

RAE VP Engineering Design for Sustainable Development

Heriot-Watt University

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Year 1.....a flying start !!

- Framework Document
- Case Study Target Matrix
- Research Assistant appointed
- Sowing the seeds with academic staff
- Began developing case studies



Years 2 and 3.....a strong headwind !!

- External contacts (e.g. LA s) yields poor response
- Course Module content developed; rejected by Engineering dept
- Case Study development continues
- Student contact experience good; academic staff slow to respond
- Reorganisation of University departments



Years 4 and 5.....turning the tide !!

- Research assistant resigns; 6 months before suitable replacement can be found
- University re-appraising material for inclusion in courses following reorganisation
- New module being developed; three introductory lectures so far
- Work on case studies continues; led by HWU Master Plan and Green Travel Plan
- VP commits for further 2 years (to end 2005)



Overview of the Journey.....bumpy !!

- Student contact; enjoyable and rewarding
- Student successes; “closing the loop”
- Academic staff; “words speak louder than actions”
- VP experience; frustration, time constraints within a sadly failing transport industry. (Policy and legislative vacuum where apathy abounds, priorities continually change, and limited resources are misdirected.)



Outputs and Resource Materials

- One Course Module (failed!!) of ten lectures
- A second course module of ten lectures (three completed so far; failure this time is unacceptable)
- 12 case studies en route to 25-30 total; most with opportunities for re-visiting and updating.
- A framework within which much could progress; assuming willingness, “buy-in” and commitment.



The Journey Ahead.....

- Optimistic about “success”
- Work with those who will commit (seek them out carefully first !!)
- Case Studies; interesting, relevant and capable of being updated.

- The Challenge; delivery and acceptance of relevance



Travel Planning for a Sustainable Future



HWU Master Plan; some statistics

- University currently: 5500 students
- Master Plan: increase to 9000 Students
- Research Park currently: 1500 employees
- Master Plan: increase to 2866 employees



HWU Master Plan; consequences

- Current (network and traffic)
- Future traffic (no network change)
- Predict and Provide (based on current travel patterns)
- Demand Management (based on Green Travel Plan)

Can we visualise the outcomes in terms of the possible impact on road network ?



GTP Delivery; Data Inputs

- Traffic flows; university and research park
- Travel Surveys for car-parking permit applicants (charges in future ??)
- Public Transport surveys (bus)



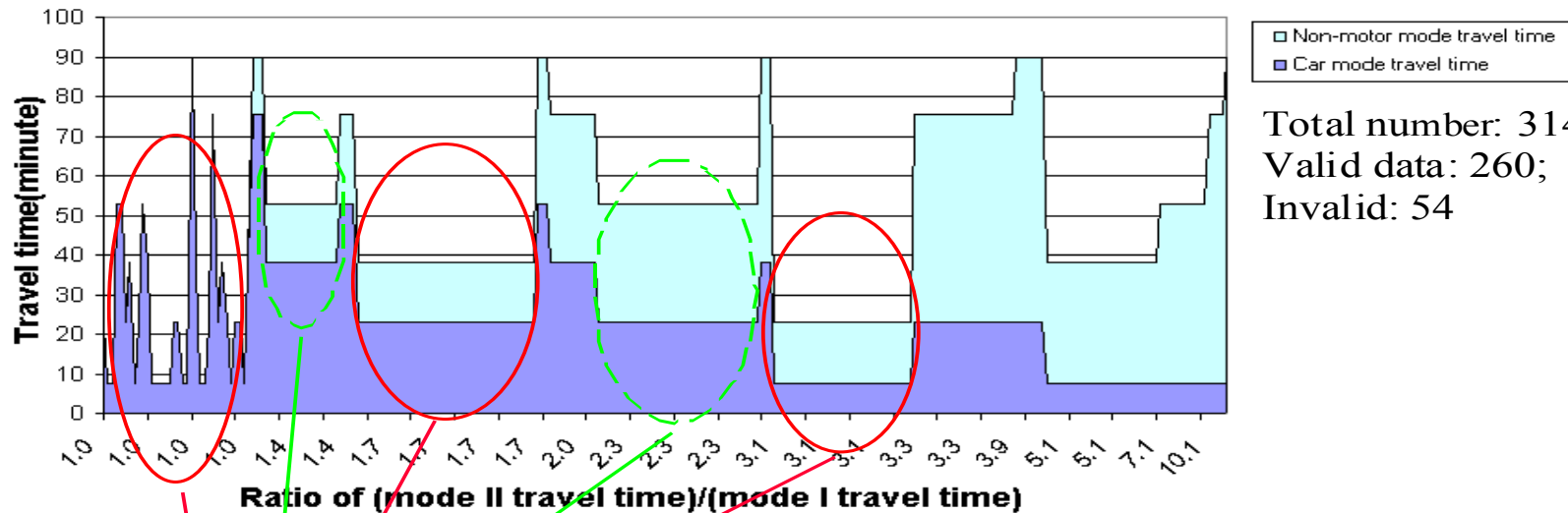
GTP Delivery; target groups

SISTech

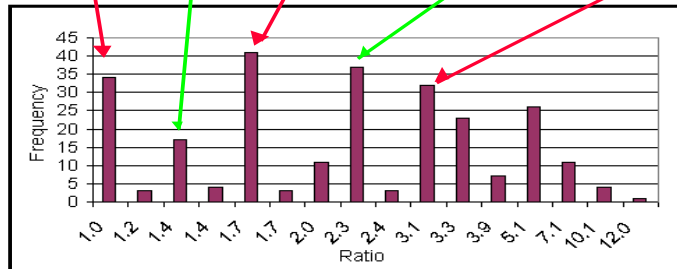
Commercial in confidence

Target group

[Data set: Motor commuters who provided non-motor travel mode time information]



Total number: 314;
 Valid data: 260;
 Invalid: 54

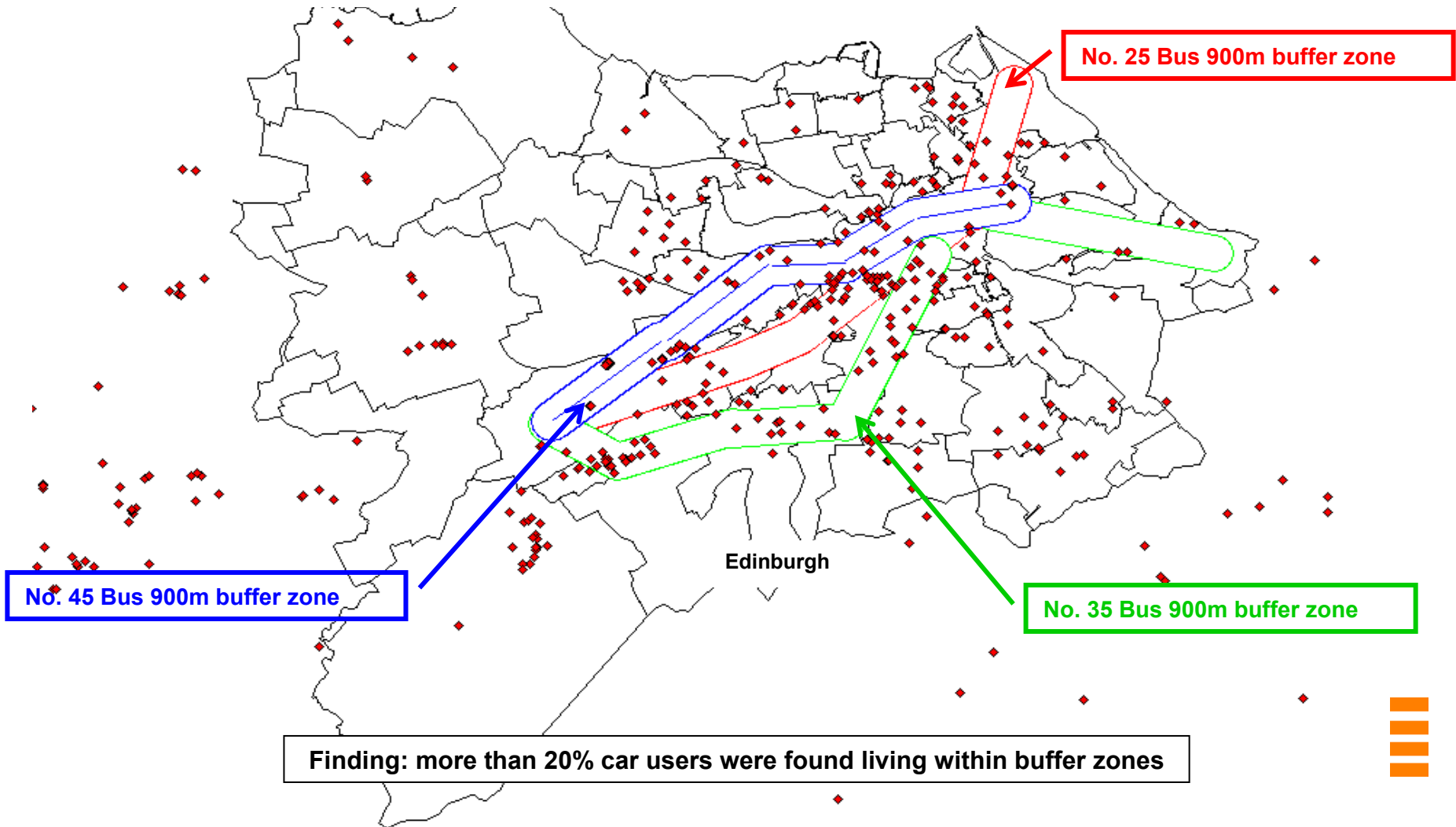


27.5% car commuters can use non-car travel mode.
 About 41% = $(34+41+32)/260$ of car journey may be reduced by 'stick and carrot' measures. By more efforts of improving the efficiency of public transport, another 14% = $37/260$ is possible. Therefore according to this brief analysis, a car-travel reduction target of about 15% (= 55% of 27.5%) is achievable.



GTP Delivery; target locations

Geographic information on HWU staff domicile distribution and bus routes (50% data)



GTP Delivery; why ? “Buy-In”

Comparison of Journey Times from Paramics simulations

	base 2002	2005 No intervention	2005 with Travel Plan
Wester Hailes roundabout to Riccarton Campus (mm:ss)	11:16	13:32	09:49
Total Journey Time (all vehicles in network) (h:mm:ss)	542:26:22	602:59:30	469:52:21



GTP delivery; why ?

- Statutory obligation through the planning system
- Alternative outcomes unpalatable; unattractive to students, unattractive to business locating in research park
- A Sustainable Model for others?



GTP Delivery; Student Involvement

- Improving data sources (to assist targeting of new measures)
- Improving operational design aspects; for example, bus routeing or new access
- Assist with monitoring effects (and therefore enforcement and marketing)
- Longevity as Case Study

