

1969

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

REPORT

relating to the proposed provision of

ENGINEERING SERVICES TO NEIGHBOURHOOD UNIT No.4

at

Casuarina District, Darwin
(Eighth Report of 1969)

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

ENGINEERING SERVICES FOR NEIGHBOURHOOD UNIT NO. 4
CASUARINA DISTRICT (WAGAMAN SUB-DIVISION), DARWIN
NORTHERN TERRITORY

R E P O R T

On 3 July 1969, His Excellency the Governor-General in Council referred to the Parliamentary Standing Committee on Public Works for investigation and report to the House of Representatives the proposal to provide engineering services to Neighbourhood Unit No. 4 in the Casuarina District of Darwin, Northern Territory. The neighbourhood unit or sub-division has been named Wagaman.

The Committee have the honour to report as follows:

THE COMMITTEE'S INVESTIGATION

1. Written submissions were made to the Committee by the Northern Territory Administration and the Department of Works. Evidence was taken at public hearings in Melbourne and Darwin from representatives of these departments and from an alderman of the Corporation of the City of Darwin.

PREVIOUS ENQUIRIES

2. The Casuarina District is one of four areas on the north-eastern outskirts of Darwin being developed or planned for residential purposes. The development of the first district, Nightcliff, except for some minor areas, has been completed.

3. The other three districts, namely, Casuarina, Dripstone and Sanderson are located east of Rapid Creek. Each is to comprise four neighbourhood units of about the same dimensions and to provide roughly comparable residential and other utility lots.

4. A former Committee reported to the Parliament in April 1965 about the provision of engineering services to Alawa, the first neighbourhood unit in the Casuarina District. The present Committee reported in May 1967 and August 1968 respectively on the servicing of the second and third neighbourhood units at Casuarina, namely, Jingili and Moil. All three proposals involved the servicing of about 600 residential blocks and the provision of part of the basic services of the district including roads, drainage, electricity etc.

5. It is appropriate to repeat here a conclusion of the Committee in 1965 that " ... the designs proposed for the Alawa unit are satisfactory and set a standard which subsequent units in the Casuarina District might follow". The present Committee endorsed that conclusion in relation to both the Jingili and Moil references and agree that it applies equally in the case of Wagaman.

6. Sewerage In the report on Moil, we observed that whilst the existing sewerage disposal services discharging through the Rapid Creek pumping station and the marine outfall at Seabreeze Point will be able to dispose of sewage from Moil, it was clear that there is a need to provide major additional facilities fairly quickly.

7. The Committee commented that " ... plans for residential sub-divisions are ahead of those for sewage disposal and the occupation of neighbourhood units after Moil can only proceed if the trunk sewer and the facility at Leanyer Swamp are available". We therefore urged the Government " ... to come

to an early decision about the provision of additional sewage disposal facilities in Darwin in order that there is no consequent delay in the provision of housing".

8. On 14 May 1969, the Committee concluded an investigation and reported to the Parliament on a proposal for the augmentation of Darwin's sewerage services. The additional facilities proposed include the construction of treatment lagoons at Leanyer Swamp, north-east of Casuarina as well as a main trunk sewer, pumping station and rising main. When the facilities are completed, sewage from all suburbs east of Rapid Creek, including the Casuarina District will be taken to Leanyer Swamp for treatment. The work is expected to be completed by about December 1970 in good time to serve the development in Wagaman proposed in this reference.

THE PRESENT REFERENCE

9. The Wagaman Sub-division is designed to provide -

- 602 residential lots
- 3 commercial sites
- 1 pre-school site
- 1 primary school site
- 4 local parks
- 1 central park
- 2 flat sites
- 1 special site

10. The services to be provided include

- roadworks and drainage around and within the sub-division, including roads, kerbs and gutters, footpaths and underground stormwater drains;

- water supply, including reticulation mains, fire hydrants and house connections;
- reticulation sewers;
- electricity supply, including high tension distribution to the area, low tension internal reticulation and street lighting.

11. The estimated cost of the work when referred to the Committee was \$2 million. The proposal is to commence servicing 260 residential lots in 1969/70 (for housing construction in 1970/71) and the remaining 342 lots in 1970/71 (for housing construction in 1971/72).

THE NEED

12. Population In the past five years, the Committee have investigated and reported to the Parliament on the following projects all of which have been concerned with meeting the domestic needs of a steadily growing urban population in Darwin.

- Alawa Sub-division - April 1965
- Augmentation of Water Supply - May 1965
- Jingili Sub-division - May 1967
- Stokes Hill Power Station, Stage 4 - October 1967
- Moil Sub-division - August 1968
- Augmentation of Sewerage Services - May 1969
- Augmentation of Water Supply - May 1969

13. In each case, the need for the proposed work was created, in general terms, by a population whose annual increment was, by count, some 7% over the 20-year period to 1966 and, by estimate, about 11% since then.

At the 1966 census, the population count for the Greater Darwin area was 21,561 including about 800 aboriginals. At 30 June 1968 it was estimated that the figure had grown to 26,800.

14. In an assessment made in 1965 based on a rate of growth of 7% per annum compound it was forecast that excluding aboriginals the population would be 24,500 in 1968. It was calculated that this growth rate would generate a demand for around 600 houses per annum requiring the servicing of at least one neighbourhood unit per year with the necessary ancillary services.

15. These predictions have been greatly exceeded as shown by the rate of growth of 11% since 1966. It is noteworthy that there is no element of the recent increase in growth rate which suggests that the increase is a temporary phenomena, no suggestion that there will be a decrease in the rate in the near future, nor any indication that the shortage of housing is in any way tapering off what has virtually become a population explosion.

16. An aspect of this situation of which the Committee took particular note was the greatly increasing number of persons living permanently in caravans located not only in caravan parks but also in backyards or under houses. In 1966, 169 persons were living permanently in caravan parks and by 1968 the figure had grown to 679. At the latter time about 500 persons were also thought to be living in caravans parked on private residential lots.

17. Demand for Housing The pressures being created by the growing rate of population increase are underlined by the accelerating demand for housing and for serviced residential land. We were provided with the following facts, which collectively, clearly illustrate not only that there is a continuing demand for serviced residential blocks but also that the rate of demand itself is growing.

18. The housing waiting list for employees of the Commonwealth in the Northern Territory has grown from 92 to 201 in the three years since 1966, despite the allocation during the period of 697 units which included an average of 150 new units each year. It is relevant that at the time of the Committee's enquiry into the Moil reference in July 1968, there were only 119 on this waiting list. On the question of the provision of Government housing, the Committee noted with interest that through the unavailability of other serviced residential land, the R.A.A.F. and the Navy have been forced to develop building lots within their own reserves for their married personnel.

19. The waiting list of applicants for Northern Territory Housing Commission accommodation has steadily grown in the same three-year period from 760 to 969, notwithstanding the allocation of 919 housing or flat units. Waiting time for a one-bedroom flat is now nine months, for a two-bedroom flat, 16 months and for a house 19 months.

20. Residential lots for privately built housing become available either from land serviced by the Government or developed privately. The extent of the demand for this type of land is difficult to gauge but we concluded from the high premiums paid at auctions of Government developed lots, that there is a scarcity of land in a fairly rapidly developing market. At sales in the last two years, premiums have ranged between \$1,000 and \$10,500 according to location and whether the sale was open or restricted.

21. When reporting on the Moil proposals, the Committee noted that the large unsatisfied demand among those wishing to build their own homes was stimulating the development for residential purposes of privately owned or leased land. In Nightcliff, 236 residential blocks and seven flat sites have

been provided in this way, Coconut Grove is expected to yield 170 lots and a further 400 lots could eventually become available in Coconut Grove and Millner. Although these lots have added to the supply of serviced land available for private houses, the Committee consider that the total demand is such that they will not become available in sufficient numbers to materially influence the need for more land to be serviced in Casuarina and other new areas.

22. The Government's serviced land target for 1969/70 is 592 lots comprising 185 lots for Government housing, 18 lots for Government flats, 330 lots for the Housing Commission, 55 lots to be auctioned and 4 lots for special purposes. These lots will, by and large, be located in Jingili and the first part of Moil to be serviced. The Committee were told that requirements for 1970/71 and subsequently, will come from the remaining 452 blocks in Jingili and Moil and from the lots which are included in the present reference.

23. Committee's Conclusions The Committee found that based on

- the increasing rate of population growth;
- the growing housing waiting lists; and
- the inflated prices being paid for building lots for private housing

there is a shortage of serviced residential land in Darwin. We received no evidence that up to this point in time the shortage of lots has inhibited general development in Darwin or in the Northern Territory but we think it is reasonable to conclude that this could occur if further unrelieved pressures build up.

24. We did, however, note that the Housing Commission bids for its funds on the basis of the building lots available to it and that the shortage of land

is the factor which curtails the Commission's construction programme to the current limits. The Commission is therefore unable to increase its level of activity unless more land is available.

25. The only authority which can provide any significant relief to the serviced land shortage is the Commonwealth which owns the land in the Casuarina, Dripstone and Sanderson Districts. In this light we examined the Government's traditional role in the urban development field in Darwin and, as a result, recommend that

- (a) the land servicing programme be accelerated, without delay, to overcome, as far as possible, the backlog of serviced lots which has built up in the past two to three years;
- (b) future land servicing programmes be closely geared to the current rate of population increment.

26. We thus agree that there is an urgent need for the work in this reference but in the light of (a) above, recommend that the work be undertaken in one stage rather than two, as a first step towards overtaking some of the backlog.

27. Having regard to the overall demands on Commonwealth finances, the needs of other projects and the need for the economic use of funds, we then considered the means by which the shortage of land might be satisfied without necessarily increasing the Commonwealth's annual commitment. We concluded that urgent consideration should be given to whether the Commonwealth is justified, in the present circumstances, in continuing as the sole developer of urban land in Darwin. Taking the point just one step further, we also

found that it could only improve the present situation if a greater proportion of serviced lots is made available for private housing construction.

DESIGN OF WAGAMAN SUB-DIVISION

28. Outline Generally, the designs proposed in Wagaman will be similar to those followed in the other neighbourhood units in the Casuarina District. The area of the unit will be broadly of the same dimensions providing, in this instance, 602 residential lots and 13 special sites.

29. The road layout has been designed with an internal road pattern centred on the nucleus of a primary school and arranged to discourage through traffic. The road system provides for four sub-neighbourhoods, each around a small park, and linked by internal roads capable of taking public transport and leading to the primary school and neighbourhood centre.

30. The outer roads of each neighbourhood will connect to form a secondary road pattern collecting traffic to and from the neighbourhood road links.

31. Lot Dimensions As in Alawa, Jingili and Moil, the aim in Wagaman is to provide an average lot size of 8,000 sq. ft. While the shape is dependent on location within the overall layout, each lot will have a frontage of 70 to 85 ft and a depth of up to 110 ft.

32. The Committee were told that lots of these dimensions provide an appropriate setting for houses designed for a tropical environment where maximum cross ventilation is a design necessity. There is also a need to allow for the establishment of landscaping to absorb street and house noises and provide adequate outdoor living space.

33. Larger lots are not desirable because of the high cost of continuous watering during the dry season and the need to keep growth under control during the wet. A reasonable depth is required to provide sufficient space behind the houses for lawns, trees and other outdoor facilities.

34. Shopping Facilities We noted when reporting on the Moil proposals that a regional shopping centre to serve the major needs of Casuarina and Dripstone is to be developed on a 20-acre site in Nakara, a neighbourhood unit in Dripstone.

35. The requirement for more accessible shopping facilities is to be satisfied by the establishment of a small group of shops in each neighbourhood unit and in this respect three commercial sites are proposed for Wagaman. They are to be located near the central park.

36. Schools The servicing proposals include sites for the Wagaman Primary School and a pre-school centre.

37. High school students from the Casuarina District will attend the Casuarina High School which is to be located in Moil.

38. Water Supply As part of the water supply to the Casuarina District, a 6 million gallon ground storage has been built in Moil and a 1 million gallon elevated tank is expected to be constructed nearby in 1969/70. Reticulation to the main storage from the supply mains at Berrimah is in a 24-in. trunk main.

39. Within Wagaman, water supply will be reticulated in either cast iron cement lined pipes or asbestos cement pipes located generally within the foot-path reservation. Water for fire protection will be delivered from 2½ in. diameter millcocks on stand pipes at appropriate points.

40. Sewerage Sewage from the sub-division will flow through a trunk sewer to Leanyer Swamp where treatment facilities referred to in paragraphs 6. to 8. are to be constructed.

41. Sewage reticulation within the sub-division will be in rubber ring jointed pipes with concrete manholes. Sowers will be laid principally at the rear of the blocks to minimise the length of connections.

42. Electricity Normal Darwin standards for 11 kV low voltage reticulation and distribution substations are to be followed. Street lighting will comprise sodium lanterns on main traffic routes and twin 20 watt fluorescent lights in minor streets.

43. Stormwater Drainage Stormwater will be directed by kerb and gutters into side entry pits at intervals along the roads and conveyed by underground pipe systems through the neighbourhood. It will connect with stormwater pipes already provided in Alawa to take this flow.

44. Roads and Footpaths Around the boundary of the sub-division where through traffic as well as local traffic is to be provided for, road widths will depend on the expected traffic density. Along the north-western perimeter, the second half of Trower Road adjoining Alawa will be constructed and this will complete a dual 36-ft carriageway road. On the eastern perimeter, the first half of a future dual carriage-way road, Lee Point Road, is proposed. Between Wagaman and Wanguri on the northern boundary, Vandelin Drive, a single 36-ft carriage-way is proposed. To the south-west, Parer Avenue, adjoining Moil has already been constructed.

45. Within the unit itself, distributor roads will be 34 ft wide and other roads 24 ft wide.

46. Roads carrying the higher density traffic are to be surfaced with 1 in. of bituminous concrete. Minor roads within the sub-division will be provided with bitumen flush seals.

47. Footpaths will be gravel surfaced with $\frac{3}{4}$ in. bituminous concrete.

48. Committee's Conclusion The Committee recommend the construction of the work in this reference.

PROGRAMME

49. The Committee were told that as with the engineering works in Moil, the proposal is to construct the work in this reference in two stages. Documentation of the first part comprising 260 residential blocks and three of the special purpose blocks is expected to be completed for the calling of tenders four months after an approval to proceed is given. Tender documents for the balance can be ready two months later.

50. Under this programme construction of both stages could be completed two years after an approval to proceed is given. It should be noted, however, that the Committee has recommended in paragraph 26. that the work be undertaken in one stage only, in an effort to overcome the serviced land shortage.

ESTIMATE OF COST

51. The estimated cost of the work when referred to the Committee was \$2 million as follows:

	\$
Roads, footpaths and stormwater drainage	1,110,000
Water supply	360,000
Sewerage	260,000
Electricity supply	230,000
Sports ground, toilet and change block	40,000
	<u>2,000,000</u>

ARTERIAL ROADS

52. The Committee, in its reports on the Jingili and Moil proposals, commented on the development of Darwin's arterial road system as an essential adjunct to the urban development taking place in the Casuarina and Nightcliff Districts. The report in May 1967 on Jingili was most critical that the only access from these districts to Darwin city area was substandard and was not being improved because of indecision on whether the Commonwealth or the Corporation of the City of Darwin was financially responsible for the work.

53. The Committee went on to say that " ... 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".

54. We reviewed progress in August 1968 when reporting to the Parliament on the Moil proposals and noted then that the financial aspect of the problem had been solved and that work had commenced on upgrading the Bagot Road section of the arterial access.

55. The Committee concluded by commenting " ... that studies of the capacity of this and other arterial roads show that the existing arterial road system, with improvements in progress and being planned, will meet needs up to the time the Moil neighbourhood unit is fully occupied. Beyond that time other arterial road links will be required if undue congestion is to be avoided.

"The Committee were informed that plans for extending the arterial road system are being considered. In view of the evidence received about the capacity of existing and planned roads, we look forward to receiving details of the proposed new roads when the next sub-division proposal is referred to the Committee."

56. On our most recent visit to Darwin, we observed that the Bagot Road works were substantially completed and that construction had commenced on some sections of the Stuart Highway between Bagot Road and the city area. It is disturbing that the latter part of the work is being tackled piecemeal, that part of it still remains to be designed and that the full effect of the Bagot Road improvements will not be felt until the upgrading of the whole of the Stuart Highway section has been completed.

57. It is equally disturbing that, so far, there has been no attempt to identify either the extent or nature of any of the arterial roads required after the Bagot Road/Stuart Highway access is saturated, beyond a re-assessment of the capacity of the latter. This study suggests that the existing access " ... will be capable of handling something in excess of Moil and would be capable of meeting the situation until at least mid-1972".

58. The urban development impetus which Darwin is now experiencing and the fact that future residential suburbs will be located north-east of Darwin, make it certain that a major improvement of the arterial road system will be required. Providing the upgrading of the Stuart Highway section is completed reasonably quickly, we would agree that the existing roads will probably be able to cope with traffic pressures for about another three years. But we cannot understand why positive steps have not yet been taken to plan for

the major roads that will most certainly be required after that time. The elements which have contributed to Darwin's growth in the past ten years and particularly in the last five years, have been fairly readily identifiable in advance. Certainly the population has grown more quickly than expected but the location and extent of residential development have been known with sufficient precision for some advanced planning, not necessarily involving financial commitment for work, to be carried out to identify future needs and their solutions.

59. At this point, it is worth stressing that the Committee recently commented in a similar vein about the tardiness of other developmental proposals for Darwin's urban areas, not only about arterial roads but in relation to the sewerage and water supply proposals reported on earlier this year.

60. In the case of the additional arterial roads, it seems that the Committee's 1967 and 1968 recommendations have been largely disregarded and as a result, we are certain that a good deal of congestion will be experienced in the Bagot Road/Stuart Highway access before a new road can be built. We certainly do not share the optimism of the Northern Territory Administration that all the steps necessary to the provision of a new road, including a traffic survey, designs, the necessary approvals, and construction can be completed in time to have a new road operating in 1972.

61. In all the circumstances, it would be a negative step to suggest that no further residential lots be serviced in Casuarina or Dripstone until the arterial road system can cope. We do, however, repeat the recommendation made in 1967 that a programme for the long term improvement of the arterial road network be decided on quickly and work commenced systematically as development

requires. The essential difference now is that the problem has been aggravated by virtually two years inactivity since 1967 and calls for immediate and positive attention.

OTHER OBSERVATIONS

62. The comments which we have already made about the absence of forward planning of urban development in Darwin has touched on the provision of residential lots, water supply, sewerage and arterial roads.

63. Whilst we appreciate the difficulties that arise through sudden expansion and the limitations imposed on the Northern Territory Administration in arranging the orderly development of Darwin by the requirement of annual budgeting and the other competing demands for money and resources, we believe that there is considerable room for improvement in the planning and execution of major works projects. This might well call for better co-ordination between the authorities concerned or changes in the administrative arrangements for handling the planning of the various elements of development but in the light of our experience with the recent references, it certainly does mean that steps should be taken to isolate and act on urban development proposals before they reach problem proportions.

64. In this respect, the Committee viewed with satisfaction the undertaking of the Northern Territory Administration witness that instead of referring each of the proposals for the engineering services for the four neighbourhood units of Dripstone to the Committee as separate references as was done with Casuarina, the development of the whole district is to be submitted as one reference. We believe this is a positive step which will not only allow the Northern Territory Administration considerably more flexibility in designing, programming and

constructing their engineering services and housing proposals, but will permit much closer attention to be paid to the other factors which need to be considered in the broad development context.

RECOMMENDATIONS AND CONCLUSIONS

65. 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.

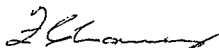
	<u>Paragraph</u>
1. THERE IS A SHORTAGE OF SERVICED RESIDENTIAL LAND IN DARWIN.	23
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		<u>Paragraph</u>
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9.	THE COMMITTEE RECOMMEND THE CONSTRUCTION OF THE WORK IN THIS REFERENCE.	48
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15.	STEPS SHOULD BE TAKEN TO ISOLATE AND ACT ON URBAN DEVELOPMENT PROPOSALS BEFORE THEY REACH PROBLEM PROPORTIONS.	63

Paragraph

16. THE COMMITTEE VIEWED WITH SATISFACTION THE
UNDERTAKING THAT THE ENGINEERING SERVICES FOR
THE FOUR NEIGHBOURHOOD UNITS OF DRIPSTONE ARE TO
BE SUBMITTED AS ONE REFERENCE.

64



(F.C. CHANEY)
Chairman.

Parliamentary Standing Committee on Public Works,
Parliament House,
CANBERRA.

21 August, 1969.

FOR SENATOR BRANSON

I present the report of the Parliamentary Standing Committee on Public Works relating to the following proposed work,

ENGINEERING SERVICES TO NEIGHBOURHOOD UNIT NO. 4
AT CASUARINA DISTRICT, DARWIN.

I ask for leave to make a short statement.

(WHEN LEAVE GRANTED)

The summary of recommendations and conclusions of the Committee is as follows:

1. There is a shortage of serviced residential land in Darwin.
2. The only authority which can provide any significant relief to the serviced land shortage is the Commonwealth.
3. The land servicing programme should be accelerated without delay.
4. Future land servicing programmes should be closely geared to the current rate of population increment.
5. There is an urgent need for the work in this reference.
6. The work should be undertaken in one stage rather than two.
7. Urgent consideration should be given to whether the Commonwealth is justified, in the present circumstances, in continuing as the sole developer of urban land.
8. A greater proportion of serviced lots should be made available for private housing construction.

9. The Committee recommend the construction of the work in this reference.
10. The estimated cost of the work when referred to the Committee was \$2 million.
11. It is disturbing that, so far, there has been no attempt to identify either the extent or nature of any of the arterial roads required after the Bagot Road/Stuart Highway access is saturated.
12. The Committee's 1967 and 1968 recommendations regarding an alternative arterial road access have been largely disregarded.
13. A good deal of congestion will be experienced in the Bagot Road/Stuart Highway access before a new road can be built.
14. A programme for the long term improvement of the arterial road network should be decided on quickly and work commenced systematically as development requires.
15. Steps should be taken to isolate and act on urban development proposals before they reach problem proportions.
16. The Committee viewed with satisfaction the undertaking that the engineering services for the four neighbourhood units of Dripstone are to be submitted as one reference.

26 August, 1969.