A basket of UK acronyms – TAs, TIAs, TRICS, TPs, TSs and WATAAT?*

Phil Jones

TDB Trip Generation Seminar

10 September 2009

* What are they all about then?

Introduction

- UK Planning – a brief overview
- A quick history of TIAs, TAs, TSs and TPs
- Development and capabilities of TRICS
- Case studies
- Some final thoughts

The UK Planning System

- Policy and Spatial Planning System
- National Policy
- Regional Policy
- Local Development Framework
- Planning Application

PPG13 (Transport)

Use	National Maximum Parking Standard 1 space per square metre (m2) of gross floorspace unless otherwise stated	Threshold from and Above Which Standard Applies (gross floorspace)
Food retail	1 space per 14m2	1000m2
Non food retail	1 space per 20m2	1000m2
Cinemas and conference facilities	1 space per 5 seats	1000m2
D2 (other than cinemas, conference facilities and stadia)	1 space per 22m2	1000m2
B1 including offices	1 space per 30m2	2500m2
Higher and further education	1 space per 2 staff + 1 space per 15 students (see note 1)	2500m2
Stadia	1 space per 15 seats (see note 2)	1500 seats

Traffic Impact Assessments – 198? to 2001

- Based largely on US methodologies
- Entirely traffic focused
- Trip rate methodology gradually became default
- Additive traffic assumption (background plus development)
- Local trip databases (eg TRAVL, Generate)...
- Gradually supplanted by national TRICS database

Issues

- Year of Assessment – Opening plus 15 years
- Responsibility for growth
- Trip rates – Average vs 85th percentile
- Predict and Provide

Transport Assessments

- PPG13 (1994 version) – fundamental shift in approach
- PPG13 (2001 version) – TAs to replace TIAs

Where developments will have significant transport implications, Transport Assessments should be prepared and submitted alongside the relevant planning applications for development. Transport Assessments replace Traffic Impact Assessments, and the Department will issue good practice advice on their content and preparation.

Travel Plans

- Emerged during early late 1990s, early 2000s
- DfT Guidance first published 2002
- Most recent Gov't guidance 2009
- Requirement set out in PPG13 (2001)
  - Major developments
  - Air quality areas
  - Schools
  - <u>Where needed to mitigate the traffic impact of a development that would otherwise be refused.</u>

Travel Plans

A travel plan (TP) is a long-term management strategy for an occupier or site that seeks to deliver sustainable transport objectives through positive action and is articulated in a document that is regularly reviewed.

- Two real types
  - Carried out by willing organisation; and
  - Imposed by the planning system

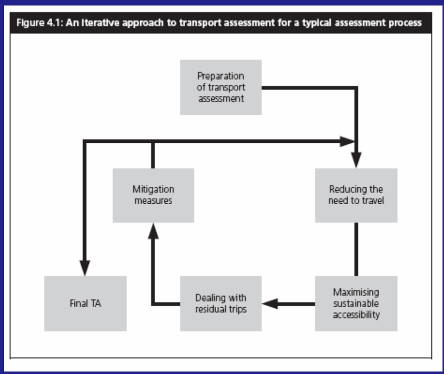
  - Problems with
    - Speculative commercial development
    - Residential development

Transport Assessment Guidelines

- Promised in PPG13 (2001), but long time coming!
- England and Wales guidance 2007
- Integration of TAs and TPs
- Policy Statement 2/07 –
  Planning and Strategic Road Network

TA Guidelines

- Reduce the need to travel
- Site Location, other measures to influence travel behaviour
- Make best use of existing infrastructure
- Lastly – provide new or expanded roads



And...

- Lesser Transport Statement (TS) for smaller sites
- Person trips, not car trips
- Removed 10%/5% traffic thresholds
- Some support for 85th percentile rates – wooly!
- Assessment years:
  - Year of opening
  - Horizon year – minimum 5 years <u>after application</u>
  - 10 years on Strategic Network

Transport for London TA Guidelines

- Published 2006
- Anticipated much of DfT guidance
- Multimodal trip gens
- TP required for all developments
- TRAVL database preferred
- But TRICS multi-mode acceptable

TfL Guidance

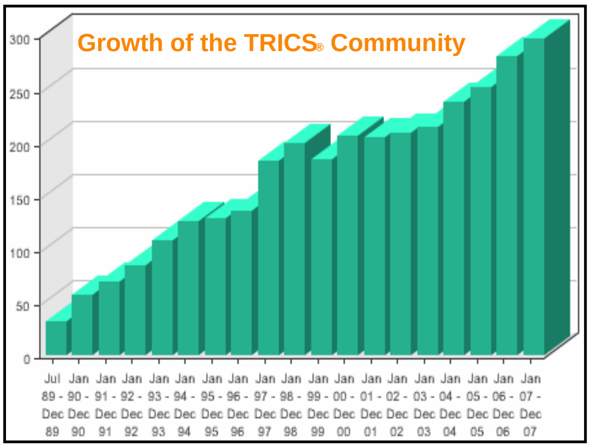
The scope of the TA is determined by the over-riding need to demonstrate how the transport demands of a particular development can be met within the existing and planned transport network

and

Another key consideration is to assess the conformity of proposals with policy.

TRICS

- Trip Rate Information Computer System
- Established 1989 by series of local authorities from the South of England
- *"Why don't we pool that traffic data we have hanging around?"*



A new focus in the new Millennium

- Introduction of multi-modal surveys
- More structured approach to commissioning annual data collection programmes
- Greater encouragement of feedback leads to an interactive approach to system development

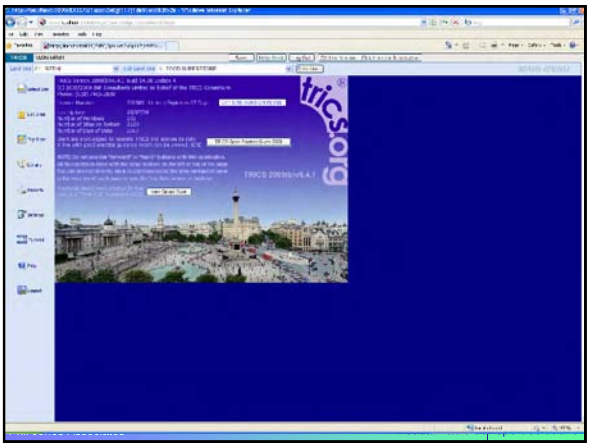
Standardised Assessment Methodology (SAM) - 2005

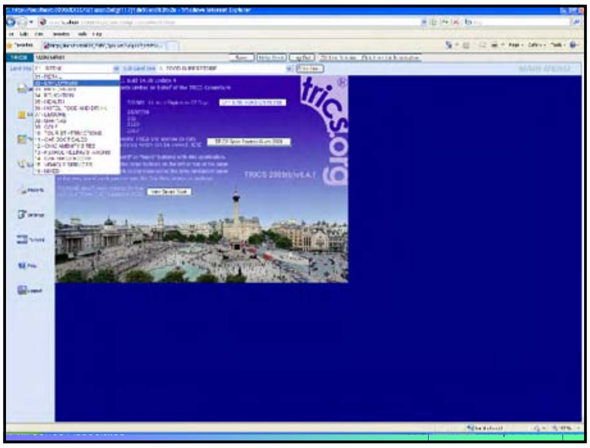
"SAM allows us to monitor the effect of Travel Plans at a range of different development types, using our own standardised national methodology"

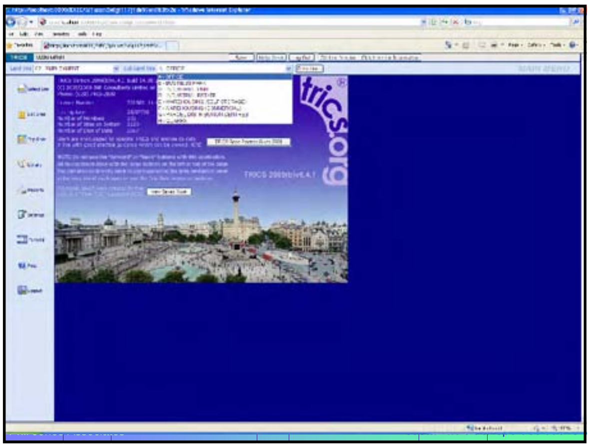
TRICS 6 – TRICS® on the web (2007)

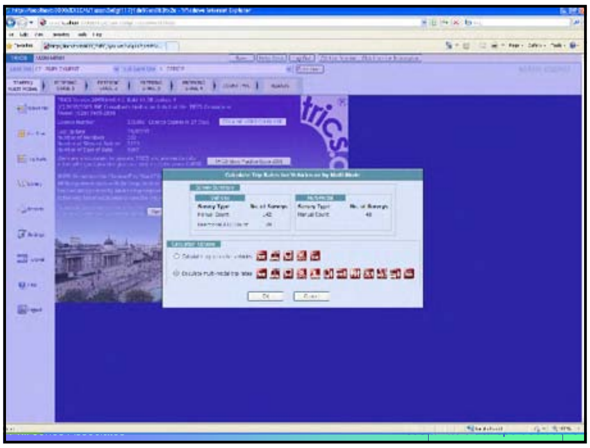
- Users access TRICS live on the internet
- Downloadable "off-line" version also introduced
- Ability to incorporate other on-line facilities (e.g. Google Maps)

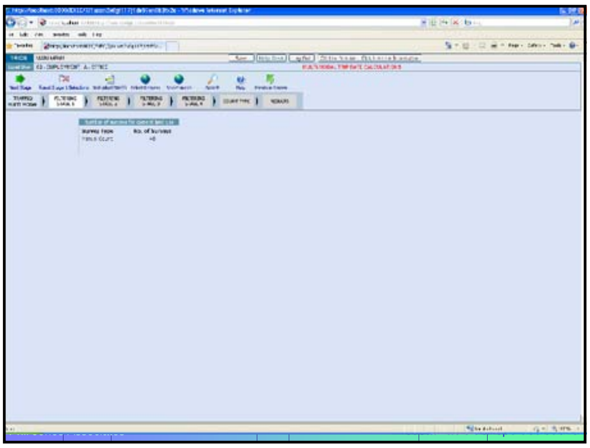
- Currently 5595 survey days of information
- 270 new days added in 2009
- 5% increase...
- Multi-modal/SAM surveys

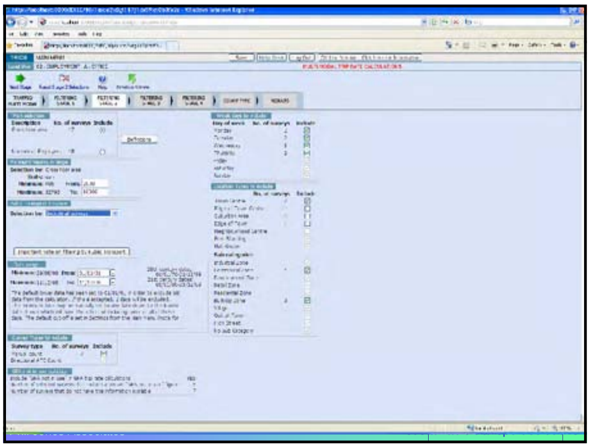


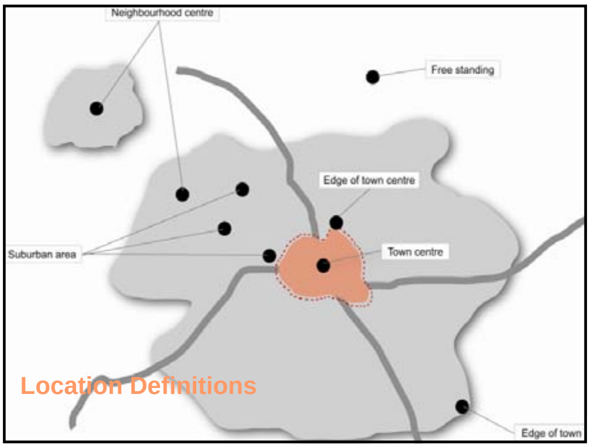


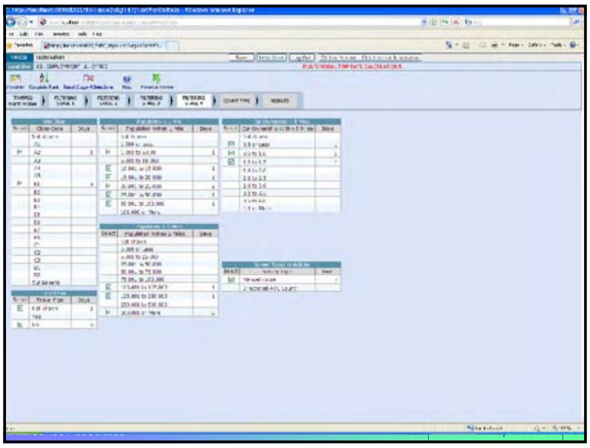


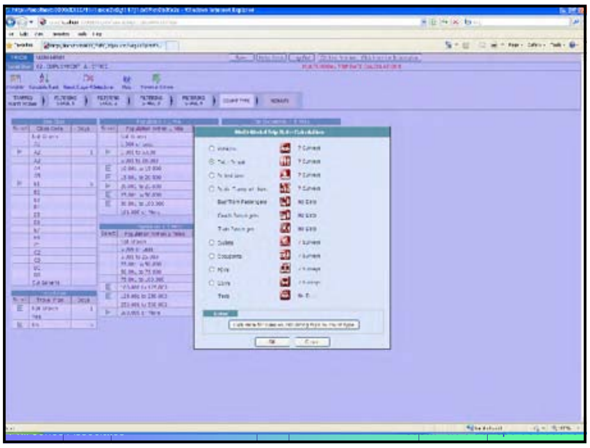


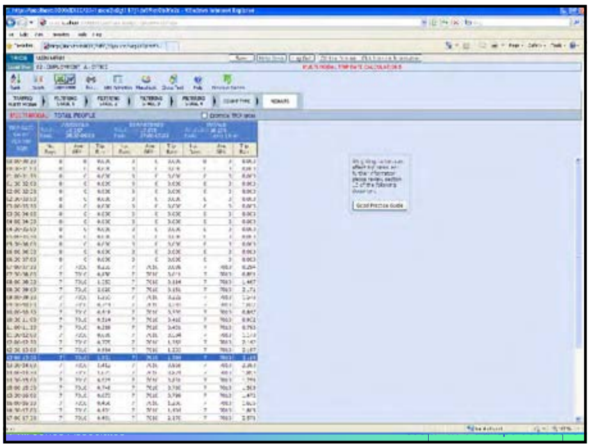


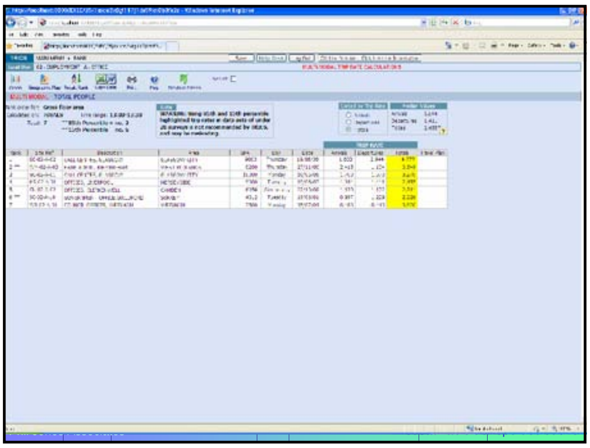


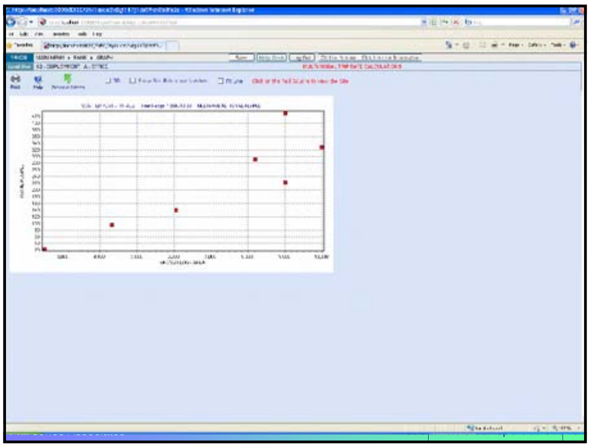

Neighbourhood centre
Free standing
Edge of town centre
Suburban area
Town centre
Location Definitions
Edge of town

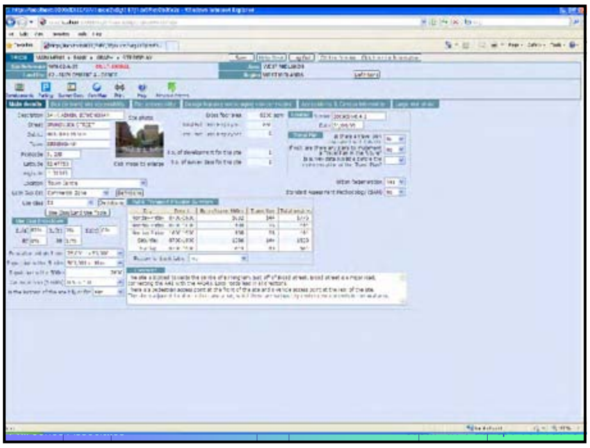


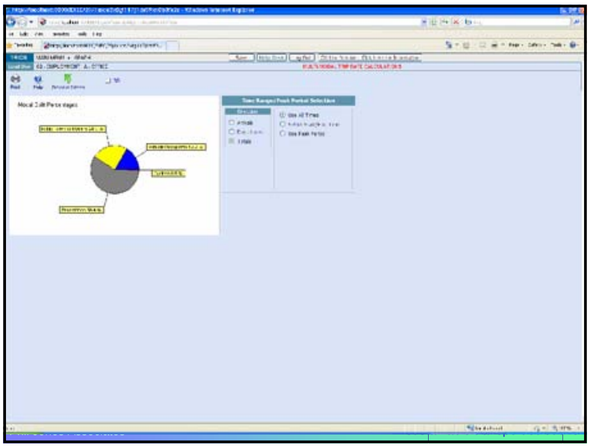


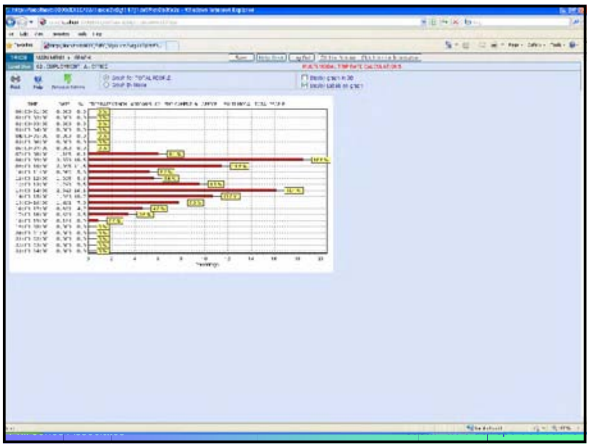










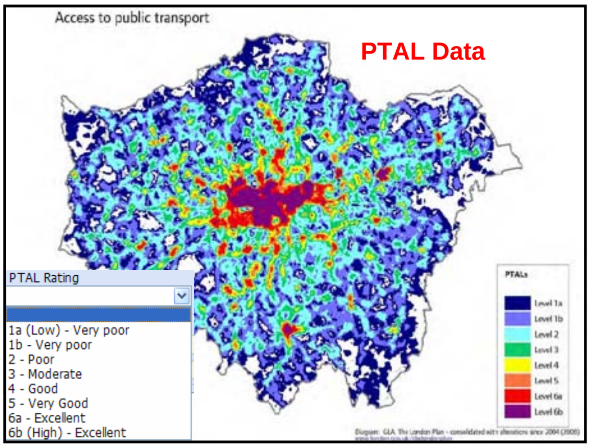


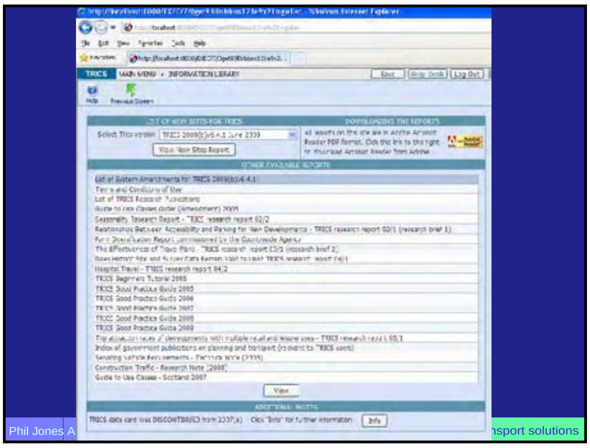
Time	INBOUND Home to Work 545	Personal Trip 130	Business Trip 42	Visitor 35	Delivery/ Servicing 14	Total People 766
05:00-05:30						
05:30-06:00						
06:00-06:30	9	0	0	0	0	9
06:30-07:00	8	0	0	0	0	8
07:00-07:30	58	2	0	0	1	61
07:30-08:00	82	0	0	2	0	84
08:00-08:30	90	0	0	5	1	96
08:30-09:00	119	0	0	3	2	124
09:00-09:30	85	0	2	1	0	88
09:30-10:00	27	0	0	3	0	30

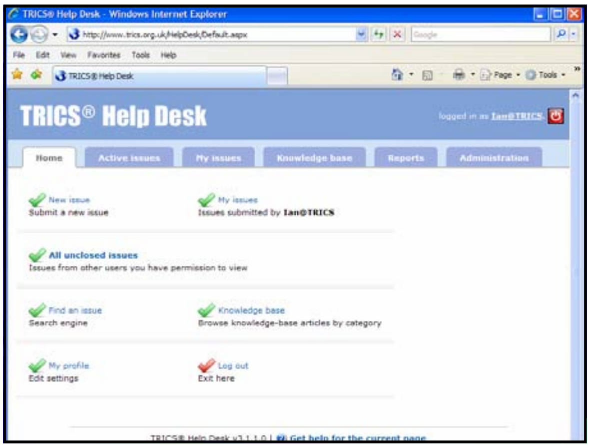
Occupied dwellings	61
Unoccupied dwellings	0
Total dwellings	61

Residential unit types

	Private	Non-Private	Total
Detached houses	0	0	0
Semi-detached houses	0	0	0
Terraced houses	18	0	18
Bungalows	0	0	0
Flats (in houses)	0	0	0
Flats (in blocks)	66	0	66
Other (specify below)			







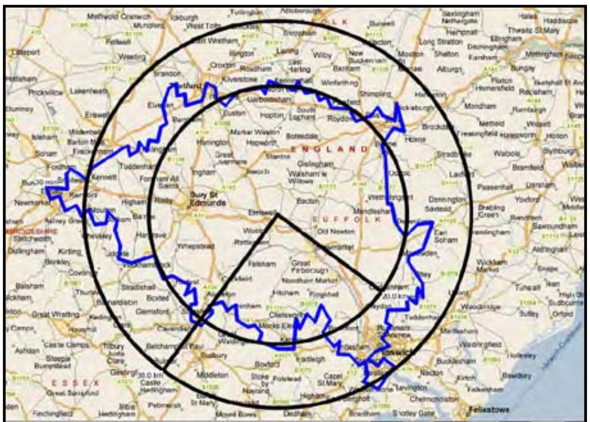
Case Studies

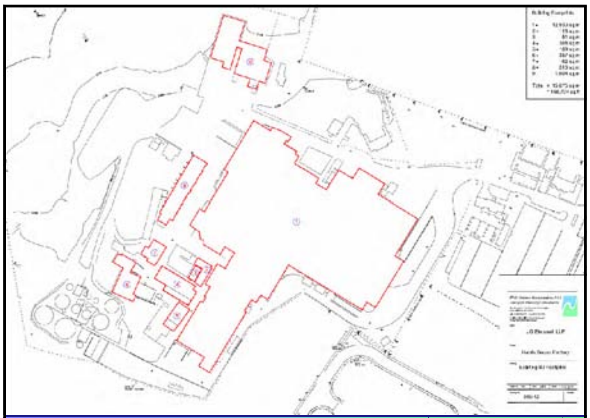
- Elmswell, Suffolk

- Worcester Bosch

Elmswell, Suffolk

- Residential-led development in rural village,Suffolk
- 209 houses, 28 apartments, 1800 sq m commercial
- Brownfield site – previously developed land
- Local concern over impact on level crossing
- Fairly standard medium small TA/TP
- Except for simulation technique.





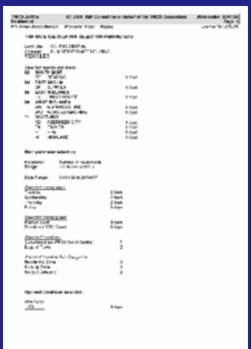
Sustainable Transport

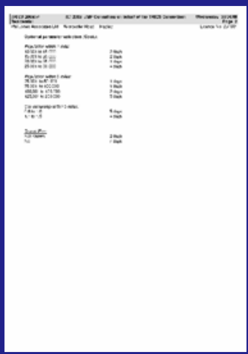
- Adjacent to Elmswell Railway Station
- Hourly service on Ipswich/Peterborough line
- 60 minutes bus service
- Commitment to fund some improvements

Travel Plan

- Framework Travel Plan
- Measures based
- Travel Plan Coordinator
- Discounted bus/rail pass
- Information/marketing

Traffic Generation - TRICS





TRICS 2008(a) (C) 2008 JMP Consulting on behalf of the TRICS Consortium Wednesday 30/04/08
Residential Page 1
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TRIP RATE for Land Use 03 RESIDENTIAL/K MIXED PRIVATE HOUSING
VEHICLES
Calculation factor: 1 HHOLDS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. HHOLDS	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. HHOLDS	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. HHOLDS	TOTALS Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	9	75	0.061	9	75	0.266	9	75	0.327
08:00 - 09:00	9	75	0.094	**9**	**75**	**0.344**	9	75	0.438
09:00 - 10:00	9	75	0.098	9	75	0.144	9	75	0.242
10:00 - 11:00	9	75	0.101	9	75	0.149	9	75	0.250
11:00 - 12:00	9	75	0.121	9	75	0.122	9	75	0.243
12:00 - 13:00	9	75	0.122	9	75	0.110	9	75	0.232
13:00 - 14:00	9	75	0.125	9	75	0.152	9	75	0.277
14:00 - 15:00	9	75	0.131	9	75	0.138	9	75	0.269
15:00 - 16:00	9	75	0.207	9	75	0.124	9	75	0.331
16:00 - 17:00	9	75	0.246	9	75	0.153	9	75	0.399
17:00 - 18:00	**9**	**75**	**0.271**	9	75	0.153	9	75	0.424
18:00 - 19:00	9	75	0.271	9	75	0.177	**9**	**75**	**0.448**
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			1.848			2.032			3.880

Parameter summary

Trip rate parameter range selected: 122 - 356 (units:)
Survey date date range: 01/01/00 26/04/07
Number of weekdays (Monday-Friday): 9
Number of Saturdays: 0
Number of Sundays: 0
Optional parameters used in selection: NO
Surveys manually removed from selection: 1

Traffic Generation - Observed

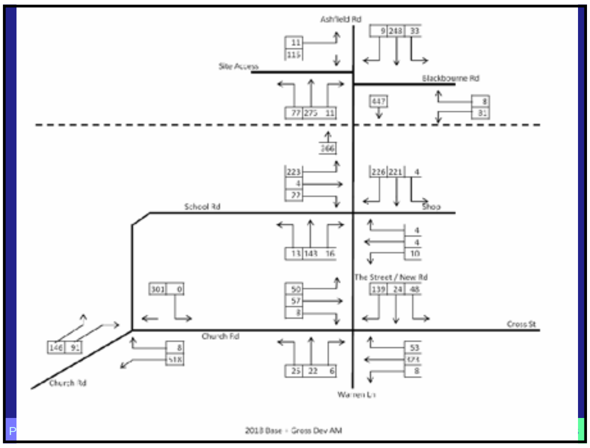
Table 5.5 Existing Traffic Generations – Blackbourne Road Development

Land Use	AM Peak			PM Peak		
	In	Out	Two-way	In	Out	Two-way
Residential	27	89	116	78	36	114

5.18 The total number of dwellings within the development has been recorded as 171. The resultant trip rates for the development are therefore shown in Table 5.6.

Table 5.6 Existing Trip Rates – Blackbourne Road Development

Land Use	No. of Units	AM Peak			PM Peak		
		In	Out	Two-way	In	Out	Two-way
Residential	171	0.158	0.520	0.678	0.456	0.211	0.667



Junction capacity tests – standard TRL software

Table 6.1 PICADY Results – Site Access / Station Rd / Blackbourne Rd (2018)

Stream	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	RFC	Queue	Delay	RFC	Queue	Delay
Blackbourne Rd – Station Rd South	0.177	0.2	0.13	0.088	0.1	0.12
Blackbourne Rd – Station Rd North	0.031	0.0	0.20	0.037	0.0	0.19
Station Rd North – Site Access	0.017	0.0	0.10	0.023	0.0	0.10
Site Access – Station Rd North	0.027	0.0	0.13	0.026	0.0	0.12
Site Access – Station Rd South	0.349	0.5	0.22	0.240	0.3	0.19
Station Rd South – Blackbourne Rd	0.023	0.0	0.11	0.030	0.0	0.11

RFC - Ratio of Flow to Capacity
Queue - End Queue (vehicles)
Delay - Inclusive Queuing Delay (minutes/vehicle)

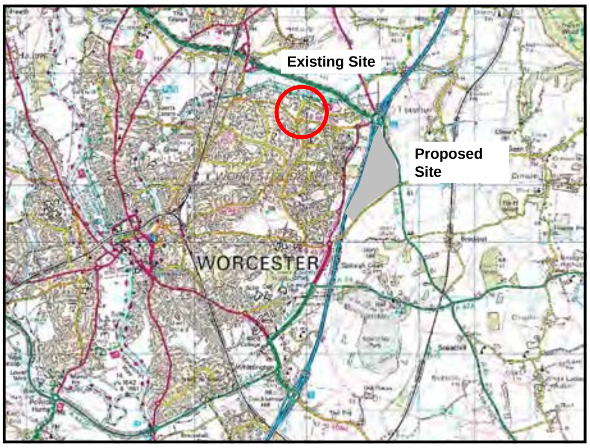
- First principles analysis of level crossing
- Closure period x average arrival rate = extra queue
- 5 vehicles extra in queue
- 10 seconds additional delay on clearance

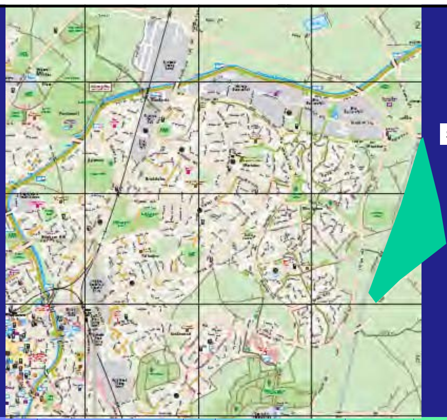
Simulation!

- 60 vehicles in/120 out, AM peak
- Reverse in PM peak
- Measured queues and delay at level crossing
- Average time to clear queue – 68 seconds
- Considered acceptable.

Worcester, Bosch

- Relocate factory to greenfield site – 72 Ha
- Increase from 1100 to 3000 employees
- Additional spec business park, 60000 sq m
- Impact on congested motorway junction
- First principles plus TRICS generations
- Ambitious target and measures-based travel plan needed to reduce scale of highway improvements



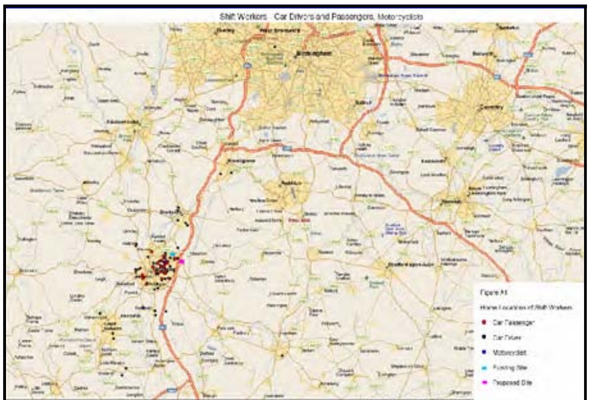


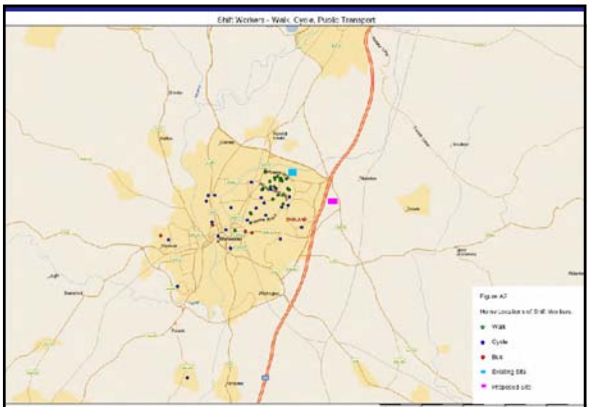
Trip Generations

- Bosch
  - Existing workforce
  - Multi-modal surveys
  - Initially assumed similar modal split
- Tech Park
  - TRICS industrial/business park trip rates

Trip Distribution

- Postcode data for Bosch workers
- Gravity model and Census data for Tech Park



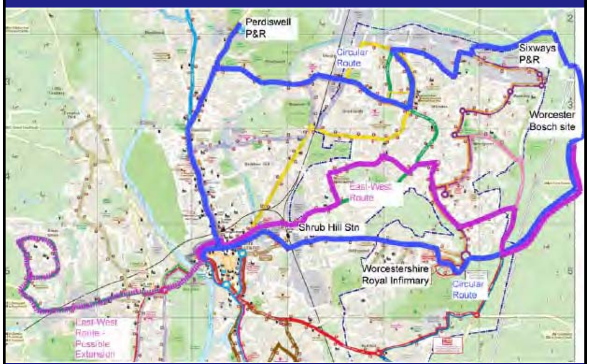


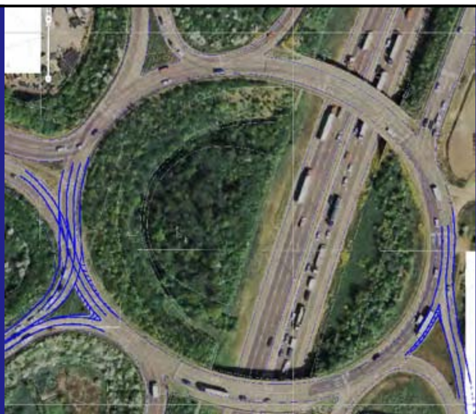
M

Bosch Mode Share Targets

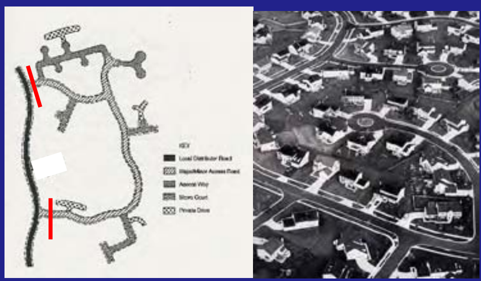
Mode	Office Workers		Shift Workers	
	Existing	Target	Existing	Target
Walk and Cycle	9%	20%	33%	33%
Public Transport	4%	15%	2%	10%
Car Passenger	11% (6% WB with driver)	16% (16% with WB driver)	16% (11% with WB driver)	16% (16% with WB driver)
Car Share Driver		13%		13%
Single Occupancy Vehicle Driver (incl m/c)	76% (all drivers)	36%	45% (all drivers)	28%

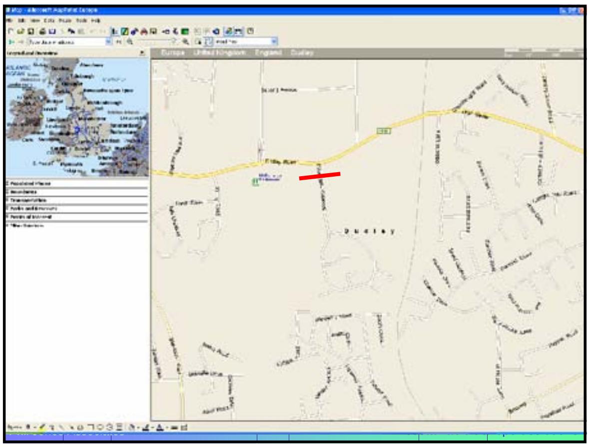
Table 5 – Interim Mode Share Targets

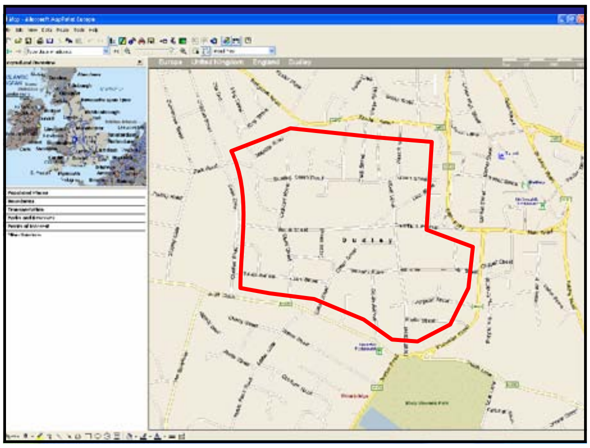




Final thoughts (1)







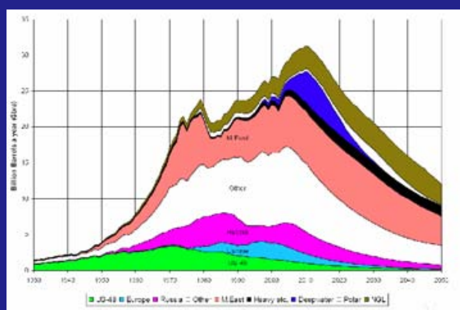
*Attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations, improving their health while reducing motor traffic, energy use and pollution;**1***

Manual for Streets

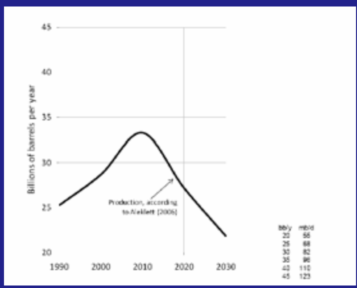
1 Snellen, D. (1999) The relationship between urban form and activity patterns. In *Proceedings of the European Transport Conference, Cambridge, 1999. London:* PTRC. pp. 429-439.

Final thoughts (2)

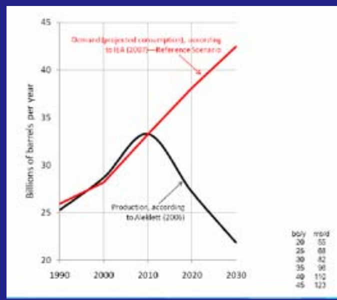
Peak Oil...any day now?



Schematic – Total World Production of Petroleum Products, 1990 - 2030

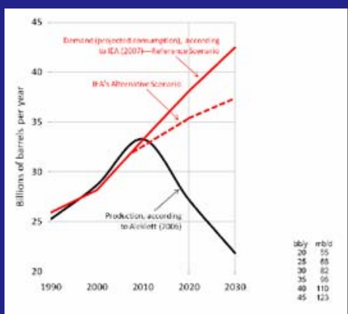


Business as Usual projection of oil consumption (IEA 2007)

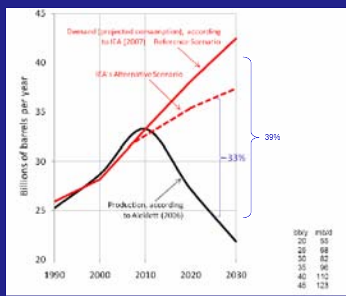


IEA Reduced Demand scenario

(all the policies that governments are considering today)



Forecast global shortfall 33% to 39% by 2025



Possible impact of shortfall on prices.

Based on a 2002 analysis by the Brookings Institution

	Shortfall in crude oil supply			
	0%	5%	10%	15%
Resulting increase in crude oil price	0%	30%	200%	550%
Crude oil price per barrel (US$)	$50	$65	$150	$320

A Transport Revolution

- Increasing use of electric motors for land transport
- More use of rail and marine transport instead of road and air for inter-urban travel
- Increased use of collectively-managed transport instead of privately managed transport

Conclusions

- Trip generation databases have their uses but...
- Rely on looking forward by looking back
- The future isn't what it used to be
- What travel patterns do we want
- Not simply what business as usual would create

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