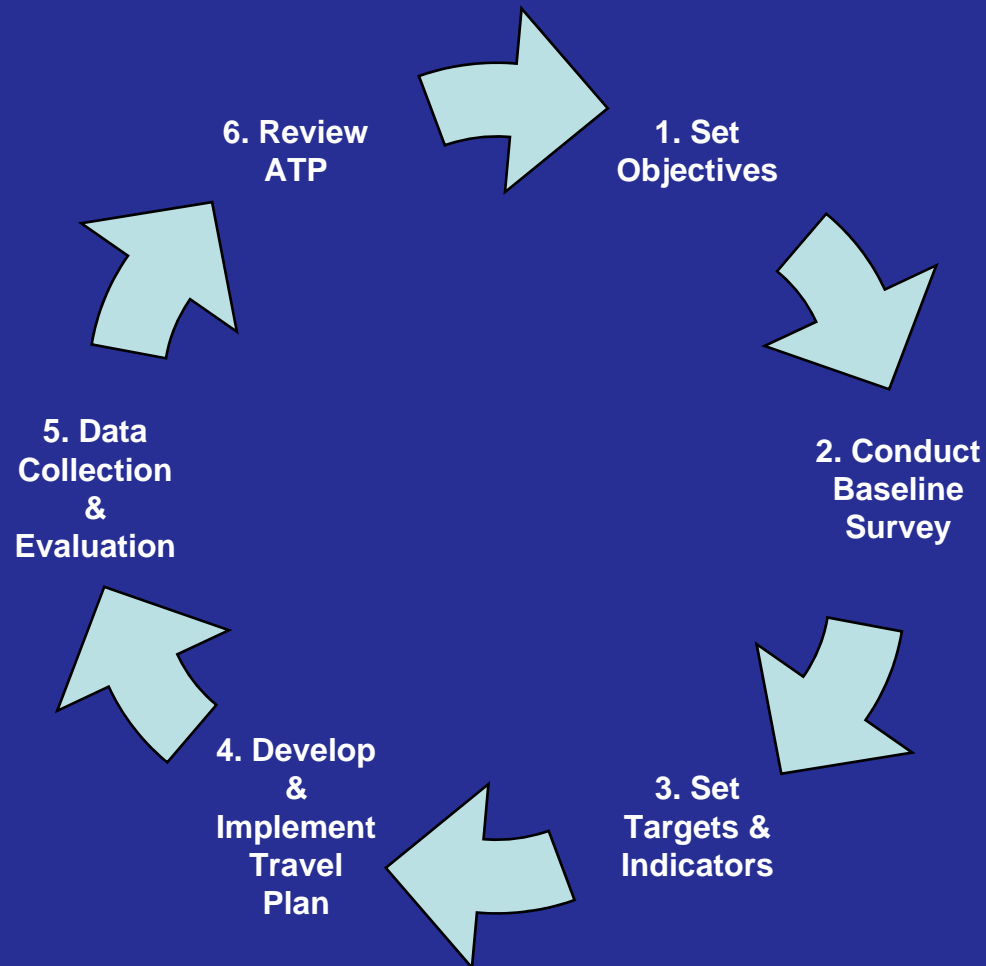
Progress So Far.....

- **Targeted Network hotspots**
- **Joint partnership working - LHAs, employers – business case**
- **Demonstrate Behavioural change**
- **Monitoring strategy – Outcome based**

# Typical Approach

- **Form Steering Group**
- **Site assessment study**
- **Travel Survey**
- **Consider opportunities**
- **Baseline monitoring**
- **Implement initiatives**

# ITB Monitoring Strategy



# Step 1: Key Objectives

- Trips removed from the Strategic Road Network
- Environmental objectives
- Social objectives
- Economic objectives
- Site-specific objectives

# Step 2 & Step 5: Baseline and Ongoing Data Collection

“Outcomes, not measures”

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



# Typical Site Specific Objectives

- To reduce single occupancy car use;
- To reduce congestion on the Strategic Road Network;
- To encourage the use of sustainable modes;
- To build or improve relationships between businesses and local authorities;
- To support social regeneration and inclusion;
- To improve the health and fitness of employees;
- To protect and to improve air quality; and
- To reduce carbon emissions.

# 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)

# 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)

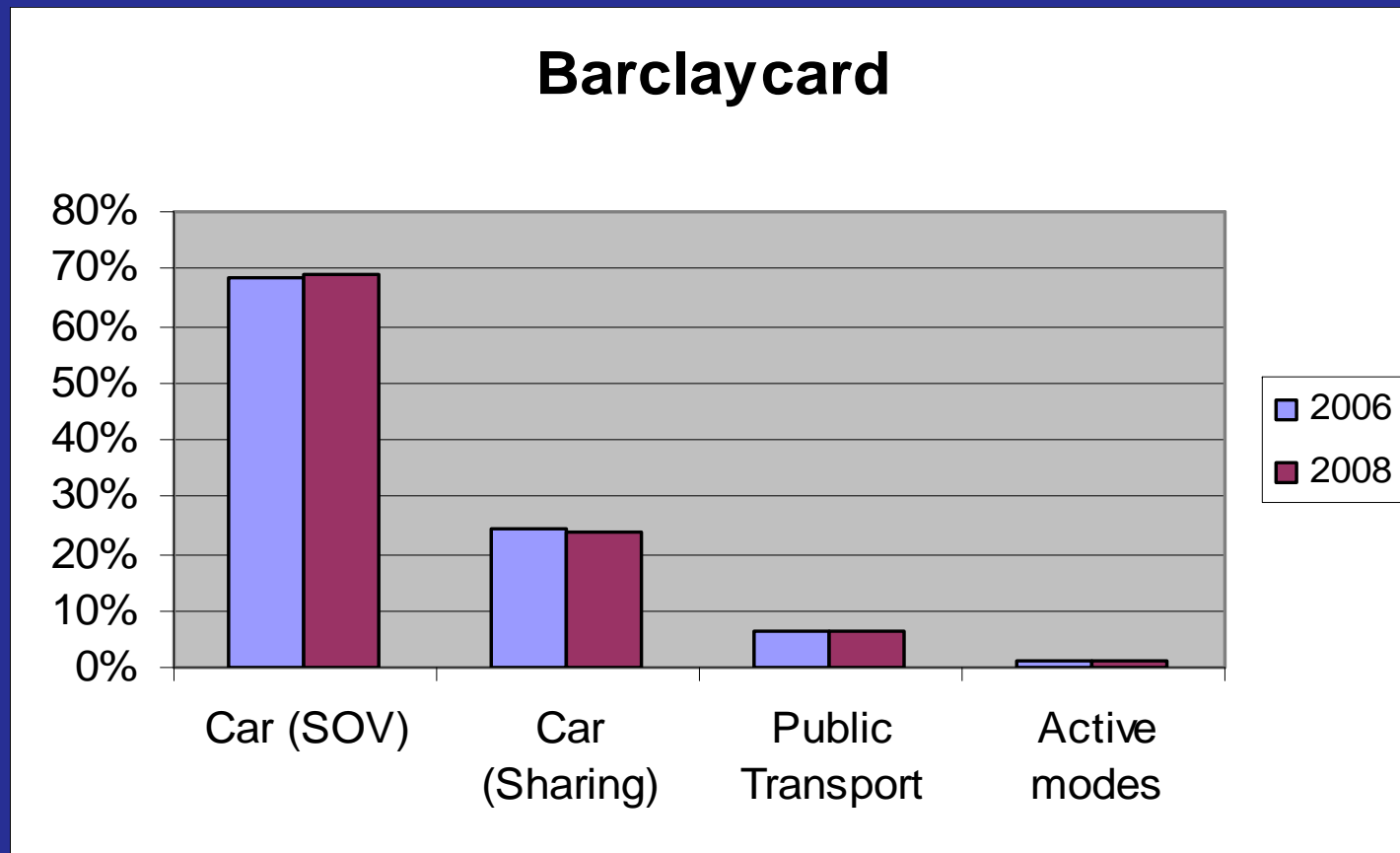
# Sites Monitored

Travel Plan Site	Location	Comps	Staff
Barclaycard HQ, Northampton	A45	1	3,000
The Mall, Cribbs Causeway	M5	135	4,000
Whiteley, Hants	M27	70	4,500
Grove Park, Leicester	M1	17	3,000
Cornwall College, Cambourne	A30	1	10,500
Birmingham Business Park	M6/M42	25	5,000
Northampton Gen. Hospital	A45	6	3,000
Cambridge Science Park	A14	90	5,000
Team Valley, Gateshead	A1	500	17,000
Fifth Avenue, Gateshead	A1	14	2,000

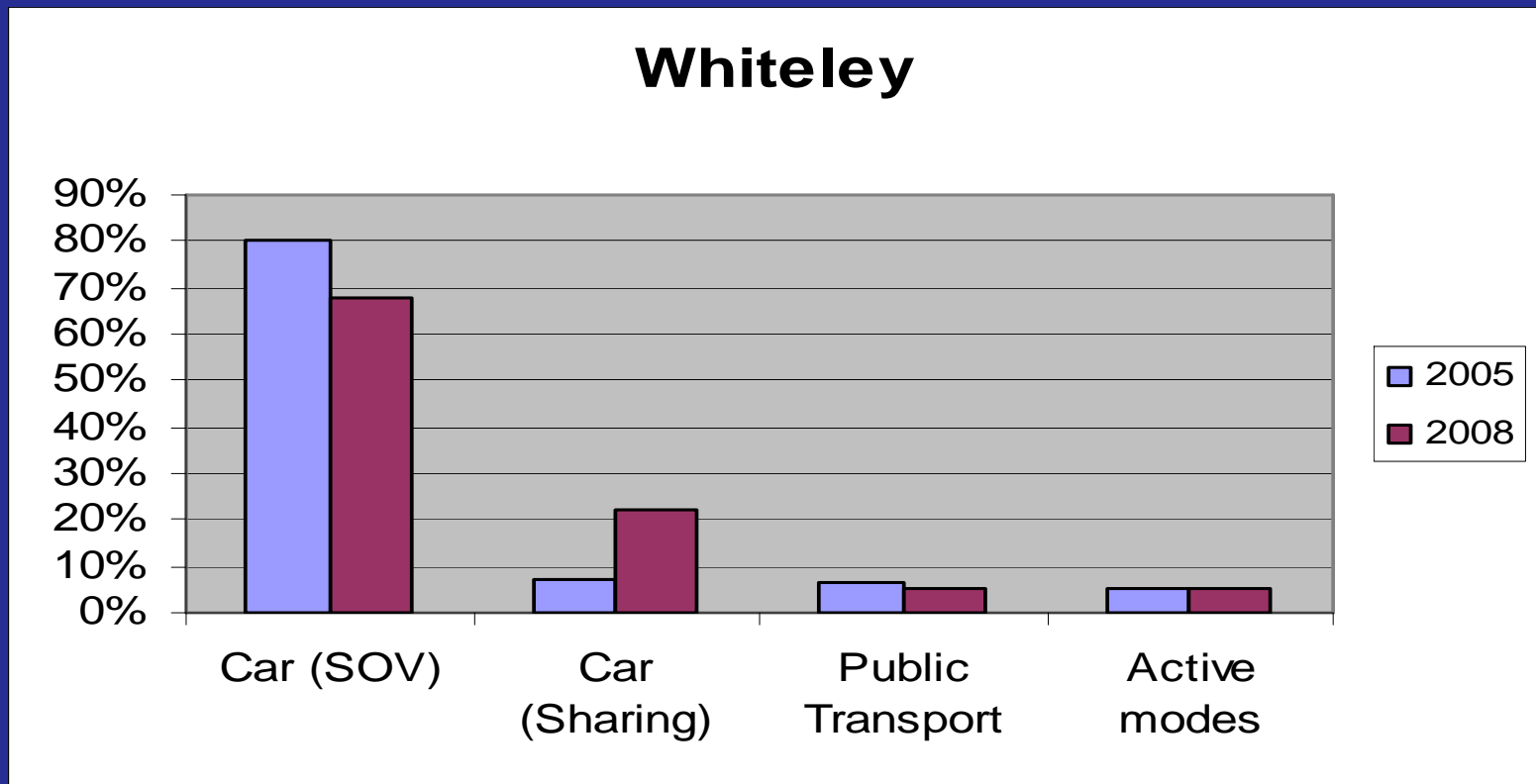
# Monitoring Results

- Mode shift
- Walking
- Cycling
- Environmental aspects

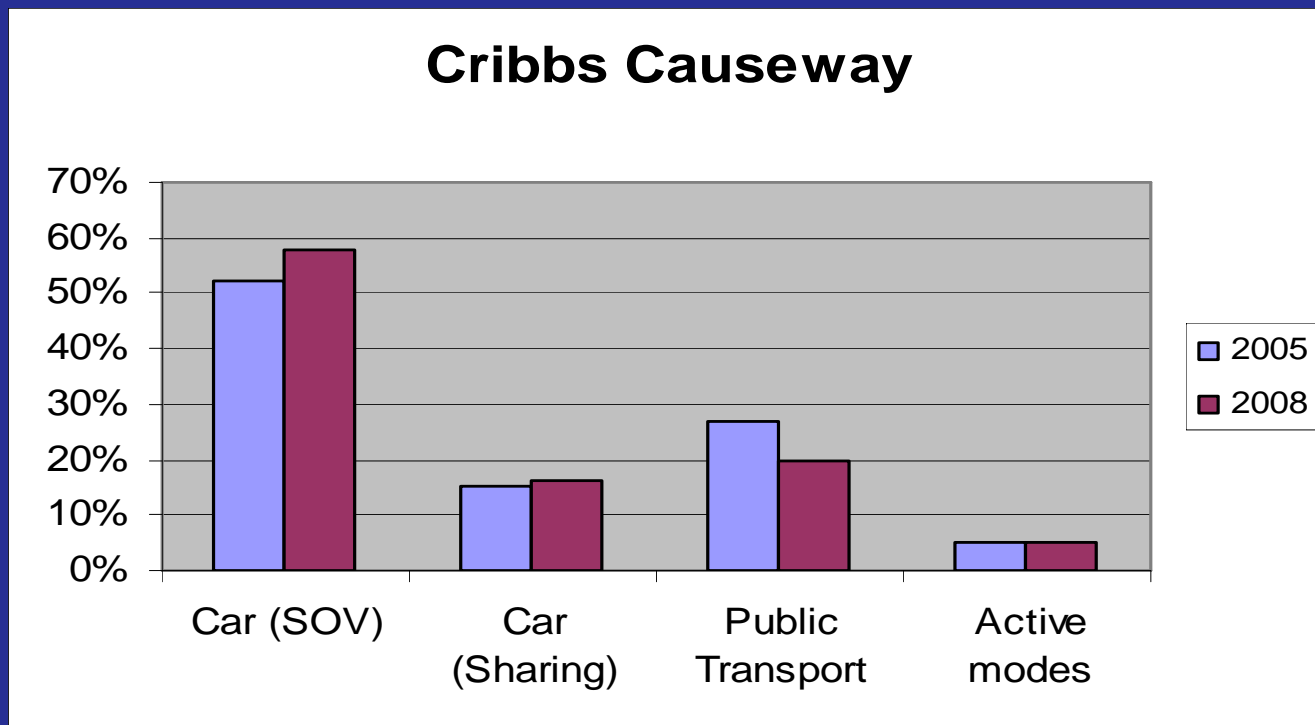
# Monitoring Sites/1



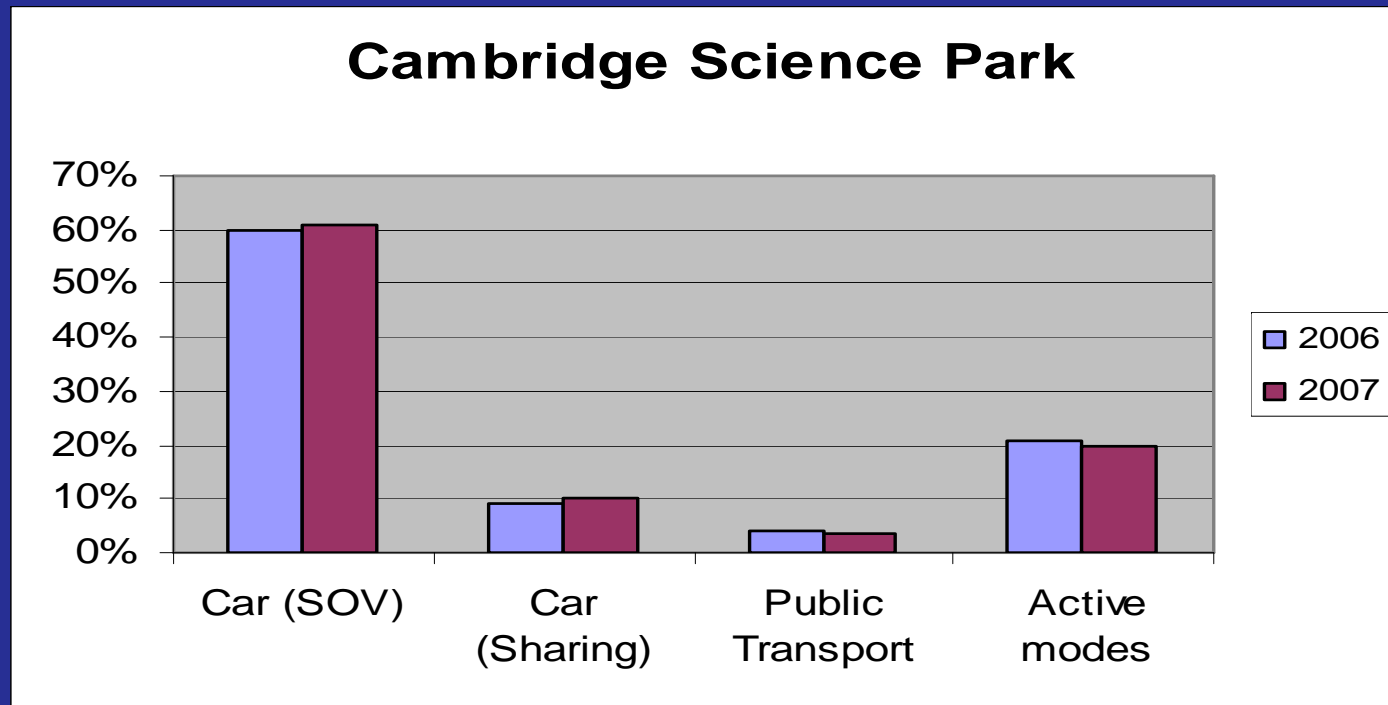
# Monitoring Sites/2



# Monitoring Sites/3



# Monitoring Sites/4



# Monitoring Results

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

\* Some employers onsite had significant increase

# Other Benefits

- Employers' reputation (CSR)
- Productivity gains
- Staff morale and turnover
- Parking/fleet management
- Health – walking and cycling
- Carbon Savings
- Air Quality Management Areas (Grove Park)

# 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**



# Developing a Business Case

## HA Business Plan Target in 2007/08

“Evaluate the benefits of the  
voluntary travel plans  
introduced....”

# Evaluation Approach

- Monetised benefits
- HA Short PAR appraisal
- DfT Webtag
- TRL develop Link-based spreadsheet
- Sensitivity Analysis (SATURN)
- Contribution to Agency's PSA Journey Reliability Target

# Appraisal Methodology



- NATA (> £5m)
- PAR (>£250k)
- **ShortPAR (< £250K)** – “first principles” calculation of economic benefits of a single location scheme
  - Time savings + VOC (part of CO<sub>2</sub> 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..

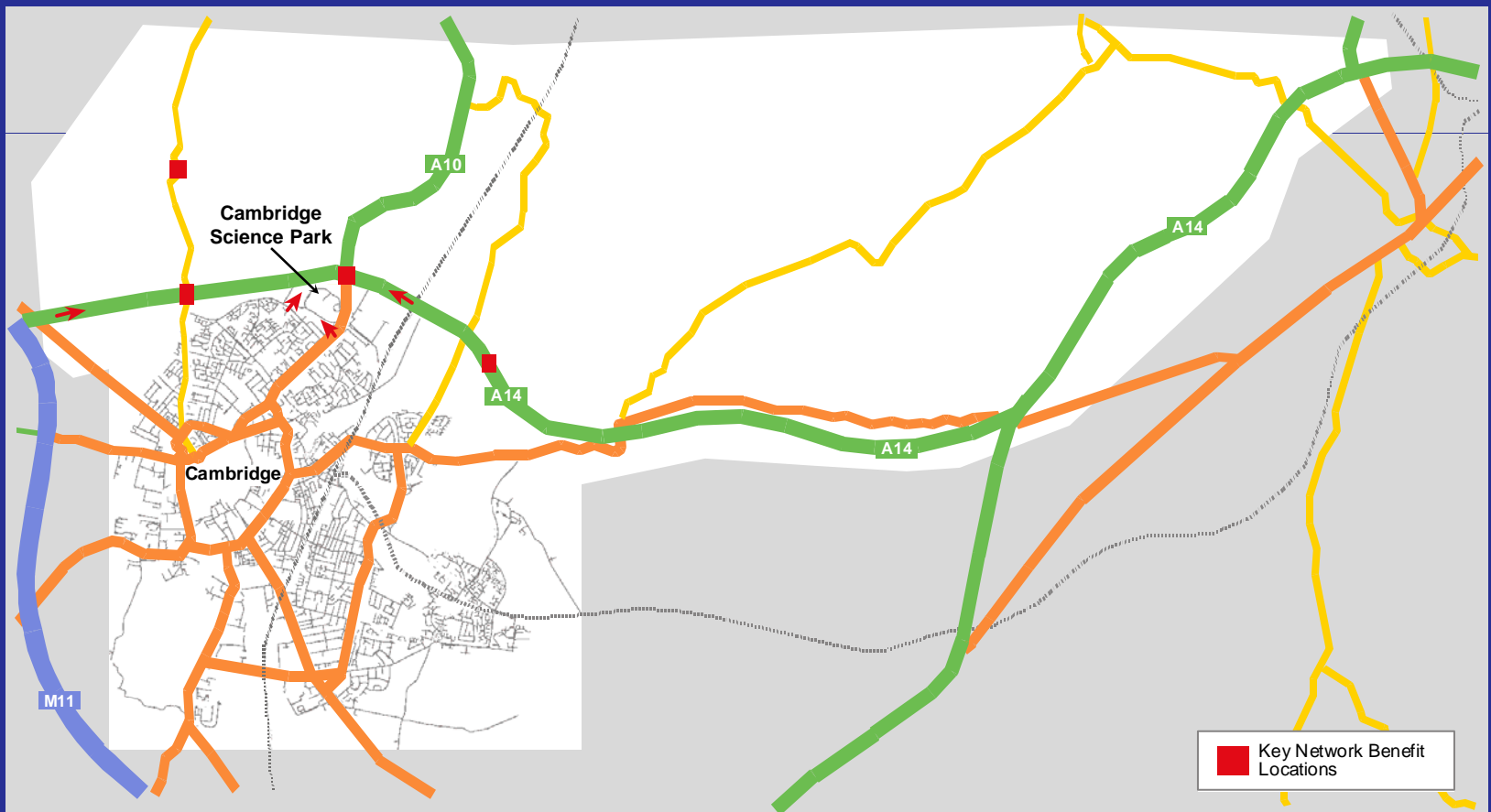
# Cambridge Science Park Example



# Local Monitoring at Cambridge



# Network Monitoring at Cambridge



# Testing the Approach

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

# Sites Evaluated

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

# Full Evaluations based on year 1 results

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

• 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%

# Benefit Summary



- **Improved PSA Target Contribution**

**(Compared to 2006/07 results)**

# Benefit Summary



- Improved PSA Target Contribution
- **Low cost and quick to implement**

# Benefit Summary

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

# Benefit Summary

- Improved PSA Target Contribution
  - Low cost/quick to implement
  - Promotes Sustainable Travel (DfT Objective)
- 
- **Wider LHA Benefits**

# Benefits Summary

- Improved PSA Target Contribution
- Low cost/quick to implement
- Promotes Sustainable Travel (DfT Objective)
- Wider LHA Benefits

## Carbon and Air Quality (AQMA<sub>s</sub>)

# Benefit Summary

- Improved PSA Target Contribution
- Low cost/quick to implement
- Promotes Sustainable Travel (DfT Objective)
- Wider LHA Benefits
- Carbon and Air Quality (AQMAs)
- **Compare well with conventional schemes/TDMs**

# Benefits Exclude

- Homeworking
- Peak Spreading

# 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

# 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.
- Needs supportive infrastructure e.g. Bus links/services, cycle facilities/storage
- Incentives Help!

# Future Travel Plans –

- Strong **Business Case** evidence
- Mainstreamed - Target in PSA Delivery Plan - **8 voluntaries 2008/09**
- Focus on **High Quality/Outcome Schemes** to maximise impact and benefits
- Strengthen **Agreements with Stakeholders**  
– increase commitment & cost sharing

# Thank You

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