



SUBMISSION

INQUIRY INTO SUSTAINABLE CITIES

January 2004

Townsville - An Evolving Sustainable City

The special northern character of place, people and economy, positions Council to make appropriate comment to the House of Representatives Committee on Environment and Heritage Inquiry into the future of Australia's urban areas. In addition there are many sustainability initiatives (social, economic and environmental) which have been ongoing by Council and community for many years in our local area.

An overriding observation, on reading the Discussion Paper (including the "posed questions"), is that although the focus of the paper is "Sustainable Cities 2025" there is a disconnect between the concepts of environment and the other intrinsically linked sustainability "realms" of social-cultural and economic considerations.

Council's submission in the preamble will address the idea that Sustainable Cities 2025 must more fully address the question of sustainability as a whole.

Ultimately, if the Sustainable Cities 2025 Inquiry remains restrictive in its approach, then this should be made clear up front and the alternative descriptive of "Environmentally Sustainable Cities 2025" might be clearer.

Noting that should this remain the case, then Council considers that the inquiry will fail to address in both question and content the integral interconnectedness of environmental sustainability with people and economics. The social-cultural and economic aspects-realms need to be considered as integral to achieving environmental sustainability and form the whole of the question of urban sustainability per se.

Without people, their well being and prosperity-job considerations, it is likely that there will continue to be a low uptake of real environmental sustainability outcomes, even if people desire it. Environment will often continue to be seen as being in contradiction to the economic well being and social-cultural matters.

Townsville City Council - a Sustainable City Initiative

Townsville has been a place of discussion and inquiry for many years on where and how development, and specifically urbanisation, should take place and the environmental impact thereof. However it should be noted that at a regional level it would seem under any analysis of environmental indicators that there has been relatively little conflict between urbanisation and landscape management, other than a couple of site specific examples to date.

This may now be changing as urbanisation, development and population growth increase and considerations to how and when to maintain the environment escalate in the community. Some of these issues and considerations will be addressed in this submission.

Sustainability of Cities in the future is a key question which dramatically faces Townsville.

This is both from a geographical perspective (as the city abuts and interfaces directly and indirectly with the Great Barrier Reef Marine Park and World Heritage Areas, or

in the case of the island suburb of Magnetic Island is encompassed by the WHA itself), and from a social-economic perspective (the desire for jobs and viable business and enterprise).

To enable the comments provided by Council to be given proper context some of the sustainability initiatives of Council are briefly discussed below.

Townsville City Council has been working on and addressing sustainability of urban cities since the late 1980's. Sustainability initiatives have included developing one of Queensland's first Environmental Conservation Strategies (including the concern about global warming) and appointing an Environmental Officer to oversee this in 1988. This body of sustainability work and dialogue arose directly from a series of community workshops which highlighted the special places of Townsville, both natural and heritage, and the requirements and considerations in protecting them. It included consideration of how and where such natural environments could and would be integrated into the fabric of the growing city.

Importantly the outcomes of this innovative and progressive work in sustainability persist today both in the community, its expectations and in the development of one of local government's first integrated environmental management units.

Environmental Sustainability is also being taken up within most Council departments, often in partnership with the Council's integrated environmental management and sustainability unit. For instance Council has, for more than a decade, been committed to and investing in urban road and parkway bikeways and walking tracks.

This unit itself addresses, on behalf of Council and the community, key environmental sustainability aspects of growing cities, provides advice on sustainability to Council and business units, and is currently facilitating the integration of social-cultural and economic sustainability into environmental protection and management considerations.

Work of the integrated environmental unit includes:

- Promoting overall sustainability across Council departments concentrating on environmental sustainability, energy conservation and management, greenhouse gas emission reduction, and the integration of social-economic considerations;
- Supporting the development of sustainability projects through partnerships with community and Council business units and local environmental sustainability industry;
- Advising Council on and implementing bushland retention/revegetation, stormwater quality management and wetland rehabilitation projects;
- Conducting local natural assets assessment and producing databases which make information on local environments and activities available to the community via a web based State of Environment Reporting framework;
- Developing joint community-Council frameworks and programs to encourage public involvement and participation in on-ground environmental work and education;
- Supporting community environmental forums, on-ground action groups and their initiatives such as Landcare; Bushcare and Coastcare;

- Providing an annual community environmental festival (Ecofiesta and environment week), and promoting the intrinsic values and ecosystem services of local Townsville environments (Coastal Dry Tropical Savanna and Wetlands of North Queensland);
- Rewarding and acknowledging environmental excellence and sustainability through awards promoting achievements by business, industry, schools, community groups, and individuals.

Many areas of the urban and non-urban parts of the City have become protected and or rehabilitated as a direct result of this program and others are currently undergoing active environmental management and habitat rehabilitation with widespread community involvement (education/on-ground works).

Examples include the protection of the Town Common Environment Park in the 1980's, current support for regional wetland conservation and protection (Serpentine Lagoon, Cromarty and Ross Dam wetlands), and other terrestrial environments on Castle Hill, Mt Stuart, Rowes Bay, and on Magnetic Island.

Additional Social-Economic and Environmental Sustainability Considerations.

Townsville is an active and growing city developing at a significant pace to take advantage of arising economic opportunities. The residents of Townsville have demonstrated a firm interest in becoming and remaining a dynamic, thriving and economically robust community. This is indicated by support from residents for its regional leadership in economic development and by the Council's commitment to supporting strong and successful regional economic development (ie. Townsville Enterprise). The Council and community also support international sister city relationships with Korea, Japan, and Papua New Guinea. To date these relationships have been centred on both economic and cultural interests.

The Council is well recognised for its socially progressive programs (Community Development programs) and inherent community spirit, highlighted by many activities which have taken place and which engaged the community, including VP50, Coral Sea Celebrations, Korea Zinc Refinery, Strand beachfront opening, social/entertainment events and Clean Beach Challenges, as well as recent Federation celebrations and the City's Centenary birthday.

Townsville people/residents (Townsvilleans) are enterprising and arguably socially adept at knowing who they are, and what they want – prosperity and development, progress, lifestyle and recreation, as well as environmental protection.

Recognition of these cultural, social and economic local aspirations is critical to understanding the meaning and reality of developing Sustainable Cities for 2025 and how a blue print might relate and/or differ across Australia.

Local places are for local people. They are blueprints for sustainability themselves and provide examples of evolving environmental and socio-economic sustainability in action. In many ways they have very different relevance across Australia due to local social-economic and environmental conditions and situations.

In the north, lifestyle is paramount to the local community, as is evidenced by the numbers of people playing or participating in sport and recreation in the local area. Playing in or supporting teams, fishing our creeks and waterways of the region, and using facilities such as the Strand boulevard and beach for relaxation, social gathering, exercise and sport (outrigger racing/surf life saving).

The outdoor lifestyle and climate mean that people do recreate in their environment and arguably have some feel for it even if they do not actually realise where they are bio-geographically - regionally, nationally and internationally.

From an infrastructure point of view, a local and external perspective of the environment would have to be that Townsville, on the whole, does not yet have congested roads, bad air quality, or unhealthy waterways.

This general view of Townsville as a healthy, relatively un-degraded environment and place to live has been summarised in the recently released Townsville State of Environment Report (www.soe-townsville.org). The report includes links to a Social Atlas which Council has been producing every few years over the past decade.

The Townsville SOE is, in itself, innovative in environmental reporting and leads the way in Australia in communicating a sense of place and telling stories about our City.

Importantly it commences to address the environmental and sustainability issues of the City by informing on pressures, condition and state of Townsville's environment. The report, along with the Social Atlas, performs a critical function in addressing the question of sustainability by making available information to residents which can then be used to assist community based decision making.

It also reports on the myriad of environmental management projects and partnerships underway with community groups and individuals. The report recognises the connectedness of economic and socio-economic activity and history with environmental condition, degradation, and protection.

The report highlights recent Sustainability initiatives within the City, including sustainable transport (purchase of a Prius petrol electric hybrid and proposals for a bio-diesel trial), solid waste management and recycling, and wastewater reuse/recycling/renewable energy efforts, and urban planning.

All these initiatives fall under the umbrella program title of "Sustainable Townsville". Council commenced a "Sustainable Townsville" project (see www.soe-townsville.org/sustainable/ for an overview) with the Queensland EPA (Sustainable Industries Division) two years ago. This project has resulted in measurable changes in organisational culture, indicating the value of direct funding from State to promote sustainability in regions. The project has product outcomes arising from sustainability work being completed by many Council departments and business units including:

1. Presentations on Sustainability and Global Warming to Council Managers, Executive Directors and other departmental staff;
2. A Greenhouse Gas Reduction and Energy Audit/Plan;
3. Supporting sustainability initiatives in Schools of Townsville ("Townsville Sustainable Schools" www.soe-townsville.org/schools/);

4. Facilitating Council and community-business sustainability networks and discussions;
5. Grouping together of all existing Council and business-industry sustainability projects for the first time, demonstrating on-ground activity in sustainability (including energy audits);
6. Demonstrated uptake of sustainability initiatives in TCC Engineering Services (Fleet Services - sustainability in transport-fleet, Citiworks – indicators, waste management and stormwater, Citiwater – water reuse and carbon neutral water recycling), Planning and Development (sustainable housing project), and Parks Services (sustainable irrigation projects);
7. Promoting urban bikeways and cycling (for health and environment) on web and at events (www.soe-townsville.org/bikeway/);
8. Linking with business and industry to promote options for sustainability and uptake of commercial green technology and green house gas reduction options (eg. NQ Solar- wind turbines; Gough Plastics – hybrid toilet; and Stanwell Corporation – methane gas capture at wastewater treatment plants).

In addition, Council has participated in, or supported, a number of environmental sustainability and regional planning projects, some of which were community based, including:

- Development of a Community Natural Resources Management and Environmental Plan for the region (being developed into an Accredited Regional NRM Plan under Commonwealth-State arrangements);
- Establishment of a community NRM and Environmental Forum and Network (NaREF) for the Townsville Thuringowa Coastal Plains sub-region;
- Development of a sub-regional planning strategy and plan for the Townsville-Thuringowa region with state departments and Councils;
- Townsville Port expansion, Port Access and other commercial and industrial planning opportunities via its business arm, Townsville Enterprise Limited.

Sustainability Pace and Uptake.

Many in a community might argue that we are not doing enough, or moving quickly enough towards sustainability in our places and economies. Others argue we are doing too much for environment and not enough for economic or social sustainability. Although the academic argument that we are not doing enough for environmental sustainability may have merit, it fails to take into account the real world and the one where people live, work and play. In Townsville we are well on our way to being a Sustainable City by 2025 and many aspects of how the city is evolving demonstrate this, including community spirit.

Whilst some may argue that the quest to obtain more and more industry and commercial business may not realise the intrinsic ideals of an environmental sustainable city, the truth is that it is a direct expression of a community's desire for vibrancy and well being. In Townsville, this expression is centred on the recognition that we live in regional northern tropical Australia with inherent limitations associated with low population mass, and limitations to accessible and cheap water, electricity

and markets. Therefore all stops must be pulled out to ensure our share of development opportunities are realised.

Hand in hand with this quest are the significant strengths in the local character of people and their economic and social achievements. This needs to be harnessed and directed in order to support the development of a sustainable outcome for the city.

Sustainable Cities 2025 as a blueprint needs to recognise that cities world wide are active expressions of their people, and Council submits that the current direction of the inquiry fails to take account of this.

The Inquiry Briefing paper, with its current focus on the environmental dimension of total sustainability, needs to be expanded to include the social-cultural and economic considerations to be truly reflective of the Sustainable City 2025.

This is the paradigm which recognises the people contribution to Sustainable Cities questions more fully, one that respects that sustainability comes from total involvement of people, volunteers, enthusiasts, conservationists “greenies”, developers and city politicians with a prosperity vision for their communities, one that is often beyond the measures of increasing profits versus protecting/setting aside environments for preservation.

This model of recognising people in the vision for sustainable cities acknowledges more fully the roles and responsibilities of cities and communities finding and developing successful community partnerships in the way forward.

Locally there are many examples of sectoral partnerships and alliances in Townsville within each of the social, economic and environmental realms.

What is lacking is that few, if any, are fully integrated across the full realms of social, economic and environmental considerations.

TCC itself is making progress within the Council and the community with a couple of initiatives, including the development of a *Healthy City Plan* which links human health and social well being with the environment. The plan, amongst other things, introduces and emphasises health and fitness linkages between open space and recreational access to natural areas and other environments (roads) for bikeways and walkways, which in turn can reduce greenhouse gas and air pollutants through increased use by people of such facilities for commuting or passive recreation.

In addition TCC Community Development Services was recently involved with producing a Framework for Progressing and Measuring Community Well Being for the Local Government Community Services of Australia Association (LGCSAA), titled “Just, Vibrant and Sustainable Communities”. This process was followed up by a Conference this year on Just and Vibrant Communities which incorporated consideration of social, cultural, economic and environmental considerations (indicators of well being) in delivering community services in local government and in the future. The conference made inquiry into the interconnectedness of these realms and championed current projects and programs underway in Australia.

Council is also supporting the development of a community driven Accredited Natural Resources Management Plan (NRM) for the Burdekin Dry Tropics, which has a sub-regional component centred on the Townsville-Thuringowa Coastal Plains and hills. This plan is intended to take into account the social and economic costs of implementing solutions to environmental degradation via an investment strategy.

Further, Townsville Enterprise Limited (TEL), in partnership with the Queensland EPA, has a “Liveable Communities” project, which aims to seek to address these matters by developing a common vision of a sustainable community complete with indicators. At this time however this particular initiative has not progressed far.

Generally though, most local initiatives and programs still remain largely sector driven and devoid of effective integration, especially in the planning stages. Sustainability will come more easily when the dimensions are joined and linked.

Hence the Commonwealth in its inquiry needs to place more proper consideration onto this fact. Participation by community and residents is only assured in the quest for sustainability when they are informed and involved in the question via substantial processes and have access to information and data on what it all means. This only becomes truly possible when the social, economic and environmental themes or realms of decision making are linked in process and action.

At the same time it is agreed that the debate on sustainability must maintain a central focus of environment, and Council supports this approach. This is because the environment provides the fundamental natural resource base (including ecological services, environmental health, soil-water, and biodiversity) from which we survive and thrive in our local and regional communities.

In order to understand the relationships in Sustainable Cities 2025, it needs to be understood that the current paradigms for sustainability in urban and regional cities are evolutionary and progressive, often synergistic with the time they are occurring.

Therefore, the city in 2025 is likely to be both similar and different to what we perceive now, as the environmental sustainability initiatives within Council which exist now were not probably foreseeable five years ago. So the potential for dramatic change, keyed by appropriate signals and drivers from both Commonwealth and State (ie. Policy, funding and incentive instruments), may lead to even greater change within the next 22 years.

Sustainability offers the opportunity to be a powerful catalyst for change within Townsville and the North Queensland region, and this should be recognised as a key process of developing Sustainable Cities.

The adoption of sustainability within Townsville as a core principle of growth and development is probably only a short time away. The last bastion is to break the barriers which still exist where one or other of the three sustainability realms and their inherent cultures remain seen as dipoles to each other. That is, they are considered not complimentary but competitive and exclusionary (eg. residential land versus wetland protection and riparian management), where in fact they are intrinsically linked and dependent upon each other for maintaining healthy, vibrant environments and

community. Once this process of agreement is determined then competing views may be less meaningful for all.

For further gains in moving towards a Sustainable City by 2025 the following will need to be addressed:

1. Structural adjustment in the way Commonwealth funding and grants are allocated is required. Grants must be provided in a manner which reward and join with local programs and initiatives instead of being driven by central policy objectives. Current directions of the Commonwealth are towards de-centralisation of community based natural resources management decision making to the regions. This is essential and supported.
2. In association with this, local government and regions must be empowered to make decisions on sustainability (including resources and management options) and environment which allow for a more appropriate mix and understanding of local environmental and social-economic circumstances (eg. local use and uptake of renewable energy options and infrastructure). Performance and effectiveness can be monitored to ensure that desired sustainability outcomes are achieved.
3. The comparative advantage of being a sustainable city must be catalysed. The ability for communities and business to be profitable or make profits is essential. In the near future any economic advantage may well be lost as more and more cities and communities “get on board” the sustainable city/community bandwagon. There may still be many opportunities depending on what happens with the extent and impact of global warming and sea level rise. Locally there are a couple of commercial businesses (Gough Plastics and NQ Solar Energy) who are actively seeking and developing sustainability infrastructure and service delivery options (solar and wind power and in the case of NQ Solar working with Ergon Energy on grid connection electricity). Technological innovation in sustainability needs to be supported to ensure commercial opportunities in business flow to the regions.
4. Extending environmental service delivery may become an increasing business opportunity for technologically progressive social-economic and environmental cities such as Townsville. The Sustainable Cities 2025 Blueprint needs to address this issue. That is the role of Australia extending progress in sustainability services delivery to other less affluent areas and regions of Australia and the world.
5. The promotion and championing of sustainability models, progress, issues and achievements. Townsville City Council has recently joined ICLEI (International Councils for Local Environmental Initiatives) in order to fulfil its rightful place as a leader in sustainability from the perspective of all three realms (social-economic and environmental). Interestingly it is a perception that, across the world, local authorities and Cities are leading the way in introducing sustainability in operations and, world wide, are often considered to be well ahead of both state-national and regional-district levels of government (see ICLEI web sites).
6. In the future there must be a move to structures and institutions across all spheres of government and departments which support not only comparative advantages, but also facilitate cost competitiveness,

profitability, and resource savings in association with environmental and risk management. This will involve taking account, to a much greater extent, environmental “externalities” which are not presently accounted for in the costs of delivery of water, wastewater, and energy supply services especially. Opportunities for competitive provision of renewable energy options may be more attractive to public and/or private utilities when the “true” costs are incorporated into the existing services.

7. All the above must be brought into a Whole Sustainability System (WSS) which takes into account all aspects of a local authority-cities business and enterprise in service delivery within the regional context, including availability of resources, markets and material supply (ie. green goods, services, and labelling).
8. The questions of what people in a community are prepared to pay for and support in environment and sustainability must be constantly determined and updated to reflect current trends and progress. It must represent what is appropriate locally or regionally as well. For example it has been shown that residents want and are prepared to pay for waste recycling in Townsville Thuringowa. This is despite the costs and limited effectiveness of the recycling of waste itself at the local scale. Although an environmental benefit across Australia accrues and can be demonstrated – it does not clearly manifest in reduced costs and greenhouse gas reductions locally to ratepayers. It operates at a national scale only.
9. A Sustainable City 2025 must be integrated and linked in its business to other regional cities and environmental/business structures to be viable. This is in order to maximise the benefits of economy of scale and environmental appropriateness of a particular activity or service delivery. In waste management this is already being demonstrated locally via the development and implementation of a Regional Waste Management Strategy based on the local environmental (North Queensland) regional organisation of Councils (HESROC-NQ). More and more rubbish is being transferred away from local tips in environmental sensitive areas and to (by truck) regional waste disposal-management sites. In the future more consideration to this type of enterprise and cooperation is going to become necessary, as well as factoring in sustainability in transport costs and consideration to the overall greenhouse gas reduction equation and environmental impact footprints of such activities. For example, consideration to waste transport fleets using renewable energy or less greenhouse gas causing damage.
10. Integration of planning and land use decisions so that they better reflect a balanced and environmentally appropriate approach to landscape ecology/services, water and air pollution, reduced energy consumption, and retention of biodiversity. By better identifying appropriate areas for land uses to occur, the competing aspects of environment and development may be minimised and conflict subsequently reduced. This would include consideration into improved transport options, corridors, and sustainable transport/public-private fleets.
11. Researching and investing in appropriate economic opportunities for renewable energy options, which viably compete with coal, facilitate uptake of gas in the medium term and wind/solar in the longer term. Consideration needs to include facilitating appropriate electricity

distribution models and competition. These models should capture and incorporate all scales of energy production including: house-home-business grid connect, medium scale products (small wind farms), and integration of industry scale energy production from waste products (eg. integrated energy management which combine waste products from a variety of sources into cost efficient energy producing options ie. landfill, wastewater, and meatworks methane, or biomass products such as agricultural residues and/or wetland plants).

By posing, understanding and working on these sustainability questions “*Road Maps* (Qld EPA Sustainable Industries term) to Sustainability” can be created. This applies to all aspects of the social-economic and environmental sustainability question and helps to create the idea of *Environmentally Sustainable Business and Social Management Systems* (ESBSMS) which in themselves become the local frameworks for developing Sustainable Cities 2025. Such ESBSMS need to be adaptive in management and provide clear process and systems which allow uptake of new opportunities and provide for viable community involvement and input to ensure constant ownership and hence support.

One area of sustainability which appears to be a standard area of consideration in environmentally sustainable city development and progress in the UK and Europe is the issue of supply chains and green purchasing. Due to the isolation and distance from some production markets there needs to be consideration in the Sustainable Cities Blueprint for how the “tyranny of distance” factor is dealt with realistically whilst providing opportunities for regional cities to prosper and develop.

One of the central aims of Qld EPA Sustainable Industries Division in making and promoting sustainability in-roads into North Queensland appears to be linking business and industry together in a manner which identifies opportunities for eco-efficiency and implementing Greener Production principles. This includes waste reduction and rationalisation of product and service from consumer to producer (the Visy – closed loop scenario).

The Sustainable Cities 2025 blueprint needs to specifically discuss this issue in relationship to regional and northern Australia, and to consider options for facilitating process and support from both Commonwealth and State which takes account of market difficulties and perceptions.

In summary the following key points are made:

Whilst protecting natural environments, local biodiversity, and maintaining appropriate ecosystem services, the main aim of a northern city, its people and leadership is to ensure and create opportunities for economic development and the social well-being of the community and its citizens. Providing opportunity for meaningful involvement and the development of successful, validated partnerships is also essential to a Sustainable City 2025 blueprint.

In terms of environmental protection and management the most significant environmental component can only be achieved by:

Building community partnerships -

Building appropriate partnerships with community, residents and business to take account of all the above, ensuring opportunities for involvement in environmental management, natural resources management and land-use allocations, and social-economic decision making. Locally, this is well demonstrated across social, cultural, economic and, more recently, environment (within last five years).

Sustainability vision and mutually developed indicators -

Developing with the community a sustainability vision which accounts for the environment appropriately, and produces simple, clear and meaningful indicators for all the realms of society (cultural, economic and environmental), and makes them available or accessible for the community. Such indicators must be monitored and evaluated over time and successfully map change in landscape and energy use/reductions.

Availability of sectoral-realm information relevant to decision-making on prosperity and sustainability -

Involves collecting and making available information on all aspects of the social-economic and environmental realms relevant to the city's development and future sustainability decision making and what people can actually do in their daily lives for themselves. Requires dynamic information and data collection systems utilising the latest technological (Internet and GIS mapping) options and opportunities.

Local Ecology and environmental conditions -

Understanding of the local ecology and environmental conditions which provide beneficial ecological services and biodiversity, both intrinsically and for maintaining the environmental health of the local *Townsville Biosphere* (includes a requirement to have both a detailed inventory of wildlife and environments as well as knowledge of what needs to be protected, and how we can actually protect it and develop as per the civic aspiration of a northern regional centre).

Cultural acceptance of place -

Developing a cultural acceptance of our local natural landscape and its place in the world, which forms an intrinsic part of *thinking globally and acting locally*, if we are serious about sustainable cities in 2025. (Note: although local people love the sun shine and clear fine days which go hand in hand with the local lifestyle, arguably there is currently a low perception and cognitive connection between these climatic factors and that the local environment and biodiversity reflect these patterns as well – ie. location of Townsville south of wet tropics in the *East Coast Tropical Savanna* region of Australia. This geographic fact is reflected in Townsville-Thuringowa being designated under the State Coastal Management Plan as being part of the *Tropical Dry Coast* (or colloquially the *Coastal Dry Tropics*).

From a practical point of view this means that Townsville has much higher evaporation compared to rainfall. Rainfall comes predominantly and intensively over a short summer wet season or monsoon, and the hills and plains surrounding Townsville are predominantly tropical grasslands with a sparsely treed over-storey and semi-deciduous rainforest-vine thickets in fire protected rocky areas and gullies.

Once these parameters and social-cultural connections are in place we can only then truly seek to maximise and maintain local ecology and biodiversity and obtain economic and social prosperity within a protected environment at the same time.

Sustainable Cities and blueprints are always going to be a compromise or set of trade-offs between the differing expectations of people and the degree to which they might:

- Understand the environment they are impacting on, the amount of information available to consumers on impacts-mitigation options and costs,
- Determine how much we are prepared to pay (as ratepayers and Councils) for environmental protection (balanced against the social-cultural and economic aspirations),
- Work out how much the community might receive back (as taxpayers) and how it gets it back (ie. the alienating processes of competitively winning environmental grants and whether they are effectively and efficiently used or not),
- Incorporate sustainable practices, which business and industry are prepared to, or have the capacity to, pay for. This includes the question as to whether they as business have taken into account, in the end product, the true costs which often are not accounted for in the price and are externalities.
- The community's education and subsequent preparedness to pay for these externalities are critical or, at a base level, how they are prepared, or not, to alter their own cultural practices (ie. using woven cotton reusable shopping bags versus plastic ones).

Council's Response to 'Questions for Consideration'

Council considers that the following comments address the '*context*' of the terms of reference and are important considerations in the development of a national strategy for sustainable cities.

- There is a need for planning of urban development to be conducted over longer timeframes. Presently 10-20 years is considered long term planning and too often, significant decisions are made on very short horizons, <3 yrs. Planning in the 10-20 year timeframe is important, so is undertaking that planning in the context of 100 year plans. Increased priority, funding and mechanisms, and also freeing up of planning resources which have become diverted by administrative tasks and specifically the development of planning schemes that take 3-5 years to prepare, have contributed to a reduced focus on planning and are items that need to be addressed if we are to actually plan our development and avoid a reactionary mode of operation.
- Regional centres need support and enhanced support networks. Where sufficient local resources are not provided to undertake planning and initiatives/tasks that support a sustainable cities agenda, assistance from a state/national level bringing expertise and labour to the development of plans and programs in close collaboration with local people is beneficial and necessary.
- A Sustainable Cities blueprint needs to recognise, and provide for, the significant development that occurs outside of capital cities, and even outside provincial cities and towns.
- A particular issue that is currently not being addressed is the increasing uniformity of the built form, regardless of location. Increased importance on identification and fostering of local vernacular will provide for enhancement of aesthetics, recognition of locality, and appropriate functionality of the built form/community structure especially reflecting the diversity of climates, cultures and lifestyles within Australia.
- The strategy, including the development of the strategy, must recognise the role that industry associations are increasingly taking in setting the pace for sustainable urban development, often in advance of government (all levels), and also the increasing role of the market in requiring more sustainable practices and outcomes and increased industry responsibility. Industry involvement and leadership is essential to the development of a progressive blueprint and strategy for Sustainable Cities. The involvement and contribution of knowledge from outside of government must be encouraged, its worth acknowledged, and input rewarded financially.
- From the viewpoint that the shaping of development is governed by the tiers of government, and that government could be considered to currently have the following characteristics: (1) weak regulatory pressure for sustainable practices, and (2) an increasing appreciation for social, environmental and financial benefits of resource efficiency and sustainability, appropriate policy strategies *for government* include:

- Mechanisms that record and recognise the ultimate economic benefits of making sustainable choices.
- Policies that foster change in organisational culture and management practices with a view to increased awareness for more sustainable opportunities, including increased training for internal capacity building.
- Regulations that require auditing, accounting of resource efficiency and sustainability opportunity.
- Demonstration projects (local).
- Emission type regulations for jurisdictions - to promote awareness of costs/values of resources (including physical, environmental, social, community, etc resources).
- Access to funding and/or financial incentive for infrastructure and initiatives that have longer term paybacks.
- Fines for non-compliance e.g. with agreed emission targets.
- High regulatory performance standards for long life infrastructure with flexibility in short term to encourage application of unproven technologies.
- Incentives for financial investment in research and development.
- Voluntary agreements, codes of conduct and negotiated agreements for flexibility and to avoid strict legislation.

1. Preserve bushland, significant heritage and urban green zones

Does the inclusion of green zones within city planning result in further urban sprawl, which has a greater detrimental effect for the environment by encroaching on more surrounding bushland?

Yes it can, however consideration can be given to good planning systems which encourage a different way of using land – focusing development on areas where natural or agricultural values are least. In addition, the idea of integrating or sustaining environments and cities are entwined, and urban bushland cutting through the landscape can mean an improved relationship between urban dwellers and the environment through greater awareness and proximity. It not only offers places for reflection but places for wildlife.

Important to this is understanding the other results and impacts which can happen ie. increaser species vs decreaser species – this happens by a variety of processes including fragmentation of habitat, alterations favouring some species of wildlife over others, and gets done to what we plant where (in landscapes or in gardens). It is not just a simple matter of planting native trees to attract wildlife. It may attract aggressive dominating wildlife detrimental to others (eg. exotic palms on Magnetic Island providing fruits for Currawongs, which chase off or eat other smaller birds). The question of balance in the landscape.

There is currently a poor understanding of landscape ecology and impacts which occur as a result of changes we make to landscapes from urbanisation and “improved” residential garden landscaping, and which interface with local environments such as creeks.

In terms of local environments, the experience in Townsville is that, whilst it is good and important aesthetically to integrate natural features such as natural drainage environments, reality, even under modest sustainability criteria, is that the waterways will change, ie sand bed load and pool systems change to permanent base groundwater-reed environments (which, if then managed, can actually become pollution management systems), as opposed to people’s expectations, which are likely to be high, that things won’t change. In north Queensland, introduced grasses which can predominate an area once grazing pressure is removed in expanding urban environments, and the base system (ie. base load drainage from over-watering – either via groundwater or direct runoff) which favours these grasses and even weed native sedges such as typha, cause problems for drains by blocking flows in flood and changing the character of the creek. However the corollary is that these systems, if managed, can provide an environmental service – ie water quality management and pollution (eg. extraction of reeds and weeds remove nutrients, which would otherwise pollute bays and creeks).

So there needs to be acceptance and expectation of landscape-ecology changes happening at both a local (drain-creek-wetland) and a regional level (larger green spaces isolated by fragmentation – with or without native “wild” corridors for flora and fauna.

In terms of sustainability, the wider nature area-systems should be retained and managed as it was and/or is now. On the other hand, with smaller environments matrixed within the urban fabric of residential development, consideration should be given to reducing impact and on-flows of negative environmental aspects (ie. increased aggressive nectar feeders or predators moving out into the surrounding landscape from a secure or enhanced habitat base which favours their presence) through awareness and understanding of how each impact on the roles and values of smaller environments for some local native wildlife and environmental quality management (ie. water quality). This is a complex relationship and must be balanced and understood in terms of the natural enthusiasm of people to plant a type of native tree or exotic which, though bird attracting, actually reduces biodiversity through competition or exclusion of other animals.

Therefore the Sustainable City blueprint must ensure that these issues are examined and indicators developed to ensure mapping and understanding of impacts, and education-awareness campaigns on biodiversity at both the broad scale and the local scale, are understood.

A guide might be that urbanisation retains green spaces with a known regional-local character (ie. – if even reduced in number of species present (eg. rock wallabies no longer on an isolated northern savanna hills when surrounded by residential and/or urban development – aka Castle Hill or Mt Louisa in Townsville) and the residential landscaping style promoted ensures that impacts on these surrounding landscapes are minimised, even with species changes inherent within the urban area. Some wildlife will be seen by people to artificially enhance local residential environments – eg. Sunbird population increases in response to greater and suitable nectar supply provided from vines with suitable flowers, and people love them.

Recognition that exotic plants themselves can provide habitat and food for different wildlife: some beneficial or interesting, some benign in broader landscape impact, others more intrusive and ecologically impacting.

These are all issues which need to be at least taken into account in terms of sustainable cities and blueprints

There is currently very poor understanding of these ecological and landscape processes, and even when it is available, it is likely to be confusing to people due to its complexity.

Therefore innovative and creative ways of communicating this type of process and impact need to be considered and consumers made aware of their impact effects and how they can/cannot mitigate them.

What are the possible impacts of either increasing or limiting the proportion of bushland and urban green zones?

Infrastructure is unnecessarily extended, however it improves amenity, wildlife corridors and has many external benefits.

The possible impacts of increasing bushland or urban green zones depend on many factors including

- Landscape ecology issues discussed above
- Alternative and viable methods of sustainable transport options which exist between population centres/areas and their use by people
- Livability of a community which means that people wish to actually stay in the community rather than taking frequent long trips to other communities to either “get out of it” , “get away “or go visiting friends and relatives
- Degree of integral community which exists in that it has all the facilities and infrastructure which a community of people may wish for, and that visits external to the local community are less frequent or managed in other creative ways – at least as an option (ie. public transport or community agreed car travel days-weekends).

Reducing proportion of bushland and urban green zones can lead to a compactness of urban design-living residents and industry, but mean a more homogenous landscape of houses and places which are not disconnected.

Can green zones be multi-purpose – serving the recreational and social needs of city dwellers while also providing habitat and environment benefits for native flora and fauna?

In some cases they can, however this needs to be considered carefully and depends on the types of animals and plants which are retained-removed, increased or decreased from the local area.

There are natural areas-green zones that, by their nature and style of human use, are directly useful for passive recreation – walking and reflection. Some natural areas can have higher levels of disturbances to parts of their environments, for example mountain bike riding and trails; horse riding and trails; trail bike and 4 wheel drives; row boats/canoes and speed boats-skiing activities. It will depend on the resilience of the landscape to sustain the activity, and the relative impact of the activity proportional to the size of the area. A narrow waterway with fast boats may lead to creek bank erosion, congestion and wildlife scared off. The effect may be opposite for a wide waterway where congestion is lessened and wildlife have room to “feel at home”.

Again the effects of landscape ecology, disturbance limits, and other environmental impacts (erosion, noise, type of plantings around infrastructure, along trails, weeds etc) dictate the actual impact.

Is it appropriate to provide incentives to encourage partnership arrangements with land holders and developers to preserve remnant vegetation on private lands?

It is essential to provide a wide range of incentives to encourage partnership in wildlife management and protection of remnant vegetation and landscapes for both landholders and developers. Altruistic ways of doing business are not going to work.

However, society should not impose obligations on private landowners without proper compensation.

How do we ensure that preserved sites of built heritage are culturally valued and appropriately integrated into planned developments?

If society wants buildings etc. preserved, society should acquire or compensate. Current system where society 'declares' a heritage site is unfair, inequitable and open to abuse.

How do we ensure that public green zones are integrated into new developments?

Green zones can be integrated into new developments by identifying and recognising the intrinsic value of natural systems for biodiversity and landscape management (hills and waterways for catchment-water quality protection), early identification and recognition via planning maps with clear intents for land use and protection of their value.

Planning Green Zones both linear (eg. waterways-drains and other terrestrial habitat corridors) and block (eg. significant habitats both lowland and hills, and catchment protected vegetated hills and floodplains) which are connected via flora and fauna corridors and, where large enough, retain intrinsic values present at time of development. This recognises all the landscape ecology and use of native-exotic plantings in gardening and landscaping as discussed in first dot point above.

Planned green zones should recognise that there are a variety of scales for green zones and their connectivity to urban-residential and industrial land-use. Where green zones are small, then community education on the role and value of these systems as aesthetic corridors and places for people needs to be part of the planning. Such small areas might be less a place for animals and plants *per se*, yet retain value for water quality management and still retain functional biodiversity (ie. high aquatic flora and fauna values) but not necessarily to the same extent as "pristine or near pristine" waterways or habitats.

Developments themselves, both industrial as well as residential, then seek to obtain their character and identity from these features. Developers with active marketers are often quick to seek out these opportunities; unfortunately they are uptaken as an idea or principle at a very high generic level and not usually representative of the true nature of the environment or provide for recognition of the environment-areas actual ecological complexity or values.

Developments which obtain some credence as sustainable from a landscape ecology or biodiversity point of view

Developments in their broadest sense should recognise that biodiversity is more than just a numbers game of proportions of type retained/protected. Landscape biodiversity is a simple matter of the animals and plants which exist there now and that have value, homes (tree hollows), feeding areas etc. Environmental Consultants can often mitigate a developer impact or environmental requirements by dismissing the character and day to day nature of an area because it occurs elsewhere. Then it becomes ok to remove it by principle. Economic value over natural inherent value.

2. Ensure equitable access to and efficient use of energy, including renewable energy sources.

How might we implement a shift from the existing large-scale energy generation and distribution infrastructure towards an alternative model?

Stance on use of renewable energy sources 'where possible and appropriate' appears too soft.

Uptake of renewable energy can be promoted through inclusion of 'real costs' in cost for use of carbon based fuels/energy sources, i.e. remove subsidises on carbon based fuels and carbon generated electricity.

Renewable energy should be promoted particularly to low income areas as these areas will be most at risk when carbon based energy costs do rise.

Through the price mechanism but include externalities, ie, greenhouse effect. If price increases, the market will change by a reduction in consumption and looking for alternatives.

There needs to be greater reliance on distributed generation model of energy supply. In this model there are many generators putting power into the mains grid. While the existing energy market in Queensland and Central/North Queensland has features of this, it is still underpinned by large coal fired stations.

The increase in the number of cogeneration plants - such as those that burn bagasse in cane mills - is welcomed. However, what is also required is for many smaller scale power generation systems using other renewable sources such as wind and solar and micro-hydro (small hydro power plants). Smaller systems in the order of 100 to 500 kW peak are largely uneconomic under existing pricing mechanisms.

As addressed in Eco-Generation Magazine of the Australian Business Council for Sustainable Energy (Issue 20/November, 2003, p.8) providers of small scale renewable energy into the mains grid are penalised by the pricing structure, while those who impose new load on the power demand (ie. new air conditioners) peak are subsidised.

Unfortunately, the capacity of the Local Utility to develop an innovative, local pricing solution is limited by the constraints of the National Energy Market that imposes a uniform pricing and tariff structure Australia wide. The mandated uniformity in the pricing structure not only fails to recognise sustainability in energy as a consideration, but retards the development of small scale sustainable **energy systems**.

How can the uptake of renewable energy for residential and commercial properties be promoted?

One method to promote the uptake of renewable energy for residential and commercial properties would be to create a new pricing structure within the National Energy Market whereby these systems are economically preferable to both the utility and the system owner.

For example, a pricing mechanism with the following characteristics would be beneficial.

- Allows for renewable energy systems up to 500 kW peak;
- Feed their power into a residential area or industrial area;
- Excess power is fed into the mains grid and credited to the supplier at a rate reflecting its green value.

What are the impediments to utilising renewable energy sources in residential, commercial and industrial areas and how might these be addressed?

North Queensland's Energy Utility, Ergon Energy, permits small scale renewable (rooftop solar) energy systems under an agreement known as the Small Scale Renewable Energy Agreement (the Agreement).

This is an imperfect agreement for both Ergon Energy and the Householder. This is because for Ergon Energy:

- the system puts an insignificant amount of power into the mains grid,
- the system does not obviate the need for the existing electricity infrastructure – as it requires mains power for those times when the sun is not shining;
- the Renewable Energy Certificates produced are so few as to not be worth the administrative expense of claiming;
- and the householder is credited at a rate higher than the normal purchase power of any electricity (ie. 11c/kWh);
- The normal poles and cables networks charges are forgone.

The Agreement is imperfect for the system owner because:

- North Queensland homes typically consume between 30-40 kWh energy per day but the agreement caps the credited energy at 10kWh/day;
- Industrial users (even warehouses) can be anticipated to use more;
- The agreement means that the householder must pay for the renewable energy system as well as paying for $\frac{3}{4}$ of a normal energy bill. An industrial user would probably need to pay a higher proportion;
- The agreement denies the system owner the ability to claim the RECS which could possibly be sold five years in advance, thereby reducing the capital cost of the system.

A striking problem is that the needs of the State Owned Corporation, Ergon Energy, are at odds with the needs and wants of those consumers who are prepared to finance and develop renewable energy systems.

There is no financial benefit to Ergon Energy to support or promote these systems given their focus on producing revenue for the State Government and the huge economies of scale of centralised fossil fuel plants.

Furthermore, there are limitations to Ergon Energy's capacity to develop innovative financing mechanisms because of the requirements for uniformity Australia-wide under the National Energy Market.

Another impediment is that to date there are very few (ie about 8) of these roof top renewable energy systems in place in North Queensland. Thus there is almost no political pressure for change. And there is no substantial baseline of information about the benefits of such systems.

To overcome this, there should ultimately be a cross subsidization of power generation with a tax on carbon rich power (ie. coal) subsidising low carbon power (ie. renewables). While small scale renewable energy systems remain comparatively expensive compared to centralised coal power, and the pricing structures are stacked against small scale renewables, small scale renewables will be unable to reach the economies of scale through which the mass production will bring prices down. This energy scenario should be assessed with a Commission to consider a range of issues including:

- The employment increase associated with manufacturing, installing and maintaining small scale renewable systems;
- Consider the balance of payments issues of locally produced renewable energy systems compared to massive investments in international technology (ie. General Electrics steam turbines etc);
- Consider the security benefits of not having huge centralised plants etc;
- The potential greenhouse benefits of promoting renewable energy systems.

It is also important in looking at the question of promoting the use of renewable energy to ensure that the benefits from the uptake of renewable energy are real and not emotional.

On current cost of production, it is too costly compared to traditional services, without including externalities in pricing. This is likely to remain the position in the foreseeable future.

Should renewable energy generation be promoted at the single dwelling level or across city regions?

- Renewable energy generation should be promoted at both the single dwelling level and the city region level taking advantage of low distribution losses (single dwelling) and economies of scale of larger renewable energy systems (regional);
- A suitable pricing structure should be developed wherein all opportunities to feed power into a network are take advantage of;
- It is important to first identify and then remove barriers to the wider adoption of renewables on any scale;
- It is vital that renewable energy initiatives must work in tandem with energy efficiency in order to ensure costs are minimised;
- Many utilities will charge a householder for connection to the mains grid and service fees even if the householder does not want and will not use mains power. Connections to the grid should not be mandatory.

Are there economic, and hence social, implications of a city increasing its use of green power and developing new complexes which are predominantly self-sufficient in terms of energy generation?

- Australians intuitively know that continuing reliance on coal power is a poor option for the future. A move toward regional self sufficiency in renewable energy will be welcomed, although probably largely misunderstood;
- Many of the economic barriers to introducing these technological advances may be overcome by innovative business models. However, under the National Energy Market pricing mechanisms currently in place, there are limitations on the innovations that are possible in sustainable energy supply;
- There may be hurdles in gaining acceptance of the ‘distributed economics’ of renewable energy supply. This can be overcome by a few successful example projects and by educating the public.

If the real costs are higher than existing sources of energy (adjusted for externalities) there is an opportunity cost to society for a sub-optimal use of resources – the money could be better spent elsewhere to maximise community welfare.

Should higher efficiency standards be mandated for all new dwellings, appliances and business operations?

- Higher standards should be mandated for all new dwellings and continually increased for appliances;
- One option would be to require all new buildings to provide a minimum amount of their own energy requirements from renewable energy. Because it is generally cheaper to reduce energy demand than to produce renewable energy, this will act as a market mechanism to ensure the energy efficiency of the building design and use;
- To police this, the buildings meter could be set such that energy consumption over a certain mandated amount accrues an extra charge. This extra charge could then fund renewable energy systems on existing buildings;
- Higher standards should continually apply to the appliances on sale keeping step with best practice.

Yes, if extra investment is justified by savings. Proper labelling of information gives consumers the choice of making this decision.

How can residential and commercial developments incorporate renewable energy generation into planning and construction?

Residential and Commercial developments could incorporate renewable energy systems into the planning immediately. However, until such time as there is an economic environment where it is viable to do so, this will not occur.

Developing the right pricing mechanisms to support small scale (ie. up to 100 kW) renewable energy systems would be a major benefit as the cost of installing

renewables could then come to be subsidised in part by the reduced energy costs of the building.

Through using designers and planners who incorporate such considerations on a cost/benefit basis.

Land use planning for orientation and provision of space suitable for solar panels will assist incorporation of renewable energy generation.

To what extent should public transport systems seek to change to renewable energy sources?

- Public transport systems should gradually introduce renewable fuels such as ethanol, biodiesel, methane, electricity from renewable sources;
- The development of such renewable energy powered public transport systems will have many other benefits including regional jobs, reduced air pollution, healthier cities etc;
- The adoption of these fuels is heavily dependant on the development of a political environment in which bio fuels can be economically produced;
- Excess costs for these fuels can be paid for by a direct tax on carbon rich (fossil) fuels.

Public transport as a preferred form of transportation will benefit significantly through adopting renewable energy sources – pollution will be down, noise will be reduced, favourability will go up, sets a good example, to the extent it is cost effective to do so.

3. Establish an integrated sustainable water and stormwater management system addressing capture, consumption, treatment and re-use opportunity

Should cities of the future be looking to develop more localised small scale systems of urban water management?

The Sustainable City 2025 will inherently recognise through its people, and their awareness of, the place it has in the hydrological cycle, local or regional, of that area. The water resource will be understood in the context of the local and regional environment. People will know where water comes from and how they use it and abuse it. They will understand that water flows through our cities via both engineered systems (water supply) and waste stream capture and treatment/reuse. They will understand what uses it has and how much the environment needs as an ecosystem for both habitat and service – ie, pollution control. They will understand how much it costs to treat water and wastewater. They will know how they can be involved in minimising use.

In specific regards to stormwater management, they will know how they impact, and cities will be developed and/or retrofitted to ensure stormwater pollutants are actively managed through a variety of mechanisms from source to receiving environmental water. Waterways will function as both a mix of wildlife habitat and water conveyance to reduce impact of flood (not remove!), and provide an ecosystem service for cleaning and maintaining the health of our waterways and wetlands (coastal and marine).

Previously considered problems resulting from previous poor land management choices or changes will be seen as resources. For example weeds and reeds will be seen as actively managed fertiliser for gardens and parks rather than a cost burden for drainage maintenance engineers and Councillors. Some of these weeds such as para grass in northern Australia, have become problems as cities have grown into farming-grazing land where once the grasses were eaten by animals (cattle).

Water will be used and reused to the maximum extent possible with all options for capture being explored.

The scale of urban water management will depend on the efficiencies required in construction cost, maintenance costs, and the relevant environmental protection objectives. In the tropics, with high seasonal rain, larger scale water and wastewater treatment systems will be likely as an economy of scale and to ensure proper maintenance and management.

Localised small-scale wastewater treatment (environmentally friendly systems) may not be useful due to problems of requiring dual reticulation. Dual reticulation would most likely be required when ground water flooding prevented irrigation of treated effluent. Unless cheap technological and safe solutions to water reuse and irrigation are found for small-scale systems then single reticulation to main sewers and infrastructure may well continue to be the best option for environmental care and management. Mains sewerage is clearly a preferable outcome on the world heritage listed Magnetic Island as septic systems and irrigated lands fail in the seasonally big

wet periods. This may not be a problem if the problems did not linger into the dry season and polluted flows were diluted.

What scale of residential water management systems is most efficient and sustainable?

There is no 'magic' scale, horses for courses – depends on land uses, catchment size, and local conditions.

Waste water management systems for scale of up to 100 persons are available but have not been widely tested in urban environments. Importantly, also, these systems have not been properly costed as a wide-scale alternative to mains sewer.

Also the issue of long term environmental sustainability of small-scale systems as above. In tropical seasonally high rainfall areas, larger scale systems may be more appropriate, and where economies of scale for commercial water reuse, and perhaps reticulation and distribution to parks for irrigation, can be made.

How do we encourage areas to abandon existing waste water systems, which may discharge to the ocean or other waterways, in favour of alternative waste water treatment methods?

Promote efficient use of water, develop recycled water reticulation systems, and change the concept of 'English' high water use gardens to models more suited to the Australian environment.

Transformation of existing waste water systems will require political will. It must become a priority, where non-conformance is penalised. A CRC to provide expertise would help.

The issue of cost and who pays is important. Townsville City Council is exploring public-private partnerships for water reuse and recycling to reduce treated water discharge to the reef by up to 95%. Due to the high costs of tertiary treatment this can only be done either in business partnership with commercial enterprise or if heavily subsidised by government. The costs should not be borne by Local Government alone.

How do we transform existing developed city areas into more sustainable water management systems?

One option is to develop local, site specific projects coordinated by Local Authorities. Funding should be made available to assist development of projects through interdepartmental teams including Environmental Management, Water utility and environmental.

Local Authorities should change planning regulations in order to ensure that large scale urban developments include sustainable water management systems such as the retention of wetland areas, rainwater retention areas to feed irrigation etc.

What incentives or market based instruments might be appropriate for residential and commercial enterprises to encourage responsible water consumption and re-use?

Incentives for responsible water use, including greater responsibility at local government level – tradable water allocations, restrictions on inefficient water uses, e.g. lawns, pay real costs for resource.

Taxes to incorporate externalities of discharge, subsidies to change the investment equation, assistance programs to identify and aggregate markets for regulated water, and cost/benefits of individualised projects.

Are more standards and guidelines needed for new development to minimise waste and storm water and to maximise capture and re-use opportunities?

Yes, best practices guidelines are absent, and if developed at state level ideally (or local government level) with modifications for regional differences, would avoid reinvention of the wheel at local level.

Council supports *in principle* the introduction of a national mandatory water efficiency labelling and minimum performance standards for domestic water using devices. This would include showerheads, basin taps, washing machines, dishwashers, toilets and urinals.

Council considers that this is an important component of any effective water demand strategy, encouraging the community to move to water efficient products and appliances in domestic areas.

However, are the costs imposed by such measures justified on a cost/benefit basis? Is a 'one size fits all' approach suitable for all users given different regional circumstances? Are such inflexible guidelines and standards likely to achieve counter productive results, ie, maximum discharge quality limit versus average discharge quality standard to take account of seasonal rainfall?

4. Manage and minimise domestic and industrial waste

How does a sustainable city bring about attitudinal change and encourage its inhabitants to accept greater responsibility for waste minimisation and management?

Through ownership. Also, through education and an approach that gives/mandates *responsibility* as an essential part of their right to operate/live in that area.

And/or

Through bringing about cultural change in the way we all live and work. If waste is seen principally as a resource then we might value it more and seek to find it a proper home, prior to binning it generally in generic disposal.

Alternatively,

All waste. It may be more effective to place most waste together and have technologically superior sorting facilities or waste-to-energy facilities.

What types of industry are appropriately located within cities, and how do sustainable cities respond to production processes and waste treatments that exist to meet city consumption patterns but occur outside of city limits?

Purchasing policy codes that require products to be produced in an environmentally friendly manner.

Industry has a massive role. Government must, and perhaps already does, recognise and assist this. Incentives include voluntary initiatives, codes of practice and partnerships (equal, perhaps even instigated by industry, with government as the [lesser] partner). Industry must become responsible and proactive and relinquish their resistance and reliance on government leadership. The Johannesburg Business Pledge for Action states: - 'Sustainability is the Opportunity, which we embrace; Responsibility is the Standard, by which we should expect to be judged; Accountability is the Obligation, which we assume; Partnership is the Pathway, which we pursue.' This would indeed be a desirable framework for all industry to work with.

Any industry can be located within a city conditional on it meeting and achieving consistently environmental sustainability criteria – that is noise, air and water pollution are prevented/mitigated and the industry's physical footprint does not displace natural systems. If it does, it compensates for this loss.

What strategies are appropriate to encourage eco-efficiency and the reduction of domestic waste?

Firstly set targets. Also include contribution for waste charges at manufacture stage similar to the German packaging system which provides funds for waste handling, reprocessing and disposal sourced from the manufacturing stage (and therefore included in the cost of the product at purchase) and also includes an incentive for product/packaging manufacturers and designers to lessen the cost of

recycling/reprocessing their packaging and products, leading to continuous improvement. Consumer choice and price signals would seem to be the best way to be successful.

- All new appliances should be manufactured to be easily dismantled for recycling (such as has happened in the auto manufacturing industry in Germany). A surcharge should be added to their retail price to make up for the difference in price between their value as recycled material and the costs of collection and dismantling and reprocessing.
- Local authorities should be assisted to develop recycling centres adjacent to landfills and these recycling centres should be coordinated nationally to develop economics of scale.

These centres could be used to implement government policy on, for example, the collection of ozone depleting substances from scrapped refrigerators and air conditioners.

What strategies are appropriate to encourage eco-efficiency and the reduction of industrial waste?

Strategies for eco-efficiency and reduction in industrial waste – cleaner production approaches; inclusion of environmental and social costs/impacts in resource costs (currently treated as externalities).

Facilitate networks of sustainable industry players who agree that waste is always a resource waiting for another industry (or industry yet to be) or process to utilise it.

Promote the creation of incentives which facilitate waste resource scavenging at all levels of use.

Ensure that all components of the industrial process are properly priced to reflect their true value (ie. externalities incorporated) so that it is within the interest of the producer to reduce material consumption via innovative processes and use of materials or alternatives.

Are there economic impacts for a sustainable city in dedicating higher environmental standards and waste treatment?

Yes, reduces disposable income, scares off investment if other areas/countries do not do the same.

While we don't include the 'lifecycle cost' of resource use it will be an uphill battle. The flawed underlying assumptions of economic systems must be altered. It is futile to work inside an economic model that dictates that growth is good when we live on a planet with finite resources. Having said that, the costs of not requiring higher environmental standards and waste treatment carry with them considerable social and environmental costs that we will have to bear and ultimately pay for (including financially). We are already 'paying' for these overlooked 'costs' and we will continue to do so. Taking reactive, recovery actions will mean we have delayed. Our social, environmental and economic costs will have increased, and the financial cost

to recover will be far more than if we had invested in preventing those issues/costs to start with.

At present there are large amounts of industrial waste. One reason for this is that the value of recovered material is high in comparison to the cost of raw materials. For as long as it is cheaper to produce new materials than to recover used materials, there will be a continuing increase in the amount of industrial waste. In order to make this material usage sustainable, it will require more industrial waste to be re-used or recycled. This can be facilitated by mandating recycling and this will become economically viable once the external costs of providing raw materials are internalised into the price.

What is the role of industry in ensuring sustainable cities, and what incentives or standards are appropriate to achieve this?

Industry in many cases is already providing the lead in sustainability and demonstrating in practice resource recovery, reduction and efficiency in operation. Industry has a role as the significant investor and some practices only emerge as a result of the striving for new ways of doing the same job cheaper and with fewer resources. Local heavy industry in Townsville have set targets in resource use (energy and water) which dramatically reduce their ecological footprint and in some cases return otherwise over exploited resources to the community.

How can industry be encouraged to be more socially and environmentally responsible, and to work in partnerships with local communities?

If there are no choices but to do so, or there is an economic benefit.

Implement regulatory mechanisms that require them to take on that *responsibility*. Some consultancy services/assistance to enable knowledge/application/adoption of these practices will be necessary to enable capability.

Industry in many cases in Townsville is leading the way due to market realities or high level drivers to incorporate social indicators into their operations.

5. Develop sustainable transport networks, nodal complementarity and logistics

What initiatives can assist in the reduction of automobile dependence?

Automobile dependence need not be such a problem. More attention should be paid to where social, environmental and economic problems associated with automobile dependence are intractable or highly problematic.

Attention should also be paid to identifying where simply changing the type of vehicle might make automobile dependence non-problematical. For example, traffic congestion in cities caused by people driving small electric vehicles is far less problematical (from an air quality perspective) than the same congestion caused by people driving 4WD vehicles.

Efforts should be made to promote a whole range of alternatives to petrol driven cars. For example, a host of initiatives could be put in place to support drivers of electric vehicles, hybrid vehicles, LP Gas vehicles and other vehicles that have good sustainability attributes.

This initiative could include access to bus only lanes, free parking, discounts on registration fees, reductions in sales tax, etc. These initiatives spread across the whole spectrum for government from Commonwealth to Local, and should be coordinated by a central body.

There should be developed a rating scheme for the transport sustainability of urban areas. Indicator could include access to bikeways, public transport, distance to services, proximity of freeways linking to services and work nodes etc. In this way, areas with a high ranking will be easily recognised by the public and identified etc. With this rating scheme, it will be possible to determine the status of areas under design with a view to changing the design or ensuring that poor performers lose market share to good ones.

A process of educating the community through advice on the issues involved and what is desirable and expected of them to achieve a sustainable transport system in the City. Such an education system should commence with primary and secondary school children.

Council supports the principles of making our cities more people/bike oriented. Council's Ross River Parkway Project - "A Natural Seam in the City" - provides for a shared pedestrian/bicycle path of around 22 kilometres, linking outer suburbs with the Central Business District.

The pathway is designed primarily for recreational use with the completed network being a series of loops that utilise existing roadway, bridges and weirs to provide links across the river. Consideration has also been given to the use of the pathway for commuters, especially for providing a safe route for school children to and from schools.

This \$10 million project is an example of what can be undertaken to facilitate pedestrian and bicycling activity. However, it comes at a great cost which, if it is to be ongoing, has to be shared by all levels of government. Council was successful on this occasion in attracting around a 50 per cent State Government contribution.

Council is also promoting higher density living in inner City areas by implementing strategies that have seen under-utilised Council land in the inner City being transformed into mixed-use high density residential development for inner City living.

The inner City urban renewal programs receive no support from the Commonwealth yet play a significant part in addressing the 'Sustainable City' concept. It is widely accepted that density of urban activity is crucial to lowering car dependence.

A new national urban renewal infrastructure program including urban renewal, accessible and affordable public transport and bicycle ways, is now what is required to address the objectives of sustainable cities.

Should new transport technologies, such as electric cars and buses, be promoted as alternative to conventional fuels?

New transport technologies such as electric cars and buses are vital to sustainable transport and do not necessarily have to be promoted at the expense of conventional fuels.

Some new transport technology use conventional fuels but in a far more efficient manner. For example, the New Toyota Prius uses about 60% less fuel than an equivalent sized car. Also, modern common rail diesel cars from Europe are extremely fuel efficient and clean.

There should be some government funded scheme to promote the introduction of new technology such as electric vehicles, human transporters etc. How many electric vehicles currently on the market internationally are suited to Australian standards? An Australian Government website should give the answer to that question.

There is a need for modular, low cost public transport options. Examples of these are the excellent public transport system in Curitiba, Brazil. In North Queensland, the indigenous technology associated with cane trains could be brought to bear for a low cost tram-way system.

Another good sustainable transportation technology is broadband internet. Proper use of this technology can obviate the need to travel. A program that assists business to develop work-from-home technology for some staff, for even a few days per week, would assist to reduce traffic and promote a work style that has been much discussed but is rarely seen.

Yes, alternatives to conventional fuels should be promoted provided they are more energy efficient on a cost/benefit basis projected into the future and including externalities.

What are the features needed in new settlement areas to encourage more diverse and sustainable transport networks?

New settlement areas need to be built with a large focus on pedestrian and non-motor car vehicular access - developed so that cars need not be the dominant transport mode: motor vehicle infrastructure such as roads; parking bays should be designed for multi use or scaled back to de-emphasise the motor vehicle. For example, two-lane roads should be made single lane with pull over bays. Parking and some vehicular access areas should be grass (with use of grass ring technology to permit limited traffic without damage to grass).

Longer term planning to integrate sustainable transport systems into existing and new development areas must be supported and required by Federal government.

Bikeways separated from roads and less parking provision for private vehicles

What is the role of federal government in assisting metropolitan areas to restructure transport networks in line with more sustainable settlement patterns?

While the community is concerned about the environmental impacts resulting from driving cars, most feel powerless to do anything about it because in regional cities there is no realistic alternative such as rapid and frequent public transport systems.

Regional urban transport systems need a large input of funds in order that people have any real alternative to car travel.

By providing accessible, affordable and safe public transport and bicycle networks, together with urban centres that are suitably connected, governments, property developers and transport providers can address the current car dependency. Council considers transport is one of the key issues in addressing the objectives of 'sustainable cities' in large regional urban centres. Improved public sector funding for public transport in regional centres, including bicycle ways, is critical to address this issue.

Federal Government can assist to popularise successful demonstrations of Australian and International sustainable settlement patterns.

What are the needs of transport systems for them to be equitable, accessible and economically viable?

For sustainable transport systems to be equitable, accessible and economically viable – less desirable transport systems must be disadvantaged in comparison.

6. Incorporate eco-efficiency principles into new buildings and housing

How can green construction and refurbishment techniques be integrated into standard building practices?

Advantage it. Regulation, despite its intentions, still makes it a more laborious and expensive path to get approval for 'innovative' developments.

As an example of eco-efficiency principles, energy efficiency provisions for housing in the Building Code of Australia became effective in Queensland as of 1 September 2003 and apply to all Class 1 buildings and Class 10a buildings with a conditioned space, for example garages.

These are the first national requirements for housing to meet minimum energy efficiency standards which are to eliminate the worst, most energy inefficient housing designs. The purpose of the regulations is to reduce greenhouse emissions by using good design and construction methods to make our houses cooler in summer and reducing the need for air-conditioning.

Local Authorities have the opportunity to play an important role particularly through their Town Plans. The Town Plan can provide a minimum standard for building energy and sustainability performance.

However, the words written in the plan will come alive only if there are demonstration houses built to show builders, developers and home owners what is possible in house design. The design and construction of these demonstration homes should be undertaken jointly with local Authorities and builders and other property specialists. Commonwealth funding should be provided.

An excellent example of this is the Brahminy house project developed by Maroochy Shire Council. This was an energy efficient house constructed by the Council and used as a display. After a few years, when the number of visitors declined and the uptake of energy efficient design houses had begun, the Council put the house on the market. Another example is the Queensland Department of Housing's 'Smart House' in Astill Court, Cranbrook, in Townsville. The house, part of the Department's 'Smart Housing' initiative to encourage the design and construction of comfortable, flexible and cost effective housing in Queensland, incorporates features that make it affordable, energy efficient, safe, secure, universally designed (making the home comfortable for people through different stages of their lives), and has disability access.

How can eco-efficiency innovations be promoted to achieve a market value in both commercial and residential buildings?

Include an appraisal of running and maintenance costs for buildings at point of sale. Also incorporate real costs for energy, water, waste disposal, material consumption – including currently undervalued social and environmental costs – then the benefit of eco-efficient practices will be demonstrated financially – and importantly linked to the

user. Incorporating full 'lifecycle costs' for materials will impact choices of construction industries.

What are the impediments to eco-efficiency principles being taken up across new housing developments and commercial areas?

Very low awareness, recognition of benefits and lack of demand by consumers, industry and government and elected political representatives – often based on perception (and sometimes actuality) of negative financial incentive. The strong link between the building and development industry and measured economic prosperity, and a lack of desire and demand for sustainable outcomes to be achieved by the industry given that context. Very conservative mindset to housing form. Prevalence for style and status above functionality and sustainability performance. The difficulty in expressing benefits.

Many impediments are due to established norms in the property development industry and the absence of sanctions against poor quality buildings. The economies of scale enjoyed by property developers, and the rigidity of existing trading patterns (ie purchasing patterns) make it difficult to introduce new technology.

What type of incentives or standards for new developments might be appropriate to encourage more sustainable residential complexes?

An approvals process that advantages 'sustainable' development. Subsidised expertise to provide sustainability advice. A mechanism for peer review rather than government review (ie use of industry expertise).

A simple, measurable and inexpensive standard or index of a building's sustainability rating is its **carbon signature**. This signature refers to the:

- embedded energy (carbon) of the materials;
- the greenhouse emissions associated with transport of the materials, the carbon signature of powering the building;
- the carbon signature of decommissioning/recycling or removing the structure at the end of its life.

Buildings with a low construction carbon signature would typically have a high quantity of construction materials made of natural materials (wood, earth, and stone) and low energy demand in operation.

Alternatively, buildings with a high construction carbon signature would have energy intensive materials such as stainless steel and aluminium, and would be energy intensive to operate (eg. to heat/cool and light).

Carbon intensity alone is not a total sustainability indicator but is a good proxy indicator for many aspects of sustainability.

Are existing building standards and product labelling sufficient to enable informed consumer choice and to ensure that the use of eco-efficiency materials and designs are maximised?

Models for building rating are not suitable and no alternative rating schemes are yet proposed to enhance informed customer choice.

Cars have only recently been mandated to carry a greenhouse emissions label. No such labelling applies to construction materials. Eco-efficiency in building materials is currently an esoteric interest.

Eco-efficient materials should be subsidised with a tax on non-eco-efficient materials.

7. Develop urban plans that accommodate lifestyle and business opportunities

What planning models and zones can we use to accommodate the different lifestyle needs and preferences of Australians in cities?

Recognition of the different needs/ wants of people.

Develop cities for PEOPLE – that is the whole point.

Separation of the service from the product. It could look physically different, but so long as needs are met.

Are urban hubs and communities concentrated around public transit nodes an appropriate future model to suit Australian lifestyle needs?

Public transport is an essential part of the tool kit for reducing transport costs and traffic congestion. Where urban sprawl continues resulting from current or future land-use decisions, then public transit nodes centred on urban hubs will be essential and would seem to be an appropriate model.

However use of vehicles, if fuel efficient, non-polluting, and greenhouse gas reducing, can still form part of our lifestyle, especially if vehicle waste management and recycling are intrinsic.

How do we transform existing suburban and inner city developments into more sustainable forms of community living?

Fostering communities within cities that enable mixing of people, socialising and working all in the same place. It must be integrated – all must function together – community, commercial and biodiversity.

How do we ensure that further urban expansion occurs as planned community developments?

Plan well in advance. Consider whether placing a higher priority on increasing densities to minimise footprint might not be a better utilisation of resources than expansion of urban areas.

Social Impact Assessments

A new development may have both positive and/or negative social impacts on the local or regional community. Importantly then, impacts (both positive and negative) must be identified early in the planning process to ensure the development is in fact suitable for the site and locality proposed in the development application.

It is important to ensure that the sustainable city of the future reflects social justice principles in its planning and development. Social impact needs to make sure that any proposed new development contributes to the social justice principles of access,

equity, equality and participation in the planning process and the life style of the sustainable city.

In response to social impact questions raised in the Terms of Reference for the Inquiry into sustainable cities the following is an outline of the social impact assessment process facilitated with the assistance of the Community and Cultural Services Department.

A social impact assessment assesses the social changes that result from proposed projects, programs or policies. They are concerned with the social impacts of development and change on communities. They aim to maximise desired outcomes and to minimise costs or losses to communities. Good social impact assessments address equity issues and involve the affected communities or individuals in the process.

The staff in the Community and Cultural Services Department are qualified to prepare social impact assessments and are to be involved in the check list process as specified in the Social Code of the Townsville City Plan. The check list is the mechanism for deciding when development requires social impact assessment. The Unit also has a close relationship with areas of the Department dealing with youth, the elderly, the indigenous population, cultural, and sport and recreation sections and can therefore provide a coordination role when input from these areas is required into the assessment process.

For the purposes of a material change of use, a Social Impact Statement (SIS) is mandatory if the development is captured by any of the triggers identified below.

Triggers

Rather than stipulating numbers or percentages and therefore providing a benchmark to trigger the Social Code, a list of questions has been developed. If the answer to any of the questions is YES or POSSIBLY, an SIS is triggered. Importantly, those questions with yes or possibly answers provide the proponent with a clear indication of the key issues to be addressed in the social impact statement.

1. Will the proposed development give rise to a significant increase or reduction in the number of persons on the site?
2. Will the proposed development significantly benefit or disadvantage any particular social group?
3. Will the proposed development give rise to an increase or decrease in employment opportunities in the locality compared with the previous use of the land?
4. Will the proposed development have a significant impact (such as tenure, type, style, cost etc.) on existing housing stock in the locality, particularly low-rental housing?
5. Will the proposed development impact upon existing community meeting places?
6. Will the proposed development give rise to increased demand for community services or facilities in the locality?
7. Will on-site support services be required?

8. Will the proposed development generate conflict in the community or adversely impact upon community identity?
9. Will the proposed development enhance or detract from the cultural characteristics of the community?
10. Will the proposed development create areas of insecurity or risk for occupants or pedestrians within or adjacent to the development?
11. Will the proposed development give rise to increased public concern regarding public safety?

Social Impact Statement (SIS)

Terms of Reference

A Social Impact Statement is required for developments which answer YES or POSSIBLY to the trigger questions outlined above.

The SIS will describe the potential positive and negative social impacts associated with the development proposal. Mitigation measures are to be clearly set out in the SIS for any potential negative social impacts resulting from the development.

Community Wellbeing

Any application submitted to Council which is subject to the Social Code will have to consider '*COMMUNITY WELLBEING*'. Community well being means:

- management of a community's resources;
- determining and managing impact on people's way of life, their culture and local community; and
- ensure opportunities exist for individuals or communities to participate in local governance.
- *Community Wellbeing* can be understood, as part or all, of the following factors:
 - Economic Vitality
 - Ease of Access to Service and Facilities
 - Community Harmony (Celebration of place, Healthy Community, participation)
 - A Safer Community
 - Cultural Development.

The components of community well being are defined below.

Economic Vitality

Economic vitality, in a social sense, relates to the extent to which development contributes to economic development and employment opportunities within the local community.

The local economy may undergo dramatic changes as a result of new development such as increased opportunities, changes to consumption levels and standards of living, and this has to be taken into consideration when assessing applications for development.

Ease of Access

Ease of access relates to the extent to which development impacts on the community's capacity to gain access to the services and facilities in areas that are essential to achieving and maintaining an equitable standard of living. This includes impacts on physical, geographic, administrative, policy or financial access. Fair and equitable access is essential to the maintenance of community wellbeing, and ensuring the access is not hindered but enhanced by the new development.

Community Harmony

Community harmony is the 'ties that bind' a community together. The concept relates to community pride, sense of place, community identity, participation in community life and the capacity of a community to accept and accommodate difference between people. Any development must contribute to community harmony and not disrupt the existing physical and social cohesion.

Community Safety

The absence of anti-social behaviour such as crime, injury and harm, the prevention of potentially unsafe practices and the community's sense and perception of safety and security define community safety. Any development should contribute to community safety and not in any way create an environment that threatens the community or individual's way of life.

Cultural Development

Cultural development is defined as the expression of the life and character of a community through elements of tradition, historical and significant property and monuments, records, products and cultural events.