

5. GUIDING PRINCIPLES

5.1 DEMONSTRATING A WHOLE OF GOVERNMENT COMMITMENT

Wyong Shire Council, Planning NSW and Transport NSW view the development of the Warnervale District and Town Centre as a significant planning and urban design project that demonstrates excellence and that will guide the subsequent actions of each organisation through the new millennium. It will display a commitment and partnership by Government (at both local and State levels) to achieving good urban design outcomes that will set the standard, and act as a model against which future development, not just by Government, but also the private sector, will be judged.

At all levels government agencies are committed to working in a partnership to achieve a positive outcome for all stakeholders including adjoining communities.

As part of this, a fundamental premise of the development is the achievement of a lifestyle and urban environment that provides opportunities for excitement, vitality and community development whilst simultaneously generating comfort, security and reassurance. Development must also be undertaken that integrates with familiar elements that connect the community with cherished and respected icons and landmarks.

The Strategy presented in this document recognises this fundamental premise. This view is not intended to down play the importance of institutional priorities or the need for a financial return. Rather, the aim of achieving an acceptable and long lasting positive community outcome through the development of the District has been elevated by Government to a status as equally important as achieving a financial return.

5.2 SUPPORTING REGIONAL CONSERVATION

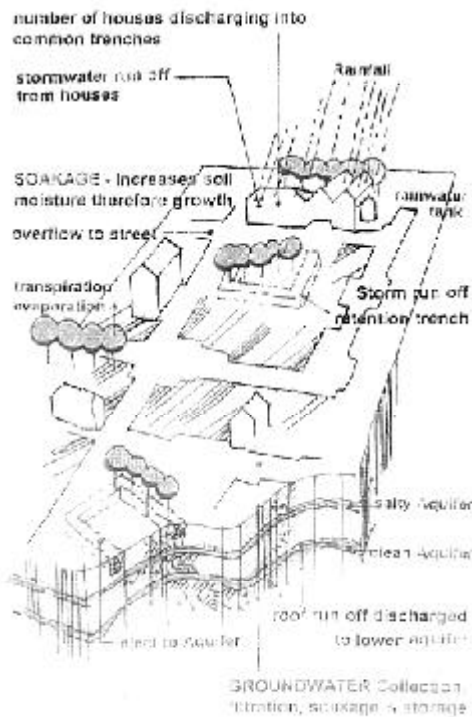
In the past, urban developments have paid little regard to the impacts they generate outside their boundaries. As a consequence, waterways were polluted and ecosystems damaged beyond immediate repair.

Today, there is an expectation that development must take place in a balanced manner that maintains the carrying capacity of the natural system of which it is a part without additional intervention or system degradation.

This is particularly vital for the Warnervale District where activities within future urban development may have the potential to impact on the ecosystems of the Tuggerah Lakes systems downstream.

RAINWATER HARVESTING

- Roof catchment system
- Collector system
- Filtration system
- Storage system
- Distribution system



GREY WATER RECYCLING
COLLECTION RETENTION RECYCLE

Filtered, sanitised & stored. Also injected to lower level aquifer for recycling. Used for irrigation & toilet flushing.

Approximately 10 year frequency overflow to street drainage

WATER MISER HOUSE

- dual flush split cistern
- Low flush toilets
- aerated low-flow faucets and shower heads
- Drip irrigation systems
- Use of Platypus Valves
- Low pressure HWS
- Water saver cycle on dishwasher and washing machine
- insulate hot water pipes
- Recycled bath and shower water to flush toilets and irrigation

Planning for the Warnervale District therefore requires, at a preliminary level, measures to:

- Retard peak stormwater flows so that volumes are maintained within the carrying capacity of the downstream ecosystem of which they are a part.
- Enhance water quality so that the stormwater that discharges into the ecosystem is as close as possible to the quality of the water in its natural state.

This requires the adoption of Water Sensitive Urban Design (WSUD) measures. These may include:

- Water harvesting, storage and distribution systems to reduce demand on potable water supplies and lower stormwater discharge.
- Potential for grey water recycling through collection, retention and recycling on site or dual potable/ greywater systems to reduce demand for fresh water and lower volumes of grey water discharge requiring treatment.
- The adoption of water saving devices within buildings.
- The identification of areas of land and infrastructure works which may permit the achievement of water quality goals.

Elements of Water Conservation

5.3 SUPPORTING ENERGY CONSERVATION

Society's sources of energy originate from fossil fuels, which come from the land. They are finite and not renewable.

Most fuel sources are due to expire within the next 30-50 years. However, fossil fuel use has increased by over 500 percent in the past half century and today meets all of the District's energy needs. The burning of fossil fuels is also being held responsible for the emerging signals of climate change. The recent interruption to energy supplies in California and Melbourne also highlights the sensitivity and dependency of urban areas on one energy source.

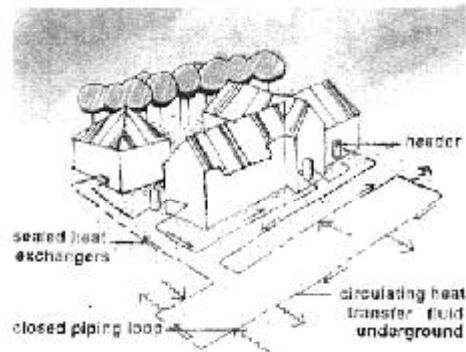
There is a growing call, therefore, for new urban areas such as the Warnervale District to adopt planning and design measures that reduce dependence on a conventional fossil fuel based centralised energy source and promote the use of localised renewable energy for urban infrastructure, building construction, lighting, air conditioning, computing and telecommunications and transportation systems.

For the Warnervale District this involves:

- Passive energy design in buildings through solar access control, shade and exterior finishes and design elements.
- Adoption of energy saving devices within buildings.
- Promotion of walking and bicycles as legitimate forms of transport in lieu of the car.
- Mixing employment, residential and community uses to reduce the separation of activities and reduce car trip generation.
- Increasing residential densities to increase the viability, and hence level of service, of public transport.

GEOTHERMAL DESIGN

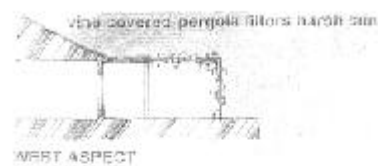
Water furnace geothermal system - heat dissipated to or heat extracted from the earth as required



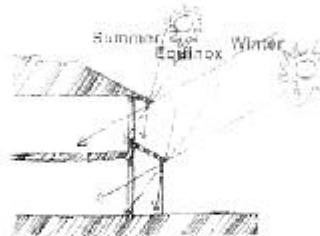
Propose demonstration project for a selected housing cluster of approximately 4 - 6 dwellings consolidated as a Strata Title group to allow a shared geothermal heat and cooling system at economical cost

Geothermal heating & cooling system provides economical water heating and space heating and cooling exchange through heat transfer from home to earth and earth to home

SUN CONTROL



WEST ASPECT



NORTH ASPECT

TYPICAL ORIENTATION CONTROL

SUN SHADING

- Limit summer sun penetration
- Maximize winter sun
- Main living areas facing north
- Private outdoor space facing north
- Roof overhang on north aspect
- Pergolas & planting on west aspect
- Separation of living & bedrooms to assist internal temp. control
- Insulated construction

EXTERIOR FINISHES

- Face brickwork and/or natural render to walls
- colorbond custom orb roof sheeting
- aluminium framed windows
- steel and timber external trim and framing

Elements of Energy Conservation

5.4 TRANSIT SUPPORTIVE DISTRICTS

Private transport, predominantly the use of the car, is one of the major consumers of non-renewable energy. Car ownership is also costly for households and car use generates significant environmental impacts by way of air pollution, vibration, noise and safety. The incorporation of cars into the planning and design process has also generated the need for wide roads and large car parking areas which consume large amounts of land, are unsightly and which are eroding the comfort and pleasure of using streets as meeting places, rather than just pathways from point "a" to point "b".

To encourage the community to reduce their need for and use of the car requires the implementation of a convenient, cheap, comfortable and inviting public transport system to replace it.

At the heart of the whole approach is the need for public transport to be competitive with the private car.

Generally, only in financial cost is public transport competitive with the private car. However, cost is relative and personal cost particularly so.

Commonly the additional personal cost of

use of the private car, even though it can be easily quantified, is perceived to be negligible and what additional cost there is, is far outweighed by the inconvenience and discomfort of using public transport.

In saying that however there is growing community recognition that the environmental and social costs of car ownership and use (which are not easily quantifiable) are becoming increasingly unacceptable.

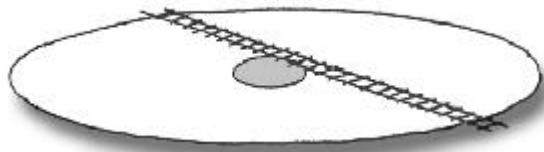
To make public transport convenient and comfortable it requires sufficient densities of people (residents and workers) to support a frequent service and a high standard of infrastructure (buses/trains, transit stops, security, information, etc).

In terms of density, the table below illustrates some commonly accepted benchmarks.

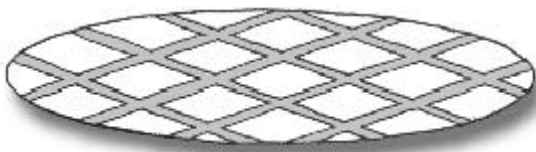
However the Warnervale District is fortunate in that it already enjoys access to a heavy rail public transport system (the Main Northern Railway Line) which is to be upgraded in the medium to long term.

Planning for the Warnervale District should promote an urban environment that capitalises on the availability of this asset and orient land uses, development and street networks to support use of the railway.

Level of Service	Required Residential Density
Bus with route spaced 0.8 to 1.0 km apart and 1 hour frequency	10 dwellings per hectare adjacent to route.
Bus with route spaced 0.8 to 1.0 km apart and 0.5 hour frequency	17 dwellings per hectare adjacent to route.
Bus with route spaced 0.8 to 1.0km apart and 10 – 15 minute frequency	37 dwellings per hectare adjacent to route.
Rail / Rapid Bus Transit with 5 minutes headway at peak hours	30 dwellings per hectare average density over an extensive area with higher densities in central areas and around stations (origin and destinations).



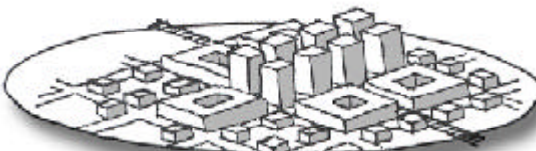
Public Transport Stop



Permeable & Legible Street Pattern



Comfortable & Walkable Streets



A Mix of Residential Densities



A Mix of Land Uses

The structure of a Transit Supportive District should comprise:

- The identification of an appropriate location for a public transport (transit) stop and the identification of a comfortable and convenient walking distance from the stop. A commonly accepted standard is 400 metres to a bus stop, which represents a 5 minute walk and 800 metres (10 minute walk) to a railway station (these distances obviously vary with topography and the character of the area).
- The establishment of a street pattern and/or pedestrian network that generates a dense fine-grain network that leads to the transit stop.
- The creation of walkable streets where the public realm is comfortable, safe and inviting for the pedestrian. This requires footpaths, lighting, street trees for shade and buildings addressing street (for casual surveillance and active/interesting frontages).
- There should be a choice of dwellings within comfortable and convenient walking distance from the transit stop to meet housing need and promote a balanced community. Residential densities should generally be higher (that is around 30 dwellings per hectare) than the prevailing suburban “norm” and should achieve two aims:
 - Provide a range of dwelling types increasing housing choice and affordability.
 - Support viable public transport in terms of service frequency and coverage.
- The introduction of a mix of land uses that establishes a centre for local residents to gravitate to which comprises an integration of open space, commercial, recreation, civic and residential life focussed upon public transport. The Centre should be the “heart” of the community, which meets its day to day needs and which the residents can have a high degree of perceived ownership and symbolically, and proudly, call “home”.

The Elements of a Transit Supportive District

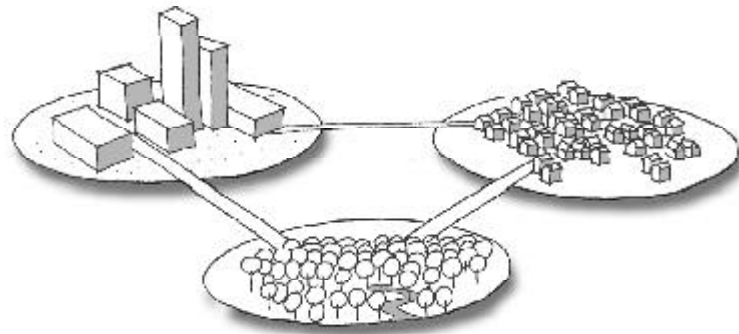
5.5 A MIXED-USE TOWN CENTRE

Zoning has been, and remains, the principal planning tool that guides land uses and development in Warnervale. However, in the District it has created a built environment that:

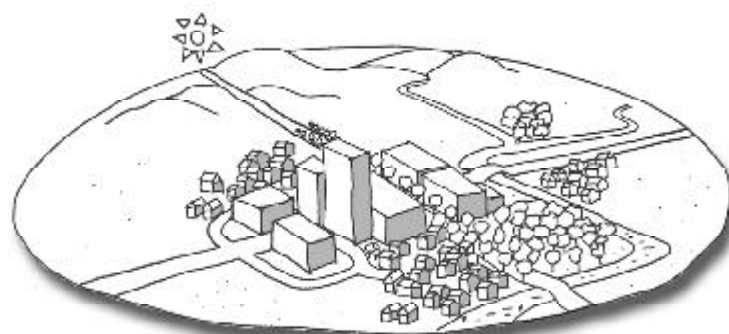
- Excludes other land uses restricting variety, vitality and diversity as well as preventing convenient and equitable access to employment and services.
- Reduces opportunities for dwelling choice and thus will not meet household dwelling need in the Warnervale District over the long term as the character of the population diversifies and ages.
- Imposes greater personal costs on residents in terms of mobility due to the need for greater car ownership and use to travel large distances.

The original premise of separating land uses on health, safety and social grounds does not apply in a post industrialised urban area such as the Warnervale District where the characteristics of contemporary non-residential development are strictly controlled through environmental and building codes which negate any potential negative impacts.

In this regard an approach that has been acknowledged as having the potential to meet the identified issues and establish an urban environment that accommodates emerging influences and trends which can meet the design challenges of the 21st Century is that of the mixed use town centre.



A Conventional Zoned Urban Area Containing a Separation of Uses



A Contemporary Urban Area Distinguished by a Mix of Uses

The key elements of this planning principle are based upon an understanding of the value of traditions which have evolved over time and adapted to new circumstances and therefore place emphasis on the following objectives:

- The introduction of a diversity of uses. Ideally uses should be mixed, both horizontally and vertically, but at a minimum connections between uses should be walkable, close, comfortable and direct (both physically and perceptually) to promote accessibility and convenience.
- The accommodation of a range of household and socio-economic groups that accurately reflect the characteristics of the population, rather than the “one-demographic” urban developments that characterise conventional urban areas. There should be a choice of dwellings available to meet housing need and promote a balanced community. Inherent within this is the provision of a range of dwelling densities and typologies and affordable housing.
- At the “heart” of the Centre will be a main street, which is the hub of the Centre’s activities and an identifiable principle public space. It should act as the pedestrian link between activities and characterised by offering tree-lined footpaths, attractive streetscapes and active ground floor frontages. The street should accommodate traffic and ideally 24-hour activity to establish an interesting and vibrant centre core.

There must be an acknowledgment that the characteristics of a traditional town centre, such as its fine grain mix of uses and human scale built form cannot be adopted in a contemporary Centre. Rather, what is required is a hybrid centre that combines the intimacy, comfort and attractiveness of a main street with the functionally efficient, accessible, demanding design requirements of a strip commercial centre that accommodates car parking, large free standing, column free commercial buildings, loading yards and advertising signage. From a neighbourhood, the Centre must be pedestrian friendly and from the road the centre must be convenient for the car.



**Views of District west from top of town centre ridge
(nursery in foreground)**