

Rising fuel and climate change costs motivated *Rowan Bedggood* and *Jon Phillips* to explore issues around commuters' transport usage.

# The cost of commuting

**A**s fuel prices escalate and concerns regarding carbon emissions increase, we thought it worthwhile to ask commuters travelling to and from work which transport strategies they might consider employing in order to reduce their weekly fuel costs and by doing so address the issue of environmental sustainability. Would commuters consider relocating their work place to reduce their commuting distance, or would they move their home to be closer to their workplace? Would they consider telecommuting or perhaps use public transport more often if fuel prices rose too high? Our study shows that commuters are prepared to consider all of these options depending on how high their weekly fuel bill rises.

Melbourne is well known for its urban sprawl with a number of growth corridors radiating in most directions from the city. Growth in these corridors has been made possible through heavy reliance on motor vehicles, rather than any systematic state or Federal Government investment in public transport. Larger proportions of the population are settling in regional urban areas, as lower socio-economic cohorts have little choice but to move further away from the Central Business District as house and rental prices decrease with distance.

Therein lies the dilemma. The lower an individual's income, the more likely they are to seek housing further away from the CBD and hence, they may also need to travel greater distances to work. The greater the dis-

tance commuters must travel, the greater the likelihood that the cost also will be higher. To compound this problem, the cost of commuting to and from work has spiralled in recent times because of ever-increasing petrol and diesel prices, which are expected to exceed \$2 a litre by the end of the year, thus reflecting a 72 per cent increase from the retail unleaded pump price of 116.1 cents per litre, as recorded in October 2006.

Results from our mail-out survey to residents in a geographically isolated region in Melbourne, called by us 'the region' and considered to be an outer suburban 'growth corridor', found that these residents would prefer to change their job or use public transport than to move from where they lived should fuel costs continue to increase. Our results highlight the need for an expanded transport system to permit greater use of public transport.

'The region' was selected because it is governed by a council who expressed concern regarding two issues.

First, traffic congestion during peak times has increased significantly in recent years with all arterial roads converging around a common geographic gateway. Given the growth in population in the area, this problem needs alleviating urgently.

Second, the council was interested in the influence of fuel prices on commuters' choice of transport, particularly against a backdrop of rising fuel costs, and this is consistent with the council's commitment to

addressing the social, environmental and economic elements of a sustainable future for the region (see Figure 1.)

Petrol run vehicles were used by 83 per cent of respondents, 8 per cent used LPG powered vehicles and 6 per cent used diesel (3 per cent were missing). Given that diesel prices currently exceed petrol prices, almost 90 per cent are faced with increasing fuel prices. It is important to note that as the survey was

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## Figure 1: Questionnaire

Residents within 'the region' were sent a questionnaire designed to capture a broad range of data, however only the results that pertain to issues around fuel prices are presented here. Respondents were asked the following questions:

1. Which fuel does your car mainly use?
2. On average, approximately how much do you currently spend on fuel per week?
3. How much would this figure need to reach before you considered the following alternatives? (in terms of \$/week)
  - a) Change jobs to permit working from home some of the time
  - b) Change jobs to permit working from home permanently
  - c) Find a job closer to home
  - d) Move residence closer to workplace
  - e) Start using public transport

conducted in October 2006, all prices, reported and projected, are in 2006 Australian dollar values, and ignore the time value of money.

Respondents reported spending an average of \$61 on fuel per week, with a range of \$0-\$270, with the most commonly reported amount of \$50.

### PUBLIC TRANSPORT

Oil shortage and climate change problems can be helped by a reduction in the consumption of non-renewable fuel which would also reduce carbon emissions. Given that alternative fuel sources such as hydrogen are largely unavailable for cars, we should look at using mass transit systems to alleviate these economic and sustainability dilemmas.

The results of this study indicate that residents in isolated urban regions are willing to use public transport should fuel prices continue to increase, instead

of driving a car to and from their place of work (see Figure 2). However, a lack of access to public transport services reported by 48 per cent of the respondents attests to the urgent need to increase the provision of public transport in 'the region'. The results of this study should prove useful in providing evidence that a cohort of the population are willing, if not eager, to use public transport, thereby reducing traffic congestion and fuel emissions and addressing the broader issue of environmental sustainability. This paper encourages councils and state government to plan for the expansion of the public transport system.

The findings also suggest that respondents would prefer flexible work arrangements some of the time, to find a job closer to home, or to start using public transport than to move their place of residence closer to work or to have to work from home on a permanent basis. This indicates a reasonably high satisfaction level with the location of their current home and that people would prefer to travel greater distances to work, even if it costs more, rather than moving their home.

A practical reason for this outcome could be that respondents thought that the nature of their job would not permit them to work from home permanently. For example, a nurse could not complete their entire job from home. Alternatively, this outcome can be explained by the need for socialisation, wherein

the workplace typically provides the opportunity for human interaction. Staying at home would be a less appealing option due to social reasons, rather than for reasons related to fuel price and consumption. Exploring the reasons behind these findings could be the impetus for future research. Here, researchers could explore whether there are barriers related to job type with regard to commuting and job decisions, and whether these issues can be predicted based on personal factors, such as demographic situation, personality type, etc.

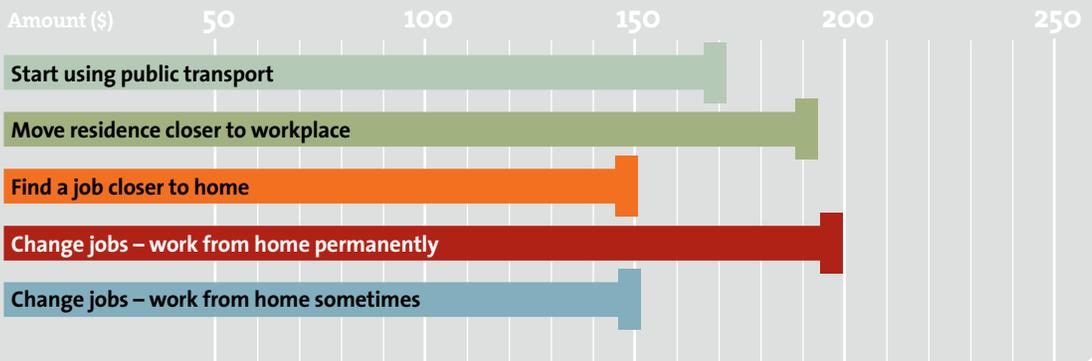
also show that people would prefer to work from home some of the time, greater job flexibility would be a winning solution on many fronts.

**CHANGING JOBS / HOME**

Fuel expenditure would have to increase from \$61 to almost \$189 on average per week (309 per cent increase) before residents would consider moving their home closer to their work. Although this was found to be the second least appealing option (changing jobs in order to work from home perma-

**Figure 2: How much it costs to effect behavioural change**

(Respondents in a geographically isolated urban region in Melbourne)



**JOB FLEXIBILITY**

This study found that fuel prices will have to increase from an average of \$61 per week to \$150 per week (245 per cent increase) for commuters to consider changing their current job. It is difficult to predict when these fuel price levels might be reached since fuel prices appear to be escalating exponentially of late with no sign of this abating. An alternative solution is to increase job flexibility arrangements whereby employees have the option of working from home some of the time. This would reduce their fuel costs and also carbon emissions. Since greater levels of job flexibility are commonly sought by employees, particularly women, and that there is a current skills shortage in many vocations, improving job flexibility will have multiple benefits: increasing job satisfaction, increasing employee retention and save individuals money as well as having positive environmental and health benefits (reducing road accidents, less stress, etc.). Since the results

ntly being the least favourite option), it may manifest sooner than we predict if fuel price rises are not arrested soon. If recent trends continue and alternative job options do not improve in urban/regional areas, then council, government and urban planners will be under increasing pressure to provide denser housing closer to the CBD to accommodate an increase in future demand. Geographically isolated urban regions are likely to suffer due to lower populations and hence lower demand for property; which will also damage local economic development.

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