Sustainable Transport for Greater Western Sydney

Sharon Fingland Western Sydney Regional Organisation of Councils Ltd (WSROC)

1 Executive summary

This paper draws upon a number of research projects highlighting the issues associated with the growing mobility and decreasing accessibility of the Greater Western Sydney (GWS) Region. It shows how 'liveability' is being endangered by threats to the environmental quality, social well-being and economic viability of the region.

It discusses the population growth proposed for the region over the next 20 years and highlights existing areas of socio-economic disadvantage. It looks at the way Federal and State Government transport policies are resulting in often unintended consequences from a regional perspective.

The paper examines policy options to minimise energy consumption and the adverse environmental, economic, social and health impacts of motorised travel and the need to reduce the reliance on the motor car in the region. Measures to achieve these aims within the overall framework of the planning system are discussed.

2 Introduction

WSROC has been lobbying on regional transport issues for many years. Successive State and Federal governments have failed to adequately address the public transport needs of Western Sydney's growing population. Yet at this time no other area of investment has the same potential to benefit so many different aspects of urban living as public transport.

A great deal of discussion has been taking place over the past few years about the failures of the prevailing approach to the way in which our cities are developed. The present system is essentially one driven by a combination of market forces and government policies that seek to control that development by various means. Much of the criticism has focused upon the lack of ability of governments at all levels to manage the process of urban development.

3 Background

GWS contains thirteen local government areas (LGAs) representing cities and Shires which account for over 42% of the Sydney metropolitan population and a large area of the metropolitan fringe. It is one of Australia's most important urban regions.

The population is about 1.8 million people. In 2003 GWS accounted for 43.2% of the population of metropolitan Sydney and 27.1% of the population of New South Wales (NSW)

3.1 Population growth

It is proposed (DIPNR, 2004) that Western Sydney will accommodate over half of the population growth in NSW over the next 20 years – approximately 600,000 people. This compares to regions such as the Hunter and the Illawarra which will grow by an additional 100,000 people over this time.

Western Sydney is not homogeneous and in some of the larger local government areas census data averages hide pockets of severe socio-economic disadvantage (Randolph and Holloway, 2003, 2004). Many of the 'middle ring' suburbs in the region are now the locations of some of the most disadvantaged communities in Australia. These areas are extensive and include large parts of Auburn, Bankstown, Parramatta, Fairfield, Blacktown, Penrith and Liverpool.

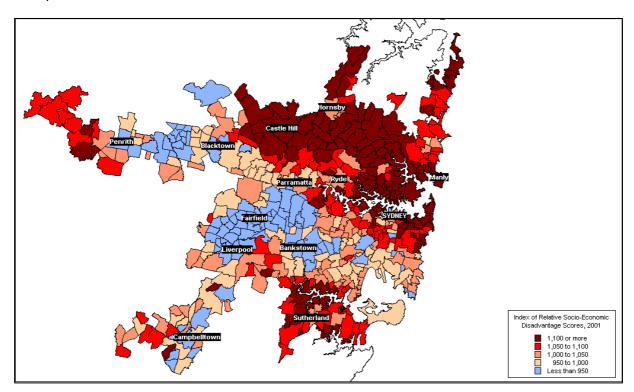


Figure 1 ABS Index of Relative Socio-Economic Disadvantage, Sydney Urban Suburbs 2001

Source: Urban Frontiers Program, University of Western Sydney

Many parts of the region are experiencing continued growth pressures whilst still dealing with backlogs and continued under-investment in infrastructure provision. For example, the rail network in Western Sydney has not been significantly expanded since the 1930s.

3.2 Federal Government policies for the region

At the Commonwealth level there has been little direct engagement with urban regions. Federal regional policy is focused almost entirely on rural areas, yet the great majority of Australians live in cities. GWS is the biggest and perhaps the best example – already 1 in 11 Australians lives in the Greater West and the region is set to grow by over half a million people over the next 20 to 25 years.

While there has been little targeting of urban regions, these areas are often affected by the unintended consequences of Federal Government decisions. An example is the way in which Government FBT policies encourage the extensive use of private vehicles in outer urban areas as part of employee remuneration packages.

As a result of the GST the price of private motoring has gone down while the price of public transport has gone up (Moore, 2004). Taxes paid by public transport users continue to

increase while sales tax on new cars has decreased. At the moment the Federal Government invests nothing in public transport and billions into freeways and roads. (Since the 1970s over 100km of motorway have been constructed to serve the needs of Western Sydney and the M7 currently under construction will add a further 40km). This imbalance must be redressed.

The FBT applying to motor cars coupled with the significant disincentive to include public transport fares in salary packages is all mitigating against encouraging people to use public transport.

The Federal Government's role in recent years relating to urban infrastructure has been confined mainly to funding support for inter-regional transport connections, particularly freight, through the National Highway system and, more recently, through AusLink (Commonwealth of Australia, 2002). While these are significant it is crucial that the Federal Government re-engages with urban regions throughout Australia in the ideas that shape our cities and the provision of necessary infrastructure. This is particularly important in Western Sydney because of this region's contribution to the national economy.

One common thread that ran through the aims of the 'Building Better Cities Program' (Commonwealth of Australia, 1991) was the need for an integrated approach to solving urban problems. The development of cities involves very complex issues that require consultation with all concerned, a comprehensive and co-ordinated approach and a level of commitment by all levels of government and the private sector to bring about change for the better.

3.3 State Government planning

During 2004 the Premier and the Minister for Infrastructure, Planning and Natural Resources initiated the development of a new Metropolitan Strategy to guide the growth of Sydney (DIPNR, 2004).

Since 1945 there have been at least six attempts to develop a plan for Sydney. The current metropolitan strategy will be the seventh. While all have contained lofty ideals and grand visions, previous attempts have failed to either plan for or provide infrastructure with an agreed program for development.

By the early 1970s Western Sydney's population had grown dramatically but there was nothing in the way of hospitals, universities, social services and transport infrastructure to support the families pouring in. While successive governments attempted to redress the situation, the results have been inconsistent, with backlogs in many areas. And, perhaps the biggest failure of all, the coverage of Western Sydney's rail network is still virtually identical in 2005 to what it was in 1933.

Indeed, it can be argued that what infrastructure provision has been provided in GWS has been the result of opportunism rather than planning. How else could you explain that over 120 kms of motorway have been constructed since the 1970s, much of it financed by the private sector and funded through tolls, but only 14 km of rail line? (WSROC, 2005).

Metropolitan planning is an exercise in managing complexity and simplistic solutions have not worked in the past. Planning issues are interconnected and solutions are required that solve more than one problem at a time – i.e. joined up problems need linked solutions.

The debate about the impact of the ageing population has begun. Currently the spotlight has been on the economic impacts of a large retired workforce, the provision of health and social services to an older population and the spatial impacts of substantial immigration of retirees. Yet the policy implications of decreased mobility and increased social isolation, coupled with

increased housing and transport stress still need to be addressed by all spheres of government. (WSROC, 2005).

4 Regional research

4.1 Who cares about Western Sydney?

The Who Cares About Western Sydney (Randolph, Pang and Hall 2001) report prepared for WSROC highlighted what residents disliked about living in the area. The most commonly stated disliked feature were the traffic problems (22%), too much crime (20%), and poor public transport (19%). In addition people disliked the distance they had to travel to work or recreation, poor roads and accessibility problems and noise and air pollution. While these findings hardly came as a surprise to those of us who have been working with the communities of Western Sydney for a number of years, it was disturbing to find that this was news to many people!

4.2 Future West

In 2002 the Mayors of the Cities and Shires of Greater Western Sydney, along with the Presidents of WSROC and the Macarthur Regional Organisation of Councils (MACROC) released a regional Mayoral Statement seeking:

- A greater say for the Councils and residents about development in local areas and across the region on broad aspects of urban growth and land supply;
- Commitment from the NSW and Commonwealth Governments that all urban growth will be supported by measures to guarantee an equitable and sustainable environment; and
- Commitment to the funding of infrastructure, protection of the region's environment and sustainability, support for diversity, employment growth and much better coordination between different levels of government in managing growth.

A further impetus for this project was the emphasis being placed on regional planning in the restructuring of the NSW environmental planning system and the recognition that a coherent regional framework is an essential element in regional advocacy and co-ordination.

Previous planning for the region had led to a lack of co-ordination, deficits in the provision of infrastructure and the dispersal of population but not employment. It had also not adequately valued the environmental quality of the region. The consequences of not implementing effective strategic planning meant that regional values were not able to guide future outcomes.

Later in 2002 thirteen local councils in GWS and WSROC co-operated to prepare a framework as the basis for improved forward planning and the better management of growth to ensure a sustainable, healthy and liveable region.

The FutureWest: Planning and Management Framework (WSROC, 2005) comprises four elements:

- Research into the issues affecting the region and local areas;
- A vision statement setting out the strategic direction for regional spatial planning;
- A regional strategy developing policy responses for ten strategic directions; and

 A framework to establish a regional management and performance assessment approach.

A number of specialist studies were undertaken to inform the development of Future West. These included:

- Western Sydney Social Profile (2002) Urban Frontiers Program UWS
- Shifting Suburbs: Population Structure and Change in Greater Western Sydney (2003) Urban Frontiers Program, UWS
- Regional Environmental Profile (2003) WSROC
- Greater Western Sydney Regional Transportation Profile (2004) PPM & CSIRO
- Suburbs in the Global City Employment Profile of Greater Western Sydney (2004)
 Macquarie University
- Infrastructure Financing Study (2004) SGS Economics and Planning

Each of the councils used their local knowledge and data to prepare detailed profiles that were integral to the development of the Planning and Management Framework.

The final report – FutureWest: Greater Western Sydney Regional Planning and Management Framework was launched by the Minister for Western Sydney in April 2005. FutureWest describes the part that GWS can play in the development and success of the Greater Sydney region and should form a major contribution to the metropolitan planning process. While its development was independent of the Metropolitan Strategy process, the consultation draft was presented to the Department of Infrastructure, Planning and Natural Resources (DIPNR) and has had an impact on the development of the Strategy.

4.2.1 Future West research

Growing mobility and decreasing accessibility are threats to the environmental quality, social well-being and the economic viability of Western Sydney. A significant increase in traffic flows and a dramatic shift in modes of transport, away from walking, cycling and public transport to the private car, contribute to these trends. These in turn create further associated problems including:

- Environmental problems such as air pollution and energy consumption;
- Health problems caused by the air pollution and noise pollution resulting from road traffic and increasing overweight and obesity as the result of the lack of physical exercise;
- **Social problems** including isolation from necessary services, changing social patterns and a deterioration in the level of public transport provision;
- Transport problems including congestion, increased danger for cyclists and pedestrians, infrastructure barriers and an increasing take up of urban land by transport related activities; and
- Economic problems including inefficiency engendered by congestion, social, economic and environmental costs.

Achieving urban accessibility therefore requires the development of sustainability goals and indicators, target setting and monitoring, along with policies aimed at improving access and not simply movement. This requires reconciling access, economic development and environmental objectives as a primary goal for Western Sydney's transport policy.

Cities are complex systems that continuously change and develop. The transport infrastructure network provides opportunities to minimise car mobility and stimulate the use of public transport systems, walking and cycling. But thinking of the City as an ecosystem also has a social dimension.

Sustainable development is a much broader concept than environmental protection. It implies a concern for future generations and the maintenance of the long-term health and integrity of the environment. It embraces concerns for the quality of life, social and inter-generational equity and the cultural, health and ethical dimensions of human welfare.

For cities to be sustainable they also need to be considered in process terms and not just from an end point. Given the complexity of cities we need to seek simple solutions that solve more than one problem at a time, or several solutions that can be used in combination. This is in marked contrast to the current practice that continues to promote simplistic solutions that fail to recognise the inherent paradox they contain. For example:

- Urban consolidation policies focussed on simply increasing the number of dwellings built on a particular area of land; rather than increasing the number of people accommodated on the same piece of land;
- Densification policies that are focussing on many of the older suburbs which, despite being located on railway lines, have been losing population for many years. (Fingland, 2002) This is clearly a matter of some concern since these areas are being targeted for urban consolidation; and
- Hidden inequalities stemming from differences in the physical and social infrastructure which is affecting affordability. Poor public transport provision, limited employment opportunities and scarce community services and facilities are all factors that erode the 'real' affordability of living in these suburbs

Over-reliance on cars has separated functions and established single interest precincts, changing social patterns and the way neighbourhoods and town centres operate. Active and engaging meeting places are lacking (WSROC, 2005). There is increasing evidence of 'community stress' (transport stress due to commuting times, costs and lack of public transport options coupled with housing stress). The risk of greater socio-economic polarization is increasing¹³ (Randolph and Holloway 2002, 2003 and 2004).

5 Sustainability and liveability

The dynamic balance of human activities on the physical environment underpins life in Western Sydney as in any city in any country. Yet, for some inexplicable reason, the sustainability of the natural environment and the liveability of our cities have come to be considered as two separate issues. As a result personal and public decisions become removed from consideration of their effects on natural support systems.

Our *State of the Environment* (WSROC 2000) report highlighted the fact that the liveability of Western Sydney is already endangered by:

- Air contamination from industrial complexes and lifestyle choices (such as our addiction to the car);
- Water contamination from close-by diverse point source pollutants upstream and weeds blown in on the wind;
- The region's ecosystem failure to continue to absorb its wastes; and

• The fact that development is impacting upon **Sydney's ability to feed itself** (i.e. the reduction in market garden use).

In order to provide for future generations to the best of our current ability we need to seek greater understanding of the inter-relationship between the quality of living in a community, the natural environment and human and natural resources.

Sustainability for Western Sydney means establishing processes and actions that support cultural vitality, environmental responsibility, social equity and economic viability (Brown, 1997). One way of making sure that sustainability is a concept that underlies our actions is to make it a key component of **all** of our planning processes. By attempting to show the interconnectivity between these four principles we can demonstrate that the quality of life in the region is affected by:

- The quality of the natural environment;
- People's expectations which determine the *pressures* placed on the available resources;
- Experience which determines the options people seek in using their environment;
 and
- Equity, security and sustainability which are goals common to any community, its economy and its environment (Brown, 1997).

The quality of life in Western Sydney is therefore the outcome of the management of our community, economic and environmental resources.

5.1 Regional transportation profile

Accessibility across the region is a key social issue, particularly with limited choice for intraregional travel and the lack of key public transport links to facilities and employment. Of all trips made by people living in GWS in 2001, 90% were made to destinations within the region and two-thirds of these were within the same LGA (PMM and CSIRO 2004). Work trips were also primarily to destinations within the region (70%). Regional commuting trips were largely made by private car.

Work trips in Greater Western Sydney varied from 62% of trips being made by car in the older LGAs in the eastern part to over 80% in some of the outlying LGAs at the urban fringe. There was a higher proportion of commuting by train than Sydney's average in some inner LGAs such as Holroyd and Parramatta and high train use in the Blue Mountains and Campbelltown. However, GWS displayed significantly lower levels of commuting by bus (2%) than the average for the rest of the Sydney Statistical Division (SSD) (6%).

Travel times by public transport for non-work purposes varied across GWS, with times of up to 10 and 20 minutes greater than the Sydney average. Average travel times for commuting trips by both car and public transport for the region's residents were generally longer than the average for the rest of Sydney. Car commuting trips in the morning peak hours (7am to 9am) were up to 17 minutes longer in many areas. Travel times by public transport for non-work purposes varied across the region with times of up to 10 and 20 minutes greater than the Sydney average in the outer LGAs.

The high volume of traffic within the region, with a mix of private and public passenger, freight and commercial vehicles, places pressure on a sparse arterial road network. During the morning peak hours, volumes of more than 1,800 vehicles per hour travelled on the arterial system throughout the region. Many other roads also experienced traffic volumes of 800 to

1,800 vehicles, even though they were not originally designed for such levels. The problem of high volumes on infrastructure built for lower capacities is exacerbated by poor connectivity with other local connections and a lack of north-south regional links.

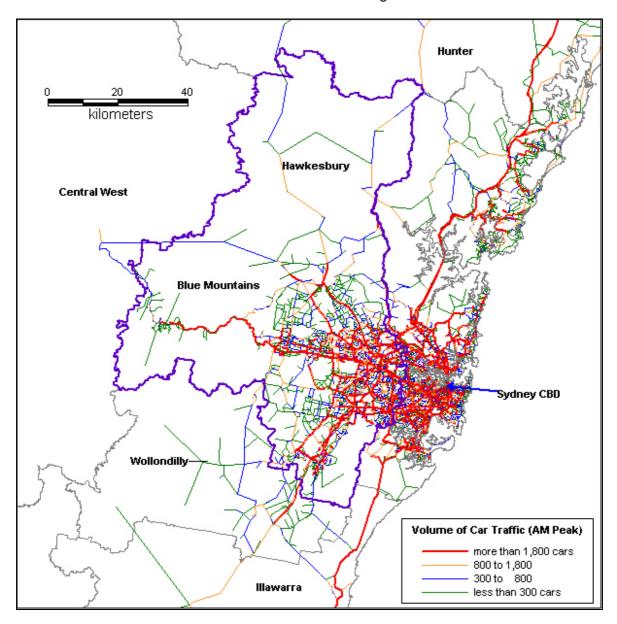


Figure 2 Morning Peak Car Traffic in Sydney SD

Source: Sydney Strategic Travel Model 2001

5.2 Regional infrastructure

Well-maintained and modern infrastructure is critical to the effective functioning of the region. For areas which are experiencing high levels of growth and expansion, the need to invest in maintaining and improving capacity of existing infrastructure should be augmented by major capital expenditure in the expansion of these networks to both new and backlog areas.

Infrastructure is linked with productivity, growth and economic prosperity. In addition to underpinning economic performance, public infrastructure is also important in social and environmental capital, helping to bind our communities and making them liveable (WSROC 2005). Failure to provide sufficient or appropriate infrastructure undermines the

competitiveness of a place. In this context, identifying a sustainable approach to the key issue of financing and funding the provision of urban infrastructure in the region is critical for the future success of Greater Western Sydney.

6 Challenges facing the region

The challenge the region faces is to manage continued high levels of growth and to secure the long term success and opportunity of the region while retaining the lifestyles and environmental qualities which are highly valued by its residents.

The region will need to provide freedom of choice, cater for increasing diversity and provide a high level of environmental, economic and lifestyle opportunities.

As Sydney grows and employment, population and infrastructure expand in Western Sydney, the old radial structure with its links to the Sydney CBD is becoming less important. Key intraregional travel patterns have to be catered for. The region also requires the establishment of a new and more relevant planning model if it is to successfully manage pressures from urban expansion and redevelopment.

While the structure of the region has to be supported by the provision of essential physical infrastructure, it should also be underpinned by social and knowledge infrastructure to support regional growth. Development of the social capital of its residents will be crucial for the region's future success.

7 Fairfield Accessible City Strategy – a case study

In 2001 Fairfield City Council launched an *Accessible City Strategy*. This had been prepared in consultation with interested groups in the community. It was the result of the development of ideas raised in a series of public workshops. The workshops, held in the first part of 2000, were intended to tap into community experience of accessibility in Fairfield. They also built on the store of knowledge about the relationship between transport and land use and the operation of transport and other systems affecting accessibility, in and around the Fairfield area.

Fairfield City Council has an ongoing major goal for the development of Fairfield as "an accessible city, one which connects people, places and activities and has a wide choice of safe, affordable and convenient transport options".

The Council also has environmental goals, which imply aiming to reduce the adverse impacts of greater mobility and equity goals which seek to achieve a more even distribution of the benefits of accessibility amongst different social groups.

The Accessible City Strategy clarified what the Council wanted to achieve in respect of accessibility and managing its effects. It set out the directions in the form of Vision Statements. These included:

- Increased opportunity for people to travel by public transport to major destinations, including employment and education locations and activity centres (at a price that is either consistent with the cost of service provision or within their financial means);
- Improved accessibility for people with special needs;
- Less social isolation;
- Reduced car dependency;

- Reduced car use:
- Reduced need to travel:
- Well managed accessibility resources; and
- A safe and efficient road network.

The Accessible City Strategy was not intended to be a 'land use/transport plan' in the conventional sense of showing what infrastructure improvements and changes to land use would be ideal. It recognised the need for infrastructure improvements and land use change, but addressed a large number of other factors that affected the ease and convenience of access in and around Fairfield. Amongst these were the legal, administrative and funding arrangements that affected the quality of public transport, information requirements, safety issues and the accessibility needs of special groups.

It was also concerned about reducing the need to travel and the adverse impacts of travel. Consideration was also given to the full range of means available to the Council to address access issues. As well as considering the allocation of resources towards infrastructure improvements, it was also concerned about other ways in which the Council itself might improve opportunities for accessibility and the environment for travel.

More than this, it addressed issues that were the responsibility of other levels of government or that were outside government control. The Strategy identified what Fairfield City Council could do in these arenas, regardless of where the primary responsibility lay. As a result, it was as much concerned with strategies of, for example, lobbying and education, as it was with expenditure.

The fundamental purpose was to go back to first principles – to identify what the Council and other stakeholders really wanted to achieve for their constituents and for the environment. The Strategy did not assume that more accessibility is always better, but recognised that there are some deep-seated, long-standing reasons as to why the population of Fairfield finds it difficult to get around. The problems were complex, requiring an interrelated set of solutions.

By developing an *Accessible City Strategy* the Council recognised that it was necessary to reduce the need to travel *and* reverse the trend for growing mobility in order to minimise energy consumption and the negative impacts of motorised travel. This was seen to be as important as reducing the reliance on the car in favour of more environmentally friendly transport modes. Measures to achieve these aims would only be effective if considered within the overall framework of the planning system. To do this it was necessary to:

- Set transport policy targets covering all aspects of the environment (e.g. land take, noise and visual intrusion);
- Develop:
 - equitable targets for evaluating different transport modes, taking into account all the costs and benefits, including environmental impacts;
 - measures to reduce the need to travel rather than continually focussing on minimising travel times;
 - policies and measures to ensure a transfer from private to public transport.
 Investment in public transport will not solve problems unless combined with action to give public transport priority over private cars;
 - an intermodal transport system, with an integrated transport policy that gives
 priority to public transport and cycling, park and ride facilities, parking restrictions
 in city centres and travel tickets that are valid throughout the region on all forms of
 public transport;

 park and ride schemes that are effectively signed, linked to pedestrian routes and cycleways, have a price advantage, are secure and are connected to the public transport network;

Promote:

- user friendly private transport vehicles plus more direct links, shorter train intervals, more stops and ease of a single fare structure;
- promote car sharing, wider use of community buses and taxis, flexible bus routing;
- Ensure that local area traffic management (LATM) schemes are accompanied with measures to ensure access through alternatives to the car or heavy goods vehicles (HGVs);
- Review road pricing measures to ensure that they do not contribute to out of town developments and urban sprawl;
- Undertake:
 - a range of measures to ensure that walking is safe, convenient and pleasant;
 - transport awareness programs to reduce the growth in car traffic; and most important of all
- Plan and design transport systems from the point of view of the user and not simply the provider.

8 Conclusion

As the region becomes more self-sufficient it is essential that accessible links to the social and economic opportunities afforded in the wider metropolitan area are maintained and developed. Recognition of GWS's role as a major region for growth, change and innovation within Sydney will be critical to the sustainability and success of the metropolitan area as a whole.

Our cities have grown rapidly but without the foresight or incentive to consider the long-term impacts on human well-being and health. Urbanisation also reflects the basic human instincts orientated towards social existence and the sharing of experiences. The human habitat has been modified by car dependence and urbanisation, the form and microclimate of our cities has now been altered and communities are now experiencing mass consumerism, the social anomalies of inequalities, changing demographics and environmental degradation.

The over-reliance on the car has heralded the replacement of 'walking cities' in which almost everyone frequently undertook exercise to a moderate degree and created car-dependent city forms. Coupled with this, technological changes such as automation in factories, a large increase in sedentary occupations, development of spectator sports and other forms of passive entertainment and decreased garden size have led to a substantial reduction in physical exercise.

Outward growth is being driven by major decentralising forces with major new employment and service functions escaping location constraints and higher development costs in older areas close to the metropolitan core.

Delivery systems are being privatised and it is now recognised that there is a need to group high density residential and employment areas to support new public transport initiatives.

There is a tension occurring between the forces of 'globalisation and 'localism'. Free market ideas, deregulation of the supply of services in order to improve internal efficiencies need to be balanced with 'localism' that is seeking increased levels of public consultation.

Deregulation has also led to the retreat of governments from a close engagement in planning of the detailed form of urban growth and from the role of co-ordinator of trunk infrastructure provision (e.g. trunk transport). There has been an increasing trend to apply components of urban policy as blanket measures with the adoption of 'place management' responses to mediating the consequences.

It is only when State Governments have a continuing responsibility for infrastructure provision that we see a countervailing and proactive response to the dispersal of urban activities.

Future West argued the case for more effective urban management. It attempted to build sustainable development principles into the Metropolitan Strategy and revive some of the lost arts of physical planning. It recognised that the delivery of quality urban areas cannot be accomplished simply through plan preparation and regulation, but requires skills in urban management.

No one would suggest that the process of metropolitan planning is not extremely complex, given the myriad of agencies and influential players in the urban development process – but that is not an excuse to walk away leaving the process half done, as has happened so often in Sydney's history.

However well intentioned, recent transport initiatives undertaken by the State Government will be viewed as failures by the community if they are not seen as an effective response to transport demand, because either the promises are neither fulfilled or the transport solutions are inappropriate and are simply not used.

What is clear is that all levels of government need to work together more effectively to achieve a better future for our city.

References

Binning, B (2001) Rouse Hill: Suburbia or Edge City RAPI Conference paper

Brown, V.A. (1997) *Managing for Local Sustainability* University of Western Sydney Hawkesbury

Commonwealth of Australia (1991) *Building Better Cities Program,* Department of Transport and Regional Development

Commonwealth of Australia (2002) AusLink: Building Our National Transport Future, Department of Transport and Regional Services

Department of Infrastructure, Planning and Natural Resources, New South Wales (2004) Metropolitan Strategy Discussion Paper: Planning for a Better Future (Sydney, DIPNR)

Fagan, B.(2004) Suburbs in the Global City: Employment Profile of Greater Western Sydney Macquarie University

Fairfield City Council (2001) Fairfield Accessible City Strategy

Fingland, S. (2002) Urban Capability Assessment of Fairfield City, Fairfield City Council

Gleeson, B. and Randolph, B.(2002) *Social Disadvantage and Planning in the Sydney Context*, Urban Policy and Research, 20,1. Melbourne

Moore, P. (2004) A New Deal for Cities: The Role of Public Transport The International Association of Public Transport (UITP)

PPM and CSIRO (2004) *Greater Western Sydney Regional Transportation Profile*, Western Sydney Regional Organisation of Councils (WSROC) Ltd.

Randolph, B. Pang, L. and Hall, J. (2001) *Who Cares About Western Sydney* The Urban Frontiers Program University of Western Sydney and the Planning Research Centre University of Sydney

Randolph, B., Gleeson, B and Holloway, D. (2002) *Western Sydney Social Profile*, Western Sydney Regional Organisation of Councils (WSROC) Ltd.

Randolph, B. and Holloway, D. (2003) *Shifting Suburbs: Population Structure and Change in Greater Western Sydney*, Greater Western Sydney Regional Organisation of Councils (WSROC) Ltd.

Randolph, B (2004), *Renewing the Middle City: Planning for Stressed Suburbs*, Urban Frontiers Program, University of Western Sydney

Randolph, B. and Holloway, D. (2004) *Social Disadvantage, Tenure and Location: Analysis of Sydney and Melbourne*, Research Paper 17, Urban Frontiers Program, University of Western Sydney.

Randolph, B. and Holloway, D. (2004) *The Suburbanisation of Disadvantage in Sydney,* Opolis, 1(1), pp 49-65.

WSROC (2000) Western Sydney Regional State of the Environment Report Western Sydney Regional Organisation of Councils Ltd.

WSROC (2003) Regional Environmental Profile Western Sydney Regional Organisation of Councils Ltd.

WSROC (2005) FutureWest; Greater Western Sydney Regional Planning and Management Framework Western Sydney Regional Organisation of Councils Ltd.

System Manager\E:\WINDOCS\REPORTS\Atrf 2005 Full paper FINAL.doc: 7/09/2005