

## Evaluating workplace travel plans

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### Abstract

Workplace travel plans have been promoted as a way to manage urban travel demand. Travel plans engage employers or site managers in addressing travel generated by their workplaces with the goal of reducing car use and enabling use of travel alternatives. In many jurisdictions in Australia and New Zealand there are programs supporting development of workplace travel plans. In addition, some jurisdictions can require travel plans through the development assessment/approval process.

There appears to have been little evaluation of workplace travel plans, beyond simple comparisons of before and after travel survey results. More rigorous evaluation of travel plans would be useful to enhance the design and implementation of travel plans and to support the business case for travel plans and the programs that support them.

This paper considers the rationale for evaluation and methodological issues and suggests a way forward. The recommended approach includes:

- Assessing the quality of travel plan documents against a good practice benchmark,
- Appraising the implementation of travel plan actions to understand what interventions were and were not enacted in workplaces,
- Appraising the level of organisational engagement to the initiative, including management support, allocation of resources and employee participation, and;
- Measurement of outcomes, particularly changes in travel behaviour after implementation of travel plan measures.

Reference is made to previous work on travel demand management evaluation and a practical framework for evaluating workplace travel plans is outlined.

### 1. Introduction

A workplace travel plan is a package of actions implemented to manage travel generated by a workplace. Primarily, travel plans seek to reduce car trips and encourage the use of lower impact alternatives, such as walking, cycling, public transport and telecommunications.

An individual plan may cover one or more sites and a single organisation or a collection of organisations (e.g. business park, health campus). Plans have been adopted by government agencies, local councils, hospitals, universities, small and large businesses and non-profit organisations. Travel plans are implemented by employers or site managers.

Travel plans have been used internationally to moderate car use and its impacts, including congested road networks, emission of pollutants (e.g. greenhouse gases) and physical inactivity. Travel plans provide a strategy for managing car use in the public interest by engaging employers and site managers in taking responsibility for trips and impacts their site generates.

Workplace travel plans (also called trip reduction plans, mobility management plans, green transport plans) originated in the United States and the Netherlands in the late 1980s and have been promoted in the United Kingdom since the late 1990s (Rye 2002). Workplace travel planning in the United Kingdom has informed practice in Australia and New Zealand. Government agencies in Australia and New Zealand have encouraged employers to adopt and implement travel plans for their sites under travel behaviour change programs (i.e. TravelSmart and TravelWise) aimed at managing demand to meet urban transport or environmental goals. Some local authorities require travel plans (under their planning schemes) as a way to mitigate the transport impacts of land use development.

As well as helping manage travel for the common good, workplace travel plans benefit employers and site managers. For them travel plans can be a means of moderating site congestion or car parking problems, encouraging active commuting as an employee health measure, improving corporate environmental performance (reducing the organisation's footprint) or meeting conditions of development approval. Implementation of a travel plan also benefits employees and clients/visitors, for example by improving options for accessing the site, enhancing work-life balance (flexible work options), promoting health (reducing car emissions, enabling physical activity through active travel) and potentially reducing travel costs.

Travel plans are premised on employers/site managers using their influence over employees and clients/visitors to encourage change in travel behaviour. This influence can include:

- The provision of information about travel options, e.g. workplace access guide, staff induction presentation, material on the corporate website
- Using incentives, e.g. financial, time or other incentives to encourage people to try or continue preferred behaviours
- Holding events to promote awareness and participation, e.g. walking and cycling challenges
- The provision and management of facilities, e.g. limiting employee access to car parking through permits, providing bicycle parking and shower and change facilities for cycle commuters, providing a ride-matching system to enable carpooling
- Making changes to corporate policy and workplace practices, e.g. flexible hours to make cycle or public transport commuting easier, limiting car and parking perks for employees, enabling teleworking and web conferencing.

Across the range of workplaces with travel plans and the variety of actions they are implementing, the questions arise 'what works?' and 'why does it work?'

## **2. Evaluation of travel plans**

Despite the expanding use of travel plans in the United Kingdom, Australia and New Zealand, the literature about the evaluation of travel plans is limited. The available literature points to a lack of monitoring and evaluation or shortcomings in the methods used.

A study of the take up and effectiveness of travel plans in the United Kingdom found that, across the sectors with travel plans, few had undertaken monitoring (Steer Davies Gleave, 2001). Similarly, an investigation of the use of the land use planning process to secure

travel plans in the United Kingdom found that the lack of monitoring and lack of guidance or standard procedures for monitoring was a common concern across local authorities (Addison and Fraser, 2002).

The Making Travel Plans Work project used a case study approach to identify the success factors and potential outcomes of workplace travel plans in the United Kingdom (Cairns et al., 2002). The organisations selected for study were considered successful in reducing car commuting and had monitoring data available, but even here monitoring was seen as problematic because of the lack of consistency in monitoring methods used at and across sites. To improve travel plan monitoring the study suggested that a consistent monitoring strategy be used over time and that indicators are selected to focus on what is most relevant to the travel plan/site and to allow cross-checking.

In Australia and New Zealand there has been dialogue about the evaluation of programs to influence travel behaviour as a travel demand management strategy. The literature largely concerns household based interventions to encourage reduced car use and greater use of travel alternatives, including debate on the parameters and methods for evaluating individual behaviour change (for example Roth et al., 2003).

Rose (2007) suggests an approach for the appraisal and evaluation of travel demand management measures in Australia. This highlights the need to design evaluation and start monitoring before implementation and suggests sharing of the evolving experience with the evaluation of travel behaviour change programs in community, school and workplace settings. The need to share data and agree on a common framework for the evaluation of travel behaviour change is reiterated by RED3 (2005).

Regarding workplace travel plans, RED3 (2005) argues for the application of statistical principles and use of common, consistent methods for sound evaluation. Sullivan and Percy (2008) highlight some survey design fundamentals that need to be addressed in designing travel surveys for evaluation. Ampt, Richardson and Wake (2009) outline guidelines for workplace travel surveys to enhance the evaluation of behaviour change from travel plans, but also suggest the use of other data to evaluate the effects of travel plans.

What evaluation of workplace travel plans does occur seems to rely on simple comparisons of before and after travel surveys. This provides an important measure of individual behaviour change after a travel plan is adopted, however a wider consideration of changes in an organisation following a travel plan would allow a better understanding of its effects. In addition, there can be shortcomings in the survey methods and analysis that affect the usefulness of survey results when used alone (Ampt, Richardson and Wake, 2009; Sullivan and Percy, 2008).

Better evaluation of workplace travel plans is important to understand their impact, enable identification, support and promotion of good practice and to inform programs supporting travel plan development and implementation. Evaluation studies can also assist in developing broader transport strategies by demonstrating the potential contribution of travel plans at a precinct or network level. This paper concerns the evaluation of individual travel plans, whether for a particular organisation or site.

### **3. Evaluation fundamentals**

Program evaluation is commonly defined as a process of collecting and analysing data to produce findings about issues or key questions identified by program stakeholders (Owen, 2006). The design of the evaluation study is negotiated between the evaluator and the program stakeholders to ensure the evaluation activities focus on providing evidence to

assist stakeholders to make judgements and decisions about the program. This is the approach to evaluation adopted in this paper and it is suggested that it is the most appropriate approach to use in evaluating travel plans. This approach is a good match as travel plans vary considerably between organisations with different purposes and processes, due to the fact that the organisations and the environments in which they operate vary. A successful travel plan will be designed to suit the site and organisation. Likewise, a good evaluation is designed to suit the particular travel plan and the organisation and environment for which it was designed.

There is increasing recognition in public policy that evaluation studies should vary in what they focus on depending on the development stage of the program (Owen, 2006). Where a program is new and still being developed and implemented, stakeholders should be concerned more about questions of implementation and suitability and less focused on measuring the achievement of outcomes (*ex-ante evaluation*). Outcomes are not yet likely to be achieved so measurement is premature. Where a program has settled in and has had sufficient time to influence its target group, its outcomes should be carefully measured in order to identify the extent to which they are being achieved (*ex-post evaluation*). However, even in an outcomes focused evaluation study, the processes by which the program operates and the environment in which it operates need to be investigated and described in order to understand why the outcomes are or are not being achieved. If the former, the process information will assist in identifying what conditions led to successful achievement of outcomes. If the latter, the evidence about context and processes will be essential for recommending changes to the program to better achieve the outcomes. As identified in several UK reports, it is useful to investigate both the outcomes of travel plans and the factors which lead to their achievement.

In general, most evaluation studies go through the following generic process (Cummings and English, 1998). Stakeholders are identified, often formed into a steering committee, and then discussions are held with the evaluator(s) to agree on the scope of the study. This usually results in an evaluation plan which clarifies the program, identifies the purpose of the evaluation study and the key questions the study will address, and the process for conducting and reporting the study. Many evaluation studies find it useful to commence with a process of describing the program, as this ensures that the stakeholders and evaluators have a common understanding of the program and provides the stakeholders with an up to date and independent picture of the program as it has been implemented. Often this description is used to compare the program as implemented with the program as it was planned to be implemented and to provide explanations for the differences. The key questions for the study are then investigated using rigorous and ethical data collection and analysis procedures. From this information, justifiable conclusions are drawn and presented to the stakeholders in a formal report (often both written and orally). The evaluation study is usually done in a way that maximizes the likelihood that stakeholders will use the information from the study to make judgments and decisions about the future of the program.

It is proposed in this paper that evaluation studies of travel plans should follow this generic process. There is substantial research evidence that this approach leads to the most appropriate evaluation studies and the greatest use of the findings by stakeholders (Chen, 2004; Cummings and English, 1998; Pawson and Tilley, 1997). It is useful to be clear about the difference between research and evaluation. Research can be characterised as a formal systematic process of testing hypotheses, attempting where possible to disprove them. In the absence of evidence contrary to the hypothesis, it is accepted as the best explanation of the social phenomenon. Program evaluation is a formal systematic process of investigating and providing evidence of the operation and impact of a particular program in order to inform stakeholders. It is therefore a utilitarian process rather than a theory testing process. Its focus comes from stakeholder concerns rather than theory and its efficacy can be measured

in its rigour but also in the extent to which it influences stakeholders and in turn is used by them.

Another important difference between research and evaluation can be found in the measurement of outcomes through comparing the changes in behaviour of participants and non-participants. In research studies, this is often done using control groups in randomised control trials, whereas evaluation studies seldom have the opportunity to assign people to program and non-program groups. Instead, comparison groups are more widely used - convenience groups (e.g. people in another similar agency) who are as similar as possible to the program group, with the only key difference being participation in the program. While comparison groups may be challenging to obtain, if done well it may be possible to compare the outcomes and conclude that where a difference exists it is due to the program's influence.

In recent years, the utilitarian nature of evaluation has been strengthened through linking it strategically to the process of program monitoring. Monitoring is the routine but systematic measurement of the intended activities and outputs of a program. It is often conducted by management and is used to identify whether the program is being implemented as planned, is attracting its target group(s), and is producing the deliverables as planned. Its main benefit is in providing information for managing the program and making design and implementation improvements. In contrast, program evaluation can be seen as an episodic, holistic and independent. As such it is better able to provide an independent perspective on the implementation and program processes, as well as investigate the extent to which outcomes and ultimately the impacts of the program, both planned and unplanned, have been achieved.

## **4. Framework for evaluating travel plans**

In this paper, the generic process to program evaluation outlined above is applied to the evaluation of travel plans. The intent is to expand the evaluation perspective from a focus on outcomes only, especially pre and post program travel behaviour as measured by surveys. This is not to undervalue the importance of measuring changes in target group behaviour but to recognise that this in itself is an insufficient basis upon which to evaluate travel plans. The expanded perspective is presented in the following four-step framework:

1. Assessing the quality of travel plan documents against a good practice benchmark,
2. Appraising the implementation of travel plan actions to understand what interventions were and were not enacted in workplaces,
3. Appraising the level of organisational commitment to the initiative, including management engagement, allocation of resources and links to strategic goals, and;
4. Measurement of outcomes, particularly changes in travel behaviour after implementation of travel plan measures.

Each of these steps is discussed in turn.

### **4.1 Assessing the quality of a travel plan**

There is a wide range in the quality of workplace travel plans. Quality here concerns the content of the travel plan document and also the process for its development and implementation.

To address issues with travel plan quality and provide guidance for those involved in writing or assessing travel plans in the United Kingdom, a specification for travel plans has been produced (British Standards Institution, 2008). The specification sets out what a travel plan should incorporate including a statement of management support, overall aims and output

and outcome targets, baseline travel behaviour, a range of interventions and a strategy for implementation and periodic review. It provides for three levels of conformance (i.e. bronze, silver and gold) based on the degree to which requirements are met, attainment of behaviour change and demonstration of organisational commitment.

Jurisdictions in Australia and New Zealand have provided guidelines for workplace travel plans (for example SA Department of Transport, Energy and Infrastructure, 2006; Land Transport NZ, 2007). These are primarily resource materials to assist those preparing and implementing travel plans as part of a travel behaviour change initiative. Typically they outline a process for gaining management support, gathering information to aid planning and later evaluation, identification of actions and drafting of a document setting out what the employer/site manager commits to do and how. However, there is scope to develop these materials further. The concept of higher level guidelines or standards has been discussed by travel plan program managers as a means to enhance quality and consistency.

Existing travel plan guidance, the UK specification or new national or cross-Tasman guidelines could be used as a yardstick for evaluating travel plan quality.

An evaluation could assess whether and how well these key steps in developing and implementing a workplace travel plan have been undertaken:

- Establishing management commitment early in the process and demonstration of links to corporate goals
- Thorough assessment of transport context including local infrastructure and services and internal factors such as workplace policy, practice and facilities
- Baseline and post-adoption surveys of travel patterns using appropriate survey design and sample size to understand and monitor behaviour of target groups and trips
- The effective engagement of relevant stakeholders, including employees in preparing and delivering travel plan actions
- The selection and development of effective and feasible actions to provide a package with potential to meet the plan's goals
- Ongoing monitoring of travel plan outputs and outcomes and use of these to review and improve performance of the initiative.

Key elements that should be checked when evaluating travel plan documents include:

- Description of the scope of the plan, including the organisation and workplace/s covered
- Statement of corporate interest and commitment and the rationale for taking action
- Clear objectives and performance targets for the plan
- Baseline information on workplace facilities, practices, policies and the transport system it is situated in, and on current travel patterns of the target group/s and behaviour/s for the travel plan (e.g. employee commuting, business trips by employees, clients trips, service trips)
- Clear statement of strategies and actions including what is to be done, who is responsible and the completion date
- A framework for implementation, monitoring and evaluation including who will coordinate and when and how monitoring and evaluation will occur.

A review of travel plan quality is important to understand the plan at the start of a wider evaluation. It can also be undertaken when starting to develop a travel plan or when drafting the document for quality assurance, providing feedback and an opportunity for improvement. This quality assessment could be undertaken by the travel plan coordinator or the committee overseeing work on the plan or by an independent party, whether in the organisation or external.

## 4.2 Appraising travel plan implementation

It is important to check whether the travel plan delivered what it committed to do. The key questions here are: were the actions implemented, to what extent and what was learnt in the process? The answers can help explain outcomes including behavioural changes. For example, the comparison of before and after mode split or vehicle kilometres travelled for a site becomes more meaningful when the nature of the intervention is known.

Appraisal of travel plan implementation (its outputs) would involve gathering information from workplace representatives. This could take the shape of a discussion with the travel plan coordinator or committee.

The contents of the travel plan, specifically the table or list of actions, provides the starting point for this approach. The quality of the travel plan will affect how readily this appraisal can be made. Specific, measurable and unambiguous actions such as 'Design and implement an employee cycle commuting challenge at both sites by June 2010' are able to be checked whereas actions such as 'Embed TravelSmart in organisational culture' are difficult to assess.

At the same time as documenting whether, and to what extent, an action was implemented, it would be useful to capture what was learnt from the experience. For example, what elements in the design of a staff challenge or incentive scheme seemed to make it work or what communication strategy helped raise employee awareness? This should aid the review of the plan and consideration of future actions.

The travel plan coordinator or team may be the only people who hold this knowledge. Documenting it is important, for in a few years it may be forgotten or they may have left the organisation. Regular, say six to twelve monthly, assessments of progress would assist with implementation and refinement of the plan as well as later evaluation.

## 4.3 Appraise organisational engagement

Organisational engagement is usually a critical factor in the success of a workplace change initiative. Securing and demonstrating senior management commitment to change is important, as is building internal support across the workforce for a change effort to grow and eventually become embedded in an organisation (Kotter, 1995). Experience in the UK points to management support and employee participation as common features of workplace travel plans that have succeeded in achieving behaviour change (Cairns et al., 2002; Rye, 2002).

Organisational engagement may have many dimensions, covering the support and involvement of management and employees. For workplace travel plan evaluation a set of indicators is needed to provide measurable and meaningful signs of how well an organisation understands, demonstrates and internalises its commitment to changing work-related travel.

Indicators of management support could include:

- Inclusion of a foreword or statement of support by the Chief Executive Officer or equivalent in the travel plan
- The level at which the travel plan was approved, e.g. Chief Executive Officer, executive management team/committee, board of management
- Participation of senior managers in travel plan events e.g. team or individual challenges

- Senior management setting an example, being a role model e.g. cycling or catching public transport to work regularly
- Existence, membership and activity of a committee overseeing travel plan implementation
- Explicit recognition of the travel plan in corporate strategies
- Allocation of dedicated staff time to developing and implementing the travel plan, i.e. part or full time role depending on size of the organisation and number of workplaces covered
- Allocation of a budget for implementation of travel plan actions – whether there is an allocation and how much.

Indicators of employee engagement could include:

- Employee awareness of the travel plan
- Employee support for the travel plan e.g. as measured by a survey
- Employee participation in travel plan initiatives, groups and incentive schemes, e.g. walking or cycling challenges, seminars, carpool register, Bicycle User Group, sustainable travel allowance
- Employee requests for information about travel options (if there is a travel plan coordinator or other central point of advice).

For most of these indicators the travel plan coordinator or committee provides the most likely source of information, and should be relatively easily collected. The routine documentation of travel plan activities, including employee and management participation, would aid evaluation. The set of indicators should be appropriate for the organisation and site/s, though common, core indicators would be enable comparison across travel plans for benchmarking and research.

#### **4.4 Measurement of travel plan outcomes**

The outcomes of a travel plan are the critical measure of its effectiveness. A travel plan seeks to bring about change so an evaluation must consider what change was sought (the aims and targets) and what resulted (the outcomes).

Most travel plans set quantitative targets such as a reduction in solo car commuting (mode split) or total vehicle kilometres of travel generated by a site or organisation. The measurement of change in travel behaviour after a period of implementation of a travel plan is an important test of its effectiveness. Travel surveys are commonly used to monitor behaviour change in the target group. Surveys need to be designed to ensure they providing meaningful data and can be repeated across time to give a statistically reliable indicator of travel patterns. Ampt, Richardson and Wake (2009) suggest guidelines for workplace travel surveys.

Given issues with survey practice and the likely availability of alternative data, it is recommended that a wider set of measures be used. In addition to travel surveys, a workplace could use car park counts and bicycle counts. For large workplaces it may be feasible to use public transport patronage figures for relevant stops or routes. Using a range of measures would allow cross-checking (or 'triangulation') to help explain any changes observed.

As well as changes in travel behaviour, a travel plan will seek intermediate changes. These are often reflected in the actions of the plan, for example changes in workplace facilities, employee awareness and corporate policy and procedure. A common step in developing a travel plan is a site assessment or access audit. Repeating this step after a period of implementation can aid evaluation by providing a measure of change in internal factors, for

example, did bicycle parking improve (security, number of bicycles accommodated) or was employee car parking constrained (fewer bays provided or fewer permits issued)?

External changes should be noted also, for example changes in public transport routes or increase in fuel prices. Even though these were beyond the influence of the organisation, they may be useful in explaining behavioural changes observed.

## 5. Discussion

These four elements provide for a comprehensive evaluation of a workplace travel plan. Undertaking all four can aid the analysis of what a travel plan achieved and why. It builds a richer story of a travel plan to aid evaluation and inform review and improvement of the change initiative. Having all elements covered can strengthen claims about the effectiveness of travel plans to reduce solo car commuting as shown by survey results. The broader evaluation adds to the explanation of why and how changes came about.

Evaluation should provide information for action. Travel plans commonly include a commitment by the organisation to review the plan after a period, e.g. three years. An evaluation incorporating the four steps outlined above should provide a sound basis for decisions on whether and how to continue a travel plan, enabling continuous improvement so the travel plan can be a dynamic initiative responsive to internal and external change. The sound evaluation of travel plans is important to identify good practice and aid evolution of travel planning as a travel demand management strategy in organisations and across cities.

The evaluation of programs that support travel plans is a separate matter not covered here. Clearly, the evaluation of individual travel plans should be a part of any assessment of these programs – the ultimate test of whether a travel plan program works is the success of the plans generated by it. The evaluation of travel plan programs would necessarily look at other matters too such as the nature and level of support offered, the planning process followed, the resource materials, training and other assistance delivered to participating workplace. This is an area for further attention.

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