

1967

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

REPORT

relating to the proposed provision of

ENGINEERING SERVICES TO CASUARINA SUB-DIVISION, NEIGHBOURHOOD UNIT NO. 2

at

DARWIN, NORTHERN TERRITORY

CONTENTS

	Paragraph
The Committee's Investigation	1
The Present Reference	2
The Need	5
Extent of the Need	7
The Committee's Conclusions	1.1
Design of Jingili Sub-division	1.3
Lot Dimensions	14
Parks and Schools	16
Shops	19
Internal Roads	20
Access Roads	24
Services	26
The Committee's Recommendation	31
Programme	32
Estimate of Cost	34
Arterial Roads	37
Recommendations and Conclusions	42

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

ENGINEERING SERVICES FOR CASUARINA SUB-DIVISION, NEIGHTOURHOOD UNIT NO.2,

DARWIN, NORTHERN TERRITORY.

REPORT

By resolution on 15 March 1967 the House of Representatives referred to the Parliamentary Standing Committee on Public Works for investigation and report the proposal to provide engineering services to Casuarina Sub-division, Neighbourhood Unit No. 2, Darwin, Northern Territory.

The Committee have the honour to report as follows:

THE COMMITTEE'S INVESTIGATION

1. The Committee received written submissions from the Northern Territory Administration and the Department of Works and took evidence in Canberra from representatives of these organizations and of the Department of Territories. During a visit to Darwin in April 1967 we inspected the site of the proposed subdivision and the work in progress in the adjacent neighbourhood unit, Alawa, and took evidence from the Town Clerk and an Alderman of the Corporation of the City of Darwin.

THE PRESENT REFERENCE

2. In April, 1965 the previous Committee reported to Parliament on the proposal to service Alawa, the first reighbourhood unit in the Casuarina District. The latter is one of three districts on the north-eastern outskirts of Darwin beyond Rapid Creek which it is planned to develop for residential purposes. As with the other two areas, known as Dripstone and Sanderson, Casuarina is to comprise four neighbourhood units each of about the same dimensions and capacity.

Bosides Jingili, which is the name of the neighbourhood unit in the present reference, and Alawa, the Casuarina District is to contain the units of Moil and Wagaman.

- 3. It is relevant to a consideration of the present reference to note that the previous Committee, when reporting on the Alawa proposals, concluded that "the designs proposed for the Alawa unit are satisfactory and set a standard which subsequent units in the Casuarina District might follow".
- 4. The engineering services included in the present reference are:
 - (a) roads and drainage around and within the sub-division,
 including road pavements, kerbs and gutters, footpaths
 and underground stormwater drains;
 - (b) water supply, including reticulation mains, fire hydrants and connections for house services;
 - (c) sewerage, including pipe drainage and amplification of the Rapid Creek pumping station; and
 - (d) electricity supply, including high tension distribution,
 to the area, low tension reticulation and street lighting,

THE NEED

- 5. Growth of the Darwin urban area has continued in the localities and at about the rate predicted in the Town Plan Report of 1965 and by the end of 1967/68 all available Crown land in the Darwin central area, and the suburbs of Larrakeyah, Parap, Stuart Park, Fannie Bay, Ludmilla, The Narrows, Bagot, Nightcliff, Rapid Creek, Millner and Alawa will have been provided with engineoring services and allocated for building purposes.
- 6. As was the case when the Alawa proposals were being investigated, it was evident that further residential development to meet the pressures caused by population growth should follow

the pattern shown in the plan. This, in effect, means the servicing of residential land in the Casuarina District initially, followed by Dripstone and Sanderson.

- 7. Extent of the Need After completion of the Commonwealth and Housing Commission 1966/67 construction programmos, 142 sorviced residential building lots will remain in sub-divisions recently completed or now under construction. The Committee were told that 69 of these lots are to be auctioned for private housing purposes later this year, leaving 73 lots for Government housing needs in 1967/68. All of these are located in the first stage of the Alawa development.
- 8. In addition, it is expected that the second stage of Alawa and the Escarpment area of the Stuart Park sub-division, will yield 377 and 103 lots respectively in time for home construction to commence next financial year. It is planned to use 413 of these lots for Government housing purposes and to auction 126 for private sale. This will loave only 14 lots to be carried forward for use in the 1963/69 housing programme.
- 9. On present indications, it will therefore be essential to commence development of at least 450 lots in 1967/68 if sufficient serviced land is to be available to meet the rate of commencement expected to be needed for Government housing in 1968/69. At the time of the Committee's enquiry, there were 641 names on the Housing Commission's waiting list alone.
- 10. Apart from the Casuarina district, the only other significant area of vacant Grown land capable of economic development for urban residential purposes is in the Ludmilla sub-division on the western side of Bagot Road and south of Gocomit Grove. The provision of engineering Services to 130 blocks in this area is expected to take place in 1967/68.

- 11. The Committee's Conclusions We agree with the conclusion of the previous Committee that the north-eastern area of Darwin east of Rapid Creek, including the Casuarina District, is a suitable location for future residential development. It is appropriate that the next stage of development should be in the Jingili subdivision.
- 12. In order to meet the serviced land needs of the 1968/69 housing programme there is a need to commence the provision of engineering services to the Jingili sub-division in 1967/68.

DESIGN OF JINGILI SUB-DIVISION

- 13. It was proposed to the Committee that the road layout should be similar to that used in Alawa, in this instance providing 581 residential lots, as well as a central park, five small parks, a primary school, two pre-school sites and a small shopping centre with adjacent parking facilities. Four of the above lots are to be used by an electricity sub station. The Committee were told that the original design provided for 616 lots but that it has been found that of those 35 cannot be developed at this stage because of sowerage difficulties.
- 14. Lot Dimensions The designs provide for lots of 70 feet by
 110 feet on average. These dimensions have been found to suit
 local needs where a wide frontage allows each lot to contain its own
 sound buffer of trees and shrubs between houses. Darwin houses,
 not being air conditioned, require large open spaces of window and
 louvred walls most of the year but these openings allow the easy
 passage of household and street noises unless sound protection
 measures are taken.
- 15. Larger lots are not desirable because of the high cost of continuous watering during the dry season and the effort required to keep growth under control during the wet season. The depth

- of 110 feet provides sufficient space behind the house for the development of lawns, tree planting, barbecue, etc.
- 16. <u>Parks and Schools</u> The designs presented to the Committee include a central park, which will contain two large sized ovals. During school hours both ovals can be used by school children and at other times they will be available for public use.
- 17. It is proposed that the strip of land on either side of Rapid Creek should be retained as a "green belt" to provide an open area separating Jingili from Millner to the west, further playing areas and public open space. The area is on the flight funnel for the airport's north/south runway. The green belt will permit two more evals to be built near the corner of Progress Drive and Freshwater Road and a further eval adjacent to the Palmerston Freeway.
- 18. Two pre-school centres, each to provide for 50 children, have been allowed for, one each on either side of the central park area.
- 19. Shops On the basis that the major shopping needs of Jingili will be absorbed within the district shopping centre to be constructed to the north to service both the Dripstone and Casuarina Districts, a small shopping centre of four shops next to the central playing area is planned.
- 20. Internal Roads The internal road pattern of Jingili has been designed to provide a number of traffic isolated subneighbourhood units connected to the neighbourhood playing centre and primary school by internal connector roads. The main internal streets which will take future bus routes, are to have 60 feet reservations for the construction of 34 feet roads. Minor internal streets will be on 50 feet reservations for the construction of 24 feet pavements.
- 21. Internal roads have been designed with "T" intersections and the sub-neighbourhoods will have alternative entry internal

road circuits. No culs-de-sac or "cross" intersections have been used. Corner truncations of 30ft. are provided at minor street corners and are 60ft at major corners. Those will allow easy vehicle turning and give a wide angle of sight at intersections.

- 22. A series of connecting walkways have been provided to form a pedestrian system through the neighbourhood as an alternative to the vohicular system.
- 23. Roads will be bitumen sealed between kerbs and gutters and and gravel footpaths will also be bitumen sealed. Stormwater drainage will be directed by kerb and gutter into side entry pits at intervals along roads and conveyed by underground pipe into Rapid Creek.
- 24. Access Roads The proposed development includes perimeter roads, one of which is common to the proposed Moil neighbourhood unit. Progress Drive is to be completed adjacent to Jingili to its design width by the completion of the median strip with appropriate lighting and a 36ft. payement which will allow for two lanes of traffic and one for parking. The second lane of the bridge over Rapid Creek is to be constructed and the intersection with Rapid Creek Road to the south will be realigned to take the additional traffic flow. Although the twin bridge and carriageway in Progress Drive will more than cater for traffic expected to be generated by Alawa and Jingili alone, the Committee agreed that it is appropriate to complete the ultimate plan at this stage to avoid the need for later disruptive construction.
- 25, To provide access to the southern sections of Jingili, it is proposed to construct as part of the present work, a service road as an extension of McMillans Road from Rapid Creek Road to the perimeter road of the Jingili sub-division where it adjoins Moil.

- Although both Alawa and Jingili will initially 26. Services draw water from the elevated 500,000 gallon storage tank in Rapid Creek through a 15 inch main being constructed as part of the Alawa development, it is proposed to provide a 6 million gallon ground storage tank for the Casuarina District in Moil in 1967/68. The Casuarina reservoir which will act as an operational storage for both the Nighteliff and Casuarina Districts will initially draw water from a new 15 inch main being built along Bagot Road. To supplement that supply a 24 inch pipe will link the reservoir direct with the main pipe line from Manton Dam at Berrimah. The provision of an elevated storage tank at the reservoir site will complete the arrangements for an external water supply to Jingili. These works were reported on by the Committee in 1965 when investigating the augmentation of the Darwin water supply.
- 27. Water supply will be reticulated through the sub-division in cast iron cement lined pipes or asbestos pipes located generally within the footpath reservation. Water for fire protection purposes will be supplied through $2\frac{1}{2}$ inch mill cocks on stand pipes at regular intervals.
- 28. As part of the Alawa reference a sewer trunk main will link
 Casuarina with the Rapid Creek sewer pumping station and the sewer
 outfall at Seabreeze Point. The Jingili sower mains will be
 connected to this discharge system. Reticulation within the
 sub-division will comprise rubber ring jointed concrete pipes
 with concrete manholes. Generally sewers will be laid at the
 rear of the lots to minimise length and will be large enough to
 extend to Moil when it is built. They will converge into a
 24 inch line which will enter the existing 30 inch main sewer
 across Rapid Creek. The extimates for this reference allow for
 increasing the pumping capacity of the Rapid Creek pumping station.

- 29. Electricity for Jingili will come initially from existing Il kV feeders in McMillans Road and Progress Drive. The main transformer station in Snell Street is being augmented and the feeders to Mighteliff and Casuarina are being reconducted in heavier cable to meet the increasing demand in the Nighteliff area and the expected initial demand from Alawa and Jingili. Full development will however require a zone sub-station for Casuarina. This is to be located in Jingili adjoining Progress Drive.
- 30. Normal Darwin standards for 11 kV and low voltage reticulation with five distribution sub-stations will be employed to distribute electricity in Jingili. Street lighting will comprise sodium lanterns on main traffic roads and twin 20 watt fluorescent lights in minor streets.
- 31. The Committee's Recommendation The Committee recommend the construction of the works in this reference.

PROGRAMME

32. The Department of Works was authorised by the Government in September 1966 to proceed with the design and documentation of the first section of the work in this reference in anticipation of a favourable report by the Committee. Designs are therefore well advanced and it is expected that the first stage comprising 324 lots will be ready for the calling of tenders next month, subject of course to a favourable report by the Committee and the House of Representatives declaring that it is expedient for the work to proceed. The Committee were told that for the balance of the work, documentation could be completed six months after an approval to proceed is given.

33. Although the contracts for the provision of the engineering services are expected to take two years to complete, housing construction on the lots being serviced can commence before that time. In other words the fact that lots are still being serviced will not prevent the commencement of the Governments 1963/69 housing programmes.

ESTIMATE OF COST

34. The estimated cost of the works in this reference when referred to the Committee was \$2.25 million as follows:

Roads and stormwater drainage	\$1,550,000
Water supply	220,000
Sewerage	300,000
Electricity supply	180,000
	
	\$2,250,000

35. We were told that of this amount 3,20,000 is not directly associated with the Jingili devolopment itself but is more properly attributable to later stages of development, principally in the Casuarina District. Details of this figure are:

McMillan's Road extension	\$130,000
Rapid Creek Road intersection	25,000
Eastern boundary road	37,000
Sewerage	48,000
Stormwater	170,000
Electrical	10,000

	\$420,000

36. At a nett figure of \$1.83 million the average cost of servicing lots in Jingili is \$3170. The Committee thought that this figure compared favourably on a per block basis with the

cost of servicing Alawa having regard to the increases in the cost of labour and materials that have occurred since that reference was investigated.

ARTERIAL ROADS

- 37. We were reminded during the public hearings on this reference that when the Alawa proposals were being investigated the representative of the Department of Works stated that although work on the arterial road system could not be regarded as part of that reference, he wished to emphasize the need for improvements to these roads to ensure that they are capable of carrying the increased traffic volume being imposed by newly developing residential areas.
- 38. It was also drawn to our notice that no improvements have been carried out to the arterial roads serving the north-eastern districts of Darwin since the previous inquiry in 1965 and neither had a decision been taken to increase the capacity of the existing roads. The reason for this is the apparent inability to settle a dispute on whether the Northern Territory Administration or the Corporation of the City of Darwin is responsible for improving Bagot Road which is still the only road connection between the Darwin city area and the districts of Nightcliff and Casuaring.
- 39. The Committee appreciated that the question of the adequacy of the arterial road system for current and future needs is not directly related to a study of the proposed development at Jingili, but it was evident that unless these roads are capable of hardling the traffic loads generated by existing and developing residential areas, the matter warranted our serious consideration.

- 40. We believe that the present road access from the Darwin city area to the Nightcliff and Casuarina Districts and within the Nightcliff District is well below standard, that it requires immediate improvement and that until this is done the position will be progressively aggravated as more residential land is opened up. There is, therefore, an immediate need for a decision to be taken on the financial responsibility for the improvement of the Bagot Road access and for the early commencement of this work.
- 41. The elongated nature of the residential areas in the Darwin Town Plan makes it imperative that improvement of the arterial road system takes place concurrently with the opening up of new residential areas. We therefore recommend that a programme for the long term improvement of the arterial road network be decided on and work commenced systematically as development requires.

RECOMMENDATIONS AND CONCLUSIONS

42. The summary of recommendations and conclusions of the Committee is set out below. Alongside each is shown the paragraph in the report to which it refers.

Paragraph

11

- 1. The north-eastern area of Darwin, east of Rapid
 Creek, including the Casuarina District, is a
 suitable location for future residential development.
- It is appropriate that the next stage of development should be the Jingili sub-division.
- 3. There is a need to commence the provision of engineering services to the Jingili sub-division in 1957/68.

12

40	The committee recommend the construction of the works	
(in this reference.	31
5.	The estimated cost of the works when referred to	۵.
	the Committee was \$2.25 million.	34
6.	There is an immediate need for a decision to be taken	
	on the financial responsibility for the improvement	
	of the Bagot Road access and for the early commencement	
	of this work.	40
7.	A programme for the long term improvement of the arterial road network should be decided on and work	
	commenced systematically as development requires.	41.

· F. C. CHANEY Chairman

Parliamentary Standing Committee on Public Works, Parliament House, CANBERRA. A.C.T.

16 May 1967