

TUGGERANONG LAKESHORE MASTER PLAN

February 2001



**URBAN
SERVICES**

PLANNING AND LAND MANAGEMENT

PALM

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1.0 EXECUTIVE SUMMARY

1.1 Introduction and Overview

The Tuggeranong Lakeshore Master Plan Study was commissioned by the Urban Projects Unit, Planning and Land Management Group within the Department of Urban Services in December 1998. It follows the earlier Belconnen Lakeshore Master Plan study and the Young People and Planning Workshops (Tuggeranong Foreshore) published in December 1998 and March 1999, respectively.

The purpose of this master plan is to provide guiding principles for a sustainable development of the Tuggeranong Lakeshore and Town Centre, that promote economic, recreation, social and cultural benefits, and incorporate consultative input from the Tuggeranong community. The master plan is a vision for the future and a development strategy, it is not a detailed development control plan. Details of the study's purpose and objectives are set out in Section 4.0

The report outlines the history and existing conditions of the lakeshore, the planning and consultative procedures adopted, and summarises the consultative and master planning processes.

The master plan study focused principally on Lake Tuggeranong and the immediate vicinity. However, in order to understand the implication of recommendation for this area and to ensure consideration of the broader context, the study area included parts of the town centre and areas west of Athllon Drive.

The Tuggeranong Lakeshore Master Plan was publicly released in August 1999 following its tabling for information in the Legislative Assembly. The Assembly referred the master plan to the Assembly's Standing Committee on Planning and Urban Services for consideration. The hearing commenced in November 1999 and the Committee's Report No 60 was released on 23 November 2000.

1.2 Master Plan Opportunities

Tuggeranong Lakeshore is a valued resource whose potential remains largely untapped. The master plan seeks to protect and enhance its natural attributes and to introduce new activity, diversity and vitality to the lakeshore area and through to the town centre. It aims to create a new people centred and sustainable environment, that incorporates conservation, open space, recreation and community uses and promotes more "active" use of lakeshore resources, including mixed residential, cultural, recreational and entertainment uses.

It responds to community concern for the natural features of Tuggeranong Lakeshore to be enhanced and for future development to be carefully managed. It will help develop the natural interface between the lakeshore and the town centre, ensuring that the amenity and environmental quality of Tuggeranong Lakeshore are shared by the whole community.

To achieve these ends, the Master Plan provides:

- overall principles and concepts for integration of the lake and town centre;
- design principles for future development;
- strategies for the main activity areas; and

The report findings are best summarised in terms of:

- The Principles Plan;
- The Concept Plan; and
- Specific Opportunities.

1.3 Principles Plan

The Principles Plan outlines the basic structure on which the master plan is based:

- Four functional and environmentally based Lake Zones A-D;
- town centre expansion opportunities and connections to the lake;
- A "support zone" west of Athllon Drive for uses requiring more space; and
- The western Murrumbidgee River Corridor area.

Lake Zone A is the shallowest lake zone and an area of low environmental sensitivity. Proposed uses are confined to conservation and low intensity uses compatible with environmental protection, passive recreation and maintenance of residential amenity.

Lake Zone B is the central basin of the Lake adjoining the dam wall and is the least constrained lake area. It adjoins the Town Park and larger foreshore areas, and is most suited to active water based recreation.

Lake Zone C adjoins the Town Centre and is proposed as the primary focus of “urban” lake edge activities. It offers maximum opportunity for active commercial and community uses on both sides of the Lake, with direct linkage to the town Centre.

Lake Zone D, south of Soward Way has lower environmental sensitivity and is more constrained in terms of access and available foreshore areas. It is most suited to low intensity open space uses compatible with adjoining town centre expansion areas.

1.4 Concept Plan

The Concept Plan identifies key environmental and development opportunities within the broader context of the Principles Plan. It includes:

- New lake edge and Town Centre Activity Centres (labelled 1-5);
- New town centre opportunities for residential and retirement development;
- Consolidation of eastern lake shore residential development;
- Key landscape and urban design axes; and
- Lake and town centre “Gateway” locations.

1.5 Specific Opportunities

Over time, implementation will see Tuggeranong Lakeshore become a more vibrant, people and pedestrian oriented precinct, with a character that is unique to Tuggeranong. Sixteen lakeshore open space areas are identified for progressive improvement, as well as twenty eight development opportunities. Specific proposals include:

- Upgrading of pedestrian lighting, waste disposal and public amenities around the lakeshore;
- Coordination of lake management and maintenance with Plan of Management procedures;
- Increased opportunities for lakeshore café, restaurant and entertainment facilities;
- New landscaped areas for passive recreation, picnic, barbecue and leisure activities;
- Improved access to lakeshore recreation and leisure activities;
- Opportunities for small scale businesses, hire facilities and concessions;
- Medium density and retirement housing on selected lakeshore and town centre sites;
- Extension of “urban” uses to the western lakeshore south of Soward Way;
- Mixed use apartment development (with public carparking) on Cowlshaw and Anketell Streets, overlooking the lake;
- Improved links between the town centre and the lake edge to encourage interaction;
- Development of a new “Village Green” between the Town Park and town centre as a new focus for low density community, entertainment, craft market and food service facilities;
- New “Gateway” zones at the main entries to the lake precinct and town centre; and
- Upgrading of the “Commemorative” Site on the eastern lakeshore as a new activity focus.

A schedule of lakeshore improvements and development opportunities are listed in section 7.0. These opportunities have been considered against environmental, infrastructure, public safety and transport criteria.

1.6 Status of the Master Plan

The master plan identifies an overall concept for future development within the Tuggeranong Lakeshore and Town Centre study area. It will be used by government as:

- Information for public works initiatives and maintenance operations particularly on the lake shore;
- Advice to Canberra Urban Parks and Places on the management of public space in the study area;
- Input to Infrastructure and Asset Management Group (Department of Treasury & Infrastructure) land release program; and
- A basis for Planning and Land Management (Department of Urban Services) consideration of future variations to the Territory Plan.

1.7 Territory Plan Review

The opportunities, outlined in the master plan, are generally within the scope and intent of the Territory Plan, however several development sites will be dependant on variations to the Plan. These include changes to the existing land use policy for development sites 5-8, the “commemorative site” (site 9) and the “village green” (site 19). Site specific opportunities are set out in Section 7.0, including a schedule of sites requiring a

variation to the Territory Plan. These changes are principally concerned with achieving greater flexibility and responsiveness that promote the master plan objectives.

1.8 Community Consultation

The master plan was prepared over a six month period from December 1998. Consultation was undertaken with the Tuggeranong community through survey/questionnaires, public meetings, displays at the Tuggeranong Hyperdome and library. Meetings with key stakeholders including the Tuggeranong Community Council, Business Tuggeranong, Tuggeranong Community Arts and the Sea Scouts were also held.

Two separate consultation periods were held in the preparation of the master plan, the first in January and February 1999 to identify community attitudes, issues and opportunities and the second in June 1999 on the draft master plan proposals.

The first consultation period found that the community's main issues included:

- The lack of restaurant, café, entertainment and interactive uses in lakeshore areas;
- Limited range of family recreation, amusement and hire facilities (eg mini golf, boat hire etc);
- The need for more trees, shade and landscape development;
- Shortage of lakeshore lighting, toilets, telephones, water safety, BBQ and picnic facilities;
- Water quality and litter problems in the lake and lakeshore areas, particularly near the Town Centre;
- The lack of retirement, aged care and nursing home facilities;
- The need for improvements to cycle and pedestrian path system;
- Poor access to the town centre and Town Park from eastern lakeshore and residential areas;
- Lack of housing, resident activity and permanent population in town centre areas;
- Encroachment of development into key recreation and open space areas; and
- Reduction in water quality from increased lakeshore development.

Where possible, these issues were reflected in the draft master plan proposals. Many of the matters raised relate to urban and open space management. The Government agencies that have responsibility in these areas are identified in the report and the issues have been referred to the relevant agency. Shortfalls in management and maintenance of land care services will be addressed through the Canberra Urban Parks and Places' Plans of Management covering lakeshore areas and through future capital works expenditure.

The proposals outlined by the draft master plan were broadly supportive, however a concern was expressed in relation to the extent of residential development in particular by the southern extension of residential uses on the eastern lakeshore adjoining Drakeford Drive.

1.9 Master Plan Team

The Master Plan was developed by a team of consultants headed by LFA (aust) Pty Limited (Architecture, Urban Planning and Landscape) working in consultation with the Tuggeranong community. Also involved in the preparation of the master plan were Ove Arup and Partners (engineering studies), University of Canberra Ecology Unit (Environmental studies), and Ray L. Davis and Company (property consultant and market analysis).

2.0 DEVELOPMENT HISTORY OVERVIEW & STUDY AREA

2.1 Town Centre and Lake Development

Tuggeranong is Canberra's third "new town". Construction of the town centre and Lake Tuggeranong was begun by the National Capital Development Commission in 1986, following the partial completion of adjoining residential suburbs of Kambah, Wanniassa and Oxley. This was followed by construction of the Hyperdome Shopping Mall in 1991 and the Town Park in 1993.

Lake Tuggeranong was developed to meet the landscape, environmental, water quality and recreational needs of the Tuggeranong community and adjacent town centre. Filling of the lake and preliminary lakeshore structure planting were complete in 1989. Lake Tuggeranong is the third lake constructed in Canberra since 1964 and has a surface area of 70 hectares, compared with 105 hectares for Lake Ginninderra and 664 hectares for Lake Burley Griffin.

The lake is formed by a 14 metres high and 550 metres long earth filled embankment located 200 metres downstream from the confluence of the Tuggeranong and Village Creeks. The downstream face of the embankment is grassed while the steeper upstream face is provided with rock protection to withstand wave action. A concrete chute spillway is incorporated on the southern abutment of the dam to safely transfer storm discharges downstream. The dam embankment also serves as a busy crossing for Athllon Drive, walkways and cycle paths. The lake is enclosed by three hills; East Knoll, Tuggeranong Trig and Urambi Hill, while the Town Centre ridge line defines the lake's western edge.

2.2 Study Area

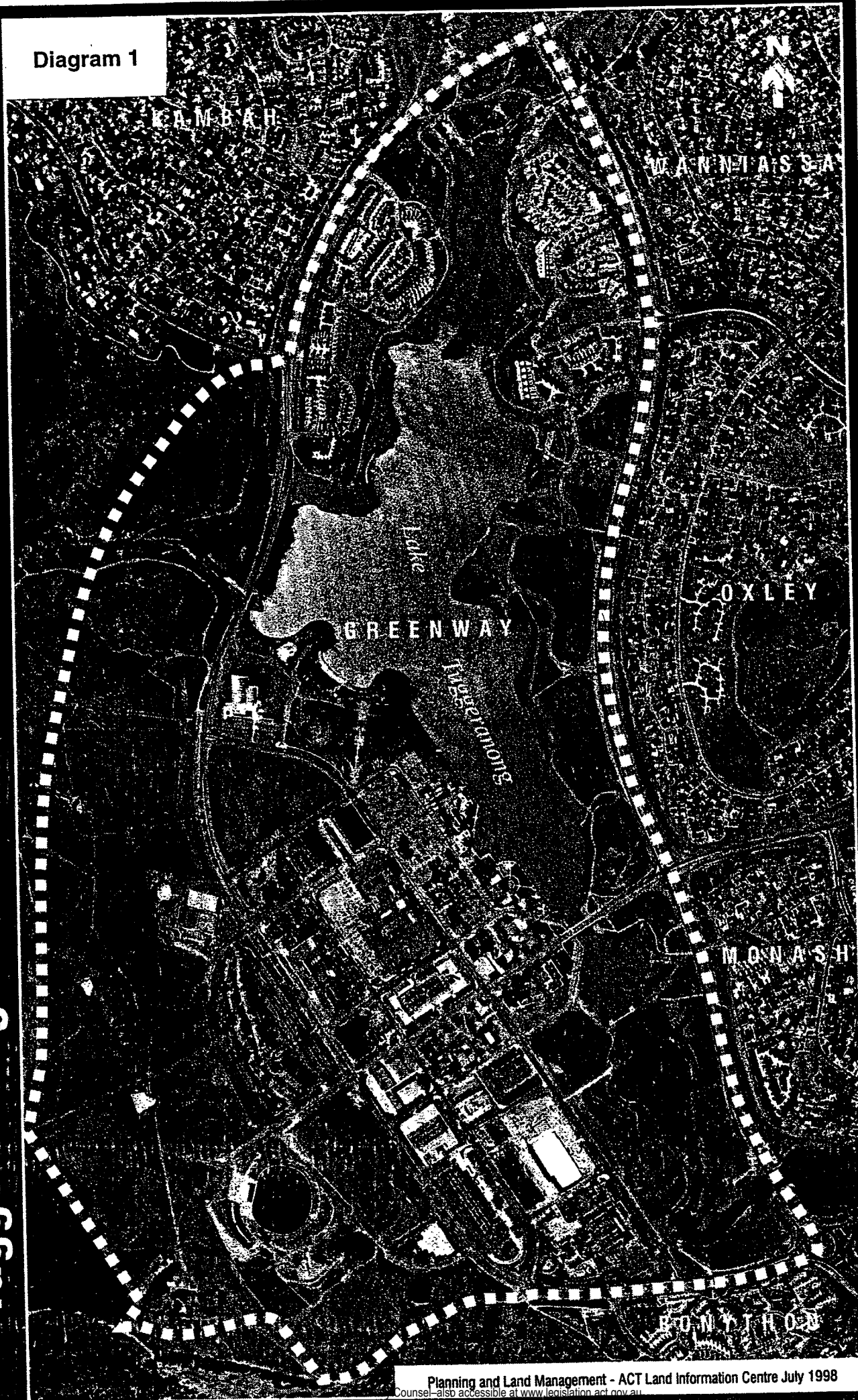
The master plan study focused principally on Lake Tuggeranong and the immediate vicinity. However, in order to understand the implication of recommendations for this area and to ensure consideration of the broader context, the study area included parts of the town centre and areas west of Athllon Drive.

The study area is shown on Diagram 1. It occupies an area of some 383 hectares, incorporating the whole lake and lakeshore, town centre and associated open space. It specifically includes undeveloped larger sites west of the town centre that are more capable of broad scale development than the lakeshore. They include land use policy areas designated by the Territory Plan as Entertainment, Accommodation and Leisure (8D) and River Corridor (13B).

The study area also included a number of areas that are identified by the Territory Plan as development sites.

Tuggeranong Lakeshore Master Plan - Study Area

Diagram 1



3.0 EXISTING CONDITIONS

3.1 Development

The town centre is now over half developed with a gross floor area of some 200,000m². and serves a population of approximately 90,000 people. All development has been subject to comprehensive urban design guidelines, however the scope of new development and landscape consolidation that has occurred since 1989 now requires a more comprehensive review. Those issues that cannot be addressed through the master plan will be referred to the relevant government agency.

3.2 Territory Plan Land Uses

The current Territory Plan Land Use Policy composition of the study area, including vacant undeveloped sites, is summarised by category in the following table.

Territory Plan Land Use Category	Area (Hectares)	Percentage
Commercial Town Centre B	98.4	25.7
Urban open space (public land)		
Foreshore	61.5	16.0
"X"	8.9	2.3
Water Feature "Pg" (Lake & ponds)	70.0	18.3
Residential	25.2	6.6
Entertainment, Accommodation & Leisure "8D"	40.4	10.5
Restricted Access Recreation	3.3	0.9
River Corridors "13B"	33.1	8.6
Adjacent area	28.6	7.5
Community Facility	2.9	0.8
Hills, Ridges & Buffer areas	11.0	2.9
Total	383.3	100.0

3.3 Existing Building Stock

The approximate areas of commercial and residential uses in the town centre and Greenway are set out in the following table. The 12 residential units in the town centre relate to caretaker and home/office units adjoining the Town Square.

	Area m²	Total m²	Units	Total Units
Commercial Uses				
Retail	77,500			
Services (banks, restaurants, health etc)	44,000			
Other (service stations, community etc)	18,000			
Sub Total		139,500		
Office Accommodation				
Sub total		66,500		
Total		206,000		
Residential Units/Townhouses				
Greenway			474	
Town Centre			12	
Total				486

3.4 Traffic & Transport

The study area benefits from a well developed traffic and transport infrastructure network, including a public transport interchange, public carparks and traffic free pedestrian precincts in the town centre and lakeshore areas. Grade separated pedestrian access is provided to the eastern lakeshore and is linked to a pathway system serving the whole lakeshore. Vehicular access to the lakeshore and town centre is via peripheral arterial roads, which are sited to limit through traffic and to provide sweeping water views of the town centre. Arterial road reserves are planned with capacity for future traffic levels under a range of traffic planning conditions.

3.5 Engineering Services

A well planned engineering services infrastructure serves the study area, including comprehensive waste water disposal and water quality management systems. Trunk services have adequate capacity for future

development in the town centre and around the lake, using normal site servicing methods. For larger sites west of Athllon Drive and Rowland Rees Crescent, some augmentation of gravity based sewage and stormwater services may be required. On site management of sewer and stormwater, including ponding, may be required for some of these sites.

Power reticulation is fully underground in all areas and central plant is well integrated with adjoining development.

3.6 Lake Functions

Lake Tuggeranong serves as a central landscape setting for the town centre, which extends for approximately 1 kilometre along its western shoreline. It acts as an expansive reflecting pool for the town centre and provides extensive over water views from the main arterial roads that flank the lake. The primary function of the lake however is to provide water quality protection for the Murrumbidgee River from urban runoff. The lake itself is protected by a series of upstream water quality control ponds with an area of approximately 20 hectares.

In the town centre area, an "urban" lake edge treatment prevails, while the remainder of the foreshore is informally developed for a range of recreation and water quality needs. The lake is an important component of the National Capital Open Space System and a major recreation resource for residents of Tuggeranong and the wider community.

3.7 Water Quality And Hydrology

Lake water quality is a result of the urban nature of its catchment, seasonal variability in water flows and the success of water quality measures, including gross pollution traps, upstream water quality control ponds and aquatic plant filtration. The actions of the community in adopting an environmental duty of care is a major factor in the quality of water in the Lake. The Lake Watch Program operated through Tuggeranong College and conservation activities of the Lake Tuggeranong Sea Scouts are two examples of community water quality awareness initiatives.

The lake is protected by fourteen gross pollution traps (GPT's). These are distributed around the lakeshore and reflect the drainage structure of the lake catchment. Completion of major development and infrastructure work since the mid 1980's has allowed the catchment to stabilise, however the management of turbidity and nutrient loads remains a challenge.

Extensive reed beds and other macrophytes play a vital role in water quality, ecosystem protection and wildlife conservation, and are dependent on the maintenance of lake water levels. Water flow is also critical in the management of algal growth. As with other ACT lakes, localised algal blooms can occur and are a measure of increased algal growth resulting from higher nutrient concentrations during low flow conditions in hot summer months.

Contrary to many residents concerns, water quality trend analysis since 1992 by Environment ACT indicates that the Lake continues to improve, with turbidity, suspended solids, total phosphorus, total nitrogen and ammonia all gradually reducing in concentration. Greater community involvement in nutrient reduction programmes is one practical way that residents could assist in further water quality improvement.

3.8 Lake Technical Details

Normal lake water level is at AHD568. This rises to AHD569.2 in a 1 in 10 year return storm and AHD569.7 in a 1 in 100 year return storm. The Tuggeranong Creek Weir has a normal water level of AHD570, while the Isabella Weir has a normal water level of AHD574.8 and Stranger Pond a level of AHD575.5. The lake has a shoreline of 6 kilometres and a maximum depth of 12 metres near the dam wall.

The water held back by the dam extends northwards some 1.2 kilometre to the Drakeford Drive and Athllon Drive intersection, while the southern arm extends about 1.3 kilometre to the existing Tuggeranong Creek Weir.

3.9 Outdoor & Water Based Recreation

As a recreation resource, Lake Tuggeranong plays an important role in relieving pressure on existing areas such as Pine Island on the Murrumbidgee River.

Lakeshore recreation uses range from cycling, bird watching and nature oriented activities in northern sections of the lake foreshores, to more active recreation centred on the Town Park. Existing pathways provide a full circuit of the central and northern portions of the lake and are actively used by cyclists, roller bladers and walkers. Town Park facilities include a skateboard park, multi-purpose indoor aquatic centre and tennis courts. Community events are focused on the Town Park. Three beaches have been developed in the main basin and serve as the focus for a range of activities such as picnics, barbecues and general recreation. The total area of foreshore parkland and recreational facilities within the study area, excluding areas west of Athllon Drive, is approximately 30 hectares.

Water activities such as swimming, sailing, rowing, canoeing and wind surfing are a regular feature of the lake scene. As with other ACT Lakes, petroleum powered boats and jet skis are prohibited, except where authorised for safety and training purposes. Pleasure sailing is not strongly represented, however Sea Scout sailing activity is well established from the east bank, using triangular course of three to four kilometres in length in the central basin. Wind surfing also operates from the east bank, using a north south zone related to the prevailing wind direction. Rowing is focused on the more sheltered southern area of the central basin between the Town Park and Tuggeranong Weir. Canoeing activity is more dispersed, but most frequent in sheltered areas of the northern Village Creek arm. Model sailing craft activity is infrequent and mainly occurs in sheltered areas adjacent to the Tuggeranong Weir. A small scale weekend outlet for public water craft hire operates from the pontoon adjoining the Library. Boating organisations have three boatsheds, comprising the Sea Scouts and combined schools sheds on the eastern lakeshore and Tuggeranong Rowing Club storage under the Library.

Lake Tuggeranong is also a popular managed recreational fishery asset. Environment ACT is responsible for the stocking of fish species and has a regular monitoring program investigating the success of the stocking program.

3.10 Environment Protection

Environment protection is a responsibility of Environment ACT and Canberra Urban Parks and Places units within the Department of Urban Services. Together they are responsible for the protection and management of terrestrial and aquatic ecosystems, including urban lakes, waterways, parkland and open space areas.

Lake Tuggeranong is a created ecosystem and is managed to accommodate water quality, flow control, recreation and conservation needs. Upstream water quality control ponds, pollution traps and extensive reed beds are used to mitigate pollution and nutrient loads from urban runoff. The lake is stocked with a range of fish species and supports a variety of water birds. Water bird habitat is mainly limited to the northern and southern reaches of the lake, and includes three islands in the Village Creek arm of the lake.

3.11 Lakeshore Management

Lakeshore management and horticultural maintenance is primarily the responsibility of Canberra Urban Parks and Places (CUPP) within the Department of Urban Services. CUPP is required under the Land (Planning and Management) Act 1991 to develop and implement Plans of Management for Urban Open Space and for Gazetted Lakes and Ponds. A Draft Plan of Management for Tuggeranong's Urban Parks and Sportgrounds was published in September 1998. In conjunction with this plan, CUPP is currently preparing another Plan of Management for Gazetted Lakes and Ponds which includes Lake Tuggeranong. It is expected that this plan will be in place by 1999-2000. The management bodies which have responsibility for managing Lake Tuggeranong are as follows;

Management bodies responsible for Lake Tuggeranong

Responsibility	Management Body
Management of land, facilities and vegetation above and below high water mark, including the management of recreation and sporting activities.	Canberra Urban Parks and Places
Stocking of fish	Environment ACT
Dam wall and spillway, water level and monitoring	ACT Stormwater, Department of Urban Services
Water Extraction Policy	Environment ACT
Water quality	Water Unit, Environment ACT
Public health issues associated	Health Protection Service, Department of Health

with recreation use of the waters	
Cultural Planning	Metropolitan Planning and Land Management Branch. Planning and Land Management Group

Source: Draft Plan of Management; Tuggeranong's Urban Parks and Sportsgrounds. CUPP Canberra September 1998

3.12 Landscape

Lakeshore areas were extensively planted during the initial development of the lake in the late 1980's and extended with the development of the Town Park in 1993. Plantings are predominantly native species, with few exotic or introduced riverine species. Exotic species are however included in the Town Park and some street plantings, providing local contrast and interest. Planting is generally structured on a functional basis, using informal groupings for screening, shelter and amenity. Some formal planting is used in the Town Park, quayside areas and adjacent avenues, as well as the landscaped "boundary axis" through the Town Park. The eastern foreshore of the central basin is least well developed and has extensive areas of open grassland.

3.13 Existing Deficiencies

A number of concerns were identified during the consultation processes with the management, planning and development for Tuggeranong Lakeshore. These concerns, involving environmental, recreational, community, residential and commercial issues are outlined below and further explained in the Appendices. A summary of community consultation results is included in Section 5.0. All concerns have been considered as part of the master planning process and are incorporated in the master plan when consistent with the plan's objectives. The matters relating to urban and open space management have been referred to the relevant agency.

The main deficiencies identified in study area facilities and activities relate to;

- ☐ Limited East West lake connections
- ☐ Community Events and Festivals
- ☐ Open Space and Recreation
 - Indoor Recreation Facilities
 - Outdoor Recreational Facilities
 - Water Based Recreation Facilities
 - Water Safety
 - Public Facilities.
- ☐ Land Uses and Development
 - Town Centre Residential and Mixed Use Development
 - Residential Uses
 - Retirement Housing
 - Café, Restaurant and Entertainment Uses
 - Commercial and retail uses
- ☐ Lakeshore Access
 - Vehicular access & parking
 - Pedestrian and cycle access
 - External linkage
- ☐ Landscape Planning & Design
 - Landscape Structure Tree Planting and Shade
 - Landscape Screening and View Corridors
 - Lakeshore Wind Exposure
- ☐ Open Space Management & Maintenance
 - Parkland areas
 - Waste management
 - Lakeshore pathways
- ☐ Water Quality & Catchment Management
- ☐ Wildlife Habitat & Protection

4.0 PLANNING PROCESS

4.1 Master Plan Purpose

The primary purpose of the study is to develop a clear and robust planning strategy or master plan incorporating principles for the sustainable development and management of Lake Tuggeranong and its surrounding areas and to provide for a diversity of activities supporting economic, social and cultural benefits. The master plan is not a detailed development control plan.

4.2 Study Objectives

To further define the aims of the study, the following objectives were included in the study brief:

- To integrate planning, urban design, development and management activities to create an exciting and attractive lakeshore which will become an integral part of the town centre;
- To protect the lakeshore environment and improve the amenity of public areas, introducing a greater range of people attracting activities to the lakeshore and increasing the vibrancy of the town centre and lake areas;
- To identify innovative recreational and business opportunities and lakeshore activities which will generate commercial enterprises and contribute to employment opportunities in Tuggeranong; and
- To achieve these by engaging and working with the Tuggeranong residential and business community in identifying planning and development opportunities in the study area.

To achieve these objectives, clear strategies are required for activities that will best contribute to the immediate lakeshore environment and those which are better suited, on environmental, social and economic grounds; to other sites within the wider lakeside, Murrumbidgee River corridor and general open space system.

Similarly, in seeking recreational, business and community activities which will generate commercial enterprises and contribute to employment opportunities in Tuggeranong, it is important that;

- Finite foreshore resources are managed strategically, with due regard to longer term planning and community needs;
- Implementation targets reflect market conditions and public sector funding capacity;
- Partnerships are created between the Territory, key stakeholders and the private sector to advance the opportunities for Lake Tuggeranong and surrounding area;
- Sites for longer term development allow for staging, interim uses, concessional activities and similar measures that address short term needs as well as longer term planning objectives.

4.3 Constraints and Opportunities

Effective master planning requires a balance between development opportunities and constraints that reflects the planning and environmental objectives for the area. The principal opportunities and constraints identified for the study area are outlined below and further developed in the Appendices.

Development Constraints:

- ☐ lake hydrology & flood levels;
- ☐ aquatic activity zoning;
- ☐ development intensity and water quality;
- ☐ micro-climate and wind exposure;
- ☐ topography and landform;
- ☐ landscape character and planting;
- ☐ engineering services capacity;
- ☐ vehicular access and parking;
- ☐ lake edge setbacks;
- ☐ view corridors, lake views & setting;
- ☐ landscape and architectural scale;
- ☐ urban design; and
- ☐ heritage - Tuggeranong Boundary Corridor.

Development Opportunities:

- ☐ town centre & lake "gateways";
- ☐ town park "village green";
- ☐ town park amphitheatre;
- ☐ lakeshore commemorative site;

- ☐ aquatic structures;
- ☐ water based recreation sites;
- ☐ urban lake edge character;
- ☐ south west lakeshore zone;
- ☐ town centre housing sites;
- ☐ mixed commercial, entertainment and leisure uses;
- ☐ Tuggeranong cultural centre;
- ☐ low density entertainment, accommodation and leisure sites; and
- ☐ paths and cycleways.

4.4 Alternative Lakeshore Development Options

To explore alternative development models for the study area, three generic options were examined, based on the range of preferences expressed in community consultation and the constraints and opportunities identified by the study team.

a) High intensity development model

This approach envisaged relatively intensive development of the lakeshore, with an emphasis on residential, commercial, entertainment and leisure facilities that would fully utilise the potential of key sites. A much more “urban” foreshore character would result, particularly in the town centre and central basin areas, where many residents have expressed preferences for a more active village or cosmopolitan setting. Despite this particular interest in greater lake edge vitality and diversity, it is clear that more intensive foreshore development for other uses is not supported by community attitudes, nor by property market analysis, both of which point to a much more selective and balanced pattern of development.

b) Low intensity or minimum development model

This approach allowed for minimum change to existing land use patterns, with an emphasis on open space, parkland and passive recreational uses, and low intensity development of existing Territory Plan policy areas. This option did not address the concerns and issues raised by local residents, community groups and the business sector. It did not provide a basis for; enlivening the lake foreshore, making better use of existing infrastructure and facilities nor for stimulating economic activity and development.

c) Selective local development model

This option allowed for the retention and enhancement of existing Territory Plan provisions, plus the selective development of key locations identified through the analysis of site opportunities, constraints, property market evaluation and the community survey.

This general approach is the most widely supported model and is considered the preferred option. It is best realised by a “nodal” approach that focuses new development on selected activity nodes and limits disruption of open space, parkland and river corridor areas. To achieve this, a number of lakeshore zones and future development sites have been identified, based on the preceding analysis of opportunities, constraints, and specific site features.

5.0 COMMUNITY CONSULTATION

5.1 Consultation Process

Introduction

The key component in the preparation of the master plan was to consultation with the community. This requirement was incorporated into the work plan and program for the study.

Component Programmes

The consultation process has been based on the following six related programs, aimed at involving a broad cross section of the community, local business and key stakeholders:

- A public information program including media releases, press reports and talk back radio;
- Open public meetings;
- Meetings with key stakeholders including Tuggeranong Community Council, Sea Scouts, community service and business group;
- "Young People and Planning: Lake Tuggeranong Foreshore" Workshops;
- Government Agency and advisory group liaison; and
- Community Survey/Questionnaire.

Consultation was conducted in two main phases, with the first concentrated on information collection, community attitudes and survey results, and the second on community responses to the draft master plan proposals.

5.2 Consultation Period No. 1

The first consultation period commenced in January 1999 with the distribution of questionnaires and the erection of displays at the Tuggeranong Hyperdome, Tuggeranong Library and Planning and Land Management Shopfront. A public meeting was held on Saturday 13 February 1999 at the Tuggeranong Community Centre. Approximately 60 people attended. The purpose of this consultation was to gather information to identify community attitudes, issues and opportunities for the lakeshore and the town centre.

Questionnaire Survey

The survey utilised pre-paid, fax and email returnable questionnaire forms. The forms contained a series of questions, a study area aerial photo that included a number of vacant development sites and guide notes. Two separate questionnaires were available for residents and community/business organisations. Resident questionnaires were distributed through the Tuggeranong Hyperdome, Tuggeranong Library, Tuggeranong Community Centre, Tuggeranong sporting and social clubs, ACT Government and PALM Shopfront, PALM's website and direct mail out. The community/business questionnaires were distributed directly to local organisations. The Tuggeranong Chronicle and Valley View newspapers also assisted by advising of the availability of the forms.

Approximately 2800 questionnaires were distributed. By the close of the consultation period on 25 February 1999, responses had been received from 84 residents and 12 organisations.

Response summaries are outlined below for key groups and a schedule of responses is included in the Consultation Report (Appendix 3).

Resident Consultation

The main issues and concerns of residents from questionnaire responses and the public meeting, are:

- The lack of restaurant, café, entertainment and interactive uses in lakeshore areas;
- Limited range of family recreation, amusement and hire facilities (eg mini golf, boat hire etc);
- The need for more trees, shade and landscape development;
- Shortage of lakeshore lighting, toilets, telephones, water safety, BBQ and picnic facilities;
- Water quality and litter problems in the lake and lakeshore areas, particularly near the town centre;
- The lack of retirement, aged care and nursing home facilities;
- The need for improvements to cycle and pedestrian path system;
- Poor access to the town centre and Town Park from eastern lakeshore and residential areas;
- Lack of housing, resident activity and permanent population in town centre areas;
- Encroachment of building development into key recreation and open space areas; and
- Reduction in water quality from increased lakeshore development.

Community Groups & Associations

The views of local community groups and associations have been considered, based on survey responses and direct liaison meetings. Valuable contributions were received from:

- ACT Aeromodellers Association;
- Business Tuggeranong;
- Canberra Jet Sports Boating Association;
- Tuggeranong Community Advisory Committee;
- Tuggeranong Community Council;
- Tuggeranong Community Arts Association;
- Tuggeranong Rotary Club;
- Lake Tuggeranong Sea Scouts Group;
- Tuggeranong Valley Rugby Union & Amateur Sports Club; and
- Waterwatch and Lakewatch.

Community Group responses reflect individual group interests and priorities, as well as a natural desire to improve the amenity and accessibility of lakeshore areas for residents. The Tuggeranong Community Council expressed the view that no further residential development should be permitted until further amenities were provided. Business Tuggeranong supported the completion of currently designated residential areas in accordance with the Territory Plan, and the introduction of town centre housing in support of the master plan objectives.

Young People And Planning

In accordance with findings from the *ACT Youth Strategy*, which sought greater youth involvement in planning processes that affect their environment, a number of workshops were initiated in late 1998 by the Social Planning Team of Planning and Land Management (PALM), aimed at gaining youth input to the master plan study.

A total of four workshops were held from late August 1998 to early December 1998, attended by young people from a range of local schools and youth groups. These included Fusion, the Galilee Day Program, Erindale College, Erindale Youth Centre, Lanyon High School, Lake Tuggeranong College, Calwell High School, and Kambah High School. Each group developed their own ideas and the workshop results were published by PALM in March 1999. Meetings were held with the consultant team in January 1999, at which previous workshop results were further explored. Inputs from other youth groups, including the Sea Scouts, have been obtained via survey responses and separate liaison meetings.

Key ideas from the youth group workshops include a social meeting and barbecue area, art and sculpture displays, jetties, cyclepath and pathways, waterslide, boat hire facilities, cafes, skate park lighting, lakeshore improvements (more trees, lighting, waste facilities and toilets), a pedestrian bridge and Aboriginal reconciliation point. Lighting of the skate park has now been implemented and is well used and a new cyclepath is currently under constructed. The bridge link could play an important role in improved access to the eastern lakeshore and Town Centre, and as a symbol of cultural and national aspirations at the centenary of Federation and beginning of a new millennia.

Business and Industry Groups

The views of local business and industry groups have been considered, based on survey responses and liaison meetings, including meetings with the following ACT Government Advisory Groups:

Commercial Advisory Group

- Australian Property Institute (ACT Division)
- ACT and Region Chamber of Commerce and Industry Ltd
- Tourist Council of Australia (ACT Region)
- Canberra Accommodation Industry Association
- Canberra Business Council
- Canberra Property Owners Association
- Harry Notaris Investments
- Goodwin Kenyon Pty Ltd
- Master Builders Association of the ACT
- Property Council of Australia
- Real Estate Institute

- Richard Ellis ACT

Residential Advisory Group

- Australian Property Institute (ACT Division)
- Mc Cann and Associates
- Canberra Property Owners Association
- Housing Industry Association
- Master Builders Association of the ACT
- MBA Land
- Real Estate Institute
- Richard Ellis ACT

Business Survey Responses

- Canberra Investment Corporation Limited
- Kondouris Group
- Nilias Nominees

The main concerns of these groups relate to opportunities for the development of business and employment within the study area, measures to ensure the orderly release of land in accordance with market conditions and the extent of private sector contributions to public infrastructure and community facilities. Development of the northern Town Centre areas, including a more substantial residential presence, was seen as an essential prerequisite for realisation of the master plan lakeshore objectives.

5.3 Consultation Period No. 2

The consultation on the draft master plan proposals occurred in June 1999 with the distribution of a second questionnaire and erection of displays at the Tuggeranong Hyperdome, Tuggeranong Library and Planning and Land Management Shopfront. Participants involved in the first consultation, where legible details had been given, were directly advised through mail of the commencement of consultation on the draft. A public meeting was held on Saturday 19 June 1999 at the Tuggeranong Library. Approximately 60 people attended.

Questionnaire Survey

The survey again utilised pre-paid, fax and email returnable questionnaire forms. The material included a summary of each of the draft proposals, location map and a series of questions concerning the proposals. The questionnaires were distributed through the displays, public meeting and by direct mail out.

Approximately 500 questionnaires were distributed. By the close of the consultation period on 24 June 1999, there were 39 responses received. Two further written submissions were received, with one elaborating further on their questionnaire response. A schedule of the responses received is included in the Consultation Report (Appendix 3).

Consultation

The main issues arising from the responses received and the public meeting are:

- The degree of residential development proposed;
- Further residential development along Drakeford Drive will affect the amenity of Oxley resident by obstructing their views;
- Proposed residential along Drakeford Drive contrary to the requirements of the Territory Plan and will jeopardise the visual character of the lake foreshore and compromise the water quality;
- The study involved limited community consultation;
- Sites south of Soward Way should be retained as a commercial land bank;
- New employment opportunities should be encouraged; and
- Carparking in the town centre.

5.4 Community Reference Group

A Reference Group comprising members of the public, Tuggeranong Community Council, Sea Scouts and business representatives was established and consulted with through the master plan preparation. The draft master plan's principles received generally positive support from the Reference Group, however differing opinions on a number of the elements proposed were expressed.

6.0 MASTER PLAN

6.1 Principles And Concepts

Principles Plan

The Principles Plan (refer Diagram 2) outlines the basic structure on which the Master Plan is based. It includes:

- Four functional and environmentally based Lake Zones labelled A-D;
- Town Centre expansion opportunities and connections to the lake;
- A "support zone" west of Athllon Drive for more space extensive uses; and
- The Murrumbidgee River Corridor area.

Lake Zone A is the shallowest lake zone and an area of low environmental sensitivity. Proposed uses are confined to conservation and low intensity uses compatible with environmental protection, passive recreation and maintenance of residential amenity.

Lake Zone B is the central basin of the Lake adjoining the dam wall and is the least constrained lake area. It adjoins the Town Park and larger foreshore areas, and is most suited to active water based recreation.

Lake Zone C adjoins the town centre and is proposed as the primary focus of "urban" lake edge activities. It offers maximum opportunity for active commercial and community uses on both sides of the Lake, with direct linkage to the town Centre.

Lake Zone D, south of Soward Way has lower environmental sensitivity and is more constrained in terms of access and available foreshore areas. It is most suited to low intensity open space uses compatible with adjoining Town Centre expansion areas.

Concept Plan

The Concept Plan (refer Diagram 3) identifies key environmental and development opportunities within the broader context of the Principles Plan. It includes:

- Lake and town centre "Gateway" locations;
- New lake edge and town centre activity centres (labelled 1-5);
- New town centre opportunities for residential and retirement development;
- Consolidation of eastern lake shore residential development; and
- Key landscape and urban design axes.

6.2 Land Use and Tenure

The master plan identifies a range of policy and development principles for the foreshore, undeveloped sites and key locations within the Study Area.

Master plan proposals are generally in accordance with existing Territory Plan provisions and tenure patterns, but introduce important new initiatives in key locations. In accordance with the master plan objectives set out in Section 4.2, proposals are based on an integrated approach to land use, environmental and community development issues. It aims to achieve a balance between constraints, opportunities, market viability and community priorities, as well as funding and management implications.

It should be noted that the Territory Plan permits a range of activities under each land use policy category.

Master Plan Outline

Continuous public access is maintained to the whole of the foreshore and the integrity of parkland, landscaped areas and lake edge setbacks is protected.

Northern foreshore areas are retained for low intensity passive recreation uses that are consistent with existing conservation and residential activities. Most new lakeshore development is focussed on the Central Basin of the lake, including the Town Centre Quay, Town Park and corresponding areas of the eastern foreshore. Several key sites in the northern town centre could play an important support role for lakeshore activity.

Southern lakeshore areas are generally designated for development in the longer term, following the consolidation of new developments in the central basin and northern town centre areas. Larger undeveloped

sites west of the Town Centre are identified for more space extensive uses, including special purpose recreation, leisure, entertainment and retirement village facilities.

The master plan opportunities are divided into two main groups which relate to;

- Lakeshore Open Space Areas
- Development Sites

Lakeshore Open Space Areas

Sixteen lakeshore areas are identified for future open space improvements as shown on Diagram 4. These areas include the Town Park and principal foreshore zones. Specific principles for each area are set out in Section 7.0.

Development Sites

Twenty eight vacant or under utilised sites are identified for future development over the next 10-15 years, as shown on Diagram 4. Most of these sites are identified for future development in the Territory Plan. Specific principles for each site are set out in Section 7.0. A suggested site release program is shown in Section 7.4.

6.3 Traffic & Transport

The opportunities outlined in the master plan support a balanced traffic and transport pattern for the study area, which facilitates public and private vehicular access to lakeshore resources and the improvement of pedestrian safety. New lakeshore facilities are located to avoid traffic and parking impacts on residential land, passive recreation areas and the lakeshore generally. Existing public parking capacity is retained and allowance is made for landscaped supplementary parking where required by new development. Provisions for additional public carparking has also been considered. A separate Tuggeranong Town Centre (Commercial Area) Parking Plan is currently prepared by Planning and Land Management. A draft extract of the plan is included at Appendix 4.

Full traffic segregation for the path and cycleway system is envisaged, as well completion of the cycleway along the northern section of Athllon Drive. Arterial road reserves are planned with capacity for future traffic levels under a range of traffic planning conditions.

6.4 Engineering Services

The existing engineering services infrastructure has adequate capacity to meet master plan development demands using conventional site servicing and reticulation methods. Where possible, new development is located for ease of connection to existing services. For larger sites within River Corridor policy areas west of Athllon Drive and Rowland Rees Crescent, some augmentation of gravity based sewage and stormwater services may be required, depending on the specific siting of development. On site management of sewer and stormwater may also be required for some of these sites.

6.5 Environment Protection

Master plan proposals have been assessed (non-statutory) in relation to their environmental impact and the development capacity of individual sites. Ecological, landscape and heritage constraints have been considered in determining the location, density and type of development, and in avoiding environmental conflicts. In areas adjoining active town centre, leisure and entertainment uses, various design and landscape measures are envisaged for screening and noise abatement, particularly where residential uses are involved.

6.6 Water Quality and Hydrology

No significant impact on water quality or hydrology is anticipated from the master plan within the immediate lake and river corridor catchments. Site development will be accommodated by appropriate engineering design within existing water quality control and management procedures and requirements. Where possible, existing gross pollution traps and water quality control methods will be utilised. If particular developments are unable to be serviced by these structures, this issue will need to be addressed as part of the detailed design for the development.

6.7 Lakeshore Management

Increased community use of lakeshore areas will increase demand for lakeshore maintenance and management. This need is recognised in the existing and forthcoming Draft Plans of Management by Canberra Urban Parks and Places, within the Department of Urban Services. The forthcoming Management

Plan for Canberra's Urban Lakes and Ponds is being developed in conjunction with the master plan to provide a more coordinated system for waterway and open space management.

6.8 Landscape

The Master Plan allows for the progressive development of lakeshore landscape amenity, through improved landscape management and the appropriate landscape treatment of all new development. For new developments, coordinated landscaping for the site and adjacent public areas will be incorporated as a development requirement, to ensure early realisation of an integrated landscape setting. Landscape upgrading for the lakeshore will be priorities to reflect master plan opportunities, including the enhancement of important view corridors, buffer areas, south west foreshore, Commemorative Site and Town Park Boundary axis.

6.9 Implementation

6.9.1 Planning Policy Changes

The master plan identifies an overall strategy for future development of the study area. It is not a detailed development control plan. The development initiatives identified in the study will be subject to inclusion in Infrastructure and Asset Management Group's (Department of Treasury & Infrastructure) land release program. The intentions for those sites will be refined and expanded through specific lease and development conditions.

The master plan involves a number of changes to existing planning policy and land use management. Most of these relate to development and management within existing land use policy provisions and are consistent with the Territory Plan. However some proposals involve changes to land use policies, requiring variation of the Territory Plan. The additional time required by the variation process is significant for the timing of land releases.

6.9.2 Territory Plan Variations

Master plan opportunities requiring variations to the Territory Plan are generally local amendments related to specific site opportunities, rather than major changes for extended areas. They include amendments to the existing land use policy for development sites 5-8, the "commemorative site" (site 9) and the "village green" (site 19). Site specific proposals and those requiring Territory Plan variations are set out in Section 7.4.

The Territory Plan variation process has not yet commenced.

6.9.3 Staging and Land Release

Land release and development staging is influenced by a number of factors, with the main determinants being;

- Market demand and current supply.
- Planning policy
- Site servicing constraints
- Infrastructure and development funding

A suggested land release program has been prepared and is included in the Development Principles section of the report (Section 7.0). The release program includes all identified development sites and their Territory Plan status.

6.9.4 Public Open Space & Facilities

Upgrading of Lakeshore parklands and facilities is a progressive process which will be influenced by the master plan, the final Lakeshore Management Plan and available funding sources. Additional toilet, picnic, BBQ, playground and exercise facilities need to be included, along with additional lighting, waste bins and water safety measures.

In addition to traditional Government funding for capital works and maintenance, considerable opportunity exists for partnerships, community sponsored development including community service organisation projects and commercial sponsorship. Interest in community based lakeshore projects has been expressed by a number of local service, sporting and recreation groups during the course of the study and could play a valuable role in the realisation of various lakeshore works. An estimate of development costs for various open space improvements and parkland facilities are indicated in Appendix 5.

TUGGERANONG

TUGGERANONG LAKESHORE MASTER PLAN

MURRUMBidgee
RIVER CORRIDOR

HIGH VISUAL IMPACT
POTENTIAL SUPPORT
FOR BETTER LAKE
EDGE UTILIZATION

VIEWS OF ACTIVE
LAKE EDGE SIGNIFICANT
IN BOTH DIRECTIONS

'CRITICAL MASS' NEEDED
AT LAKE EDGE

LOW VISUAL IMPACT

LOWER DENSITY
TOWN CENTRE
SUPPORT USES
TO INVEST

CONNECTION

COMMERCIAL
EXPANSION

SIGNIFICANT
VIEWS ACROSS
FORESHORE
TO LAKE

LOW
ENVIRONMENTAL
SENSITIVITY

LOW SCALE
LAKE EDGE
USES

ACTIVE
WATER USE

* RESIDENTIAL
CONSOLIDATION

ACTIVE LAKE
EDGE USES

ACTIVE COMMERCIAL
BOTH SIDES

LOWER ENVIR'L
SENSITIVITY















PRINCIPLES PLAN

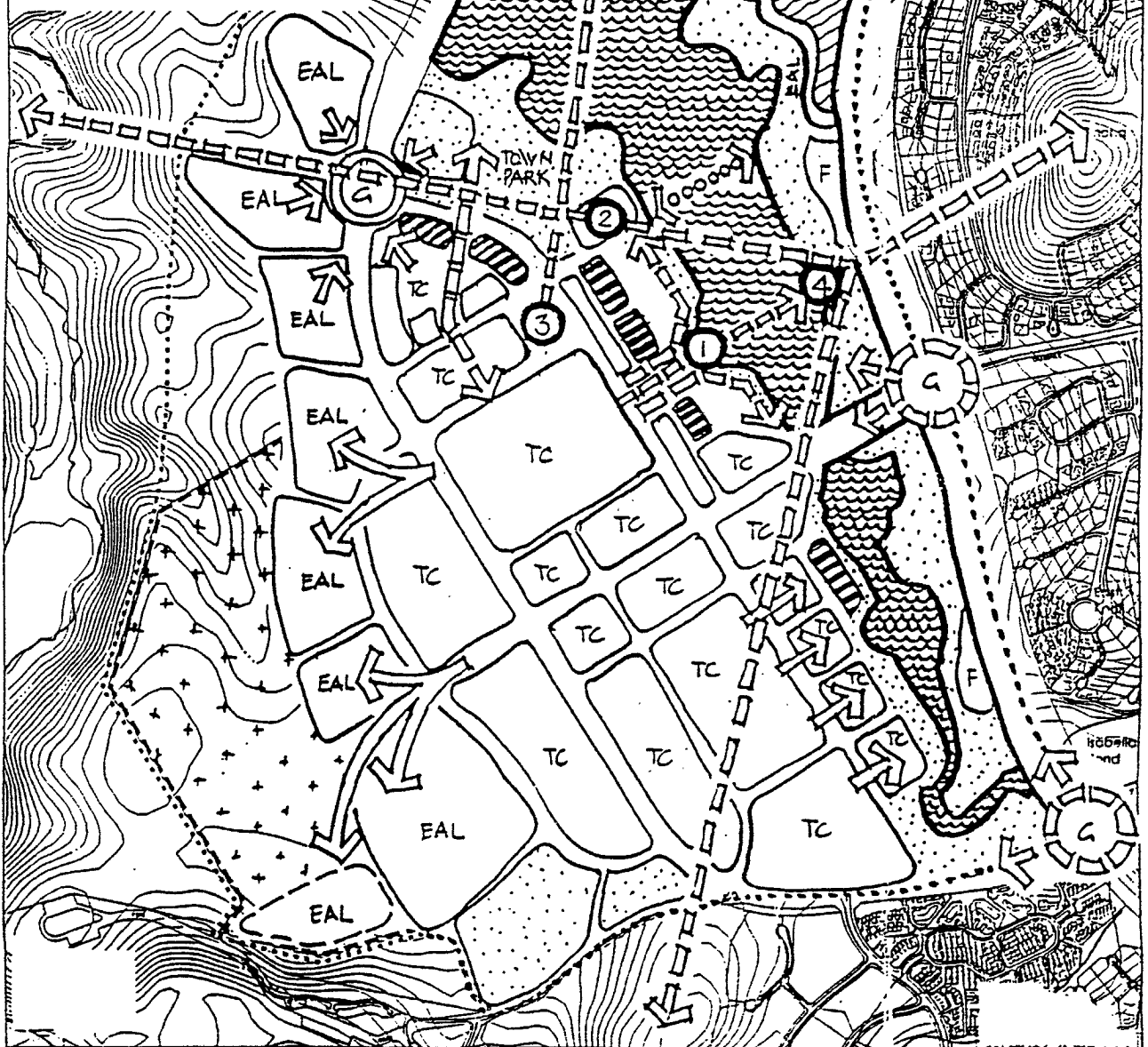
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Diagram 2

TUGGERANONG

TUGGERANONG LAKESHORE MASTER PLAN

-  Lake Tuggeranong
-  Existing Parkland & Open Space
-  River Corridor
-  New Activity Centres
-  Gateway Location
-  Planning Axes
-  Functional Links
-  Possible Future Crossing
-  Entertainment Accommodation & Leisure Uses
-  Town Centre Uses
-  Future Development Site
-  Existing Residential
-  New Residential
-  New Town Centre Housing



CONCEPT PLAN

Authorised by the ACT Parliamentary Council—also accessible at www.legislation.act.gov.au

Diagram 3

7.0 DEVELOPMENT AREA PRINCIPLES

Development area principles have been prepared based on a 10-15 year time horizon, within which the staging of land release and development will be determined by a number of factors including community support, funding capacity and development market conditions.

7.1 Lake, Catchment & Environmental Principles

All foreshore and river corridor development is subject to the water quality and environmental standards required by ACT planning and environmental legislation and their associated management plans. The cost of augmenting site services, access and environmental protection measures to meet ACT requirements will be the responsibility of the respective developers.

7.2 Lakeshore Open Space Areas

Sixteen lakeshore areas have been identified, as shown on the master plan map (Diagram 4).

Lakeshore Areas 1 & 3

Lakeshore Zones 1 and 3 are directly associated with adjacent housing and wildlife areas, and are accessed via local residential streets. They are unsuited for intensive recreational development and any uses that may generate traffic or other conflicts with residential amenity. Improvements should be limited to selective upgrading of landscape and low intensity passive recreation uses, such as picnic areas, fitness structures, bird watching hides and waste bins. Picnic areas should be located adjacent to existing parking areas, with suitable separation and screening from adjacent housing. Additional parking should be excluded as well as barbecues, public toilets and other facilities that may increase external usage. Provision of isolated bird watching hides will need to incorporate appropriate design and management measures to limit misuse and vandalism. Landscape improvements will need to take into account issues of community safety.

Lakeshore Area 2 (Northern Gateway)

This zone is an integral part of the northern "Gateway" for the lake and requires comprehensive landscape upgrading to improve the main northern approach for visitors and residents. The area should exclude visible buildings, structures and miscellaneous signage. View corridors are needed to define lake and Town Centre views, while providing foreground landscape interest. A detailed landscape design is required including strict guidelines for signage and structures. Landscaping needs to be consistent with lakeshore policies as a whole. This could be achieved solely as low maintenance parkland, or with suitable low intensity recreational uses, such as par 3 golf course, with any vehicular access required from Athllon Drive. All uses in this area need to be compatible with the water quality and wildlife habitat functions of the adjacent wetlands, as well as complementing adjacent residential areas.

Lakeshore Area 4

This zone centres on the inlet opposite Bibb Place, and is proposed as an upgraded water recreation node, to complement existing Sea Scout and College uses. This area has good vehicular access from Mortimer Lewis Drive, well established landscape, parking, beach and boat ramp facilities and is some what removed from adjacent housing. Subject to upgrading of the existing landscape buffer and parking, this area can support additional water recreation activities, including boat shed, water safety, hire facilities and minor concessions. The adjacent lagoon adds interest to the areas and opportunity exists for limited improvements such as barbecue, playground and picnic facilities. Concession uses might include a local shop or kiosk that also serves adjacent residential areas.

Lakeshore Area 5

As with Area 4, this area has good vehicular access from Mortimer Lewis Crescent as well as established parking and beach facilities. It is the most accessible public recreation area on the eastern foreshore and has capacity for substantially increased recreation use. The broad promontory forming the northern half is most exposed, but also the most versatile for multi-purpose use, including onshore marshalling and rigging for sail craft, major outdoor events and festivals. To retain this capacity, barbecues, picnic tables and structures should be located at the carpark or lake edge, rather than centrally. The shallow cove forming the southern half is narrower, more sheltered and better suited to passive uses, barbecue and picnic facilities. The whole zone requires additional shelter planting, but with emphasis on shelter for the southern half.

Lakeshore Area 6

Together with Area 7, this area frames the "commemorative site" on the eastern foreshore and is best retained as open parkland directly facing the town centre. However the site is relatively well treed and

screened from Drakeford drive, such that longer term development could be accommodated in the eastern half and related to the vehicular access required for the adjacent "commemorative site".

Lakeshore Area 7-8

These two areas are key "view corridor" areas for the town centre and should remain undeveloped apart from improved pedestrian access and low height landscape that does not obstruct views of the lake.

Lakeshore Areas 9-10

These two zones are relatively inaccessible and are best retained as a landscape buffer zone and passive recreation area for adjoining development areas, with an emphasis on more intensive landscape development. Vehicular access from Drakeford Drive is not feasible for these areas.

Lakeshore Area 11

This extended zone adjoins undeveloped town centre commercial areas south of Soward Way and benefits from an ideal north east aspect with direct water views and access. Upgrading of the existing pathway system and public access will allow parkland amenity to be shared with adjoining future town centre development, as occurs in northern lakeshore areas. A landscaped linear parkland of 30 metre minimum width is proposed to better utilise this setting.

Lakeshore Area 12

The site is a special asset requiring the maintenance of existing urban quayside amenity, while encouraging the diversification of lake frontage uses. The recent introduction of lakeshore bistro uses at the Arts Centre and water craft hire from the library pontoon are examples of the mixed use activity envisaged.

This potential could be realised by localised sublease, concession and licensing arrangements, as well as some carefully controlled small scale redevelopment in key locations. Subject to such arrangements, this established setting could facilitate early development, in contrast with sites requiring a Territory Plan variation. The relatively inactive lakeshore frontages of the library, college and Community Centre are key opportunities for this diversification of quayside uses or alternatively via a floating pontoon adjacent to the Community Centre.

A new outdoor cafe associated with the Arts Centre is being introduced. Similarly, the vacant site between McDonalds and KFC could accommodate additional food services. This site could be used to diversify the mix of food outlets in this key location and to take advantage of the well developed terraces and pergolas overlooking the lake.

Lakeshore Area 13 (Town Park East)

Within the Town Park zone, no major building development is proposed, apart from the Village Green (Development Site 19) and land between the aquatic centre and skateboard park. Additional barbecue and picnic facilities need to be considered adjacent to the main swimming area, together with landscape enhancement of the Boundary Axis and development of the outdoor amphitheatre facilities. Additional playground and activity areas also need to be considered for a wider range of age groups, with appropriate age separation and access controls. Where possible, additional toilets, change areas and similar amenities should be associated with other activity centres or new developments, for ease of access and extended surveillance (eg Village Green).

Lakeshore Area 14 (Town Park West)

This area, incorporating the existing skateboard park, is a focus of active teenage recreation. New facilities, whether public or private, are best located in this area to facilitate access, park management and security. The area is highly visible from the Athllon Drive dam crossing and should be reserved for special purpose outdoor activities that allow the landscape character of the foreshore to be retained. The area provided for by the Territory Plan as Restricted Access Recreational should be expanded to allow uses such as these and others which may emerge.

Lakeshore Area 15 (Western Gateway)

This area at the junction of Athllon Drive and Anketell Street is effectively the western "Gateway" of the town centre and coincides with the historic "boundary axis" identified in the Territory Plan. With future development of the prominent adjacent development sites 20, 21 and 22, this location will attain even greater significance, requiring a more distinctive urban design and landscape treatment as a landmark node. This should include streetscape upgrading of Anketell Street as a major avenue approach to the Town Park and town centre.

Lakeshore Area 16 (Pedestrian Bridge)

Opportunities for a pedestrian lake crossing are constrained by central basin water activity zones and are effectively limited to the "Village Green" area where the Town Park joins the College. A pedestrian link in this location has the potential to unite the relatively isolated eastern foreshore with the Town Centre and to directly address the issue of restricted eastern access to the Town Park. Several sitings are possible, related to either the boundary axis or Cowlshaw Street alignment.

Detailed investigations are required to test the feasibility of this link, including measures for water craft and lake maintenance access, as well as basic hydrology and flood retardation. It is initially envisaged as an extended jetty or boardwalk, similar perhaps to the existing Community Centre pier, rather than an elevated engineering structure. Incorporation of suitable water recreation components, as suggested by Tuggeranong youth groups, could extend its role and attract commercial interest in its funding, development and maintenance.

This initial suggestion came from a range of youth groups as part of a young peoples planning initiative. It has the advantages of improving access to the town centre particularly for those without private vehicles, strengthening the image and attraction of the lake and encouraging better use of public facilities.

The most significant issue however would be the capital cost of the initiative. The construction and siteworks would run to millions of dollars with the final cost dependant on design. There is no government support for such expenditure and the advantages of the initiative, although real, are not substantial enough to give this project priority above other imperatives for public funding.

7.3 Development Site Principles

Twenty eight key development sites have been identified, as shown on the master plan map (Diagram 4).

Development Site 1 (Block 2 Section 30)

This vacant site is identified for residential development by the Territory Plan and is adjoined by existing two storey housing. It has excellent parkland and lake views and is well screened from Drakeford Drive. The site is well suited to two storey residential development, possibly as two separate parcels to reflect the scale of adjacent residential developments. Noise abatement measures may be required to protect the development from excessive traffic noise from Drakeford Drive.

Development Site 2 (Block 9 Section 29)

This vacant site is identified for residential development by the Territory Plan. In addition to residential development there maybe the potential to provide aged accommodation through either single storey aged person units in a communal garden format or apartment. This will need to be carefully considered given the distance of the site from public transport and facilities. As this area and the whole northern sector of Greenway is poorly served by local convenience shops, allowance for a local shop or kiosk has been included in the adjacent water recreation node. Noise abatement measures may be required to protect the development from excessive traffic noise from Drakeford Drive. The existing playground located on the this block should be relocated to a nearby lakeshore location.

Development Site 3 (Pt. Block 23 Section 20)

This site, which includes beach, boat ramp, sea scout and college boat house facilities, is ideally suited to upgrading as a water recreation node on the eastern lakeshore. Extension of the sea scout premises is currently planned and area is available for similar facilities, including additional parking. A comprehensive development and landscape plan is required, including provisions for peak uses associated with triathlon activities, regattas and the like. As noted previously, the area has good vehicular access from Mortimer Lewis Drive and is separated some what from adjacent housing. The area can support additional water recreation activities, including boat shed, water safety, toilets and change rooms, hire facilities and minor concessions. Concessional uses might include a local shop or kiosk that also serves nearby residential areas.

Prior to any construction on Development Site No. 3, additional car and boat trailer parking is required in the immediate vicinity to accommodate the existing and future demand associated with this node. Additional carparking can be constructed adjacent to the existing carpark. Forward tree planting should be introduced to screen the carpark from nearby residential. Street lighting should be installed in this location for pedestrian safety, particularly of children using the scout hall.

Due to its relative isolation, this area is not suited to general recreational hire, except where directly associated with organised sailing activities. Commercial assessment indicates that to be viable, recreational hire should be a single venue within or adjacent to the Town Park. Suitable areas for temporary overflow parking associated with major events also needs to be identified, to minimise impacts on nearby residential areas. Open foreshore areas south of the node appear most suitable. Consideration should also be given to the relocating the existing stock proof fence along the kerb of Mortimer Lewis Drive to permit infrequent overflow parking to protect the amenity of nearby residents.

Development Sites 4-7 (DS 4- Pt. Block 1 Section 66; DS 5- Section 59; DS 6- Section 58; DS 7- Section 57)

This extensive lakeshore area south of Soward Way is identified by the Territory Plan for town centre commercial uses and has an excellent north east aspect with direct water frontage. These sites are important for future expansion of the town centre and for service industry growth, and also have prime water frontage for community and mixed commercial uses which may enhance the urban character of the lakeshore. It is proposed that Oakden Street frontages incorporate entertainment, leisure and small business uses at street level. Special consideration is required in the detailed planning and design for these sites to provide "attractive" and interactive frontages onto the lake edge.

Development Site 8 (Pt. Block 1 Section 65)

This area is seen as an extension of site 14, but with terraced 2-3 storey walk up residential apartments above street level commercial uses in the longer term. Unrestricted public access around the lake edge will be maintained.

Development Sites 9-11 (DS 9 & 10- Pt. Section 19; DS 11- Section 18)

Existing public carpark sites on the western side of Cowlshaw Street are ideally suited to low rise urban housing that utilises the north eastern aspect and lake views over the college, library and Community Centre. With appropriate development and streetscape guidelines, an exciting mixed use housing precinct could be achieved, incorporating existing public carparking as part of the development.

Three storey walk up apartments above street level commercial and community uses is preferred, incorporating two levels of carparking to meet the existing public parking provisions and the demand generated by the development. As with inner city mixed use housing, planning and design will need to address the privacy, security, noise and amenity of residents.

The site currently provides carparking which is well utilised by adjacent developments and commercial premises including a club. The release of this site will need to assess the ongoing requirement for such parking and ensure that any impact on commercial premises including the club operations are considered as part of the lease and development conditions or in other ways. Similarly issues of occupant amenity will need to be considered due to the adjacent activities. Adequate car parking is to be provided during and after construction.

Development Site 12 (Block 5 Section 16)

The site bounded by Athllon Drive, Anketell and Cowlshaw Streets is an ideal focus for expansion of residential uses (including aged care facilities) together with limited mixed commercial, entertainment and leisure uses related to the adjoining town centre and Town Park areas. It has good access from Athllon Drive, the bus interchange and commercial core.

As the most prominent undeveloped site of the Western Gateway zone, it requires a high quality urban design and landscape treatment, including upgrading of Anketell Street as the major avenue approach to the Town Park and Town Centre. Active street frontages would be beneficial on Anketell and Cowlshaw Streets to revitalise this area and establish a more active link between the Town Centre and Town Park. This may include a landscaped activity spine, linking Holwell (Scollay) Street to the Town Park and providing internal access and parking. Site access would be limited to Anketell and Cowlshaw Streets, with no frontage access from Athllon Drive.

The site currently provides carparking which is utilised by the adjoining club. The release of this site will need to assess the ongoing requirement for such parking and ensure that any impact on commercial premises including the club are considered as part of the lease and development conditions or in other ways. Similarly issues of occupant amenity will need to be considered due to the adjacent activity. Development will be subject to further testing of market demand and the preparation of a detailed development and staging plan.

Development Site 13 & 14 (Pt. Block 10 Section 46)

The existing Territory Plan Entertainment, Accommodation and Leisure (8D) land use policy with the addition of residential uses for these two sites, offers a range of uses suited to this town centre gateway and river corridor setting. The adjacent aquatic centre and skateboard park will expand the area's recreational role, and the opportunities for complementary development on both sites.

The topographic prominence of Site 21 is best suited to uses with compact built facilities that can be carefully sited to reflect site contours, landform and views. The flatter terrain of Site 22 is more suited to comprehensive site development or larger structures which may require screening from the Athllon Drive approach, such as indoor leisure, health resort or country club facilities. Both sites require advanced structure planting to ensure landscape integration with their Gateway, River Corridor and Boundary Axis setting.

To safely access these sites, a combined vehicular access from Athllon Drive at the Anketell Junction is required and should include access to adjacent Development Site 27.

Such proposals will also ensure that the current Territory Plan requirements are preserved as development conditions that would apply to any use of the sites. These requirements include; visual and functional compatibility with the town centre and river, minimal servicing and structural demand and the management of stormwater.

Entertainment, accommodation, leisure and residential uses for these sites is supported.

Development Site 15 (Pt. Block 10 Section 46)

The site provides a natural expansion zone for existing uses on the western side of Rowland Rees Crescent and is best suited to uses that will benefit from good access to the town centre and views of the river corridor and Brindabellas. These include sports facilities, commercial accommodation and recreation. Further sporting facility development is planned for the area to the south. Development of this site will be required to be consistent with the Territory Plan's Entertainment Accommodation and Leisure land use policy (8D) overlay provisions.

Sporting, recreation, and commercial accommodation uses for this site is supported.

Development Site 16 (DS 16a- Block 6 Section 46; DS 16b & c- Pt. Block 10 Section 46)

The existing Territory Plan's River Corridor, Urban Open Space and Entertainment Accommodation and Leisure land use policies for this sites remain the most appropriate land use classifications. The Territory Plan permits a range of low intensity uses, including recreation, entertainment, equestrian, outdoor adventure, recreation, youth and health camps, orienteering and similar activities. Protection of water quality and open space landscape amenity are critical determinants for any development. Sites 24a is reserved for an outdoor sports facility.

Sporting, river corridor, open space, entertainment, accommodation and leisure uses for this site is supported.

Development Site 17 (Block 4 Section 13)

This National Land site, between the Department of Social Services (DSS) office complex and Archives Repository, has long been recognised as a comprehensive development site, capable of accommodating a major government department, commercial development or national institution. As with the DSS development, the ability to offer large attractive sites for metropolitan, regional and nationally based enterprises can significantly enhance local development and employment.

In the longer term, the national land classification should be reconsidered with the intention of the land returning to the Territory. National land uses for this site is supported.

Development Site 18 (Block 22 Section 17)

This site recognises the existing town centre bus interchange and adjacent Anketell Street sites as being strategically significant for future development of the northern town centre. The site is ideally located at the main entry to the town centre and Town Park, with dramatic axial views to the north east over the park and lake to Mount Taylor. The scenic, community and commercial value of this location warrants a strong vertical emphasis development fully reflects its potential and will effectively promote northern Town Centre and lakeshore development.

Development Site 19 (Pt. Block 10 Section 46)

This area west of Athllon Drive is within the Territory Plan's River Corridor land use policy area and has a number of servicing constraints similar to Development Sites 21 and 22. However it has valuable potential for residential development including aged care and other future uses, with good town centre, Town Park and public transport access and excellent scenic views to the Murrumbidgee corridor. A Territory Plan variation will be required to permit residential and it may also be beneficial to introduce entertainment, accommodation and leisure uses to the site.

Such proposals will also ensure that the current Territory Plan requirements are preserved as development conditions that would apply to any use of the site. These requirements include; visual and functional compatibility with the town centre and river corridor, minimal servicing and structural demand and the management of stormwater.

Development Site 20 (Pt Block 20 Section 19)

This area centred on the existing Town Square is a vital link between the Town Centre and lakeshore, but is ineffective in its current form. A detailed study is proposed to revitalise this area and to improve its effectiveness in linking the town centre with the Lakeshore Area 12.

TUGGERANONG

TUGGERANONG LAKESHORE MASTERPLAN OPPORTUNITIES

LEGEND

--- STUDY AREA



PROPOSED LAKESHORE
OPPORTUNITIES



PROPOSED DEVELOPMENT
OPPORTUNITIES

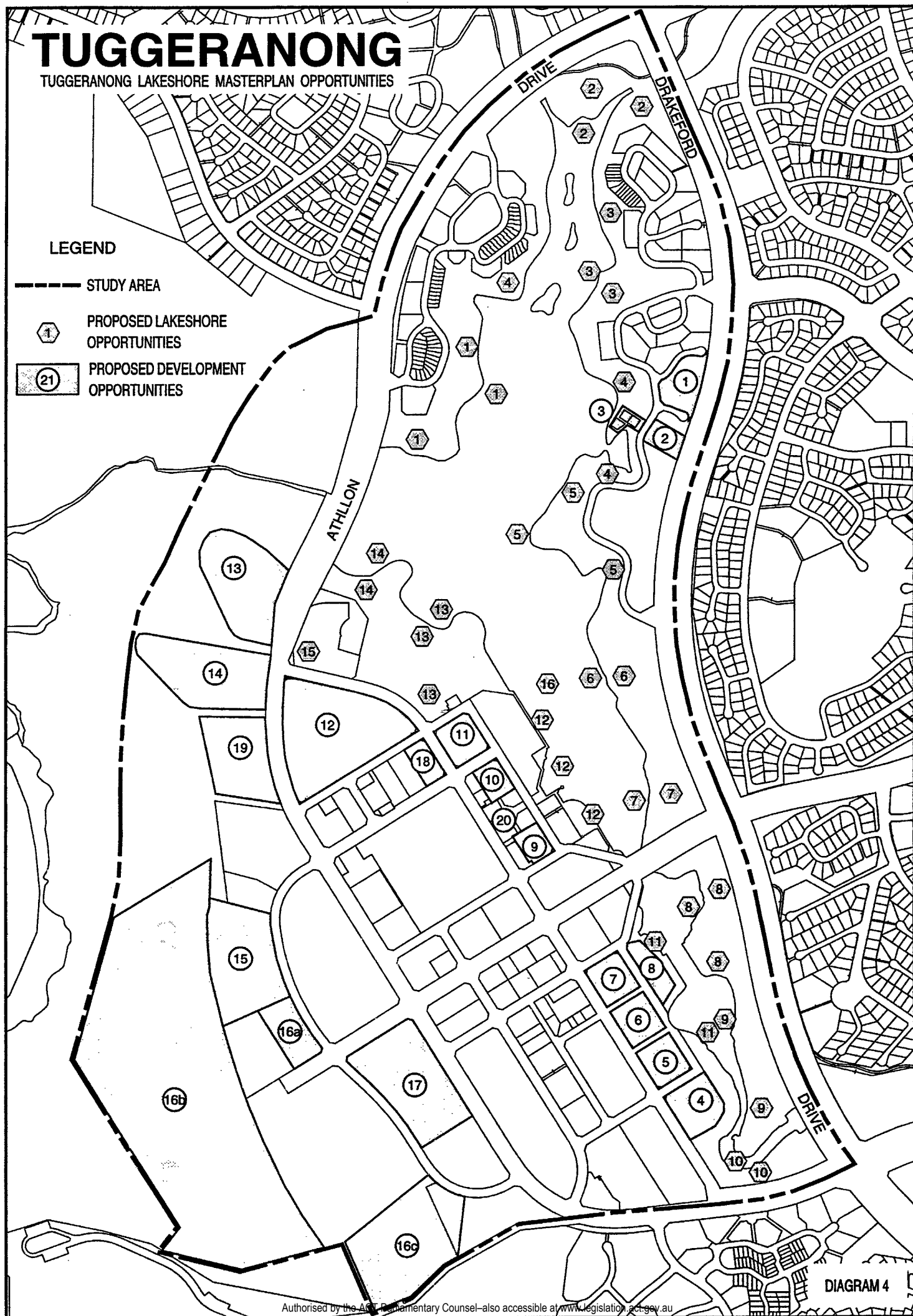


DIAGRAM 4

7.4 Staging of Development

A suggested land release program for the Development Sites is set out in the following schedules. Actual timing will be dependant on a number of factors including market conditions and development response. Approximate release periods are indicated in relation to Short Term, Medium Term and Long Term. As the schedules include a number of new development initiatives, for which market feedback is not available, the release sequence will require periodic review to best reflect demand, including interest in specific sites. Schedule A lists all sites in Development Site reference order, while Schedule B groups sites according to type of development.

For those sites identified, a variation to the Territory Plan will be required before the site's full potential is realised.

Suggested Site Release Program

Schedule A (Development Site Reference Sequence)

Devel. Site Reference	Block&Sectn Reference	Territory Plan Variation Req'd		Site Area m2. (Approximate)	Territory Plan Land Use Existing / Proposed	Release Period
		Yes	No			
01	2 of 30		No	13,015	Residential	sequence by type of Developmt
02	9 of 29		No	6,240	Residential	
03	Pt 23 of 20		No	N/A	Urban Open space	
04	Pt 1 of 66		No	TBD	Town Centre Commercial	
05	Section 59		No	11,431	Town Centre Commercial	
06	Section 58		No	11,480	Town Centre Commercial	
07	Section 57		No	11,431	Town Centre Commercial	
08	Pt 1 of 65		No	TBD	Town Centre Commercial	
09	Pt Section 19		No	TBD	Town Centre Commercial	
10	Pt Section 19		No	TBD	Town Centre Commercial	
11	Section 18		No	11,485	Town Centre Commercial	
12	5 of 16		No	70,365	Town Centre Commercial	
13	Pt 10 of 46	Yes		TBD	Residential + EAL (8D)*	
14	Pt 10 of 46	Yes		TBD	Residential + EAL (8D)*	
15	Pt 10 of 46		No	TBD	Ent, Accom, Leisure (8D)	
16a	6 of 46		No	15,231	Ent, Accom, Leisure (8D)	
16b	Pt 10 of 46		No	N/A	River Corridor (13B)	
16c	Pt 10 of 46		No	N/A	Urban Open Space	
17	4 of 13		No	53,502	Town Centre - National Land	
18	22 of 17		No	6,740	Town Centre Commercial	
19	Pt 10 of 46	Yes		TBD	Residential + EAL (8D)*	
20	Pt 20 of 19		No	NA	Town Centre Commercial	
Lakeshore Area 14	Pt 3 of 62	Yes		TBD	Restricted Access Recreational (refer text)	

* Additional area specific uses

Suggested Site Release Program**Schedule B (By type of development)**

Schedule B (By type of development)						
Devel. Site Reference	Block&Sectn Reference	Territory Plan Variation Req'd		Site Area m2.Approx	Territory Plan Land Use Existing / Proposed	Release Period
		Yes	No			
RESIDENTIAL SITES						
01	2 of 30		No	13,015	Residential	Short Term
02	9 of 29		No	6,240	Residential	Short Term
08	Pt 1 of 65		No	TBD	Town Centre Commercial	Long Term
09	Pt Section 19		No	TBD	Town Centre Commercial	Med Term
10	Pt section 19		No	TBD	Town Centre Commercial	Long Term
11	Section 18		No	11,485	Town Centre Commercial	Long Term
12	5 of 16		No	70,365	Town Centre Commercial	Short Term
COMMERCIAL & OTHER SITES						
03	Pt 23 of 20		No	N/A	Urban Open Space	Short Term
04	Pt 1 of 66		No	TBD	Town Centre Commercial	Med Term
05	Section 59		No	11,431	Town Centre Commercial	Med Term
06	Section 58		No	11,480	Town Centre Commercial	Med Term
07	Section 57		No	11,431	Town Centre Commercial	Med Term
12	5 of 16		No	70,365	Town Centre Commercial	Short Term
13	Pt 10 of 46	Yes		TBD	Residential + EAL (8D)*	Med Term
14	Pt 10 of 46	Yes		TBD	Residential + EAL (8D)*	Med Term
15	Pt 10 of 46		No	TBD	Ent, Accom, Leisure (8D)	Short Term
16a	6 of 46		No	15,231	Ent, Accom, Leisure (8D)	Short Term
16b	Pt 10 of 46		No	N/A	River Corridor (13B)	N/A
16c	Pt 10 of 46		No	N/A	Urban Open Space	N/A
17	4 of 13		No	53,502	Town Centre - National Land	Med Term
18	22 of 17		No	6,740	Town Centre Commercial	Short Term
19	Pt 10 of 46	Yes		TBD	Residential + EAL (8D)*	Long Term
20	Pt 20 of 19		No	NA	Town Centre Commercial	N/A

APPENDICES

APPENDIX 1: EXISTING DEFICIENCIES

The community consultation process and research identified a number of issues and concerns with the management, planning and development within the study area. The concerns involve environmental, recreational, community, residential and commercial issues as outlined below. A full summary of community consultation results is included in section 5.0.

1.1 Limited East West Access

Lake Tuggeranong, with an area of 70 hectares, length of 2.8 kilometres and 6 kilometres shoreline, is well matched in scale to the town centre and its topographic setting, and is much valued by the community. It is however located on the western extremity of the Tuggeranong district, and for some residents, is seen as an obstacle to town centre and Town Park access, due to its elongated shape and limited crossing provisions. Youth groups and those living immediately east of the Lake have expressed most concern, citing separation from the lake by Drakeford Drive and reliance on the indirect Soward Way (Erindale Drive) bridge crossing. As a young respondent to the community survey perceptively noted, "Everyone lives on the other side of the lake".

Athllon Drive provides convenient vehicular access to the town centre from the north and south, as does the lakeshore pathway for pedestrians and cyclists, but for the eastern suburbs, access is more difficult. Additional access is available over Tuggeranong Weir, but does not assist north eastern residents, for whom substantial detours to the north or south are required. Inconvenience is greatest for pedestrians and cyclists, deterring more frequent use of the town centre and Town Park. Those with limited transport options are most disadvantaged, particularly teenagers, older residents and young families. This concern can be expected to increase with the completion of residential areas on the eastern bank, and could prompt interest in more direct vehicular and pedestrian links to the Town Centre proper. It is of interest historically, that additional vehicle crossings were considered in the early planning of Tuggeranong, when west Murrumbidgee urban development was envisaged, but were omitted from later development plans and the current Territory Plan.

The opportunity for an additional pedestrian crossing offers many benefits, particularly if directly linked to the town centre, Town Park and underpass locations on Drakeford Drive. While a large obtrusive structure would be unacceptable on scenic, urban design and cost grounds, other solutions are possible, including a low set footbridge or pontoon boardwalk (similar perhaps to the existing Community Centre pier), with provision for the passage of water craft. The location and design of any such structure would need to reflect recreational boating areas, water safety, lake maintenance, hydrology and flooding issues. The Draft Plan of Management for Lakes and Ponds will involve zoning of the water body according to various aquatic guidelines and indicators, which will influence location options for any future crossing.

The initial idea of a "walking bridge" formed a central part of the Young People in Planning workshops.

1.2 Community Events and Festivals

A desire for more community events and festivals was expressed by many Tuggeranong residents, most of whom recognised the lakeshore and Town Park as an ideal outdoor venue for such activities. To facilitate such events, retention of large multi purpose areas with good access to the lake edge, town centre, parking and public transport was seen as an important master plan provision. Latent opportunities offered by the as yet undeveloped Village Green and amphitheatre areas of the Town Park were noted with interest.

1.3 Open Space and Recreation

Indoor Recreation Facilities

The aquatic centre, 10 pin bowling centre and facilities of Basketball Canberra are the primary indoor facilities in the study area. The Youth Centre and Hyperdome video arcade and cinemas are important community and youth facilities. Relatively few additional facilities were identified in the community survey, and relate principally to additional youth activities, including a ice skating rink and additional video arcade.

Outdoor Recreation Facilities

Tuggeranong is comparatively well served with outdoor recreational facilities in suburban areas and on a per capita basis. Major town centre facilities include the enclosed oval and new outdoor hockey facility (Stage 1), west of Rowland Rees Crescent. Apart from the aquatic centre, skate board park and college tennis/basketball courts, there is a limited range of purpose built facilities within the immediate Lake shore area, particularly for teenage and youth activities. The Town Park is however used for a range of informal games and recreation, including lunchtime touch football, jogging and occasional golf practice. Features

most frequently requested in the community survey include BBQ's, picnic areas, mini golf, playgrounds, recreational hire and games areas, such as volleyball and boules.

Water Based Recreation Facilities

Existing water based recreation facilities include public beach, wind surfing, rowing and boat launching provisions, as well private facilities for local associations such as the Sea Scouts. While there are no comprehensive hire facilities for water craft, a permit was issued in January 1999 for weekend sailing dingy hire from the new pontoon adjoining Tuggeranong Library. The facility has limited capacity and is expected to be initially confined to small sail craft. Fishing is also an important recreational past time.

Water safety

While water safety statistics indicate few serious incidents, many residents are concerned with water safety issues and the lack of facilities in concentrated public activity areas. Comprehensive safety measures are employed by the Sea Scout and other groups for organised aquatic activities, but general public safety provisions, such as lifesaving devices and emergency telephones require closer attention. With the anticipated future growth in water based activities, additional water safety measures will need to be addressed by the relevant agencies. However their placement and design will need to address vandalism concerns.

Public Facilities

Reported inadequacies in public facilities relate mainly to barbecues, toilets, bubblers, pathway lighting, public telephones and waste bins, with the eastern lakeshore least well provided. Limited public toilet provisions and extended closures due to vandalism were of particular concern. Improved protection, maintenance and the provision of additional facilities will be considered by the relevant Government agency in response to the issues identified by the master plan and as part of the current plan of management for the foreshores.

1.4 Land Uses and Development

Town Centre Residential and Mixed Use Development

A notable characteristic of Tuggeranong Lakeshore development is the lack of residential and mixed use development within and adjoining the town centre. This contrasts with initiatives taken in Civic, Acton, Kingston, Gungahlin and Belconnen to introduce residential and mixed use support activity to town centre and foreshore areas. These uses add interest and diversity and improve the use of public areas during after hours and weekend periods. Opportunities for mixed use zones in other strategic lakeshore locations also requires close attention, as a means to stimulate more creative use of under utilised foreshore resources, and to promote public safety and security.

Residential Uses

Apart from medium density and townhouse development in the northern lake area, there is a lack of residential development in other lakeshore zones. This is most noticeable in the town centre, southern and eastern lake zones, with a resulting lack of residential based activity and associated uses. In considering new housing for such zones, particularly on the eastern lakeshore, attention is required to improve access that will promote greater use of town centre and lake edge resources, whilst ensuring public safety and security.

Retirement Housing

There is a notable absence of retirement and aged person facilities in the study area and nearby suburbs. New retirement development within the study area was strongly supported during the community consultation process, including possible lakeshore and western Town Centre locations.

Site area requirements for retirement villages and nursing homes (ie. 3.5 to 5 hectares), are relatively demanding, and much greater than for retirement housing or aged person unit sites. This effectively excludes the larger facilities from the immediate Lakeshore area, however several alternatives are possible north / northwest of the town centre.

Café, Restaurant and Entertainment Uses

A more diversified provision of food service and entertainment facilities adjoining the lake edge was requested by a large number of respondents. In addition to existing "fast food" outlets, a need was seen for indoor outdoor café, restaurant, bar, night club and food hall facilities that could take greater advantage of the lakeside setting. Some grouping of facilities, which might generate a greater sense of place and activity focus, was generally preferred to "scattered" development. Requests for additional cafés and restaurants

were almost double those for picnic/barbecue, recreation hire facilities and tree planting, which were the next largest groups of requested items in the community survey.

Commercial and retail uses

Few respondents favoured lakeshore commercial and retail uses (other than those discussed above) and many considered them inappropriate.

1.5 Lakeshore Access

Vehicular Access & Parking

Vehicular access and parking for lakeshore activities is provided in various locations around the lake and has a strong influence on local activity levels. Convenient car access and parking is important for many users, including young families, picnickers, disabled and elderly visitors and those with bulky recreational equipment.

Pedestrian and Cycle Access

While a full traffic segregated circuit is provided for the northern portion of the lake, shared road use is required at the Soward Way bridge and for portion of Mortimer Lewis Drive on the east bank. Cycle paths currently under construction will provide separation in Soward Way. These will also provide a link from the Anketell Street intersection along Athllon Drive, connecting with the existing cycle paths serving the northern and eastern side of the lake. No pathway links are provided along the eastern lakeshore south of the Tuggeranong Weir, however there appears to be little demand for this at present in the absence of specific attractions and direct links to residential areas.

Full traffic segregation for lakeshore pathways is clearly desirable and should be incorporated in future development and capital works programs.

External Linkage

In addition to lake crossing issues outlined above, town centre connections to the lakeshore are relatively underdeveloped and rely largely on the Town Park and Town Square links. The Reed Street and Cowlshaw Street connections for example are key approaches to lakeshore facilities, but are poorly defined and dominated by vehicular access and parking. The Tuggeranong Arts Centre has sought streetscape improvements for its Reed Street approach and similar improvements are needed for Cowlshaw Street as the primary access for future "Village Green" development. Improvements are also required to the Town Square link to increase the effectiveness of this key access to the lake.

1.6 Landscape Planning & Design

Landscape Structure Tree Planting and Shade

As most lakeshore planting is less than 10 years old, it has yet to develop the shelter and shade originally intended. None the less, many areas suffer from an under developed landscape structure, particularly regarding advanced structure planting and windbreaks. This leads to unduly exposed conditions in many areas, including Tuggeranong Town Park and the eastern lakeshore of the central basin. A more comprehensive landscape planning input is required to address these issues, including restoration of the "boundary axis" planting through the Town Park and its termination on the eastern foreshore. In the northern wetlands area, the Sea Scouts have provided valuable assistance with tree planting programs on and around the existing islands and their facilities. Additional tree planting is favoured by many survey respondents, particularly for the eastern lakeshore.

Landscape Screening and View Corridors

Extensive screen planting is provided throughout the lakeshore areas and contributes significantly to the amenity and visual appreciation of the lake. Enhancement of lake views has long been a key landscape objective for the lake and requires view corridors to be maintained, including those from Drakeford and Athllon Drives. A number of locations now require remedial work on screen planting and view corridors to better utilise the scenic qualities of the lake.

Lakeshore Wind Exposure

The need for additional windbreak planting is most evident in the Town Park and eastern foreshore and relates to the topography, north western exposure and immature landscape of these areas. Additional windbreak planting needs to be carefully considered however, to ensure that other landscape objectives, scenic amenity and view corridors are also maintained.

1.7 Open Space Management & Maintenance

Parkland

Concerns with parkland management relate largely to lighting, waste removal, vandalism and infrequent grass mowing. Encroachment of private gardens into open space areas was also a concern in some locations. The Draft Plan of Management for Tuggeranong's Urban Parks and Sportsgrounds (September 1998) deals with many of these issues, however few residents are familiar with its provisions and policies due to its relatively recent origin. Its presentation will allow greater public appreciation of parkland management issues.

Waste management

Litter and debris accumulation on the foreshore and lake is the most prevalent concern of residents. The concern relates principally to concentrated activity areas, including the Town Park, Skate Board Park and "fast food" locations, but includes general lake debris and the condition of gross pollutant traps at stormwater inlets to the lake. Additional waste bins and more frequent waste removal was requested by many respondents. The Draft Plan of Management provides a framework to better address these issues as part of future lakeshore management.

Lakeshore pathways

Lakeshore pathways are mainly asphalt paved. Improved maintenance was sought by numerous respondents, principally to rectify tree root damage. This is most relevant for skate boards and roller blades, which represents a high proportion of current usage. Final completion and full traffic segregation of the lakeshore pathway loop was sought by many survey respondents.

1.8 Water Quality & Catchment Management

Water Quality & Pollution

Water quality concerns were raised by many respondents, with the most frequent issues being turbidity, urban debris, weed growth and blue green algae. Most residents recognise the lake's role as a water quality control system and resulting limits on visual quality, but are keen to encourage further measures which may improve existing conditions. Regular monitoring and maintenance of gross pollution traps serving the central basin is important in minimising visible pollution levels, as is the provision of waste bins and cleaning in high activity lakeshore areas. Some water quality are inherent to the design of the lake, notably in the Kambah Wetlands, where upstream constraints prevented construction of additional pondage on Village Creek. As a result, this area is not intended for body contact water sports.

It is important to note however, that water quality has been improving since 1992 on all indicators measured by Environment ACT. Greater community involvement in anti litter and nutrient reduction programmes is one practical way that residents could assist in further water quality improvement. The Tuggeranong College Lake Watch Group is a good example of such community involvement.

1.9 Wildlife Habitat & Protection

Water Bird Habitat and Management.

Lake Tuggeranong has one of the most diverse aquatic macrophyte communities of any Lake in the ACT, with more than 25 plant species present. These are spread around much of the lake shoreline and many were planted in a capital works program in 1994. Wildlife habitat exists around most of the shoreline.

The high level of water bird activity on the lake reflects the success of wildlife conservation measures, particularly on the northern Village Creek arm of the lake (ie. Kambah Wetlands). Sea Scout tree planting and wetland monitoring has aided the habitat quality of the area and its islands. Occasional conflicts do occur however, related to localised bird concentrations. In sheltered Quayside areas adjoining the town library for example, roosting flocks produce heavy soiling of pathways, grassed areas and seats. Moderately high faecal coliform readings in the Wetlands have also been attributed to water bird concentrations. An appropriate management strategy is needed to address these issues, while maintaining wildlife conservation objectives.

APPENDIX 2: CONSTRAINTS & OPPORTUNITIES

2.1 Development Constraints

Hydrology & Flood Levels

The lake is engineered to meet various hydrological criteria, including water quality management, periodic flushing, flood control and multi-purpose recreational use. Lakeshore planning must reflect these constraints, including the effects of low flow, drought and periodic storm events. Flood mitigation is important for public safety and property protection. With a 1 in 10 year or 1 in 100 year (AEP) storm for example, the corresponding rise in water level is 1.2m and 1.7m respectively, resulting in temporary inundation of some low lying Lakeshore areas. All lakeshore housing is located outside the 1:100 year zone, however other lake edge development is possible in such areas, subject to appropriate site formation and floor levels of at least 569.7 AHD (ie. above the 1:100 year flood level). Recreation areas and cycle paths need to be above the 1 in 2 year flood level.

Aquatic Activity Zoning

Aquatic recreation potential is influenced by many factors, including lake ecology, water area, water quality, depth, microclimate and exposure. Lake Tuggeranong is best suited to low intensity recreational uses compatible with its scale and multipurpose role. Lake activities are subject to the provisions of the Territory Plan (Water Policies Part C2).

Water activities such as swimming, sailing, rowing, canoeing and wind surfing are a regular feature of the lake scene. Pleasure sailing is not strongly represented to date, however Sea Scout sailing activity is well established, using triangular course of three to four kilometres in length in the central basin. Shore facilities can be housed in various locations, however most active recreation is effectively focussed on the central basin. Existing swimming, sailing, windsurfing and rowing activities involve few conflicts of use, as the activity zones are relatively separate, with little overlap. Seasonal and daily weather patterns are also relevant, as rowers generally prefer calmer early morning conditions and sail boarders usually seek windier afternoon conditions. As the balance of uses will change over time, the zoning and management of water recreation has been included as part of the new Draft Plan of Management for Canberra's Urban Lakes and Ponds being prepared by Canberra Urban Parks and Places.

The location of any future jetties, pontoons, boardwalks or similar features will need to reflect these activity zoning requirements and minimise constraints on possible future uses.

Development Intensity and Water Quality

Water quality control conditions apply to all development in the study area and require stormwater run-off to be appropriately managed before discharge in to the lake. For some sites, additional settlement ponds or gross pollution traps may be required, directly influencing siting, site area and landscape requirements. The Water Environment Protection Policy under the Environment Protection Act 1997 provides guidance for development sites.

Erosion and sediment control are required on all developments. Current ACT Pollution Control Authority guidelines exercise close control of site discharges and waste disposal, and require all developments of more than 1 Ha to provide sediment retention pond capacity of 150m³ per Ha.

Micro-climate and Wind Exposure

Microclimate and wind exposure vary around the lakeshore, reflecting prevailing wind direction, topography and shelter planting. The eastern Lakeshore is most exposed and for outdoor facilities requires shelter planting and siting measures to ameliorate wind conditions.

Topography and Landform

The gently rolling landform of the Lakeshore has been effectively utilised in lake and landscape design to accentuate topographic and water edge features. New development needs to reflect these scenic qualities, fully utilise landscape opportunities and avoid intrusive impacts on main view corridors and ridge lines.

Landscape Character and Planting

Lakeshore landscape planting is predominantly native species, with exotics generally limited to selected Town Centre, Town Park and streetscape applications. Maintenance of this indigenous planting theme is a firm policy of Canberra Urban Parks and Places and includes the progressive removal of invasive non-

indigenous material, such as willows and poplars, except where heritage or critical urban design values have precedence.

Engineering Services Capacity

A well planned services infrastructure provides the study area with adequate trunk capacity for future development of lakeshore sites. However proximity to reticulated services is a key factor in limiting site development costs and landscape disturbance. A coordinated multi use approach is required for reticulated services, which avoids undue dispersal of facilities and services duplication. Shared infrastructure principles apply equally to roads, parking and site works.

Vehicular Access and Parking

Existing lakeshore access is well planned and incurs little conflict with adjoining lessees and residents. This relies on through traffic being diverted from housing and pedestrian areas, and the location of active lake edge attractions in public foreshore areas. Shared use of visitor and recreational parking should be sought where activity patterns are compatible.

Lake Edge Setbacks

Lake edge setbacks generally vary from 30-60 metres in residential areas, reducing to 10 metres in some town centre areas (eg. Tuggeranong Library and Arts Centre). Setbacks are required for lake edge access, maintenance and landscape amenity, and as a simple means of flood prevention without extended lake edge reconstruction. Future lake edge development must meet the site and building levels criteria noted above.

View Corridors, Lake Views & Setting

The preservation of lake views for residents, foreshore users and passing motorists is a key planning objective and influences the pattern of lakeside development. It requires open view corridors to the lake and siting guidelines that prevent subsequent obstructions. Required corridor widths vary, to suit intimate local views and broader zones for more panoramic views from key vantage points. The latter include Lake views from the Drakeford and Athllon Drive approaches to the town Centre. Landscape maintenance work is required in a number of these locations to better utilise the scenic qualities of the lake.

Landscape and Architectural Scale

Lake Tuggeranong is relatively small in scale, with an area equal to 70% of Lake Ginninderra and 10% of Lake Burley Griffin. Lake width ranges from 60 to 500m, with a modest 200-250m opposite the Town Centre. Scenically, the Lake benefits from its contained setting of local hills and the distant Brindabella Range, but its modest scale requires lakeshore development to be carefully considered to achieve a balanced landscape and urban design setting.

Existing lake edge development does not exceed 2 storeys in height and retention of this scale is important for many residents, particularly in established residential areas. When properly sited, two storey development is generally within the tree canopy height and need not impair lake views from existing housing and public areas. However for Town Centre and central foreshore areas, the introduction of well planned 3-4 storey mixed development was seen to offer many advantages, including greater activity, interest, urbanity and residential identity for the heart of the community. This height is similar to that of the Hyperdome.

Urban Design

Development within the town centre (commercial area) is required to be consistent with the urban design requirements of the Territory Plan.

Heritage: Tuggeranong Boundary Corridor

The study area is bisected by the northern boundary of the historic Tuggeranong Homestead, which passes through the Town Park. This alignment and remaining stone wall, are listed in the ACT Heritage Places Register and included in the Territory Plan (Heritage Overlay H33 - Tuggeranong Boundary Marker Complex). This alignment was incorporated in the Town Park Master Plan (1993) as an important visual axis, which bridged the Lake and defined a landscaped Commemorative Site on the eastern foreshore. The heritage listing precludes visual obstruction along the alignment and development within its immediate curtilage.

2.2 Development Opportunities

Town Centre & Lake "Gateways"

The main approaches to the town centre and lake have considerable scenic potential, which is not effectively utilised in existing landscape and urban design provisions. Opportunities at the Drakeford/Athllon Drive and

Athllon/Anketell Street Junctions for distinctive “gateway” development are of particular interest for the Town Centre and Lake respectively. As these opportunities relate primarily to approach road experiences, it is vital that their form and character has an appropriate “urban” scale, designed to be read at the speed of a moving vehicle.

At the Drakeford/Athllon junction, otherwise commanding views over the Lake and Town Centre to the Brindabella Range are impaired by unresolved landscape and roadside development, with no sense of arrival, civic identity or appropriate signage. Similarly, at the Athllon/Anketell junction, which marks the entry into the Town Centre, no sense of arrival or civic presence is evident. This junction also coincides with the major “boundary” axis of the Town Park, whose dramatic poplar plantings and memorial stone walls could be used to enhance the setting. The junction is also flanked by four strategically located vacant sites, whose future character will significantly influence the character of this important location.

Appropriate “gateway” treatments could include distinctive landscape planting, “landmark” architectural works and contemporary urban/environmental art or sculpture.

Town Park “Village Green”

Within the Town Park Master Plan (1993) provision is included adjacent to Tuggeranong College for a future “Village Green”. The area remains undeveloped, but with an ideal north-easterly aspect overlooking the lake, it is strategically located for future community development between the Town Park and Town Centre. Potential uses might include recreation, food services, entertainment and craft markets, as well as recreational equipment hire. As a recognised community meeting place, it could also be a focus for informal community events and activities, including fetes, community stalls, street theatre, busking and a “speaker corner” venue.

Town Park Amphitheatre

The Town Park Master Plan also included provision for landscaped amphitheatre and performance stage. The large naturally formed space is north facing, with a location and orientation that is suited to multipurpose use and minimal noise disturbance. While no interest was expressed in development of this facility during community consultations, its current usage for informal games and value as a large outdoor events area warrant its retention, particularly in view of the added community focus that other master plan proposals will bring to the northern Town Centre and Town Park.

Lakeshore Commemorative Site

The Town Park Master Plan includes a landscaped “commemorative site” on the eastern foreshore at the junction of the “Boundary” and Town Square urban axes. The potential of this strategic site facing the town centre is not realised by existing development, and warrants reconsideration as a more active development focus for the eastern lakeshore. The site is readily serviceable, would be accessible from Mortimer Lewis Drive, and could be developed to complement community, arts and entertainment uses on the town centre foreshore.

Aquatic Structures

Greater use of jetties, pontoons and boardwalks for improved water access is favoured by many residents, and is reflected in the 1993 Town Park Master Plan. Further development of Sea Scout activities is also likely to require a small wharf. These ideas were extended in youth group survey responses which advocated a multipurpose pedestrian link between the east and west lakeshores.

A new pedestrian link could satisfy a number of needs if properly sited and designed. By incorporating suitable water recreation components, it may also attract commercial interest in its funding, development and maintenance, however little interest has been shown by the development sector. The Draft Plan of Management for Lakes and Ponds will include zoning of the water body according to various aquatic guidelines and indicators, including recreational and environmental quality factors. These will directly influence location and design options of any structures or crossing.

Water Based Recreation Sites

Suitable water recreation sites are mainly determined by physical factors, such as water depth, edge conditions, useable area, microclimate and wind exposure, but also by accessibility and compatible adjacent uses. Lake Tuggeranong is best suited to low intensity recreational uses compatible with its relatively small scale and multipurpose role. The more exposed central basin and eastern foreshore is best suited to sail craft, while the sheltered northern and southern arms and western foreshore are more appropriate for other craft and general water recreation.

On shore support facilities should reflect these factors, suggesting that;

- The central basin remain the focus of active water based recreation
- Organised sail craft activity continue to operate from the eastern foreshore
- Main swimming focus on the Town Park, with east shore beaches serving multipurpose needs.
- Public hire facilities operate mainly from sheltered locations on the western foreshore

As noted previously, final determination of these zones and the location of associated support facilities is subject to the findings of the Draft Plan of Management for Lakes and Ponds which is currently in preparation by Canberra Urban Parks and Places.

Urban Lake Edge Character

The urban quality of the Town Centre lakeshore is enhanced by the College, Library, Community Centre and Arts Centre, but is not matched in other development areas. Most of the lakeshore is characterised by parkland, undeveloped areas and low rise development with generous 30-60m landscape setbacks. Opportunity exists on suitable sites to selectively introduce a more "urban" character, while maintaining water edge access, public open space, lake views and flood protection measures. In addition to interstate and overseas examples, the Boathouse Restaurant, Canberra Yacht Club and Kingston Foreshore Development on Lake Burley Griffin provide relevant ACT examples.

South West Lakeshore Zone

This extensive lakeshore area south of Soward Way is identified for Town Centre uses and has an excellent north east aspect with direct water frontage. It is important for future Town Centre and service industry growth, but may also be appropriate as a prime water frontage for community, mixed commercial and housing uses which may enhance the urban character of the lakeshore. The north east aspect and water frontage would also be ideal for outdoor restaurant and café uses.

Town Centre Housing Sites

Existing carpark sites on the western side of Cowlshaw Street are ideally suited to low rise urban housing that utilises the north eastern aspect and lake views over the college, library and Community Centre. With appropriate development and streetscape guidelines, an exciting mixed use housing precinct could be achieved, incorporating existing public parking as part of the development.

Mixed Commercial, Entertainment and Leisure

The site bounded by Athllon Drive, Anketell and Cowlshaw Streets is an ideal focus for expansion of residential with limited commercial, entertainment and leisure uses related to the adjoining Town Centre and Town Park areas. It has direct access from Athllon Drive, the bus interchange and adjacent activities. The Anketell Street frontage facing the Town Park is ideally located for residential, leisure and lifestyle uses, while the Cowlshaw frontage is better suited to expansion of town centre commercial uses.

Tuggeranong Cultural Centre

The Tuggeranong Community Arts Association has advocated additional cultural facilities to augment the community programmes of the existing Arts Centre. These facilities are suited to a central lakeshore venue and could complement existing or future development on the western or eastern lakeshore.

Low Density Entertainment, Accommodation and Leisure Sites.

Inclusion in the study area of sites west of the town centre provides opportunities for more extensive uses that cannot be accommodated in lakeshore areas. Sites west of Rowland Rees Crescent have good access to town centre facilities and the open space setting within the Murrumbidgee River corridor. The two existing sites on Athllon Drive adjoining the Aquatic Centre have excellent potential for comprehensive development as part of a new Town centre "Gateway".

Paths and Cycleways

Completion of full traffic segregation for all segments of the foreshore circuit is a high priority.

APPENDIX 3: CONSULTATION

3.1 Consultation Period No. 1

Individual Responses

ISSUE RAISED	No. Responses
Food services – cafes(28), restaurants (36), various types	77
Picnic or BBQ – picnic (18) BBQ(21)	40
Hire facilities or concessions– various types	33
In favour of more trees / shade	26
No development	25
Residential development within the area for seniors – retirement, aged care, hospice, nursing home	25
Paths cycle and walking – more of , improved, , complete around lake	24
Water based recreation seen as good use of area – various	23
Parks – new, more, landscaped	19
Public toilets – provision of. 2 respondents noted tenants of new development to have responsibility	17
Playgrounds for various age groups	16
No commercial or office development	16
Lighting issues – more, improved, largely related to safety	14
Recreation development generally – non specific type	14
Gardens – specialist – community, botanic, water, formal, sculpture	12
No residential development	12
Seating	12
Performance area – outdoors, for theatre, busking, bands etc.	11
No powercraft	9
Pro – Development – generally or site specific	8
Parking – more, improved	8
Pitch & Putt golf	8
Residential – generally	8
Rubbish bins – more, mobile, recycling, specialist (dog pool!)	8
Appropriate lake edge development	8
Commercial Accommodation – hotel/motel	7
Commercial development - generally or site specific	6
Regular grass slashing – incl. under trees	6
Cleaner water in the lake	5
Maintain access to the foreshore	5

Individual Responses - Condensed Summary

RECREATION FACILITIES	
Picnic or BBQ – picnic (20) BBQ(26)	40
Hire facilities or concessions– various types	33
Water based recreation seen as good use of area – various	23
Playgrounds for various age groups	16
Recreation development generally – non specific type	14
Pitch & Putt golf	8
TOTAL	134

FOOD SERVICES	
Food services – cafes(30), restaurants (39), various types	77
TOTAL	77

PRO-DEVELOPMENT	
Residential development within the area for seniors – retirement, aged care, hospice, nursing home	25
Residential – generally	8
Appropriate lake edge development	8
Pro – Development – generally or site specific	8
Commercial Accommodation – hotel/motel	7
Commercial development - generally or site specific	6
TOTAL	62

LANDSCAPE ISSUES	
In favour of more trees / shade	26
Parks – new, more, landscaped	19
Gardens – specialist – community, botanic, water, formal, sculpture	12
TOTAL	57

DEVELOPMENT CONCERNS	
No development	25
No commercial or office development	16
No residential development	12
TOTAL	53

URBAN SERVICES, FACILITIES	
Public toilets – provision of. 2 respondents noted tenants of new development to have responsibility	17
Lighting issues – more, improved, largely related to safety	14
Seating	12
Rubbish bins – more, mobile, recycling, specialist (dog pool!)	8
TOTAL	51

ACCESS	
Paths cycle and walking – more of , improved, , complete around lake	24
Parking – more, improved	8
Maintain access to the foreshore	5
TOTAL	37

MISCELLANEOUS	
Performance area – outdoors, for theatre, busking, bands etc.	11
No powercraft	9
Cleaner water in the lake	5
Regular grass slashing – incl. under trees	6
TOTAL	31

Community Group Responses

ISSUE RAISED	No. Responses
Landscape planning and design issues – various incl. seating, park Reconciliation Point, gardens	18
Hire facilities or concessions– various types	17
Accessibility & transport – incl. paths cycle and walking – more, improved, complete around lake (4)	12
Food services – cafes(2), restaurants (6), various types	10
Lighting issues – more, improved, largely related to safety	10
Picnic or BBQ – picnic (2) BBQ(5)	7

ISSUE RAISED	No. Responses
Entertainment facilities	6
Footbridge across lake	6
In favour of more trees / shade	6
Performance area – outdoors, for theatre, busking, bands etc.	6
Water based recreation seen as good use of area – various	6
Water quality & catchment management	6
Cultural and the Arts	5
Family Community & Social Services – incl. Public toilets (2)	5
Outdoor Recreation facilities – incl. Pitch & Putt (3)	5
Residential – generally including residential development within the area for seniors (2)	4
Indoor Recreation facilities	3
Open Space Management	2
Retail – markets, skate park shop(s)	2
Wildlife and habitat	2
Community events	1
No development	1
No powercraft	1
Rubbish bins –mobile	1
Signage – wildlife information	1

Community Group Responses - Condensed Summary

RECREATION FACILITIES	
Hire facilities or concessions– various types	17
Picnic or BBQ – picnic (2) BBQ(5)	7
Water based recreation seen as good use of area – various	6
Outdoor Recreation facilities – incl. Pitch & Putt (3)	5
Indoor Recreation facilities	3
TOTAL	38

LANDSCAPE ISSUES	
Landscape planning and design issues – various incl. seating, park Reconciliation Point, gardens	18
In favour of more trees / shade	6
TOTAL	24

ACCESS	
Accessibility & transport – incl. paths cycle and walking – more, improved, complete around lake (4)	12
Footbridge across lake	6
TOTAL	18

ENTERTAINMENT & THE ARTS	
Entertainment facilities	6
Performance area – outdoors, for theatre, busking, bands etc.	6
Cultural and the Arts	5
Community events	1
TOTAL	18

URBAN SERVICES, FACILITIES	
Lighting issues – more, improved, largely related to safety	10
Family Community & Social Services – incl. Public toilets (2)	5
Open Space Management	2
Rubbish bins –mobile	1
TOTAL	18

FOOD SERVICES	
Food services – cafes(2), restaurants (6), various types	10
TOTAL	10

ENVIRONMENT & HABITAT	
Water quality & catchment management	6
Wildlife and habitat	2
Signage – wildlife information	1
TOTAL	9

PRO-DEVELOPMENT	
Residential – generally including residential development within the area for seniors (2)	4
Retail – markets, skate park shop(s)	2
TOTAL	6

DEVELOPMENT CONCERN	
No development	1
TOTAL	1

No powercraft	1
TOTAL	1

3.2 Consultation Period No. 2

	IDENTIFIED SUBURB		TOTAL
	Oxley	Other	Total
Number of Responses	12	27	39
Preferred Proposals			
Pedestrian bridge	0	4	4
BBQs	1	2	3
Playground areas	1	0	1
Open area	1	4	5
Pitch & Putt / mini golf	0	3	3
Sport & Recreation	1	4	5
Family Activity	0	2	2
Boat Hire	0	1	1
Recognition of active vs. passive	0	2	2
Commemorative Site	0	1	1
Lakeshore area 4	1	0	1
Lakeshore area 5	1	0	1
Lakeshore area 6	1	0	1
Lakeshore area 12	1	1	2
Lakeshore area 16	1	0	1

	IDENTIFIED SUBURB		TOTAL
	Oxley	Other	Total
Support			
cafes & restaurants	5	19	24
more recreation facilities	7	18	25
aged persons accommodation	1	20	21
upgrade commemorative site	7	13	20
village green	6	17	23
increased residential to support better lake use	0	14	14
Does Not Support			
cafes & restaurants	3	5	8
more recreation facilities	2	5	7
aged persons accommodation	6	5	11
upgrade commemorative site	1	8	9
village green	2	5	7
increased residential to support better lake use	9	10	19

Amphitheatre	0	1	1
All which increase lake activity	0	2	2
Recognition of maintenance needs	0	2	2
Inner residential	0	4	4
Importance of Site 26	0	1	1
Upgrading of cycle path/lighting	0	2	2
Cafes / restaurants	0	5	5
Retirement Village/aged	0	5	5
Preferred Proposals			
Gateway	0	1	1
Limited development west	0	1	1
Better urban design/architectural controls		2	2
Landscaping	1	0	1
Public toilets	0	1	1

Non-Preferred Proposals			
Inner Residential Development	0	2	2
Housing generally	0	1	1
Development to the east	0	5	5
High rise dwellings/height	0	3	3
Equestrian	0	2	2
Passive Development	0	1	1
Site 11 - 14	0	1	1
Site 6 - townhouses	0	1	1
Sites 5 - 7 - entertainment	0	1	1
Sites 5 - 7 - residential	12	1	13
Site 8 - residential	12	0	12
Expansion toward river corridor	0	4	4
Pedestrian bridge	0	1	1
Site 28	0	1	1
Sites 16 - 18	0	2	2
Inner mixed use	0	1	1

Other Issues			
Carparking	0	3	3

Masterplan responds to Constraints & Opportunities			
Answered Yes	0	15	15
Answered No	3	5	8

4.0 TUGGERANONG TOWN CENTRE (COMMERCIAL AREA) PARKING PLAN (Draft Extract of Parking Plan to be published)

4.1 Background

Car parking is provided on-site (ie. on the block) as part of any development in accordance with the requirements of the *Draft ACT Parking and Vehicular Access Guidelines*. Typically, carparking is also provided for, off-site in nearby public car parks. The proximity of available public car parking to the development (ie. to the block) may influence the amount of on-site carparking and also permits flexibility in car parking management to respond to changing demands (eg providing more 2 hour spaces for shoppers).

4.2 Existing Situation

While there is a perception that there is a "parking problem" within the Tuggeranong Town Centre (commercial area), a 1998 parking survey (undertaken mid morning week day) revealed that the overall carparking demand was 63% of the total number of public and other carparking spaces available (refer Table 1 and Figure A).

Table 1 : 1998 Car Parking Demand v's Total Supply (source: Road Use Management, City Services, Department of Urban Services, September 1998)

Type	Demand	Supply	Occupancy %
Public (ie. Government)	1218	1400	87%
Private	1413	1784	79%
"Private for Public Use" (eg Homeworld carpark)	1480	3301	45%
TOTAL	4111	6485	63%

However some carparks are almost 100% full due to their very convenient location for shoppers and employees (eg. carparks at the corners of Reed and Cowlshaw and Pitman and Cowlshaw).

4.3 Site Suitability & Short Stay/Long Stay

The *Draft ACT Parking and Vehicular Access Guidelines* require public long stay parking (in town centres) to be located within 400 metres from the "activity", whilst short stay parking should be located within 200 metres of the "activity". Operational parking needs are to be located on-site or immediately adjacent.

Short stay is defined as parking for less than 4 hours, while long stay parking is for more than 4 hours. This aims to allow shoppers and visitors to be located closer to the "activity" than employees.

Figure B indicates areas which are located outside a 200 metre radius from public carparks. This demonstrates that approximately two thirds of the commercial area of the town centre lies outside this radius. In the long term, with the completion of development, areas will have greater need for public carparking (ie. off-site carparking), particularly south of Soward Way.

4.4 Future Carparking Demand

Development forecasts have been calculated to determine the future carparking demand within the commercial area of the town centre in the short term and long term.

The short term forecast is based on the 1999 Chief Minister's Department Land Release Program for 1999/2000 to 2003/2004 and on a series of assumptions of the expected development type for these blocks. A number of these assumptions are discussed in the master plan.

The long term forecast is based on the vacant land register (Chief Minister's Department) and on a series of assumptions of the expected development types for these vacant blocks. A number of these assumptions are discussed in the master plan.

As referred to in Figure B, in the longer term areas, particularly south of Soward Way, will have a greater need for public carparks. To address this issue, a Public Car Parking Plan is being developed by the Territory that will reserve sites for public car parks. These carparks could be either free standing (ie. at grade), a structure or part of a private development. A number of these locations are also identified by the master plan for development.

To determine what the extent of future public carparking needs may be, it has been assumed that 50% of required carparking calculated for the future development types would be provided off-site in public carparks (based on the *Draft ACT Parking and Vehicular Access Guidelines*). The remaining 50% would be provided on-site. The short stay and long stay split for each activity was calculated for both the maximum total and the off-site demand.

Short Term

The expected maximum total in the short term (2003/4) is 4048 spaces. The 50% off-site demand is 1984 spaces (ie. 1984 public carparking spaces required).

Long term

The expected maximum total in the long term (after 2020) is 5659 spaces. The 50% off-site demand is 2789 spaces. An alternative scenario generates an 50% off-site demand of 2058 spaces (where Precinct B does not have any off-site parking provision).

4.5 Future Precinct Demand and Supply Balance

The study area is divided into 12 precincts to derive an expected future precinct demand and supply (ie the surplus/deficiency, a negative result indicates a deficiency), based on the above assumptions.

Short Term

Figure C demonstrates a future short term **deficiency of 1616 spaces**, with Precincts E, H, D and K having deficiencies greater than 400 spaces.

Long Term

Option 1 (refer Figure D) demonstrates a future long term **deficiency of 2423 spaces** with Precincts B, E, H, D and K having deficiencies greater than 400 spaces. Precinct J has a 184 space deficiency.

Options 2 (refer Figure E) demonstrates a future long term **deficiency of 1741 spaces**. This option accommodates all carparking generated by development on precinct B, on precinct B (ie. no off-site demand).

4.6 Additional Car Parks

To address the future deficiencies, it is proposed to establish additional public car parks, as indicated.

Short term

Figure F indicates how 1710 additional parking spaces could be provided in the town centre. This would produce a **surplus balance of 94 spaces** [ie. the short term deficiency + total new additional spaces (-1616+1710= 94)].

Long term

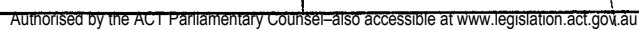
Figure G indicates how 2360 additional parking spaces could be provided for Option 1. This would produce a **deficiency balance of 63 spaces** [ie. the short term deficiency + total new additional spaces (-2423+2360= -63)].

Figure H indicates how 1710 additional parking spaces could be provided for Option 2. This would produce a **deficiency balance of 31 spaces** [ie. the short term deficiency + total new additional spaces (-1741+1710= -31)].

In the overall context of the town centre's long term parking needs, based on assumptions made on the future development types, the deficiencies discussed account for less than 10% of the total town centre deficiency and are considered manageable.

The Territory will finalise the Parking Plan which will then be incorporated in the Parking Guidelines.

4

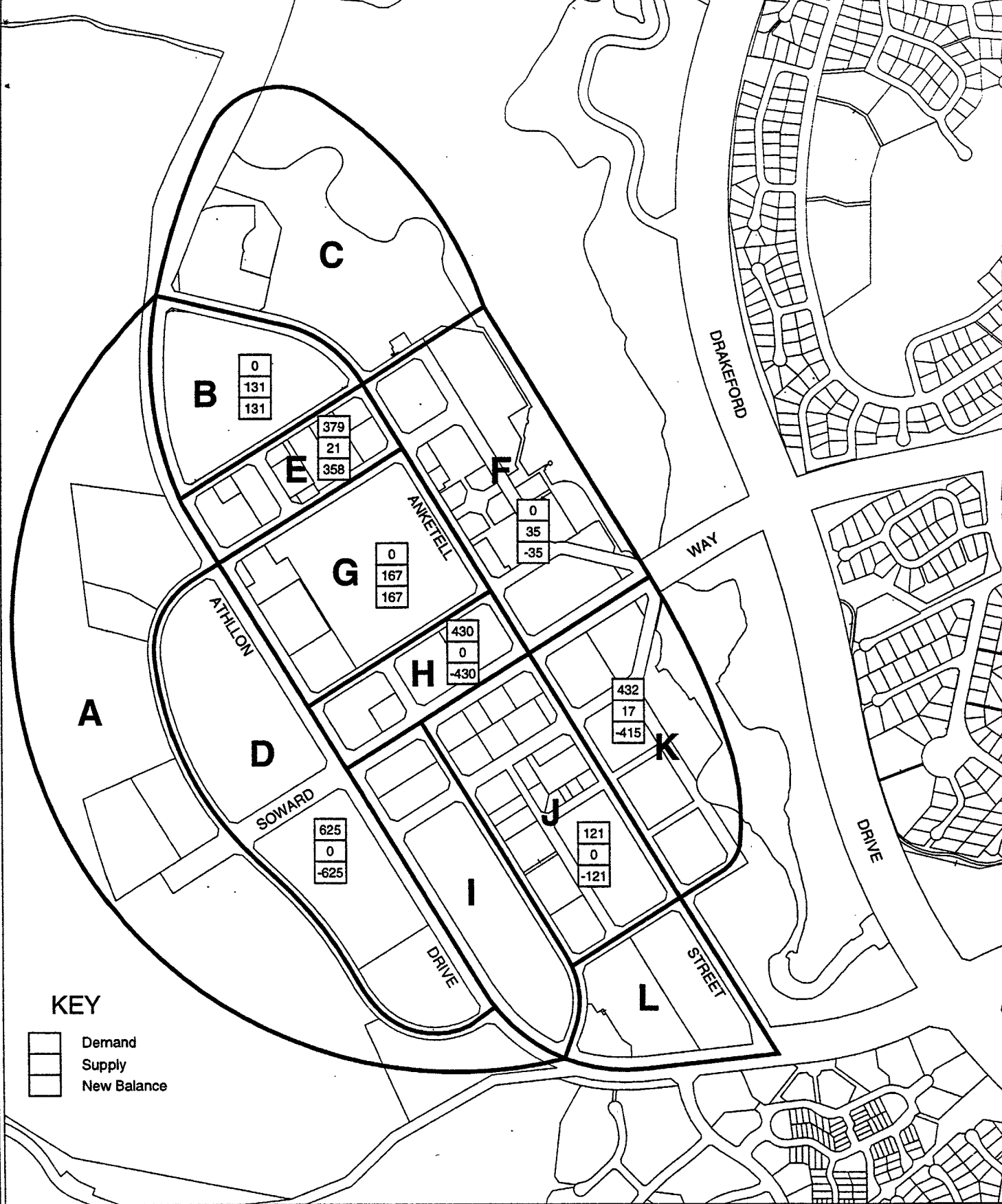




TUGGERANONG TOWN CENTRE

Figure B: Areas Outside 200m Walking Distance Radius From Public Carparks (Short Stay)

Authorised by the ACT Parliamentary Counsel—also accessible at www.legislation.act.gov.au

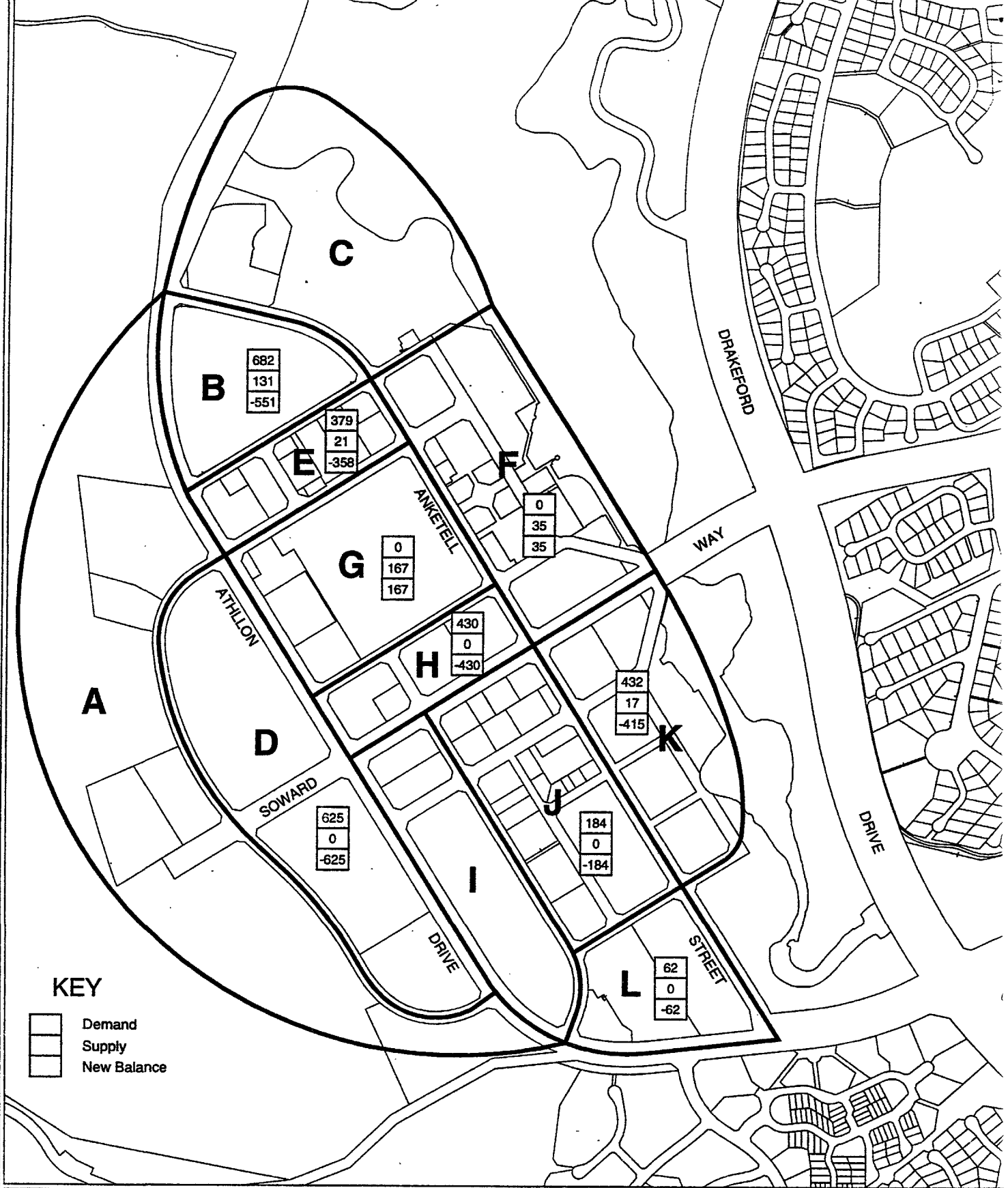


TUGGERANONG TOWN CENTRE

Total New Balance -1616

Figure C: Demand / Supply & New Balance (Short Term) by Precincts

Authorised by ACT Planning and Community Services, also accessible at www.legislation.act.gov.au

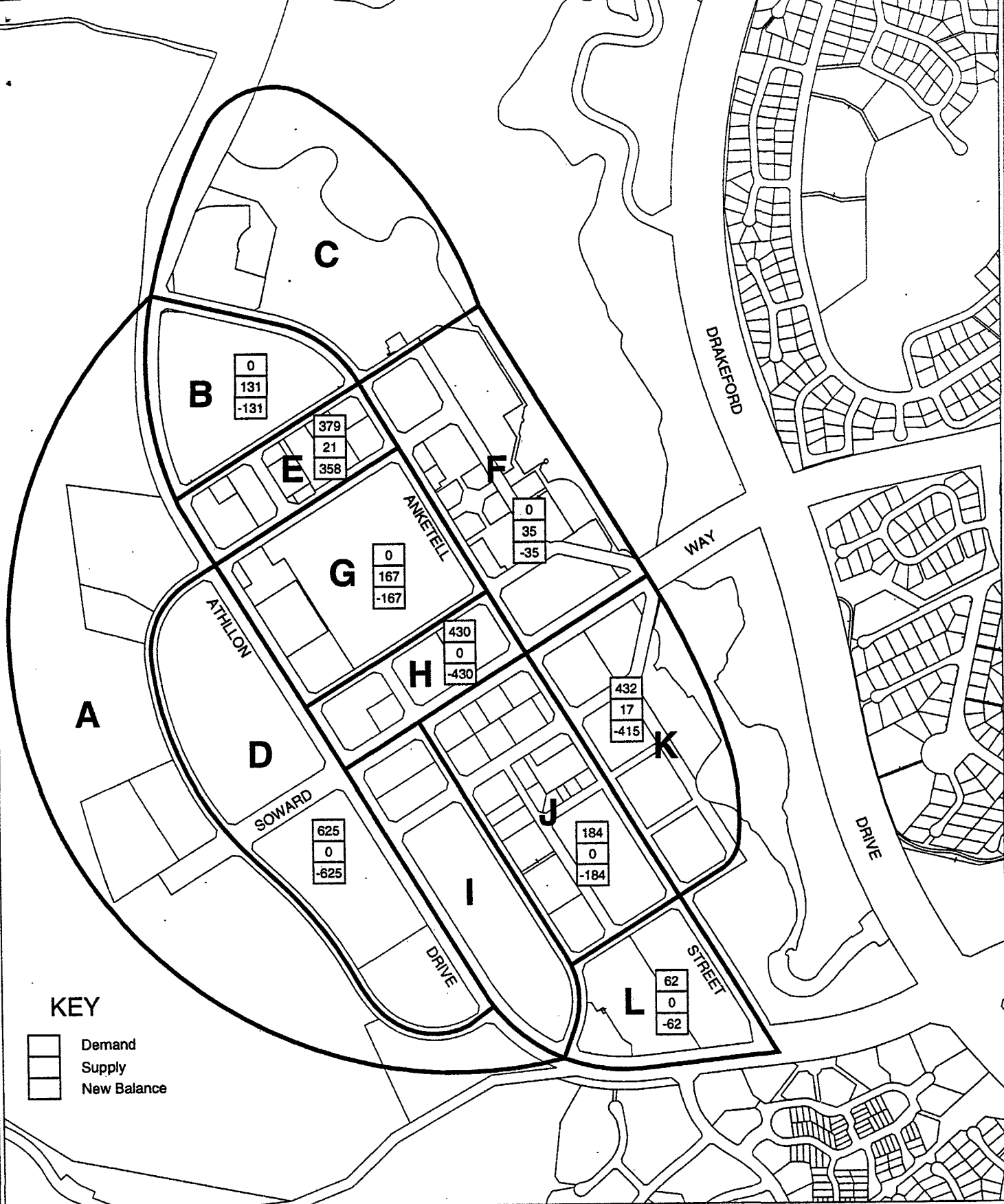


TUGGERANONG TOWN CENTRE

Total New Balance -2423

Figure D: Demand / Supply & New Balance (Long Term) by Precinct - Option 1

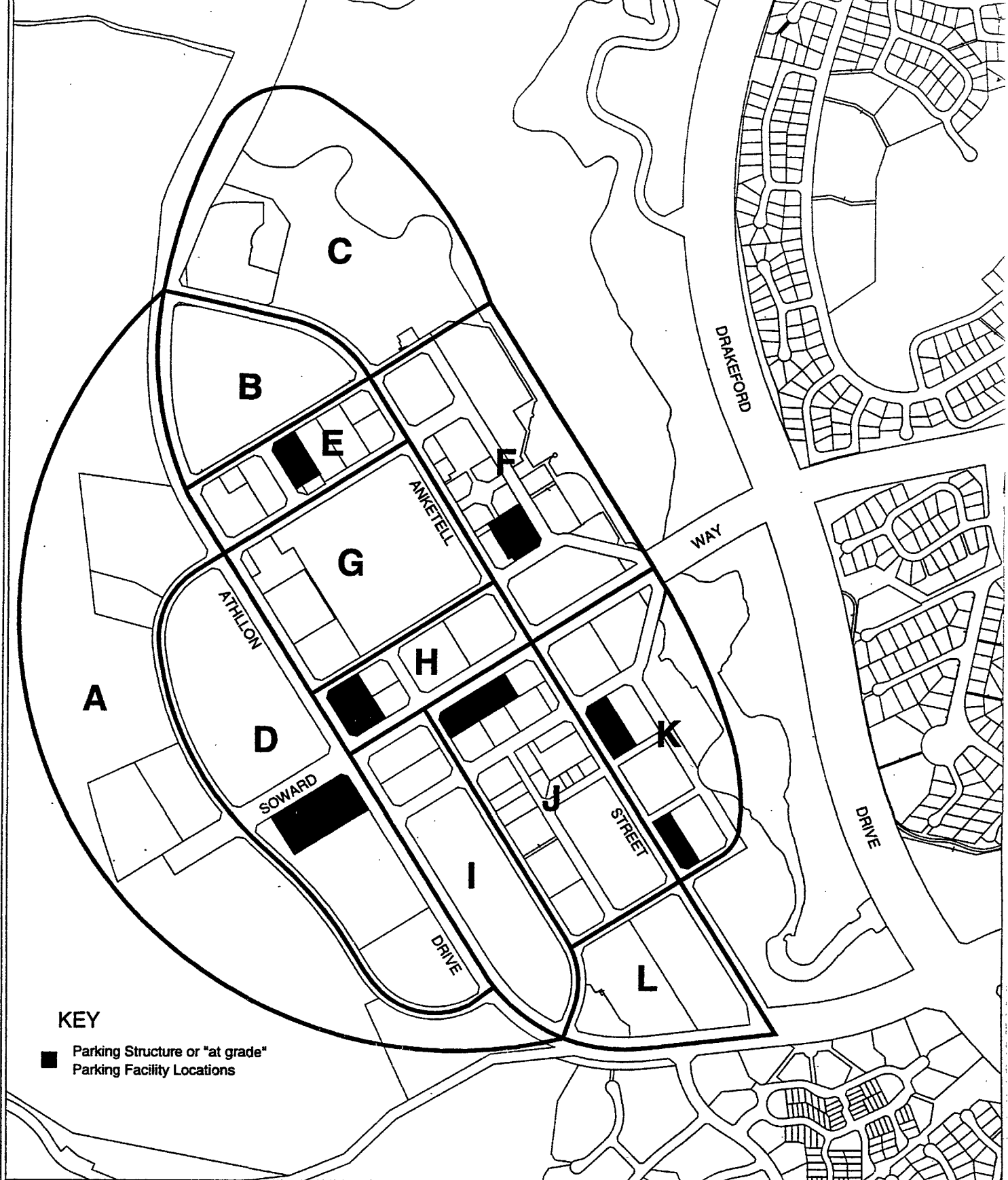
Authorised by the ACT Parliamentary Counsel—also accessible at www.legislation.act.gov.au



TUGGERANONG TOWN CENTRE

Total New Balance -1741

Figure E: Demand / Supply & New Balance (Long Term) by Precinct - Option 2

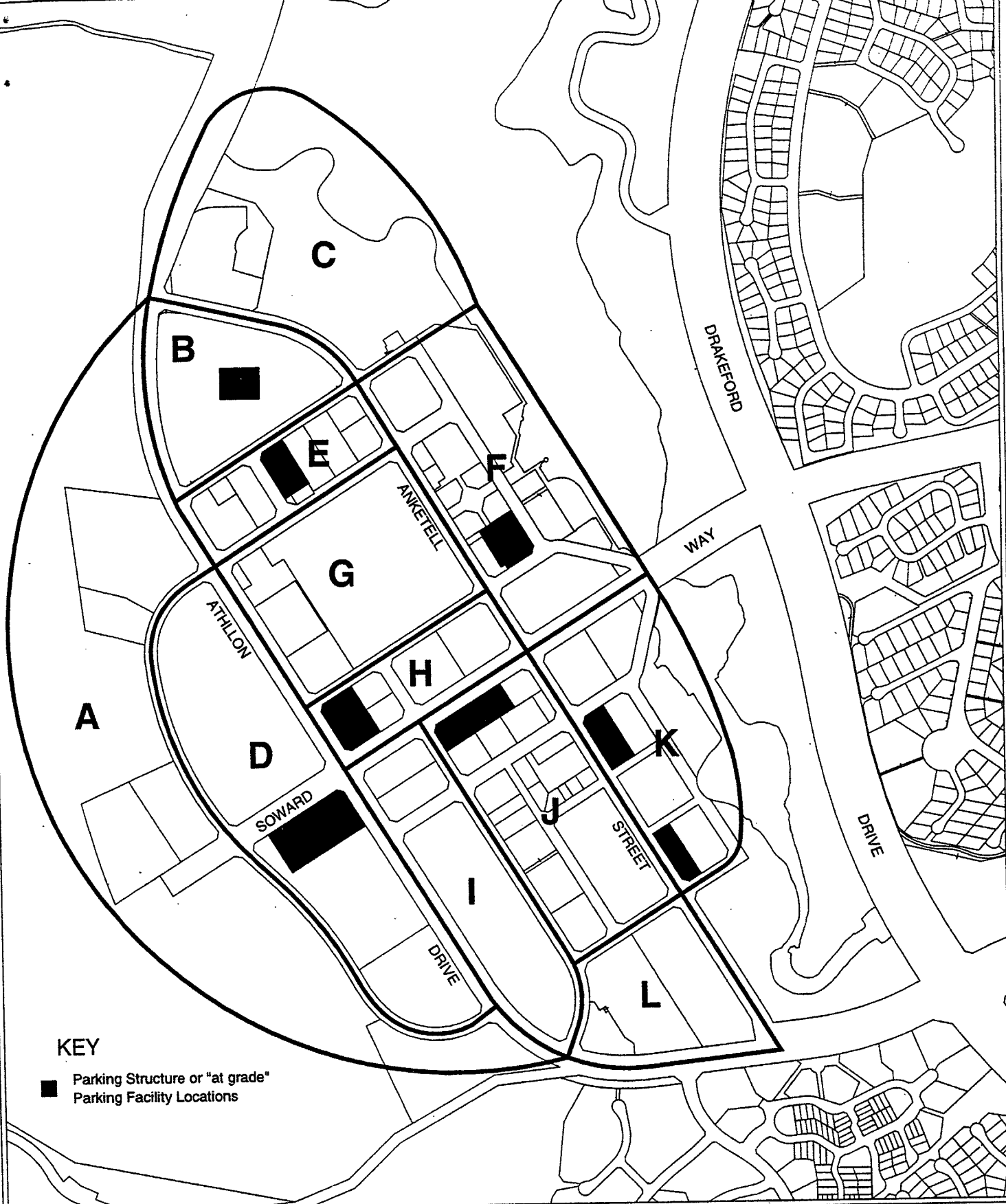


TUGGERANONG TOWN CENTRE

Total New Supply: 1710 spaces

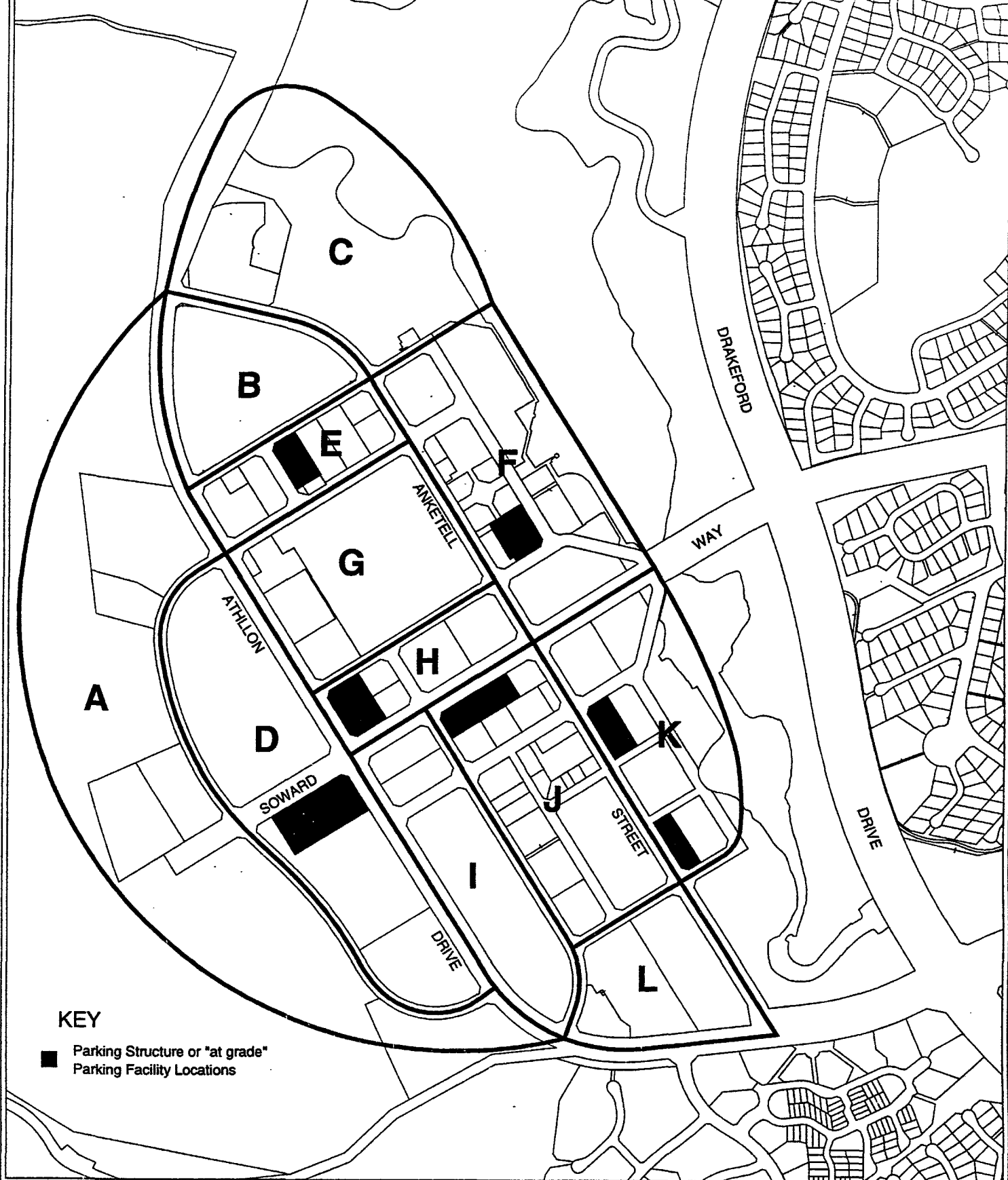
Figure F: Additional Public Carpark Locations (Short Term) by Precinct

Authorised by the ACT Parliamentary Counsel—also accessible at www.legislation.act.gov.au



Total New Supply: 2360 spaces

Figure G: Additional Public Carpark Locations (Long Term) by Precinct - Option 1



TUGGERANONG TOWN CENTRE

Total New Supply: 1710

Figure H: Additional Public Carpark Locations (Long Term) by Precinct - Option 2

Authorised by the ACT Parliamentary Counsel—also accessible at www.legislation.act.gov.au

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6.0 STUDY TEAM

The Tuggeranong Lakeshore Master Plan was prepared by the following consultants on behalf of the Development Management Branch of the ACT Department of Urban Services.

Discipline	Consultant	Contact Names	Contact
Urban Planning	LFA (aust) Pty Limited	John Firth & Sue Dove	02 62478677 (P) 02 62478891 (F)
Landscape Planning	LFA (aust) Pty Limited	John Firth & Rex Pepper	02 62478677 (P) 02 62478891 (F)
Civil Engineer	Ove Arup & Partners	Steve Walker & Gary Squires	02 62811711 (P) 02 62825333 (F)
Transport Engineer	Ove Arup & Partners	Andrew Cleaver	02 62811711 (P) 02 62825333 (F)
Urban Services Engineer	Ove Arup & Partners	Hans Porcervina & G. Squires	02 62811711 (P) 02 62825333 (F)
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7.0 INDICATIVE DEVELOPMENT COSTS

Approximate project costs for typical open space facilities are shown in the following table. The figures are for broad budget planning purposes only and allow for typical ACT standards and design quality. Costs include labour, materials, installation, local services, defect maintenance and full statutory compliance, but exclude project design, management and superintendence costs. They are subject to change due to specific site conditions, special design inclusions, available site services, the scale and nature of works contracts and market conditions.

Facility	Description	Units	Cost
Bicycle Paths	Bitumen Paved 2.5m wide	Km	\$70-90,000
	Reconstruction or regrading existing	Km	\$35-40,000
Carparking	Bitumen paved incl. minor site works	Per bay	\$2,000
Playgrounds	Small; Incl. prefab equipment; soft fall area, seating and litter bins	Per unit	\$20-40,000
	Large; As above	Per unit	\$50-200,000
Public Toilet Block	Free standing "Exceloo" type; M&F including local services	Per block	\$100,000
Picnic Shelter	Free standing with seating and paving; open sides and metal deck roof	Per Unit	\$30-50,000
BBQ Area	Double Elect. Coin Opp; incl paving (90m2), tables (2), bench seating (4) and water supply	Per area	\$15-30,000
Seating Area	Bench seat and related paving (3m2)	Per unit	\$1-2,000
Waste Bins	Powdercoated heavy duty steel	Per unit	\$500-1,000