WMDC SATURN Model
A Database Approach

Saturn User Group Meeting
September 2007

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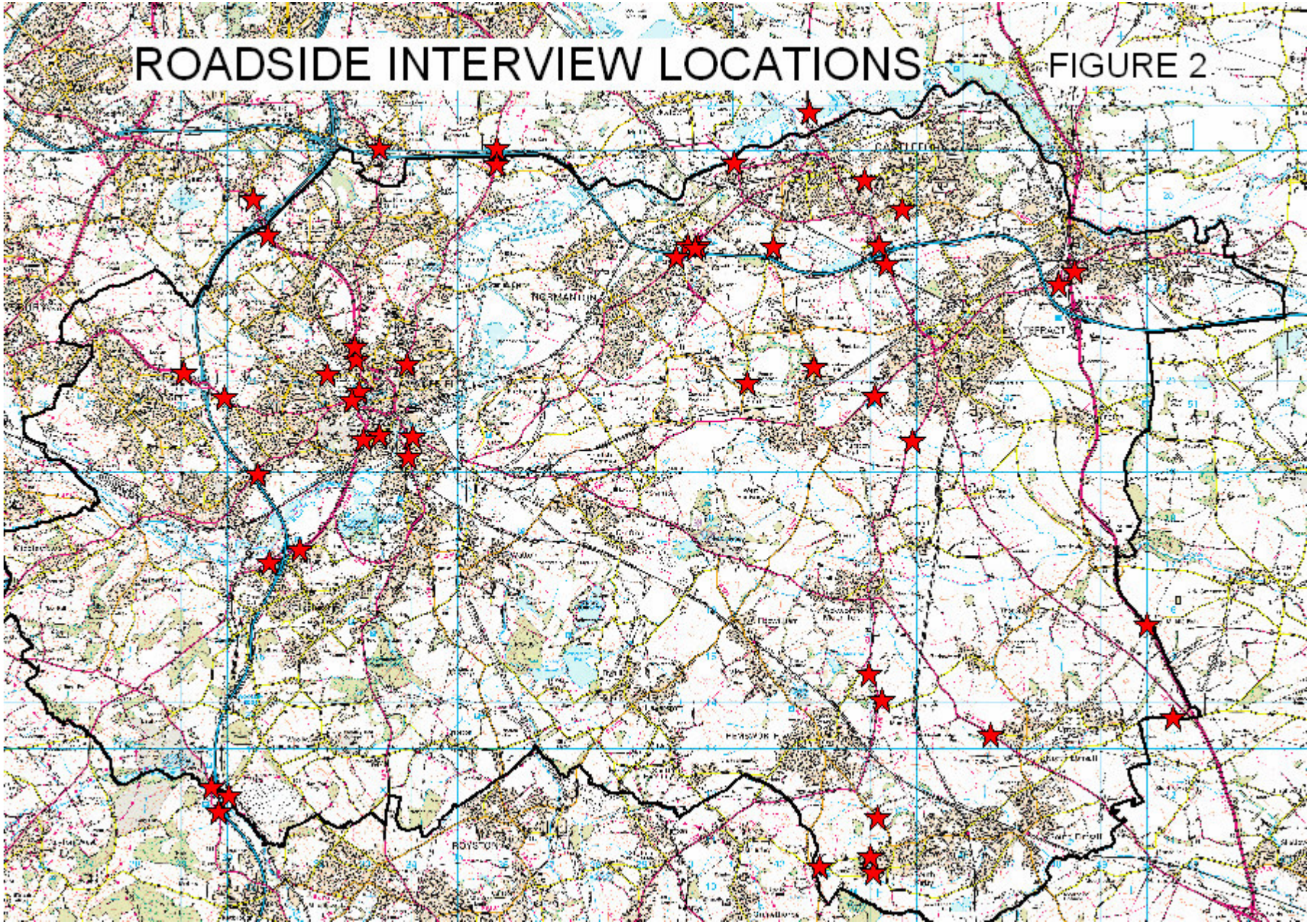
Model Scope

- Whole of WMDC in simulation area
- Buffer network derived from SWYMMS
- 3 periods – AM peak, inter-peak, PM peak
- 3 modes – Cars, LGV's, HGV's
- 409 zones
- Modelled year 2004
- Extensive count data 2000 – 2006
- 47 RSI survey sites

ROADSIDE INTERVIEW LOCATIONS

FIGURE 2



Summary Validation Results

GEH analysis using 748 counts

- **AM peak 90% GEH < 5**
- **Inter peak 94% GEH < 5**
- **PM peak 90% GEH < 5**

Journey time analysis 32 routes

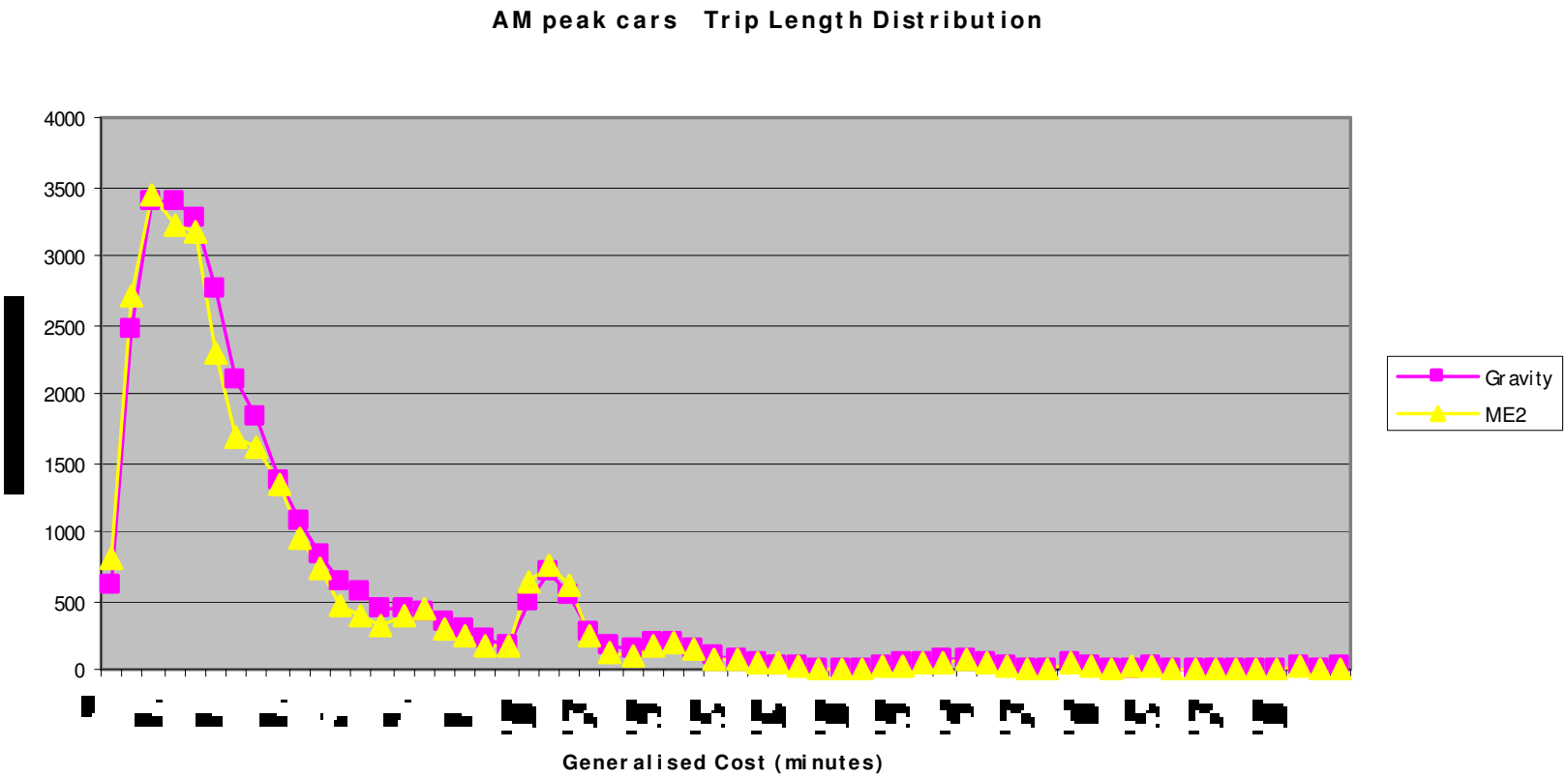
- **AM peak 81% routes within 15% observed times**
- **Inter peak 100% routes within 15% observed times**
- **PM peak 81% routes within 15% observed times**

Matrix validation

Gravity synthesised trips v ME2 estimation

	AM	IP	PM
Cars	1.8%	1.7%	3.1%
LGV's	1.5%	1.1%	2.3%
HGV's	0.9%	3.9%	0.6%

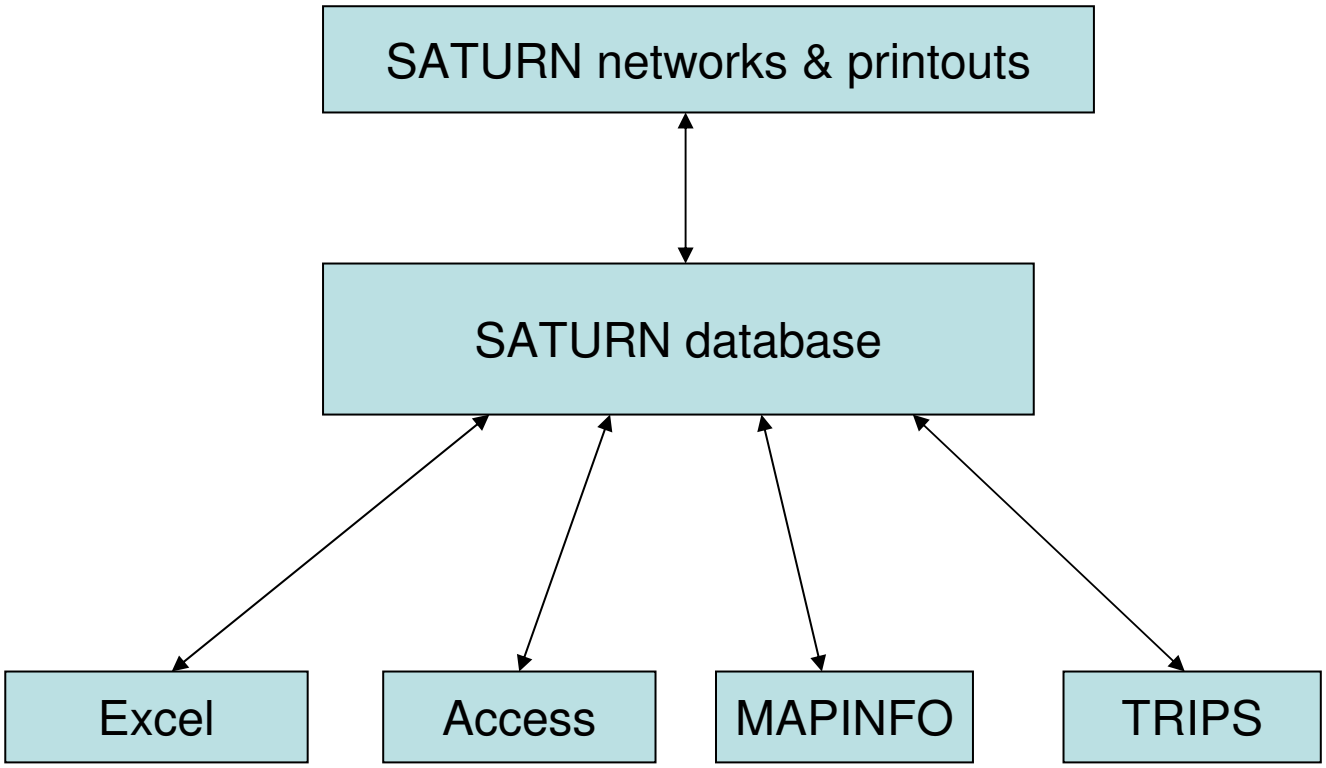
Trip length distribution



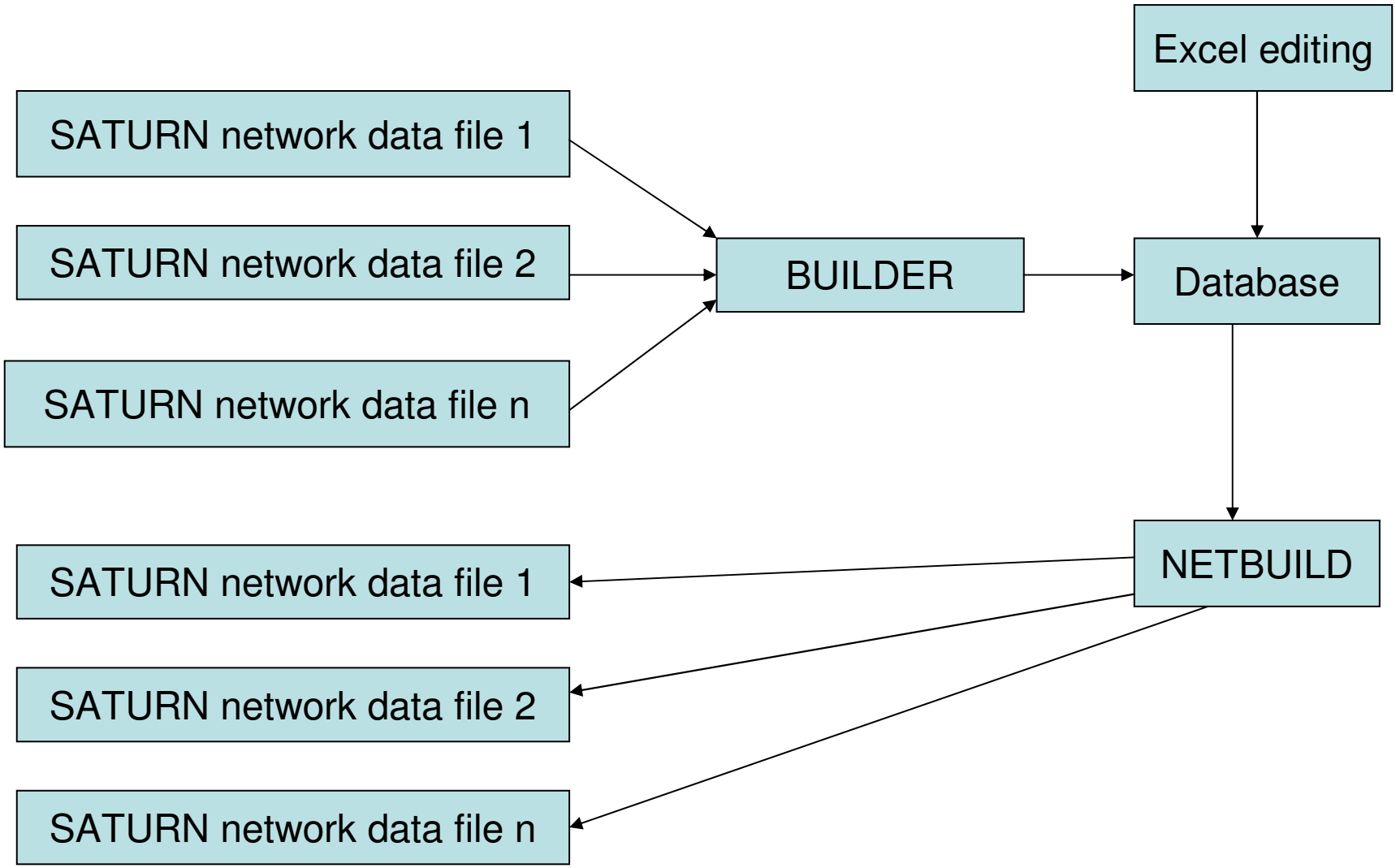
Database approach

- Avoids column dependent data entry
- Allows global changes
- Reduces & labels data entry
- Facilitates consistency
- Provides links to other systems
- Errors are more easily identified
- Allows data entry in an order decided by user
- All networks for all schemes & time periods held in one database.

Typical database linkages



Importing/exporting models to a database

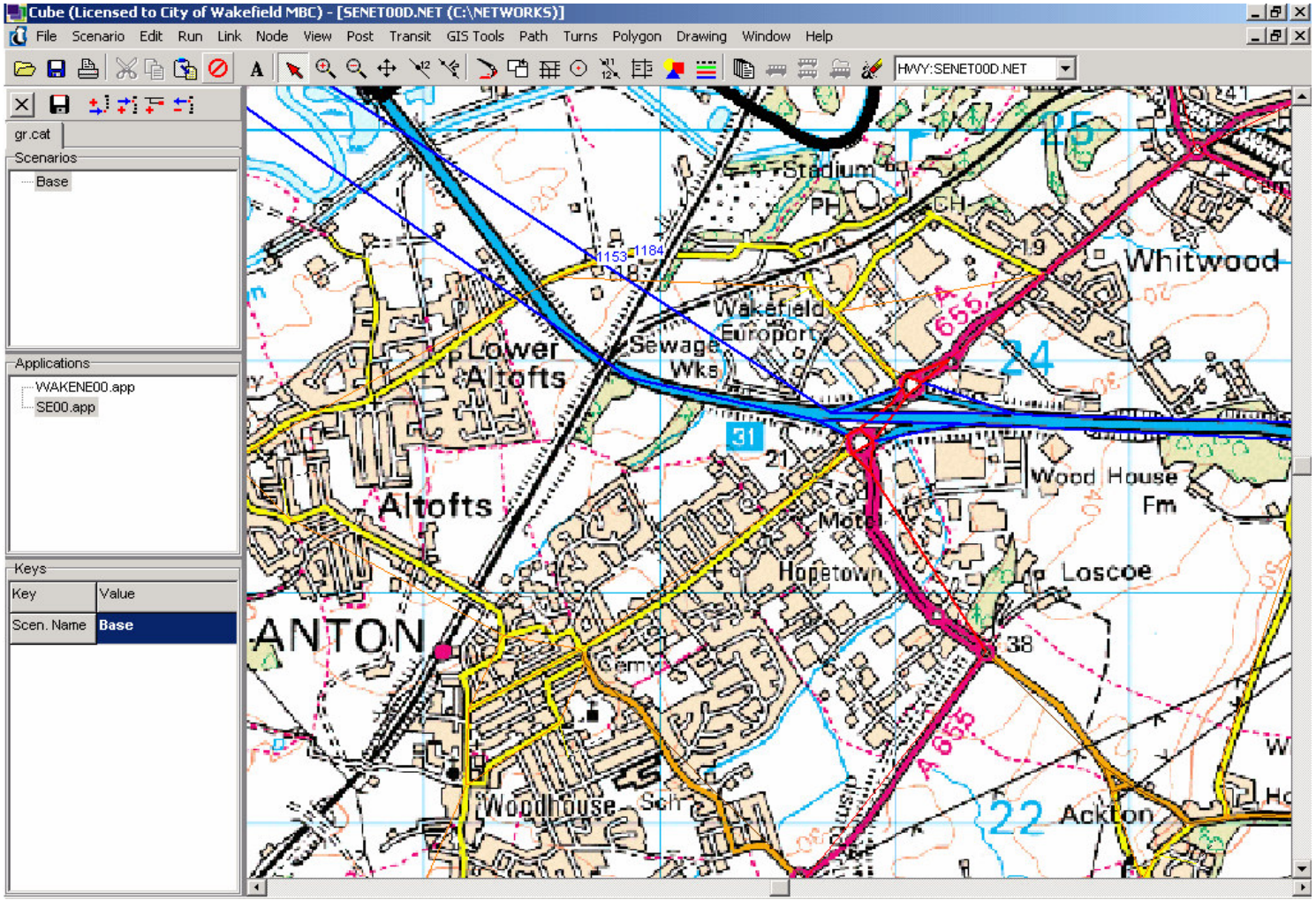


Consistency analysis

	SOURCE	ANOD	BNOD	CNODI	AREANAME	JTYPE	TURNN	SATFLOW	TPM	TPMM(	LANE1	LANE2	ORDERNUM	COMMENT
2	04DM 08DM 08DS 23DM 23DS 08D1	1004	1003	4725	WMDC	Dummy	1	1750			1	1	1	
3	04DM 08DM 08DS 23DM 23DS 08D1	4725	1003	1004	WMDC	Dummy	1	1750			1	1	2	
4	04DM 08DM 08DS 23DM 23DS 08D1	4726	1004	1003	WMDC	Dummy	1	1750			1	1	1	
5	04DM 08DM 08DS 23DM 23DS 08D1	1003	1004	4726	WMDC	Dummy	1	1750			1	1	2	
6	04DM	1009	1006	8378	WMDC	Signal	1	3600			1	2	1	
7	04DM	1009	1006	4384	WMDC	Signal	2	2400			3	4	2	
8	04DM	8378	1006	4384	WMDC	Signal	1	0			0	0	3	
9	04DM	8378	1006	1009	WMDC	Signal	2	0			0	0	4	
10	04DM	4384	1006	1009	WMDC	Signal	1	0			0	0	5	
11	04DM	4384	1006	8378	WMDC	Signal	2	1600			1	1	6	
12	08DM 08DS 23DM 23DS 08D1	1530	1006	8378	WMDC	Signal	1	3600			1	2	1	
13	08DM 08DS 23DM 23DS 08D1	1530	1006	4384	WMDC	Signal	2	2400			3	4	2	
14	08DM 08DS 23DM 23DS 08D1	8378	1006	4384	WMDC	Signal	1	0			0	0	3	
15	08DM 08DS 23DM 23DS 08D1	8378	1006	1530	WMDC	Signal	2	0			0	0	4	
16	08DM 08DS 23DM 23DS 08D1	4384	1006	1530	WMDC	Signal	1	0			0	0	5	
17	08DM 08DS 23DM 23DS 08D1	4384	1006	8378	WMDC	Signal	2	1600			1	1	6	
18	04DM	5601	1009	1011	WMDC	Priority	1	1488			1	1	1	
19	04DM	5601	1009	1006	WMDC	Priority	2	3500			1	2	2	
20	04DM	1011	1009	1006	WMDC	Priority	1	1050	M		1	1	3	
21	04DM	1011	1009	5601	WMDC	Priority	2	0			0	0	4	
22	04DM	1006	1009	5601	WMDC	Priority	1	0			0	0	5	
23	04DM	1006	1009	1011	WMDC	Priority	2	0			0	0	6	
24	04DM	1009	1011		WMDC	External	1	0			1	1	1	
25	08DM 08DS 23DM 23DS 08D1	1529	1011		WMDC	External	1	0			1	1	1	
26	04DM 08DM 08DS 23DM 23DS 08D1	1014	1013	5433	WMDC	Priority	1	1488			1	1	1	
27	04DM 08DM 08DS 23DM 23DS 08D1	1014	1013	2438	WMDC	Priority	2	3500			1	2	2	
28	04DM 08DM 08DS 23DM 23DS 08D1	1014	1013	4711	WMDC	Priority	3	0			0	0	3	
29	04DM 08DM 08DS 23DM 23DS 08D1	5433	1013	2438	WMDC	Priority	1	917	G		1	1	4	
30	04DM 08DM 08DS 23DM 23DS 08D1	5433	1013	4711	WMDC	Priority	2	743	G		2	2	5	

ZONES / Boundary / COORD / Stage / link / GIS \ TURN /

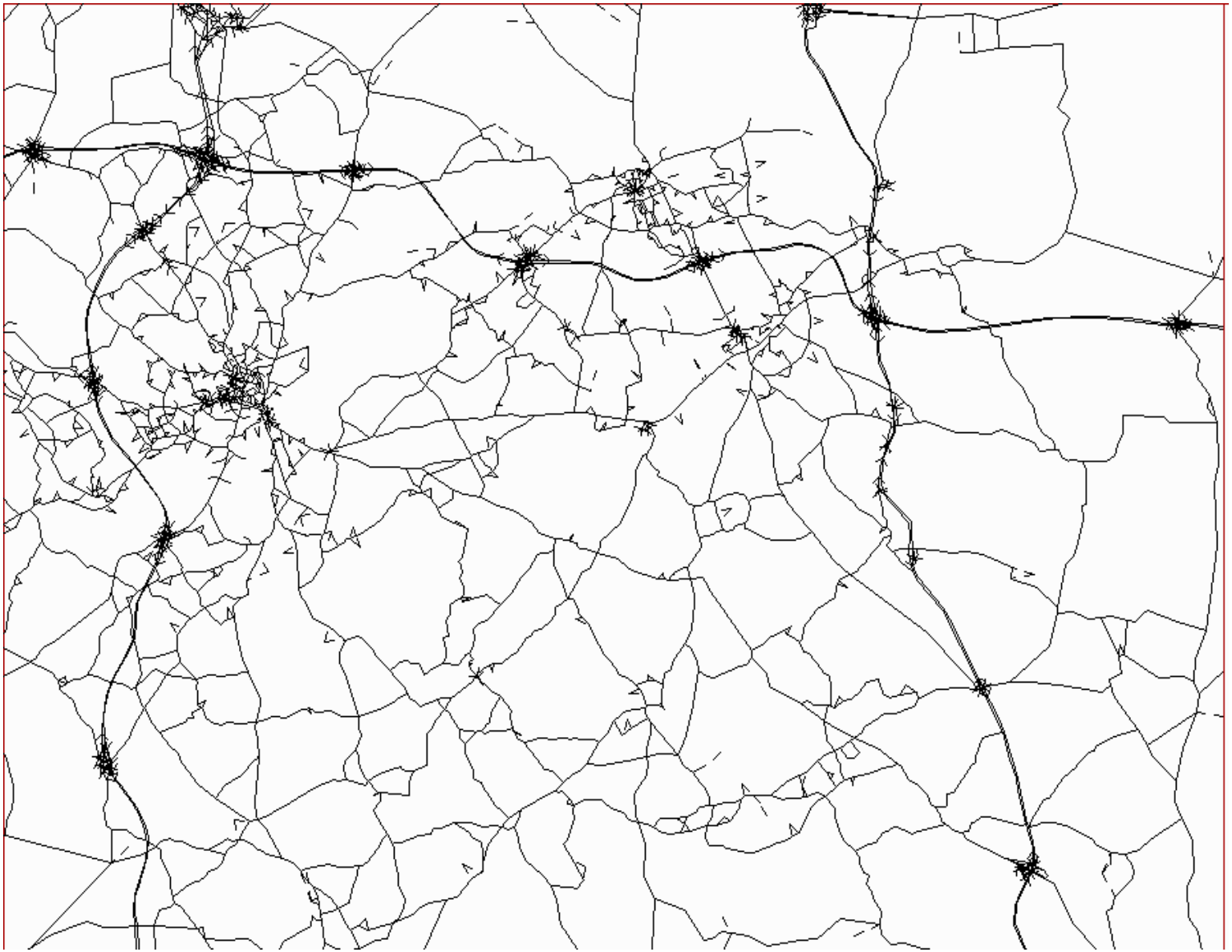
Using the TRIPS network editor



Other Benefits of linking to TRIPS

- Creates an automatic GIS file
- Automatic calculation of link distance
- Link types verified – Lanes - SATFLOWS
- Speed/flow curves automatic
- Default coding priority junction clockwise

Network appearance in P1X



Question & Answers