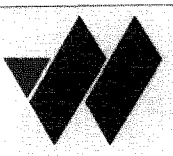
THE **Warren** CENTRE
FOR ADVANCED ENGINEERING



30th October 2003

Environment and Heritage Committee
House of Representatives
Parliament House
Canberra ACT 2600

Dear Members,

The Warren Centre for Advanced Engineering makes this submission to the Standing Committee on Environment and Heritage's Inquiry into Sustainable Cities. It is based on the findings of the *Centre's Sustainable Transport in Sustainable Cities* project, the reports of which are an integral part of the submission.

Credentials for making the Submission

Two hundred of Australia's leading professionals and practitioners invested $3^1/_2$ years and $4 million in the Warren Centre's *Sustainable Transport in Sustainable Cities* project (STSC). The project's leaders and contributors covered a wide range of disciplines including urban planning, transport, economics, law, community behaviour, health and education. They included invited overseas specialists from the UK, Europe and the United States. A comprehensive community values survey involving almost 1500 people underpins the project. Appendix A is a schedule of contributors.

The *Sustainable Transport in Sustainable Cities'* findings have been well received by government; industry and professional associations and the project won the prestigious Bradfield Award for Engineering Excellence in NSW.

Submission

This submission relates the findings of the *Sustainable Transport in Sustainable Cities* project to the terms of reference of the Inquiry into Sustainable Cities. It includes input from key members of that working group plus input from other work of the Warren Centre.

This submission comprises this summary letter and the attached:

- Final/Summary report of the project – *Towards a City of Cities,*
- Executive Summaries of the 12 published reports:
  The State Of Play;
  Community Values Research Report;
  Healthy Transport, Healthy People;
  Changing Travel Behaviour;
  Transport Pricing: more than just a tax;
  A City of Cities;
  Reforming through Informing;
  Why Travel?;
  Moving People;
  Freight: The Forgotten Task;
  Flying: Planes and Trains;
  Removing The Barriers; and
- An Omnibus CD containing all 13 reports comprising over 100 technical papers.

Engineering Building J13 Sydney University NSW 2006
Telephone 02 9351 3752 Facsimile 02 9351 2012
Email warrenc@eng.usyd.edu.au Internet www.warren.usyd.edu.au

The Inquiry's terms of reference encompass the *Sustainable Transport in Sustainable Cities* project's objectives and findings.

The *Sustainable Transport in Sustainable Cities* project had a broad scope embracing social themes (eg health, equity and involvement), environmental themes (eg congestion, emissions and energy) and planning questions (eg urban form, density and multiple centres; community, regional and intercity access; integration).

The project had a primary focus on achieving a sustainable city but the over riding goal was to enhance accessibility in a city by reducing the need to travel and through providing an effective, affordable, equitable transport system that:

- Improved lifestyle for its community:
- Increased access for everyone to everything;
- Increased use of Public Transport;
- Reduced growth of private motor car use;
- Increased walking and biking;
- Improved freight logistics;
- Increased social and financial equity;
- Reduced land-take for transport;
- Preserved bushland and urban green space;
- Reduced energy use;
- Reduced atmospheric, water and noise pollution.

The preferred broad definition of sustainability in the Brundtland Commission's (1987) report adopted for the project and the Vancouver Principles for Sustainable Transport are presented in Appendix C.

The Aim of the Inquiry vis-à-vis those of the Sustainable Transport in Sustainable Cities project

The discussion paper indicates that the Inquiry's purpose is to provide a 'National Map' of issues and approaches rather than set specific actions for particular areas.
The Inquiry lists seven objective areas for study:

1. Preserve bushland, significant heritage and urban green zones;
2. Ensure equitable access to and efficient use of energy, including renewable energy sources;
3. Establish an integrated sustainable water and stormwater management system addressing capture, consumption, treatment and re-use opportunities;
4. Manage and minimise domestic and industrial waste;
5. Develop sustainable transport networks, nodal complementary and logistics;
6. Incorporate eco-efficiency principles into new buildings and housing; and
7. Provide urban plans that accommodate lifestyle and business opportunities.

The Warren Centre concurs with this broad thrust but submits that the Inquiry should recognise that all aspects interrelate and therefore must be considered as an integrated whole, like The Warren Centre *Sustainable Transport in Sustainable Cities* project.

While the Warren Centre's *Sustainable Transport in Sustainable Cities* project took into account all seven areas listed above, it focused primarily on areas 1, 2, 5, and 7. The project identified energy consumption, water use and waste production with considerations for biodiversity, as the key parameters for a sustainable city. However, the key measure for sustainable city

form, and the transport system to serve it, is whole-of-life energy consumption in buildings and transport (both in their construction and operation).

While the *Sustainable Transport in Sustainable Cities* project is primarily focused on Sydney *The State of Play* report indicates that the issues and challenges are common to most cities here and overseas. Also the *Community Values Research Study* report identified many of the issues the community has in living in their city and the values and trade offs they make in doing so. The final report, *Towards a City of Cities*, lists the actions necessary in the city with its structure, transport and pricing to optimise the outcomes for city dwellers.

The Warren Centre has also established an Energy Committee comprising leaders from the energy industry. That group has initiated two projects that are relevant to the inquiry: "energy efficient high rise buildings" and "distributed energy". While it is not expected that these project will be completed for about 18 months, any findings there from would be made available to the Inquiry on request.

A separate Warren Centre Committee is working on water issues. One of the project priorities in its future agenda is the *Disaggregation of Urban Water Supplies*, a proposition that has great significance when looking at energy and total water usage and recycling of water for sub-potable applications.

The Warren Centre recommends that any consideration of sustainable cities include integrated urban planning and transport in order to contain the growth of adverse aspects, as at present, whilst dealing with social issues, equity and environmental outcomes as well as cost and pricing. This broad integrated approach is necessary to ensure a sound and lasting outcome.

Strategies recommended for the Inquiry into Sustainable Cities.

The major recommendations of the *Sustainable Transport in Sustainable Cities* project centred around:

- developing a city structure, in the case of Sydney a City of Cities
- supporting the economic, social and cultural growth of regional centres,
- sending the right pricing signals and broadening the funding base,
- engaging the community in the process,
- and removing the barriers to change, principally institutional.

The key findings from the project are that sustainable cities require a holistic analysis of all relevant issues and that practical solutions will require implementation across a range of disciplines. Focusing only on the easy answers will not work.

Within this framework, key strategies proposed that the Inquiry address are:

- Plan cities as population units with $^1/_2$ to 1 million persons. Cities within this range can be developed as single cultural and social entities providing a full range of services including social, educational, cultural, health etc. Larger metropolitan areas such as Sydney and Melbourne, can be developed as a city of cities (see Appendix B), which allows expansion of the city as separate residential, commercial, cultural and social city units, economically linked with high level transport, with each providing a full range of services. Full details are contained in the *City of Cities* report.
- Encourage the cultural, recreational and economic growth of the new cities within the city, by:
  - Developing integrated solutions - integrated transport, land use and pricing - integrated modes: existing, new and emerging. The benefits to be derived from integrated solutions are much greater than from transport or planning

improvements alone, resulting in reduced cost of transport initiatives and improved sustainability.

- ❖ Servicing the needs of each community, city centre, city region and between cities by a hierarchy of transport. This should include walking, bicycling, car, on call and scheduled community buses, regional buses, networks focussing on regional CBD's and very fast transit such as the very high-speed train (VHST) between the cities within the metro region. The overriding themes being integration and frequency.
- ❖ Building Public Transport patronage – through business solutions related to the needs of existing and potential patrons. Traditional patronage models do not consider the needs of all potential patrons. Public Transport must provide a better service than less sustainable transport modes such as private vehicles or people will not use it.
- ❖ Introducing new technology (such as ultra-light automated transport [Austrans] and the very high speed train [VHST], as well as improvements to the existing systems (signalling, operation, communication), where appropriate and in a timely manner. In many instances, new technological solutions can be achieved at lesser cost than modifications or extension to existing systems (eg Epping to Parramatta transport link in Sydney).

- ♦ Use a range of pricing and hypothecated funding initiatives to encourage the desired development of the city and its transport, for example, the greater use of mass transport as an alternative to private vehicles. The *Sustainable Transport in Sustainable Cities* project concluded that the changed directions are achievable largely within current government funding with some reallocations and some new and expanded hypothecated sources and private investment.
- ♦ Engage the community in the process, so that they support the changes.
- ♦ Ensure that legislation and institutional frameworks support rather than inhibit (as they frequently do today) the positive change required.
- ♦ Within that city framework, define the green zones where no development is to occur, develop water and waste management strategies and policies and establish outcome standards for buildings and housing to incorporate eco-efficiency principles.

Processes Recommended to Implement the Strategies

In pursuit of the above strategies we recommend that the inquiry actions should include:

- ♦ Develop a generic plan for Australian Cities based on minimisation of energy and water use and waste production with consideration of social, environmental and economic objectives. Endorse appropriate structure plans for Australian Cities that meet these criteria. See Warren Centre *A City of Cities* report and final report *Towards a City of Cities*. Specifically:
  - ❖ Identify green zones in and around cities based on biodiversity and other relevant environmental and heritage considerations.
  - ❖ Develop a process for genuinely involving the community in planning the cities rather than current public participation processes for which there is significant community criticism.
  - ❖ Develop a monitoring process with ABS that independently reports progress in achieving sustainable cities through performance measures for social, environmental and economic outcomes. See Warren Centre report Reforming Through Informing.
- ♦ Develop the National Transport Plan as part of the AusLink plan to include transport in cities.

- Establish a generic strategic transport structure plan for cities integrated with land use and pricing and funding strategies with a focus on local, intracity and intercity transport rather than road, rail and buses.
- Assist States and Territories to implement this plan. For example:
- Concentrate initially in making the current public transport infrastructure in cities work better with more customer focus by increasing frequency of services so that timetables become unnecessary.
- Develop a transport-planning model that identifies potential as well as existing patrons and that focuses on what we wish to achieve rather than projections of what we have.
- Identify the needs of specific cities and regions in cities, accepting that one solution does not fit all.
- Investigate new technologies for specific areas, eg ultra-light automated transport for the Warringah area, for Western Sydney and the VHST for a Greater Sydney wide overlay on existing transport networks connecting the regional city centres. See the Warren Centre reports Moving People and Flying: Planes and Trains.

- Appoint a working group comprising representatives of Federal and State Governments and the private sector to review pricing in and funding for cities.
  - Focus on transport, land use and pricing structures with the overall concept of taxing or charging for activities that negatively affect lifestyle, communities, economy and environment, and then offset these increases by reducing or eliminating taxes on activities with positive effect. Pricing offers the greatest means of providing and developing an effective city and funding its transport system. See the Warren Centre report *Transport Pricing: more than just a tax* and *Road Relief: Tax and Pricing Shifts for a Fairer, Cleaner and Less Congested Transportation System in Washington State,* A Report by the Energy Outreach Centre, Olympia WA USA, 1998.

Comments on the Specific Terms of Reference of the Inquiry

1. The environmental and social impacts of sprawling urban development

Australian cities must always comprise a mix of densities from high rise in city centres to medium density in inner suburbs, to single dwelling houses in the outer suburbs and rural residential in outer areas. All are appropriate in a city with the community having freedom of choice for the nature of their lifestyle over their lifetime. 'Sprawl' is an unnecessary and emotional word as for many your families the single dwelling house on the ¼ acre block is their dream and a dream which governments would be well advised to support. But at the same time they seek choice of housing type which choice changes throughout a lifetime.

The important aspect is that the mix of densities is appropriate to the city and its aim to be sustainable. For too long governments have focussed on density per se as a panacea for sustainable cities with narrow policies for higher density everywhere or low density across the city or even concentration at transport nodes, whereas a democratic and sustainable city needs all of these with an appropriate location for each and a balance between all.

Mixed uses at centres is also a key strategy to minimising the environmental and social impacts in cities. This means centres have a mix of retail, commercial and residential within the centre desirably integrated with a transport node and appropriately related pricing measures such as parking restrictions and charges. This can effectively encourage walking as an alternative to car use.

The Warren Centre's *Sustainable Transport in Sustainable Cities* showed how this mix and balance could be achieved in Sydney as an example for Australian cities with the outcome a liveable city with effective transport that is sustainable and financially viable to achieve.

2. The major determinants of urban settlement patterns and desirable patterns of development of growth of Australian cities

The Warren Centre's *Community Values Research Study* identified many of the issues the community has in living in their city and the values and trade offs they make in doing so. These aspects and policy decisions that governments make then determine the settlement pattern of a city. The report, *A City of Cities*, discusses these actions over time and indicates the desirable pattern of development for Sydney as a sustainable city as an example to other cities, while *Towards a City of Cities*, lists the actions necessary in the city with its structure, transport and pricing to achieve the pattern desired in any city.

3. A 'blueprint' for ecologically sustainable patterns of settlement, with particular reference to eco-efficiency and equity in the provision of services and infrastructure

The Warren Centre's *Sustainable Transport in Sustainable Cities* is a 'blueprint' for a sustainable Sydney. It set down the process for establishing similar 'blueprints' for other Australian cities.

Definition of green zones in the city where development is prohibited is the most positive contribution to eco-efficiency.

Pricing offers the best opportunity for achieving efficiency and equity across the city in providing services and infrastructure in the city. See the Warren Centre report *Transport Pricing: more that just a tax*

4. Measures to reduce the environment, social and economic costs of continuing urban expansion.

As indicated above, the Warren Centre's *Sustainable Transport in Sustainable Cities* is exactly the 'blueprint' for achieving this aim, that is a city where social and economic costs and environmental impact are minimised. The process in that report sets down how similar outcomes can be achieved in other Australian cities.

Reforming through Informing sets down the performance measures in the social, environmental and economic areas to attain these aims.

5. Mechanisms for the Commonwealth to bring about urban development reform and promote ecologically sustainable patterns of settlement.

The Warren Centre's *Sustainable Transport in Sustainable Cities* includes in its recommended actions, those where the Commonwealth should be involved in developing sustainable Sydney, which would equally apply across other Australian cities.

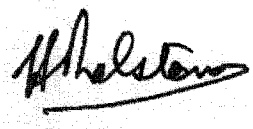
Specifically where the Commonwealth must become involved include:

1. Developing with the States and Territories a generic strategic plan for Australian cities to minimise energy and water consumption and waste production and identify green zones within cities.
2. Developing with the States and Territories a process for genuinely involving the community in the planning process.
3. ABS developing the monitoring process for measuring success in achieving sustainable cities and public dissemination of that information.

4. Add city transport to the AusLink National Plan and establish a generic strategic plan for integrated transport systems in and between cities with than plan integrated with land use and pricing. That plan should focus on getting the best out of current transport systems; developing a model for planning public transport system that achieves what we want not more of what we have; identifying specific transport needs of specific cites; embracing new technology; and developing a long term forward plan for airports and very high speed trains for Australian cities to economically drive development through effective and efficient transport.
5. Review with the States and Territories pricing and funding for cities and their transport systems focussed on providing incentives for what we seek rather than what we seek to avoid, as at present, e.g. taxes on car and public transport use.
6. The Federal Government review its structure focussing on super ministries to achieve specific outcomes, rather that disciplines. These now operate in NSW, Victoria and to a lesser extent in other States.

We commit the above recommendations to you and the study of the findings of the Warren Centre *Sustainable Transport in Sustainable Cities* reports referred to herein. We are prepared to develop any of the aforementioned aspects with you or those that take the recommendation forward.

Yours faithfully



Hugh Ralston

Chair – Sustainable Transport in Sustainable Cities Steering Committee

Director – The Warren Centre for Advanced Engineering

Ken Dobinson

Project Director – Sustainable Transport in Sustainable Cities

Attachments:

- Appendix A - Schedule of contributors
- Appendix B – The City of Cities defined
- Final report of the project - *Towards a City of Cities,*
- Executive summaries of the 12 accompanying reports, *State of Play; Community Values Research Report; Healthy Transport, Healthy People; Changing Travel Behaviour; Transport Pricing: more that just a tax; A City of Cities; Reforming through Informing; Why Travel ?; Moving People; Freight: the Forgotten Task; Flying: Planes and Trains; Removing the Barriers,* and
- The Sustainable Transport in Sustainable Cities Omnibus CD.

ADDITIONAL INFORMATION HELD BY THE COMMITTEE

ATTACHMENTS TO SUBMISSION NO. 73

ATTACHMENTS, APPENDICES AND PHOTOGRAPHS PROVIDED WITH SUBMISSIONS ARE HELD IN THE COMMITTEE OFFICE