

HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE

INQUIRY INTO SUSTAINABLE CITIES 2025

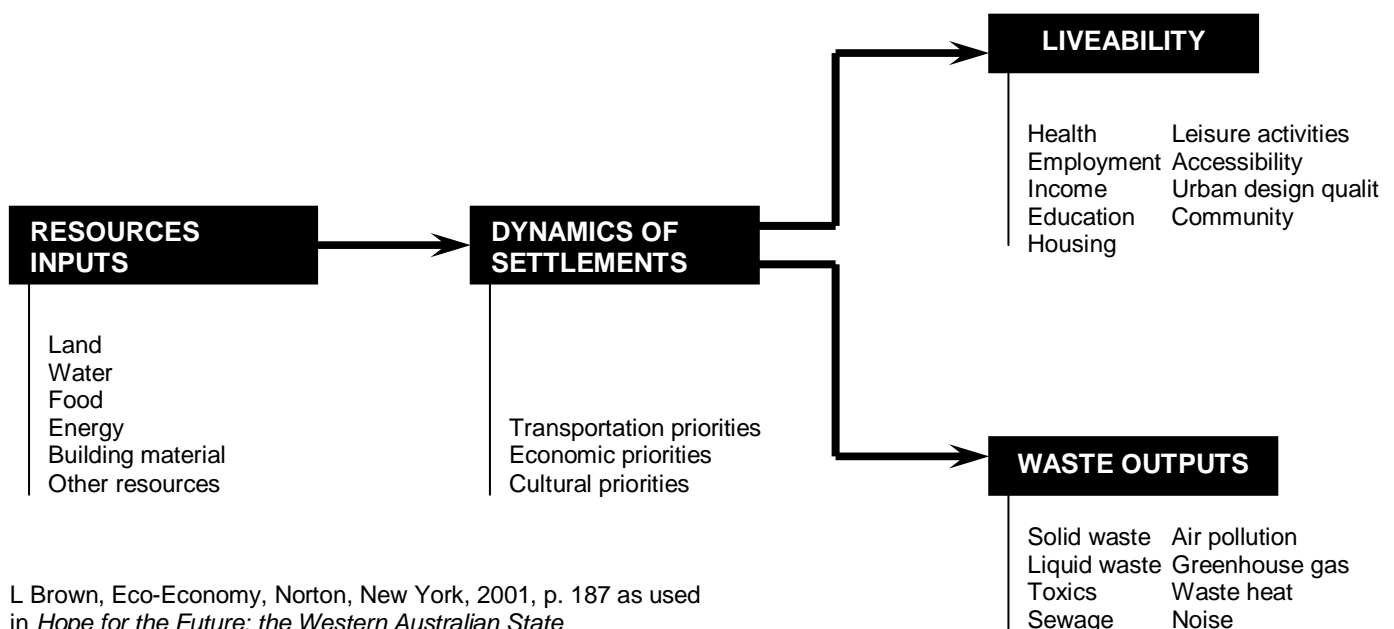
RESPONSE FROM THE GOVERNMENT OF WESTERN AUSTRALIA

WESTERN AUSTRALIAN INITIATIVES FOR ACHIEVING SUSTAINABLE CITIES

To be sustainable, settlements require the integration of environmental, social and economic dimensions.

Western Australia’s settlements are among the most attractive places to live in the world, constantly becoming more innovative and efficient in their management of resources and wastes, while at the same time protecting liveability, cultural heritage and a ‘sense of place’.

This is because Western Australia is very consciously planning and providing settlements that reduce the ecological footprint and enhance quality of life at the same time. Governments, the Private Sector and the community are working through a framework of principles, policies and actions based on the following extended metabolism model:



Some Western Australian initiatives which the Committee may find useful as innovative alternative models for consideration are outlined below.

1. STATE SUSTAINABILITY STRATEGY

The Western Australian Government's *Hope for the Future: the Western Australian State Sustainability Strategy* (SSS) (September 2003), is the first comprehensive sustainability blueprint released by any Australian State or Territory Government.

The SSS was prepared following extensive public consultation and in partnership with academic institutions and key stakeholders representing business, social and environmental interests.

It is designed to make Western Australia a better place to live by setting a new course and will be used by Government as a benchmark for decision-making.

Sustainability is defined as meeting the needs of current and future generations through an integration of environmental protection, social advancement and economic prosperity.

The SSS proposes 11 principles for sustainability, 6 vision statements, 42 areas of action and over 300 actions to be undertaken by Government agencies.

It addresses the way in which the State is governed and the activity of Government agencies; the management and use of natural resources; the planning and building of our settlements; and the important contribution of the community, business and industry; as well as the State's ability to contribute to the overall global effort for sustainability.

The State Government will lead by example by developing a *Sustainability Act* - the first in Australia. The Act will embed sustainability at the very highest level and ensure that it is implemented right across Government.

Government agencies are also required to develop sustainability action plans to ensure the pursuit of sustainability in their day-to-day activities and decision-making.

The Government will also establish a *Sustainability Roundtable* to advise Government and bring together Western Australian leaders in sustainability to oversee the implementation of the SSS.

Of the 6 vision statements, the SSS' *Sustainability and Settlements* has the most direct relevance to this Inquiry with proposals for:

- managing urban and regional growth;
- revitalising declining centres and suburbs;
- sustainable urban design;
- integrating land use and balanced transport;
- managing freight and regional transport;
- preserving air quality;
- reducing waste and managing it as a resource;
- the water future;
- sustainable energy;
- conserving cultural heritage and landscapes and creating a 'sense of place'; and
- building sustainably.

The SSS is available from the website <http://www.sustainability.dpc.wa.gov.au>

2. STATE GREENHOUSE STRATEGY

The Western Australian Government's draft *Western Australian Greenhouse Strategy* (December 2003) has been released for public comment by 15 March 2004.

The Strategy provides a blueprint for Government, industry and community response to the challenges of global climate change resulting from human activities - one of the most serious barriers to sustainability and economic, social and environmental well-being.

Western Australia is a source of many raw materials, including minerals and natural gas, and applies highly developed environmental management requirements to industrial development. However, the economy is energy intensive, and is growing, resulting in increasing levels of Greenhouse gas emissions.

The Strategy is designed to limit or offset this growth in emissions through energy efficiency, the use of renewable energy, carbon sequestration in revegetation and other ways. It specifically addresses the Western Australian Government's core directions of:

- reducing emissions;
- promoting sequestration;
- ensuring effective adaptation to changed climate conditions; and
- pursuing economic opportunities that arise from climate change.

Responses to Greenhouse effects are deliberated and agreed internationally, with the Commonwealth Government representing and deciding Australia's participation. The Government believes that the Commonwealth should consider Western Australia's unique circumstances when it is acting on the nation's behalf in these international agreements.

The Western Australian Government believes Australia should aspire to ratify the Kyoto Protocol and believes there should be a national approach to this issue. However, it expects the Commonwealth to engage the States and Territories before any decision is made on ratification to clarify what the terms and conditions would mean for jurisdictions.

The draft Strategy is available from the website <http://www.greenhouse.wa.gov.au>

3. LAND MANAGEMENT

The Western Australian Government has a number of instruments for the subdivision, development, use and release of land as one of its most effective ways of avoiding unsustainable city growth and development, including the:

Western Australian Planning Commission

The *Western Australian Planning Commission Act 1985* establishes the Western Australian Planning Commission (WAPC), amongst other functions, to:

- advise the Minister on the co-ordination and promotion of urban, rural and regional land use planning and land development in Western Australia;
- prepare a planning strategy for Western Australia as a basis for co-ordinating and promoting regional land use planning and land development and for the guidance of Government departments and instrumentalities and Local Governments; and
- plan for the co-ordinated provision of infrastructure for land development and the planning of transport.

The Act also creates 4 statutory committees, the:

- *Executive, Finance and Property Committee* which performs the administrative, financial and property functions of the WAPC, and particularly the monitoring of development projects and the acquisition and disposal of property and associated capital works;
- *Infrastructure Co-ordinating Committee* which advises the WAPC on planning for the provision of physical and community infrastructure throughout Western Australia, with specific responsibility for co-ordinating the *Metropolitan Development Program*, the *Country Land Development Program* and the provision of infrastructure for land development;
- *Statutory Planning Committee* which is the WAPC's regulatory decision-making body and whose functions include approval of the subdivision of land, approval of leases and licences, advice to the Minister on Local Government town planning schemes and scheme amendments and advice on appeals on these matters; and
- *Transport Committee* which advises the WAPC on transport planning throughout Western Australia, with decision-making powers in relation to transport matters in the Perth Metropolitan Region (PMR) and on strategic issues across Western Australia;

and allows the WAPC to create others with specific tasks or to address one-off situations. The WAPC has established:

- 4 *Regional Committees* to advise it on planning for the Regions, the development of regional planning schemes and other planning functions as delegated to them;
- 5 *District Planning Committees* for the PMR to provide a forum for discussion and recommendation on regional planning issues; and
- 6 *Asset Management and Special Purpose Committees*.

State Planning Strategy

The *State Planning Strategy* (SPS) (December 1997) provides a land use planning vision for development, and the estimated 2.7 million population, by Western Australia's bicentenary in 2029.

The SPS advises Government on land use planning and the co-ordination of services and infrastructure provision throughout the State.

It is designed to manage the growth of the PMR and the development of towns outside that, particularly Regional Centres. It sets out a program to ensure that development does not destroy the environment, recognises that resource management and sustainable development are vital to the State, provides measures to improve air, water and land quality and ensures careful resource management, conservation and social and economic considerations are all taken into account.

It establishes 5 Principles and associated Strategies, namely the:

- *Environmental Principle* to protect and enhance the key natural and cultural assets of the State and deliver a high quality of life based on sound environmentally sustainable principles by:
 - increasingly using energy sources that have minimal impact on the environment;
 - preventing further loss in biodiversity;
 - ensuring that air quality is protected;
 - ensuring that water resources are conserved and their quality protected;

- ensuring that land and soil is safeguarded and that degradation does not occur;
- reducing consumption of materials and promoting recycling;
- promoting planning, management and protection of resources;
- protecting landscape, open space and public access;
- enhancing the quality of life for all Western Australians; and
- protecting the State's cultural heritage;
- *Community Principle* to respond to social changes and facilitate the creation of vibrant, accessible, safe and self-reliant communities by:
 - monitoring the amount and rate of population growth;
 - responding to the changing needs of the population;
 - improving the linkage between land use planning and the provision of human services;
 - providing a range of housing opportunities;
 - building a sense of community through the design of accessible settlements and public facilities; and
 - incorporating opportunities for consultation and including the views and concerns of local communities and groups with specific needs in local and regional plans;
- *Economic Principle* to actively assist in the creation of regional wealth, support the development of new industries and encourage economic activity in accordance with sustainable development principles by:
 - minimising delays in Government approval processes;
 - providing flexibility in the planning system to meet the needs of small business;
 - providing for the likely growth of downstream processing and value-adding industries;
 - facilitating land use planning for the growth of the tourism industry which is sensitive to environmental constraints;
 - making allowance for the needs of new industries and technologies and
 - supporting and further developing the State's main centres of business, culture and administration;
- *Infrastructure Principle* to facilitate strategic development by ensuring land use, transport and public utilities are mutually supportive by:
 - integrating land use and transport planning;
 - providing efficient freight transport routes and hubs;
 - planning for transport facilities;
 - planning for balanced travel;
 - ensuring the efficient, progressive development and servicing of urban land;
 - promoting the development and optimal use of key strategic infrastructure;
 - supporting the development of more nodal urban settlements;
 - ensuring that provision of public utilities to country areas is based on economic and social considerations; and
 - promoting public facilities as a means of assisting the creation of regional wealth and providing cultural benefits; and
- *Regional Principle* to assist the development of Regional Western Australia by taking account of the regions' special assets and accommodating the individual requirements of each region through strategies appropriate to each.

Statement of Planning Policy No. 8 – State Planning Framework Policy

Following the SPS, the *State Planning Framework Policy (Statement of Planning Policy No. 8)* (2000) provides a framework for State and Regional policies and plans

which apply to land and development in Western Australia and guidance on how they are to be used.

The Policy provides the general principle for land use and development which is that the primary aim of planning is to provide for the fair, orderly, economic and sustainable use and development of land.

Metropolitan Development Program

Operating within the framework of the SPS, the *Metropolitan Development Program* (MDP), and particularly its *Urban Land Release Plan*, facilitates orderly and economic development through the timely provision of land, services and infrastructure, consistent with Western Australia's overall budgetary objectives and guidelines.

The Plan covers the next 5 years for the PMR and Peel Sector, ensuring:

- the provision and promotion of planning leadership in the planning, co-ordination and budgeting of Government activity for new land development and redevelopment;
- an adequate supply of dwellings and serviced land for residential-type development to meet anticipated demand in a range of locations and at a reasonable price;
- the availability of associated community services and facilities in accessible locations;
- the availability of associated physical services and infrastructure to service new land development and redevelopment; and
- the containment of Public Sector costs through the planned and co-ordinated provision of infrastructure and services to facilitate the staged release of new land development.

Country Land Development Program

The *Country Land Development Program* (CLDP) ensures an adequate supply of appropriately zoned and serviced land for development by:

- identifying and monitoring past and current land development activity with services and infrastructure provision;
- identifying, addressing and monitoring development constraints and opportunities; and
- projecting the location and extent of future development activity, services and infrastructure requirements.

It is prepared in consultation with the Local and State Governments, service providers and the building and development community, and complements the existing statutory and non-statutory planning instruments that regulate and guide land use within a region.

Metroplan

Metroplan (December 1990) plans for the future growth of the PMR from a population of 1.4 million to an estimated 2 million in 2021, requiring some 400,000 new dwellings, of which it is planned that 20% would be provided in established suburbs.

It indicates where growth should occur, but not the population of those areas. It contains:

- *Key Elements* identifying 'urban' and 'future urban' land;
- *Planning Principles* providing the policy context for formulating plans, including:
 - an emphasis on urban containment and suburban renewal to slow down and contain the outward growth of suburban Perth;
 - a corridor structure for new urban areas, with 'lateral wedges' for environmental purposes and for separating major urban areas; and
 - balanced distribution of employment locations, focussing on areas convenient and accessible to the resident workforce, and encouraging growth where high standards of accessibility can be maintained;
- *Planning Themes*, including:
 - promoting railway station precincts for employment-generating activities;
 - promoting public transport and ensuring a high-level of service to new areas;
 - providing a high-quality road network for the new urban areas; and
 - providing for cycling and walking as alternatives to motorised travel; and
- *Planning Policies* on specific planning topics.

Greater Perth is, in part, a review and replacement for Metroplan.

Metropolitan Region Scheme

The *Metropolitan Region Scheme* (MRS) is the statutory basis for planning in the PMR, designed to regulate and control the use of land for town planning purposes.

It comprises a map and text which identify a number of zones (urban, industrial, rural) and reserves (parks and recreation, important regional roads, public purposes) which together help shape the broad urban form of the city, and what is allowed in each.

These documents are available from the website <http://www.wapc.wa.gov.au/cgi-bin/index.cgi?page=/publications/content.html>

4. BUSH CONSERVATION

Bush Forever (December 2000), is the Western Australian Government's plan for retaining and protecting regionally significant bushland and associated wetlands within the Swan Coastal Plain portion of the PMR, through a variety of mechanisms. It also contributes significantly to achieving the core objectives of the 1996 *National Strategy for the Conservation of Australia's Biological Diversity*.

In 2001, *Bush Forever* received the award for excellence under the environmental planning or conservation category of the Royal Australian Planning Institute national awards, putting Western Australia at the forefront in developing and implementing sustainable solutions for bushland protection.

The PMR (which includes areas of State Forest and National Parks in the hills region of Perth) covers 533,391 hectares (this excludes waterways, which would bring the total area to 740,495 hectares).

The Swan Coastal Plain portion originally comprised some 290,261 hectares (pre-European settlement), of which around 28% (some 81,000 hectares) remains. *Bush Forever* includes a 10-year implementation strategy for the conservation and management of a total of 18% (some 51,200 hectares) of this in 287 sites which affects around 700 landowners and 35 agencies.

The plan provides a decision-making framework for a consistent, co-ordinated, whole-of-Government approach to assist stakeholders and Government. It recognises the balance required between the Public and Private Sector needs for conservation and development in an expanding, vibrant city.

As the Government can only commit to reserving and acquiring areas of highest conservation value and lands which present the community with the 'best value for the conservation dollar' (the cost of acquiring all lands in *Bush Forever* is around \$485 million), *Bush Forever* sites will be protected through a range of mechanisms, including:

- reservation and acquisition for sites of the highest conservation value. To achieve this, the Government has agreed to set aside up to \$100 million over the next 10 years;
- a range of 'off-reserve' complementary mechanisms for private rural landowners to encourage private land management for conservation, including:
 - land covenants;
 - voluntary management agreements;
 - advice and financial incentives (including potential rate and tax incentives) from Public and Private Sector agencies; and
 - rural negotiated outcomes such as subdivision for conservation; and
- negotiated planning solutions for 'up-zoned' lands (land zoned Urban, Urban Deferred and Industrial in the MRS).

Bush Forever is available from the website <http://www.wapc.wa.gov.au/cgi-bin/index.cgi?page=/publications/content.html>

5. HERITAGE CONSERVATION

The *Heritage of Western Australia Act 1990* establishes the Heritage Council of Western Australia which is the State's advisory body on heritage matters to provide for and encourage the conservation of places, buildings and sites which have significance to the cultural heritage of Western Australia.

To do this the Council:

- identifies and protects heritage places, and through guidance of Local Government town planning;

- established and maintains the *State Register of Heritage Places*, an extensive list of places which should be conserved for future generations;
- ensures that any development of heritage places is in harmony with cultural values;
- ensures that 'sustainable building' policies and programs recognise the important role of heritage conservation to savings in energy consumption and demolition waste (recognising that refurbishment is more efficient than demolition-and-rebuild);
- promotes awareness and knowledge of the State's cultural heritage and awareness of the condition and value of the built heritage;
- encourages best practice in infill development within heritage areas;
- developed a series of case studies depicting the value and importance of heritage conservation and providing good examples of successful adaptive re-use of buildings;
- provides financial assistance through:
 - the *Heritage Loan Scheme*, which provides owners of heritage property with access to discounted loans for heritage conservation works;
 - the *Heritage Grants Program* which makes available \$1 million for conservation works to privately owned places entered in the Register. Cultural heritage conservation and interpretation grants are also available from Lotterywest; and
 - waivers for rates and taxes under certain circumstances; and
- offers a *Regional Heritage Advisory Service* and plans to develop a *Heritage Tourism Strategy* to assist communities in building on heritage tourism opportunities.

More information is available from the website <http://www.heritage.wa.gov.au>

6. WATER MANAGEMENT

The Western Australian Government's *Securing Our Water Future: a State Water Strategy for Western Australia* (February 2003), is its comprehensive multi-faceted approach to Western Australia's water shortage.

The Strategy contains a range of measures to secure Western Australia's water future, through strong community, Government and industry partnerships, aimed at:

- improving water use efficiency in all sectors;
- achieving significant advances in water re-use;
- fostering innovation and research;
- planning and developing new sources of water in a timely manner; and
- protecting the value of our water resources.

Financial incentives to promote water efficiency and penalties for water wastage are two of the key initiatives:

- a \$7 million *Waterwise* program will encourage the up-take of products such as rainwater tanks, water-efficient washing machines, low-flow shower heads and garden bores through rebates of up to \$300;
- charges for water wasters will be increased under the strategy, while charges for other consumers will be limited to increases in the Consumer Price Index.

The Government is also providing \$3 million to set-up the *Premier's Water Foundation* to fund water-related R&D activities in Western Australia aimed at investigating innovative ways of utilising and protecting its water resource. The Government will be seeking supplementary funding from the Commonwealth Government and encouraging financial assistance from the Private Sector through tax-deductible incentives.

Groundwater abstraction and recharge, salinity, desalination technology, recycling and water efficiency technology will be priority issues for the Foundation.

Other key initiatives of the strategy include:

- a target of 20% *re-use* of treated wastewater by 2012;
- development of two new dams in the South West providing up to 23 gigalitres a year;
- a target consumption level of 155kl/person/year for consumers served by the Integrated Supply Scheme by 2012;
- continuation of the daytime sprinkler restrictions that apply from 9am to 6pm to all garden bores and extend the restrictions to Local Government; and
- a \$6 million investigation to enable a decision to be made on water allocations from the Yarragadee project in the South-West, which could supply up to 45 gigalitres a year.

As part of the Strategy, the Government has also committed to a campaign to be implemented by the International Council for Local Environmental Initiatives in partnership with the Western Australian Local Government Association, involving a sustainable water management program for Western Australian Local Government Councils.

The Strategy is available from the website <http://www.ourwaterfuture.com.au>

7. WASTE MANAGEMENT

The Western Australian Government's *Strategic Direction for Waste Management in Western Australia* (August 2003), is its blueprint for achieving zero waste by 2020.

Landfill space is being consumed at a rate of about 7,000 tonnes per day, which is not sustainable, and, if nothing is done now, Western Australia could be faced with a waste crisis within 10 to 15 years.

The Directions is a new approach to prioritising spending from Western Australia's landfill levy which is to be targeted toward supporting industry in its efforts to promote resource-recovery and resolving waste issues, improving cleaner production processes and developing new markets for recycled goods and services.

It also sets out the ground rules for a fully-integrated and co-operative society applying the principles of industrial ecology, eco-efficiency and reducing consumption to avoid waste. Programs will exist across all sectors to minimise the production of waste, with most waste:

- directly *re-used* or recycled;
- treated then directed for re-use or recycling; or
- energy is recovered from the residual wastes.

The zero waste model described will be used to assist decision-making and application of strategies and policies to support continued learning in reducing resource consumption and generation of waste.

The Directions are available from the website <http://www.wastewa.com/whatsnewindex.asp>

8. ENERGY MANAGEMENT

Sustainable Energy Policy

The Sustainable Energy Development Office (SEDO) was established in November 2001 to help deliver the Western Australian Government's *Sustainable Energy Policy* which is an integrated approach involving Government, industry and the community.

The policy:

- promotes a whole-of-Government response to renewable energy and energy efficiency;
- ensures Western Australia is consistent with national and international commitments to renewable energy development and the up-take of energy-efficient technologies;
- expands markets for renewable energy and energy efficiency products and services both domestically and internationally;
- strengthens the ties with Commonwealth and other State authorities responsible for energy policy responses to Greenhouse Gas and climate change issues;
- boosts R&D and innovation efforts in renewable energy and energy efficiency;
- supports consumers in renewable energy purchases and energy-efficient products;
- promotes fuel switching, energy efficiency and green power purchases among domestic and commercial users; and
- promotes improved efficiency in the generation of electricity from fossil fuels.

SEDO's role is to increase the use of renewable energy and energy efficiency, and to further develop a sustainable energy industry, which contributes to the State's economy. The Government's achievements through SEDO to date include:

- a comprehensive on-line guide, the *Energy Smart Directory*, to bring suppliers together with potential customers of sustainable energy products and services, including:
 - lighting and renewable energy specialists;
 - insulation and glazing suppliers;
 - engineering consultants;

- energy auditors; and
- architects;
- its *Reach for the Stars* program promoting energy-efficient star-rated electrical and gas appliances, including training and promotional materials provided through stores and a consumer awareness campaign;
- a *Western Australian Solar Water Heating Subsidy* giving rebates to householders;
- the *Renewable Energy Water Pumping Program* (funded under the Commonwealth Government's *Renewable Remote Power Generation Program*) providing rebates for renewable energy-based pumps (such as solar pumps and windmills) used instead of diesel pumps in off-grid areas of Western Australia;
- the *Energy Smart Line* and brochures providing information on energy efficiency and renewable energy for homes;
- assisting businesses on energy management through the delivery of a range of seminars on sustainable energy practices;
- funding community and Local Government projects which reduce Greenhouse gas emissions from stationary energy sources;
- implementation of the Australian Building Greenhouse Rating program aimed at reducing Greenhouse gas emissions from commercial buildings;
- promotion of the *House Energy Rating* schemes, particularly the *FirstRate* software tool;
- the *Energy Smart Government* policy requiring participating State Government agencies to reduce their non-transport energy consumption by 12% by 2006/07;
- the *Photovoltaic Rebate Program*, a Commonwealth Government initiative providing funding to assist in the purchase of photovoltaic (PV or solar) power systems serving households and community buildings; and
- the *Renewable Remote Power Generation Program* providing rebates for renewable energy systems replacing diesel generation in off-grid areas. Funding is provided by the Commonwealth Government, based on the diesel fuel excise paid for off-grid public generation in each State over four years from 2000/01 to 2003/04.

More information is available from the website <http://www.sedo.energy.wa.gov.au>

Sustainable Transport Energy Program

The *Sustainable Transport Energy Program* (STEP) is the Western Australian Government's comprehensive approach for developing environmentally, economically and socially sustainable transport systems for Western Australia.

Western Australia has a high dependency on road transport and its economy is sensitive to relatively small fluctuations in oil prices through its impact on transport costs. This combined with diminishing supplies of oil in the coming 10 to 20 years, necessitates its need to diversify its sources of transport energy and move towards newer, sustainable energy sources, such as bio-fuels or hydrogen.

Current STEP initiatives include:

- the development of a *Sustainable Transport Energy Strategy* for Western Australia. A high-level Government, science, industry and stakeholder committee will deliver a draft strategy in February 2004 which will include recommendations on:
 - alternative energy sources;

- demand reduction proposals;
 - restructuring for reduced transport intensity;
 - priorities for R&D;
 - education and information strategies;
 - financial regimes that might be used; and
 - the role Government can play;
- a trial of bio-fuel (a fuel extracted entirely from plant material) using Transperth buses. Arrangements are currently being negotiated with the supplier for about a dozen Transperth buses to participate. During this period there will be on-going monitoring including emission testing, fuel consumption and maintenance trends;
 - increased use of 4-cylinder vehicles within the Planning and Infrastructure (P&I) Portfolio of Government agencies. This could prevent some 100 tonnes of Greenhouse gases from being released into the atmosphere while operating for the State Government, and save about \$150,000 in fuel and running costs yearly;
 - the inclusion of 20 Toyota Prius hybrid electric cars in the Department for Planning and Infrastructure (DPI) fleet to gather data and evaluate the environmental impacts and cost-effectiveness of using hybrid electric vehicles;
 - a hydrogen fuel cell bus trial where 3 hydrogen fuel cell buses will be added to the Transperth fleet in July 2004 for a 2-year trial which is being conducted with a contribution of \$2 million from the Commonwealth Government. Perth is one of the 11 cities involved in the trial, and the only one outside Europe;
 - hosting the *Hydrogen and Fuel Cell Futures Conference: the Transition to Sustainable Transport Energy* in partnership with the United Nations Environment Programme in Perth in September 2004 – the first such comprehensive event for the Southern Hemisphere (www.congresswest.com.au/hydrogen).

More information is available from the website www.dpi.wa.gov.au/sustain/step.html

9. AIR QUALITY MANAGEMENT

The *Perth Air Quality Management Plan* (AQMP) (December 2000) is the Western Australian Government's blueprint for industry, Government and individuals to work together to ensure a better environment, a healthier lifestyle and a cleaner, clearer skyline for Perth's present and future generations.

The AQMP contains 126 actions at three levels:

- local - the immediate neighbourhood;
- regional - the suburban or Local Government area; and
- the entire PMR,

to be carried out over 30 years using a combination of State and Local Government regulatory and planning measures, education (including monitoring and research) and voluntary actions.

The areas identified as having the greatest impact on Perth's air quality are commuter behaviour, vehicle emissions and industrial emissions which are tackled in 8 key areas:

- health effects research, by:
 - assessing the relationship between Perth's air quality and human health effects;
 - identifying other research priorities;
 - identifying future research priorities and funding; and

- investigating the community health impacts of smoke from prescribed burning and bushfire;
- monitoring, modelling and research, by:
 - maintaining an up-to-date, comprehensive, effective and publicly accessible air emissions inventory;
 - maintaining and improving the existing monitoring network in the PMR;
 - reviewing and enhancing air quality models, and communicating results; and
 - encouraging research into the nature and sources of emissions contributing to the Perth airshed;
- land use and transport planning, by:
 - developing a more sustainable mix of transport modes and planning in the PMR;
 - reviewing and improving land use planning;
 - integrating land use and transport planning; and
 - encouraging the use of energy efficiency principles in design and construction;
- vehicle emissions management, by:
 - implementing on-road enforcement of vehicle emissions standards;
 - encouraging the removal of older vehicles from the Perth fleet;
 - reducing vehicle emissions through appropriate in-service emissions testing;
 - promoting the use and management of clean fuels in Perth; and
 - improving vehicle technology to produce cleaner new vehicles;
- domestic emissions management, by:
 - reducing emissions from solid fuel heaters through improved design, installation and use;
 - phasing-out backyard burning in the PMR;
 - increasing energy efficiency of domestic dwellings through better insulation and home design; and
 - encouraging the community to consider air quality issues when purchasing domestic products;
- burning emissions management, by:
 - improving community awareness about air quality considerations and prescribed burning activities;
 - enhancing smoke management expertise among burn managers and fire control officers;
 - reviewing and amending statutory requirements to take account of air quality management in the PMR;
 - evaluating the effectiveness of smoke management programs for prescribed burning activities; and
 - promoting consistency in approving, managing and undertaking burning activities;
- industrial emissions management, by:
 - reducing atmospheric emissions from industrial processes by advocating the concept of 'best practice';

- establishing the impact of major nitrogen oxides emitters of point-source combustion products and considering options for their cost-effective control;
- ensuring appropriate airshed planning for future industrial development and power generation in the PMR;
- identifying and assisting the major emitters of reactive organic compounds to reduce industrial contributions; and
- promoting and providing incentives for the broader adoption of cleaner technologies in all industrial activities; and
- community information and education, by:
 - improving the co-ordination and integration of air quality community education programs and awareness campaigns;
 - improving community understanding of the benefits of alternative transport modes and correct vehicle maintenance;
 - improving community understanding of the sources and impacts of emissions related to domestic activities;
 - improving community understanding of indoor air quality issues; and
 - ascertaining target audiences within the community, industry, and Government.

An implementation strategy, audited on an annual basis by a multi-stakeholder (industry, community and Government) Air Quality Co-ordinating Committee, rolls the AQMP's actions into 12 initiatives (and 43 programs), namely:

- community education;
- vehicle emissions reduction;
- reduction of industrial emissions of nitrogen oxides and reactive organic compounds;
- health research;
- modelling improvements;
- air quality monitoring;
- indoor air;
- land use and transport planning;
- haze reduction;
- energy-efficient buildings;
- cleaner production; and
- smoke management.

Recognising that clean air is essential to a healthy population and a healthy environment, the SSS indicates that the programs within the Perth AQMP need to be continued and accelerated where feasible, and that similar strategies need to be considered and developed for growing Regional Centres.

The AQMP is available from the website http://aqmpweb.environ.wa.gov.au/air_quality/Publications/AQMP_Report

10. NOISE MANAGEMENT

With the trend towards more populated areas and use of technology, neighbourhood noise levels tend to be rising. Entertainment, sport, traffic, commercial and domestic activities have the potential to disrupt an otherwise quiet environment, disrupting peoples' lives and causing loss of sleep, interference to activities and emotional stress.

Noise impacts from stationary sources are controlled through the *Environmental Protection (Noise) Regulations 1997* which have been tailored to Western Australia's *Environmental Protection Act 1986*. They prescribe standards and make it an offence to cause or allow noise emissions which exceed the prescribed standards.

The Regulations:

- set limits for noise:
 - from public places as it affects adjacent premises; and
 - passing from one premise to others, including from one unit to another in a block of units,which ensure that it is kept to acceptable levels, while at the same time allowing for reasonable economic, cultural and social activity to occur;
- provide:
 - the basis for determining acceptable noise levels in relation to surrounding land uses, recognising and protecting the quiet surroundings of residential areas, and the influence of industry, commerce and transport on the noise environment; and
 - clear methods for noise assessment and control, providing certainty to industry as to what standard is expected;
- set assigned noise levels (the highest levels acceptable) on the basis of combinations of:
 - the type of premise;
 - the duration of the noise;
 - the time of day;
 - the type of noise (such as impulsive (banging or thumping), tonal (whining or droning) or modulated (like a siren));
- make provision for community activities and special cases, within prescribed conditions, to allow reasonable amounts of activities which benefit the community, such as:
 - agriculture;
 - approval where assigned levels can't be met, such as large industrial premises;
 - bellringing and calls to worship;
 - blasting;
 - construction sites;
 - equipment used on residential premises;
 - musical instruments; and
 - outdoor concerts; and
- for the most part will be administered by Local Governments.

Noise impacts from mobile sources are managed through formal environmental conditions established following environmental assessment and/or statutory conditions of approval imposed on proposals at the time of subdivision or development.

In addition, non-statutory policy measures are applied in land use and transport planning decision-making, and infrastructure providers apply standards and practices to ameliorate noise impacts.

A summary of the Regulations is available from the website http://www.environ.wa.gov.au/downloads/1408_Noise_Regs_Summary.pdf

11. INFRASTRUCTURE CO-ORDINATION

The Western Australian Government is responsible for facilitating the delivery of infrastructure to meet community needs. Currently infrastructure development is decentralised across several Government strategies and policies resulting in plans and actions with a specific focus rather than on a strategic 'total infrastructure' basis.

With responsibility for providing infrastructure lying with both the Public and Private Sectors, planning and co-ordination becomes very important, but also more complex.

In order to ensure the efficiency, equity, accessibility and timeliness of the provision of place-based physical structures, services and facilities across all Government agencies and the Private Sector, the WAPC's Infrastructure Co-ordinating Committee has introduced a program to monitor on-going infrastructure needs and implementation.

The key element is a *State Infrastructure Study* which will provide a basis for improved infrastructure monitoring, planning and co-ordination through a series of maps showing existing infrastructure and 5-year programmed and budgeted expenditure. It will:

- assess infrastructure demand by:
 - monitoring planning for committed, programmed and potential projects; and
 - assessing key economic and demographic indicators and projections to assess future demand on a spatial basis;
- assess land and infrastructure supply by:
 - conducting a State-wide land developer's intentions survey for major residential, commercial and industrial landholdings;
 - developing a State register of the major public and private infrastructure that currently exists or is under construction or committed; and
 - co-ordinating project planning with the State budget cycle to provide a spatial representation of programmed State Government investment; and
- identify demand-supply gaps in infrastructure priorities and co-ordination across Government agencies, including:
 - identifying priority areas for further investigation/co-ordination through the MDP, CLDP and industrial land development program;
 - establishing staging priorities and triggers for key infrastructure projects; and
 - providing feedback on priority actions to existing key co-ordination systems and organisations such as the SPS, State Government agencies, Infrastructure Co-ordinating Committee and the Regional Development Council/Commissions.

More information is available from the website <http://www.wapc.wa.gov.au/cgi-bin/index.cgi?page=/contacts/content.html>

12. SUSTAINABLE URBAN DESIGN

The Western Australian Government has a number of instruments for ensuring sustainable city growth and development, including:

Greater Perth

Greater Perth is the Western Australian Government's new 30-year strategic plan for the sustainable development of 'Greater Perth' which consists of the PMR, the Peel Region Scheme area, the Greater Bunbury Region Scheme area and the Avon Arc.

A review of *Metroplan* (1990) and the *Corridor Plan* (1973) commenced in June 1999 as the *Future Perth Project*. This was renamed *Greater Perth* in December 2002.

As part of the development of this plan, a comprehensive consultation process was undertaken to involve the community in identifying a shared direction for making Perth the world's most liveable city by 2030.

The *Dialogue with the City* process included:

- a random survey of 8,000 households;
- competitions for primary and high schools;
- an on-line discussion group and 'listening sessions' with youth, Indigenous Australians and people from non-English speaking backgrounds; and
- the largest community consultation forum in the Southern Hemisphere allowing 1,100 people to work interactively to plan Perth as they would like to see it in 2030.

The challenges and choices for developing a new strategic plan for Greater Perth - one of Australia's fastest-growing cities - are presented in 9 discussion papers on:

- *Planning Context* which provides the history and context by reviewing the key strategic plans and policies which have guided the development of Perth to date;
- *Population and Housing* which covers issues that Western Australia will face as its current population of just under 2 million reaches nearly 3 million by 2031;
- *Economy and Employment* which argues that the major economic base of the modern city is the services its citizens and visitors buy and sell to one another;
- *Sustainable Environment* which states that priority must be given to protecting and enhancing Perth's natural environment, one of its primary attributes;
- *Integrating Land Use and Transport* which considers how to provide sustainable access between areas where people live and earn, learn, play and shop in Perth;
- *Residential Land Balance* which provides the current density profile and scenarios for 2.4 million people and an additional 405,300 dwellings in 2031;
- *Costs of Urban Form* which shows that increasing average net residential densities in fringe developments and managing the release of new urban land to optimise capacity can mean infrastructure cost-savings, and that public transport-friendly layouts for new suburban development can mean higher initial costs but reduced car dependency in the long run;
- *Infrastructure Co-ordination* which explores current and future means for the Government to ensure that physical and community infrastructure, both public and private, is co-ordinated, efficient, equitable, accessible and timely; and
- *Can Perth Be More Creative* which recognises that art and culture also play a vital role in defining and enhancing the identity of a place.

Statement of Planning Policy No. 9 - Metropolitan Centres Policy

The *Metropolitan Centres Policy (Statement of Planning Policy No. 9)* (2000) provides a hierarchy of centres:

- with the Perth Central Area as the dominant centre and primary focus for retail, commercial, cultural, housing, entertainment and tourist activities;
- 8 strategic Regional Centres as major multi-purpose and employment centres containing a full range of regional shopping, office, administrative, social, entertainment, recreation and community services;
- 14 Regional Centres as multi-purpose centres providing a predominantly retail function, a mix of offices, community and entertainment facilities;
- district centres;
- neighbourhood centres; and
- local centres.

The Policy provides a broad regional planning framework for co-ordinating the location and development of retail and commercial activities and achieving a balanced distribution of employment throughout the PMR to facilitate:

- a reduction in travel times;
- the application of best urban design practice to centres; and
- the need for centre sizes to reflect available infrastructure and locational requirements.

It contains a number of detailed policy descriptions and will be reviewed when the *Greater Perth Plan* is completed.

Liveable Neighbourhoods

Liveable Neighbourhoods: a Western Australian Government Sustainable Cities Initiative (Edition 2, June 2000) is a sustainable planning model which aims to meet the different lifestyle needs and preferences of Australians in cities through 6 key elements, namely:

- community design;
- movement network;
- lot layout;
- public parkland;
- urban water management; and
- utilities.

Through the objectives and requirements of each element, it caters for a sustainable development pattern and a diversity of lifestyle choices, recognising that the design and layout of a subdivision is a fundamental determinant of the urban form where it can:

- set the urban character and design of an area;
- allow or inhibit social interaction and thereby influence the likelihood of community formation;
- force car dependence or reduce it by encouraging the non-car modes of walking, cycling and public transport;
- give or deny access to facilities for all users of the urban environment; and
- provide or prevent opportunities for locally-based business and employment.

The *Liveable Neighbourhoods* model focuses on the idea of an urban structure based on walkable mixed-use neighbourhoods with interconnected street patterns to facilitate movement and to disperse traffic. Daily needs may be within walking distance of most residents. With good design, more people will actively use local streets and thereby enhance safety. Local employment opportunities are facilitated within the town structure, providing the community with a firmer economic base and enhancing self-containment of neighbourhoods and towns. Safe, sustainable and attractive neighbourhoods are sought with a strong site-responsive identity supportive of local community. This model promotes better community, employment, and environmental sustainability than conventional planning practice.

Statement of Planning Policy No. 1 - Residential Planning Codes

The *Residential Planning Codes (Statement of Planning Policy No. 1)* (1991) are applied through town planning schemes and zones and allow residential development.

The objective of the Codes is urban containment by encouraging a wider range of lot sizes and an increased variety of housing types throughout residential areas. They are designed to deal with fundamental aspects of the design of residential development such as density and setback controls, and are structured around general provisions, such as setbacks, car parking, amenity, etc.

These documents are available from the website <http://www.wapc.wa.gov.au/cgi-bin/index.cgi?page=/publications/content.html>

13. SUSTAINABLE TRANSPORT

Western Australia has practiced sustainable transport for well over a decade through a wide variety of State Government policies and strategies, and through its active involvement in transport reform and planning at the national level, including through:

Integrated Land Use and Transport Planning

Cities around the world are attempting to better integrate land use and transport planning. Western Australia has been and is continuing to do so through:

The National Charter of Integrated Land Use and Transport Planning

The *National Charter of Integrated Land Use and Transport Planning* (2003) is a high-level agreement between Commonwealth, State and Territory land use and transport planning Ministers which provides the principles, aims and outcomes to facilitate effective and sustainable urban and regional development across Australia through better transport and land use integration.

It recognises the need for better co-ordination amongst all three levels of Government in achieving, amongst other aims:

- increased accessibility by widening choices in transport modes and reducing vehicle travel demand and impacts;
- places and living areas where transport and land use management support the achievement of quality of life outcomes;
- increased opportunities for access in both the present and longer term; and
- a safer and healthier community.

The Charter can provide the context for the development of State- and local-level policies, plans and strategies aimed at improving the sustainability of urban and regional areas through better land use and transport integration.

The Charter is available from the website <http://www.atcouncil.gov.au>

State-Based Integration of Land Use and Transport Planning

A number of State-based initiatives exist or are planned to foster greater integration between land use and transport planning, including:

- even prior to the Western Australian Government's involvement in the development of the National Charter, amalgamating and restructuring agencies to integrate planning and transport functions in the form of the P&I Portfolio generally, and DPI specifically;
- preparing sub-regional integrated transport plans prioritising improvements for public transport, cycling and walking facilities over 5-, 10- and 20-year timeframes;
- achieving a better balance of transport modes and integration of these with land use planning through the funding of infrastructure and services. Within the P&I Portfolio, priorities for the assessment of capital funding proposals are developed incorporating sustainability considerations. The *Portfolio Directions* statement sets out how the P&I Portfolio agencies will create better places for all West Australians to live by progressively aligning their plans and resource requirements to meet sustainability objectives;
- developing a *Statement of Planning Policy* on the sustainable planning, provision and maintenance of transport and infrastructure and the integration of land use and transport; and
- recommending expanding research and training on the integration of transport and land use for more balanced transport outcomes in the proposed Masters in Transport Studies established among the four Western Australian universities.

More information is available from the SSS website <http://www.sustainability.dpc.wa.gov.au>

State Transport Strategy

The Western Australian Government is developing a *State Transport Strategy* which will include a *State Transport Infrastructure Plan* (STIP), a Practical Metropolitan Strategy for personal mobility in Perth, an investment plan for ports and policy measures to deal with systems management of the freight transport system.

Work is just commencing on the STIP which will provide a focus on transport infrastructure priorities in Western Australia for the next 10 to 15 years and identify opportunities to apply the Government's intermodal/freight policy to infrastructure investment. It will cover:

- Western Australia's National Highways, State roads, public port and maritime facilities and the Government-leased railway network;
- infrastructure that has strong linkage to economic activity; and
- opportunities for investment partnerships between Governments (State or Commonwealth) and the Private Sector.

Perth Metropolitan Transport Strategy

The *Perth Metropolitan Transport Strategy* (MTS) 1995-2029 (1995) concluded that, to take it into the 21st Century, Perth needed a balanced transport system which placed equal weight on all facets of the transport system: roads, public transport, taxis, bicycle and pedestrian facilities, road and rail freight facilities and access to the Port of Fremantle and Perth International Airport.

The MTS focuses on providing access and transport for people, goods, services and experiences rather than providing for vehicle movement in its own right. It does not seek to change the anticipated level of transport activity, but aims to alter the share of that transport activity between the transport options.

Through a set of principles, targets, strategies and actions, the MTS seeks to ensure Perth's transport system provides acceptable levels of accessibility on an affordable and sustainable basis for all of its residents and businesses such that:

- pedestrians would be provided with better facilities in established and newly developing residential and commercial areas;
- cyclists would enjoy good routes to local urban centres and destinations such as schools, as well as a regional network of facilities, better local facilities and improved information;
- public transport passengers would benefit from efficient and effective bus, train and ferry services and improved access to Regional Centres as well as the Perth Central Area. Passengers travelling to or from the Central Area during peak travel periods would continue to enjoy a very high standard of service at reasonable cost, and concession users would benefit from low fares. Passengers using public transport during the day, evening or weekend would have rapid, frequent and reliable services;
- car drivers would continue to enjoy good roads and would benefit from measures taken to promote higher vehicle occupancy and greater use of alternative transport options;
- people with mobility limitations would have a wider range of transport options;
- businesses would continue to have access to a good road transport system, enhanced by the development of a road hierarchy including measures to limit the impact of traffic congestion and delays;
- manufacturing and bulk export transport would be promoted on identified and protected routes;
- transport users and beneficiaries would contribute more fully to the costs of providing the infrastructure and services from which they benefit; and
- air pollution, noise and other adverse effects of traffic would be limited, especially in residential and recreational areas.

The MTS is available from the website <http://www.dpi.wa.gov.au/publications/#metro>

Reviving the Use of Rail Travel in Perth

Perth is a very liveable city and always does well on international rankings of the world's cities. It is a very low-density city, having the second lowest density after Canberra. However, its level of car dependency, on all major indicators, is very high.

While this level of car dependency is manageable now, as Perth grows the pressure to manage such high levels will increase. The challenge is how to ensure that as it

grows, from 1.5 million people to 2.25 million over the next 25 years, its liveability is at least maintained, but better still, improved.

The Western Australian Government is committed to getting people out of their cars and onto public transport. Buses are critical to the success of public transport in Western Australia but experience shows it is rail that is clearly able to turn those with a choice into public transport users.

The revival of the rail system has been driven by popular demand. In 1983 the Government re-opened the Fremantle Line because of public pressure following its closure. In 1991 the electrification of the three existing lines was completed and in 1993 the 31 km Northern Line was built, both with public support.

The Perth electric rail system has been an outstanding success story with patronage growing from 9.5 million passenger boardings per year in 1992 to 30 million seven years later. No other city has achieved such growth.

The train's success has been due to its speed, comfort and integration into a broader system. This major upgrading of transport infrastructure has provided an opportunity to revitalise sub-centres (and the city centre), to integrate other forms of transport into station precincts and to shape new development in less car-dependent ways.

The new rail system provides a 'spine' of fast transport services but not all of Perth has access to this and increasingly journeys are across the city between corridors. There are successful cross-city bus services but some of these are reaching capacity. Integrated bus service expansion and extended rail services need to be planned into the longer-term. The potential for light rail and other innovative new services to provide links between corridors and sub-centres needs to be explored.

So now the State Government is building the biggest urban rail extension in Australia for 100 years: the 74 km line to Mandurah at a cost of \$1.5 billion (in 2006/07 dollars). Sydney built the 7 km Eastern Suburbs Line in the early 70's. Brisbane built a 20 km extension to the Gold Coast in the late 80's with the help of Commonwealth Government funding. No other cities have extended their rail networks.

This New MetroRail Project will effectively double the size of the urban passenger rail system which will see:

- the extension of the Northern Suburbs Railway to Clarkson in 2004;
- the spur line to Thornlie in 2004;
- the Southern Suburbs Railway to Rockingham in 2006 and Mandurah in 2007;
- 93 new electric railcars;
- 84 route kilometres of new track;
- 15 new stations; and
- patronage increasing from 101,000 to 170,500 per day in 2006/07.

More information is available from the website <http://www.newmetrorail.wa.gov.au/>

Personal Transport Management

The Western Australian Government is working to achieve a more sustainable balance between private car use and other transport options. It is doing this by influencing the extent of travel undertaken in private cars and making car use more environmentally sustainable, and through the promotion and provision of efficient and effective public transport (including taxis and other hire services) and non-motorised personal transport for all travellers, through:

Managing the Use of Private Cars

Private car use is a major basis of social and commercial activity in the PMR and is likely to continue into the foreseeable future. However, continued unrestrained car use cannot be supported either economically or environmentally because of its impacts on the quality of life, transport efficiency and equity.

The Western Australian Government is working to overcome this car dependency and ensure effective, but not unlimited, car access through the planning policies and travel options described elsewhere in this document and through the following private car-specific initiatives:

- promoting higher vehicle occupancy rates through cheaper parking, vehicle priority lane privileges and other incentives;
- facilitate car pooling by Government workers;
- limiting car access in areas where congestion is a serious problem, or where unnecessary car use interferes with goods and services traffic; and
- managing the supply of parking through the *Perth Parking Policy* and the *Perth Parking Management Act 1999*, and similar initiatives in other Regional Centres.

However, it recognises that private cars will continue to be used as the major form of personal travel into the foreseeable future, and so it is working to limit the impacts of car use through the planning policies and travel options described elsewhere in this document and through the following private car-specific initiatives:

- co-ordinating Government funding to encourage the efficient and appropriate use of cars for access and transport;
- promoting cars with low fuel use and emissions;
- promoting national standards for passenger vehicle safety in line with world's best practice;
- monitoring the development of technology which would enable pricing mechanisms to promote car use and transport efficiency;
- promoting energy efficiency information about new cars; and
- developing a strategy to improve fuel efficiency and reduce the atmospheric emissions of the car fleet.

More information is available from the website <http://www.dpi.wa.gov.au>

Increasing the Use of Public Transport

The Western Australian Government created the Public Transport Authority (PTA) in 2003 to focus on the delivery of safe, reliable and high-quality public transport around the State. Improving the quality of public transport services is seen as key to changing travel demand, increasing patronage and balancing the transport task.

The PTA brings together the integrated public transport system of buses, coaches, trains and ferries, and school bus and other services throughout Western Australia, which currently comprise:

- for the PMR:
 - bus services:
 - a fleet of more than 1,000 buses;
 - servicing over 305 standard routes (including Central Area Transit and Free Travel Zones operating in Perth and other major metropolitan business districts) and 482 school-bus services through 3 contractors;
 - with around more than 56 million bus boardings annually;
 - train services:
 - 56 stations spread across a network of almost 100 km along 4 lines;
 - a fleet of 48 2-car trains;
 - making more than 750 trips each week day;
 - with around 31 million train boardings annually;
 - ferry services:
 - 2 ferries;
 - making 60 trips each week day through 1 contractor;
 - with around 480,000 ferry boardings annually; and
- for Regional Western Australia:
 - bus, taxi and 4WD services:
 - a fleet of 133 buses, 2 taxis and 1 4WD;
 - run by 22 operators;
 - servicing 163 routes;
 - more than 500 trips per week day;
 - with around 2.2 million boardings annually;
 - school bus services:
 - a fleet of 842 buses;
 - run by 475 operators;
 - servicing 842 routes;
 - almost 1,700 trips per school day;
 - with around 4.9 million boardings annually;
 - coach services:
 - servicing 247 regional locations spread across 20 routes;
 - more than 71 million passenger kms travelled per year;
 - with around 230,000 boardings annually;
 - train services:
 - servicing 28 regional locations spread across 3 routes;
 - around 70 million passenger kms travelled per year;
 - with over 250,000 boardings annually.

The *Ten-Year Plan for Transperth 1998-2007* (1999) and a proposed long-term public transport plan, involving updating the MTS and *Greater Perth*, will guide the city into the future. In the meantime, in order to make public transport, with its attendant sustainability benefits, the preferred method of travel in the future, the State Government is continually working to provide better services for existing passengers and attract new passengers by:

- working to remove inequitable taxation treatments and salary packaging arrangements which do not allow public transport as a travel option;

- preparing sub-regional integrated transport plans prioritising improvements for public transport, cycling and walking facilities over 5-, 10- and 20-year timeframes;
- developing a fully-integrated and co-ordinated system of conventional mass transit services (bus, train, ferry), para-transit services (small vehicles responding to demand), park and ride facilities and alternatives such as walking and cycling;
- responding to the specific needs of different travel markets (commuters, students, 'captive' and 'choice' non-workers/non-students; People with Disabilities (PWD));
- improving and expanding the bus, train and ferry rolling stock;
- upgrading and expanding passenger security and safety;
- providing by the end of 2004 a world-best SmartRider ticketing system for integrated public transport, incorporating promotional and incentive activities for passengers, greater security at stations and faster boarding;
- integrating all types of public travel whenever possible, including integrated bus and train services and timetables, providing safe and economical bicycle parking at train and bus stations and car parking at park and ride Stations;
- extending the metropolitan rail network to almost double the existing suburban rail system, including the 74 km rail extension to Mandurah;
- associated with this rail expansion, improving the land use around rail stations and public transport transit corridors to maximise the environmental and economic benefits;
- investigating the potential for light rail and other innovative new services to provide links between corridors and sub-centres;
- through a *Building Better Stations* program, improving and implementing transport land use integration for existing train and bus stations and bus/train interchanges;
- improving the metropolitan rail track;
- extending the bus rapid transit network;
- providing priority measures to avoid congestion-caused delays and improve the reliability of buses;
- since June 2002, purchasing only buses powered by environmentally-friendly natural gas, and assessing other alternative fuels; and
- improving bus services by increasing frequencies, extending inter-urban routes and adding services in new areas.

More information is available from the website <http://www.pta.wa.gov.au>

Encouraging Cycling

Non-motorised forms of transport, such as cycling, are critical to sustainable urban development and have also been demonstrated to provide multiple health, social and environmental benefits.

Western Australia has taken cycling as a transport option seriously since the mid-1970s when the then Town Planning Department's report, *Cycleways*, set out the principles and designs for planning and providing facilities for cyclists two years

before the Geelong 'Australian Bikeplan'. Soon after, the first State Bicycle Committee, comprising representatives of State and Local Government and cyclist groups, was established and published the first Bicycle Policy, a program for improving conditions for cyclists, in 1980.

Since then, cycling has continued to be actively pursued by successive Governments through a comprehensive program comprising:

- a dedicated Government bicycle planning and management unit responsible for the co-ordination of cycling programs and infrastructure development and advocacy for cycling facilities and services;
- a Western Australian Bicycle Committee with representatives from the cycling community and Local and State Governments, to advise the Government on programs for encouraging bicycle use and reducing bicycle-related crashes, the implementation of bicycle programs, and policies and strategies that have significance for the effectiveness of bicycle programs;
- bicycle strategies and plans such *Bike Ahead: Bicycle Strategy for the 21st Century* (1996);
- wide-ranging promotional campaigns such as *Cycle Instead*, including:
 - an annual *Bike Week*, a 10-day program of events encouraging all Western Australians to consider the transport, health, recreation and economic benefits of cycling;
 - media advertisements;
 - sponsorship of community-based events; and
 - promotional material;
- information, education, awareness-raising and behaviour influencing resources, including a comprehensive range of cycling maps and brochures;
- development of cycling-specific legislation;
- a variety of road safety measures including:
 - links with road safety programs;
 - safe cycling education programs targeted at motor vehicle users, cyclists and pedestrians;
 - identifying, developing and signposting safe routes to defined local destinations, including schools and commuter routes; and
 - bicycle-friendly local area traffic management;
- engineering and planning including:
 - preparing sub-regional integrated transport plans prioritising improvements for public transport, cycling and walking facilities over 5-, 10- and 20-year timeframes;
 - developing cycling-friendly environments in town centres;
 - improving bicycle access on local streets;
 - providing guidelines for Local Governments to audit and improve the accessibility of their cyclist infrastructure;
 - ensuring bicycle facilities serve the needs of all bicycle users;

- policies and designs for shared-use paths;
- urban design standards which encourage cycling without the need for totally separate facilities;
- providing on-road and published information and traffic signing;
- incorporating bicycle requirements in Local Government planning schemes and policies; and
- funding assistance to Local Governments and community groups to assist in the provision of cycling facilities in Regional Western Australia;
- encouraging the provision of end-of-trip facilities in new and refurbished Government buildings;
- integrating bicycle use with public transport through:
 - good cyclist access to train stations and other major public transport interchanges;
 - the provision of lockers at train and bus stations; and
 - negotiating the carriage of bicycles on trains;
- research into cycling behaviour, attitudes and perceptions, and evaluation through bicycle use and crash statistics;
- working to remove inequitable taxation treatments and salary packaging arrangements which do not allow bicycles as a travel option; and
- the *Perth Bicycle Network Plan* (1996) which:
 - is a comprehensive network of cycling facilities for the PMR for local and regional bicycle trips covering a range of on- and off-road facilities for commuter and recreational use, and for cyclists with differing skill levels;
 - comprises:
 - (on-road) local bicycle routes - linked local streets with special provision and priority for cyclists;
 - principal transport routes - high-standard bicycle facilities along the alignments of suburban railways and freeways
 - regional recreational paths - combined recreational and commuter cycling facilities following linear areas of public open space, such as river and coastal foreshores;
 - highways and main roads - various on-road facilities to separate cyclists from other traffic and are the responsibility of the State Government;
 - district roads - provide for movements between suburbs and neighbouring districts and are the responsibility of Local Governments;
 - end-of-trip facilities, including secure parking; and
 - improvements to rectify poor design or lack of maintenance, remove barriers or impediments to the continuity of bicycle networks, provide grade-separated crossings of the railway, roads and intersections;
 - will be over 1,400 kms and is being constructed in 3 stages; and
 - provides funding assistance for Local Governments in providing Local Bicycle Routes and for the planning and development of cycling facilities.

More information is available from the website <http://www.dpi.wa.gov.au/cycling/>

Encouraging Walking

Non-motorised forms of transport such as walking are critical to sustainable urban development and have also been demonstrated to provide multiple health, social and environmental benefits as well.

The Western Australian Government is pursuing walking as a transport mode through a comprehensive program comprising:

- a co-ordinating function responsible for raising the profile of walking as an alternative to car use;
- a Walking WA Committee with representatives from the National Heart Foundation, Murdoch University, Walking Reference Group, Sustainable Transport Coalition and Local and State Governments, to promote strategies to increase walking in Western Australia;
- strategies and plans such as *Perth Walking: the Metropolitan Region Pedestrian Strategy* (2000) and walking initiatives associated with the Premier's Physical Activity Taskforce and the SSS;
- wide-ranging promotional campaigns such as *Walk There Today*, including:
 - an annual *Walk Week*, a program of events for families, workplaces, schools, Local Governments and community groups across Western Australia to participate in and promote walking and the use of public transport (as this involves walking) and promotes a more active lifestyle;
 - media advertisements;
 - sponsorship of community-based events; and
 - promotional material;
- information, education, awareness-raising and behaviour influencing resources, including a comprehensive range of maps, guides and brochures;
- workshops, seminars and conferences such as the *Australia: Walking the 21st Century: an International Walking Conference* held in Perth in February 2001;
- a variety of road safety measures including:
 - links with road safety programs;
 - safe walking programs such as the *Walking School Bus*;
 - identifying, developing and signposting safe routes to defined local destinations, including schools and commuter routes; and
- engineering and planning including:
 - preparing sub-regional integrated transport plans prioritising improvements for public transport, cycling and walking facilities over 5-, 10- and 20-year timeframes;
 - developing pedestrian-friendly environments in town centres;
 - improving pedestrian access on local streets;
 - providing guidelines for Local Governments to audit and improve the accessibility of their pedestrian infrastructure;
 - policies and designs for shared-use paths;
 - urban design standards which encourage walking;

- incorporating walking requirements in Local Government planning schemes and policies; and
- funding assistance for volunteer groups, sporting/active transport organisations, health services and Local Governments with opportunities to effectively plan, implement and evaluate community-based events and programs promoting walking.

More information is available from the website <http://www.dpi.wa.gov.au/walking/>

Ensuring Transport is Accessible for People with Disabilities

Western Australia is leading the way in providing accessible transport options for PWD through:

- a Consumer Advisory Committee comprised of people from a wide spectrum of disability type and age to provide advice on how the transport system can best meet the needs of PWD;
- its National and State award-winning *Going Out and Getting There: Action Plan for Accessible Public Transport for People with Disabilities in Perth* (1995, evaluated 2001) which ensures that services, information and infrastructure are developed to meet the needs of PWD. All new fleet and infrastructure is fully accessible, and existing fleet and infrastructure is being systematically replaced or upgraded to overcome barriers to the use of:
 - buses, by providing accessible buses (targeted 90% of the fleet by 2009; over 300 buses and many bus routes are now accessible) with:
 - low floors;
 - extendable ramps;
 - a 'kneeling' action to bring the bus closer to the ground;
 - airconditioning;
 - driver communication devices; and
 - space for 2 wheels;
 - trains, by providing fully accessible carriages (all now accessible);
 - ferries, by providing fully accessible jetties and craft (all now accessible);
 - bus and train stations, by providing:
 - tactile ground surface indicators;
 - sophisticated lift (including wider doors for wheelchairs, lower control panels, back-lit buttons, Braille translations and glass walls for better visibility in getting safely in and out) and escalator systems;
 - access ramps where lifts or escalators are not available;
 - handrails;
 - high-visibility colour contrast painting;
 - improved lighting;
 - pedestrian facilities, including kerb ramps and pathways;
 - accessible parking and drop-off points;
 - good signage, including tactile and Braille signage; and
 - help/security telephones;
 - country services, by providing:
 - large capacity coaches with:
 - a 'kneeling' action to bring the bus closer to the ground;
 - improved leg room;

- raised numbering on the seats;
- yellow handrails;
- brightly contrasting coloured strips on the steps;
- wheelchair lifts;
- space for wheelchairs;
- facilities to fix the wheelchairs to the floor for the safety and convenience of the passenger; and
- audio loops;
- railcars with:
 - wheelchair access via powered ramps;
 - specially-designed toilets;
 - special areas for wheelchairs with stabling and anchoring facilities;
 - audio loops; and
 - Braille and tactile signage throughout; and
- services, by providing
 - printed and web-based information which conforms with disability guidelines and is available in alternative formats;
 - an InfoLine to assist with journey planning; and
 - communication cards for those who have difficulty communicating;
- wheelchair accessible taxis (over 80 in Perth and 15 in Regional Centres) and the *Taxi Users Subsidy Scheme* which provides a reduced rate for people with severe disabilities which prevent them from using public transport; and
- the development a video (*Easy Street*) which looks at planning for an accessible pedestrian environment.

More information is available from the website <http://www.dpi.wa.gov.au/about/disability.html>

Changing Travel Behaviour

The Western Australian *TravelSmart* program is a world's first initiative to influence people's travel decisions and bring about voluntary changes in their travel behaviour. Through households, schools, businesses, Local Governments and major destinations (universities, hospitals, etc), *TravelSmart* informs people of their travel choices and motivates them to consider walking, cycling, using public transport, carpooling or teleaccess instead of using the car for some trips.

Following its success in Perth, most other States and five overseas countries have taken-up the program.

TravelSmart comprises a suite of programs:

- *TravelSmart Household* (also referred to as Individualised Marketing) which was pioneered in Perth and is being extended across the PMR;
- *TravelSmart Local Government* which helps Local Governments and their communities to develop and implement local action plans and community education and information strategies to influence travel behaviour, and to encourage consideration of alternative modes in Local Government policy and decision-making;
- *TravelSmart Schools* which helps school communities to reduce traffic congestion around their schools. It is curriculum-based and incorporates strategies that engage students and schools with a focus on student-centred

learning and development of leadership skills. The program is delivered in partnership with Millennium Kids, a local non-profit youth-based environmental group that empowers youth to contribute to the environment.

The *Walking School Bus* supports this program by enabling groups of parents to take action in making walking to school safer and more convenient;

- *TravelSmart Workplace* which helps Public and Private Sector employers to manage work-related travel. The focus is on reducing car use by improving and promoting travel alternatives, particularly to staff by assisting workplaces to develop, implement and evaluate Green Transport Plans; and
- *TravelSmart Major Destinations* which helps universities, hospitals and other destinations to develop and implement travel behaviour change programs to reduce car use and increase use of the travel alternatives to access them.

More information is available from the website <http://www.dpi.wa.gov.au/travelsmart/>

Freight Transport Management

In order to improve the sustainability of Perth's freight system the Western Australian Government conducted a highly consultative *Metropolitan Freight Network Review* in 2001/02 which resulted in:

- pioneering a world's best practice sophisticated and transparent public multi-criteria analysis technique for applying sustainability to the resolution of complex planning problems for major road proposals, with practical outcomes; and
- the *Freight Network Strategy* (2002) to provide an integrated, safe and economically and environmentally sustainable transport system which minimises community conflict and meets the needs of regional communities.

The actions identified are being implemented, including:

- extending Roe Highway to Kwinana Freeway to cater for the increasing level of traffic to the industrial areas in Cockburn and Kwinana;
- increasing the mode share of rail for container traffic to Fremantle Port;
- building inland container terminals to reduce the number of empty truck movements;
- making better use of the roads through improved scheduling, backloading and a truck booking system at Fremantle Port;
- planning for the outer harbour at Kwinana which will take much of the growth in traffic from Fremantle Port;
- improving existing roads to improve efficiency and reduce the impact of traffic on local residents;
- developing intermodal transfer terminals and other freight improvements in Albany;
- reviewing, re-focussing and reactivating the Grain Logistics Committee to optimise the performance of the grains logistics chain;
- relocate and modernise the livestock saleyards;
- examining the opportunity for rail to increase its share of the freight task; and
- co-ordination of traffic signals to streamline traffic flows on key roads; and

- the proposed development of a *Statement of Planning Policy* on the provision of an efficient freight network that is socially and environmentally responsive.

More information is available from the website <http://www.dpi.wa.gov.au/metro/freight/>

14. SUSTAINABLE BUILDINGS

The Western Australian Government is currently developing a housing strategy (*Housing Strategy WA*) to guide the planning and management of the supply of new dwellings and to facilitate the gradual adaptation of existing dwellings to meet future needs. Importantly, sustainability is one of the overarching principles guiding the development of this Strategy (along with affordability and accessibility).

The SSS is being used to guide the development of *Housing Strategy WA*, and so, many of the initiatives, policies and actions that will emerge will contribute directly to the goals and directions set down in the SSS.

The Western Australian Government has implemented a number of initiatives to encourage the integration of green construction and refurbishment techniques into standard building practices, such as:

- appointing a Government Architect to encourage good design and construction, particularly in Government buildings, and assist in the implementation of sustainability initiatives in the building industry;
- progressively moving to the construction of 5-star energy-rated social housing;
- building demonstration projects that promote best practice in green building (for example, Broome Sustainable House, South Atwell School);
- requiring owners of commercial properties seeking to lease the building to a Government agency to have their buildings rated using the Australian Building Greenhouse Rating Scheme;
- representation (by the Department of Housing and Works) on the Australian Building Codes Board and participating in the development of new building standards; and
- developing a new Building Act that will provide an effective framework for both mandatory and best-practice standards.

The Western Australian Government is examining the use of software packages (such as the New South Wales' *Building Sustainability Index* (BASIX)) as a basis for assessing sustainability of the urban development and the built form.

It is also leading by example and promoting best sustainability practice in the construction of buildings for Government use, major capital works, demolition and adaptive re-use of buildings. For example, it requires the owners of commercial properties to have their buildings energy-rated and this information provided as part of its consideration when leasing a building for a Government agency.

More information is available from the website <http://www.dhw.wa.gov.au>

15. SUSTAINABLE INDUSTRY

The WA Sustainable Industry Group (WASIG) is a multi-stakeholder platform of business, Public Sector, environment, engineering and education professionals committed to a clean and competitive Western Australia.

It is a member of the Regional Network of the World Business Council for Sustainable Development and Signatory to the International Declaration on Cleaner Production administered through the Division of Industry, Technology and Economics of the United Nations Environment.

WASIG was established in July 1999 primarily to provide a forum for the sharing of practical information related to the implementation of Cleaner Production and Eco-Efficiency. It is convened and facilitated through the Centre of Excellence in Cleaner Production, Curtin University of Technology.

As of March 2003, WASIG was liaising with over 400 professionals representing over 270 organisations. Of the current participants, 44% represent industry and industry associations, 28% State or Local Government, 13% educational institutions, 7% consultants and the remaining 8% professional and community groups.

WASIG works to:

- encourage participants to identify and pursue their own opportunities for implementing Cleaner Production and Eco-Efficiency, in particular through promotion and administration of its *Western Australian Cleaner Production Statement*;
- foster dialogue on how local, national and international experience can best be utilised for the development and implementation of environment and sustainable development-related policies and strategies, in particular those affecting businesses; and
- partner with other organisations in the public and non-government sectors to raise general awareness and understanding of sustainable development issues and the opportunities it presents to Western Australia.

The *Western Australian Cleaner Production Statement* and details about WASIG are available from the website <http://wasig.curtin.edu.au>

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