EIS 318

AA052368

Eastern distributor, City of Sydney : environmental impact assessment report pursuant to clause 64 of the Environmental Planning and Assessment Regulation 1980.

EASTERN DISTRIBUTOR

CITY OF SYDNEY

ENVIRONMENTAL IMPACT ASSESSMENT

REPORT

pursuant to Clause 64 of the Environmental Planning and Assessment Regulation 1980

NOVEMBER, 1985

Department of Main Roads, New South Wales

EASTERN DISTRIBUTOR

CITY OF SYDNEY

ENVIRONMENTAL IMPACT ASSESSMENT

REPORT

pursuant to Clause 64 of the Environmental Planning and Assessment Regulation 1980

NOVEMBER, 1985

Department of Main Roads, New South Wales

EASTERN DISTRIBUTOR

CITY OF SYDNEY

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

SECTION 112 DETERMINATION

Having examined and considered the Environmental Impact Statement and all of the representations made, and being satisfied that measures will be incorporated in the design and/or undertaken during construction to eliminate or reduce the identified detrimental effects on the environment, I have decided to adopt the Proposal indicated on the exhibited Environmental Impact Statement, and to proceed with construction, subject to various modifications described in Section 2 of the Assessment Report.

Commissioner for Main Roads
New South Wales

TABLE OF CONTENTS

PAGE

DETERMINATION

TABLE OF CONTENTS

CONTENTS PAGE

CONTENTS

LIST OF FIGURES (FOLLOWING PAGE 12)

PART A

INTRODUCTION AND MODIFICATIONS TO PROPOSAL

1.0 INTRODUCTION

The Department of Main Roads (DMR) proposes to construct the Eastern Distributor, a twin tunnel arterial road scheme, from the Cahill Expressway in Woolloomooloo to Drivers Triangle at Moore Park.

The proposal is subject to assessment under Part V of the Environmental Planning and Assessment Act, 1979. The DMR being the Determining Authority, an Environmental Impact Statement (EIS) for the Proposal was prepared according to requirements set out in that Act and its Regulation and was placed on public exhibition from 12th August, 1985, to 20th September, 1985. The summary of the EIS is presented in Appendix A.

This Assessment Report has been prepared pursuant to Clause 64 of the Environmental Planning and Assessment Regulation, 1980, and in response to 180 public submissions received during and after the EIS exhibition period. Submissions were received from a variety of sources including Government Departments, Statutory Authorities, private organisations and individuals. The nature of submissions also varied and included petitions and form letters. A list of submissions is presented in Appendix B.

Prior to the EIS, a brochure describing the Proposal was distributed to residents in the corridor, to Government Departments and other organisations in May 1985, with a request for comments. Many organisations, particularly those with little comment and those indicating support for the Proposal, did not make a further submission on the EIS. Those organisations and individuals who made a submission in response to the brochure, but not to the EIS, are listed in Appendix C.

In formulating the Assessment Report each submission has been examined and the issues raised have been identified and categorised. The report presents each issue and follows it with a response to that issue. For clarity, the issues are grouped under headings of Design, Traffic and Transportation, Social and Environmental, Economic, and Other Issues.

As a result of the examination of submissions and further investigations conducted by the DMR subsequent to the EIS a number of modifications have been made to the Proposal. These modifications are described in Section 2 of this report.

It is considered that the modifications to the Proposal described in Section 2 will reduce the detrimental effects of the Proposal on the environment as identified in the EIS.

2.0 PROPOSED MODIFICATIONS

2.1 INTRODUCTION

This section presents proposed modifications to the Eastern Distributor Proposal described in the EIS. Some of these modifications are in response to issues raised by the public and documented in the following sections of this report. Others are the result of more detailed investigations conducted by the Department following the publication of the EIS.

The modifications include a number of measures to reduce detrimental effects of the Proposal as identified in the EIS or in public submissions.

It should be noted that the detailed design of the project has not yet been completed (December 1985). Further modifications may become necessary, and further measures will be incorporated to reduce adverse impacts where practicable.

2.2 STAGE 1

2.2.1 Palmer Street (Figure 1 of this report).

It is proposed that the alternative arrangement for Palmer Street in Stage 1, described in Fig. 5.7 of the EIS, be adopted. This layout deletes the ramp to William Street included in the initial Proposal (see Fig. 2.15A in the EIS) and retains the use of Palmer Street for traffic turning left and right at William Street. The kerbside lane will be retained for parking. The buildings on the eastern side of Palmer Street will still be required to accommodate the proposed Stage 1 underpass of William Street but the alternative layout has the advantage of reducing the amount of roadway to be built in Stage 1. The residual area between the tunnel approach road and the rear of properties facing Bourke Street will be used as a work site for Stage 2 construction.

2.2.2 Cathedral Street (Figure 1 of this report).

It is proposed that Cathedral Street be closed during Stage 1 on both sides of Palmer Street. The pedestrian overbridge now proposed at this location, designed to cater for Stage 2, will be commenced during Stage 1 (see Section 2.3.2 below).

2.2.3 **Underpass under William Street** (Figures 1 and 2 of this report)

It is proposed that the underpass under William Street be reduced from three lanes to two. This is compatible with the modification to the width of the Stage 2 and 3 tunnels now proposed to be two lanes wide (see Section 2.3.3 below). The two lane underpass of William Street will be adequate for traffic needs and will reduce the width of roadway to be built. It will need to widen to three lanes as it approaches Stanley Street to provide for slower vehicles on the incline.

2.2.4 **Stanley Street** (Figure 2 of this report)

It is proposed that the alternative layout for Stanley Street shown in Fig. 5.8 of the EIS, be adopted. The main advantage of this layout is to increase the residual area of land on the north-east corner of the Stanley/Palmer intersection. The size of this area may be critical to the construction of the Stage 3 tunnel which will require adequate working space. It will also improve traffic flow around the S-bend during Stages 1 and 2. No additional property is required. Another advantage of this layout is the ability to connect the underpass to the Stage 3 tunnel with minimal regrading of the road pavement or diversion of traffic. The whole area bounded by Palmer Street, Stanley Street and Wisdom Lane can be redeveloped after Stage 3.

2.2.5 **Turning Movements from South Dowling Street** (Figure 3 of this report

It is proposed that in Stage 1 new lane marking be provided for left and right turning lanes from South Dowling Street to Fitzroy Street (for traffic travelling north and south respectively). This will facilitate the flow of traffic along South Dowling Street itself and can be accommodated within existing boundaries by adjusting the eastern kerbline. It will not increase the flow of traffic into Fitzroy Street.

An additional exclusive left turn lane from Flinders Street into Moore Park Road will be provided by altering the lane marking between existing kerbs. On the southern side of Drivers Triangle, between Anzac Parade and South Dowling Street, an additional left turn lane will be provided by altering the lane marking and by a minor movement of the kerbline.

2.2.6 **Anzac Parade Memorial** (Figure 3 of this report)

The Returned Services League and Sydney City Council have agreed to the moving of the Anzac Parade Memorial. The Department will remove the Memorial and pass it on to Council which will then organise its restoration. It will later be replaced near its present location. It is also likely that one of the four gate posts near the Memorial will need to be removed. There is a possibility that Council might relocate all four gate posts after a similar restoration.

2.3 STAGES 2 AND 3

2.3.1 **Connection with the Cahill Expressway** (Figure 4 of this report)

Figure 2.14 of the EIS indicated the proposed layout of the connection between the Cahill Expressway and the Eastern Distributor. It comprised a signal controlled intersection with Sir John Young Crescent and Plunkett Street, plus an underpass from Cowper Wharf Roadway. Further traffic analysis has shown that this layout has certain deficiencies which require rectification. In particular, the signal controlled intersection would have insufficient capacity to accommodate the predicted volume of traffic and to allow the necessary right turn movements. Also, traffic entering the Cahill Expressway from Cowper Wharf Roadway would create a weaving problem with traffic turning off to Shakespeare Place.

It is proposed that traffic and pedestrian movement at the northern end of the Eastern Distributor be modified as follows (see Figure 4 of this report):

- a two-way underpass will be built under the existing Cahill Expressway to provide for traffic wishing to cross or to turn right on or off the Eastern Distributor; no traffic signals will be needed between the Expressway and the Distributor;

- the southern end of the Cahill Expressway will be shifted slightly to the east to accommodate a two-way connection between Sir John Young Crescent and the underpass; there will be no intrusion into the park.

- traffic to and from Woolloomooloo Bay and Garden Island will use the underpass and will not be required to use the northern end of Bourke Street; Lincoln Crescent will be narrowed to one lane to provide the southbound connection; the residual area will be landscaped; Plunkett Street will be closed;

- a pedestrian overbridge will be provided between Plunkett Street and the Domain footpath west of Sir John Young Crescent; it will also provide access to the west side of Palmer Street and the east side of Sir John Young Crescent; it may be possible to incorporate the eastern end of the overbridge into a redevelopment of the site on the southside of Plunkett Street (to be acquired for the Eastern Distributor).

2.3.2 **Pedestrian overbridge at Cathedral Street** (Figures 1 and 5 of this report)

It is proposed that a pedestrian overbridge rather than an at-grade pedestrian crossing be provided at Cathedral Street. This is mainly because traffic emerging from the northbound tunnel will not have sufficient warning of pedestrians crossing at Cathedral Street and a signal controlled crossing is considered to be unsafe in such a situation. It is also proposed because of the changes at Plunkett Street (see Section 2.3.1 above) which eliminate the traffic signals. The overbridge at Cathedral Street will be designed to be compatible with adjacent buildings, to be easy to use by pedestrians walking along Cathedral Street to or from the City, and to retain the view along Cathedral Street.

2.3.3 **Tunnel widths and alignments**

It is proposed that the tunnel widths be reduced from three to two lanes in both directions. This is considered to be adequate for traffic needs, and the reduced width will cost less to construct.

Horizontal and vertical alignments for the tunnels also change slightly (see Figs. 2.2 and 2.3 in EIS). Clearance is reduced to 4.6m to match the Cahill Expressway tunnel and the grade at the northern outlet is reduced from 8% to 6%. At Anzac Parade the grade and the height of the portal entrance is reduced slightly and the entrance to the Flinders Street portal is expected to be reduced from its current 12%. There will be no additional effect on property. The reason for these changes is to improve traffic conditions and to reduce construction costs.

2.3.4 Delroy Flats (Figure 5 of this report)

Further investigation of conditions at the entrance to the Stage 2 tunnel north of William Street has indicated that it will be necessary to demolish the block of flats (Delroy) on the northern side of William Street east of Palmer Street. This will affect about 45 tenants accommodated in the 28 dwelling units in Delroy Flats. Eighteen of the units are managed by the Housing Commission. The Commission is aware of the need to demolish the building (see Section 5.1 below).

This is because the building has been found to be prohibitively expensive to underpin and even then it is not certain that it could be underpinned without causing major structural damage. Even if successfully underpinned it is probable that the building would be demolished for redevelopment soon after the redundant County Road zoning is lifted and the DMR sells the property.

2.3.5 Cut and cover of Palmer Street

The EIS proposed "cut and cover" construction of the Stage 3 tunnel from the William Street underpass to Stanley Street, where bored tunnel would commence. As an alternative, Section 5.1 of the EIS described the possibility of extending the cut and cover section to near Burton Street. As a result of further geological investigation it is considered necessary to cut and cover this section, or to make the tunnel deeper. This latter option is not possible because of the entry gradient.

This work could progress in short lengths along Palmer Street, with the new deck reinstating the street for local access. In effect there will be a mid-block street closure moving progressively along Palmer Street, with à cul-de-sac on both sides. Vehicular access to property frontages will be denied only temporarily. After reinstatement of the road surface, the bulk of excavation will continue underneath and Palmer Street will revert to local use.

2.3.6 Possible Closure of Bourke Street (Figure 6 of this report.

An error has been made in Fig. 2.17A of the EIS: the indicated closure of Bourke Street north of Taylor Square cannot be implemented until Stage 3 as in Stage 2 it will be used for northbound traffic.

2.3.7 **Tunnel outlets to Anzac Parade and Moore Park Road** (Figure 7 of this report)

The southbound tunnel will terminate with two lanes emerging in Anzac Parade and one lane in Moore Park Road. The alignment of the exit to Moore Park Road shown in Figure 2.1 of the EIS has been modified to avoid a geological weakness known as The Great Sydney Dyke and to avoid several mature trees on the edge of Moore Park. The exit tunnel will now swing wider into the park, avoiding the trees, before emerging in the centre of Moore Park Road. This flat grassed area of Moore Park will be reinstated. The soccer pitches will not be affected. The exit to Anzac Parade will be adjacent to the median.

2.3.8. **Tunnel outlet to South Dowling Street** (Figure 7 of this report)

Underground, and to the north of the outlets described above, two lanes will diverge from the southbound tunnel into South Dowling Street. The portal will be on the eastern side of South Dowling Street, and will require an incursion of about 8 metres into Moore Park for a length of about 200 metres.

This area south of Drivers Triangle is unsuitable for driven tunnel, and the outlet will be constructed by cut and cover technique. This will require the demolition of the Frank Saywell Memorial Kindergarten on the corner of South Dowling Street and Moore Park Road. The kindergarten building is on leased Crown Land which is administered by the City Council as trustee. The kindergarten is attended by 60 children, about half of whom live in the nearby residential area. The site has been affected by "Proposed County Road" zoning for many years.

The Moore Park Local Environmental Study (1984) by the City Council recognised that the kindergarten is in a poor location because of heavy traffic and inadequate space. The study recommended that it be relocated to a vacant building in the Army Engineers' Depot off Moore Park Road. However, the recently announced proposal for a sports stadium to replace the Sydney Sports Ground may prevent this.

The Department will compensate the Kindergarten Union to the value of reinstating the kindergarten on an alternative site. The Department is currently investigating the availability of an alternative site, and this will require further investigation by the Kindergarten Union with assistance from the Department.

Immediately south of the kindergarten, as part of Councils' Moore Park Recreation Centre, there are netball courts which will be displaced by construction of the tunnel portal. The courts will be reinstated, either by making use of residual land on the kindergarten site after the kindergarten has been relocated, or by constructing a concrete slab over the tunnel portal.

2.3.9 Ventilation Towers

As discussed in Section 2.9 of the EIS, tunnel ventilation is being investigated as part of the pre-design studies.

Initial indications are that two towers of about 20 to 25 metres height will be required. The preferred location for the tower for the southbound tunnel is on the west side of Flinders Street at the intersection with South Dowling Street where a building will be acquired. The tower, measuring about 22m x 8m, will be set back from Flinders Street leaving the potential for redevelopment of the remainder of the site. The redevelopment will shield the tower visually.

The preferred location for the tower for the northbound tunnel is just north of Stanley Street. Measuring about 18m x 6m the tower could be incorporated into a new development on the residual land on the east side of Palmer Street (see Figure 2 of this report). Power distribution equipment could be incorporated into a two storey terrace-style development on the street frontage, designed to be visually compatible with the buildings across Stanley and Palmer Streets.

2.3.10 Tunnel emergency stairways

Emergency stairways will be provided at intermediate locations in each tunnel. Their locations are currently being investigated, but the following appear to be suitable for the southbound tunnel:

- in Berwick Lane (which already ends in a flight of steps) just north of Liverpool Street;

- on the vacant site on Flinders Street just south of Taylor Street, owned by the Department; the stair exit to the street, plus a proposed electrical transformer, could be incorporated into a commercial development of the site.

The following location appears to be suitable for the northbound tunnel stairs:

- on the vacant site of either 230 or 232 Palmer Street, just north of Liverpool Street; together with a transformer they will occupy most of one of these sites previously occupied by a house.

2.3.11 **South Dowling Street** (Figures 8 and 9 of this report)

Various options for South Dowling Street have been investigated in terms of reducing noise impacts, providing pedestrian accessibility from Surry Hills and Redfern to Moore Park and rationalising the intersection of South Dowling Street and Cleveland Street.

It is proposed that all arterial traffic should be able to use South Dowling Street, and the options which would divert traffic away from that road are rejected, for reasons given in Section 3.7 of this report.

Within South Dowling Street the Department is prepared to undertake some modifications to reduce the projected increase in noise impact and to make greater provision for pedestrians. Any such modifications will involve trading off various impacts, and therefore the Department cannot indicate a firm scheme at this stage. Two schemes are considered to be feasible and reasonable in terms of cost and impacts.

The first option for modification is to shift the northbound carriageway 2.5 metres to the east, and to reduce the median strip by an equal width (see Figure 8). The existing kerbside lane would be treated with footpath widening/tree planting in part, with parking on the remainder. The parking parts could be paved with blocks to extend the visual improvements of the tree planting. This modification would reduce the predicted noise increase of 2 dBA at the building facade by 1.2 dBA, ie existing noise levels of 76 dBA would increase to 76.8 dBA with this modification, compared with 78 dBA if South Dowling Street were unaltered (L10 18 hour noise levels).

To improve pedestrian and bicycle access to Moore Park an overbridge will be constructed at Parkham Street to replace the existing signal controlled crossing. Consideration will be given to a second overbridge possibly at Arthur Street. A new signal controlled crossing will be provided at Thurlow Street. Pedestrian facilities will also be retained or provided at the intersection signals at Moore Park Road and Cleveland Street.

The second option for modification is to shift both carriageways to the east by intruding into Moore Park by about 5 to 8 metres, and to provide an access road along the western side. As shown in Figure 9, a 4 metre wide median would be provided between the access road and the through carriageway. This separation would alter the future noise levels at building facades from an increase of 2 dBA to a reduction of 2 dBA below existing levels. The adverse impact of this scheme would be the loss of 5 to 8 metres of Moore Park, although the new median between the access road and the through carriageway could be planted with trees, and in due course an attractive avenue of trees could develop. This scheme would cost about $3M more than the first option.

It is proposed that these two options be further examined and discussed with the City Council and with local residents before a final decision is made on modifications to South Dowling Street.

2.3.12 Cleveland Street Intersection

At the South Dowling Street/Cleveland Street intersection it is feasible to accommodate the increased traffic by altering the signal phasing and lane configuration without affecting properties or Moore Park. On both legs of South Dowling Street there will be 3 lanes for through traffic plus 2 lanes for right turning traffic. On Cleveland Street (west) a right turning lane will be provided by adjusting kerb lines to accommodate the additional lane. On Cleveland Street (east), right turns will be prohibited.

2.3.13 Other measures to reduce detrimental effects.

Whilst not necessarily being modifications to the Proposal as described in the EIS, a number of measures will be incorporated into the design or the method of construction of the Eastern Distributor to reduce potential detrimental effects on the public. These will include the following.

(i) A landscape plan will be prepared, to include substantial planting of trees on residual parcels of land and to supplement existing street trees. This was indicated in principle on Figures 2.14 to 2.17 of the EIS. The area between the Cahill Expressway and the Art Gallery will not now be required for an on-ramp and will be landscaped. Substantial planting can also be achieved in the area adjacent to Lincoln Crescent (see Figure 4 of this report).

(ii) The rear of some houses facing Bourke Street and Kidman Terrace will be subjected to increased traffic noise, and appropriate fencing will be incorporated in the road design. Measures to reduce noise at houses in South Dowling Street are discussed in Section 2.3.11 above.

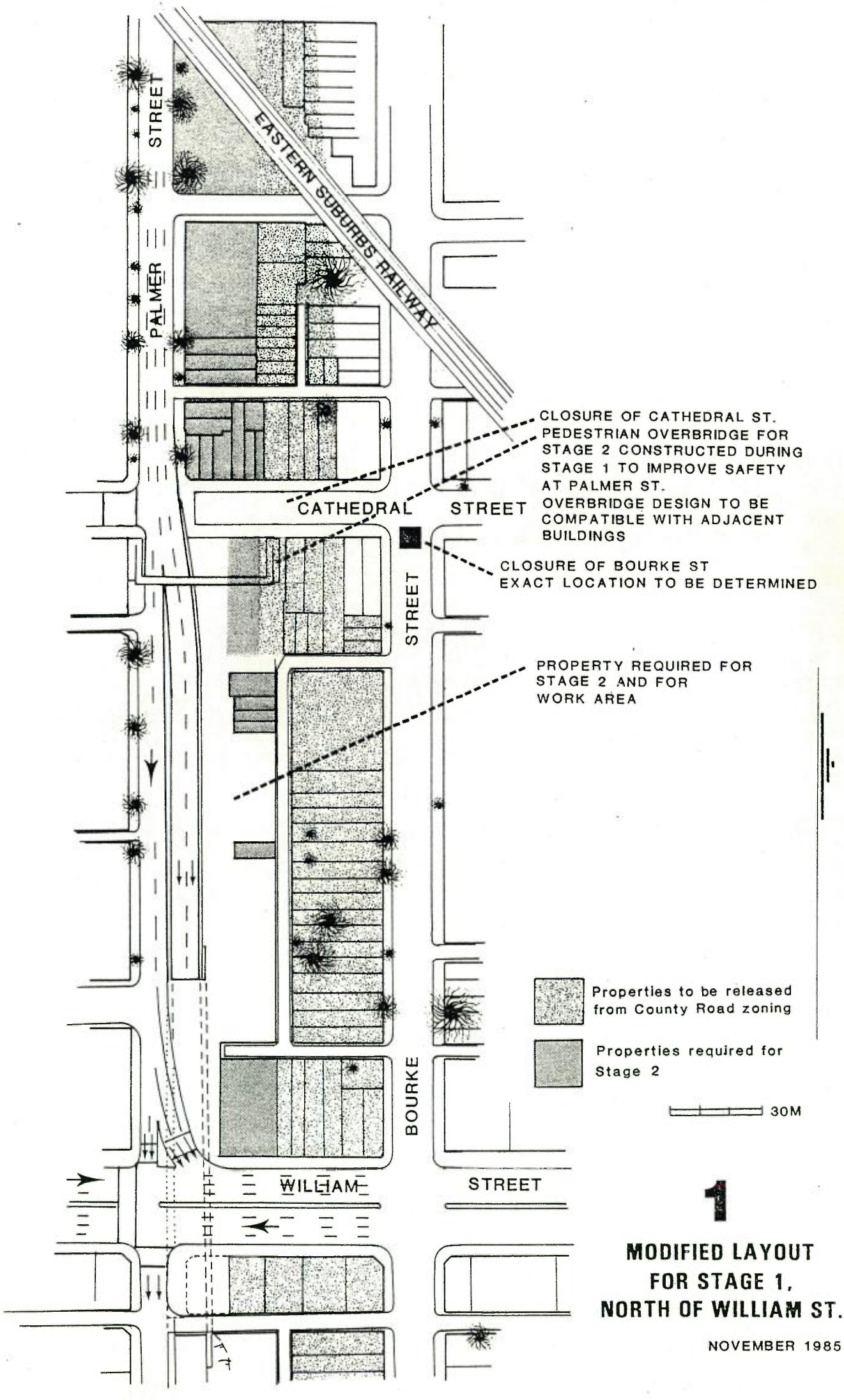
(iii) The EIS suggested several associated traffic management measures aimed at removing through traffic from streets such as Bourke Street and Baptist-Crown Street. Liaison will be maintained with the City Council with the objective of implementation at appropriate stages of completion of the Eastern Distributor.

(iv) A strategy for rehousing eligible displaced residents has been agreed with the Housing Commission and is described in Section 5.1 below.

(v) The EIS indicated that the removal of the County Road zoning from those properties not required for the Eastern Distributor could have an adverse effect on tenants.

The DMR will advise the City Council and the Department of Environment and Planning (DEP) of those parts of the existing County Road reservation which will not be required. The DEP has indicated a willingness to discuss appropriate zonings and local plan provisions with the City Council, and to assist with the re-zoning of the land.

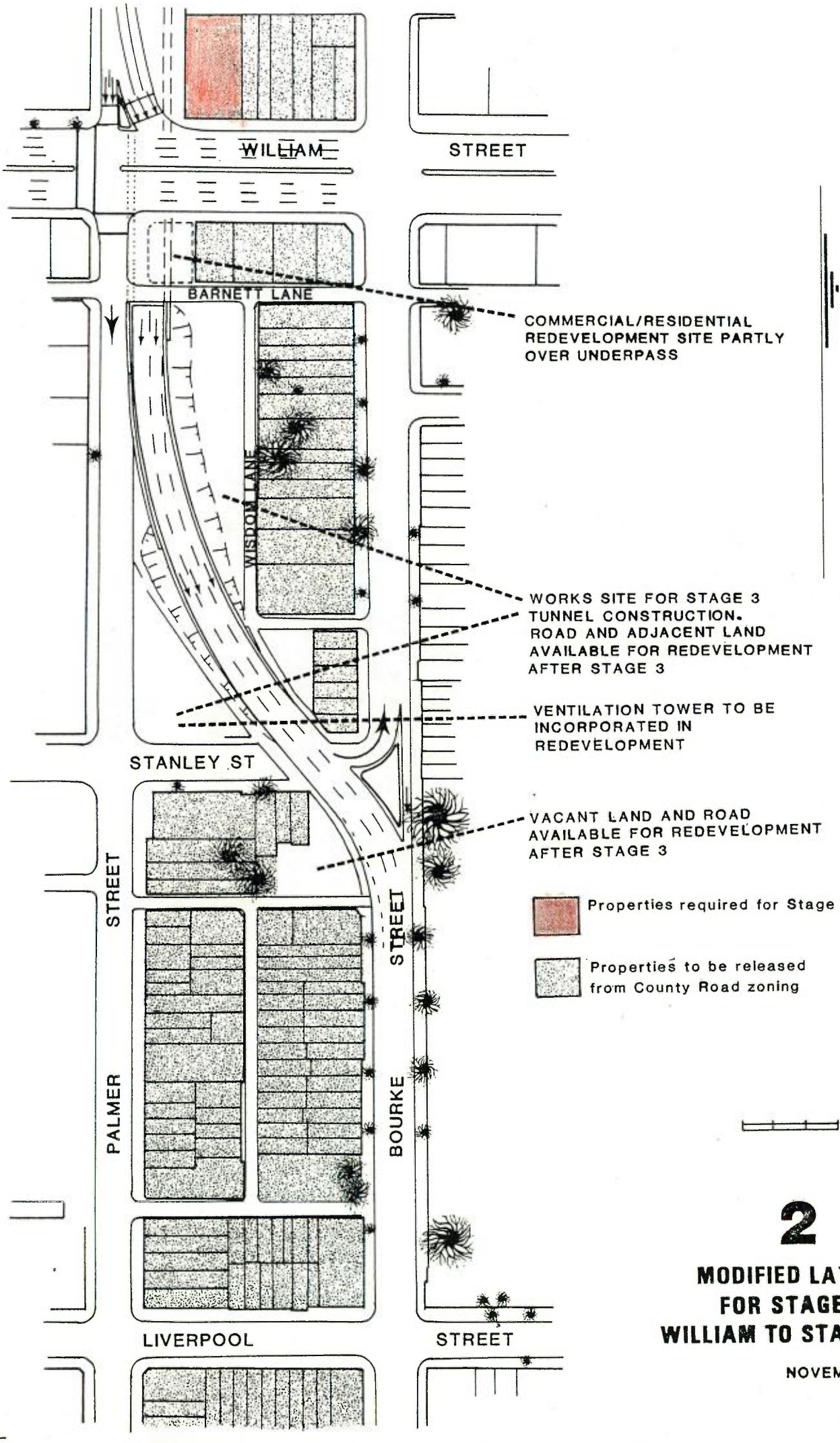
(vi) Liaison will be maintained with the City Council during the design of Stages 2 and 3 of the Eastern Distributor and during construction.



1

MODIFIED LAYOUT FOR STAGE 1, NORTH OF WILLIAM ST.

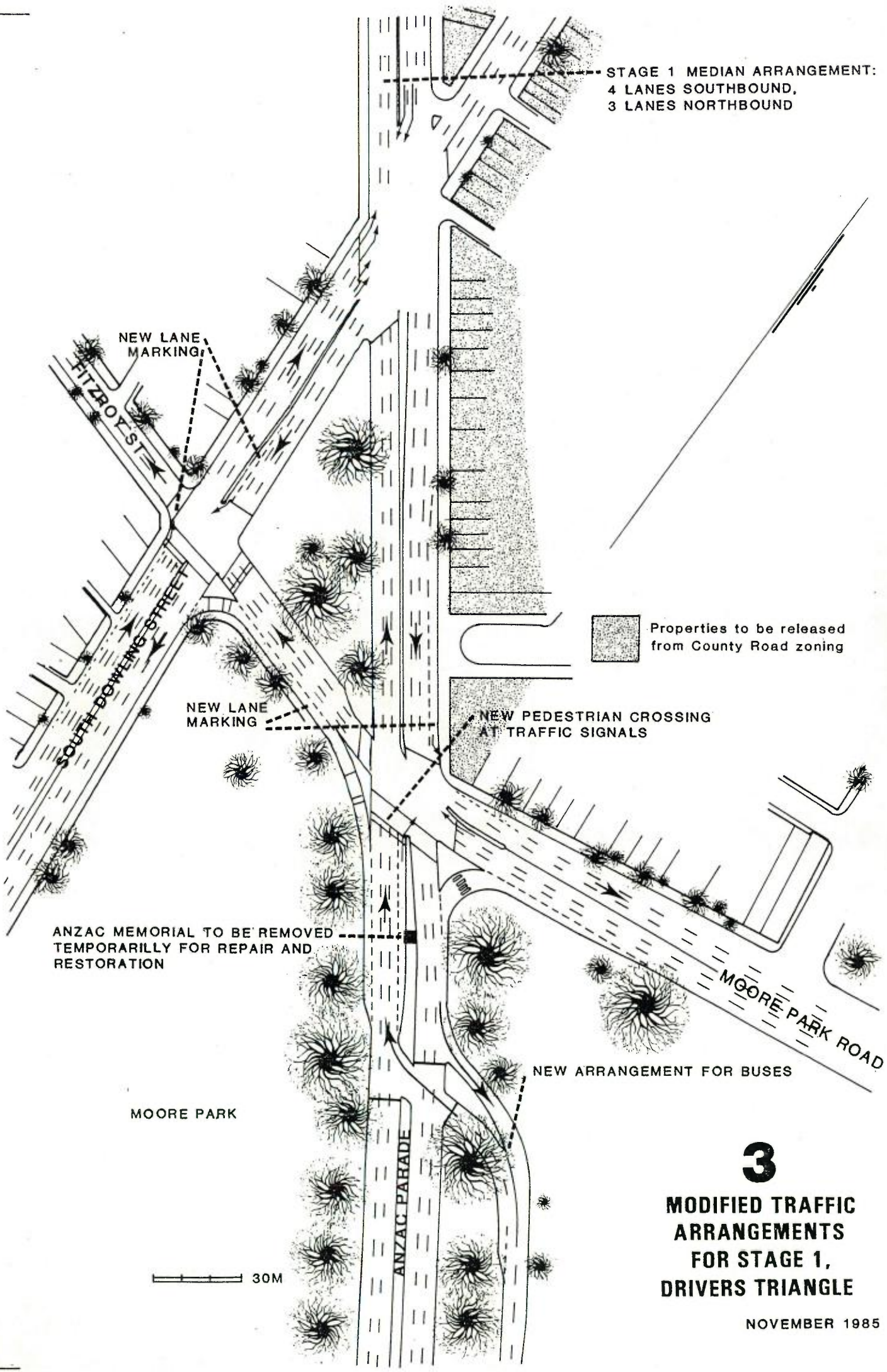
NOVEMBER 1985



2

MODIFIED LAYOUT FOR STAGE 1, WILLIAM TO STANLEY ST.

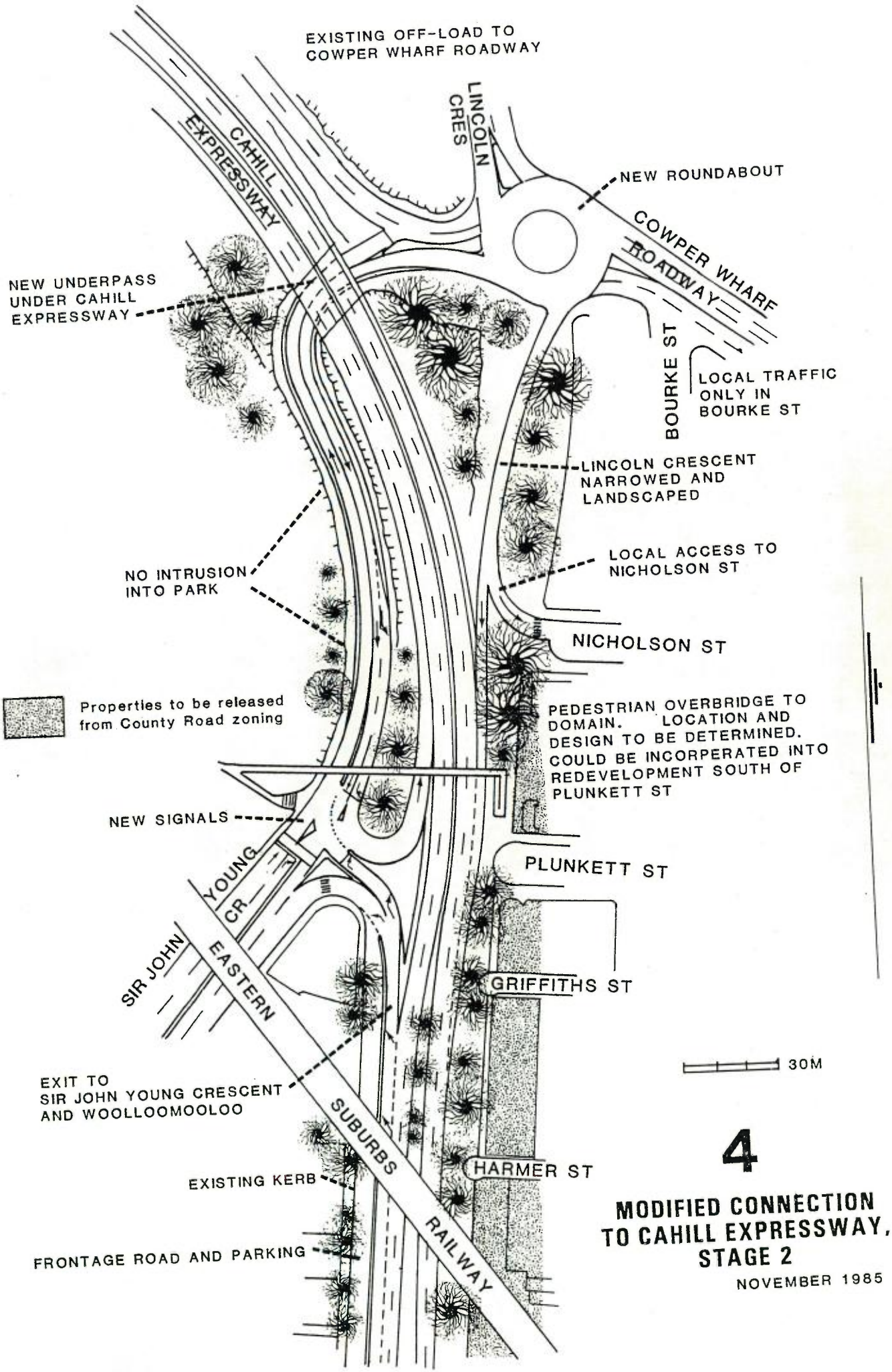
NOVEMBER 1985



3

MODIFIED TRAFFIC ARRANGEMENTS FOR STAGE 1, DRIVERS TRIANGLE

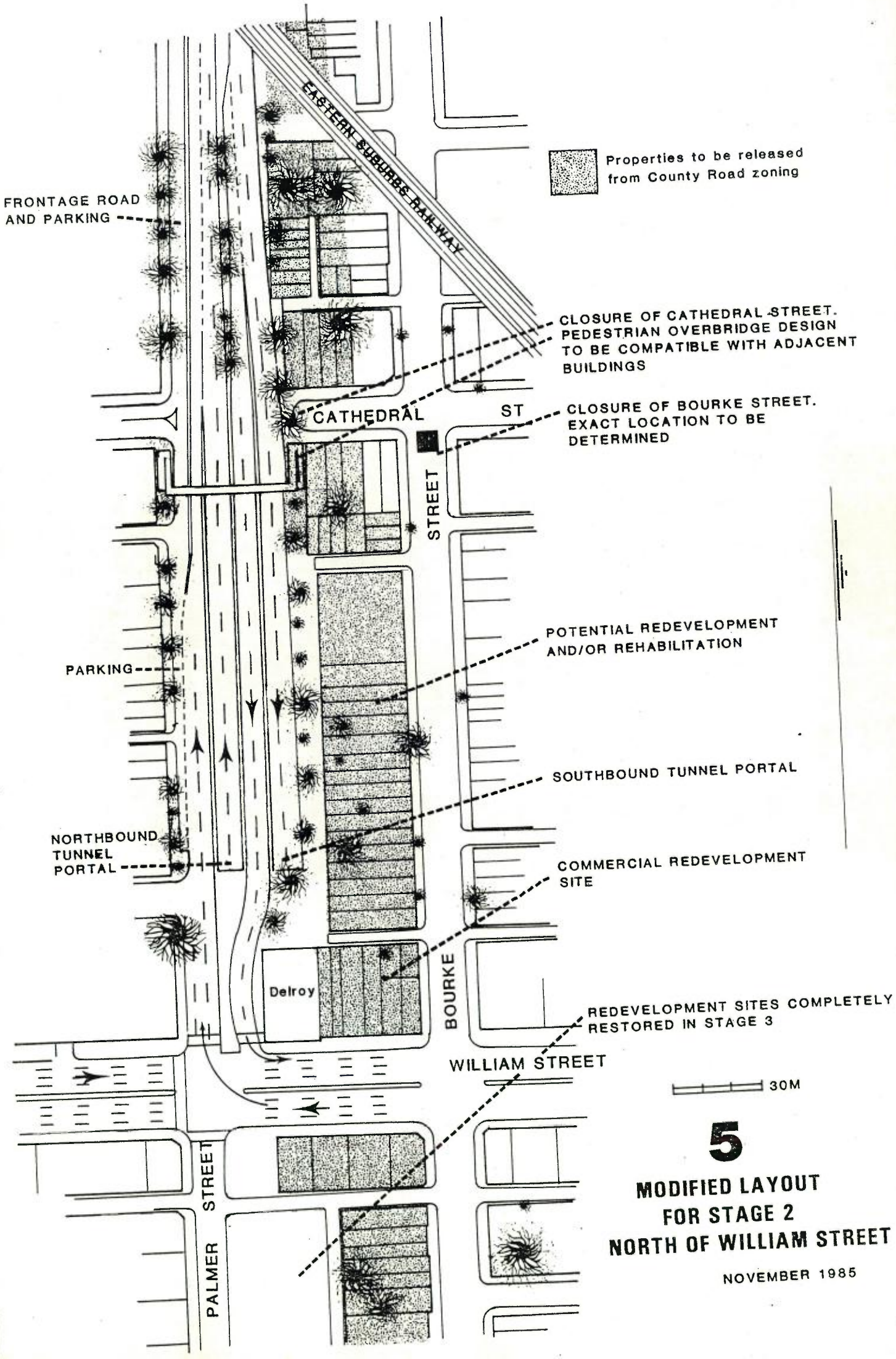
NOVEMBER 1985



4

MODIFIED CONNECTION TO CAHILL EXPRESSWAY, STAGE 2

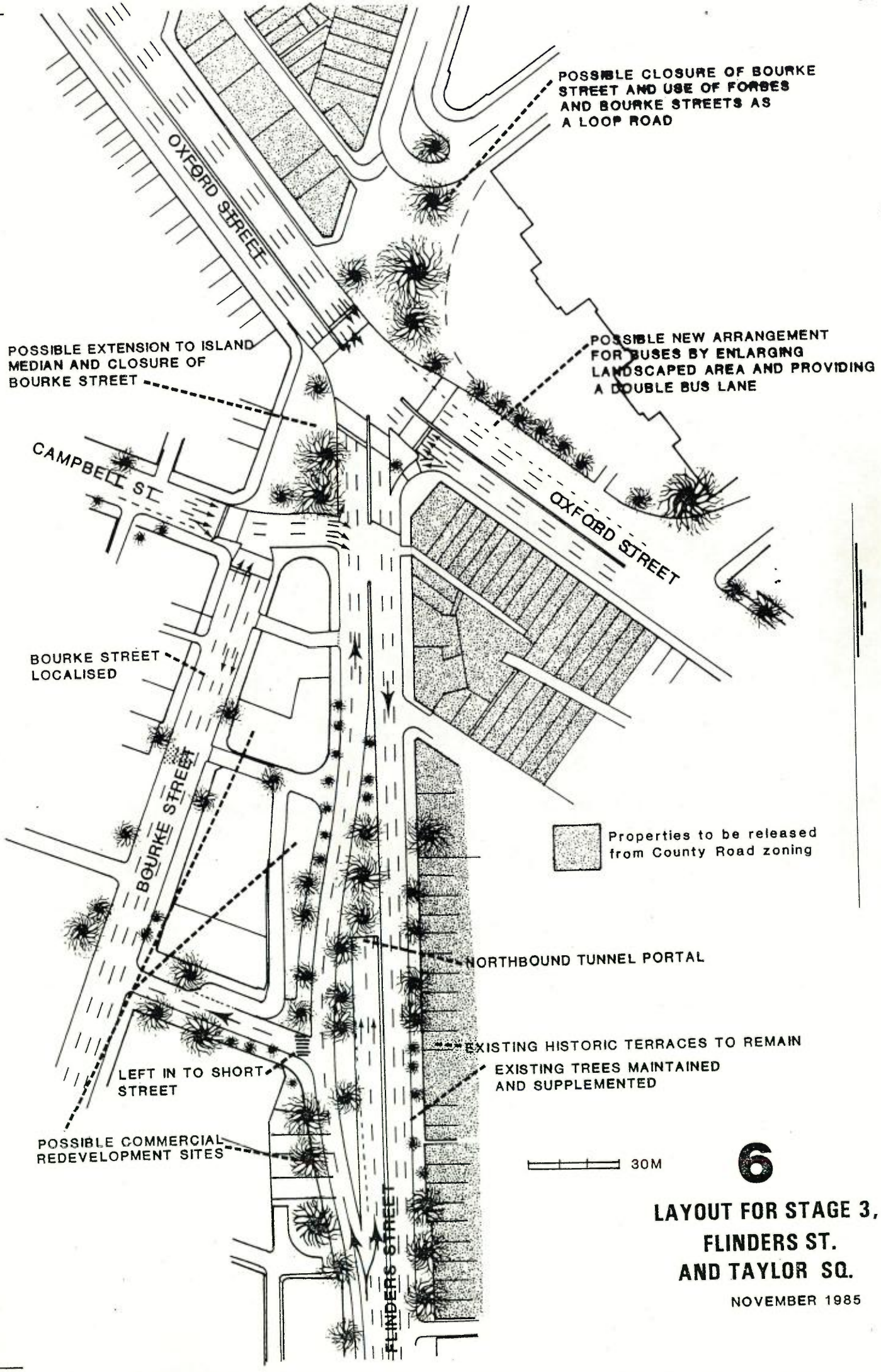
NOVEMBER 1985



5

MODIFIED LAYOUT FOR STAGE 2 NORTH OF WILLIAM STREET

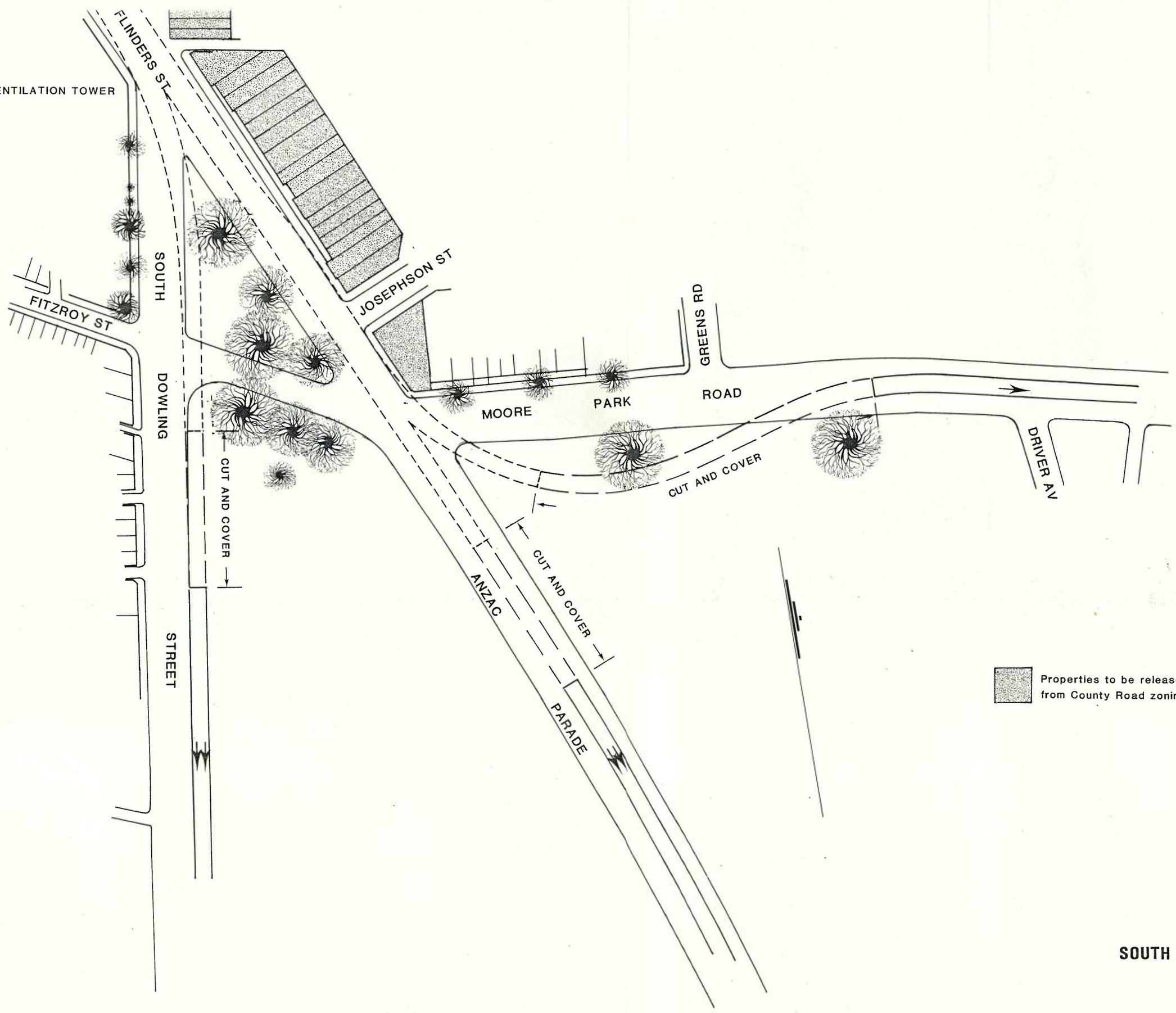
NOVEMBER 1985



6

LAYOUT FOR STAGE 3, FLINDERS ST. AND TAYLOR SQ.

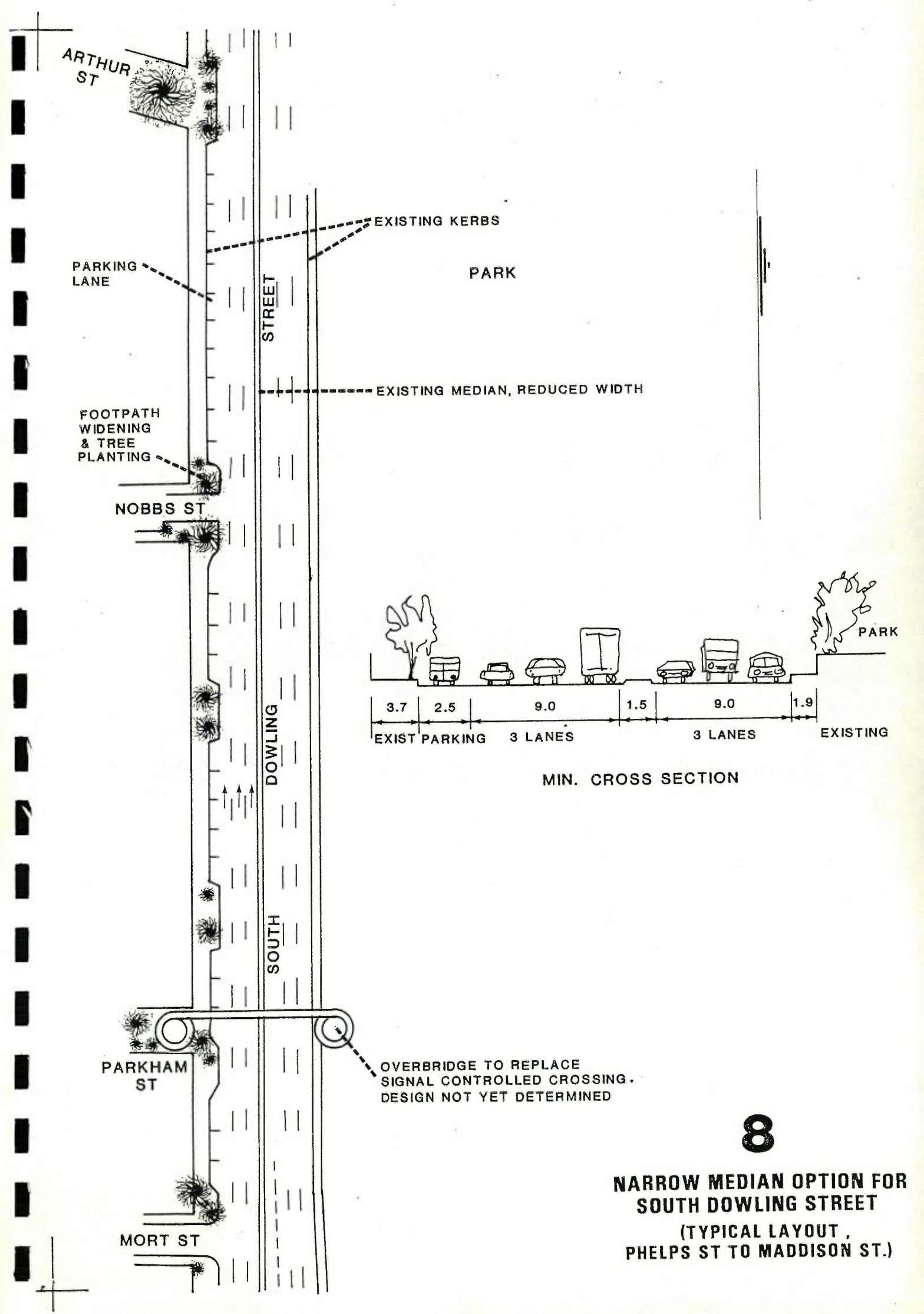
NOVEMBER 1985



7

SOUTH TUNNEL PORTALS STAGE 2

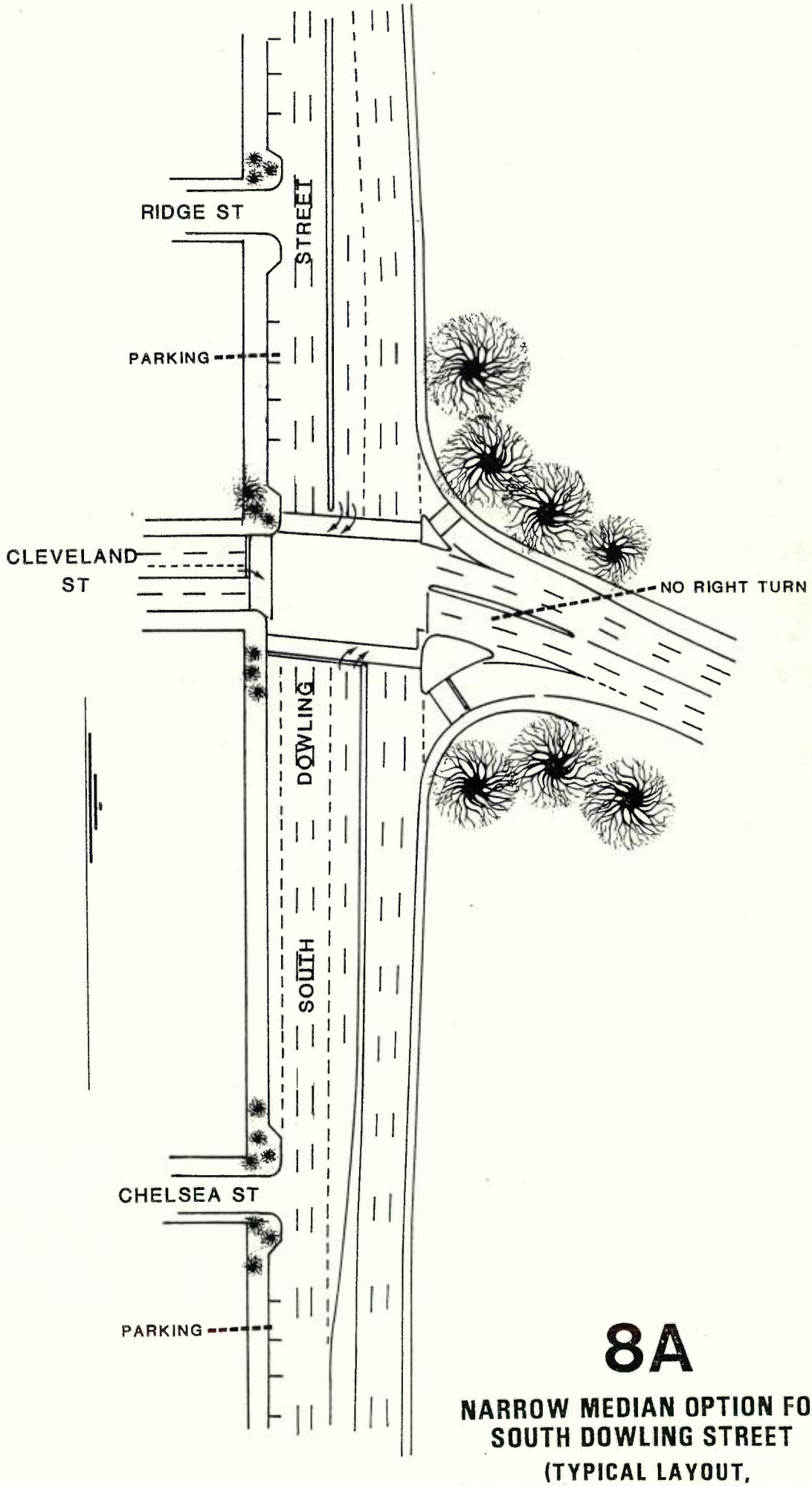
NOVEMBER 1985



8

NARROW MEDIAN OPTION FOR SOUTH DOWLING STREET

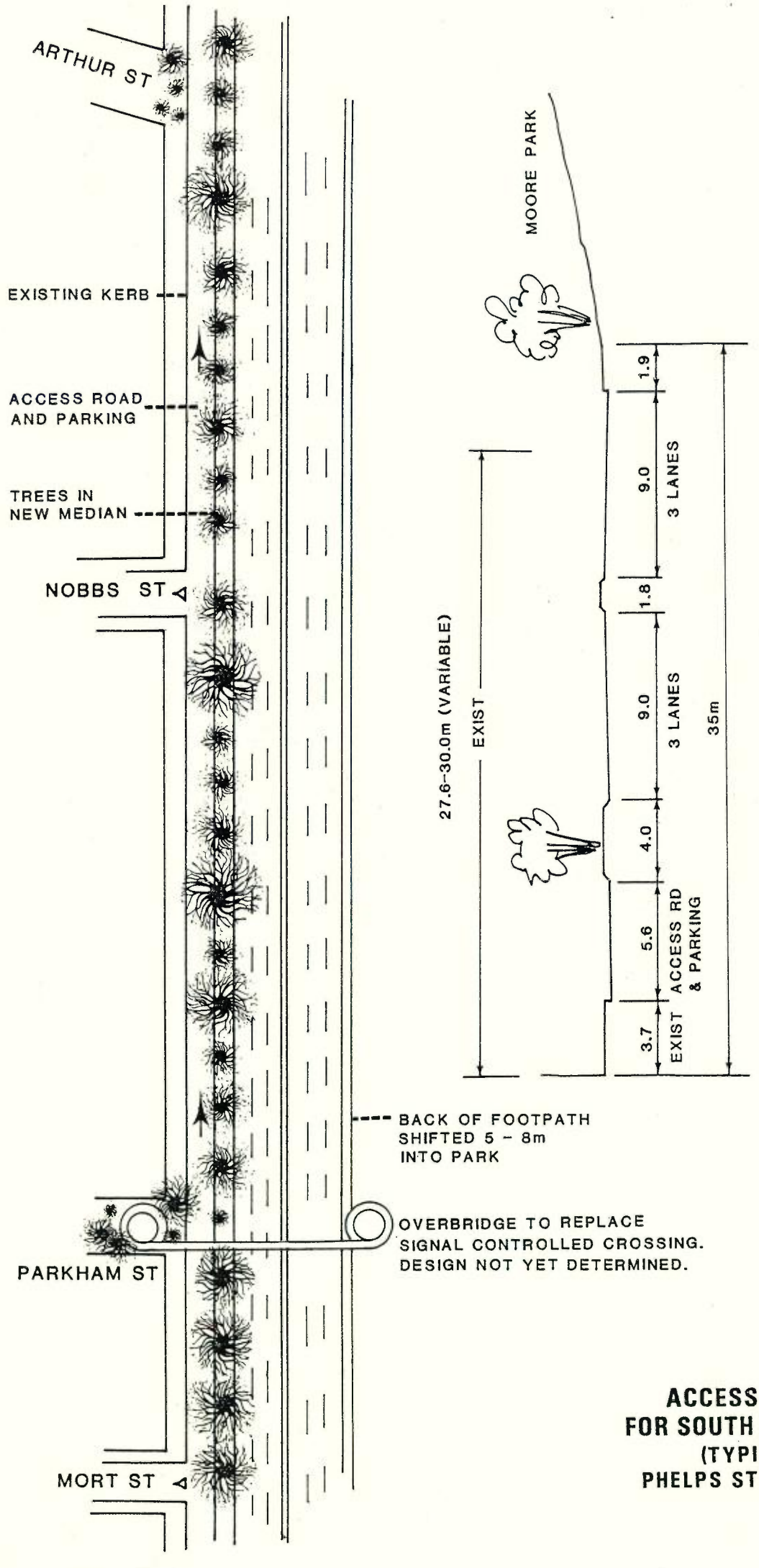
(TYPICAL LAYOUT, PHELPS ST TO MADDISON ST.)



8A

NARROW MEDIAN OPTION FOR SOUTH DOWLING STREET

(TYPICAL LAYOUT, PHELPS ST TO MADDISON ST.)



9

ACCESS ROAD OPTION FOR SOUTH DOWLING STREET (TYPICAL LAYOUT, PHELPS ST TO MADDISON ST)

PART B

ISSUES RAISED IN PUBLIC SUBMISSIONS

3.0 DESIGN ISSUES RAISED IN PUBLIC ISSUES

3.1 NORTHERN PORTALS

Submission No. (See Appendix B)	ISSUE/Response
6,11,13,18, 26,27,28 42-110	Northern portals should be located on the periphery of Woolloomooloo at Haig Avenue/Phillip Park
26	"If a Freeway must be built, then it should be placed on the periphery of Woolloomooloo and constructed in such a way as to retain the residential integrity of the area."
178	The physical design of the tunnel portal should be carefully undertaken to achieve a meaningful entry point and integrate with the surrounding environment.

A portal in the vicinity of Riley Street near Sylvia Chase Square was considered as an option for the Eastern Distributor tunnels during the EIS process. This option was discarded as it was considered that the benefits of building a portal in this location were heavily outweighed by the arguments against it. These arguments also apply to the option of locating the portal west of Riley Street in Phillip Park. This option is considered to be inferior to the proposed location in Palmer Street for the following reasons:

(1) The geology of the area is not suited to a portal. Riley Street lies in a creek bed, and it would be expected to involve a significant depth of alluvial strata. At best the rock in the area would be deeply weathered. These features make the construction of a tunnel portal difficult as the stratum through which the tunnel must emerge is unable to provide the necessary support. This would considerably increase the cost of the portal and the associated structures.

The poor geology would require cut-and-cover construction, but the presence of the Australian Museum would prevent this south of William Street on this alignment.

(2) The alignment between a feasible south portal location in Flinders Street and a north portal at Haig Avenue would be both extremely steep and very close to the surface. This is a feature of the available portal locations and the profile of the terrain between. The consequences of this are that:

- More damage to buildings on the surface may be expected to occur; and
- The steepness of the northbound tunnel alignment would be criticised on the grounds of safety; and
- Construction of the tunnel would be more expensive than over the proposed route as a greater amount of support is expected to be required.

(3) The tunnels would drop to a level some distance below sea level, and this in a creek bed. It is very likely that drainage problems would be considerable both during construction and in operation, and that the pumping installations necessary to protect against flooding would be a significant expense.

(4) The tunnel alignment to this portal runs under more freehold property and less road than the preferred alignment. This would entail significantly higher costs for stratum acquisition.

(5) Access to and from the Domain parking station would be adversely affected. The scheme would require restrictions on access to Sir John Young Crescent in order to achieve the required traffic capacity. Alterations to the parking station would probably be necessary.

(6) The environmental benefits of diverting the tunnel away from Woolloomooloo would be limited. About half the traffic presently using Crown and Palmer Streets would continue to do so.

(7) A first stage underpass of William Street could not be built with this scheme, and the substantial traffic benefits which the proposed Stage One will provide for five years would be forgone.

15 **Location of northern portals detrimental to properties at 93-105 Palmer Street. Tunnel entry should be closer to Cathedral Street**

The location of the northern portals along Palmer Street was determined by the slope of the land. Tunnel traffic will enter and emerge from the portals opposite the above locations but will be further away from these properties than existing traffic, and will be partially depressed.

3.2 PALMER STREET/SIR JOHN YOUNG CRESCENT INTERSECTION

26 **Traffic between William Street and the Cahill Expressway should be two-way along Palmer Street. A raised carriageway may be needed to connect Palmer Street to the Cahill Expressway over Lincoln Crescent**

This submission assumed that the northern portals could be located at Haig Avenue/Phillip Park and that traffic in both directions between William Street and the Cahill Expressway could therefore be accommodated in Palmer Street. As discussed above, this location of the portals is considered to be unsuitable.

The suggested grade separation at Lincoln Crescent/Plunkett Street/Palmer Street has been investigated and has been found to be unnecessary for traffic management purposes provided that the proposed underpass under the Cahill Expressway becomes two way (as shown in Figure 4 of this report). This facilitates the movement of traffic from Sir John Young Crescent to Woolloomooloo and simplifies the intersection at Plunkett Street. A raised carriageway over Plunkett Street is considered undesirable in terms of its likely visual impact.

3.3 LOCAL ACCESS: WOOLLOOMOOLOO

11,13,17, 26,27,28,39, 42-110 175,176 Local access between Woolloomooloo and East Sydney and the CBD and Domain will be restricted. Access between east and west Woolloomooloo will be inhibited. Pedestrian overbridges should be provided at this location. There should be no impediment to pedestrian movement, the aged, disabled and children receiving special consideration

17,26,28 Insufficient attention is given to pedestrian crossings. The severance effects are still severe along Palmer Street.

The at-grade crossings proposed at Plunkett and Cathedral Streets were considered to provide a high level of local access across the proposed Eastern Distributor and a more suitable means of pedestrian access (for aged and disabled pedestrians in particular) than pedestrian overbridges. However, the questions of pedestrian access in general and pedestrian overbridges in particular, have been further investigated. An overbridge at Cathedral Street will be provided instead of pedestrian signals. This change is also in response to increasing concern in the Department that northbound traffic emerging from the tunnel would have inadequate warning of the crossing and would be hazardous for pedestrians.

The design of the overbridge will be considered subsequent to the determination and will aim to achieve a balance between minimising impacts on adjacent buildings and maximising its use by pedestrians.

As discussed in Section 2.2.1, it is now proposed to modify the Proposal shown in the EIS for the intersection of Plunkett Street. It is now proposed to provide a pedestrian overbridge across the Eastern Distributor at Plunkett Street, with the street closed to traffic.

As shown in Figures 4 and 5 of this report, pedestrian access between Woolloomooloo and the CBD and Domain will be served by overbridges at Cathedral Street and Plunkett Street and by the existing Art Gallery Road bridge.

11,13 **The Eastern Distributor will "... increase and institutionalise expressway conditions through the middle of Woolloomooloo along Palmer Street."**

It is agreed that the Proposal will institutionalise the arterial function of Palmer Street. Palmer Street will be a surface arterial, with property frontage, and will not be constructed to full freeway standard. The Proposal will bring together on a single road most of the through traffic presently on three roads in Woolloomooloo, i.e. Bourke, Palmer and Crown Streets. Figures 4 and 5 of this Report show that pedestrian access will be served by overbridges at Cathedral Street and Plunkett Street.

26 **Woolloomooloo west of Palmer Street should remain residential. Further encroachment of the CBD should be discouraged but with the Eastern Distributor the pressure to incorporate this area into the CBD will become irresistible**

The capacity to control land use west of Palmer Street rests with the Sydney City Council. Council's Strategic Plan (1980 & 1984), which incorporates an arterial route along the pathway of the Eastern Distributor envisages the area west of Palmer Street as mixed commercial/residential. There appears to be no reason why residential uses west of the proposed Eastern Distributor should not continue to be accommodated, provided that adequate pedestrian access remains between east and west Woolloomooloo and between west Woolloomooloo and the Domain.

3.4 WILLIAM STREET COMMERCIAL/OFFICE BLOCK

26 **The commercial/office block recommended for William Street site is "strongly resented". "Residents have fought long and hard to keep high rise development out of Woolloomooloo"**

A commercial/office development on the northern side of William Street with a floor space ratio of about 5:1 is considered to be in keeping with existing developments along this frontage, but this would be a matter for Council in its rezoning of the land following the removal of the County Road zoning. Proposals for the southern side of William Street recognised that the Edwardian character of this frontage needs to be retained (pp.23, 61). Suggested redevelopment of surplus and residual land in the rest of Woolloomooloo are in accordance with the Local Environmental Plan for this area.

3.5 RILEY STREET

24,27 **The re-routing of traffic in Riley Street (in Stage 1) will be detrimental to the local environment. Signposting should be used to direct northbound traffic from William Street to the Cahill Expressway via Boomerang Street and Haig Avenue.**

The re-routing of traffic from William Street to the Cahill Expressway via Riley street in Stage 1 will cause adverse noise and air quality effects in Riley Street. However, in Stages 2 and 3 traffic is re-directed to Palmer Street, alleviating any adverse impact temporarily imposed on Riley Street (p.19 of EIS).

In Stage 1 the re-routing of traffic via Boomerang Street and Haig Avenue might cause less adverse impacts. However, given the small number of residential properties in Riley Street, the disbenefits to traffic of a longer travel distance along Boomerang Street are considered to outweigh the temporary impacts avoided.

3.6 FUNCTION OF PALMER STREET

26 **Capacity limitations on the Harbour Bridge will require Palmer Street to stack cars at certain times. "The interchange function of Palmer Street could be severely impaired". It should be shared with another street**

In Stages 2 and 3 it is already proposed that the "interchange function" of Palmer Street carrying traffic from William Street to the Cahill Expressway, be shared with Crown Street (p.19 of EIS). However, Palmer Street will be the main route from the east to the Cahill Expressway.

3.7 SOUTH DOWLING STREET

7,16,26,28 31,33,36 40,42-110, 111-172,174, 175 The EIS acknowledges significant air pollution and noise effects on South Dowling Street but does not propose mitigating measures. A satisfactory solution for South Dowling Street should be developed as part of the Eastern Distributor proposal.

The traffic analysis for the EIS indicates that volumes on South Dowling Street are predicted to increase as follows:-

	Fitzroy Street - Cleveland Street		Cleveland Street- Crescent Street	
Veh.both directions per am(pm)peak hr.				
Existing	2800	(2800)	3900	(3300)
Stage 1*	2950	(2950)	4050	(3450)
Stage 2*	3960	(4100)	4900	(4350)
Stage 3*	4300	(4400)	5400	(4900)

* 1984 traffic redistributed for these Stages.

Noise levels on South Dowling Street between Crescent and Fitzroy Streets were forecast to rise from the existing L10 (18 hour) of 76 dB(A) to 78 dB(A) in Stages 2 and 3. Measures to reduce noise levels are discussed above in Section 2.3.11.

The EIS predicted adverse air quality impacts on South Dowling Street (p.81). The levels of carbon monoxide were based on computer simulation of the existing and future air quality measurements elsewhere in the Eastern Districts.

Since publication of the EIS the same air quality consultants have been commissioned to measure existing air quality at the facades of houses in South Dowling Street and to re-run the computer simulation based on these measurements. The results, for existing traffic and for predicted traffic levels after Stage 3 is completed, are as follows (carbon monoxide one-hour-average mg per cubic metre):

South Dowling Street	Fitzroy Street-Cleveland Street		Cleveland Street-Crescent Street	
Peak Hour	am	(pm)	am	(pm)
Existing Measured	10	(4)	10	(7)
Stage 3 modelled: @ existing speeds	12	(13)	18	(16)

For comparison, the World Health Organisation and the State Pollution Control Commission recommend a maximum one-hour-average exposure of 43mg per cubic metre (35 parts per million). Also for comparison, existing levels on other arterial roads in the Eastern Districts range between about 5 and 32 mg/cu.m.

The above table indicates that the increased traffic on South Dowling Street will have an adverse effect on air quality at the building facades but that the effect will not be significant if traffic speeds are maintained near existing levels. Existing average traffic speeds at the two locations range between 54 and 64 km/hr for the two peak hours.

If average traffic speeds were to drop in the future to 40 km/h the air quality simulation undertaken by the consultants indicates that carbon monoxide levels would increase to 21(21) mg/cu m and 26(23) mg/cu m in the two sections of South Dowling Street at am(pm) peak hours.

The proposed modifications to the Cleveland Street intersection (see Section 2.3.12 above) have been computer simulated for the future traffic levels to confirm that the level-of-service will be similar to that existing, and hence traffic speeds on the residential parts of South Dowling Street will not be substantially lower than existing speeds. Similarly, the proposed grade separation of traffic at Drivers Triangle will ensure that traffic speeds on South Dowling Street are maintained.

Whilst not considered to be a significant impact, the reduction in air quality would be mitigated by either of the two design options for South Dowling Street described in section 2.3.11 above.

6 **The DMR should commission studies into ways in which impacts on South Dowling Street can be mitigated. The studies should involve public participation and their findings should become part of the Eastern Distributor proposal.**

Investigations into the means whereby impacts on South Dowling Street could be reduced are discussed in detail below. Extensive public consultation has already been undertaken as outlined in Section 7.8 below. Further consultation is proposed in Section 2.3.11 above.

16,26,40,174, 175 **Vibration caused by heavy trucks is also perceived as a problem by residents.**

The noise consultants commissioned for this study advise that what is perceived by people on heavily trafficked routes as vibration (transmitted through the ground) is often low frequency noise (transmitted through the air). Measures to mitigate noise impacts are described in Section 2.3.11. Vibration caused by wheels hitting potholes will be minimised by the Department maintaining South Dowling Street to a high standard.

180 **This submission expressed opposition to the Moore Park Option and the South Dowling Street option outlined in Section 5.1.4 of the EIS. Responses to the following issues in this section discuss options for South Dowling Street which were raised in other submissions. Section 2.0 provides a discussion of modifications to the Proposal for this area.**

7,9,16, 26,31,33,40 111-172

South Dowling Street, between Crescent Street and Fitzroy Street, should be one way northbound along the eastern lanes. Southbound traffic should be re-routed via Anzac Parade and Dacey Avenue. The western lanes of South Dowling Street should be used for local access and landscaping. Mounding should be provided between the local access road and South Dowling Street. South Dowling Street could also be depressed, in a shallow or deep trench with associated mounding and pedestrian overpasses

31,32

There should be no mounding between South Dowling Street residents and the park, particularly because of the views that would be lost.

This option for South Dowling Street (and associated questions) has been investigated in terms of its likely traffic, noise effects, and costs. This scheme, termed The CAT Scheme, would reroute a total of 25,000 vehicles per day from South Dowling Street southbound to Anzac Parade and Dacey Avenue. It would require grade separation for southbound traffic at the Anzac Parade/Cleveland Street intersection ($3.0M), grade separation for two lanes turning right to Dacey Avenue ($6.0M) and an enhanced two lane left turn from Dacey Avenue to South Dowling Street ($1.2M). Other construction work would include the mound and associated retaining wall along the closed section of South Dowling Street ($2.5M), pavement and intersection adjustments including traffic signals ($1.1M), landscaping drainage and mountable kerbs ($0.5M). Two pedestrian overbridges would cost $0.6M. The total cost of construction work would be about $15 million.

Deletion of the South Dowling Street portal of the southbound tunnel has been estimated to save from $7 million to $9 million of the construction cost of the tunnel system.

Almost all the southbound traffic which would be diverted out of South Dowling Street is travelling to destinations south of Redfern. Being rerouted via Anzac Parade and Dacey Avenue would increase the trip length for southbound traffic by 790 metres. To calculate the road-user dis-benefits of diverting 25,000 vehicles per day, it is assumed they would travel at an average speed of 50 kph on either route and have an average vehicle occupancy of 1.4. Vehicle operating cost is taken to average $0.12 per km and the value of travel time is $3.20 per person hour.

	Value ($ Million)
Distance increment: 6 million v.k.m. per annum	0.72
Time increment: 168,000 person hrs per annum	0.55
Total annual road user disbenefit	$1.27 M
Capitalised value of annual disbenefit (@ 10%)	$13 M

There are some 3,000 vehicles per day which wish to join South Dowling Street to travel south from Cleveland Street (the present volume could increase with the closure of Albion Street at Flinders Street) and these would use Bourke Street under this option. This would have the effect of reducing the environmental benefits offered by the Eastern Distributor proposal by about 30% along Bourke Street, Redern. Similar results might be expected to occur on some other streets.

Summary "CAT Scheme"	
Construction Costs	$15 million
Road user disbenefits	13
less	
Tunnel and exit savings	8
Net cost of CAT Scheme to achieve environmental benefits for about 120 residences on South Dowling Street.	$20 million

<u>The Trench Variation</u>

An alternative arrangement for the CAT Scheme would place the northbound South Dowling Street traffic in a trench instead of behind a mound. This would require a grade separated crossing at Cleveland Street. The cost of the trench pavement, support walls, drainage, Cleveland Street bridge and ramps, signals, connections, pedestrian bridges and landscaping etc., is $14.2 million. Works deleted from the CAT Scheme are $4.7 million a net additional cost of about $10 million over the CAT Scheme.

Summary "CAT Scheme, trench Variation"	
Construction Costs	$25 M
Road user disbenefits	13
less	
Tunnel and exit savings	8
Net cost of Trench Variation	$30 M

Neither of these options is considered to be in the public interest because of the high net cost. Furthermore, the additional length of 790 metres would discourage motorists from using the tunnels and would reduce the potential for environmental benefits to be made to Bourke Street.

9,31 **All through traffic in South Dowling Street should be re-routed via Anzac Parade and Dacey Avenue.**

This option has been evaluated as an extension of the CAT Scheme and will be termed <u>The CAT Preferred Scheme.</u> The scheme would reroute a total of 49,000 vehicles per day to Anzac Parade and Dacey Avenue. Other factors are as for the CAT Scheme.

It would require grade separation at Anzac/Cleveland ($6M), Anzac/Dacey ($10M), and probably at Dacey/South Dowling ($4.2), plus two extra lanes on Dacey Avenue ($1M), restoration and landscaping of South Dowling Street ($0.5M). The total cost of construction work is thus about $22 million.

	Value ($ million)
Distance increment: 12 million v.km per annum	1.44
Time increment: 330,000 person hrs per annum	1.07
Total annual road user disbenefit	$2.51 M
Capitalised value of annual disbenefit (@ 10%)	$25 M
Summary "CAT Preferred Scheme"	
Construction Costs	$22 M
Road user disbenefits	25
less	
Tunnel and exit savings	8
Net cost of CAT Preferred Scheme	$39 M

This option is considered not to be in the public interest because of the high cost and the high road user disbenefits of additional distance.

As with the CAT Scheme there would be a considerable volume of traffic not well served by this deviation and which would as a consequence use surface streets and avoid the new facility, thus reducing the benefits which would otherwise be achieved on Bourke and Crown Streets in Redfern and Surry Hills.

30	The Cleveland Street/South Dowling Street intersection could be simplified if turning traffic were re-routed via Dacey Avenue/Lachlan Street. The South Dowling Street/Cleveland Street intersection has been examined in conjunction with options for South Dowling Street. It is considered to be feasible to accommodate the projected traffic by altering the signal phasing and lane configuration between existing kerb lines.
26	The Eastern Distributor should be continued in a cut-and-cover tunnel under South Dowling Street. The high cost of this scheme is not considered to be warranted, particularly since it would carry only a proportion of the proposed tunnel traffic.
11,13,40	South Dowling Street should be shifted 10 metres to the east into Moore Park. A service road could then be provided to residences along South Dowling Street and a line of trees between the service road and South Dowling Street
26	The proposal to shift South Dowling Street 10 metres to the east should be abandoned. It would provide minimal shielding effect and sets an unacceptable precedent for "sacrificing" parkland.
19	Degree of encroachment into Moore Park should be kept to a minimum.
174	Unsympathetic utilisation of Moore Park is totally unacceptable.
180	The proposal to shift South Dowling Street 10 metres to the east is opposed as this would significantly increase the high levels of traffic-related pollution experienced by Sydney Boys' High School.

This option to create a separation between the houses and the traffic, would not require the re-routing of any traffic but would simply modify the cross section of South Dowling Street by shifting the existing 6 lanes into the Park by a minimum of 5m. A median strip about 4 metres wide would separate a one-way access road from the through carriageways. Trees could be planted along this median. Preliminary construction cost estimates are $4M, allowing for utility relocation, roadway reconstruction and new kerbs and drainage for the access road and median, but not including the cost of any pedestrian overbridges. Whilst this option would reduce noise to below existing levels, even with the increased traffic, the Department is unable to fully support the suggestion because of the intrusion into Moore Park. The option is worthy of further consideration, as discussed in Section 2.3.11 above.

The 4 lane Variation.

It has been suggested in a submission prior to the EIS that South Dowling Street could be reconstructed as 4 lanes plus service road, all within the existing road reservation. Whilst feasible to construct, it is considered that 2 lanes each way, even with "no stopping" restrictions, would be inadequate to carry the projected traffic flow, with no provision for isolated broken down vehicles or illegal parking. It should be noted that clearway conditions have been applied to carry existing traffic, providing 3 lanes each way. This scheme would cost about $3M to construct, excluding the cost of any pedestrian overbridges.

The Narrow Median Variation.

The Department has investigated whether any other options would reduce the adverse effects on residents of South Dowling Street without incurring high costs. One possibility is to shift the northbound carriageway 2.5 metres to the east into the existing median strip. The kerbside lane could then revert to all-day parking, or could become part parking and part footpath/tree planting. The net effect on noise at the front of houses would be to reduce the projected increase of 2dBA to an increase of 0.8 dBA. A further reduction in noise could be achieved by constructing a noise barrier along the median strip. However, such a barrier would restrict pedestrian movement across the road and is not favoured by the Department. This scheme would cost about $1M to construct, plus $0.2M if a noise barrier were included, plus $0.6M if two pedestrian overbridges are provided to compensate for restriction of pedestrian movement. This option is worthy of further consideration, as discussed in section 2.3.11 above.

40 **South of Dacey Avenue (in conjunction with the Anzac Parade/Dacey avenue re-routing) South Dowling Street might be shifted to the west into Commonwealth land to provide relief to the residences on the eastern side.**

South of Dacey Avenue there will be little increase in traffic as a result of the Eastern Distributor. Traffic arrangements at the Bourke/Crescent Street intersection will be altered to permit two-way access between South Dowling Street and Bourke Street (south of Crescent Street). Traffic using South Dowling Street to and from the Eastern Distributor will continue to use Bourke Street, south of Crescent Street, as at present. The suggested shift into Commonwealth land is therefore considered to be unnecessary.

3.8 ACCESS TO MOORE PARK FROM SURRY HILLS AND REDFERN

6,7,11,13,17 23,31 42-110 The proposed access to Moore Park from Surry Hills and Redfern is inadequate. Pedestrian overbridges should be provided at Arthur and Thurlow Streets. At grade pedestrian crossings do not cater satisfactorily for the aged and disabled.

31 A pedestrian overbridge may be better located at Maddison Street than Thurlow Street.

17,26,28 Insufficient attention is given to pedestrian crossings. The severance effects are still severe along South Dowling Street.

173 There is no safe access to Moore Park from across South Dowling Street.

180 The Proposal should ensure the provision of adequate pedestrian access across South Dowling Street to the Moore Park Area, which is heavily utilised by students of all ages.

The question of pedestrian access to Moore Park from Redfern and Surry Hills has been investigated in conjunction with the various options being considered for South Dowling Street. The possible reduced median width being considered (see Sections 2.3.11 and 3.7 above), and the number of school children using the existing signals near Parkham Street, suggest that the best location for an overbridge is at Parkham Street, to replace the existing signals. South of Cleveland Street a suitable location for an overbridge would be at Thurlow Street, which has been closed to traffic. However, the relatively low number of pedestrians crossing this section of South Dowling Street would be adequately served by a signal controlled crossing.

31 Anzac Parade is suitable for a pedestrian overpass

The number of pedestrians at any one location is insufficient to warrant an overbridge. Pedestrians will be provided for at each signal controlled intersection.

3.9 TUNNEL PORTALS AND VENTILATION

26,28 The EIS does not address the likely impact of the tunnel portals on surroundings; the tunnel portal in Flinders Street will be out of keeping with the streetscape

The EIS addresses the likely impact of the tunnel portals in Section 4.3.4. It is noted that visual impacts will be caused by ramp/portal construction but that this "will be greatly affected by the design quality of new engineering and buildings works and by the quality and scale of tree planting and other landscaping works".

19 DMR should consider an amended design for southern entrance to northbound tunnel so that buildings on west side of Flinders Street can be retained (e.g. locate portal to west of through lanes between Short Street and Patterson Lane).

The minimum cross section required around the tunnel portal exceeds the existing Flinders Street boundaries, resulting in property acquisition. Changing the tunnel entrance/local road configuration does not alter this situation. Moving the portal north or south of the proposed location would effect either the properties to the north (two shops south of Patterson Lane plus building north of Patterson Lane) or the furniture showroom and St Michaels Church to the south.

It is preferable for traffic which does not wish to enter the tunnel to pass to the west of the portal. This will enable local traffic to enter Short Street and thence Bourke Street.

26 **No tunnel ventilation details are provided**

Tunnel ventilation is being investigated as part of the pre-design studies. Initial indications are that two towers of about 20 to 25 metres height will be required. The preferred location for the tower for the southbound tunnel is on the west side of Flinders Street at the intersection with South Dowling Street. A building will be acquired. The tower, measuring about 22m x 8m, will be set back from Flinders Street leaving the potential for redevelopment of the remainder of the site.

The preferred location for the tower for the northbound tunnel is just north of Stanley Street. Measuring about 18m x 6m the tower could be incorporated into a new development on the residual land on the east side of Palmer Street (see Figure 2 of this report). Power distribution equipment could be incorporated into a two storey terrace-style development on the street frontage, designed to be visually compatible with the buildings across Stanley and Palmer Streets.

Noise emissions from the towers and equipment will be low and will conform with the Australian Standard 1055-1984 "Acoustics: Description and Measurement of Environment Noise".

Meteorological studies currently underway to verify that the air from the tunnel is dispersed effectively show that under normal atmospheric conditions and tunnel traffic the concentrations of carbon monoxide CO 40 metres downwind off the top of the tower will be less than 4ppm. Further downwind and at ground level, the concentrations are lower. This compares with the State Pollution Control Commission's guidelines of 35ppm for a 1 hour exposure of carbon monoxide.

When the wind has a velocity greater than 5 metres per second, downwash of discharged air may occur, with certain wind directions. The levels of CO have been conservatively estimated to be 11ppm in the immediate vicinity of the tower.

When discharged air is trapped below elevated inversions, studies show that ground level concentrations will not be increased.

In the case of a breakdown of the elevated inversion, as occurs during some mornings, the levels of CO could rise to 17.6ppm for a 3 to 10 minute period and with a low wind speed. This condition is transient and the CO levels decrease with higher wind speed and distances beyond 40 metres from the tower.

Under normal dispersion conditions, emmissions from the towers and from motor vehicles in the streets will not result in a deterioration of air quality at ground level. At low wind speeds when CO levels from vehicles could be high, ground level concentrations from the towers will be low because plume rise is enhanced at low wind speeds.

3.10 RELOCATION OF TELECOM PLANT

1 **The proposed method of construction for Stage 1 requires the relocation of Telecom Plant and could delay the construction schedule. The depth and method of construction of the Stage 3 tunnel are of concern to Telecom because of their plant in Liverpool and Oxford Streets. The use of cut-and-cover methods may endanger the Liverpool Street conduits.**

An OTC Telecommunications cable crosses Moore Park and passes along Moore Park Road. Relocation of this cable does not present great technical problems so long as the overall length (between repeaters) is not greatly altered. Up to 10m is believed to present no problem.

The Telecom tunnel under Oxford Street will not be disturbed in the Proposal.

A major conduit run was installed along the line of Liverpool Street some years ago, and was possibly located deeper between Bourke and Palmer Streets in order to avoid the risk of disturbance by the Eastern Distributor as it was then proposed. There is a relatively small clearance above the proposed Stage 3 tunnel and the question of the need for special consideration is raised.

Discussions with Telecom have been made with regard to the feasibility and cost of relaying the existing duct route in Liverpool Street. The proposed cut and cover method of construction is dependent with respect to depth on the lowest point of the Telecom ducts in Liverpool Street. A proposal for raising the ducts across Palmer Street has been submitted to Telecom for their assessment so that an analysis can be made of the economic and technical feasibility of raising the cut and cover depth against deepening the excavation below the existing ducts.

Should the analysis indicate that the raising of the ducts is desirable, further discussion would be entered into with Telecom and work would be carried out in conjunction with Telecom.

Telecom have another major communications corridor in William Street. No special problems are anticipated in the Stage 1 adjustment. There have been discussions with Telecom regarding the relocation of their plant affected by Stage 1 At this point no significant delay to the construction schedule is anticipated.

3.11 EFFECT ON SEWERS, WATERMAINS AND STORMWATER SYSTEMS

2 **No mention is made of the likely effect of the proposal on sewers, watermains and stormwater systems.**

The likely effect of the Proposal on sewers, watermains and stormwater systems was not given in the EIS. This information is presented here.

There have been discussions with MWSDB personnel regarding the effects on sewers, stormwater systems and water mains. The following summary reflects the current state of these discussions.

The Bondi sewer will not be affected by the proposal; however some strengthening works must be carried out on the Bourke street oviform sewer which joins the Bondi trunk sewer at Liverpool Street. A new manhole must also be sunk east of the Bourke Street Liverpool Street intersection to replace a manhole which will be removed in Stage 2.

Sewers and stormwater systems are affected by cut and cover works in Palmer Street and will involve relocation and redirection. The old combined system is being slowly replaced with separate sewer and stormwater systems. To this end, the sewers affected will be redirected via new pipes and a new shaft to the Bondi trunk sewer; stormwater drains will be redirected down Palmer Street to connect with a proposed new stormwater system draining to Woolloomooloo Bay. Other sewers affected at the southern portals may be supported or relocated with no special difficulties or cost.

The tunnels affect watermains at various places; no great technical difficulty is forseen in relocating or supporting these.

4.0 TRAFFIC AND TRANSPORTATION ISSUES RAISED IN PUBLIC SUBMISSIONS

4.1 REGIONAL ROAD NETWORK AND TRUCK ROUTES

10,26,29 The submissions lodged by the Anti-Freeway Action Committee (10 and 26) and the Inner Sydney Regional Transport Study Group (29) referred to the regional road network and the future of freight movement. Submission 26 in particular stated that social issues raised in a working paper undertaken by Jackson Teece Chesterman Willis and Partners, were not included in the EIS.

This study was a draft working paper and was prepared at the time the Eastern Distributor was an at-grade proposal. However, the regional issues raised by that paper are addressed below.

19,26,29 Submission 29 stated in general terms, quoting from the Jackson Teece draft working paper, that "the extent to which a proposed network will encourage the increase in truck movements" .... "is the major question in this regard", particularly if the Maritime Services Board development at Pyrmont goes ahead.

26 The proposal will offer the best possible trucking route between Port Botany and Port Jackson and therefore attract more heavy vehicles; such trucking increases would be contrary to the objectives of the EIS.

23,26,31 The statement that future road freight movement reductions will depend on rail investments (p.43) is an admission that the Eastern Distributor proposal fails to meet one of its prime objectives - the removal of heavy vehicles from local streets.

6,7,30,31 Appropriate traffic management plans should aim to provide truck routes outside residential areas. Perimeter residential roads should not be a passageway for heavy vehicles. Ban heavy vehicles from Campbell, Albion, Fitzroy/Foveaux and Cleveland Streets

173 There is only a partial removal of heavy vehicles from residential streets.

The Eastern Distributor will not increase the number of trucks on the road network, nor the number of trucks travelling between Port Botany and Port Jackson. What it will do is attract many of the longer distance trucks which are currently passing through the Eastern Districts to and from locations such as the Harbour Bridge, Woolloomooloo and Garden Island.

The majority of these trucks are currently using Bourke and Baptist-Crown Streets. Most of these trucks are expected to divert to South Dowling Street via Crescent Street (with a proposed change to the channelisation of the Crescent/Bourke street intersection to permit this movement). The effect of removing the longer distance trucks will be to reduce the number of trucks on Bourke and Baptist-Crown Streets by about 50%. The other 50% of trucks have origins or destinations in the Eastern Districts and are unlikely to divert.

This diversion will go some way to achieving the stated objective of removing heavy vehicles from local streets. The absolute control, or prohibition, of heavy vehicles rests with the City Council which could introduce Light Traffic Thoroughfares on appropriate local streets. However, this regulation would not apply to heavy vehicles with an origin or destination in the street, or to vehicles that must use the street to gain access to their destinations.

It is agreed that ideally, truck routes should be outside residential areas. However, the only control on trucks is the Light Traffic Thoroughfare regulation described above. The encouragement of traffic to use perimeter roads such as South Dowling Street is the alternative to control by prohibition.

Whilst partially residential it is considered appropriate for heavy vehicles to be diverted to South Dowling Street, which is a classified Main Road. The function of Main Roads is to provide for all through traffic. Discrimination between vehicle types is neither desirable nor feasible on such roads. This equally applies to Cleveland Street, which is also a Main Road. This is also on the perimeter of the residential area and is considered to be an appropriate route for heavy vehicles.

With regard to Albion Street and Fitzroy Street, the Proposal will remove through trucks from the former, and will have little effect on the use of the latter.

7,16,111-172
31,40

The volume of trucks on South Dowling Street is a main concern together with the noise and vibration effects which will be unbearable.

Options for mitigating the effects of additional traffic on South Dowling Street are discussed in Section 3.7 above. However, it should be noted that South Dowling Street is considered to be more suitable for trucks than Bourke and Crown Streets.

29

No account is taken of a statement in the draft working paper on the EIS that ..."North South traffic from Port Botany (and Kingsford Smith airport) cannot be disregarded especially because of the land use situation that is developing in South Sydney .... the further conversion to transport related uses of large amounts of vacant warehousing space will clearly exacerbate the situation".

It is considered that the conversion of vacant warehousing space in South Sydney to transport related uses will happen with or without the Eastern Distributor. Large sites vacated in recent years by manufacturing industries, and zoned industrial, are clearly suitable for conversion to transport related uses. The proximity of such sites in South Sydney to Port Botany and Kingsford Smith Airport has resulted in many such conversions in recent years. Whilst this can result in local problems caused by truck traffic, the location is appropriate in a regional sense. The Department is responsible for the provision of a suitable main road system, and including provision for any additional north-south traffic generated by the conversion.

12,26

The working papers show that less than 40% of heavy vehicle movements are expected on the Eastern Distributor, this and the possibility that a similar reduction could be achieved by more use of rail freight is not featured in the EIS. The EIS does not indicate any Government commitment to implement the Kirby Inquiry recommendation re the railing of goods

The question of rail freight vs. road freight is outside the scope of the EIS. The Department's plans for the main road network must be made incrementally, with regard to the level of development of other Government proposals. However, it is considered extremely unlikely that rail could substitute for road in the distribution of freight within the metropolitan area, or that it could reduce the trucks on Bourke and Crown Streets by 50%.

7,10,26 **EIS does not address problems of moving hazardous materials through the Eastern Districts. The inner suburbs will continue to be at risk from dangerous goods if a suitable truck route is not found. Truck route around residential areas along Dacey Avenue and Anzac Parade should be designated and made obligatory for all vehicles with dangerous loads.**

It is agreed that the EIS does not address problems of the conveyance of dangerous goods as distinct from other truck movements. Main roads are considered to be the most desirable routes for dangerous goods and, although main roads in the study area have residential properties fronting onto them, so too do the majority of main roads in the Sydney region. Consequently, it is impractical to prohibit the carriage of dangerous goods on main roads, even though the legal mechanism exists to enable such a prohibition (S.3(1)(h) of the Motor Traffic Act and S.119A(2) of the Regulations to that Act).

The Department of Environment and Planning (DEP) is currently undertaking a study on the possibility of determining routes for vehicles carrying dangerous goods in the Botany Bay Region. The DMR will liaise with the DEP as the study develops. Results of the study will eventually be capable of statewide application.

Dangerous goods will be prohibited from the tunnels and will continue to use surface streets between Flinders Street and the Cahill Expressway. Trucks carrying dangerous goods, as with all trucks, are expected to reduce on Crown and Bourke Streets in Surry Hills and increase on South Dowling Street (a main road). This could be enforced by Council imposing Light Traffic Thoroughfare restrictions on Crown and Bourke Streets.

4.2 THE PUBLIC TRANSPORT ANALYSIS

In a number of submissions a bias against public transport is claimed:-

7 **The EIS fails to identify and promote reasonable opportunities for public transport.**

12 **The cost of a public transport alternative is portrayed as being overly expensive by showing an extensive idealised light rail plus heavy rail system.**

19 "Should evaluate the available range of transport alternatives that have a bearing on an issue such as the existing traffic congestion in the Eastern Distributor Corridor"; useful for comparison of relative cost benefit ratios.

26 Comparison of feasible alternatives refers to a limited series of road-based alternatives only.

26 None of the transport benefits investigated is as extensive as those offered by a public transport system.

26 No new data has been gathered on public transport; the EIS used "carefully selected pieces of old data to support a freeway based option".

26 The EIS ignores public transport proposals for Darling Harbour.

26 The idealised public transport system is inadequate because it is restricted to south of the harbour.

28 The EIS ignores, at the outset, any public transport.

175 Public transport receives superficial consideration. Lack of commitment to examine options.

The Department has no bias against public transport and refutes any such allegations. Under the requirements of the Environmental Planning and Assessment Regulation, in preparing the EIS for the Eastern Distributor, the Department has investigated the interaction between an Eastern Distributor and public transport, and whether public transport enhancement could be seen as an alternative to an Eastern Distributor in bringing about environmental and traffic flow improvements in Woolloomooloo, in East Sydney, Surry Hills and Redfern. This investigation has been undertaken comprehensively using the most reliable data available. It concludes that even an idealised system could not be expected to cater for the diversity of trip purposes, origins and destinations accommodated on the Cahill Expressway and by extension, an Eastern Distributor.

The Department did not undertake an extensive evaluation of regional public transport or transport system requirements. This form of evaluation is desired by a number of respondents to the EIS exhibition and many of the comments appear to result from the limitations which the Department considers were reasonably imposed in the EIS work.

12 **It is reasonable to expect that 20% of daily and 25% of peak (Cahill Expressway) traffic could be converted to public transport on weekdays.**

The analysis undertaken for the EIS agrees with the approximation of 20% of daily trips but concludes that a much smaller percentage (10%) of pm peak period trips would be diverted by an idealised public transport system. In a typical weekday only a very small proportion of Cahill Expressway southbound traffic would be destined for the Domain Parking Station. It is claimed that the omission of these trips would have increased the 10% but the difference would be negligible.

The assessment presented in the EIS is considered reasonable since it assumes the transfer of between 5% and 50% of existing car trips to an enhanced public transport system depending upon the origins and destinations of the trips in relation to the new public transport system. It would be unwise for the Department to assume more since there is no evidence from the Eastern Suburbs Railway that it has reduced road demand to any great extent.

The Eastern Suburbs Railway was opened on 23rd June, 1979, providing a direct service between Bondi Junction and the City Centre. In 1977 (County of Cumberland Traffic Counts) the combined Annual Average Daily Traffic on William Street east of Palmer Street, Oxford Street west of Ocean Street and Cowper Wharf Road was 119470 vehicles. This figure reduced in 1979 to 109440, possibly as an immediate response to the Eastern Suburbs Railway. By 1981 the figure had increased to 118150 with a further increase to 125080 by 1983. This latter (1983) figure represents a 4.7% increase over 1977 traffic despite the introduction of the railway system.

6 **Council should undertake a study to determine the feasibility of a park-and-ride terminal south of Moore Park, and a light rail transit service connecting Central Station, Moore Park Sporting Centre, the Showground, Randwick and the University of New South Wales. A link to Darling Harbour could also be considered.**

The Department would raise no objection to such a study.

7 **The DMR should confirm that the creation of exclusive bus lanes through Flinders and Oxford Street is feasible under the proposal.**

In transferring most of the through traffic from Crown and Bourke Street, Surry Hills, a very large traffic flow is concentrated on and under Flinders Street upon completion of the Proposal. Flinders Street carried 3800 vehicles and 4600 vehicles per hour in the am and pm peaks respectively in 1984 (Figure 3.4 of the EIS). At the end of Stage 3 construction of the Proposal and without allowing for traffic growth, Flinders Street is expected to carry slightly fewer vehicles; i e 3700 and 4100 vehicles per hour in the am and pm peaks (Figure 3.7 of the EIS). Similarly it is not expected that there will be much change in traffic flows in Oxford Street although there will be reduced delays at the intersections. In the circumstances it is not possible to confirm that the creation of exclusive bus lanes through Flinders and Oxford Streets is feasible under the proposal, but the suggestion has merit and is worthy of investigation after the tunnels have been opened to traffic.

25 **The EIS provides no origin or destination data on weekend trips. Intuitively it is claimed that a significant proportion of such trips would be to major sporting events, to exhibitions or to the airport, and that they would therefore be suitable for conversion to public transport.**

No reliable origin destination data relating to weekend trips on the Cahill Expressway was available to the Study Team. The EIS relied upon 1981 data on generalised weekend travel. This data indicates that weekend trips are typically widely dispersed in origin and destination and that trip purposes are not generally amenable to conversion from cars to public transport.

26 **Bus routes between Woolloomooloo and the CBD may be adversely affected.**

No government, private, general or school bus routes penetrate within the Woolloomooloo area. Government bus routes serve the area from peripheral roads; William Street, Sir John Young Crescent and Cowper Wharf Road. None of these routes are advesely affected by the proposal.

30 **Foveaux Street directs through traffic onto Eddy Avenue. This arrangement should not be institutionalised because Eddy Avenue should serve solely as a public transport interchange.**

The EIS work concentrated on schemes which would reduce north-south traffic through residential streets in the Eastern Districts. East-west traffic was considered to the extent that the Proposal requires traffic to be transferred from Albion Street to Campbell Street. The Proposal does not affect traffic on Foveaux Street or Eddy Avenue. Should an alternative be found it is unlikely that its feasibility will be inhibited by any aspect of the Proposal (see Section 4.3 below).

4.3 EAST-WEST TRAFFIC IN SURRY HILLS

7,19,30 **The EIS does not address "intimately related" matters of east-west traffic flows; lack of detailed consideration of east-west flows does not satisfy elements of Section 4 of DEP's Director's requirements; appropriate traffic management plans should aim to improve present arrangements in Surry Hills and Redfern.**

6,30 **Considerable attention was given in the EIS to improvements for north-south streets. However, not only have no proposals been made for east-west improvements but there is no real analysis of the problems or measures to correct them.**

173 **Traffic conditions on Albion and Fitzroy/Foveaux Streets will remain the same or become worse.**

The EIS identified changes in east-west traffic patterns to the extent that they either affect or are affected by the proposed Eastern Distributor. It is considered that matters raised in this respect in Section 4 of the Director's requirements to have been adequately addressed. The existing problem of east-west traffic is not considered to be directly related to the Eastern Distributor.

The principal objective of the EIS was to improve travel conditions in the Eastern Distributor corridor and its immediate surroundings implying an emphasis on north-south traffic. However, travel conditions will improve on Oxford and William Streets, and, as described above, modifications to the Cleveland Street/South Dowling Street intersection will contribute to the improved conditions. Conditions on Albion Street will improve by the removal of eastbound through traffic.

26,31 **The traffic conflicts at Cleveland/South Dowling Streets are not addressed in the EIS.**

The Department agrees that these conflicts were not addressed in the EIS. They have now been investigated in conjunction with options for South Dowling Street (see Section 3.7 above). It is considered to be feasible to accommodate the projected traffic flows between existing kerbs by altering the lane configuration and signal phasing.

30 **Retention of Fitzroy/Foveaux Streets as a major east-west corridor is in conflict with the increasing community identity of Surry Hills.**

As described above, east-west traffic movements in Surry Hills were not the focus of the EIS. The question of whether Fitzroy/Foveaux Street should be retained as a major east-west route could be addressed in a separate study. This could be subsequent to the determination of the Eastern Distributor which will not adversely affect east-west routes.

7,30 **Short term measures for east-west traffic flows should share flows more equitably amongst available streets.**

It is proposed to divert eastbound traffic away from Albion Street, into Campbell Street. Some westbound traffic could then be shared between Fitzroy Street and Albion Street, if Council wishes. However, this would not be recommended on traffic management grounds alone.

26,30 **In the EIS east-west flows across the study area are shown to be greater than north-south flows. However, the EIS fails to address the essential objective of "Improving traffic conditions where major north-south movements cross or distribute with major east-west movements" (p.39). Improvements must include those from social and environmental perspectives of the residents affected. This has not been addressed in relation to east-west traffic as demonstrated by ...."Existing traffic movements on Fitzroy and Foveaux Streets will remain" (p.19).**

It was stated in the EIS that "to achieve the objectives of the Proposal it is essential that the new road system improves traffic conditions where major north-south movements cross or distribute with major east-west movements." This is achieved by the Proposal. By putting part of the north-south movement underground and not altering existing traffic movements on William, Oxford, Cleveland and Fitzroy/Foveaux Streets, the north-south conflicts with east-west traffic would be removed and conditions for east-west traffic would generally be improved.

30 **It is difficult to see how various benefits intended to flow to the north-south changes will not be significantly devalued by the continuing presence of a major east-west corridor along Fitzroy and Foveaux Streets.**

Traffic flows in both directions are expected to improve. Resolution of various conflicts with east-west traffic, Cleveland Street/South Dowling Street in particular, are described above and in Section 3.7. The placement of southbound traffic in a tunnel under the Fitzroy Street corridor will clearly resolve the conflict referred to. Consequently, the benefits accruing to the north-south flow are not considered to be devalued by the presence of east-west traffic.

30 **Must recognise that the residential components of Surry Hills and Redfern is being intensified by conversion of commercial/industrial premises to residential use e.g., redevelopment of Crown Street Womens' Hospital.**

This is relevant if noise sensitive development takes place adjacent to Campbell Street or South Dowling Street. The Proposal will be beneficial to the Crown Street site because the Eastern Distributor will divert traffic away from Crown and Albion Streets.

26 **Closure of Little Moore Park Road at Drivers Triangle should be investigated as a means of diverting traffic away from Fitzroy and Foveaux Streets.**

This would have a serious impact on westbound traffic and could only be undertaken if a suitable alternative route were available. This issue is independent of the Eastern Distributor and would require further study after the determination of the EIS.

28 **No measures have been taken to offset increased traffic flows in Campbell Street in an area that contains light industry and generates pedestrian traffic.**

Although there will be no change to the existing location of pedestrian crossings along Campbell Street, the significant reduction in traffic changing direction through the crossing at the Campbell Street/Crown Street intersection will simplify pedestrian movements in that area. The four way signalised crossing at Campbell Street/Crown Street is capable of controlling all the pedestrian traffic with increased vehicular traffic on Campbell Street.

Pedestrian arrangements at the three way crossing at Campbell Street/Riley Street will remain unchanged. This could be made four way if necessary and all signals will be rephased as a result of modifications for the Eastern Distributor.

Flinders Street and Oxford Street pedestrian arrangements at Taylor Square will be simplified with the elimination of the two Bourke Street crossings and shorter crossings on Oxford Street. The reduction of north-south traffic on Flinders Street will again simplify pedestrian movements. There is no change to the Flinders Street/Albion Street signalised crossing.

5.0 SOCIAL AND ENVIRONMENTAL ISSUES RAISED IN PUBLIC SUBMISSIONS

5.1 DISPLACEMENT OF RESIDENTS

11,13,18, 6,7,28,22,26 42-110,176	**Commitment needed from the Government to rehouse all residents displaced by construction.**
17,28,11,13 18,26,42-110 176	**Surplus DMR properties should be transferred to the Housing Commission at no or low cost.**
17,27,11,13 26,28,173 175,176	**Lost housing stock for low income people should be replaced.**

These matters have been investigated further with the Housing Commission. Several options have been canvassed to resolve the immediate re-housing problem associated with Stages 1 and 2 of the Distributor as well as contributing to the Government's longer term inner city public housing objectives.

Both the DMR and the Housing Commission will immediately allocate staff to a small project team to be located in Woolloomooloo which will co-ordinate advice and assistance to residents affected by Stages 1 and 2 and develop recommendations aimed at resolving the longer term housing problems associated with the Eastern Distributor.

In the first instance, the Project Team will address the re-housing needs of persons who meet the current criteria for public housing assistance with the DMR assisting by making available suitable surplus properties in the area, and any other suitable properties that become available elsewhere in the inner city.

Further consideration will be given to a selective acquisition of housing stock in the area to complement these immediate actions.

11,13,26,6, 42-110 **Low income housing and boarding rooms should be protected from the effects of rezoning and gentrification.**

6,26,176 **Redevelopment of land should be for public housing not private development which will increase values and displace more people.**

The indirect effects of rezoning the redundant part of the County Road zone could be much more extensive than the direct effects of displacement due to construction. It is a matter for the City Council and for the Department of Environment and Planning to protect low income dwellings if they see this as a need. Initiatives should be taken by those authorities in the areas of zoning and development control, and not by the DMR. The effects of rezoning would equally apply to a "no build" option. The statutory controls to protect these dwellings may need to be innovative, and this matter has been discussed with planning staff of the two responsible authorities.

5.2 AIR AND NOISE POLLUTION

22,26,42-110 **The conclusions on pollution are misleading. The effect of the Proposal on air and noise pollution will be minimal as the same number of vehicles will be involved overall. Air pollution levels will remain high.**

The same number of vehicles will be involved overall and therefore the proposed Eastern Distributor will not have an adverse effect on the level of emissions at a regional scale, but will have a beneficial effect through improving traffic flow. It will also reduce local levels of air pollution and significantly reduce emissions on particular streets, such as Crown, Bourke and Albion Streets, and at Taylor Square.

Background levels of air pollution in this area are high. Therefore, despite the improvement in local air quality brought about by the Proposal, air pollution will remain, but conditions on particular streets will improve markedly.

Noise levels will improve in line with reduced traffic volumes on particular streets. Overall, at the surface, noise levels will also improve as traffic is directed underground.

Localised areas where traffic volumes and air and noise pollution will increase as a result of the re-distribution of traffic in the area have been identified in Sections 4.5 and 4.6 of the EIS, and Appendices 4 and 5 of the EIS. See also Section 3.7 above.

26 **No estimates of air pollution near the tunnel portals are provided.**

See Section 3.9 above.

30 **Noise levels in Fitzroy Street are higher than those indicated in the EIS due to the "canyon" effect created by buildings on either side.**

This may be the case. However, under the Proposal traffic volumes and therefore noise levels on Fitzroy Street are expected to decline slightly.

6.0 ECONOMIC ISSUES RAISED IN PUBLIC SUBMISSIONS

6.1 OBJECTIVES

21,25 **The objectives of the study do not include the goal of economic worthiness. The study was conducted without regard to the cost of proposals.**

In the EIS the concept of economic worthiness is located in the broader assessment framework established by Section 57(2)(f) of the Regulations to the Environmental Planning and Assessment Act 1979 which states that ... "The contents of an environmental impact statement ... shall include ... justification of the proposed activity in terms of environmental, economic and social considerations".

Section 6 of the EIS outlines the way in which the Proposal is considered to be justified on social, environmental and economic grounds, taking into account the social and environmental costs of alternatives to the Proposal. The relative costs of the alternatives, including the economic costs, are central to the evaluation.

6.2 FUNDING OF THE PROPOSAL

20,21,26,37, 175,177 **The commitment of funds to this project will prevent the construction of a large number of very desirable alternative projects. Funds to be allocated to this project should be spent on roadworks elsewhere in NSW.**

Whether funds are spent on this project or elsewhere in NSW is a matter for Government decision based on the relative priorities seen for all viable projects.

25 **As the benefit cost ratio is less than 1, the road would not be eligible for funding under the Federal Bicentennial Roads Programme and State funds would need to be used.**

Eligibility for Federal funding is not linked to the benefit cost ratio, but to other factors. It is not proposed that Federal funding be used for the project.

27, 177 **"Should funds only permit the initial stage of the project, and later stages be left to the future, the adverse traffic implication on the nearby residential areas would be significant".**

The Minister has announced the Government's intention to build all three stages by 1992. Even if later stages were deferred, for whatever reason, the traffic implication would not be adverse on nearby residential areas. Stage 1 does not significantly redirect traffic, other than permitting traffic to be removed from Bourke Street, Woolloomooloo.

6.3 ECONOMIC PERFORMANCE OF PROPOSAL

12,20,21,25, 26,176,177

The economic performance of the Proposal is poor and inadequately addressed. Although Stage 1 performs best, another option has a benefit cost ratio which is twice as high. The costs of Stages 2 and 3 are significantly higher than the quantified benefits and therefore to describe the benefit cost ratio of Stage 1 only in Section 6 is misleading. Only Options 2 and 3 perform well economically.

On economic grounds alone the Proposal does not perform well. The rationale for the Proposal has essentially to do with the social and environmental costs of comparable alternatives, including the "no build" alternative, and the inability of yet other alternatives to meet the objectives of the project. The benefit cost ratio for each alternative should therefore be considered in conjunction with the likely social and environmental costs of each scheme which cannot be quantified and incorporated into the benefit cost ratio as can other costs. The likely social impact of major at-grade options is particularly significant in this respect. With Options 2 and 3 ("minor works" and "underpasses at William Street") the principal objectives for the project are not met.

6.4 ASSESSMENT OF COSTS AND BENEFITS

12

Because improvements to air and noise pollution and local accessibility are already reflected in the benefit cost ratio as increases in residential property values, it is misleading to treat them as additional benefits.

Improvements to air and noise pollution and local accessibility are incorporated into the benefit cost ratio insofar as residential property values are an indicator of such qualities. Air quality, noise and local accessibility are also treated as separate factors in the assessment of the relative strengths and weaknesses of the various options, related to the objectives. These two forms of assessment are not mutually exclusive and are not meant to be treated as components of an overall calculation of costs and benefits. Rather, they are complementary and overlapping forms of assessment designed to provide a wide perspective on the overall costs and benefits of each option.

12 **The advantages claimed for a uniform road system are covered by the inclusion of vehicle operating costs and accident reduction benefits in the benefit cost ratio**

The same argument applies to this point as to the previous point.

12 **The benefit derived from increased property values may have been overstated as some of this benefit would be achieved by lifting the County Road reservation, without any road construction**

Some increases in property value would be achieved simply by lifting the County Road reservation as is implied in Section 4.1.4 of the EIS. However, the likely net increases in property values for each option are based primarily on changed traffic conditions as described in Economic Working Paper No. 3. The increase in value itself is not an economic benefit but is used as a proxy for the economic benefit of improving the environment of residential streets by removing traffic.

6.5 SOCIAL COSTS

26 **Social costs have been quantified purely in terms of changes to property values.**

Social costs are not amenable to quantification in dollar terms. For this reason the economic analysis, which deals only with costs and benefits that can be quantified, is complemented by other forms of assessment, as summarised in Table 5.12. The social costs of the proposal are also discussed in some detail in Section 4.0 of the EIS.

26 **The total cost to the community should be presented in the EIS, not just the economic and engineering costs**

The aim of the EIS was to present the total cost (and total benefit) to the community of the Proposal and a number of reasonable alternatives to the Proposal. This was the rationale in going beyond the economic (and engineering) variables, in the economic analysis, that can more easily be quantified, and paying attention to the impact of the Proposal on housing, the community structure and the visual environment (Sections 4.1 - 4.3)

6.6 PROPERTY VALUES

26,176 **The estimated increase in property values are suspect. They are only one third of the likely increase estimated in the Pak Poy/MSJ Keys Young report prepared for Council.**

The estimates alluded to in the Pak Poy/MSJ Keys Young report were based on discussions with local real estate agents who suggested that following the removal of the County Road zoning there would be an immediate 25-30% increase in the value of properties no longer affected by the zoning, and a further increase of 20-25% as the area improved. The estimates used in the EIS firstly referred to a wider range of properties (properties on streets directly or indirectly affected by changes in traffic volume) and secondly were based on experience elsewhere regarding the relationship between property values and traffic on adjacent streets.

175 **The Proposal would damage the value of houses in Palmer, Bourke and Riley Streets.**

Some property owners will benefit from an increase in value, particularly on those streets from which arterial traffic will be diverted, such as Bourke Street. Other property owners will benefit from the removal of the County Road zoning. Some owners could incur a reduction in value on roads which are presently lightly trafficked but which attract more traffic as a result of the Proposal. This could apply to Riley Street during Stage 1 only. Palmer Street north of William Street already serves heavy volumes of traffic; Palmer Street south of William Street will experience a substantial reduction in traffic after Stage 3.

6.7 DISTRIBUTION OF COSTS AND BENEFITS

29 **No account has been taken of a statement in a Working paper on the EIS that "the benefits of the project will be experienced outside the area directly affected while costs are borne locally".**

The quotation here needs to be placed in its original context:-

> "To the extent that an Eastern Distributor could bring about transport improvements, it would be of most benefit to vehicles travelling through the area. In general terms and without adequate measures being taken to mitigate harmful effects, it could well be argued that the benefits of the project will be experienced outside the area directly affected, while the costs are borne locally".

In addition the draft working paper referred to was prepared at the time that the most likely proposal for an Eastern Distributor appeared to be an at-grade or partly covered scheme, involving the loss of substantially more property than is affected by the current Proposal. In this case the local costs of the project would have been much more severe. Following the revision of the Proposal, the working paper was not adopted as an appropriate framework for analysis.

29 **Complementary planning measures are necessary to ensure a proper distribution of costs and benefits in the region**

Complementary planning measures were investigated during the preparation of the EIS and in the assessment phase (see, for example, Sections 3.3, 3.7, 3.8, and 5.1 above). It is considered that the project will achieve considerable local benefits to offset adverse local impacts.

7.0 OTHER ISSUES RAISED IN PUBLIC SUBMISSIONS

7.1 TRAFFIC VOLUMES IN OXFORD STREET

14 **A greater reduction in traffic volumes on Oxford Street is attainable. Car parking facilities for the Oxford Street shopping centre are required.**

19 **DMR should consider downgrading the arterial role of Oxford Street between Taylor Square and Centennial Square.**

The EIS forecasts a reduction in traffic volumes on Oxford Street, Paddington. Various detailed traffic management measures might be employed to further reduce traffic volumes in the Paddington shopping precinct and these will be considered separately by the Department. However, Oxford Street is a main road, and any downgrading of its arterial role should be considered in terms of the effect of traffic diversion to other roads. The Council is responsible on the question of car parking facilities.

178 **Given the reduction in surface traffic in Taylor Square there will be the opportunity to improve and upgrade this junction as an important open space.**

Figure 2.17A in the EIS represents a possible treatment for Taylor Square. More detailed examination is being undertaken as part of the preliminary design process.

7.2 RELOCATION OF COMMUNITY FACILITIES

11,13,26, 42-110 **With the location of the northern portals at Haig Avenue/Phillip Park, the City of Sydney Police Youth Club should be relocated to another site in Woolloomooloo and the affected parkland should be landscaped.**

Since the location of the northern portals at Haig Avenue/Phillip Park is not considered feasible (see Section 3.1 above), these issues are not relevant.

7.3 ATTRACTION OF PASSENGERS FROM PUBLIC TRANSPORT

12 **A new road facility can be expected to attract passengers from public transport from the eastern and southern suburbs to the Central Business District thereby increasing congestion.**

The proposed Eastern Distributor is designed as a by-pass route around the CBD. It is therefore not expected to attract public transport passengers from the eastern and southern suburbs to the CBD.

The availability and cost of parking in the CBD is considered the major constraint on private travel into the CBD. Congestion of roads leading into the CBD is not considered to significantly influence the modal split. To the extent that the Eastern Distributor will relieve traffic conditions on roads leading into the CBD, it is not expected that a change in the modal split for CBD-bound traffic will occur.

Further, the improved road network will benefit existing road-based public transport (buses and taxis), which may encourage patronage.

7.4 BIAS IN THE EIS

12 **Setting "the completion of an important arterial link" as an objective and the adoption of a limited study area are examples of bias in the EIS towards a road solution.**

The "completion of an important arterial link" was not considered as an objective for the project. Rather, the objective in this regard, inter alia, was "to improve travel conditions through the Eastern Districts". The means whereby this was thought achievable was through the "establishment of an appropriate link in the regional road network" (p.13).

The "Eastern Districts" was adopted as the main area of analysis for traffic and social and environmental impacts because it is the area in which the effects of the Proposal are likely to be most distinctly felt. Two other areas of analysis are also employed: the regional scale (p.24) and the corridor itself, for detailed design analysis

10,26 **Many sections of the EIS are selective in their choice of topic, the amount devoted to the topic and in the information presented. There is bias towards an Eastern Distributor in the interpretation of information.**

The nature of an EIS is a to present a preferred option. That scheme is supported by supplying information on the existing situation, how that might change under the preferred scheme and how adverse impacts may be mitigated. The EIS must also discuss alternatives and why they are not preferred. The Department believes that the EIS is a valid document under the EP & A Act and presents a reasonably thorough examination of all relevant issues.

7.5 LIAISON WITH COUNCIL ON TRAFFIC MANAGEMENT/IMPACTS OF CONSTRUCTION

6 **Council should maintain close contact with the DMR during pre-design studies to prepare appropriate traffic mangement plans; the key concerns should be to encourage through traffic to remain on arterials; to ensure good access to Moore Park and the Domain; to improve on east-west flows in Surry Hills and Redfern and provide an adequate truck route.**

The Department does liaise with Council and has convened meetings with Council staff to discuss pre-design studies, both during and since the preparation of the EIS. This will continue to ensure that all consequential traffic management measures are taken up. The initiative lies with Council on many of the above matters as they relate to the control of local roads.

6 **Council should maintain close contact with the DMR during the pre-design study to evaluate likely construction impacts.**

The pre-design study is being undertaken at present and meetings with Council staff have occurred and will continue to occur.

7.6 DECISION ON PROPOSAL

7 **No decision should be taken until studies have been undertaken into matters raised in the CAT report.**

The Department will comply with Section 112(3) in considering matters which are relevant to the final decision on the proposal. All matters raised in the CAT submission have been considered and further studies have been undertaken on many of them.

7.7 ROAD BASED OPTION

10 **The Anti-Freeway Action Committee expressed the view that it does not reject a road based plan but rejects the Proposal as it stands.**

Alternatives to the Proposal have been studied and are discussed in detail in Section 3.0 above. Modifications made to the Proposal since exhibition of the EIS are presented in Section 2.0 above.

7.8 PUBLIC CONSULTATION

A number of points were raised in the submissions as follows:-

10,42-110 **EIS does not adequately state or reflect community concerns.**

31 **Not enough effective public consultation with people most likely to be affected by some of the proposed changes. Consultants did not do enough primary source research.**

31 **Many people have not been aware of most meetings that were held, and have had little or no contact with action groups**

175 **Lack of consultation with residents of Woolloomooloo, Darlinghurst and Surry Hills regarding various options.**

The Department has held two public exhibitions, has distributed an information brochure to residents' letterboxes in the study area and held regular meetings with community groups thought to be representative of the affected community. The Department has made a point of maintaining contact with and being receptive to all representations by community groups. Individuals have had the opportunity to write, phone or discuss their views with the Department's officers.

The research and consultation conducted is considered to be most adequate for the purposes of the Proposal

31 **Booklet published by DMR was not distributed to all households in the Eastern Distributor corridor.**

The booklet with information on the Proposal was distributed to all residents and businesses (approx. 12000) within the following area - Sir John Young Crescent at Cahill Expressway - Elizabeth Street - Cleveland Street - South Dowling Street - Moore Park Road - Greens Road - Oxford Street - Victoria Street - Macleay Street - Darlinghurst Road - Cowper Wharf Roadway.

31 **System of "public notices" does not work well. In the Moore Park/East Redfern district there is not a regular delivery of any "local" newspaper or newsletter.**

The exhibition of the EIS was notified in the Sydney Morning Herald as well as local newspapers. This is considered adequate and complies with Clause 60 of the Environmental Planning and Assessment Regulation.

7.9 TRAFFIC ON CROWN AND BOURKE STREETS

22,173 **Does not accept predicted long term traffic reductions on Crown and Bourke Streets; roads will attract more traffic to area.**

Following construction of the Proposal, through traffic can be discouraged from using Crown and Bourke Streets by traffic management, as suggested in the EIS, if this is desired by Council.

7.10 DISTRIBUTION OF COSTS/BENEFITS

22 **The EIS ignores the distribution of costs and benefits. The benefits of the Proposal are small and unevenly spread. The plan is divisive and sets different sections of the community against one another.**

The distribution of costs and benefits is not ignored in the EIS. The distribution of local costs and benefits will be affected by the redistribution of traffic. A far larger number of residents will derive benefit from the Proposal than will be adversely affected. The precise redistribution of costs and benefits under the Proposal is noted particularly in Section 4.0 of the EIS.

The financial costs of the project and the road-user benefits will be distributed throughout the community of Sydney and N.S.W.

The Proposal may be considered divisive in that it alters environmental conditions in the Eastern Districts, improving the situation for large parts of the area and limiting adverse effects to much smaller areas. This occurs as an inevitable result of the planning process, designed mostly to provide benefits to the greatest number.

7.11 TRAFFIC CONGESTION

26 **There is no real proof that traffic congestion will be less than now; traffic will merely be rearranged.**

The provision of an access free route will reduce north-south travel times. East-west movement will also improve because of less conflict. While it is true that traffic will (merely) be rearranged, its grade separation will involve an overall reduction in congestion.

7.12 CONSTRUCTION IMPACTS

26 **Local residents are concerned about construction impacts, especially weekend construction, and the impacts near tunnel portals.**

While some construction might need to be undertaken out of normal working hours and construction impacts will be most significant near the portals, all construction at the surface will be regulated by the City of Sydney's "1976 Code for the Control and Regulation of Noise on Building Sites". The likely extent of construction impacts and their anticipated management is explained in some detail in Section 4.7 of the EIS.

7.13 MOORE PARK SPORTS COMPLEX

11,26 **Plans should be updated to take account of flows generated by new Moore Park Sports complex.**

Weekend traffic flows generated in the Moore Park area have been analysed in the study. It is unlikely that the new Sports Complex will generate a demand greater than existing events. Provision will be made to allow the special bus services to continue to operate from Central Station via Albion Street. These services will not be adversely affected by the Proposal.

7.14 PUBLIC INQUIRY

26 **A Public inquiry is needed to ensure that rehousing is undertaken. Compensation levels should be determined by a public inquiry.**

Compensation for property acquisition is determined under the Public Works Act. A public inquiry is a matter for the Minister for Planning and Environment.

7.15 MOTORISTS' PERCEPTION OF TRAVEL TIME SAVINGS

26 **Travel time savings are minimal and therefore unimportant to the motorist; short time savings are not perceived by motorists according to a study prepared for DMR. (The Social Effects of Freeways, Planning Workshop 1979).**

The study cited by this submission was not accepted by the Department. A number of studies including the Leitch Report (1977) referred to in Economic Working Paper No. 4, have documented that motorists do perceive and value small travel time savings.

7.16 DIFFERENCES AMONG OPTIONS

26 **Overall there is not much difference among the various road options investigated in terms of severance effects and direct/indirect displacement costs.**

The Department disagrees with this statement. On physical grounds alone, there are vast differences among the options investigated and the variations in lengths of cut and cover under these options have large differences in their severance effects and direct displacement costs. Indirect displacement costs, such as those associated with removal of the County Road reservation, remain the same under each option.

7.17 VISUAL IMPRESSIONS

31 **South Dowling Street is the introduction to the city, the first part seen by visitors, and should not be choked by traffic or heavy trucks.**

It is not anticipated that South Dowling Street will be choked with traffic. It will be a free flowing traffic facility. More visitors to Sydney will have the pleasant visual aspect of Moore Park as they enter the city.

31 **Many people have chosen to live in this (Moore Park/Surry Hills) environment. It should not be made to resemble Balgowlah, Forestville or other sub-urban freeway systems.**

There is no change proposed to the physical environment in this area of Moore Park/Surry Hills.

7.18 EAST REDFERN

31 **Very little was done in relation to the residential district of East Redfern**

Surry Hills constituted a larger proportion of the area (the 'Eastern Districts') thought to be most directly affected by action taken on an Eastern Distributor. It therefore received relatively more attention in the EIS than East Redfern, but streets in that area affected by the Proposal (Baptist Street, South Dowling Street, Cleveland Street) have been considered.

7.19 ADEQUACY OF EIS

7,176 **EIS fails to propose measures to mitigate all identified impacts, as required by the Director's requirement No. 4, specifically with regard to South Dowling Street, the displacement of people, the relationship with east-west traffic, the lack of promotion of public transport, and the movement of hazardous materials.**

It is considered that the EIS has comprehensively identified and assessed all environmental impacts as required by S.112 and Clause 57 and 58. Where appropriate, mitigating measures have also been proposed in the EIS. It is not considered essential for an EIS to propose measures to reduce every detrimental effect. In terms of S.112(3) this is done at the time of the final decision, after considering public submissions. Where effects are considered to be significant, further mitigating measures are proposed in this Clause 64 assessment report.

The Director's requirements were written at the time when the proposal was a distributor in open-cut coming to the surface in Flinders Street. The capacity of Flinders Steet to accommodate the traffic, the impacts on residential areas at this southern end and effects of displacing a large number of people were all of concern at that time. As a consequence of the EIS process the proposal was changed to a tunnel scheme. It is considered that this change constitutes a substantial measure to mitigate these impacts and thereby compliance with the Director's requirement No. 4.

7.20 ABANDON STAGE 1

6,11,13,18,26 27,28,42-110 **Stage 1 should be abandoned.**

Chapter 6 of the EIS discusses the reasons why Stage 1 should be built. Stage 1 as a whole will achieve significant benefits for road users for five years while Stages 2 and 3 are being constructed.

8.0 OTHER SUBMISSIONS

The following submissions expressed their support for the Proposal.

34 "This Proposal will greatly assist north-south traffic in the City and free traffic movement of the Eastern Suburbs, by the reduction of accidents and the removal of black spot intersections". (POLICE DEPARTMENT).

38 "Construction should begin immediately after acceptance of the E.I.S." (STATE CHAMBER OF COMMERCE AND INDUSTRY).

179 The Proposal will be ... "a phenomenal improvement for the Eastern and Southern Suburbs motorists (and) road transport operators". It will also make a difference to the lives of residents of East Sydney. (PREMIER CRU WINE AND CATERING SERVICES).

The following submissions have no objection to or no major concern with the Proposal.

3 No objection (DEPARTMENT OF MINERAL RESOURCES).

5 "No objection from a nature conservation or archaeological point of view." (NATIONAL PARKS AND WILDLIFE SERVICE).

35 "The Proposal will not significantly affect tourism in the area". (TOURISM COMMISSION OF NEW SOUTH WALES).

4 Not affected by the Proposal (ELECTRICITY COMMISSION OF NEW SOUTH WALES).

The following submissions have indicated qualified support for the Proposal.

7 The Proposal will:

- Reduce traffic flows in Bourke, Crown and Baptist Streets ... with associated reductions in air and noise pollution.
- Make possible initiatives by Sydney City Council to discourage through traffic in the residential parts of Surry Hills and Redfern.
- Provide an opportunity to substantially upgrade the community and regional resource of Taylor Square.

- Reduce traffic flows on Albion Street, Surry Hills, leaving only local traffic, with associated reductions in air and noise pollution.
- Improve access to local community and commercial facilities on Crown and Bourke Streets, Surry Hills.
- Complement the objectives of the Sydney City Council "Inner City Bicycle Plan."
- Greatly improve pedestrian movement in Surry Hills and Redfern because of large traffic reductions on local streets.
(COMMUNITIES FOR ACTION ON TRAFFIC)

14 In favour of the project as it affects Oxford Street, Paddington, in that it reduces the volume of traffic in this busy shopping centre. (PADDINGTON CHAMBER OF COMMERCE.)

19 Thorough assessment of the environmental issues involved in the planning of an inner-urban arterial road.
(NATIONAL TRUST)

36 The Proposal is a sensitive response to a major planning problem and provides substantial benefits to the communities of inner Eastern Sydney; these latter will become increasingly appreciated and valued with time.
(ALDERMAN CLOVER MOORE ON BEHALF OF C.A.T.).

111-172 Support the proposal because of the huge environmental benefits which it will bring to the communities of Surry Hills and Redfern, in particular:

- Decreases of up to 70% in traffic travelling on Crown, Bourke, Baptist and Albion Streets.
- Considerable and worthwhile improvements to Taylor Square, helping realise its potential as a community and regional resource.
- Easier and safer pedestrian and cyclist movement through our residential streets.
(FORM LETTER TYPE 2 - SEE APPENDIX B).

173 The Proposal has many merits and is superior to the original plans.
(C. DRYDEN).

177 The Institute supports the Department's general methodology in preparing the document and the tunnel concept for the Distributor. (ROYAL AUSTRALIAN PLANNING INSTITUTE).

178 . An immediate benefit which we endorse is the removal of uncertainty that has affected land in the study area zoned as County Road reservation since the 1950's.

. We also endorse the recommendation that this surplus land, owned by the Department of Main Roads, now be made available for redevelopment as primarily residential land. (ROYAL AUSTRALIAN INSTITUTE OF ARCHITECTS).

180 **The Proposal provides for:**

. reducing air and noise pollution levels in Surry Hills, Darlinghurst, East Sydney and Woolloomooloo and so can be anticipated to lead to an improvement in the environmental quality of Department schools located in these areas and the residential areas served by these schools.

. a reduction of traffic on local streets making access to and from school facilities safer for the children in our charge.

. residential development, including the potential for public housing, at a time when accommodation at many inner city schools is underutilised. (DEPARTMENT OF EDUCATION - METROPOLITAN EAST REGION).

PART C

APPENDICES

APPENDIX A

SUMMARY OF E I S

(EXTRACT FROM E I S)

This report considers the likely environmental impact of the proposed "Eastern Distributor", a twin tunnel arterial road scheme to be built in three stages from the Cahill Expressway in Woolloomooloo to Drivers Triangle at Moore Park (Figure 1.1). The Proposal derives from a longstanding plan for a bypass route on the eastern side of Sydney's Central Business District which would also divert regional traffic from local streets. Previous designs have met with resistance because of their social impact and substantial property loss in one of Sydney's oldest areas.

This proposal involves the provision of two tunnels, one for southbound traffic from the Cahill Expressway to Drivers Triangle and the other for traffic travelling in the opposite direction, towards the Harbour Bridge. In the first instance though, it is proposed that an underpass be constructed at William Street and the present southbound route be geometrically improved at Stanley Street (Figure 2.1) to provide immediate benefits for traffic travelling through the area. This element of the scheme (Stage 1) is also required for the next two stages, which involve the construction of the southbound and northbound tunnels respectively.

The construction of the Eastern Distributor as proposed will allow the lifting of the "County Road reservation" which has affected the area since the early 1950's and been the cause of much building dilapidation and disrepair. An immediate benefit of the Proposal will therefore be the removal of the uncertainty that has affected this area. Together with land remaining from construction, the property in the "corridor" already in public ownership can be rehabilitated or redeveloped. Further, there is the potential for more dwellings to be constructed on these sites than will be demolished for road construction.

The most immediate benefit of the proposal will be to "through traffic". There will be reduced congestion and delay and a greater sense of continuity in the road system leading from major facilities such as the airport to the city and beyond. As the project progresses however, there will be substantial environmental benefits for residential areas in Surry Hills, Darlinghurst, East Sydney and Woolloomooloo, currently subject to heavy traffic flows. Air and noise pollution levels will decline, local streets will become safer and local services and facilities will be more accessible. Safety at major intersections in the vicinity will also improve.

The character of the area will change as a result of the rezoning of land (from 'County Road' to other uses) and as a result of environmental improvements. This will be of general benefit to the City and the local community. However, without ameliorative measures being taken, the major social costs of the project will be borne by people displaced and by those residents adversely affected by the upgrading of the area and the subsequent loss of low income accommodation.

The costs and benefits of the proposal will be unevenly spread in the Eastern Districts (Figure 1.6). For example, there will be a substantial decrease in traffic in a number of streets but increases in traffic volumes in some streets and some corresponding decline in their environmental quality. This report therefore also examines measures which could be taken to mitigate adverse effects.

The report considers a range of feasible alternatives to the proposal. These are examined in terms of transport, environmental and social objectives established for the project. Where possible, the evaluation has been translated into monetary terms to provide an economic evaluation of the proposed scheme, compared with other possible schemes.

In terms of capital expenditure, the proposal is costly as it involves substantial tunnelling. However, in terms of the social costs avoided and the environmental benefits achieved, it ranks well compared with other options for the area. When the redevelopment opportunities provided by this scheme (including the potential provision of much needed public housing) are also taken into account, the Proposal is considered desirable on transport, social and environmental grounds.

THE PROPOSED EASTERN DISTRIBUTOR

Stage 1:

The first stage of the new scheme will provide an underpass of William Street, at Palmer Street, for southbound traffic.

The bends between Palmer and Bourke Streets will be widened and straightened. There will be easier left hand turns into William Street and Oxford Street.

William Street traffic heading toward the Harbour will only be able to turn right at Riley Street.

Traffic congestion along William Street, Palmer Street and Crown Street will be significantly alleviated.

Stage 1 is scheduled for completion by 1988.

Stage 2:

In the second stage, a Tunnel will be bored from a point just north of William Street near Palmer Street, through to Anzac Parade, with branches coming out directly onto South Dowling Street and Moore Park Road.

This will give southbound traffic heading toward the east, south east and south, including the airport, an uninterrupted flow.

Bourke Street and Palmer Street will then be used exclusively for northbound traffic.

Together with improvements in the phasing of traffic signals, this will significantly improve the flow of northbound traffic.

Existing busy streets, such as Crown Street, will return to the role for which they were designed — quieter, less congested local roads.

Stage 2 is scheduled for completion in 1990.

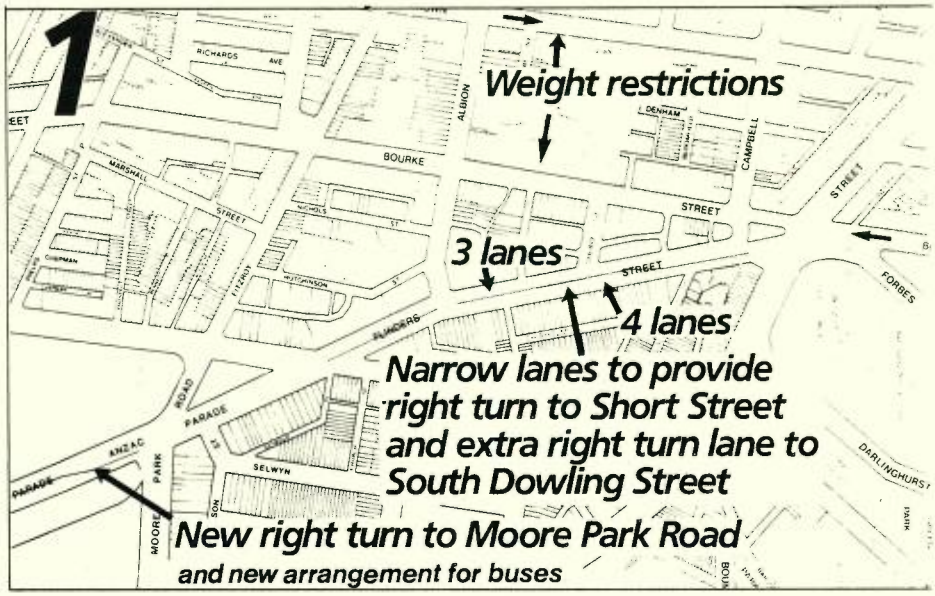
Stage 3:

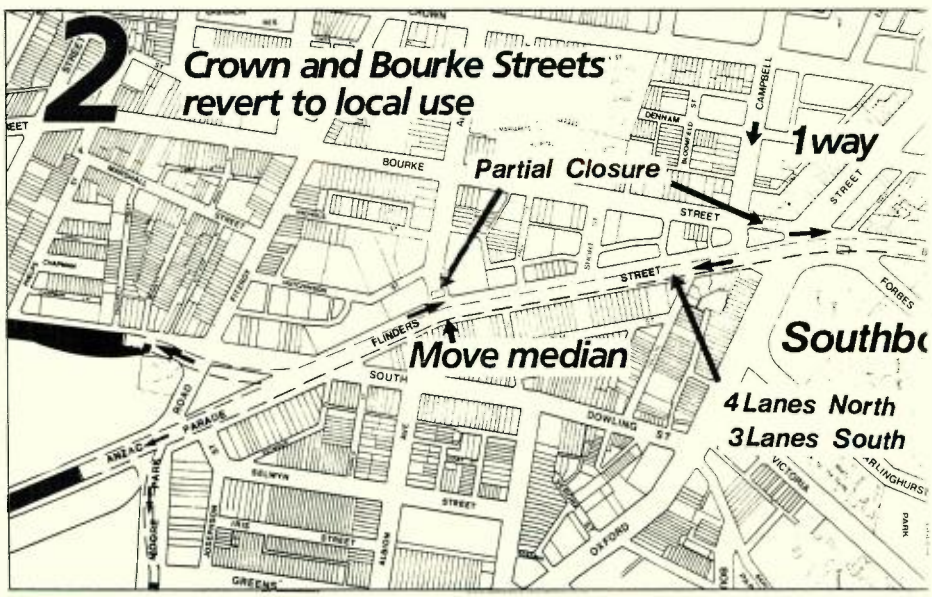
In the third stage of development, a tunnel will be bored from Flinders Street to connect with the underpass of William Street.

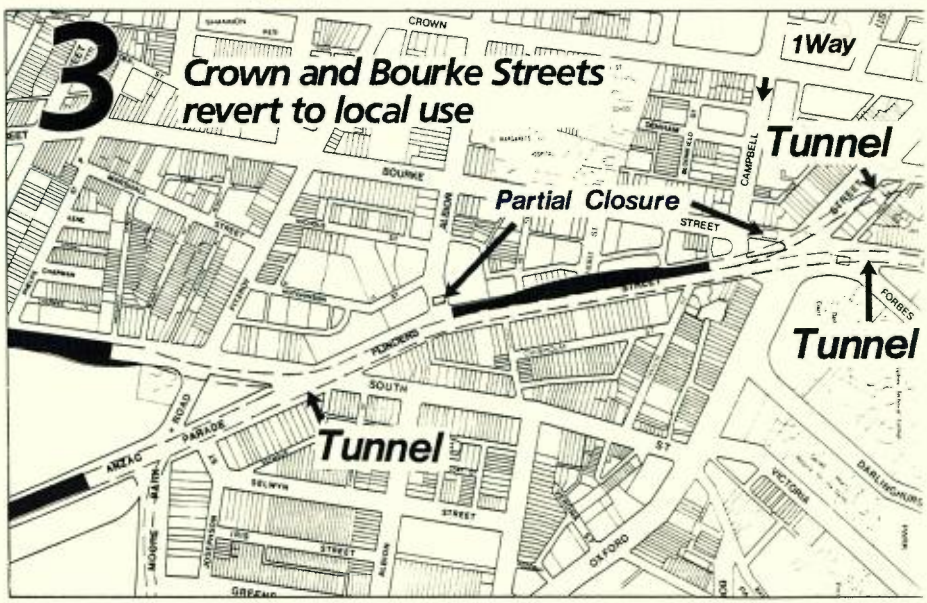
This will give northbound traffic an uninterrupted flow.

Surface roads will become quieter and less congested as they are used for local traffic movement.

Stage 3 is scheduled for completion in 1992.







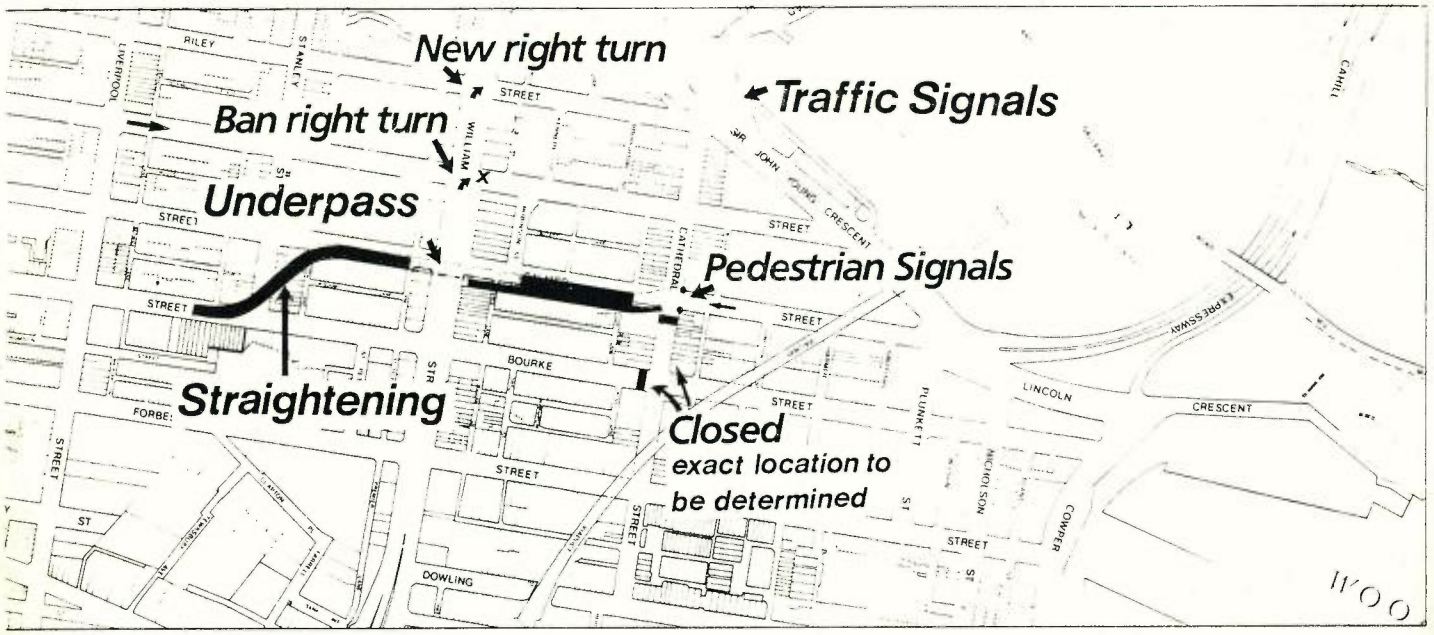
Eastern Distributor - August 1985

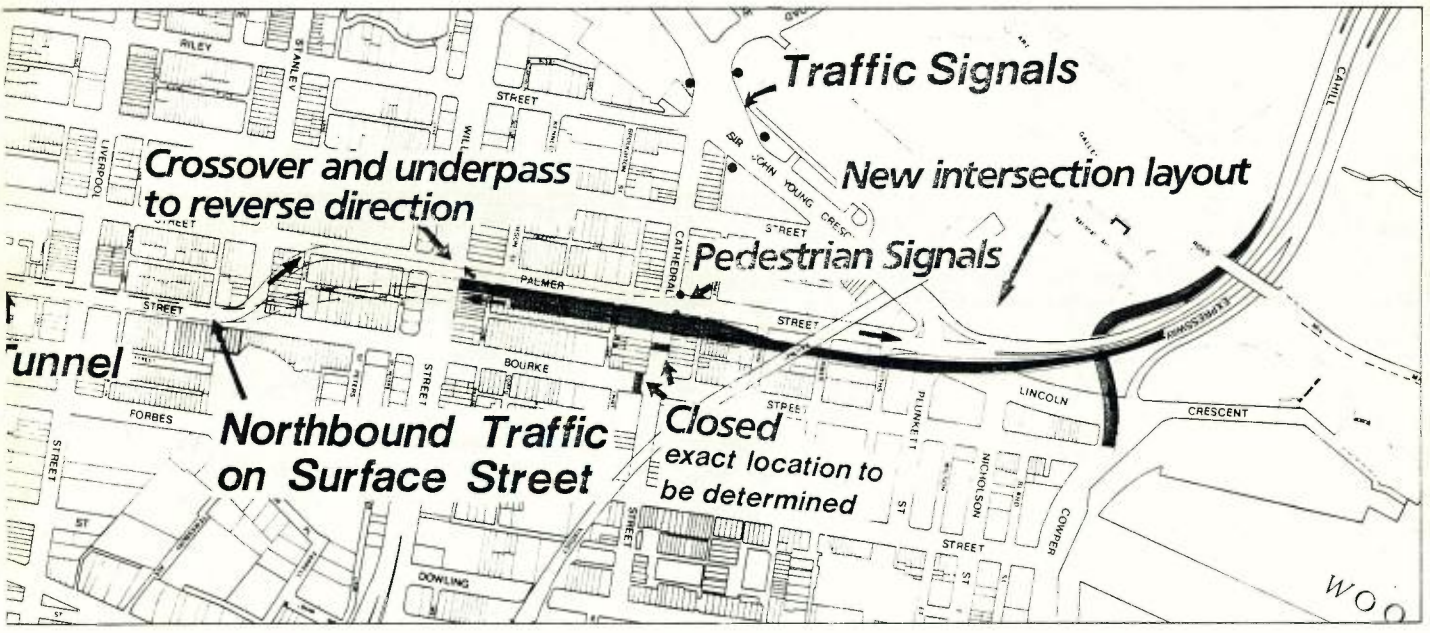
DMR

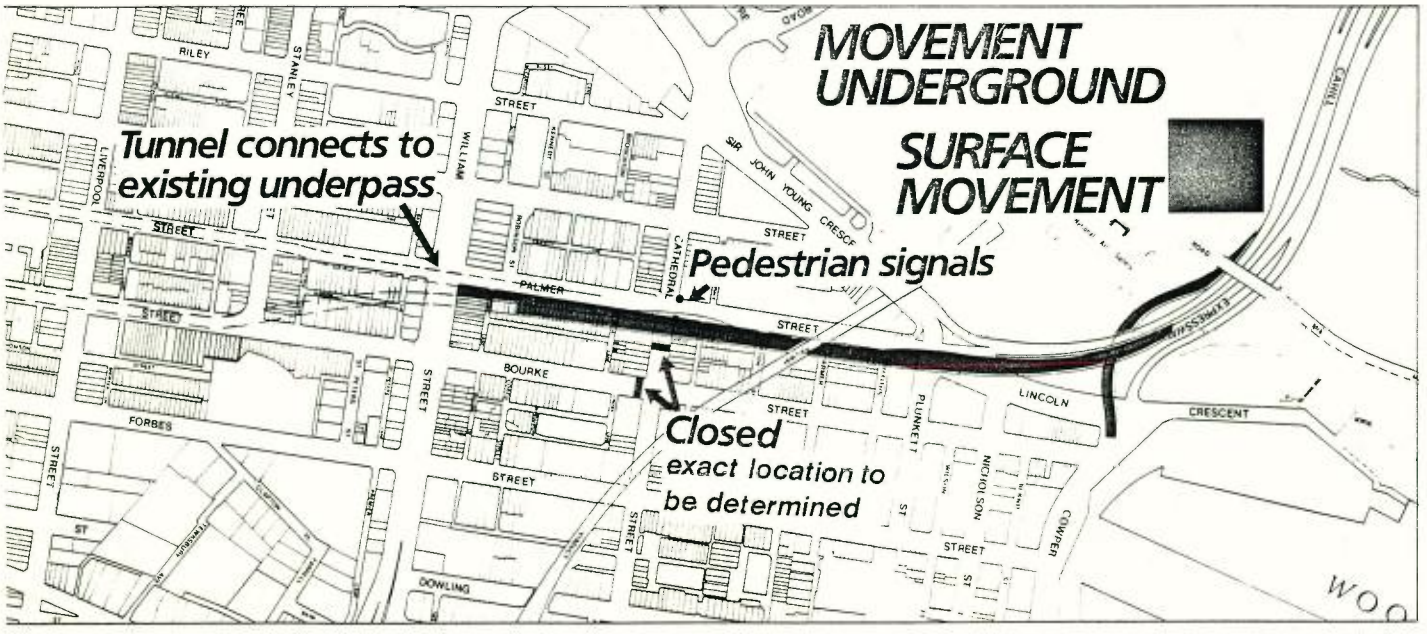
1.1 N

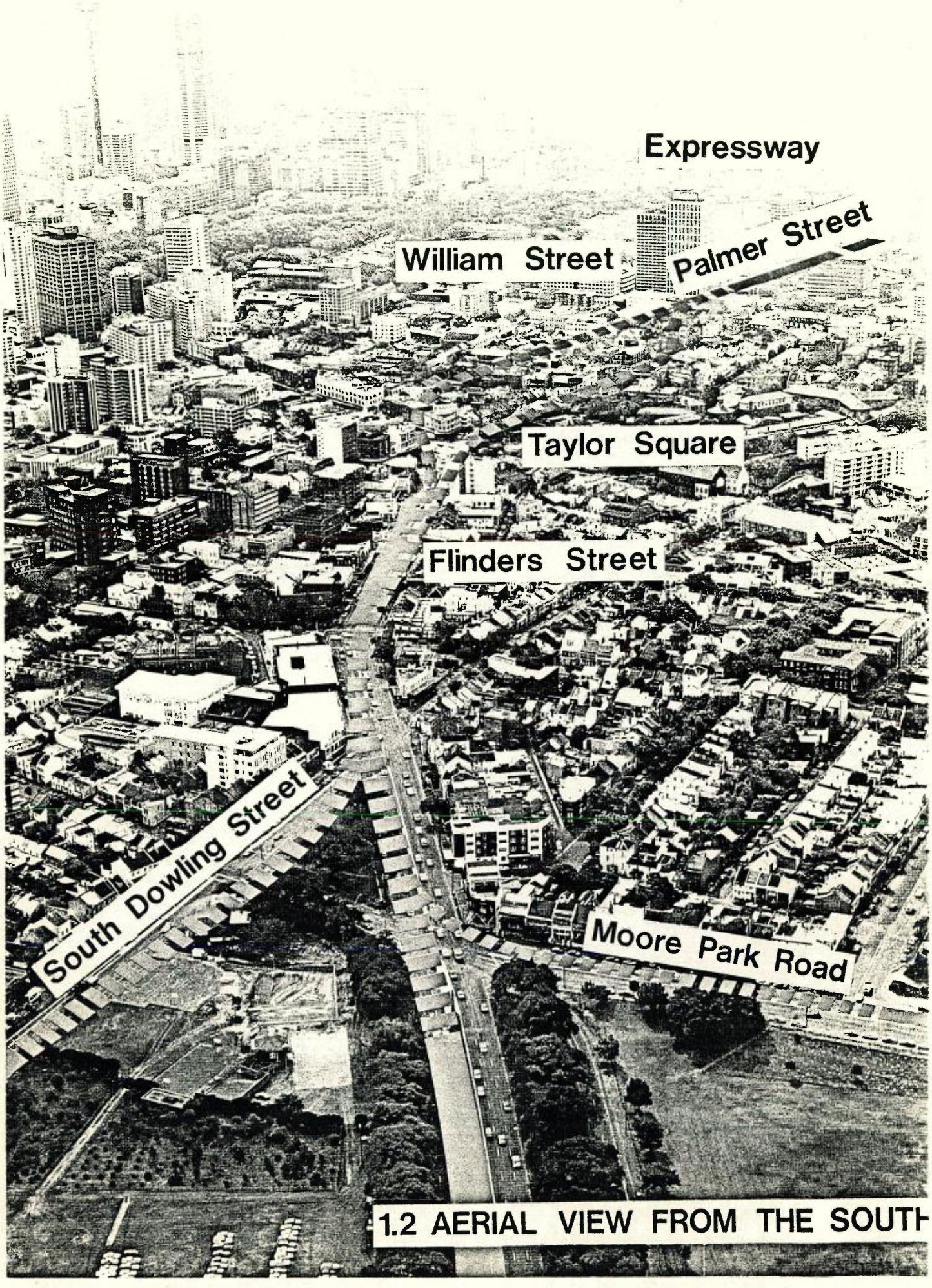
200 M

THE PROPOSAL


New right turn
Traffic Signals
Ban right turn
Underpass
Pedestrian Signals
Straightening
Closed
exact location to
be determined


Traffic Signals
Crossover and underpass
to reverse direction
New intersection layout
Pedestrian Signals
Tunnel
Northbound Traffic
on Surface Street
Closed
exact location to
be determined


MOVEMENT
UNDERGROUND
SURFACE
MOVEMENT
Tunnel connects to
existing underpass
Pedestrian signals
Closed
exact location to
be determined



1.2 AERIAL VIEW FROM THE SOUTH

APPENDIX B

LIST OF SUBMISSIONS

Submission No.	Name	Date
1.	Telecom Australia	16.9.85
2.	M.W.S. & D.B.	2.9.85
3.	Dept. of Mineral Resources	5.9.85
4.	Electricity Commission	17.9.85
5.	N.P.W.S.	18.9.85
6.	Sydney City Council	20.9.85
7.	Communities for Action on Traffic	Sept. 1985
8.	C.A.T. (South Dowling Street)	13.9.85
9.	C.A.T. (South Dowling Street) Refined Sub.	23.9.85
10.	Anti-Freeway Action Committee Initial Sub.	19.9.85
11.	Woolloomooloo Tenants Assoc.	30.8.85
12.	Action for Public Transport	21.8.85
13.	Australian Labor Party	3.9.85
14.	Paddington Chamber of Commerce	2.9.85
15.	Toga Ltd.	11.9.85
16.	Ald. Clover Moore (Sydney Council) Media Release	13.9.85
17.	Total Environment Centre	Sept. 1985
18.	Petition (152 Names)	N.K.
Issues:	Not proceed with Stage 1 Nth Portals Philip Pk/Haig Av. Guarantee replacement housing Transfer DMR prop. to H.C.	
19.	The National Trust of Australia	22.10.85
20.	Western Sydney Regional Organisation of Councils	10.10.85
21.	P. Hoban	3.9.85
22.	B. Murphy	16.9.85
23.	E. Cook	18.9.85
24.	Pet. to Legislative Assembly (No. of petitioners - 7)	24.9.85
Issues:	Riley Street	
25.	Action for Public Transport: Media Release	17.9.85
26.	Anti-Freeway Action Committee (Final Sub)	24.9.85
27.	Woolloomooloo Residents Action Group	19.9.85
28.	Oxford St. & Sth. Darlinghurst Association	19.9.85
29.	Inner Sydney Regional Transport Group	20.9.85
30.	Surry Hills East-West Traffic Action Group	20.9.85
31.	M. Atkinson (Redfern)	19.9.85
32.	E. & S. Hurlimann (Surry Hills)	19.9.85
33.	M. Phelan (Surry Hills)	14.9.85

Submission No.	Name	Date
34.	Police Department	2.10.85
35.	Tourism Commission of N.S.W.	1.10.85
36.	Ald. Clover Moore (Correspondence to Minister)	6.9.85
37.	J. Quayle (Corr. to Minister)	11.8.85
38.	State Chamber of Commerce & Industry (Corr. to Minister)	15.8.85
39.	P. Dahl-Helm (Corr. to Minister)	No date
40.	J. Quinnell (Corr. to Minister)	20.9.85
41.	The Langton Clinic	30.9.85
42-110	Form Letter Type 1 (69 Letters)	
Issues	E.I.S. inadequate Not satisfied with Study. Will not be of benefit . Disadvantages.	Various
42.	R. Adams (Darlinghurst)	
43.	M Adams (Darlinghurst)	
44.	P Anderson (North Sydney)	
45.	D Belford (Lakemba)	
46.	S Belford (Helensburgh)	
47.	K J Bender (Alexandria)	
48.	K B Brochie (Darlinghurst)	
49.	P Boyd (Darlinghurst)	
50.	J Brookman (Woolloomooloo)	
51.	B Currie (Woolloomooloo)	
52.	J Clouston (Darlinghurst)	
53.	B. Dickeson (Surry Hills)	
54.	T Doulos (Woolloomooloo)	
55.	S Dunne (Surry Hills)	
56.	J Earle (Darlinghurst)	
57.	E Eldridge (Glebe)	
58.	P English (Woolloomooloo)	
59.	S Fischer (Darlinghurst)	
60.	J Fowler (Darlinghurst)	
61.	A Gent (Summer Hill)	
62.	R Genet (Bondi)	
63.	G Giles (Sydney)	
64.	K Greenwood (Woolloomooloo)	
65.	B Gunnulson (Woolloomooloo)	
66.	R Hayes (Woolloomooloo)	
67.	A Hammond (Woolloomooloo)	
68.	J Hughes (Woolloomooloo)	
69.	C Hume (East Sydney)	
70.	M Huser (Kings Cross)	
71.	C Jefferey (Woolloomooloo)	
72.	B King (Woolloomooloo)	
73.	G Leonard (Woolloomooloo)	
74.	M Leonard (Woolloomooloo)	
75.	A Leu (Darlinghurst)	
76.	J Leu (Darlinghurst)	
77.	P Mar (Darlinghurst)	
78.	S Maude (Darlinghurst)	
80.	M Mills (Woolloomooloo)	
81.	C Mills (Woolloomooloo)	
82.	F Neale (Darlinghurst)	
83.	A Otter (Kings Cross)	
84.	J Otter (Kings Cross)	

Submission No.	Name	Date
86.	P Richardson (Potts Point)	
87.	P Ryan (Woolloomooloo)	
88.	J Scanlon (Darlinghurst)	
89	P Scott (Woolloomooloo)	
90	J Seaton (Turramurra)	
91.	J Seaton (Turramurra)	
92.	A Slee (Darlinghurst)	
93.	J Smyth (Woolloomooloo)	
94.	T Spence (Kings Cross)	
95.	W Snowden (Darlinghurst)	
96.	P Tackacs (Woolloomooloo)	
97.	M Townsend (East Sydney)	
98.	D Wade (Darlinghurst)	
99.	J Wajcnam (Darlinghurst)	
100.	D Watson (Woolloomooloo)	
101.	S Wayland (Woolloomooloo)	
102.	J Weir (Darlinghurst)	
103.	R. Winkler (Woolloomooloo)	
104.	W Erwin (East Sydney)	
105.	M Rubbet (Darlinghurst)	
106.	N Smith (Darlinghurst)	
107.	K Stanton (Darlinghurst)	
108.	M Jeenow (Woolloomooloo)	
109.	M Lockwood (Cremorne)	
110.	A Antanion (Newtown)	
111-172	Form Letter Type 2 (62 letters)	Various
Issues:	Support for and concerns about proposal.	
111.	I Apps (Surry Hills)	
112.	J Brown (Moore Park)	
113.	J Broadbent (Surry Hills)	
114.	E Clifford (Surry Hills)	
115.	E Cook (Surry Hills)	
116.	T Dunne (Surry Hills)	
117.	B Enkelmann (Surry Hills)	
118.	B Forum (Surry Hills)	
119.	D Fisher (Surry Hills)	
120.	V Grokas (Surry Hills)	
121.	R Guest (Redfern)	
122.	J Hall (Redfern)	
123.	D Hughes (Surry Hills)	
124.	J Jones (Redfern)	
125.	O Kapit (Surry Hills)	
126.	T Kavaras (Redfern)	
127.	J Kelly (Surry Hills)	
128.	A Kilby (Surry Hills)	
129.	A Latham-Smith (Camperdown)	
130.	M Latham-Smith (Camperdown)	
131.	P McWilliams (Surry Hills)	
132.	D McGregor (Surry Hills)	
133.	P and V Maniatis (Surry Hills)	
134.	V Marroum (Redfern)	
135.	P Moore (Redfern)	

Submission No.	Name	Date
86.	P Richardson (Potts Point)	
136.	S Helsdingen (Surry Hills)	
137.	R Noonan (Redfern)	
138.	F Rizze (Chippendale)	
139.	A Robertson-Swann (Surry Hills)	
140.	R Robertson-Swan (Surry Hills)	
141.	R Ronan (Redfern)	
142.	J Bond (Surry Hills)	
143.	B Strath (Redfern)	
144.	J Turner (Surry Hills)	
145.	F Vuletin (Surry Hills)	
146.	A Williams (Surry Hills)	
147.	M Williams (Surry Hills)	
148.	S Willis (Redfern)	
149.	P Hardy (Surry Hills)	
150.	G Pandretos (Surry Hills)	
151.	W Barnett (Moore Park)	
152.	E Billington (Moore Park)	
153.	B Kelly (Surry Hills)	
154.	D Everett (Surry Hills)	
155.	C Salmon (Surry Hills)	
156.	M Nikolaidis (Surry Hills)	
157.	S Robinson & J Matthews (Surry Hills)	
158.	M Rapp (Surry Hills)	
159.	K Carmichael (Surry Hills)	
160.	B Kingham (Surry Hills)	
161.	J Cloppara (Surry Hills)	
162.	L Churchland (Surry Hills)	
163.	A & P Stevens (Surry Hills)	
164.	S Kalatzis (Surry Hills)	
165.	D Churchland (Surry Hills)	
166.	E Brown (Surry Hills)	
167.	R Kelly (Drummoyne)	
168.	J Herbert (Moore Park)	
169.	D Greyling (Surry Hills)	
170.	N & S Kyriacou (Surry Hills)	
171.	A Nathanael (Surry Hills)	
172.	R Lucas (Surry Hills)	
173.	C Dryden	12.8.85
174.	M Yabsley M.P.	20.9.85
175.	T Tetai No date	
176.	East Sydney Community Tenancy Scheme	18.9.85
177.	Royal Australian Planning Institute	24.10.85
178.	Royal Australian Institute of Architects	28.10.85
179.	Premier Cru Wine & Catering Services	31.10.85
180.	Department of Education - Metropolitan Eat Region	4.11.85

APPENDIX C

LIST OF SUBMISSIONS TO BROCHURE
(Those which did not make a further submission to the EIS)

SUBMISSIONS RECEIVED FROM PUBLIC AUTHORITIES, AGENCIES, INSTITUTIONS, ETC.

The Australian Gaslight Company
Board of Fire Commissioners
Bourke Street Primary School (Surry Hills)
Friends of the Earth
Inner City Care
Maritime Services Board of N.S.W.
National Roads and Motorists Association
Premier's Department
State Pollution Control Commission
Squatters and Renters Public Housing Action Collective
Sydney Church of England Girls Grammar School
St Margaret's Hospital
St Vincents Hospital
Sydney County Council
Urban Transit Authority of NSW

SUBMISSIONS RECEIVED FROM PRIVATE PERSONS

B Apel	(Sydney)
A Berton	(Potts Point)
"Beverley"	(Surry Hills)
A Christie	(" ")
P Clare	(" ")
J Clunne	(Balmain)
J Dikkers	(Potts Point)
D Evans	(Woolloomooloo)
R Facchini	(East Sydney)
S Graf	(" ")
L Griffin	(Darlinghurst)
P Halloran	(Sydney)
Hampton Court Family Hotel	(Potts Point)
J Haworth	(Darlinghurst)
G Hici	(East Sydney)
A Horsfield	(Paddington)
E Hotti	(Woolloomooloo)
T Marks	(Surry Hills)
A & J Meneghlla	(Darlinghurst)
W Mrongovius	(Paddington)
P Muldoon	(Woolloomooloo)
J Newton	(")
K & P Noakes	(Surry Hills)
B Paul	(Woolloomooloo)
D Plasto	(Potts Point)
M Ranby	(Surry Hills)
P Rawle	(Woolloomooloo)

APPENDIX C CONT'D

Residents Petition	(Woolloomooloo)
E Riley	(Paddington)
M Rodshaw	(Darlinghurst)
A & S Rosenmai	(Surry Hills)
P Ryan	(Woolloomooloo)
A Shalleh	(Surry Hills)
G & C Schwarz	(East Sydney)
R Scott	(Woolloomooloo)
M Shea	(Sydney)
Mrs Smith	(Potts Point)
D Sobek	(Woolloomooloo)
P Stevens	(Paddington)
R Tetley	(Woolloomooloo)
N Towart	(Paddington)
L Van Ummersen	(Woolloomooloo)
H Wagner	(Potts Point)
W Wijnen	(" ")