

SETTLEMENT STRATEGY FOR DENMARK

TOWN PLANNING SCHEME POLICY NO. 28

**Adopted on the 22nd December, 1998 in accordance with
Clause 8.2 of Town Planning Scheme No. 3**

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1. PURPOSE OF THIS SETTLEMENT STRATEGY

The Albany Regional Strategy released by the State Planning Commission in 1994 contains a Key Action which in part reads “Develop specific strategies for the expansion of urban centres, in terms of residential growth, regional open space and the provisions of community facilities etc and reflect those strategies in local authority town planning schemes.” Another action of the strategy reads “Town planning schemes should include housing strategies which provide opportunities for urban consolidation, choice and variety in housing styles together with energy efficient housing and subdivision design.”

This Settlement Strategy establishes the Council’s position for the provision of residential land to cater for urban growth to the year 2020. It applies to the Denmark townsite and nodal village settlements.

The Strategy is the result of Council’s consideration of the submissions received and the outcome of a public workshop held to discuss the draft of this Strategy entitled "Denmark Residential Strategy Review" (December, 1996) prepared by Ayton Taylor and Burrell on behalf of Council.

Following the approval of the WA Planning Commission the draft Denmark Residential Strategy Review was advertised for comment in 1997. The purposes of that Review were:

- ❑ To assess the likely future population growth of Denmark;
- ❑ To assess the existing availability of land to accommodate such growth;
- ❑ To examine alternative strategies for allocating additional land if required;
- ❑ To examine the potential impact on the existing character and environment of Denmark; and
- ❑ To recommend a preferred settlement strategy for guiding Denmark's future residential development.

The planning process during the preparation of the draft Review examined extensive options for the future urban growth of Denmark. The draft included future planning units and each was analysed in terms of its capability and suitability for various forms of urban development from conventional fully serviced lots to larger lots commonly known as special residential whilst maintaining the unique aesthetic qualities of Denmark.

Council must accommodate a range of lot sizes to provide for the projected population. There is a demand for special residential and special rural lots which needs to be controlled and planned for appropriate areas to protect the rural base of the Shire and to avoid undermining consolidation policies. Council’s Rural Settlement Strategy addresses the particular issue of the planning for the rural areas. In respect to the future development of nodal village settlements in the outer rural parts of the Shire, Council’s Rural Settlement Strategy provides clear guidance as to the anticipated form and scale of these settlements and that document is to be read in conjunction with this Settlement Strategy.

2. STRATEGY OBJECTIVES

The objectives of the Settlement Strategy are to:

- maintain Denmark's essential character as a country town;
- contain urban sprawl and retain public open spaces and natural bushland near the town centre;
- preserve the mix of natural bushland and historic and picturesque built environment;
- prevent the development of an excessively large townsite by encouraging satellite villages such as Nornalup, Bow Bridge, Kenton and Peaceful Bay;
- promote village type development in areas such as Bow Bridge, Nornalup and Kent River in order to ease the pressure on Denmark townsite;
- provide for alternative lifestyles through the development of special rural zones, preferably located close to townsites and not on productive agricultural land;
- recognise the high value placed on conservation of the environment by the community;
- retain the rural character and tree lined approaches to Denmark townsite;
- protect the environment and particularly waterways and water bodies;
- consolidate existing residential areas to enable better facilities and services to be provided close to where people live;
- optimise the utilisation of existing infrastructure investment; and
- encourage sustainable development as the quality of the waterways, remnant vegetation and the environment must be protected and managed through proper and efficient coordinated land use planning.

3. ESSENTIAL CRITERIA FOR GROWTH

The preliminary investigations for this Strategy established the following criteria are essential components for the planned growth of Denmark:

- Future suburban development should be clustered and separated by foreshore reserves, public open space and landscaped buffers in order to retain a balance between the natural environment and development.
- Increase inner urban residential densities where reticulated sewerage is or is likely to be available.
- The urban core of Denmark townsite should be consolidated and surrounded by a greenbelt.

- Consideration should be given to incorporating the ridgelines and significant vegetation surrounding Denmark within a landscape protection area.
- Utilise reserves, foreshore reserves and public open space to provide a comprehensive system of pedestrian/cycleways linking the town centre with existing and proposed suburbs and facilities.
- Preclude urban development and subdivision which could intensify land use from within the Little River valley particularly on the western side of Ocean Beach Road.
- Screen future development from major traffic arteries by vegetated buffer strips wherever possible.
- Consolidate, protect, manage and revegetate the Denmark River, its tributaries and associated foreshores and wetlands.
- Ensure all development is specifically designed to minimise the export of nutrients into the waterways and Wilson Inlet.
- Protect remnant stands of karri and tingle trees within the townsite.
- Retain the tree lined entrance ways to Denmark and enhance them with additional planting of indigenous trees.
- Any form of development of the Agricultural School land on the eastern side of the Denmark River should be subject to the extension of the foreshore reserve together with extensive revegetation and screening to South Coast Highway.

4. POPULATION GROWTH AND PROJECTIONS

Denmark's population was static in the 1960's and first half of the 1970's. From 1976 the population grew relatively rapidly, more than doubling from 1,780 people to 3,899 by 1996.

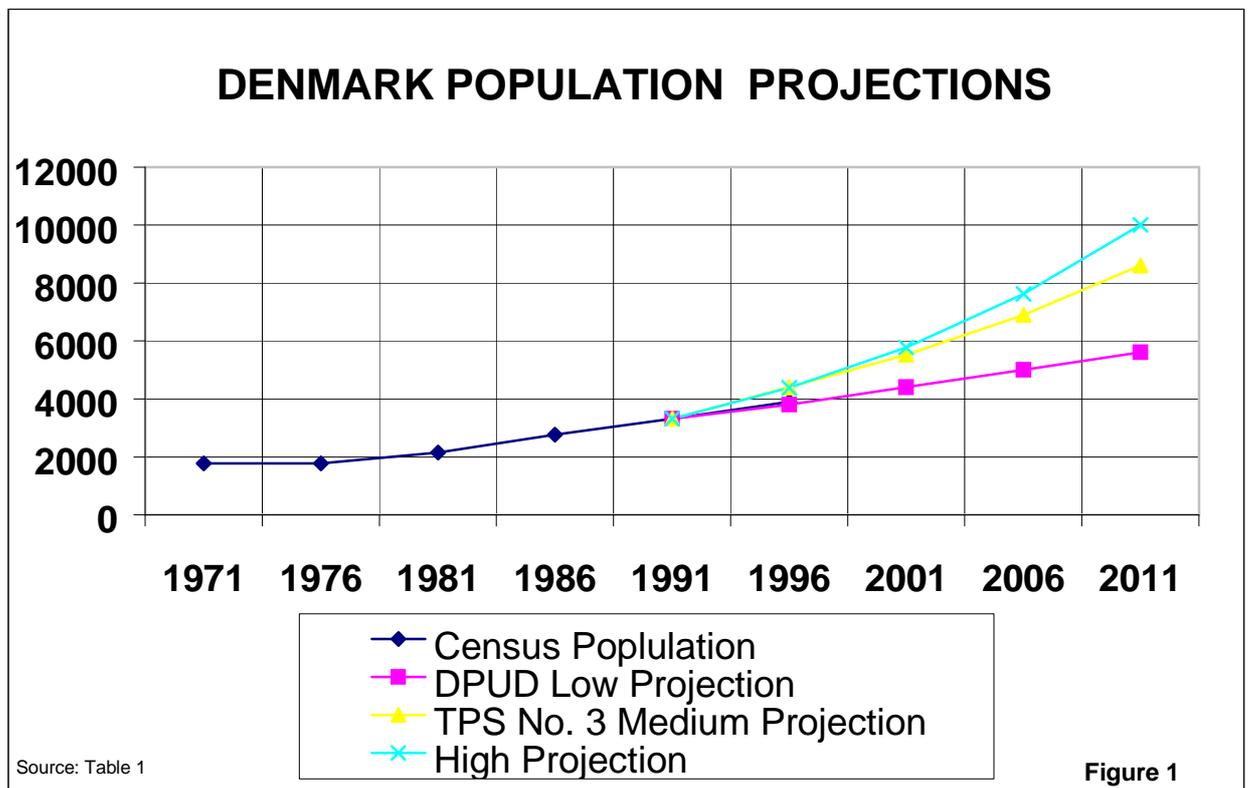
	1971	1976	1981	1986	1991	1996	2001	2006	2011	Total Growth	Rate (%)
Census Population	1780	1780	2156	2771	3317	3899					
DPUD Low Projection					3317	3800	4400	5000	5600	2200	2.60%
TPS No. 3 Medium Projection					3317	4400	5510	6890	8600	5280	4.60%
High Projection					3317	4380	5770	7620	10000	6680	5.70%
Source: Ayton, Taylor Burrell Shire of Denmark DPUD ABS Census											

Table 1 and Figure 1 illustrate the range of population projections for Denmark.

The low projection was prepared by the Department of Planning and Development (now the Ministry for Planning) and assumes an overall rate of 2.6% per annum. Over a twenty year period the Shire's overall population would grow from 3,317 to 5,600 an increase of 2,200 people.

The medium projection in Town Planning Scheme No. 3 assumes that the pattern of migration experienced between 1981/86 will be repeated for each five year period to 2006. The overall rate of growth is 4.6% per annum which has been extrapolated a further five years to 2011. The total population for the twenty year period is 8,600 which represents an increase of 5,283 people.

The implications of an even higher growth rate, with the population tripling over twenty years to 10,000 people has been included. This represents an overall growth rate of 5.7% per annum and a total increase of 6,683 people. Such growth is not inconceivable over a twenty year period and clearly has a number of implications in terms of its impact on the Shire. Such a high growth rate however is unlikely to be a reality.



Projecting future population growth is difficult to achieve with any accuracy. Its value is as a tool to explore options and impacts of accommodating varying levels of growth. Regular monitoring of growth can then enable strategies to be fine tuned as required.

5. AVAILABILITY OF RESIDENTIAL LAND

Table 2 indicates the amount of vacant land currently zoned Residential under Town Planning Scheme No.3. Figure 2 indicates existing zonings within the urban area. Density codings range from R2 to R20. By increasing density codes of areas capable of being sewerred, a total lot potential of 1,168 lots could be achieved when using an R20 density coding.

Table 2. Residential Land Availability - Existing Zoned Land April 1998				
CENSUS COLLECTOR DISTRICT	EXISTING ZONED SUBDIVIDED VACANT LOTS	VACANT UNSUBDIVIDED LAND		TOTAL LOT POTENTIAL (with increased Rcode densities)
		AREA	LOT POTENTIAL	
2	3	8 ha	24	27
3	71	54.9 ha	494	565
6	115	37.6 ha	233	348
7	98	56.1 ha	130	228
TOTAL	287	156.6ha	881	1168
Source: Shire of Denmark Ayton Taylor & Burrell				

Assuming a residential occupancy rate of 2.5 persons per dwelling, the stock of vacant lots could accommodate approximately a further 1,985-2,200 people based on current zoning or 2,920 people, if density is increased.

It should be noted however, that not all land is usually placed on the market or developed, as it is often held for investment or retirement purposes. A healthy supply of land is also required at any one time, ideally with a good choice of lot sizes, prices and locations. It is considered that at least 30% more lots should be available at any one time over and above projected demand. This consideration is based on the figure used in the Albany Residential Expansion Strategy prepared by the State Planning Commission in 1994.

By adjusting the existing stock of lots to account for the 30% factor, it is estimated that between 1,390 and 1,540 people could be accommodated based on current zoning or 2,044 people if densities are increased.

In terms of the population projections, the existing stock of vacant land within the urban area could accommodate the whole of the Shire's growth based on the low projection. Assuming the population had increased as projected for 1996, then a further 2,160 people or 860 lots would be required to accommodate the medium projection and 3,580 people or 1,430 lots to accommodate the high projection.

6. ENVIRONMENTAL CONSIDERATIONS

In considering the future growth of Denmark, the major environmental concerns relate to the export of nutrients into the waterways and the loss of remnant vegetation.

The main waterways are the Denmark and Little Rivers, together with their tributaries. These waterways provide the transport routes for nutrients into Wilson Inlet. While sections of the waterways are well vegetated and protected by reserves, there is scope to restore fringing vegetation. Rezoning and subdivision of land provides an opportunity for foreshore reserves to be ceded free of cost. The width of the foreshore reserve should be determined by taking into account erosion processes, flooding characteristics, fringing vegetation, conservation of wildlife and possible sea level rises. As a general guide, the Water and Rivers Commission consider foreshore buffer areas should be based on the following setbacks:

Inlets:	75 metre buffer from the water line.
River:	50 metre from the water line (includes waterways shown on the 1:50,000 maps).
Creeks:	25 metre buffer from the water line (permanent waterways not shown on 1:50,000 maps).
Wetlands:	25 metre buffer from the water line.

The establishment of foreshore reserves provides a number of other important opportunities including:

- the creation of wildlife corridors;
- the establishment of a system of pedestrian walkways and cycleways;
- the general enhancement of Denmark's landscape amenity;
- the opportunity to minimise the impact of urban sprawl by breaking residential development up into smaller village like clusters.

The management of stormwater run off is important. The adoption of water sensitive design principles, which ensure stormwater is managed onsite, is advocated. The use of sedimentation basins and revegetation is needed to minimise erosion and ensure nutrients are not transported into the waterways.

The extensive coverage of vegetation contributes significantly to the scenic landscape amenity of Denmark. In addition the vegetation provides:

- a habitat for native flora and fauna;
- areas of passive recreation;
- a means to control wind and water erosion; and
- the prevention of waterlogging and nutrient build up in the waterways.

Detailed assessment of remnant vegetation and its management and protection will be a requirement at the structure planning stage. Rezoning of land and subdivision provides an opportunity for significant remnant vegetation on private property to be incorporated into adjoining reserves, foreshore reserves and public open space.

7. BUSH FIRE CONTROL & MANAGEMENT

With the extensive area of remnant vegetation combined with steep terrain, fire safety is a particularly important issue. Infill development and structure planning provide an opportunity to considerably improve fire safety and management by incorporating fire management planning into local structure plans, rezonings and subdivision approvals.

Fire management planning will address:

- site suitability (including slope analysis)
- access for fire vehicles and escape routes for residents;
- strategic fire breaks and low fuel areas around dwellings;
- the provision of an adequate water supply for fire fighting;
- the provision of, or contribution to, adequate fire fighting equipment and services;
- the design of buildings for fire resistance;
- the positioning of building envelopes where larger lots are proposed;
- clarification of management responsibilities for public open space and reserves;
- ensuring tree preservation measures do not conflict with fire protection objectives; and
- increasing public awareness and education.

Infill development involving smaller lots will considerably improve fire safety in many areas by reducing fuel loads, while at the same time providing improved vehicular access and reticulated water and fire hydrants.

8. COMMERCIAL LAND

An assessment of Denmark's commercial land requirements was carried out as part of the "Denmark Commercial and Industrial Strategy". Some fifty residential lots adjoining the central business district (CBD) may ultimately be used for commercial orientated uses over the next twenty years. These lots are concentrated within the heart of the townsite along Holling Road, Price Street, North Street and on either side of the South Coast Highway between Millar Street and Ocean Beach Road. This Settlement Strategy will provide the opportunity for more intensive residential development to occur. Mixed use development can minimise any actual loss of housing and such development would cater for changing housing needs, particularly for smaller households.

There will be instances in the structure planning process for the residential planning units where minor shopping centres (250m² NLA) or corner stores in appropriate locations with new residential development are required to service the needs of the community.

The nodal settlements at Bow Bridge, Nornalup, Kenton and Peaceful Bay will need to provide for commercial facilities in their respective structure plans.

9. INDUSTRIAL LAND

The existing industrial area is largely developed and further land is under consideration. The “Denmark Commercial and Industrial Strategy” assesses industrial land requirements. A recently commenced Denmark Industrial Area Site Selection Study will further add to the analysis of availability of industrial land.

As Denmark grows there will be the need for more industrial and service industrial land in appropriate locations with adequate separation from residential areas. Buffer requirements of the EPA will be a prime consideration in any planning for industrial areas.

10. EDUCATIONAL FACILITIES

School sites must be established in accordance with Education Department criteria based upon residential neighbourhood size and population. Such sites must be earmarked in the structure planning process.

WA Planning Commission has a policy on School Sites and in respect to primary schools it sets a base figure of one primary school for every 1250 residential lots. The Education Department has recently reviewed that figure particularly for country towns and the standard now set is one primary school for every 1800 residential lots.

The new Denmark High School is to be built as portion of the Agricultural College land east of the Denmark River and is scheduled to open in the year 2000. It is not envisaged Denmark will require another High School. New Agricultural College buildings are to be developed near the new High School on the College land. The Primary School will expand into the former High School buildings on its present centrally located site.

As Denmark grows in accordance with this Settlement Strategy the area to the north of the waste water treatment works uncompassing the CBD, planning units A to F and existing residential areas (1700 lots in total) can be serviced by the existing primary school. The areas to the south of the waste water treatment works to Lights Road and encompassing planning units G & H (1500 lots in total) will require a new primary school which is to be located in planning unit H. It is not envisaged Denmark will require any further primary schools other than the two above, however, in the long term the monitoring of growth will confirm this.

11. COMMUNITY USES

Denmark is presently well provided with reserves that can accommodate community uses. As growth occurs in accordance with this Settlement Strategy more community facilities will be needed in appropriate locations in residential neighbourhoods. The Liveable Neighbourhoods – Community Design Code provides guidance in terms of the provision and distribution of community facilities and minor shopping centres. The structure planning process for the various planning units should address the need for community facility sites.

The nodal settlements in the rural areas will need to address community facility sites in the structure planning process.

A new site may be required for the Denmark hospital in the future. Any planning for such a relocation will need to have regard to this Settlement Strategy.

12. PUBLIC OPEN SPACE

The existing availability of reserves within and adjacent to the Denmark urban area, indicates it will be unlikely that existing residential land will need to be acquired for public open space particularly given the cost involved and the fragmented nature of much of the land.

A tripling of the population over the next twenty years could result in the demand for two additional ovals and sporting fields. These facilities could be developed as multiple use facilities in association with new school facilities. Careful management of public open space areas will be necessary given the potential for nutrient export to the waterways.

Structure plans for the planning units and nodal settlements must also identify a range of sites for active and passive recreation. These sites would be obtained as subdivision occurs with the aim being to consolidate useable sites, rather than each subdivision providing small, isolated pockets of land that have limited use and are expensive to maintain.

Consideration must also be given to requiring cash-in-lieu of providing such land where appropriate to provide funding to develop consolidated sites with recreational facilities.

13. TRANSPORTATION

Main Roads WA is currently assessing the long term transportation needs in respect to road facilities for Denmark. This Settlement Strategy does not attempt to assess the need or possible options for such proposals but the Main Roads assessment must take this Strategy into consideration.

There is no immediate demand for a public transportation system in Denmark but this will need to be closely monitored as population grows.

Structure planning for the planning units and the nodal rural settlements must consider the need for cycle and pedestrian forms of movement.

14. SERVICING INFRASTRUCTURE

The provision of infrastructure and services is to be based on an orderly pattern of development and linked directly to the structure planning process for the planning units and the nodal rural settlements to ensure timely and efficient provision.

Servicing agencies such as Water Corporation, Western Power and Telstra will need to ensure their long term planning is adjusted to reflect this Settlement Strategy.

The Water Corporation is carrying out an odour monitoring study for the wastewater treatment works in order to establish an appropriate buffer separation for future residential development in close proximity to that facility. Where treatment works are to be provided for the nodal rural settlements, such buffer separation areas must be given due consideration.

15. SETTLEMENT STRATEGY FOR ACCOMMODATING FUTURE GROWTH OVER THE SHIRE

When considering the population projections, additional land will need to be zoned Residential. The actual amount of land and the rate that land is required, will depend upon the proportion of development occurring in the surrounding rural areas. Council will encourage the development of outlying townsites and a limited controlled amount of Special Rural and Landscape Protection in accordance with its Rural Strategy.

Based on Census information some 48% of the Shire population is located within the Denmark urban area. The Rural Settlement Strategy supports the consolidation of Nornalup, Bow Bridge, Kenton and Peaceful Bay as preferred nodes of development in an attempt to reduce the pressures on the Denmark urban area. Further intense development in these nodes is subject to structure planning. The settlement of Peaceful Bay is currently subject to the preparation of a structure plan. The planned growth of these nodes is a key part of Council's Settlement Strategy as:

- they provide an opportunity to disperse development pressure from the Denmark townsite;
- the planned development of small nodes is preferable to a broad scatter of rural residential development. It enables a focal point for the surrounding rural community to be developed and a far more efficient use of land;
- the development concentrating on specified nodes will reduce the pressure for adhoc development scattered throughout the general rural areas;
- the nodes are located in attractive localities and provide opportunities to develop Denmark's tourist infrastructure further;
- they accord with the findings of the Albany Regional Strategy;
- the physical constraints of large vegetated hills, low flat valleys and Wilson Inlet effectively create a wall of land and water unsuitable for urban development other than in the planning units identified;
- urban sprawl of the Denmark townsite is not favoured.

It is unlikely that nodes, such as Nornalup, Bow Bridge and Kenton, will be able in the short term to support sewerage, water, educational and social services/facilities, however it is considered that over the time frame of the strategy, the development of townsites will be possible.

Council will positively support the development of these nodes through the structure planning process that will plan for and encourage their long term development.

Population growth throughout the rural areas may also occur as a result of rural subdivision, intensification and diversification of rural landuse.

16. SETTLEMENT STRATEGY FOR ACCOMMODATING FUTURE GROWTH WITHIN DENMARK TOWNSITE – PLANNING UNIT RECOMMENDATIONS

Eight planning units have been identified in the planning and community consultation process. Each unit is analysed in terms of its capability and suitability to support urban development. Recommendations are provided for each planning unit at the end of this section. Figure 3 is the Strategy Plan showing the planning units.

Table 3 below, indicates the approximate lot potential of the planning units.

Table 3. Future Residential Land		
LOCALITY	AREA	CONSERVATIVE LOT POTENTIAL
A	29 ha	200 Sewered
B	26 ha	50 Unsewered
C	99 ha	75 Unsewered
D	248 ha	200 Unsewered
E	18 ha	140 Sewered/Unsewered
F	22 ha	130 Sewered/Unsewered
G	24 ha	20 Unsewered
H	70 ha	630 Sewered
TOTAL	536ha	1445

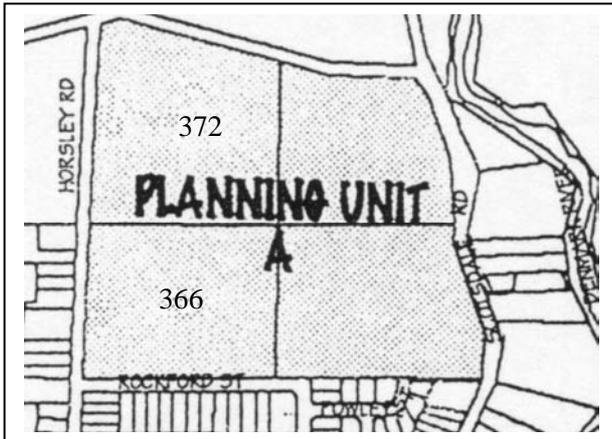
Source: Ayton, Taylor & Burrell

The total lot potential of 1,445 lots would accommodate the medium projection and also the high population projection. The townsite can accommodate anticipated future growth providing all the planning units are available for development over time. There are some constraints in terms of the development of some of the planning units. It will also be important to actively encourage the development of the smaller nodes elsewhere within the Shire.

Consideration was given to the possible development of part of the Agricultural School site for residential purposes. While the area of the Agricultural School is considered large enough (approximately 100ha) to support a fully serviced residential development, this option was discounted by Council due to community desire to protect and retain the Agricultural College on its present site. A decision by the Minister for Education in April 1998 to authorise the construction of a new High School and a new Agricultural School on this land further cements this position of its unavailability for residential development in the foreseeable future. The Agricultural College requires the full extent of its landholding for its farming activities. The use and future of the area to the south of South Coast Highway near the Denmark River needs to be assessed and monitored in terms of future needs of fully serviced residential land in this locality.

There are seven parcels of rural zoned land adjacent to urban and/or future areas on Figure 3. Urban development is not preferred in these areas due to various reasons such as dense vegetation, landscape/visual qualities and values or low lying land with poor capability and suitability for any more intense form of subdivision other than that existing. In the long term with subsequent reviews of this Settlement Strategy, these areas may be reassessed.

Planning Unit A



- 1 km north of Town Centre
- 4 ownerships
- 29 hectares

Natural Features

- Slopes down toward the east ranging from 2.5 to 5% on the hill top to 8 to 15% elsewhere. Small area in north-east has steep slopes (15 to 30%).
- Mostly cleared grazing land supporting good pastures. Pocket of remnant Karri and Redgum (3500m²) in south-east corner is a site feature.
- Highly visible from the portion of Scotsdale Road that the site abuts and moderately visible from South Coast Highway travelling toward Denmark from the east. Well screened from the town centre.
- Scenic Rural Landscape with excellent views obtained in an easterly direction.

Land Use/Surrounding Uses

- Site is utilised as grazing land. A vineyard is located on Lot 373.
- Surrounding land use comprises residential the south, rural (grazing) and special residential the west, rural uses toward the north and rural and residential uses the east.

Land Capability On-site Disposal

- Soils consist of: Keystone (Kb) Soil Group 1 on the western portion.(duplex soils with brown gravelly surface horizons over a yellow-brown and red brown clay soil.)

Major Valleys (V3) - Soil Group 2 on the eastern half (yellow duplex soils comprise the slopes while deep loamy soils are found on narrow terraces). Trent (TR - Soil Group 4 on a small portion of the south central boundary (gravelly sandy yellow duplex soils, with some gravelly sands and lateritic duricrust.).

- Overall shows a moderate to high capability.

Servicing Opportunities/Constraints

- McLean Road on the northern boundary is unconstructed. Otherwise the area is very accessible via existing sealed roads. Vehicular access to Scotsdale Road needs to be controlled.
- The whole area is readily sewered via the existing sewer in Rushton Street and by extending the existing sewer in Scotsdale Road.
- The whole area can be serviced with water from the reservoir on the west side of Horsley Road. (Maximum service RL65).
- The whole site drains to the Denmark River, immediately to the east. The central drainage line could be utilised for retention basins and POS.

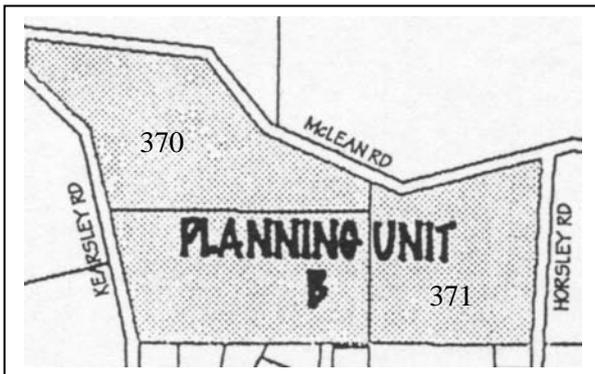
Planning Issues

- area forms a logical extension of the townsite, can economically be serviced and has excellent views and aspect.
- visual impact of development requires consideration.
- remnant karri trees to be protected, preferably within POS.
- potential residential/vineyard conflict needs to be addressed.
- stormwater drainage to be managed on-site and utilize drainage line for sedimentation basins and POS.
- need for commercial/community facilities.
- potential yield – 200 sewered lots.

Planning Unit A Planning Recommendations/Policy

- Prior to further development/rezoning, a local structure plan be prepared which provides for fully serviced residential development and addresses the following issues:
 - visual impact
 - retention and protection of remnant vegetation
 - landuse conflict
 - stormwater management
 - POS provision
 - vehicular access to Scotsdale Road
 - commercial/community facilities
 - Liveable Neighbourhoods – Community Design Code principles

Planning Unit B



- 26 hectares
- 1.2 km north to Town Centre
- 3 Ownerships

Natural Features

- Predominantly slopes at grades of 8 to 15% and in the northern portions 15 to 30%. Site generally slopes toward the south south-east and east.
- Mostly cleared grazing land with a copse of Karri (good understorey) located toward the central north of the site. Mature Karri also present within the road reserves.
- Scenic upland rural landscape with excellent views over Denmark, Wilson Inlet and Nullaki Peninsula with views over eastern farmland also available.
- Due to cleared nature, the site is moderately visually exposed to the Denmark town centre and portions of South Coast Highway and Scotsdale Road.

Land Use/Surrounding Uses

- Currently used for grazing and hobby farm purposes.
- Rural uses abut the northern boundary whilst to the south residential uses exist. Abuts units A and C.

Land Capability on-site Disposal

- Soils consist of:
Keystone (Kb) - Soil Group 1
- Medium to high land capability.

Servicing Opportunities/Constraints

- McLean and Horsley Roads unconstructed.
- Outside catchment of existing sewer. Soil types suit on site effluent disposal.
- Small area in NE corner below 65 contour can be serviced by existing water reservoir. New high level reservoir required for remainder of site.

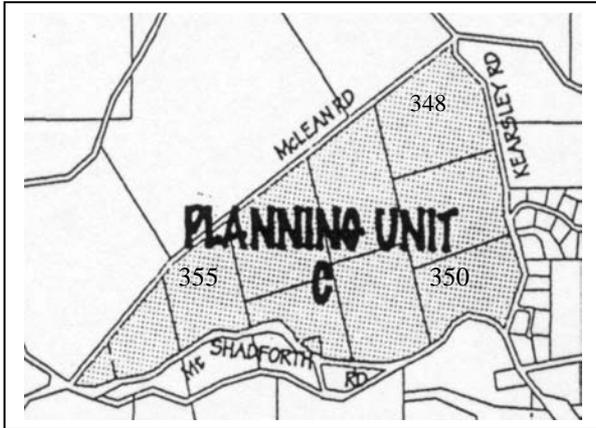
Planning Issues

- land considered suitable for special residential development, subject to detailed capability assessment.
- remnant vegetation and particularly mature karri trees in road reserves to be protected.
- design to maximise available views and minimise visual impact of development with selective revegetation.
- fire protection and vehicular access in association with adjoining planning units needs addressing.
- drainage to be managed on site with appropriately located sedimentation basins.
- potential yield – 50 unsewered lots.

Planning Recommendations/Policy

- Prior to further development/rezoning, a local structure plan be prepared which provides for special residential development and addresses the following issues:
 - land capability assessment
 - visual impact
 - retention and protection of remnant vegetation
 - stormwater management
 - POS provision
 - fire protection
 - coordination of vehicular access and fire protection with Units A & C.

Planning Unit C



- 99 hectares
- 10 Ownerships
- 1.2 km north-west of town centre

Natural Features

- Slopes vary between 2.5 to 8% toward the north and 15 to 30% over much of the ridge flank to the south.
- The site is partially cleared with significant stands of karri remaining.
- The bulk of the vegetation comprises remnant, tall Karri forest with a generally good understorey condition.
- Some pines have been planted midway along the northern boundary.
- Comprises primary ridge wall with excellent views available over rural land to an adjacent ridge, the Denmark town centre, Wilson Inlet and Nullaki Peninsula.
- Site is visually exposed to Mt Shadforth Road and Unit D, although roadside vegetation provides some screening.
- Western portions are exposed to the Denmark townsite.

Land Use/Surrounding Uses

- The site is currently utilised for hobby farming, rural retreat purposes and includes a conservation reserve.
- Surrounding landuse includes rural, special rural and forest to the north, small rural lots including fruit trees to the south, Unit B to the east with rural (grazing) and tourist development to the west.
- Abuts Unit D

Land Capability on-site Disposal

- Comprises Kb Keystone soil unit.
- Overall medium capability.

Servicing Opportunities/Constraints

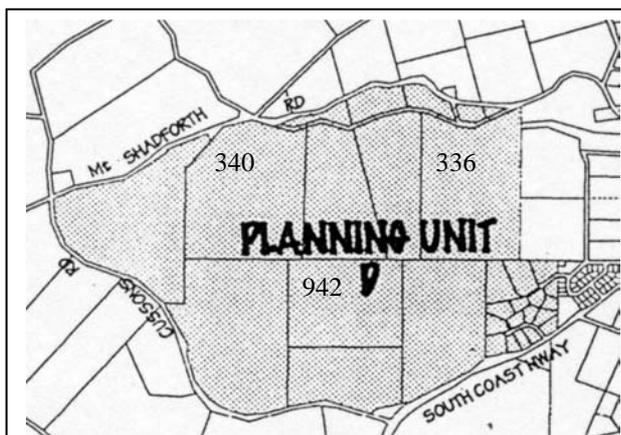
- site falls steeply to the south into the Millar Creek Catchment.
- existing sewer is approximately 750 metres to the east of this area.
- cost of extending the sewer a major constraint.
- new high level reservoir required to provide reticulated water.

Planning Issues

- fire protection requires detailed assessment given the extent of vegetation cover and steep slopes on the ridge flank.
- site may support a mix of special rural and special residential development, subject to viability of providing reticulated water, fire protection, visual impacts and retention of remnant vegetation.
- visual impact of development must be addressed.
- further development provides an opportunity for significant remnant vegetation to be protected by inclusion in public open space.
- planning needs to be coordinated with Unit B, particularly with regard to vehicular access and fire protection.
- development needs to be screened from Mt Shadforth Road.
- drainage to be managed on site with appropriately located sediment basins.
- access to Mt Shadforth Road to be restricted.
- potential yield – 75 unsewered lots

Planning Unit C**Planning Recommendations/Policy**

- Prior to further development/zoning, a local structure plan be prepared which provides for special residential/special rural development and addresses the following issues:
 - land capability assessment
 - visual impact
 - retention and protection of remnant vegetation
 - stormwater management
 - POS provision
 - fire protection
 - coordination of vehicular access and fire protection with Units A & B
 - screen development and restrict access to Mt Shadforth Road.



Planning Unit D

- 248 hectares
- 10 Ownerships
- 1.5 km from town centre

Natural Features

- Slopes of 2 to 8% exist along ridgelines with slopes of 15 to 30% evident along creeklines.
- The site slopes to the south and south-east, south-east and north-east and south-east from three low hill tops of 201m, 143m and 128m respectively.
- The site is predominantly cleared, however, significant stands of remnant vegetation exist in the south, centrally and toward the east. These stands are dominated by tall dense Karri and Jarrah forest. Variable understorey conditions exist with some areas having an excellent understorey while others have been degraded by stock.
- Three defined drainage lines exist on site which drain toward the east into Millars Creek, Denmark River and the Wilson Inlet. The central drainage line has a confined catchment which does not generate significant flows.
- Foreshore vegetation for the two most significant creeks is in a generally good condition. An area of surface granite is evident toward the centre of the site.
- Eastern portions are visible from the Denmark townsite whilst southern and northern portions are visible from South Coast Highway, Cussons Road and Mt Shadforth Road, however, roadside and the remnant vegetation remaining on site reduces site visibility.

- Excellent views are afforded from the higher land over Denmark, south Denmark and Wilson Inlet. Lower portions are inwardly focussed.

Land Use/Surrounding Uses

- Current landuse is predominantly grazing with some retreat living.
- Surrounding landuse comprises a vineyard, grazing, and residential. The disused timber mill abuts the site on its southern boundary.
- Abuts Units C & F.

Land Capability on-site Disposal

- Site comprises the Keystone Kb. unit.
- Overall a medium capability.
- Areas of low and very low capability exist in connection with the three creeklines and areas of granite.

Servicing Opportunities/Constraints

- The northern catchment is approximately 1,000 metres upstream of the existing sewer and the southern catchment about 500 metres upstream of its main outfall sewer. If the area was developed to its full potential, these existing sewers would be of insufficient capacity.
- Sewers are not recommended to be extended to this area because:
 - steep slopes do not suit small lots or sewer construction due to excessive length of sewer per lot, varying depths of construction, greater number of manholes and need for rock excavation.
 - deep trenches would alter the ground water movement of the area and adversely impact on large areas of vegetation.
 - soil types mostly suit on-site effluent disposal.
- The majority of this area (above RL65) cannot be supplied by the existing water headworks. A new reservoir, together with supply main and pump station, would be required at the peak (approx RL200) towards the western end of the ridge. Pressure reduction will be required for these lots below RL120.

Planning Unit D.Cont....**Planning Issues**

- need for alternative access to minimise access from South Coast Highway and Mt Shadforth Road.
- visual impact of development on prominent slopes and adjacent to South Coast Highway needs to be addressed.
- a comprehensive fire protection plan is required with appropriate emergency access.
- lot sizes and design should respond to topography, soils and visual impact considerations.
- provision of reticulated water is required.
- design should maximise the views and varied character of the site.
- a mix of rural residential and special residential lots is recommended subject to detailed assessment, appropriate soil types, the use of alternative treatment units in some areas.
- drainage to be managed on site with appropriately located sedimentation basins.
- creeklines and significant areas of vegetation to be protected by foreshore reserves and public open space.
- potential yield – 200 unsewered lots.

Planning Unit D**Planning Recommendations/Policy**

- Prior to further development/rezoning, a local structure plan be prepared which provides for special residential/special rural development and addresses the following issues:
 - land capability assessment
 - visual impact
 - screen development and minimise access to South Coast Highway and Mt Shadforth Road
 - retention and protection of remnant vegetation
 - stormwater management
 - foreshore reserves and POS provision
 - fire protection

Planning Unit E



- 18 hectares
- 2 Ownerships
- 1 km south-west of town centre

Natural Features

- Land slopes eastwards at 2-8%.
- Mostly cleared with individual trees and stands of Karri and Jarrah with incomplete understorey toward the south and along eastern boundary
- The site is bisected in the north by a weak drainage line with T tree and melaleuca vegetation immediately fringing the water course.
- From the high land views over the town centre to the inlet.
- Tall trees and roadside vegetation limit visual exposure from the town centre and South Coast Highway.

Land Use/Surrounding Uses

- Predominantly used for grazing purposes.
- Surrounding land comprises rural lots and residential uses.
- Abuts Unit F.
- Small poultry activity within Unit.

Land Capability on-site Disposal

- Mainly comprises Kb Keystone soil unit with a small eastern portion comprising F Fernley unit.
- Overall medium capability with the lower land flanking the creek showing low capability.

Servicing Opportunities/Constraints

- completion of the Kemsley Estate has brought the sewer to the north eastern corner of this area. The majority of this site gravitates to that location and lends itself to sewerage reticulation, with the exception of the southern corner.
- the area can be supplied satisfactorily with reticulated water from existing supply in Kemsley Estate and South Coast Highway.

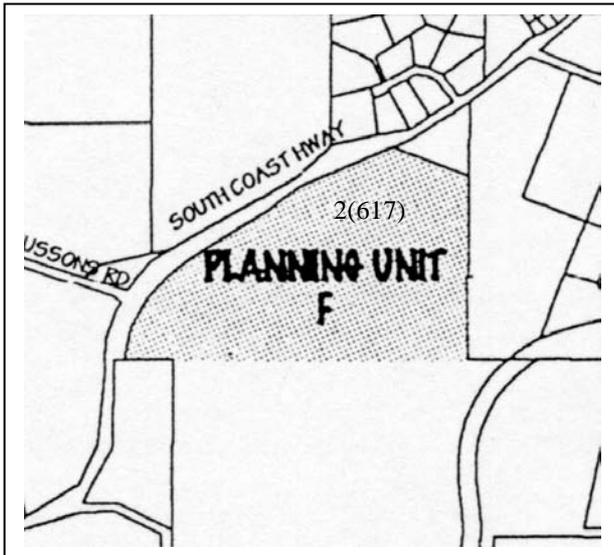
Planning Issues

- subject to existing remnant vegetation and screening along the South Coast Highway being retained and supplemented where necessary, the area is a logical extension of the existing townsite.
- good views are available over the townsite and Wilson Inlet.
- availability of services supports urban development.
- creekline and drainage lines require protection.
- drainage should be managed on-site with provision for sedimentation basins.
- a small pocket of special residential development may be appropriate in the southern corner, subject to detailed assessment, appropriate soil types, alternative treatment units and suitable setback from creekline.
- access from South Coast Highway to be restricted.
- creeklines and significant remnant vegetation to be protected by foreshore reserves and public open space.
- planning for this area requires coordination with Unit F.
- potential yield – 140 sewered and unsewered lots.

Planning Unit E**Planning Recommendations/Policy**

- Prior to further development/zoning, a local structure plan be prepared which provides for fully serviced residential development and addresses the following issues:
 - visual impact
 - retention and protection of remnant vegetation
 - stormwater management
 - foreshore reserve and POS provision
 - fire protection
 - screen development and restrict access to South Coast Highway
 - coordinate planning with Unit F
 - land capability assessment in southern area
 - Liveable Neighbourhoods – Community Design Code principles

Planning Unit F



- 22 hectares
- 1.5 km south-west of town centre
- Single Ownership

Natural Features

- Lower land and central hilltop comprise slopes of 5 to 8%.
- Midslopes comprise some areas of 15 to 30%.
- The site is extensively cleared with the exception of a significant copse of Jarrah (with few Karri) with a generally degraded understorey in the north-east and north central portion of the land.
- Good views to the west, north and east exist.
- Eastern and northern portions are exposed to the town centre and South Coast Highway although the eastern highway frontage is effectively screened by remnant vegetation.

Land Use/Surrounding Uses

- Currently utilised for grazing purposes.
- Area of earth works/gravel extraction exists to the south.
- Abutted to the east by Unit E, north by Unit D, south by grazing land and to the west by the disused timber mill.
- Unit E contains a small poultry activity.

Land Capability on-site Disposal

- Entire site comprises the Kb keystone units showing medium suitability for onsite disposal.

Servicing Opportunities/Constraints

- the northern half of the area can be gravitated into the sewer to be provided for Unit E. The southern half would require a new pump station and pressure main.
- detailed assessment is required to determine the viability of sewerage the southern portion or whether soils are suitable for on-site effluent disposal.
- the majority of the area is too elevated to be served by the existing water system. A pump station, supply main and reservoir would be required.

Planning Issues

- development subject to Unit E proceeding and detailed assessment given servicing constraints and steep slopes.
- visual impact of site needs to be addressed and development screened from South Coast Highway, Ocean Beach Road and townsite.
- significant remnant vegetation and creekline to be protected by foreshore reserve and public open space.
- access to South Coast Highway to be restricted.
- design to maximise aspect and views.
- area of excavation/gravel pit to be rehabilitated.
- detailed assessment required to determine whether deep sewerage is viable or soil suitable for on-site effluent disposal.
- stormwater drainage to be managed on-site with appropriately located sedimentation basins.
- potential yield – 130 seweraged and unsewered lots.

Planning Recommendations/Policy

- Prior to further development/rezoning a local structure plan be prepared which provides for fully serviced residential development and addresses the following issues:
 - land capability assessment
 - visual impact
 - retention and protection of remnant vegetation
 - screen development and restrict access onto South Coast Highway
 - stormwater management
 - foreshore reserve and POS provision
 - fire protection
 - coordinate development with Unit E
 - rehabilitate gravel pit
 - Liveable Neighbourhoods – Community Design Code principles

Planning Unit G



- 24 hectares
- Approximately 2 km south of the town centre
- 4 Ownerships

Natural Features

- Slopes for the northern areas average at less than 2%.
- Slopes in the south-east and south-west average at 5%.
- Northern flats are totally cleared.
- Central flats comprise degraded Melaleuca woodland.
- South eastern and south western portions on higher land comprise Jarrah woodland and forest with an understorey in a generally good condition.
- Vegetation on the northern flats points to the presence of shallow groundwater.
- A weak seepage line follows the base of the south-eastern hillock.
- Views are limited from the northern flats, however, good views can be achieved in northerly directions from the higher southern land.
- The immediate roadside margins and the higher southern land are considered exposed to Ocean Beach Road.

Land Use/Surrounding Uses

- Cleared northern flats are utilised for market gardening purposes.

- Land to the west is used for grazing/hobby farming.
- Further to the north east is the Water Corporation's Waste Water Treatment Plant. A 500m buffer for this plant would impact on this area.

Land Capability on-site Disposal

- Lower central and northern portions comprise the F Fernley unit whilst south-eastern and south western portions comprise the M Matterband and K Keystone units.
- Overall capability is medium. The seepage area and surrounds has a low capability.

Servicing Opportunities/Constraints

- portion of the area is in the waste water treatment plant buffer zone.
- provision of sewer to the balance of the land is considered inefficient as detailed site assessment is likely to prefer large lots.
- soil types and depth to ground water vary in this area and detailed site assessment is required to determine lot size.
- water reticulation can be provided from the existing service in Ocean Beach Road.

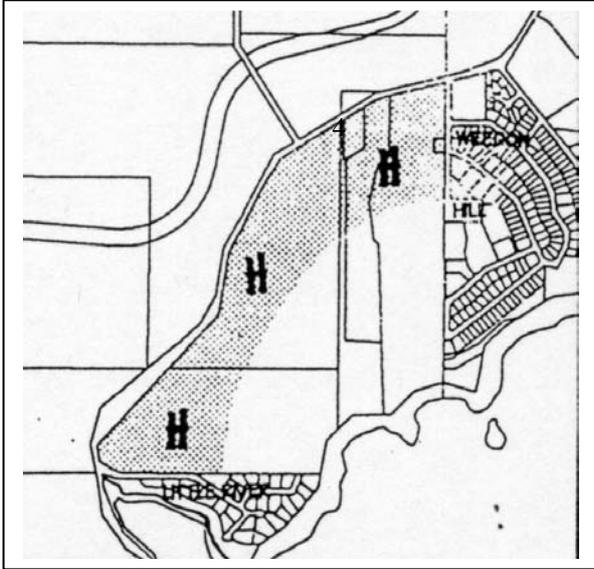
Planning Issues

- residential development is precluded within the waste water treatment plant buffer area.
- potential conflict between closer development and existing horticultural uses needs to be addressed.
- area is visually exposed from Ocean Beach Road.
- further development of the area requires detailed site assessment in relation to soils, ground water levels, visual exposure from Ocean Beach Road and servicing possibilities.
- fire protection needs consideration.
- potential yield – 20 unsewered lots utilising alternative treatment units.

Planning Unit G**Planning Recommendations/Policy**

- Prior to further development/rezoning , a local structure plan be prepared which addresses the following issues:
 - Waste water treatment plant buffer
 - visual impact
 - land capability assessment
 - conflict with horticultural use
 - servicing
 - retention protection of remnant vegetation
 - wetland protection
 - stormwater management
 - fire protection

Planning Unit H



- 70 hectares
- Approximately 2.5 km south of the town centre
- 4 Ownerships

Natural Features

- Slopes of 5 to 15% predominate, however, slopes of 15 to 30% exist higher up Weedon Hill.
- Northern portions are predominantly uncleared and comprise medium to tall Jarrah forest with some Karri. Understorey is generally incomplete.
- Southern portions are generally cleared with a stand of medium Jarrah forest on the southern boundary. Understorey is in a poor condition.
- Gravel excavation has taken place in the northern area.
- the site has views to the north and west over cleared and uncleared rural land.
- Western portions of the land are exposed to Ocean Beach Road primarily as a result of clearing and topography.
- Northern portion of the site are visible from both Units F, D and northern C.
- Granite outcrops exist in the north.

Land Use/Surrounding Uses

- Landuse comprises grazing on the cleared portions.

- Surrounding landuse comprises rural (grazing) in the north and west and tourist/chalet development to the south.
- Land to the east is zoned residential.

Land Capability on-site Disposal

- Soils consist of the K Keystone unit over the bulk of the site with the F Fernleigh unit in the immediate Ocean Beach Road margins.
- Both units show a medium to high capability.

Servicing Opportunities/Constraints

- infill sewerage of the Weedon Hill residential area to the east would enable this area to be progressively connected to the sewer system.
- the steep and rocky terrain.
- can be serviced with reticulated water from the existing supply in Ocean Beach Road.

Planning Issues

- development of sewered lots in some parts could conflict with the retention of remnant vegetation.
- small residential lots do not suit steep, rocky and heavily vegetated slopes.
- the cleared slopes are more suitable for smaller lot development.
- variety in lot sizes will be needed
- structure planning should include Residential zoned land to the east and appropriate treatment to Wilson Inlet foreshore.
- visual impact of development needs to be addressed and development should be screened/setback from Ocean Beach Road and Wilson Inlet.
- development along the ridgeline needs to be carefully designed to avoid the appearance of sprawling suburbia by utilizing pockets of remnant vegetation to break up the development into clusters.
- access onto Ocean Beach Road should be restricted.
- drainage should be managed on site with appropriately located sedimentation basins.

Planning Unit H.Cont... Planning Issues.Cont...

- a dual use path to be provided along Ocean Beach Road.
- a comprehensive fire protection plan is required for the area, particularly the heavily vegetated northern portion.
- creeklines, Wilson Inlet foreshore and significant remnant vegetation to be protected by foreshore reserves and public open space.
- need for commercial/community facilities.
- a primary school site needs to be provided.
- potential yield – 630 sewerred lots.

Planning Unit H

Planning Recommendations/Policy

- Prior to rezoning or further development/rezoning a local structure plan be prepared which provides for fully serviced residential development which addresses the following issues:
 - visual impact
 - retention and protection of remnant vegetation
 - stormwater management
 - foreshore reserves and POS provision
 - screen development and restrict access to Ocean Beach Road
 - fire protection
 - residential zoned land to the east
 - primary school site provision
 - visual impact from Wilson Inlet
 - servicing with reticulated sewer and water
 - commercial/community facilities
 - Liveable Neighbourhoods – Community Design Code Principles

17. STRUCTURE PLANNING

The preparation of structure plans will form the basis of Amendments to the Town Planning Scheme. Structure plans provide a comprehensive physical framework for assessing subdivision and development applications at the neighbourhood scale. They are particularly useful in areas of fragmented landownership and enable a coordinated approach to be taken in terms of the road layout, public open space, school sites, community facilities, public transport routes, pedestrian/cycleway routes, services and other features.

Preparation of the structure plans and subsequent Amendments will need to demonstrate that they have addressed the essential elements of this Strategy. Guidelines for the preparation of structure plans are provided in the WA Planning Commission Policy Manual and should form the basis for any such proposal.

18. OVERALL SETTLEMENT STRATEGY RECOMMENDATIONS

- 18.1 Promote the distribution of population growth between the Denmark townsite and the remainder of the Shire by supporting the development of specified nodes at Nornalup, Bow Bridge, Kenton and Peaceful Bay.
- 18.2 Medium density housing will be encouraged adjacent to the town centre in order to provide a wider range of housing to cater for changing housing needs.
- 18.3 Low density residential areas that can be sewerred, will be recoded to allow higher densities such as R20 to allow for more efficient use of land and infrastructure.
- 18.4 Encourage the Water Corporation to adjust their Infill Sewerage Program to maximise the consolidation of residential development and facilitate the servicing of planning unit areas.
- 18.5 Prior to or concurrently with rezoning and subdivision of the specified nodes and the planning unit areas, Council may require local structure plans for the whole node or unit to be prepared which address the issues identified for each planning unit area.
- 18.6 The rezoning and development of planning unit areas A, E, F& H will be subject to the provision of comprehensive services. On-site effluent disposal within planning unit areas B, C, D and G may be considered, subject to detailed capability assessment.
- 18.7 Council will promote the principles of the Liveable Neighbourhoods – Community Design Code of the W.A. Planning Commission.
- 18.8 A green belt be consolidated around the Denmark townsite with foreshore reserves, public open space and reserves being utilised to establish corridors, incorporating pedestrian footpaths and cycleways, linking outlying residential areas.

- 18.9 Vegetation, particularly along the ridge lines surrounding Denmark are to be protected, together with significant remnant vegetation located within the townsite. The tree lined entrance ways to Denmark will be retained and enhanced as will vegetated buffers to development along Ocean Beach Road.
- 18.10 The Little River Valley will be protected from urban development and the existing Rural zone be retained. Council will adopt a minimum lot size for the Rural zone of 10ha on lots fronting Ocean Beach Road.
- 18.11 Provision will be made for the expansion of Denmark's commercial and industrial areas through the finalisation of the Commercial and Industrial Strategy.
- 18.12 The land to the east of the Denmark River and to the south of South Coast Highway will be analysed in the monitoring and review process below to determine whether additional fully serviced residential land and associated facilities will need to be provided for in this locality.

19. IMPLEMENTATION

Following endorsement of the Settlement Strategy for Denmark by Council, it will be forwarded to the W.A. Planning Commission for endorsement. Council will then adopt the Strategy as a Town Planning Scheme Policy in accordance with the provisions of Town Planning Scheme No. 3.

Residential densities in the existing zoned Residential areas will need to be reviewed by Council with a view to them being increased to allow for more intense development subject to in particular the provision of reticulated sewerage connection. In most instances a coding of R20 is considered appropriate.

Council as a priority will initiate an Amendment to Town Planning Scheme No. 3 to provide for an increase in residential density codes in the inner urban areas which will encourage the extension of the reticulated sewer network and more intense development to better utilise that land resource.

20. MONITORING AND REVIEW

This strategy will be monitored and reviewed on a regular basis, particularly in terms of the population growth rates, take up of lots and relative distribution of development within the rural and urban components of the Shire.