

## **Jobs Closer to Home: What does it mean and how to achieve it**

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### **1 Introduction**

Planning agencies throughout Australia have adopted the principle of integrating land use and transport in their strategic planning documents to achieve shorter trips and achieve jobs closer to home. In NSW, the *State Plan: A New Direction for NSW* includes Priority E5 Jobs Closer to Home, which was strongly supported in community consultation, and is seen as important in achieving a work/family balance.

Despite widespread community and professional recognition and acceptance of the issue, there are many ways to measure and define the concept of jobs closer to home. For instance, it can be expressed as self-containment, decentralisation/suburbanisation, jobs-housing balance, jobs dispersal, ratio of jobs to workers, average commute trip time, or average commute trip distance. In NSW, the State Plan measure is the proportion of the population with access to a centre within 30 minutes by public transport, with a range of supporting indicators.

The paper discusses the definition and measurement issues using data for Sydney. A central issue is conflict between opportunities for jobs closer to home, and actual behaviour of workers in choosing a job closer to home. Opportunities can be measured in different ways such as self-containment, or jobs accessible within certain travel time, while actual behaviour can be measured by average duration and distance of a commute trip and mode.

Measurement and definition issues have implications for the policy approaches to achieve the objective of jobs closer to home. Policy initiatives can focus on increasing opportunities for jobs closer to home, but this may not be reflected in actual behaviour. In working towards the objective, planning needs to recognise the different reasons why people may not choose a job close to home. The paper discusses policy approaches to achieving jobs closer to home such as transport improvements, strategic land use planning for housing and job location, work practices and the role of information, and related impacts on other policy objectives such as public transport use and air quality.

There is agreement that “jobs closer to home” is a worthy goal. But what does it mean? How can it be measured? And how can it be achieved? What are the impacts of a jobs closer to home objective for both land use and transport policy? The paper contributes to the professional practice of transport and land use planners in achieving the important transport-related objective of jobs closer to home or jobs-housing balance.

### **2 Policy context for jobs closer to home**

Integrating land use and transport is a key principle of planning agencies throughout Australia. The National Charter on Integrated Land Use and Transport Planning was endorsed by federal and state Ministers for Transport and Planning in 2003. A report undertaken for the COAG Review of Urban Congestion into the potential for improved implementation of integrated transport and land use planning to improve congestion outcomes found that States, Territories and local governments have long and generally positive experience with integrated transport and land use planning for specific sites, areas and corridors (CRWG 2006 p.11). In their strategic planning documents, state governments

around Australia have objectives to achieve jobs closer to home, although they may be expressed in different ways.

NSW strategic planning documents which support jobs closer to home include the Integrating Land Use and Transport policy package (NSW DUAP 2001), Metropolitan Strategy *City of Cities* (NSW DoP 2005) and *State Plan: A New Direction for NSW* (NSW Government 2006).

## **2.1 Integrating Land Use and Transport (ILUT) policy package**

The ILUT policy package released in 2001 (NSW DUAP 2001) includes two policy documents: Improving Transport Choices and The Right Place for Business and Services. The policy explains why businesses and services which generate transport demand should be in locations (centres) that offer a choice of transport and encourage people to make fewer and shorter trips. Dispersed locations cannot be accommodated without significant community and environmental costs. Encouraging as many businesses as possible to locate in centres accessible by public transport will help better manage the journey to work and provide more equitable access to job opportunities.

## **2.2 Sydney Metropolitan Strategy**

The NSW Government's Metropolitan Strategy *City of Cities: A Plan for Sydney's Future* (NSW DoP 2005) is a strategic plan to guide Sydney's growth and change over the next 25 years to 2031. It sets objectives and actions across seven related themes: Economy and Employment, Centres and Corridors, Housing, Transport, Environment and Resources, Parks and Public Places, and Implementation and Governance. The guiding principle for location of new housing and jobs is integrated land use and transport. The Strategy sets new dwelling and employment capacity targets to 2031 for each of the ten subregions identified in Sydney (see Figure 1). The Strategy will be implemented at the local level through a Subregional Strategy for each of the subregions. The Subregional Strategies provide guidance for local government and identify new dwelling and employment capacity targets for each Local Government Area within the subregion.

The Metropolitan Strategy defines a typology of centres and identifies a set of Strategic Centres including Global Sydney, Regional Cities, Specialised Centres and Major Centres as a focus for development, activities and services, connected by the public transport network.

The Metropolitan Strategy's Economy and Employment theme has the objective of more jobs in western Sydney to better match residential development, with a target of an extra 236,000 jobs in western Sydney by 2031, increasing from 663,000 jobs in 2004 to 900,000 jobs in 2031. This represents half the jobs growth in Sydney.

## **2.3 State Plan: A New Direction for NSW**

The NSW Government's *State Plan: A New Direction for NSW* released in November 2006 identifies 34 priorities for state government agencies (NSW Government 2006). One of these priorities under Improved Urban Environment is Priority E5 Jobs Closer to Home. This priority was supported in community consultation, and is seen as important in achieving a work/family balance. The State Plan (NSW 2006 p. 123) says:

“The community strongly supported this priority, telling us that locating businesses, services and lifestyle opportunities closer to where people live has many benefits. For them, less travel means:

- more family time

- more productive businesses
- less congestion and less pollution
- more vibrant and attractive cities and centres”.

The State Plan includes performance measures and targets for each Priority. The performance measure and target for Priority E5 in the State Plan is to “increase the proportion of the population with access to a city or major centre within 30 minutes by public transport.” Overall, 80% of Sydney’s population lives within 30 minutes by public transport, although the proportion varies by subregion. The State Plan reported performance for each of the 10 subregions within Sydney and Sydney in total. The measure has since been revised to improve its robustness and accuracy.

The measure was one of five performance measures identified in the Metropolitan Strategy for the objective to ensure fairness and equity through improving access to opportunities. The measure represents access to the job, activity and service opportunities available in centres which are also connected to other centres by the public transport network.

Agencies must prepare Priority Delivery Plans to achieve priorities in the State Plan. The targets are included in the performance plans of heads of agencies. Performance will be independently audited. Technical Notes on methodology and updates on performance are publicly available on the State Plan website [www.nsw.gov.au/stateplan](http://www.nsw.gov.au/stateplan).

Other State Plan Priorities with a strong transport-land use focus are Priority S6 Increase public transport mode share for work trips, Priority E3 Cleaner air and greenhouse gas reductions, Priority E7 Improve road efficiency and Priority S3 Improved health through reduced obesity.

### **3 Definition and measurement issues for jobs closer to home**

Despite the acceptance of the need for “jobs closer to home”, there is no single accepted measure amongst the many different ways to measure and define the concept of jobs closer to home. For instance, it can be expressed as self-containment, jobs-housing balance, ratio of jobs, decentralisation of jobs, suburbanisation, commute trip duration (average or distribution), and commute trip distance (average or distribution).

Data availability can affect choice of measures. For instance, the ABS Census collects information on an individual’s home and workplace of main job, usually released as origin-destination matrices for travel zones (which are groups of Collection Districts), and collects all modes used for an individual’s Journey to Work (but not the order of use). Distance and time for the Journey to Work must be estimated using transport network models.

In Sydney, the Transport Data Centre’s Household Travel Survey, in its 11<sup>th</sup> continuous year in 2007/08, collects data on commute trips (to and from work) for a sample of over 3,000 households each year giving 11,000 full-time workers in the 5 year pooled sample. The HTS provides richer data on Journey to Work travel than the Census, but for a smaller sample. HTS data enables work trip duration and distance to be calculated and shows how commute trips may be combined with other trip purposes and household interactions. The Transport Data Centre’s Sydney Strategic Travel Model with population and employment distribution and transport networks allows calculation of access to job opportunities by different modes (public transport vs private vehicles) within different travel times.

Definitions and measurement of potential for jobs close to home, and actual behaviour are discussed in terms of employment self-containment; potential accessibility to jobs; and actual commute behaviour.

### **3.1 Employment self-containment: potential and actual**

Employment self-containment can be expressed at different spatial units. Employment self-containment measures, whether potential or actual, depend on the spatial unit used for calculation. Spatial units include:

- Local Government Areas. There are over 40 LGAs in Sydney, ranging in size from less than 6 sq km for Hunters Hill to over 400 sq km in Baulkham Hills and Penrith and in population from 12,000 in Hunters Hill to 272,000 in Blacktown.
- Subregions. The Metropolitan Strategy identified 10 subregions in Sydney (see Figure 1).
- ABS statistical subdivisions.
- Other recognised areas such as Greater Western Sydney, defined as 13 LGAs (the 11 members of the Western Sydney Regional Organisation of Councils plus Camden and Campbelltown).

Any boundaries are artificial, and may not reflect labour markets. The larger the spatial unit in population and area, the higher the self-containment. For instance, over 90% of workers in Sydney work in Sydney Statistical Division which has almost 2 million jobs. In a San Francisco study, Cervero and Duncan (2006) used the number of occupationally matched jobs within a 4 mile radius of residential location as a measure of self-containment.

A measure of **potential** self-containment is the number of workers living in an area compared to the number of jobs in the area. But it does not take into account the match of skills between workers and jobs, such as whether workers have the skills to fill the jobs in the area. In Sydney, apart from the CBD (Sydney City subregion), only one subregion has a ratio of more than one job to one worker: Inner North subregion with the major employment centres of North Sydney, St Leonards and Macquarie Park has 1.37 jobs per resident worker. Ratios are also affected by data issues such as workers with no fixed place of work (4.1%), unknown workplace (4.5%) or undefined address (0.8%) (TDC 2003).

A measure of **actual** self-containment is the proportion of workers in an area who live and work in that area. In Sydney, the North East subregion on the northern beaches has the highest employment self-containment: 50% of the North East residents with jobs work in the North East subregion which may reflect transport connections to other areas and lifestyle-related small businesses. In contrast, just over a quarter of Inner West residents with jobs work in the Inner West subregion.

In their ATRF 2004 paper, Battellino and Stone (2004) describe self-containment for travel to work in Greater Western Sydney (GWS) which includes 13 LGAs: approximately one third of all trips to work by residents of GWS are within the same Local Government Area, another third are to an LGA within GWS and a further third are to the rest of Sydney.

In Melbourne, the journey to work information collected in the census shows that 25–35 per cent of Melbournians work in the same municipality in which they live (VCEC 2006 p. 61).

Self-containment is often discussed at a regional level. For instance, 25% of Central Coast workers leave the Central Coast for work and 15.8% of Illawarra residents leave Illawarra for work (NSW DoP 2006, 2007).

Some jobs are more closely related to the distribution of population than others. It is easier for workers in population-related jobs such as personal services (hairdressers) or retail (supermarkets, bakeries) to find a job closer to home. In contrast, it may be harder to find a job close to home in industries which are more concentrated/clustered within urban areas such as the Financial and Business Services industry sector clustered in the CBD, globally competitive industries in Sydney's global economic corridor, or specialist industries such as location-specific mining or defence.

### Targets for self-containment

There is no ideal measure of or target for self-containment. High self-containment can reflect poor transport access out of an area, a high level of home-based employment, or the size of the area, while low actual self-containment can reflect good transport links, opportunities in adjoining subregions, or a small subregion. For these reasons, it is difficult to determine or set self-containment targets for spatial units.

For Greater Western Sydney, Battellino and Stone (2004) noted that "There is no way of knowing whether the high level of containment is an indication of the difficulty of accessing jobs by means other than private vehicles; or a confirmation of the proposition that people will generally only allocate a certain amount of time (a 'time budget') for the journey to work and that travel to job opportunities in the rest of Sydney, including by public transport would exceed this budget".

High self-containment is not necessarily consistent with other environmental and health objectives for increased use of sustainable modes and reduced car use. Self-containment may generate shorter work trips, but it is more likely those trips will be made by car. Due to its speed, rail is used for long trips, particularly for trips to the CBD. For instance, the average rail commute trip is 23 km for Sydney overall, and 31 km in Greater Western Sydney, compared to the average car commute trip of about 18 km for both (Battellino and Stone 2004). Walking is used for very short trips. But car is also used for short trips.

From scenario modelling for Greater Western Sydney, Battellino and Stone (2004) note that "The distribution of employment has complex and contradictory effects. Increasing local employment accessibility in the outer areas does not necessarily encourage public transport use and may result in an increase in car trips and VKT. Increased growth of employment in centres encourages increased trip lengths as this growth is at the expense of more local dispersed employment growth."

In analysing JTW data for Melbourne, Moriarty and Mees (2006 p. 9) note that "people employed outside the CBD and environs have essentially stopped using non-car modes, which are now patronised almost exclusively by central city workers, plus the small minority of suburban workers who are 'captive' to public transport."

### **3.2 Potential accessibility to jobs**

Accessibility to jobs within certain travel time is another measure of "jobs close to home". The choice of two variables – how many jobs and what time period – affect the measure. What proportion of jobs is considered to offer a reasonable choice? 25% of Sydney's jobs is equal to over 500,000 jobs. The choice of the time limit, methodology of calculating access time, and the spatial unit all affect interpretation.

Table 1 shows the proportion of people in Sydney who can reach Sydney's jobs within 60 minutes by public transport and private vehicle. More people can reach at least 50% of jobs

within 60 mins by public transport than can by private vehicle. However, the results would vary if a different time threshold of 30 or 45 minutes was chosen.

Analysis of the 900 plus travel zone in Sydney shows that no travel zone can reach 50% of the jobs in Sydney within 30 minutes by public transport.

Again, these measures do not reflect the type of jobs that can be reached. Results reflect the distribution of jobs and the service characteristics of the transport network such as network connections, frequency, and travel time.

**Table 1 Proportion of Sydney’s population accessible to jobs within 60 minutes**

<b>% of population who can reach jobs in Sydney within 60 mins</b>	<b>Within 60 mins by public transport</b>	<b>Within 60 mins by private vehicle</b>
Less than 20% of jobs within 60 mins	36.2%	39.6%
20 to 50% of jobs within 60 mins	14.8%	22.6%
50 to 70% of jobs within 60 mins	24.2%	8.2%
More than 70% of jobs within 60 mins	24.7%	29.6%
Total	100%	100%
At least 50% of jobs within 60 mins	48.9%	37.8%

Source: TPDC (2006b) *TransFigures Train Access and Egress Modes* and Request No. 07/011 (2001 data).

### 3.3 Actual behaviour for commute trip

Potential for jobs close to home varies from actual behaviour of individual workers in choosing a job closer to their own home. Workers’ choice of a job closer to home can be measured by time or distance. Actual behaviour for the commute trip in Sydney is discussed using data from the Household Travel Survey in terms of duration, distance and mode. Key indicators of travel behaviour by subregion in Sydney are in shown in Table 3 on the last page (TPDC 2006a).

Averages can be misleading but provide an indication of differences between subregions. HTS 5 year pooled data on the mean and median distance between home and work by income, industry and occupation shows that the mean distance can be up to 50% longer than the median indicating a distribution with a tail of long distances between home and work.

#### Duration in minutes

In Sydney, the average duration in minutes of a commute trip is remarkably constant across the 10 subregions, despite the different characteristics of each subregion. The Sydney average is 32 minutes, with subregions varying from a low of 29 minutes in the inner areas to a high of 37 minutes for North and Central Coast subregions. The average commute trip time has also been relatively constant over time since the 1991 travel survey.

The Marchetti principle of a daily travel budget of one hour of travel time is often used as a standard or benchmark. In Sydney, average weekday daily travel time across the whole population is 79 minutes, exceeding the one hour time budget (TPDC 2006a). The one hour budget is likely to be exceeded for many workers, as the average one way commute trip is over 30 minutes, without considering trips for other purposes.

## Distance in km

There is more variation across subregions in the average distance in km of a commute trip than time. The Sydney average for a commute trip is 15.5 km, but subregions vary from a low of 8.8 km in East subregion to a high of 25.6 km in Central Coast. The differences reflect the mix of modes used: walking has the lowest average speed, while train has higher average speed than bus.

For instance, the East subregion has the shortest average commute trip distance at 8.8 km, but the average duration of 29 minutes is closer to the Sydney average of 32 minutes. This reflects high use of walking and cycling, and bus for the work trip. The average speed for a commute trip in the East is 18 km/h, compared to an average speed of 46 km/h for the Central Coast (average duration of 33 mins and distance of 25.6 km) which reflects the Central Coast's relatively uncongested conditions and use of rail and freeway for interurban trips.

As with self-containment, the size of the subregion affects subregional averages. The East subregion is only 80 sq km, compared to North West subregion at 5,252 sq km.

## Mode

In Sydney, car is the most common mode for the Journey to Work (70%), with 22% of Journey to Work trips by public transport. The Sydney average hides variation, as public transport use varies markedly by destination and is particularly high to selected centres such as the CBD core (over 70%), CBD surrounds (65%), North Sydney (50%), Bondi Junction and Chatswood (almost 40%), St Leonards (35%), Parramatta (30%) and Burwood (almost 30%), but low elsewhere.

Variations in public transport use by destination type reflect both the quality of public transport (and difficulty in serving dispersed, out of centre employment well), and the role of parking restraint in mode choice. Household Travel Survey data on the reasons for public transport use for the journey to work highlights the role of parking availability in public transport use. "Avoiding parking problems/costs" was cited by 56% of workers in Global Sydney (Sydney CBD and North Sydney) as a reason for their public transport use for the Journey to Work to Global Sydney. This is double the proportion of workers citing the next most common reason – only 27% cited public transport is faster. Between 21% and 26% of workers in the 3 other types of Strategic Centres (Regional Cities, Major Centres and Specialised Centres) also cited avoiding parking problems as a reason for using public transport. However, avoiding parking problems is not the most common reason. Not having a car is the most common reason for public transport use to these other centres.

A result of jobs closer to home in low density dispersed locations may be higher car use for the journey to work, and possibly for other trips. To achieve a range of objectives, jobs should be in centres and locations which can be served by public transport, with management of parking in those centres.

## **4 Influences on actual behaviour in choosing a job closer to home (or not)**

There are many influences on actual behaviour in choosing a job closer to home including the distribution of jobs, multiple worker households, and housing-transport trade-offs. The interaction of elements over time also influences whether a worker's job is close to home, when measured at a specific point in time. Table 2 shows how average distance between home and work varies by selected characteristics using Household Travel Survey data.

**Table 2 Average distance between home and work by selected characteristics of all workers (full-time and part-time/casual)**

<b>Characteristic</b>	<b>Average distance (km)</b>
<b>Housing tenure</b>	
Own home	16.9
Renting	13.1
<b>Household type</b>	
Lone person	14.6
Couple with children	16.5
<b>No. of vehicles</b>	
No vehicle	9.9
1 vehicle	14.5
2 vehicles	17.0
<b>Labour force status</b>	
Full time work	17.0
Part time or casual work	12.5
<b>Income</b>	
<\$10,400	10.9
\$10,400-\$15,599	11.5
\$15,600-\$20,799	13.3
\$20,800-\$25,999	14.0
\$26,000-\$31,199	15.2
\$31,200-\$36,399	15.6
\$36,400-\$41,599	16.6
\$41,600-\$51,999	17.6
\$52,000-\$77,999	17.5
\$78,000 or more	17.5
<b>Average</b>	<b>15.8</b>

Source: Household Travel Survey 2005 (5 year pooled data of 15,111 records), TDC Request No. 07/100. Average distance is road distance calculated by Sydney Travel Model (not respondent reported distance).

#### 4.1 Distribution and mix of jobs: distance and income

Jobs by industry, occupation and income level are not distributed equally across the urban area. For instance, 40% of jobs in Sydney CBD are for skilled professionals compared to only 8% of jobs in western Sydney. Similarly, 51% of jobs in Sydney's global economic corridor are in finance, banking and business services compared to only 17% of jobs in western Sydney (NSW DoP Metropolitan Strategy 2005 p. 142).

Globally competitive industries such as finance and business services, tourism, education, information industries, design and advanced manufacturing are concentrated in the global economic corridor, centred on the CBD. Higher skilled, higher paying jobs support lower paying service support jobs.

HTS 5 year pooled data for full-time workers shows that of the industry groups, workers in home-based Agriculture, Forestry and Fishing had the shortest average distance (mean 8.8 km), while workers in Mining had the longest average distance (24.3 km). Workers in population-related industries such as Health and Community Services (14.3 km) and Accommodation, Cafes and Restaurants (14.4 km) had shorter average distances than Finance and Insurance (19.3 km) and Government Administration and Defence (19.6 km).

Of the main occupation groups, HTS data shows that Elementary clerical, sales and service workers had the shortest average (mean and median) distance between home and work, with a mean of 15.4 km. However, Labourers and Related Workers, another low skilled occupation, had a longer mean distance of 18 km.

The uneven distribution of jobs and interaction with the housing market means that skilled workers may choose to travel further to access a higher paying job, while lower skilled workers also travel further for a job, particularly if it services higher income workers.

Table 2 (for all workers) shows that average distance between home and work increased with income, with the highest income workers travelling further. The data is very similar for full-time workers.

#### **4.2 Multi-worker and multi-job households**

It may be difficult for a household with two (or more) workers to locate close to the jobs of all workers. The casualisation of employment in which a worker may have several jobs at a time or work in a succession of casual jobs in different industries also affects the ability to match locations.

Residential location may be a trade-off between a home close to work for a part-time worker, but further away for the full-time worker, if that helps achieve child-care and parenting arrangements. ABS data shows that of families in NSW with at least one parent employed, 61% use working arrangements to care for children. Working arrangements include flexible working hours, permanent part-time work, shiftwork, work at home or job sharing (ABS 2006 p. 25).

Table 2 shows that average distance between home and work is longer for couples with children than for lone person households, longer for workers buying/owning their home than renting, and longer for full-time workers than for part-time and casual workers.

In discussing activity spaces, Olaru et al. (2005 p. 4) cite Axhausen and Garling 1992 that “activity scheduling by individuals and households is a multi-day (weekly) problem solving process arising from the need to deal with experienced shortages of time”. Olaru et al. (2005 p. 4) note “there are numerous trade-offs occurring within households: when one person spends more time travelling, others may spend more time taking care of the households obligations. Unfortunately, this web of interactions and constraints at the household level has not received extensive attention in transport planning and accessibility research”.

#### **4.3 Housing-transport trade-offs**

In choosing a residential location, households often make a trade-off between housing and transport costs. Housing in more accessible locations is more expensive but reduces transport costs. Conversely, housing in less accessible locations is cheaper but incurs higher transport costs both in time and reduced access to public transport. The need for cheaper housing, or more housing for the same cost, means some people choose to live further away from accessible locations, and commute longer distances to work. The high transport costs in time may be borne by the full-time worker, while the rest of the household benefits from the location.

Table 2 shows that average distance between home and work increases with number of vehicles, with workers in no vehicle households living closest to work.

#### **4.4 Home based employment and no fixed place of work**

Both home-based employment and no fixed place of work are significant segments (almost 10% of jobs/workers) which can influence estimates of average commute trip duration and distance. An increase in mobile services such as home loans, car maintenance and pet grooming which can be delivered at the customer's home or workplace, means an increasing difficulty in working close to home.

#### **4.5 The time factor**

A worker's job close to home at one point in time may not be close to home over time if the job relocates or the household relocates, or there is a new job or new household formed.

Due to the Census question about living at the same address 5 years ago, there is more data on residential location change than employment relocation. In Sydney, only 52% of people in 2001 lived in the same residence as in 1996 (ABS 2006 p. 16). Employers also change business location over time, often relocating to less expensive (and less accessible) land to accommodate business growth. Over many years, the NSW public sector has relocated offices out of Sydney CBD to centres within Sydney with the recent move of the NSW Police Force and Sydney Water to Parramatta, and outside Sydney (Workcover to Gosford).

A worker's ability to change their residential location to follow a relocating job depends on factors such as the rest of household (such as access to children's schools and childcare), the cycle of the property market, and barriers to movement such as stamp duty and search costs. A worker's ability to change their job location to reflect a new residential location depends on their skills, and degree of specialisation.

Table 2 shows that workers renting their home live closer to work than workers who own or are buying their home, perhaps reflecting ease of relocation.

#### **4.6 Future developments**

A range of developments could influence the relationship between residential and job location affecting distance to work. In the future, telecommunications technology may become more influential, reducing the impact of physical separation between home and job and allowing greater work from home, home-based employment and mobile services employment.

Other changes in work practices, supported by technology, could include more flexible work arrangements such as a compressed work week. In terms of total weekly distance, a 20 km commute trip 5 days a week is equivalent to a 25 km commute trip 4 days a week. Total time could be reduced further if the 4 days of travel was in shoulder or off peak times.

Demographic changes such as the ageing of the population and declining household size are likely to have an impact both on residential location as proximity to family to care for ageing relatives becomes more influential, and on the location and nature of jobs with an increase in in-home personal and care services.

## **5 Policy initiatives for achieving Jobs Closer to Home**

The definition and measurement of jobs closer to home has implications for the policy initiatives adopted for the goal. The goal of “jobs closer to home” can be achieved broadly through reducing travel time and/or reducing distance. Initiatives include transport improvements, integrated land use and transport planning, work practices and information. While a wide range of policy initiatives can be pursued, the relative focus on each may be determined by its (measurable) contribution to improving performance. In Sydney, the policy approach is set in the State Plan, Metropolitan Strategy and Urban Transport Statement.

A key policy decision is the relative focus on reducing “average” travel time or distance across all workers verses reducing the extreme tail of the time or distance distribution for workers with very long commute trips, which is affected by the definition of “closer to home”. Long commute trips can have serious implications for work/family balance, with parents unable to spend time with young children. For instance, electronic bus priority may reduce travel time for bus users throughout Sydney, but major regional economic development with “global city” jobs in Gosford and Wollongong may be required to reduce commuting from the Central Coast and Illawarra to Sydney. However, focusing on reducing the extreme tail requires a detailed understanding of the reasons for the extremes. The tail could be occurring due to poor transport connections from a specific area with transport lagging residential development, or could reflect workers travelling to specialist highly clustered jobs or workers making housing-transport trade-offs.

### **5.1 Transport improvements**

Within the existing (mis)match of residential and job location, policy approaches to reducing travel time would focus on transport improvements including both service improvements to existing transport and new transport links. The impact of distance can be overcome by increasing the speed of travel through transport service planning such as express trains and express buses, and through motorways. However, major new links such as fast rail links to regions and motorways can encourage people to live further away in distance, if the travel time is improved. This has a flow-on impact on household travel for all purposes. A difficult balance needs to be struck between providing transport accessibility improvements to poorly served areas and acknowledging that these improvements may have land use consequences counter to policy intentions. A strategic plan guiding land use controls can help ensure major transport infrastructure does not have unintended consequences of contributing to low density development extending urban boundaries. Transport initiatives for Sydney are outlined in the Metropolitan Strategy, State Infrastructure Strategy and Urban Transport Statement.

### **5.2 Strategic planning: employment location and skills**

Distance between jobs and home can be reduced through strategic planning following integrating land use and transport principles addressing both employment and housing location. The Sydney Metropolitan Strategy adopts the principle of encouraging activities and services in accessible locations, particularly the set of identified Strategic Centres. Planned Major Centres of Leppington and Rouse Hill have been identified for the South West and North West Growth Areas which will accommodate 30-40% of Sydney’s new dwellings to 2031. Almost half of new jobs to 2031 are planned to be located in western Sydney to better match population growth.

The Metropolitan Strategy recognises that skill levels are unevenly distributed across Sydney and there is a need to increase the number of full-time and highly skilled jobs in western Sydney to improve the mix of jobs. Globally competitive jobs in finance and business services, tourism, education, information industries, design and advanced manufacturing are concentrated in the global economic corridor centred on the CBD.

The Metropolitan Strategy's Economy and Employment theme includes Objective A2 to Increase Innovation and Skills Development with actions to strengthen industry clusters, support magnet infrastructure, utilise local assets to encourage learning and innovation, and promote learning city initiatives in selected centres. Objective A3 to Improve Opportunities and Access to Jobs for Disadvantaged Communities includes an action to increase integration of employment and housing markets. The NSW Government's Statement on Innovation, released in 2006, supports skills development. The Subregional Strategies identify industry clusters in each subregion and build on health and education precincts. Industry clusters in emerging fields include information and communications technologies and other digital technologies, creative industries, biomedical and pharmaceuticals, nanotechnology and energy-efficient technologies.

Strategic planning documents such as the Metropolitan Strategy provide opportunities for jobs closer to home through setting housing and jobs targets and ensuring sufficient appropriately zoned land to meet targets through statutory planning instruments such as Local Environmental Plans. However, state governments are limited in how they influence actual behaviour, given the wide range of influences on choice of job and home location.

### **5.3 Strategic planning: housing**

Housing affordability and housing mix also contributes to some workers travelling further to jobs. The Metropolitan Strategy notes that some areas of Sydney have difficulty in attracting workers because of high housing prices and rents. This can lead to extended journey to work times for primary school teachers, childcare workers, retail and hospitality staff and home care workers. This has been identified as the "key worker issue" in large cities. Conversely, some growth regions are unable to attract professional staff because of distance from the home address of people with these skills. The Subregional Strategies address the integration of employment and housing markets by ensuring that councils' Local Environmental Plans must zone for a mix of housing types for both lower and high income households to ensure diversity in the supply of local labour. The Metropolitan Strategy also identifies affordable housing initiatives.

### **5.4 Work practices**

Travel time can be reduced through changes to work practices including more flexibility.

Rates of home-based employment do vary by occupation, and thus by subregion. Sydney LGAs with high rates of working at home on the 2001 Census day include Ku-ring-gai (8.5%), Pittwater (8.1%), Woollahra (7.9%), and Mosman (7.9%) (TDC 2003).

## **5.5 Information**

Information could be used to influence behaviour and encourage actual take-up of jobs closer to home. TravelSmart voluntary travel behaviour change programs provide a model for the provision of information to encourage behaviour change. Innovative approaches could include a job swap database, and advertising government jobs in local papers, not just the metropolitan paper. In their ATRF 2006 paper, Fenton and Jensen (2006) showed how web-based information on transport costs could influence choice of residential location of people moving to Townsville to reduce household transport costs.

## **5.6 Jobs closer to home and related objectives**

While jobs closer to home implies a measure of time or distance, mode used for work trips is also important. Related State Plan priorities are Priority S6 Increase public transport use on a safe and reliable system, and Priority E3 Cleaner air and reduce greenhouse emissions. It is likely a reduction in vehicle use will be required to meet the targets set for these two priorities. For environmental and health reasons, government objectives encourage use of sustainable modes such as walking, cycling and public transport.

Initiatives for achieving jobs closer to home should not have adverse impacts on public transport and air quality. Detailed evaluation is required to assess the impact of initiatives, including unintended consequences. The TDC's Sydney Strategic Travel Model is one tool, but it cannot assess all benefits such as the relative merit of a 30 minute car trip vs a 40 minute public transport trip which includes 10 mins of walking contributing to physical health.

Unintended consequences include impacts on the complex inter-relationship between modes and household interactions. In Sydney, almost 7% of JTW trips are by car passenger. However the car passenger mode is harder to achieve with dispersed jobs. In his ATRF 2006 paper, de Gruyter concluded that even to Melbourne CBD, a CBD-wide car pooling scheme is not viable. In Sydney, Household Travel Survey data indicates that for train trips from home, 19% of people access the station by "drop off and ride", higher than access by park and ride (16%) or bus (16%) (TPDC 2006b).

As part of a package of transport improvements and strategic planning, demand management initiatives have a role in influencing mode used. Demand management can include information on travel choices such as TravelSmart programs (household or centres based) or pricing. Actual behaviour in choosing a job closer to home could be influenced by pricing of transport and housing by influencing the housing-transport trade-off. If the aim is to reduce Vehicle Kilometres Travelled, a policy approach is to increase the cost of car use relative to the cost of alternatives. This may happen as part of the market or policy response to climate change and peak oil. Scenario modelling using the TDC's Sydney Strategic Travel Model has shown that when the cost of fuel increases, short car trips switch to walking rather than public transport. This reflects assumptions in the model based on current behaviour which may not be reflected in reality.

## **6 Conclusions**

There are many different ways to define and measure the objective of "jobs closer to home" from opportunities for a job closer to home to workers' actual behaviour in choosing a job closer to home. NSW has adopted a measure and target for its State Plan Priority Jobs Closer to Home, with a range of supporting indicators. Understanding and agreeing on the definition and measurement are critical for the choice of policy initiatives and the relative

contribution of each initiative. Policy initiatives include transport improvements, strategic planning for housing and job location, skills development, work practices and information provision. In reality, a package of policy approaches is adopted.

The choice of policy approaches must also recognise that jobs closer to home is just one element in the broad set of government objectives for social, economic and environmental outcomes. There are related government objectives for public transport use and air quality to meet environmental and health goals. The NSW State Plan has targets for increasing public transport mode share, cleaner air and reducing obesity. A major challenge for government is not only providing opportunities for jobs closer to home, but also converting opportunities to actual behaviour, given the wide range of influences on workers' choice of both residential and job location.

## **Acknowledgment**

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**Figure 1 Sydney Metropolitan Strategy's 10 subregions (and Central Coast)**



Table 3 Jobs closer to home indicators for Sydney

Indicator Type	Demographic			Opportunities		Actual behaviour					
	Area (sq km)	Population, 2004	% of total population (in Sydney SD)	% of pop. with access to city or centre in 30 mins by public transport*	% of pop. with access to 25% of all jobs within 30 mins by public transport#	% of workforce that lives and works within subregion	Av. commute trip duration, mins	Av. commute trip distance, km	% public transport use for JTW	Av. commute trip by public transport duration, mins	% of commute trips by public transport less than 30 mins
East	80	272,000	6.5%	90%	20%	39.1%	29	8.8	30.7%	47	12%
Inner North	99	292,000	7.0%	90%	40%	44.8%	29	10.0	30.5%	47	10%
Inner West	62	229,000	5.5%	100%	38%	26.2%	29	10.0	32.2%	50	10%
North	548	261,000	6.3%	85%	0%	32.2%	37	17.2	25.1%	66	0%
North East	255	231,000	5.5%	69%	2%	49.9%	32	13.6	18.1%	61	4%
North West	5,252	749,000	18.0%	59%	0%	48.8%	34	20.7	14.4%	76	6%
South	451	644,000	15.5%	86%	10%	38.5%	33	14.1	25.6%	60	5%
South West	3,376	405,000	9.7%	68%	0%	44.4%	37	23.5	15.2%	81	1%
West Central	312	657,000	15.8%	93%	0%	44.0%	32	14.5	19.9%	66	5%
Sydney City	24	127,000	3.0%	100%	85%	58.9%	26	5.9	34.4%	42	19%
Sydney (10 subregions)	10,459			80%	11%						
Central Coast	1,684	302,000	7.2%		14%	64.3%	33	25.6	13.5%	107	0%
Sydney SD (inc Central Coast)	12,143	4,169,000	100%		11%	90.3%	32	15.5	22.1%	61	7%
Data source and year:		TPDC 2004	HTS 2004	TPDC STM 2005	TPDC STM 2006	Census 2001	HTS 2004	HTS 2004	Census 2001		HTS 2004 (5 yr pooled)

**Notes: Opportunities**

\*Measure reported in State Plan includes access to Global Sydney, Regional Cities and Major Centres (centres defined in Metropolitan Strategy).

The measure has since been revised to improve robustness and accuracy, including addition of Specialised Centres. See [www.nsw.gov.au/stateplan](http://www.nsw.gov.au/stateplan) for technical notes and updates.

#25% of jobs within 30 mins by public transport represents the proportion of people in each subregion who can reach 25% of Sydney's jobs (approx 500,000) within 30 mins by public transport.

A score of 0% for a subregion means there is no travel zone in that subregion that can reach at least 25% of Sydney's jobs within 30 mins by public transport.

**Notes: Actual behaviour**

Actual duration of commute trip by public transport is door-to-door travel time (arrive time minus depart time), not in-vehicle time used for the Opportunities measures.