

Appendix 1. Supporting information regarding infrastructure and housing to Environment Centre NT and COOLmob submission for the Territory 2030 Strategic Plan

A key priority for the Northern Territory should be to have implemented the principles of Ecologically Sustainable Development (ESD) within the next five years. ESD requires that priorities and resources target development that has economic, environmental and social benefits.

Infrastructure & Housing

Strategic Direction	Issue/Background	Targets	Action	Performance Indicators
Transport and infrastructure (including NTG funded energy infrastructure) investment decisions are based on Least Cost Planning ⁱ	Least Cost Planning compares the total costs and benefits for all alternatives to meet a service need. The alternatives assessed in each case include demand reduction measures, such as demand management and energy efficiency, road pricing, developing more walkable and cycle-able neighbourhoods and promoting telecommuting.	Alternative demand reduction options implemented by Government and government owned corporations where they prove to be least cost approaches.	<ul style="list-style-type: none"> • Training of Government economists in Least Cost Planning • Least Cost Planning regularly used 	<p>Least Cost Planning used to compare demand reduction options with traditional solutions prior to all significant investment decisions.</p> <p>Demand reduction programs exist in all relevant areas and case studies are regularly released and awards granted.</p>

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<p>Ecologically Sustainable Development is not negotiable.</p>	<p>There have been claims that recent major projects, developments and sub-divisions are targeting sustainability but the end products have not delivered consistent sustainable outcomes. Eg. The supposedly sustainable street orientation in Bellamack is wrong and will result in significant air conditioning use.</p> <p>Also, even when the NT adopts the 5 star housing energy efficiency requirements in the Building Code of Australia (BCA), there will not be a significant improvement in the sustainability of new tropical housing stock.</p> <p>We need new specialist resources in Government tasked with rapid evolution of minimum energy efficiency requirements that will result in a step change in the design of tropical housing for comfort as well as for energy efficiency.</p>	<p>Clear, measurable, mandatory sustainability requirements, developed, peer reviewed, and assessed by experts, included in all government project specifications and bid assessments from project conception.</p>	<ul style="list-style-type: none"> • Mandatory minimum requirements are set and regularly reviewed and improved on in: the NT Planning Scheme, the Building Code of Australia provisions for the NT, Development Consent processes, Environmental Assessment processes, and local, Territory and Commonwealth government funded projects. • Expert sustainability input sets mandatory sustainability requirements, and assesses bids and final proposals against these requirements, for all major projects. 	<p>All new developments and buildings achieve mandatory ESD requirements as reviewed by an independent Sustainability Commissioner.</p> <p>Planning Scheme includes mandatory requirement for 90% of streets in new developments to allow north south orientation, and east west long axes, of residential buildings - and solar access to northern facades in hot arid areas.</p>
<p>Ecologically Sustainable Development is not negotiable.</p>	<p>Feedback from ECNT members suggests that Government Capital Works projects funding levels are at times less than the required budget to meet the service need. Apparently, when faced with insufficient budgets, stakeholders often focus on achieving floor area requirements at the least possible cost per square metre and there is insufficient budget to implement best practice cost effective low energy greenhouse-friendly measures.</p>	<p>All project budgets are sufficient to achieve project scope, quality and sustainability requirements.</p>	<p>Capital works and major project cost estimates to be regularly reviewed against budgets – and, if insufficient, projects not to go ahead until the budget is increased, or the scope reduced, to allow achievement of sustainability requirements.</p>	<p>Forward works, design list and capital works and major project cost estimates and budgets to be reviewed, at least annually, and a summary report to be publicly released, by independent Sustainability Commissioner.</p>

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<p>Government leads best practice sustainable infrastructure by example.</p>	<p>Mandatory minimum requirements rule out the most unsustainable options but government also needs to promote best practice sustainability. Experience with best practice will lead the way for increasingly stringent mandatory minimum requirements.</p> <p>Government green leasing intentions are already impacting positively on the market.</p> <p>There is also a desperate need for best practice guidelines, promotion and incentives relevant to the NT.</p> <p>This cannot be achieved without adequately resourced in-house expertise and project funding.</p>	<p>Government should research and promote best practice infrastructure sustainability.</p>	<p>Government leases, builds and promotes examples of best practice/leading edge sustainable infrastructure.</p> <p>Quality information, training and incentives are available to industry and the community on best practice/leading edge sustainable infrastructure.</p>	<p>Sustainability Commissioner to confirm in publicly available report that at least one new government infrastructure project a year demonstrates leading edge sustainability.</p> <p>Best practice design, operation and maintenance guidelines and training, targeting NT climates, available to industry.</p> <p>Incentives reward sustainability best practice in all sectors of industry.</p>

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<p>The trend of continually increasing energy and water generation capacity to match uncontrolled demand growth is recognised as unsustainable.</p>	<p>The NT should not assume emissions trading would result in end users reducing their consumption.</p> <p>Mechanisms exist to achieve mass investment in end user efficiency and demand reduction.</p> <p>For example:</p> <ul style="list-style-type: none"> • In California utilities charge more per kWh to customers where the utility has invested in end user energy efficiency to reduce total consumption – cost neutral for the customers and profitable for the utilities. • Interstate utilities are piloting controls to cycle customer’s air conditioners and water heaters on and off to reduce peak demands and avoid massive new infrastructure investment to meet short daytime peaks. 	<p>Utilities in the NT are required by legislation to provide sustainable, alternative solutions to their customers’ needs such as end user efficiency and demand management and the market is re-structured to accommodate this approach.</p>	<p>Introduce legislation-requiring utilities to invest in end user efficiency and demand management.</p>	<p>End user demand reduction investment legislation implemented.</p> <p>Utility investment in end user efficiency and demand reduction occurring.</p>

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<p>Reduce the negative economic, environmental and social impacts of urban sprawl by limiting outward growth of Darwin - increasing the density of existing residential areas and focusing new areas of development around future electrified transit stations (Transit Oriented Development).</p>	<p>Prof Peter Newman, Director of Sustainability at Curtin University, and an international expert in sustainable cities, describes part of the solution to oil dependence in cities as:</p> <p>“Electrified transit. This means high capacity electric Metros and Suburban Rail (heavy rail) with their associated dense centres or Transit Oriented Developments. It also means plug in electric buses (already quite common in some cities) and electric light rail with their associated local corridors of denser linear development. “ⁱⁱ</p> <p>Prof Newman, in his presentations, quotes a study that found that the increased land value around proposed new railway stations in Perth could have funded the rail infrastructure. He also quotes a cost benefit study that found that this type of development has economic benefits in four different categories such as: health, environment, personal finances and community finances.</p> <p>Electrified transit such as light rail also transports people more compactly than cars or buses – reducing congestion and the demand for new road infrastructure.</p> <p>Light rail has been implemented in other cities in the world of equivalent size to Darwin</p>	<p>Implement increased urban density and transit Oriented Development in Darwin.</p>	<p>Change Planning Scheme to allow sub-division of residential blocks.</p> <p>Initiate, and implement recommendations of, a Darwin Transit Oriented Development plan prior to finalisation of Weddell.</p> <p>Identify and protect transit corridors in and around Darwin and outer Darwin.</p>	<p>Electrified transit system planned immediately and built by 2020</p> <p>All new residential development within set radius of planned stations</p> <p>Increasing housing density in existing residential areas</p> <p>Identify and protect transit corridors in and around Darwin and outer Darwin immediately.</p>

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Increase the number of Territorians choosing transport options other than one person one car travel.	<p>Typically Darwinians' car use carbon footprints are as big as their carbon footprint from their electricity use.</p> <p>As well as addressing greenhouse gas abatement, sustainable transport initiatives address the social equity and security related impacts of peak oil.</p> <p>Other than the public transport branch of the Department of Planning and Infrastructure, there are virtually no resources in Government dedicated implementing non-car based transport measures.</p>	<ul style="list-style-type: none"> • Community based social marketing behaviour change campaigns driven by Government. • Make it harder, not easier, to commute by car (eg. through high car parking costs and low parking availability). • Increase the visible benefits of public transport (eg. dedicated public transport lanes/corridors). • Improve access to public transport – particularly addressing trip times for people living in Palmerston and outer Darwin, commuting to and from Darwin City and Casuarina. • Make it possible for people to live in Darwin and Palmerston without needing to own a car by providing public transport during off-peak times and allowing bikes to be taken on public transport. 	Significant Government resources are dedicated to implementing non-car based transport measures – and are actively supported by all of the transport bureaucracy.	<p>Transport surveys show the percentage of non-one-person-one-car commuting trips in Darwin has quadrupled by 2020.</p> <p>Funding of non-car based transport measures in Government, as a portion of roads and car based travel funding, is equivalent to the proportion of non-car based trips targeted in Territory 2030 Strategy.</p> <p>NT Government collaborates with local government on sustainable transport.</p> <p>Sustainability Commissioner to review sustainable transport resourcing and initiatives in regular publicly available reports.</p>

ⁱ Least Cost Planning (LCP) definition slightly amended from Wikipedia:

“Least Cost Planning is a relatively new technique used by economists for making rational decisions about investments in transportation and other infrastructure projects.

It is based on cost-benefit analysis. However, it is more comprehensive in that it looks at not only the total costs and total benefits for an individual project, but it also examines the total costs and benefits for all alternatives or combinations thereof and treats them on an "equal footing." These alternatives include not only construction projects but also demand reduction measures, such as demand management and energy efficiency, road pricing, developing more walkable neighbourhoods and promoting telecommuting.

Equal footing means that there is no discrimination against some alternatives based on political or ideological factors.

LCP itself is generally more costly than cost-benefit analysis, because of the requirement to study objectively all potential alternatives. However, it can provide large savings to taxpayers because it will do a better job of selecting those projects, which maximize benefits while minimizing costs.

There has been a trend towards making LCPM mandatory for regional transportation plans. For example, it has been required by Washington State law (RCW 47.80.030) for regional transportation plans since July 1, 1994."

ⁱⁱ Page 3 "The Crash, Peak Oil and Resilient Cities" By Peter Newman, Professor of Sustainability, Curtin University (http://sustainability.curtin.edu.au/local/docs/The_Crash.pdf)