

TRANSPORT RESEARCH, PLANNING AND OPERATIONS WITHIN THE
DEPARTMENT OF THE CAPITAL TERRITORY

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ABSTRACT: *This paper sets out to explain (a) the role of the Department of the Capital Territory and the National Capital Development Commission in transport planning in Canberra and the difficulties which have arisen as a result of the dual responsibility for the overall planning task and (b) how the Department of the Capital Territory is attempting to reduce the communications gap which exists between the planning and operations areas within that Department.*

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INTRODUCTION

The Transport and Traffic Special Group of the Department of the Capital Territory is an unusual institution. Officers of this group, together with staff employed by the National Capital Development Commission, bear responsibility for the research and the planning of the transport task of Canberra, to ensure that land use planning, transport aims and the resources available to the transport sector are compatible. Officers of the Transport and Traffic Special Group are responsible for the operation of the Canberra Omnibus Service, in the unique Canberra environment, as well as all traffic planning and management.

THE CITY

Canberra is Australia's largest inland city, 310 kilometres from Sydney and 640 kilometres from Melbourne. Its current population of 190,000 is highly mobile, changing place of residence and place of employment within the A.C.T. and moving into and out of the Territory. Canberra's households have incomes above the national average (due to above average earnings and a high proportion of two income earners within the family). Educational qualifications are higher than in other metropolitan areas. Canberra has a very high car ownership ratio.

TABLE 1

CAR OWNERSHIP LEVELS IN CANBERRA, 1971

| Vehicles per domicile | Houses | Self- contained flats | Other private | Total | % |
|-----------------------------|--------|-----------------------------|------------------|--------|-------|
| 0 | 1,788 | 980 | 108 | 2,876 | 7.6 |
| 1 | 18,287 | 2,995 | 279 | 21,561 | 56.8 |
| 2 | 9,856 | 523 | 79 | 10,458 | 27.6 |
| 3 or more | 2,441 | 106 | 20 | 2,567 | 6.8 |
| Not stated | 324 | 99 | 47 | 470 | 1.2 |
| | 32,696 | 4,703 | 533 | 37,932 | 100.0 |

Source: 1971 Population Census results
Australian Bureau of Statistics

TABLE 2

MOTOR VEHICLE REGISTRATIONS AND LICENSED DRIVERS (1965-1974)

| Year | Private Cars | | Licensed Drivers | |
|------------|--------------|------------|------------------|------------|
| | No. | % Increase | No. | % Increase |
| 1965 | 26,864 | 13.1 | 44,270 | 9.8 |
| 1966 | 31,184 | 13.9 | 49,987 | 11.4 |
| 1967 | 34,649 | 10.0 | 56,250 | 11.1 |
| 1968 | 38,946 | 11.1 | 62,300 | 9.7 |
| 1969 | 43,331 | 10.1 | 68,379 | 8.9 |
| 1970 | 49,061 | 11.7 | 77,679 | 12.0 |
| 1971 | 55,554 | 11.7 | 89,697 | 13.4 |
| 1972 | 62,661 | 11.3 | 101,579 | 11.7 |
| 1973 | 71,635 | 12.5 | 112,478 | 9.7 |
| 1974 (est) | 78,594 | 8.9 | 127,894 | 12.1 |

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TABLE 3

CAR REGISTRATIONS PER CAPITA

| Year | 1965 | | 1971 | |
|------------------------------|-----------|----------|-----------|----------|
| City | Sydney | Canberra | Sydney | Canberra |
| Private cars | 505,000 | 27,000 | 690,000 | 56,000 |
| Population | 2,470,000 | 88,465 | 2,770,000 | 144,063 |
| Car registrations per person | 0.21 | 0.31 | 0.25 | 0.39 |

Source: Sydney data -- interpolated from SAIS Vol. 1.1.
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Canberra data -- NCDC Annual Report 1973-74

Unlike most other urban areas, Canberra is a planned city. The current plan, based on a Y concept, as opposed to radial and other plans, has gradually evolved from Walter Burley Griffin's master plan of 1912. The Y concept offers both advantages and disadvantages to the town planner but unfortunately there are considerable disadvantages to the public transport planner and operator.

The Y plan, combined with high mobility, low density residential areas and decentralization of employment means that travel patterns, even for the journey to work, are exceptionally diverse, and that direct cross-town public transport journeys, e.g. Woden to Belconnen, are uneconomic because of low catchment en route.

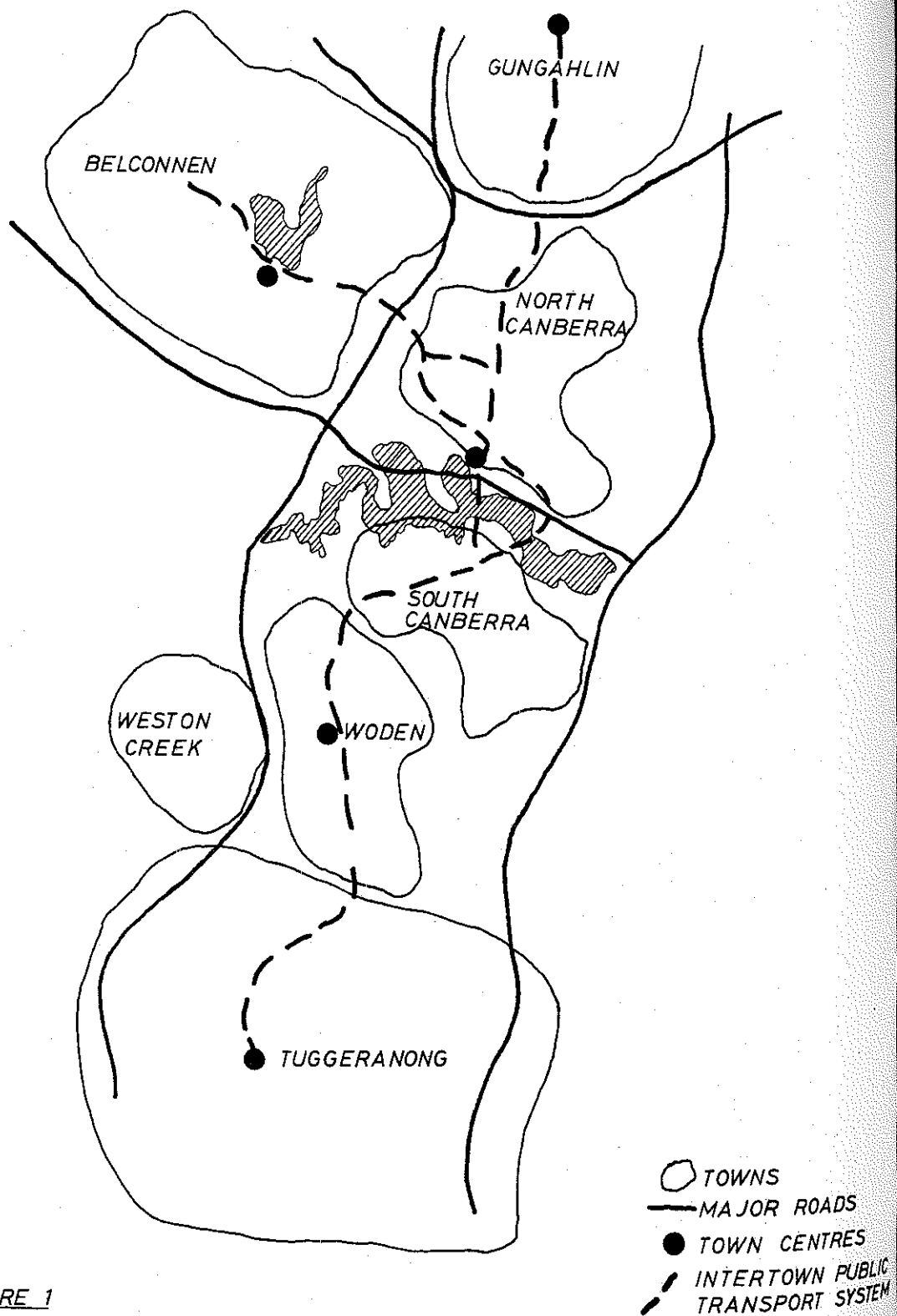


FIGURE 1
GENERAL PLAN CONCEPT

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BACKGROUND

The Canberra Bus Service will be fifty years old on 19th July, 1976, but it was not until 1972 that a transport policy and planning area was created within the Department. Prior to this, transport planning was undertaken solely by the National Capital Development Commission (NCDC), the organisation responsible for general planning and construction of major works in Canberra.

Whilst NCDC received some input and comment from the transport operations area, this comment from the end user was of marginal value and had minimal impact, because of insufficient resources, information and skills within the operations area. In other words, during this time NCDC planning was not evaluated by the end user.

Canberra thus developed as a car orientated city. Employment and retail centres were designed for car access. Suburbs and street patterns were designed primarily for cars, and road network was structured to restrain traffic moving freely through suburbs. This created difficulties for the public transport operator in providing a service to a high proportion of residences that offered reasonably direct bus routes between the suburbs and the city. A conflict of interest existed, but as public transport had been relegated to a minor role in the transport task - that of carrying disadvantaged persons - it perhaps mattered little that the bus routes were circuitous. The Canberra Bus Service became the butt of many a joke - did you know that the longest distance between two points is a Canberra bus route? Internal planning, facilities and operations were of a low standard, reflecting the low status of Canberra's public transport. In recent years a noticeable change in priorities has occurred.

As mentioned earlier, a Transport Policy and Planning Branch was established within the Department in 1972. This Branch has made significant contributions to the integrated planning of Canberra.

In 1974 the Department of the Capital Territory and NCDC acknowledged the problems Canberra would soon face should existing priorities be continued. Car usage, particularly for the journey to work, was growing at a rate faster than roads could be built or parking demand met. The alternatives were clear - increase the role of public transport, or face the destruction of the city's character through congestion, pollution and parking blight.

In July 1974 the Department of the Capital Territory and the National Capital Development Commission agreed on a transport policy, based on the following objectives:

1. Develop transport facilities which best serve the complex pattern of activities necessary to the well-being of the community.
2. Encourage the development and use of a high quality public transport system.
3. Provide for freight and essential private car movements at minimum cost to the community, and with minimum impact on the social and physical environment.
4. Promote public safety and amenity, and the conservation of resources.
5. Ensure public understanding of, and support for, the transport policies developed.

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The major elements of this policy, to be implemented within the framework of the Y plan, were defined as follows:

1. The early build-up of new employment centres adjacent to public transport terminals will continue so as to progressively reduce the need for excessive travel. More medium density housing will be constructed close to employment centres and along major public transport routes.
2. Conflicts between pedestrians and vehicles will be minimised by the construction of time-and-space-segregated walkways. Traffic-free pedestrian precincts will be extended in town centres.
3. Cycling will be promoted as a transport mode by the construction of a metropolitan cycle path system serving educational, work and recreational needs. Priority of construction of individual sections will be determined by safety and functional considerations.
4. Local bus services will be improved through the provision of frequent, attractive and reliable services which minimise waiting and travel times for all users.

Where appropriate, public transport will be given priority of movement over private transport on busy roads and at junctions. A bus stop will be provided within easy walking distance of every household.

5. An express inter-town public transport system will be developed operating on a reserved right-of-way as necessary. Its stations will cater for interchange with pedestrian, feeder bus, taxi and park-and-ride traffic movements.
6. Growth of the flexible working hours system will be encouraged to promote more efficient usage of the transport system, especially public transport.
7. Freight distribution centres will be planned and developed so as to optimise the efficiency of distribution and to minimise the intrusion of local and interstate commercial vehicles on residential and town centre streets.
8. The extent, location and design of the highway network will be such as to minimise energy consumption, provide a high level-of-service for off-peak freight and private car usage, and protect the natural and social environment. Major roads will be developed to provide for inter-suburb, town bypass and town access movements with the minimum of traffic intrusion on to residential streets.
9. The unnecessary use of the private car for commuting purposes will be discouraged. Any shortfall in peak period road capacity or parking space will be offset by the provision of improved public transport facilities. The provision of car parking in the main centres will be maintained at the minimum necessary to

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protect the environment and promote public transport usage.

10. Priority of parking space location and provision will be given to short-stay parkers, so that the parking needs of shopper, visitor and business car users will be met within reasonable walking distances of the main retail and business centres.
11. All public parking in the main centres will be strictly controlled, and a pricing mechanism will be used to maintain the integrity of the short-stay parking facilities.
12. The public transport system will be operated in an efficient and cost-conscious manner, while providing a high level of service to all sections of the community. It is recognised that the public transport system fulfils a social need, and that its provision and successful operation may require continued financial subsidy.

In other words, to overcome the problems previously identified, the role of the private car for the journey to work must be downgraded, with matched upgrading of public transport. Vehicle volumes, parking, road capacity etc. must be planned in an integrated approach to all vehicle movements in Canberra.

Two major sets of relationships are of interest in this paper and must be examined: relations between the Department and NCDC, and also between the planning and operating areas of the Department.

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PLANNING LIAISON BETWEEN THE DEPARTMENT OF THE CAPITAL
TERRITORY AND THE NATIONAL CAPITAL DEVELOPMENT COMMISSION

The planning role of the two organisations differs, inasmuch as NCDC is concerned with the panorama, and the Department of the Capital Territory with specifics. Nonetheless the two must work in close cooperation to achieve efficient, balanced planning from aesthetic, land-use, transport and operational considerations.

Although past planning was unbalanced an attempt has been made to rectify this by the creation of the Departmental planning area, and the formulation of a jointly agreed policy to guide planning.

The net result is increased perception, by the Department, of the overall planning aims for Canberra, and increased NCDC awareness of the public transport and other city management responsibilities of the Department.

For example, Departmental officers are now involved at the earliest stages of town suburb design. In the new towns of Tuggeranong and Gungahlin road patterns have been designed to facilitate the provision of public transport, to ensure a high level of service in the future. Shopping centres, schools etc. are sited and designed with reference to easy access by bus patrons.

Forward planning has not stopped at this level. In recognition of technological advances, there is a reserve for a mass transit linehaul system along the intertown spine. An evaluation of mass transit, initiated jointly by the Department of the Capital Territory and NCDC, is approaching completion and subsequent detailed studies will be commenced

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in the near future.

The Department of the Capital Territory and NCDC work closely together on the transport planning and construction of major capital works in Canberra. Liaison between the two bodies is undertaken in three major ways:

- (i) NCDC presents plans and invites Departmental comment;
- (ii) the project is jointly undertaken by both DCT and NCDC; or
- (iii) DCT has representation on NCDC Steering Committees.

In addition the Departmental transport planning area has created a Liaison Officer position to expedite, inform and supplement formal channels.

Of the above forms of cooperative effort, the greatest value has come from method (ii), where the project is jointly undertaken. Steering Committees are reasonably successful, but it has been found that where DCT is treated by NCDC as a client the Department has difficulty in ensuring that the Commission clearly understands client needs.

The main problem lies in the differing conceptual approach of a specialised planning body and an operation orientated planning body. For example, problems have arisen, associated with the provision of roads and bridges at a date appropriate for the extension of the bus service; suburb planning to enable direct bus routes; and the timely provision of depot, interchange and terminal facilities. These problems

have of course been compounded by the fact that NCDC must order priorities against competing demands for scarce investment cash.

PLANNING/OPERATIONS - THE COMMUNICATIONS GAP IN THE
DEPARTMENT OF THE CAPITAL TERRITORY

A communications gap can develop between a transport operations area and a transport research area, (a) as a result of a lack of understanding by the operations section of the long-term objective of the planning schemes and (b) lack of understanding by the planning personnel of the day-to-day operating problems in a transport undertaking.

One great deficiency in many passenger transport organisations is the absence of an adequate management information system. Research is dependent upon statistics: the requirement to collect and collate routine statistical data generally falls upon the operations area. The imposition of this additional burden on operations sometimes creates conflict between research and operations areas.

Although public transport is a rival of the private car in a fiercely competitive passenger transport market, few statistics are collected by individual operators relating to that market and the undertaking's performance within that market. Although many transport undertakings provide an excellent timetable service for their community, little effort, and in some instances, no effort, is made by management to sell their product - the bus service. A traditional outlook of many managements is to provide the service and leave it at that. There is no marketing division. The potential customer is left to scout around and find out when and where the service operates through phone calls or

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interrogation of bus drivers and pedestrians. Transport research staff can assist operations personnel to alleviate what is one of the greatest single deficiencies of public transport - the absence of customer information.

When the policy and planning cell was created in the Department of the Capital Territory, there was an absence of statistical information, apart from a few unrelated accounting figures. This was a direct result of the evolution of a small bus service, which for many years could be likened to a family run country town bus service, where a large number of the personnel employed had been intimately associated with its operation for many years.

As a result of the change in government policy towards transport, and the increased emphasis being placed upon the movement of persons by bus, there was a greatly increased demand for statistical data. For example, it has been necessary for the policy and planning cell to know how many passengers, by category of person, travel on various bus routes in the peak and off-peak periods. The operations area did not have access to such information. Indeed up to this point in time it had little need for such information.

In many cases a division has developed between the planning and operations areas which has not engendered trust on either side. The policy and planning cell often recruits persons from outside the operations area, persons with a different disciplinary background from those who have grown up with a practical transport experience. The lack of training and appreciation of the role of others often encourages a suspicious reserve giving rise to questioning the motives of persons seeking information.

The almost continuous one-way movement of requests for information originating in the planning area does little to reduce the level of questioning by operations staff of the motives of the planners. The planning and policy cell requires a broad flow of information which can only be derived from current operations; operations personnel very rarely call for information from the planners whereas planners invariably require the immediate supply of information from the operations area. Whilst operations may not have the relevant information to supply immediately a more serious problem is operations' day-to-day concern with matters such as liaison with the union, educational bodies and the general public which causes operations management to have little time available for the extraction of ad-hoc statistics. The challenge is to appreciate the role of the other persons in the organisation as a whole.

Of course the situation which sometimes exists in Canberra is not unique in the transport world; similar examples could be collected from many other cities.

Much closer liaison between operations and research, perhaps involving a weekly meeting of some senior members of the operations and policy and planning staff to review current requirements for data and developments in the immediate future in each of the respective areas, may go a long way to improving the communication system and to explaining each other's area of responsibility. As the transport organisation grows to meet the increasing demand placed on it for the provision of services the best liaison will be essential between planners and operators. One cannot allow mutual distrust to continue.

Current deficiencies in the availability of statistics data in Canberra will, it is envisaged, be reduced

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by the introduction of a management information system, the implementation of which is the responsibility of the policy and planning cell.

Following the introduction of the system the policy and planning cell will be then able to attempt to monitor innovation and service alterations whilst operations management will have greatly improved control of bus operations.

The functional and organisation framework of the transport undertaking can contribute towards the creation of the communications gap between operations and research. For example, at what stage should the research staff complete its task and hand over the project to operations staff? The Department of the Capital Territory Operations Section incorporates a review and development sub-section - its principal responsibilities being to continually review timetables and shifts, ensuring optimum utilisation of resources, routine liaison with other authorities such as traffic and police regarding routing of buses and placement of bus stops. Liaison with the NCDC is also undertaken by the Review and Development Sub-Section as a direct result of the latter area's responsibility to introduce bus routes to service new residential and employment zones within the city. It is that latter region where the demarcation between planning and operations becomes somewhat tenuous. As mentioned earlier the planning cell of the Department of the Capital Territory employs an NCDC Liaison Officer and it is the specific duty of that officer to liaise with the Commission to ensure that services are provided for all users in all parts of the city and suburbs and that facilities for the convenience of the operations section are provided at the appropriate place at the appropriate time.

Liaison between planning and operations in this field of work is difficult and the Department is currently examining alternative ways and means of organising the respective responsibilities of planning and operations. One of many solutions to this problem suggests that the total framework be re-distributed on the basis of a three part dissection.

- (i) Operations Review and Development Sub-Section could retain the responsibility for the day-to-day review of the utilisation of manpower and vehicles involving a continual appraisal of timetables and shifts. Review and Development could also retain its responsibility for routine liaison with traffic authorities.
- (ii) The short-term planning aspects of Review and Development could be absorbed by the Short and Medium Term Planning Section within the Policy Branch. Representatives of the operations area would be required to work with the planning personnel on specific projects to oversight the practical aspects of planning depots, interchanges, bus routes, etc.
- (iii) Long-term planning (ten years plus) could be separated within the planning and policy branch into a separate cell.

It is perhaps a basic weakness of the entire transport industry that research is often undertaken in a vacuum with little liaison with personnel engaged in operations, persons who in most cases have had years of practical experience in operating a bus service, often under very trying conditions.

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It has been recognised within the Department of the Capital Territory that the line of communications between research and operations must be strengthened and much work is currently being undertaken by the Department in an attempt to lessen the communications gap between operations and planning.

This paper has identified the interaction, activities and problem areas existing in Canberra in the transport task. There are discernible levels in the organisation of the transport planning and operations function. Each level has a unique contribution to make and, if each contribution is successfully coordinated, the potential exists for Canberra to have rational land and transport uses integrated with operation and control capabilities. Sadly, the ideal situation seems unattainable. On a brighter note, progress is being made to reduce the extent of these deficiencies. Already some improvement in the communications between the Commission and the Department and between various areas within the Department has been achieved in recent months.