

IPENZ TRANSPORTATION CONFERENCE 2013 TECHNICAL NOTE

“TRAVEL BEHAVIOUR CHANGE IN SINGAPORE: TAKING A HARD APPROACH TO SOFT MEASURES”

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Abstract

This technical note provides the reader with an understanding of Singapore's Travel Demand Management (TDM) strategy and how the rollout of the Singapore Travel Smart travel behaviour change programme is aiming to spread the travel demand on the public transport network from the morning peak period into the shoulder peaks.

Increased overall travel demand through population growth is impacting on train operations in Singapore. Furthermore, overcrowding is reducing peak period reliability. In response to these issues, the Travel Smart pilot programme with 13 organisations is focusing on encouraging a shift to off-peak travel through a range of measures. These include incentives to encourage off-peak travel through pricing/reward mechanisms, introducing flexible working arrangements in organisations in Singapore participating in the pilot and the collaboration of government agencies.

The Singapore Travel Smart programme has a strong focus which drives the programme and the emphasis of the travel planning measures for the need of the client and the organisations involved. The traditional travel planning approach has been adapted to suit the environment and the organisations involved. Moving towards a tailored approach to travel planning offers organisations the opportunity to concentrate their time and resources to where travel behaviour change is anticipated to create the most benefits.

Introduction

The objective of this technical note is to provide the reader with an understanding of Singapore's Travel Demand Management (TDM) strategy and define how the rollout of the Singapore Travel Smart travel behaviour change programme is aiming to spread the travel demand on the public transport network in the morning peak period.

The first section provides a background to TDM in Singapore and introduces the Singapore Travel Smart project. This pilot project was launched by the Singapore Land Transport Authority (LTA) in August 2012 to determine whether success in travel behaviour change achieved internationally can be replicated in Singapore.

The key measures being deployed through this pilot programme are described. These are primarily related to flexible working, which is in line with feedback received from the organisation baseline surveys and aligns with the client's main objective of shifting demand on the public transport services outside of the morning peak. As such this programme has a strong focus which drives the programme and the emphasis of the travel planning measures for the need of the client and the organisations involved.

The traditional travel planning approach has therefore been adapted to suit the environment and the organisations involved. This approach of tailoring travel planning measures to meet the needs of the client and organisation involved has been developed in other cities. Examples are provided from London and Auckland where workplace travel planning toolkits/packages have been developed to meet the needs of the businesses involved in their travel planning programmes, to better serve their needs and requirements.

Singapore Travel Smart Case Study

History of TDM in Singapore

Singapore is a country with a population of 5.2 million people, yet the land area is only 714 square kilometres (DOS Singapore, 2012), which is just larger than the size of Lake Taupo. It is therefore a very densely populated country (approximately 7,400 people per square kilometre) with transport demand issues that have been addressed through efficient public transport and road infrastructure development programmes, complemented by a range of TDM practices.

A White Paper (LTA, 1996) published by the Singapore Government in 1996 set a blueprint for Singapore's future land transport system, which included a strategy to manage demand for road transport. Through its TDM strategy, Singapore has historically adopted a 'user pays principle'. The Area Licencing Scheme (ALS) was introduced in 1975 around the Central Business District (CBD), the first of its kind in the world (Lew & Leong 2009). This scheme applied tolls to all vehicles entering a 'restricted zone' in the CBD area. In 1998, the scheme was replaced with Electronic Road Pricing (ERP), also the first of its kind in the world at the time. Currently, the LTA is conducting a system evaluation test for the next generation ERP system, a more advanced global navigation satellite tolling system.

Various innovations have also been established to limit the growth of car ownership, including the Vehicle Quota System (VQS). The VQS requires prospective vehicle owners to bid for a Certificate of Entitlement (COE) in order to own a car. High demand for a COE means securing one is costly and this has had an influence on travel behaviour, encouraging many residents to rely on public transport for travel in Singapore rather than running a car. Restrictions on car ownership mean that there is greater pressure on the LTA's public transport strategy to meet the nation's travel demand. Currently, 44% of all journeys by main mode of transport are by public transport (bus or train) (DOS Singapore, 2011), which is much higher than most comparable worldwide cities. Overcrowding is already starting to impact on MRT service reliability and the local public's perception of the efficiency of the network in the morning peak period has suffered in recent years. The LTA is therefore working to mitigate further reductions in the quality of service to passengers.

Despite Singapore’s obvious forward thinking with regards TDM, their application of travel behaviour change programmes has been limited to date. The Travel Smart pilot programme was therefore launched in July 2012 to establish whether the success of similar travel planning programmes internationally could be replicated.

Travel Behaviour Change Pilot Programme

The Singapore Travel Smart project involves working with organisations across Singapore to promote flexible working arrangements and to endorse sustainable travel modes at both a business management and employee level. The key objectives of the pilot programme are to manage workplace travel demand during peak periods on Singapore’s road and public transport networks, and encourage the use of more sustainable transport modes.

A broad cross-section of 13 organisations were recruited to participate in the pilot programme including: Ernst and Young, Citi, IBM, BP and the Public Service Division. Combined, the organisations generate almost 25,000 commuter trips in the morning peak. As the majority of the morning peak congestion issues are experienced in and around the CBD, a large proportion of the organisations targeted are centrally based.

The planning and development of the organisation Travel Smart action plans has been completed and the organisations are now in the process of implementing their actions. Figures 1 and 2 demonstrate mode split and work start time trends from one of the pilot organisations, a large professional services firm in the CBD. Public transport is the most desired mode for employees; a mode split that is generally consistent with the other pilot organisations based in the CBD. Although the morning peak period on the road network in Singapore has shifted under the influence of ERP policies, the public transport peak remains concentrated, driven by the need for employees to start work at 9am (refer to Figure 2).

Figure 1: Baseline staff commute mode split of a large professional services firm in Singapore CBD

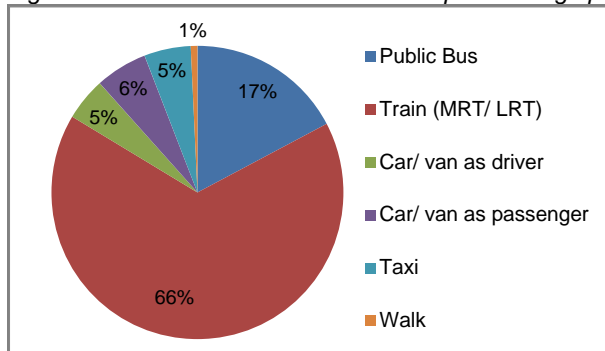
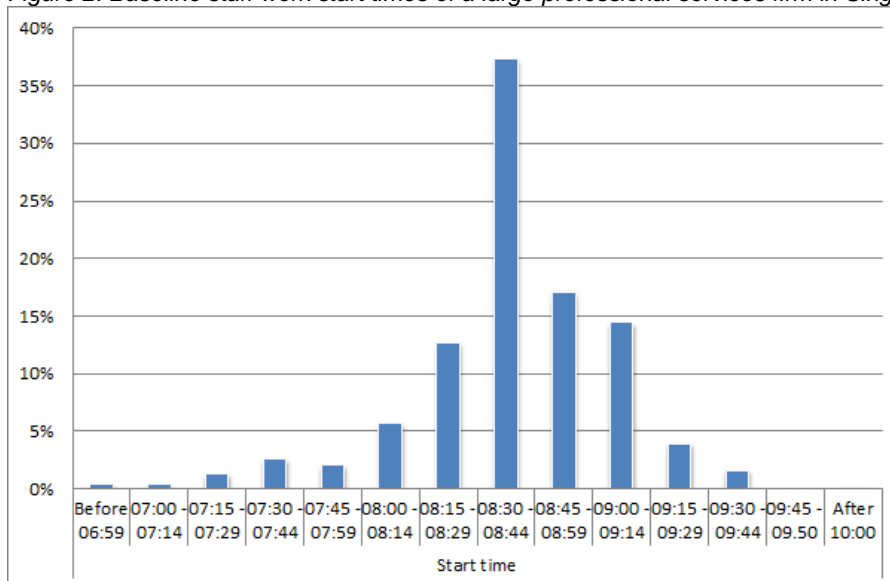


Figure 2: Baseline staff work start times of a large professional services firm in Singapore CBD



The bespoke Travel Smart Action Plans for each organisation include a range of measures that are to be delivered in 2013. Due to the issue of morning peak commute trip demand, the majority of measures focus on encouraging a shift to off-peak travel, particularly among public transport users. The mechanisms proposed to influence this shift include a range of incentive schemes, pricing and reward mechanisms as well as the introduction of flexible or staggered working hour policies. Similarly, telecommuting or compressed working weeks are encouraged to reduce the need to travel. Once the organisation travel plans have been fully implemented, an impact evaluation will be undertaken to assess the effectiveness of the plans and whether they have met the agreed objectives. This will assist the LTA with determining whether there is a long-term role for travel planning in Singapore's travel demand management strategy.

Flexible Working Incentives and Measures

The focus of the Singapore Travel Smart Action Plans is therefore on the first objective of the project: to manage workplace travel demand during the peak periods. The second objective: to encourage an increase in the take up of sustainable modes is a minor objective in comparison. This focus on spreading the peak demand on the public transport network is driven by the LTA's overarching aim for the pilot programme of addressing safety, reliability, efficiency and capacity concerns around use of the current key public transport services; to make better use of the current network. This is echoed in the results from the organisation baseline surveys which show a keen interest from staff and employers to provide more flexible working opportunities (staggered working hours and telecommuting) to reduce the need to travel and/or reduce travel time. This demonstrates a targeted approach to travel planning within these businesses, a focus and weighting of flexible working measures.

Some of the flexible working incentives and advice measures being promoted or developed in the pilot organisations are described in the following paragraphs.

There are some off-peak public transport incentives already in place in Singapore. MRT commuters with trips terminating at specific stations before the morning peak period benefit from Early Travel Discounts (SMRT, 2012) on fares during weekdays. In addition, the INSINC (Incentives for Singapore Commuters) scheme (LTA Academy, 2012) offers bonus 'credits' to commuters who travel in the morning off-peak periods. The credits are recorded on the passenger's fare card and can be used online to enter prize draws or exchange them for cash. INSINC was introduced as part of a research project by the National University of Singapore in collaboration with Stanford University with the intention of measuring impacts on travel behaviour. There is now an intention to tailor the scheme for Travel Smart organisations to offer their employees customised off-peak travel incentives.

Incentivising off-peak travel is possible in Singapore as public transport services run at high frequencies not only in the peak but also off-peak periods, offering passenger's reliability of high service frequency if they choose to stagger their commuting time. In Auckland the draft Auckland Regional Public Transport Plan (AT, 2012) aims to provide similar public transport services during and off-peak which will provide an improved opportunity to promote peak spreading of demand on the network.

The adoption of flexible working arrangements in Singapore varies from one workplace to another, as evidenced through the pilot programme. Many organisations have objectives to move towards greater flexibility in an effort to rationalise property demand and to achieve corporate social responsibility objectives. However, there are also barriers to flexible working in Singapore. These include senior/middle management resistance, negative perceptions of flexi workers among their colleagues and lack of technology equipment to work at home. Achieving the goal of travel behaviour change through Travel Smart is therefore intrinsically tied to the employment, HR and technology policies of participating organisations.

An approach being developed through the Travel Smart programme to overcome these common barriers comprises of strategy, planning and change management phases. During the strategy phase the opportunity for introducing new ways of working is assessed, which

includes the use of space, staff productivity and satisfaction, cost-benefit analysis and the readiness of an organisation to change (its people, business processes, and technology). The most effective process of obtaining the input required has been through one-on-one senior management interviews, combined with departmental focus group discussions/workshops. This has proved to be a vital stage in the profiling of an organisation. Once the strategy is agreed, programme planning takes place, assisted by a pilot group to test proposed new working practices. This enables the new working practices, policies and processes that support the strategy to be refined, along with managing change, resistance and minimising perceived risk of disruption to business operations.

Change in Travel Behaviour Change Programmes Focus

The Singapore Travel Smart pilot programme is being developed around a key objective of spreading the demand on the public transport network during the morning peak period. The key measures being deployed are therefore primarily related to flexible working, which is in line with feedback received from the organisation baseline surveys. As such this programme has a strong focus which drives the programme and the emphasis of the travel planning measures for the need of the client and the organisations involved.

This approach of tailoring travel planning measures to meet the needs of the client and organisation involved has been developed in other cities. The following paragraphs describe the workplace travel planning toolkits/packages developed in London and Auckland to meet the needs of the businesses involved in their travel planning programmes, to better serve their needs and requirements.

Business Travel Planning Toolkit, Transport for London

The Transport for London (TfL) business toolkit¹ comprises of seven guides which cover a range of travel planning themes from smarter working to fleet management. These practical 'how to' guides cover various aspects of sustainable business travel and transportation which are deployed by TfL's Business Engagement Team. This team help businesses across London develop sustainable travel options for their staff and their operations.

The toolkit approach developed by TfL provides businesses with an opportunity to gain assistance and advice from the Business Engagement Team to develop and implement some travel planning measures that are key to their organisation, rather than being required to develop and implement a full travel plan with measures that are less important/relevant.

Commute Travel Planning Packages, Auckland Transport

Auckland has been implementing travel behaviour change programmes since 2002. Previously these programmes were run by the legacy councils, and are now being led as an integrated approach by Auckland Transport across the region.

In 2012 the Auckland Transport Community Transport team (supported by the New Zealand Transport Authority) developed and launched a series of targeted travel planning themed programmes under the banner Commute²: Carpooling; Cycling; Public Transport; Teleworking; Travel Planning; and Walking. They provide organisations with targeted travel behaviour change advice and assistance that is relevant to their needs and issues. This is supported by change management advice and guidance from the Community Transport Commute travel plan co-ordinators. Organisations can also deliver a full travel plan to incorporate all initiatives however; the Commute programme offers organisations the opportunity to focus their time and resources to where travel behaviour change is anticipated to create the most benefits. The programme has also raised the profile of the travel planning programme through recognised branding which is linked to recent changes to the wider operational and corporate Auckland Transport brand

¹ <http://www.tfl.gov.uk/businessandpartners/7680.aspx>

² www.aucklandtransport.govt.nz/commute

Conclusion

Singapore provides an excellent example of pushing the boundaries of innovative and highly effective transport policies to meet their travel demand requirements. Although the majority of these TDM initiatives are related to the land use and population typologies of Singapore, the LTA's pilot travel plan programme, Travel Smart, is providing an opportunity for a travel behaviour change programme to be trialled and tested as a TDM component.

The main issue for the Singapore LTA is overcrowding on the public transport network in the morning peak period, a key issue that can be related to by many international cities around the world. The Singapore Travel Smart pilot programme forms part of an overarching suite of mitigation measures aimed at encouraging organisations and their staff to stagger working hours and/or reduce the need to travel. This is being undertaken through a range of initiatives including incentives for commuters switching to travelling in the shoulder peak periods, promotional activities and change management programmes to assist organisations with altering their flexible working policies.

The focus on flexible working in the Singapore context is a result of both the project's main objective and the results from the business baseline surveys. The traditional travel planning approach has therefore been adapted to suit the environment and the organisations involved. This apparent change in approach to traditional travel planning methods of developing full travel plans for organisations containing a broad range of measures, which have been often equally weighted in value, has shifted to a more targeted approach. This has been demonstrated in the business toolkit developed by Transport for London and through the new Commute travel planning packages launched by Auckland Transport. This focussed methodology offers organisations the opportunity to concentrate their time and resources to where travel behaviour change is anticipated to create the most benefits.

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