DEPARTMENT OF DEFENCE

REPORT ON THE TRAFFIC IMPLICATIONS OF THE MASTERPLAN FOR THE NAVAL STORES SITE AT ERMINGTON FOR RESIDENTIAL PURPOSES

OCTOBER 1999

COLSTON BUDD HUNT & KAFES PTY LTD
ACN 002 334 296
Level 18 Tower A
Zenith Centre
821 Pacific Highway
CHATSWOOD NSW 2067

Telephone: (02) 9411 2411
Facsimile: (02) 9411 2422
Email: cbhk@wr.com.au

REF 2996/2

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Colston Budd Hunt & Kafes Pty Limited has been retained by the Department of Defence to prepare a report on the traffic implications of the Masterplan for their Naval Stores site at Ermington. The site is located on the northern side of the Parramatta River, as shown on Figure 1.

1.2 The site is no longer used for defence purposes and is currently vacant. It was, until recently, used for the storage of new motor vehicles. The site has frontage to Spurway Street, River Road and Silverwater Road. It is proposed to use the site for residential purposes. The site has been rezoned from its previous special use zoning to a residential zoning to permit residential development.

1.3 This company prepared a report[1] on the traffic implications of the rezoning. That report assessed a potential development on the site of some 700 dwellings. The report was before Council and the other relevant authorities at the time of the rezoning. This report draws on the earlier report where appropriate.

1.4 This report examines the implications of the Masterplan through the following chapters:-

- Chapter 2 - describing existing conditions;
- Chapter 3 - describing the implications of the Masterplan

[1] "Report on the Traffic Implications of Rezoning the Naval Stores Site at Ermington for Residential Purposes", September 1996

2 THE EXISTING SITUATION

The Site

2.1 The Masterplan applies to the old Naval Stores site at Ermington. The site is located on the northern side of the Parramatta River between Spurway Street and Silverwater Road, as shown on Figure 1. The site is no longer used for defence purposes and is currently vacant. It was, until recently, used for the storage of new motor vehicles. That use was perceived as a significant problem by residents due to the generation of heavy vehicle movements in local streets. However, that use has now ceased.

2.2 The site adjoins the Parramatta River to the south. George Kendall Riverside Park is located east of the site across Spurway Street. Eric Primrose Reserve is located west of the site across Silverwater Road. However, Silverwater Road is on an embankment rising up to Silverwater Bridge over most of the western boundary of the site. This means that Silverwater Road, rather than the reserve is the dominant feature on the western side of the site.

2.3 Development to the north of the site is predominantly residential. Rydalmere East Primary School is located on Spurway Street and Ermington Shopping Centre is located just south of Victoria Road between Spurway Street and Silverwater Road.

The Road Network

2.4 The site has direct frontage to Spurway Street, River Road and Silverwater Road. Silverwater Road is a major arterial road and no access is provided to the site. The site has access off the southern end of River Road, a relatively wide residential street, however, this is not currently in general use. The primary access to the site

is currently off Spurway Street close to its southern end.

2.5 Spurway Street and River Road both run north-south from the site to Victoria Road. They intersect with Victoria Road at signal controlled intersections. Spurway Street extends north across Victoria Road connecting back to Silverwater Road via Kingsford Street.

2.6 River Road terminates at Victoria Road. However an off ramp from Silverwater Road intersects with Victoria Road opposite River Road. This allows vehicles travelling north or south along Silverwater Road to access River Road. However, vehicles from River Road can only conveniently travel south along Silverwater Road either via Victoria Road or South Street.

2.7 Right turns are permitted in and out of Victoria Road at Spurway Street, but not at River Road. Thus vehicles exiting from River Road to Victoria Road must turn left. Victoria Road is basically a six lane divided road. An eastbound S-lane has been installed at Spurway Street to provide a right turn lane.

2.8 The operations of the intersections of Spurway Street and River Road with Victoria Road are complicated by the fact that Betty Cuthbert Avenue intersects with the two streets only about 10 metres south of Victoria Road. Betty Cuthbert Avenue is, in effect, a parking area servicing the Ermington Shopping Centre and hence generates a significant amount of activity.

2.9 The pavement in Spurway Street has been marked to keep the queues at the Victoria Road stopline clear of the intersection of Betty Cuthbert Avenue. In practice this works well for vehicles entering Betty Cuthbert Avenue but can result in delays for vehicles leaving Betty Cuthbert Avenue at times of peak flows in Spurway Street.

2.10 Spurway Street is a relatively narrow street providing a single traffic lane in each direction. Traffic calming and a pedestrian crossing have been provided in the vicinity of the school to slow vehicle speeds and provide a safer environment for the children. Right turns in and out of Coffey Street are prohibited. Spurway Street does not have kerb and gutter along the site frontage.

2.11 Spurway Street intersects with Boronia Street at a T-junction with Boronia Street forming the stem of the "T". However, traffic in Spurway Street has to give way to traffic entering and leaving Boronia Street. Boronia Street is an important access to the area connecting east, via Hope Street, to Wharf Road which has a major signal controlled intersection with Victoria Road. It is also possible to move across to Ryde Bridge using the Andrew Street/Constitution Road route through Meadowbank.

2.12 The only other access to the area is via South Street. South Street is a short street connecting between River Road and Silverwater Road. Access to and from Silverwater Road is restricted to left turns only.

Traffic Flows

2.13 Peak period traffic counts were available from the previous study at the following intersections:-

* River Road with
  - South Street;
  - Coffey Street;
  - Victoria Road.

* Spurway Street with
  - Boronia Street;
  - Victoria Road.

2.14 The results of the intersection counts are shown on Figure 2 for the morning and afternoon peak hours. The two way peak hour flows are summarised in Table 2.1. It can be seen from the figure and table that, as would be expected, the highest flows occur on Victoria Road with two way flows in the range 3,900 to 4,700 vehicles per hour.

Table 2.1 : Existing Two Way Peak Hour Flows

Location	Two Way Peak Hour Flow	
	Morning Peak	Afternoon Peak
Victoria Road		
- west or River Road	4695	4465
- west of Spurway Street	4425	4075
- east of Spurway Street	4275	3940
Spurway Street		
- north of Victoria Road	210	350
- south of Victoria Road	450	655
- north of Boronia Street	500	650
- south of Boronia Street	45	25
River Road		
- south of Victoria Road	230	310
- north of Coffey Street	90	105
- south of South Street	55	55
Silverwater Road Ramp		
- north of Victoria Road	200	320
Boronia Street		
- east of Spurway Street	475	645
Coffey Street		
- east of River Road	195	130
South Street		
- west of River Road	240	160

2.15 The next busiest streets are Spurway and Boronia Streets. Spurway Street, between Victoria Road and Boronia Street, and Boronia Street itself carry flows

in the range 450 to 650 vehicles per hour. Flows on Spurway Street, south of Boronia Street, are very low, less than 50 vehicles per hour. River Road carries two way peak hour flows in the range 100 to 300 vehicles between Coffey Street and Victoria Road. These decline to less than 60 vehicles per hour south of South Street.

2.16 Coffey Street and South Street generally carry flows in the range 150 to 250 vehicles per hour. Morning peak hour flows are higher than afternoon peak hour flows in Victoria Road. Afternoon flows are generally higher than morning flows on the other streets with the exception of Coffey Street, South Street and the southern end of Spurway Street.

2.17 It is apparent from an examination of the flows shown on Figure 2 and observation of the area, that there are significant movements of traffic through the area that have no destination in the immediate area. The main movements are westbound from Boronia Street to South Street, two way between Victoria Road and Boronia Street using Spurway Street and westbound from Boronia Street to Victoria Road at River Road.

2.18 It is estimated, from an examination of the flows shown on Figure 2, that of the order of 400 vehicles per hour two way pass through the area. The movement is predominantly westbound during both peak periods. This is a result of the way the streets, particularly River Road and South Street, connect to the road network. There are also significant movements from the Ermington Shopping Centre to Silverwater Road via River Road and South Street and between the centre and Boronia Street via Spurway Street.

2.19 Whilst it is beyond the scope of this study to address this issue it is worth noting that the volume of through traffic could be significantly reduced in Tristram Street, Coffey Street, River Road and South Street if the left turn out of South

Street into Silverwater Road was prevented by a partial road closure. However, this would tend to increase flows in Spurway Street and, possibly, the northern end of River Road.

Intersection Operations

2.20 The operations of the surveyed intersections have been analysed using the SCATES and INTANAL programs. The SCATES program analyses the operations of co-ordinated traffic signals and has been applied to the intersections along Victoria Road. The INTANAL program has been used to analyse the other, sign controlled intersections. The programs produce a number of measures of intersection operations. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle.

2.21 Based on average delay per vehicle, INTANAL and SCATES estimate the following levels of service (LOS):-

- For Traffic Signals, the average delay per vehicle in seconds is calculated as Delay/(All Vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other Control Mode.

>70	=	"F"	Unsatisfactory and requires additional capacity

- For Give Way and Stop Signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Acceptable delays and spare capacity
29 to 42	=	"C"	Satisfactory but accident study required
43 to 56	=	"D"	Near capacity and accident study required
57 to 70	=	"E"	At capacity and requires other Control Mode
>70	=	"F"	Unsatisfactory and requires other Control Mode

2.22 It should be noted that for Roundabouts, Give Way and Stop Signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

2.23 The INTANAL and SCATES analysis are summarised in Table 2.2. The above analysis indicates that the intersections are all operating at level of service A, a good level of service. This accurately reflects the situation in relation to the intersections away from Victoria Road.

2.24 The intersections along Victoria Road do, in fact, have adequate capacity to cater

for existing flows, particularly since the completion of the Silverwater Road overpass. However, downstream constraints, notably the intersections west of Silverwater Road can result in queues and congestion in the section of Victoria Road around Spurway Street and River Road.

Table 2.2 - Intersection Analysis Results

Intersection	Average Delay (sec/veh)		Level of Service	
	Morning	Afternoon	Morning	Afternoon
Victoria Road with				
- River Road	4	5	A	A
- Spurway Street	4	5	A	A
Spurway Street with				
- Boronia Street	10	12	A	A
River Road with				
- Coffey Street	6	6	A	A
- South Street	6	6	A	A

Residential Amenity

2.25 It is also necessary to examine the implications of traffic flows in terms of their impact on residential amenity. The definition of the impact on residential amenity by varying levels of traffic flow is extremely complex. Perceptions of impact vary greatly from person to person. Traffic flows that one person may find perfectly acceptable may be considered excessive by another. Impact is affected by the nature of the street and the area in which it is located, its width, building setbacks, grades etc. as well as by the speed of traffic and the mix of cars and heavy vehicles.

2.26 Traffic on any class of road has an impact on the amenity of an area. Noise and pedestrian access are also important factors to be considered in the development of new properties abutting major roads. Traffic limits such as volumes, speed limits, do not generally apply to major roads, although emphasis is currently being placed on traffic calming issues on sub-arterial roads and in retail areas.

2.27 The Environmental Capacity of an area is determined by the impact of traffic, roads and various aspects of the location.

Traffic characteristics;

- traffic volume;
- traffic composition, in particular the proportion of heavy vehicles;
- vehicle speed.

Road characteristics

- road reserve and carriageway width;
- number of traffic lanes;
- gradient;
- road surface conditions;

Locality characteristics

- distance from road carriageway to property boundary;
- nature of intervening surfaces;
- setback of building from property boundary;
- type and design of building

2.28 The Roads and Traffic Authority has undertaken considerable research into appropriate environmental capacity performance standards on residential streets. Their "Guide to Traffic Generating Developments" defines the following environmental capacity performance standards for local residential streets and collector roads.

- Local Roads
  - Environmental goal - 200 vehicles per hour in the peak hour;
  - Maximum flow - 300 vehicles per hour in the peak hour;

- Collector Roads
  - Environmental goal - 300 vehicles per hour in the peak hour;
  - Maximum flow - 500 vehicles per hour in the peak hour.

2.29 Spurway Street and Boronia Street are currently performing, at least, a collector function. Indeed given the fact that they are carrying relatively long distance through traffic flows they are arguably performing some arterial functions. These two streets are currently carrying flows in excess of the desirable maximum flow for collector roads. This situation could only be addressed by some action to control through traffic, such as the partial closure of South Street, discussed above.

2.30 The residential sections of River Road are generally carrying flows well within the environmental goal for local streets. An exception to this is the short section between Coffey Street and South Street. Flows in Coffey and South Streets are below the maximum flows for local streets but equal or exceed the environmental goal.

2.31 Thus, whilst the area generally experiences a good level of amenity, the

environment of some streets is affected by traffic flows. This results primarily from vehicles driving through the area, rather than from the generation of the area itself.

Public Transport

2.32 Public transport services in the area are provided by private bus services. Route 333, a sub-regional service from Parramatta to Chatswood runs along Victoria Road. Route 540 also runs along Victoria Road between Parramatta and West Ryde. The only route that directly serves the area is Route 406 that travels from Auburn along Silverwater Road, loops around via Victoria Road, Spurway Street, Coffey Street, River Road and South Street back to Silverwater Road.

2.33 Route 333 is a peak period service operating at hourly frequencies. The other routes generally provide a 15 to 30 minute frequency in peak hours falling to 30 to 60 minutes outside the peaks. Thus, whilst the bus services provide connections to the rail system at Parramatta, Auburn and West Ryde, public transport access is limited, and, at its closest, about 300 metres from the site.

3 IMPLICATIONS OF THE MASTERPLAN

3.1 The Masterplan allows for a residential development with a total of up to 700 dwellings. This is the same number of dwellings as considered at the time of the rezoning.

3.2 The concept plan shows the following possible mix of dwellings:-

- Detached Houses - 20 dwellings;
- Duplexes, Courtyard Homes and Town Houses -320 dwellings; and
- Apartments - 360 dwellings.

3.3 The concept plan indicates that the 360 apartments comprise 240 two bedroom and 120 three bedroom apartments. This report examines the transport implications of the Masterplan through the following sections:-

- access and internal circulation;
- implications for the road network;
- public transport implications; and
- summary.

Access and Internal Circulation

3.4 The site has frontage to Spurway Street, River Road and Silverwater Road. Access is currently available from River Road and Spurway Street, although only the Spurway Street access was in regular use. The possibility of providing access off Silverwater Road was investigated.

3.5 The provision of access off Silverwater Road is complicated by the fact that over most of the site frontage the road is on an embankment climbing up to Silverwater Bridge. Silverwater Road also narrows from 6 to 4 lanes in the vicinity of the site. Preliminary discussions with the Roads and Traffic Authority indicated that the only way that direct access could be considered would be if it were restricted to left turns only.

3.6 This would involve a new road link under the northern end of Silverwater Bridge if access were to be provided from the south. This would be expensive and would have a significant impact on the riverside park and the Eric Primrose Reserve. It was determined that provision of access from the south could not be justified for a residential development.

3.7 Consideration was also given to providing a left turn into the site from the north. The access would have to be located in the north west corner of the site as this is the only area where the site and Silverwater Road are roughly at the same level. Whilst it will be necessary to ensure that there is no conflict between merging traffic in Silverwater Road and the deceleration lane required to serve the entry, it is proposed that a left turn entry be incorporated into the development.

3.8 Access to the development will therefore be a left turn in only from the north along Silverwater Road and via River Road and Spurway Street. There are no intrinsic difficulties in connecting to either River Road or Spurway Street. The River Road access will simply be an extension of the existing street. Spurway Street basically only serves the site at its southern end. The external implications of the use of these streets are discussed in the following section. It will be necessary to complete construction of Spurway Street to a suitable standard, including kerb and gutter, between Boronia Street and the site access.

3.9 The proposed internal layout of streets within the development has been designed to allow residents of the area to arrive and depart via Silverwater Road (entry only), River Road or Spurway Street, whichever is most convenient. This will reduce to a minimum the risk of traffic from the new development using streets, such as Tristram and Coffey Streets, to move between River Road and Spurway Street.

3.10 The street network for the site shown on the concept plan suggests that River Road would be extended through to the river, reflecting the existing arrangement with Spurway Street. The main internal road would connect, between Spurway Street and River Road. A number of local access roads would serve the various residential precincts. The internal roads would be designed in accordance with relevant codes and standards.

Implications for the External Road Network

3.11 The masterplan allows for a residential development of up to 700 dwellings, comprising 20 detached houses, 320 duplexes, courtyard homes and townhouses and 360 apartments. The 360 apartments are expected to comprise some 240 two bedroom apartments and some 120 three bedroom apartments.

3.12 The Roads and Traffic Authority's "Guide to Traffic Generating Developments" recommends design generation rates for residential development. The relevant rates for weekday peak hours are as follows:-

- Detached dwellings - 0.85 vehicles per hour per dwelling;
- Townhouses etc. - 0.5 to 0.65 vehicles per hour per dwelling;
- Apartments -two bedrooms - 0.4 to 0.5 vehicles per hour per dwelling;

- three or more bedrooms - 0.5 to 0.65 vehicles per hour per dwelling.

3.13 The above rates have been applied to the development as shown in the concept plan. The higher rates have been applied to the townhouses and apartments to ensure a conservative analysis.

3.14 The resulting forecast additional traffic generation for the residential development is some 420 vehicles per hour two way during the morning and afternoon peak hours. It is expected that about 80 per cent of the peak hour generation would be outbound in the morning peak hour and inbound in the afternoon peak hour. An allowance of 30 vehicles per hour two-way has been made for vehicles that would be attracted by the proposed ferry wharf at the southern end of Spurway Street. This gives a total generation of 450 vehicles per hour two-way.

3.15 It was assumed, on the basis of a review of the distribution of existing traffic movements in and out of the area, that the traffic generated by the development would split between the various approach and departure routes as follows:-

- Victoria Road (East) - 15 per cent;
- Silverwater Road (North) - 15 per cent;
- Victoria Road (West) - 25 per cent;
- Silverwater Road (South) - 15 per cent; and
- Boronia Street (East) - 30 per cent.

3.16 The forecast flows have been assigned to the road network using the above distribution. This results in traffic flows as shown on Figure 3 and summarised in Table 3.1. It can be seen from the figure and the table that, as would be

expected, the greatest increases in flows occur at the southern end of Spurway Street and River Road.

3.17 Flows are expected to increase to about 300 vehicles per hour two way in Spurway Street, south of Boronia Street, and 140 to 200 vehicles per hour in River Road. The difference between morning and afternoon peak hour flows arises primarily as a result of the restrictions on access between River Road and Victoria Road and between South Street and Silverwater Road.

3.18 Flows on Spurway Street, north of Boronia Street increase by about 140 vehicles per hour in both the morning and afternoon peaks to flows of about 650 and 800 vehicles per hour two way in the morning and afternoon peak hours. Flows at virtually all other locations increase by less than 100 vehicles per hour two way.

3.19 The slip lane off Silverwater Road would potentially be used by vehicles approaching from the north along Silverwater Road and from the west along Victoria Road. It was estimated that some 15 and 55 vehicles per hour would arrive from the north during the morning and afternoon peak hours respectively. Some 20 and 90 vehicles per hour would arrive from the west during the same periods. It was assumed that all vehicles from the north and some 50 per cent of vehicles from the west would use the new slip lane. On this basis, the number of vehicles using the slip lane would be some 25 vehicles per hour during the morning peak and 100 vehicles per hour during the afternoon peak. These are relatively small numbers of vehicles given the relatively high cost of providing the access.

Table 3.1 : Existing Two Way Peak Hour Flows

Location	Two Way Peak Hour Flow			
	Morning Peak		Afternoon Peak	
	Existing	With Development	Existing	With Development
Victoria Road				
- west or River Road	4695	4795	4465	4530
- west of Spurway Street	4425	4440	4075	4125
- east of Spurway Street	4275	4345	3940	4010
Spurway Street				
- north of Victoria Road	210	275	350	415
- south of Victoria Road	450	590	655	790
- north of Boronia Street	500	640	650	785
- south of Boronia Street	45	315	25	290
River Road				
- south of Victoria Road	230	330	310	380
- north of Coffey Street	90	190	105	175
- south of South Street	55	210	55	140
Silverwater Road Ramp				
- north of Victoria Road	200	215	320	375
Boronia Street				
- east of Spurway Street	475	605	645	775
Coffey Street				
- east of River Road	195	195	130	130
South Street				
- west of River Road	240	295	160	175

3.20 The operations of the intersections analysed in Chapter 2 have been reanalysed using the SCATES and INTANAL programs. The results of those analyses are shown in Table 3.2. It can be seen from Table 3.2 that the greatest increase in average delays is two seconds per vehicle, a small increase. All intersections continue to operate at Level of Service A.

Table 3.2 : Intersection Analysis Results

INTERSECTION	Average Delay (sec/veh)				Level of Service			
	Morning		Afternoon		Morning		Afternoon	
	Existing	With Development	Existing	With Development	Existing	With Development	Existing	With Development
Victoria Road with								
- River Road	4	5	5	6	A	A	A	A
- Spurway Street	4	6	5	8	A	A	A	A
Spurway Street with								
- Boronia Street	10	10	12	11	A	A	A	A
River Road with								
- Coffey Street	6	7	6	7	A	A	A	A
- South Street	6	7	6	6	A	A	A	A

3.21 As was discussed in Chapter 2, the SCATES analysis along Victoria Road cannot reflect the impact of down stream capacity constraints with resultant congestion in the section of road under consideration. However, the analysis has clearly demonstrated that the additional traffic generated by the development would have minimal impact on the operations of the Victoria Road intersections.

3.22 It was noted in Chapter 2 that the intersection of access to the Ermington Centre's parking in Betty Cuthbert Avenue with Spurway Street and River Road close to Victoria Road causes some congestion. This problem cannot be completely overcome without major reconstruction of the centre and its access.

3.23 However, consideration could be given to a number of actions to mitigate the existing problems. Such actions relate to an existing situation, not the proposed development and could include the following:-

- widening Spurway Street to provide an additional northbound approach

lane at Victoria Road. This would result in some loss of parking in Betty Cuthbert Avenue and is likely to be expensive as significant service relocation would be involved;

- reduce the amount of non-local through traffic in Spurway Street. This would involve, primarily, the control of the Boronia Street, Spurway Street through traffic route;

- incorporate the Betty Cuthbert Avenue intersection with Spurway Street into the Victoria Road signals. This is likely to be difficult to achieve in practice due to the short distance between the intersections and the likely impact on the efficiency of the Victoria Road signals.

3.24 In terms of the amenity of residential streets, those that carry the bulk of the traffic generated by the development will be Spurway Street and River Road. Flows in Spurway Street north of Boronia Street currently exceed the recommended maximum flow for a collector road, and will continue to do so.

3.25 The cause of this, as discussed in Chapter 2, is the amount of through traffic passing through the area. If this situation is to be addressed it would require a broad appraisal of traffic movements in a wider area with a view to developing strategies to control traffic in streets such as Boronia Street and Spurway Street.

3.26 Traffic flows in all other streets will remain below the maximum recommended for local residential streets. As previously discussed, consideration could be given to controlling movements between South Street and Silverwater Road as a way of reducing through traffic in the area. This would benefit South Street, River Road, Coffey Street and Tristram Street but could increase flows in Spurway

Street.

3.27 The intersection of Boronia and Spurway Streets is unusual in that the "stem" of the T-junction, Boronia Street, has priority over traffic in Spurway Street. Historically this was not a problem as the southern section of Spurway Street carried little traffic, although it does make the movement of traffic through the area easier.

3.28 It is suggested that when development of the site proceeds, consideration be given to installation of a roundabout at this intersection. This would have the triple benefit of controlling vehicle speeds, ensuring that all movements through the intersections receive equitable access and marginally discouraging through traffic.

3.29 Overall, it is concluded that the proposed development will not significantly alter traffic conditions in the area. However, the amenity of the area would benefit significantly from reduction in the volume of through traffic using the area.

Public Transport Implications

3.30 The site is not particularly well served by public transport at present. The nearest service is in Silverwater Road with no stops close to the site. It is recommended that discussions be held with bus operators with a view to extending their services to serve the new development. This would probably be best achieved by a loop route using Spurway Street , the new internal road in the site and River Road. This would ensure convenient access to public transport for the site as well as improving access for existing residents. It is also proposed, subject to agreement with Sydney Ferries, to provide a ferry wharf at the southern end of Spurway Street. This will provide direct and convenient ferry access to the City and Parramatta CBD.

Summary

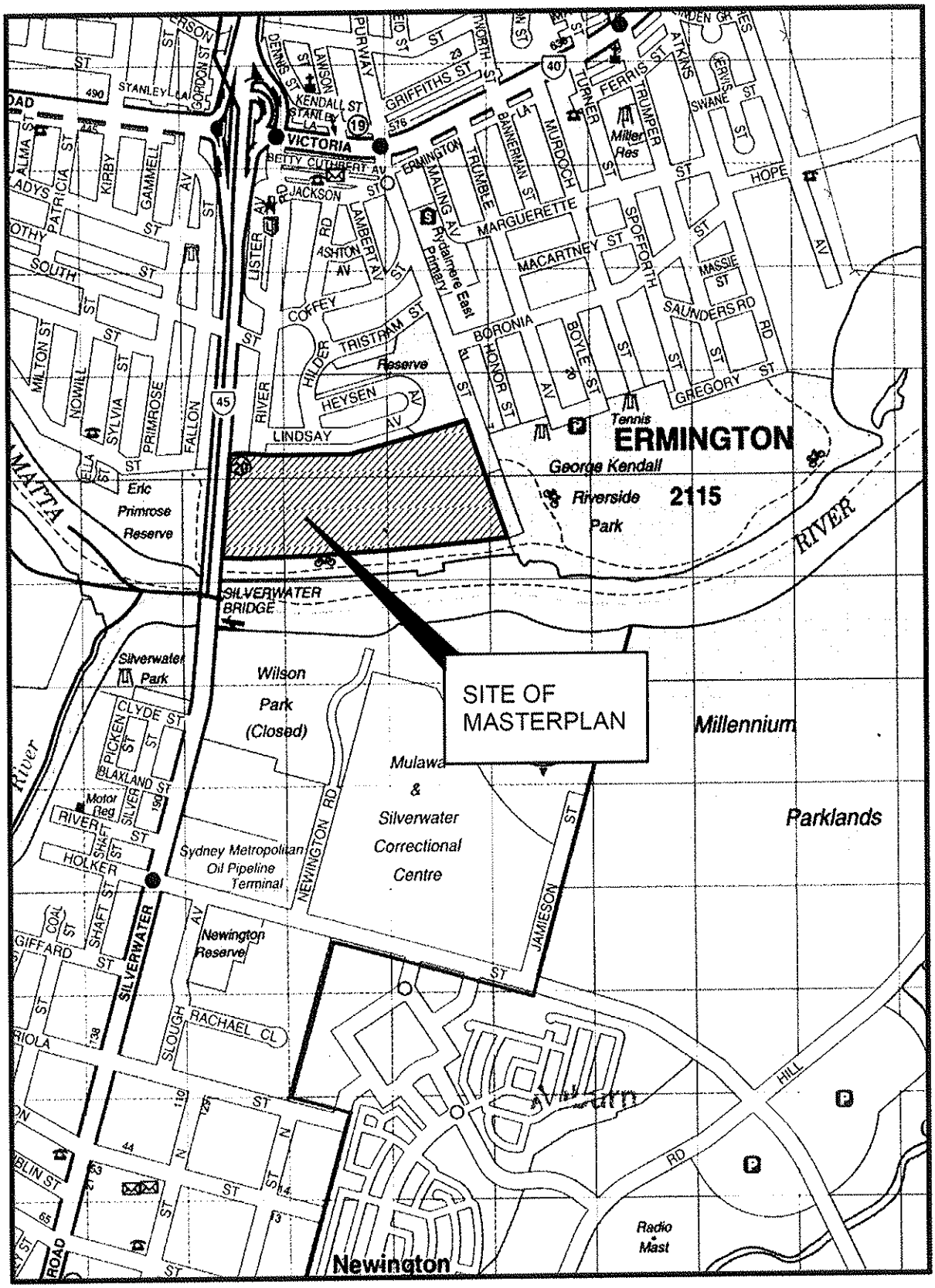
3.31 In summary, it is proposed that the site be developed for residential purposes. Access will be via Spurway Street and River Road as connections to Silverwater Road are not practical. The internal street system is designed to allow future residents to exit via whichever street is most convenient to ensure there is no unnecessary use of existing east-west streets such as Coffey and Tristram Streets.

3.32 The development will increase flows in Spurway Street, River Road and Boronia Street. It will be necessary to complete construction of Spurway Street to a suitable standard between Boronia Street and the site access. The road network has the necessary physical capacity to cater for the additional flows. However, consideration could be given to the installation of a roundabout at the intersection of Spurway and Boronia Streets.

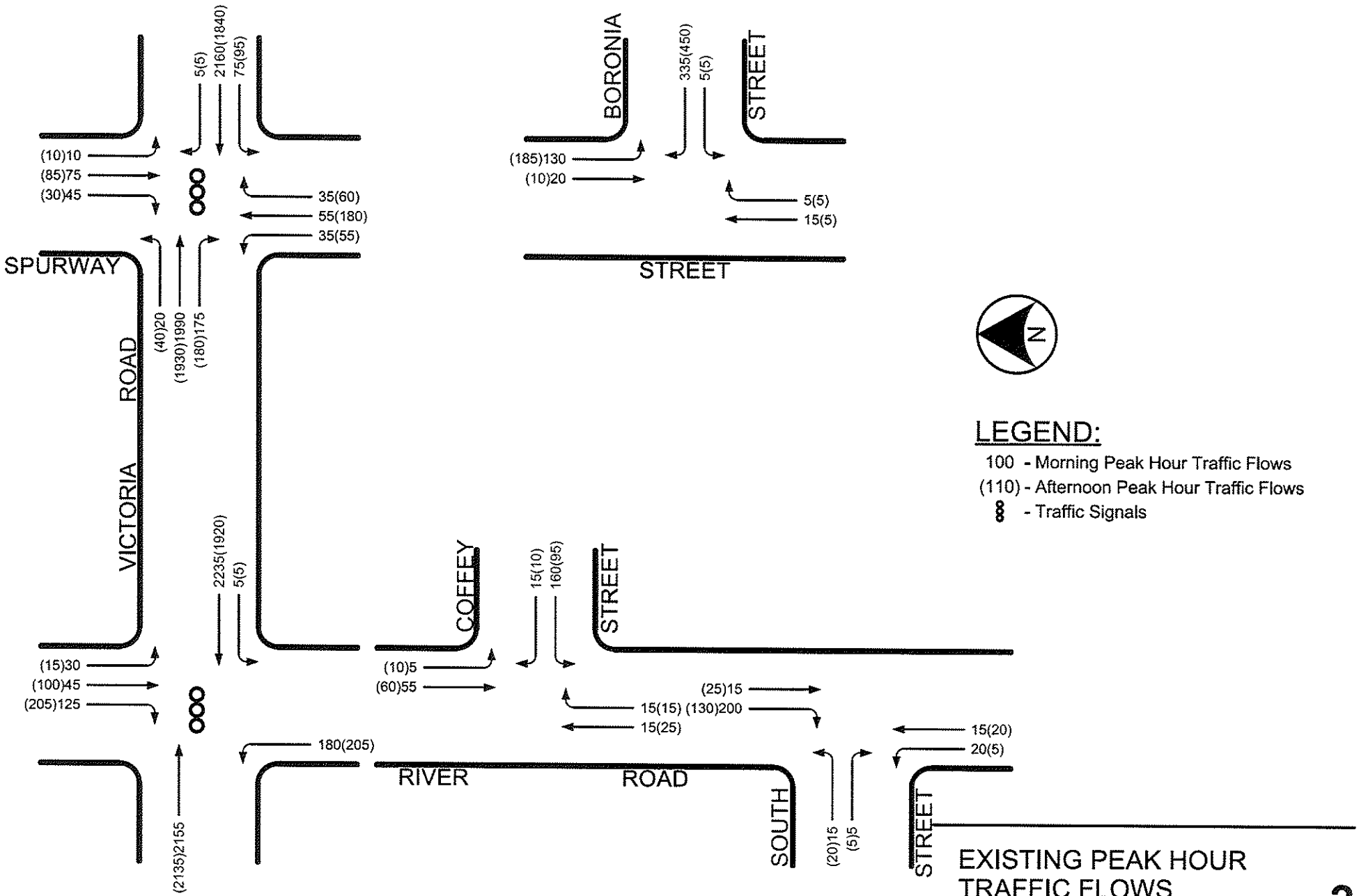
3.33 The problems currently being experienced in the vicinity of the intersection of Betty Cuthbert Avenue with Spurway Street will not be significantly worsened by the development. They are existing problems resulting from the layout of roads in that location. This could only be completely resolved by a major reconstruction of the centre and its access. However, a number of possibilities have been canvassed to mitigate the problem.

3.34 The most significant of these is the possibility of controlling through traffic using the area. This primarily arrives along Boronia Street. This would have a second major benefit in reducing the impact of traffic on the amenity of residents in Boronia and Spurway Streets.

3.35 It is recommended that discussions be held with bus operators with a view to extending bus services in the new area, probably via a loop using Spurway Street, thenew internal road and River Road. Finally, it is proposed to provide a ferry wharf at the southern end of Spurway Street.

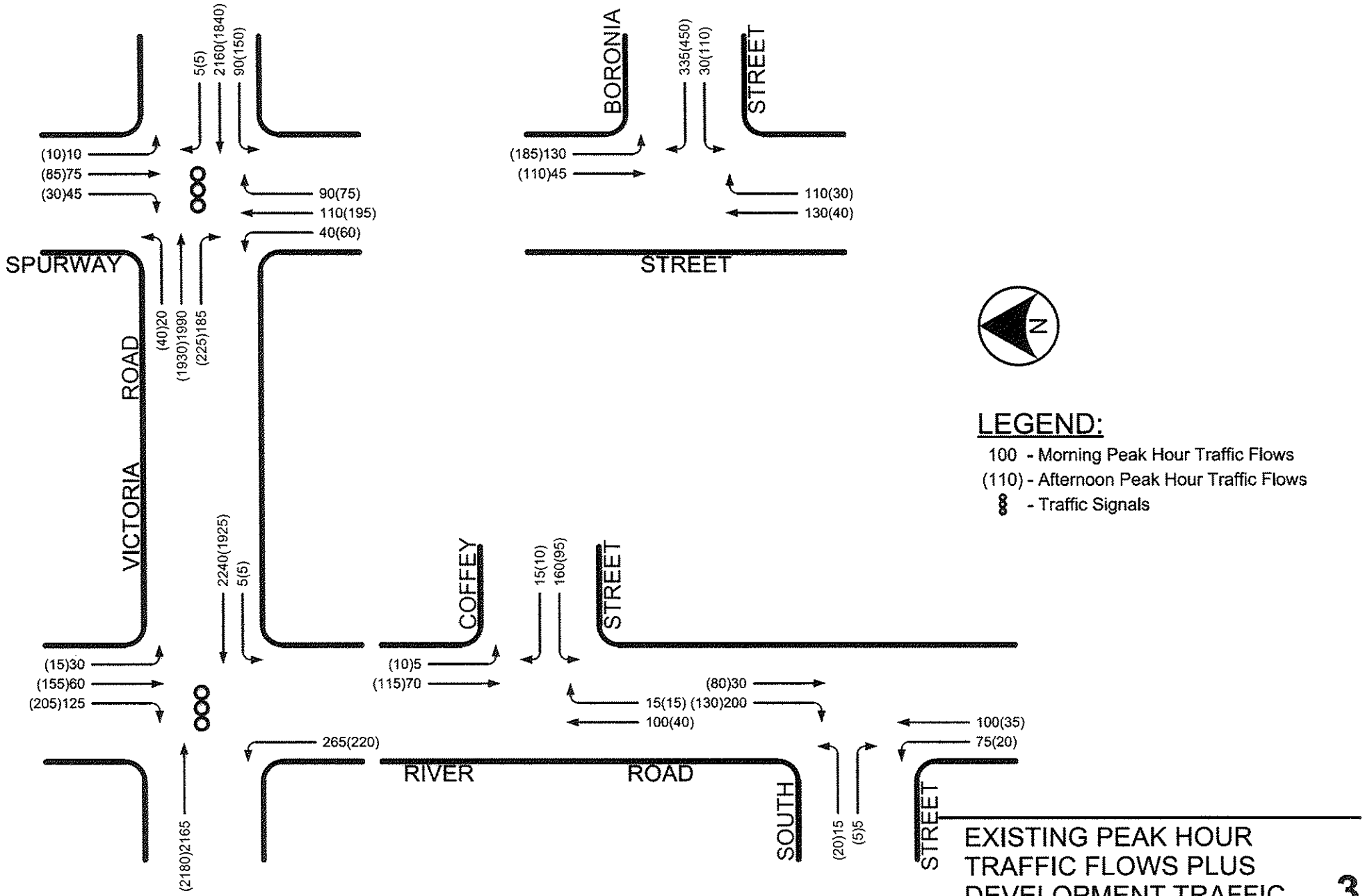


LOCATION PLAN 1



EXISTING PEAK HOUR TRAFFIC FLOWS

2



EXISTING PEAK HOUR TRAFFIC FLOWS PLUS DEVELOPMENT TRAFFIC

3