

[illegible]

NOTES: Any number highlighted in red has a manual entry in the cell

[illegible]

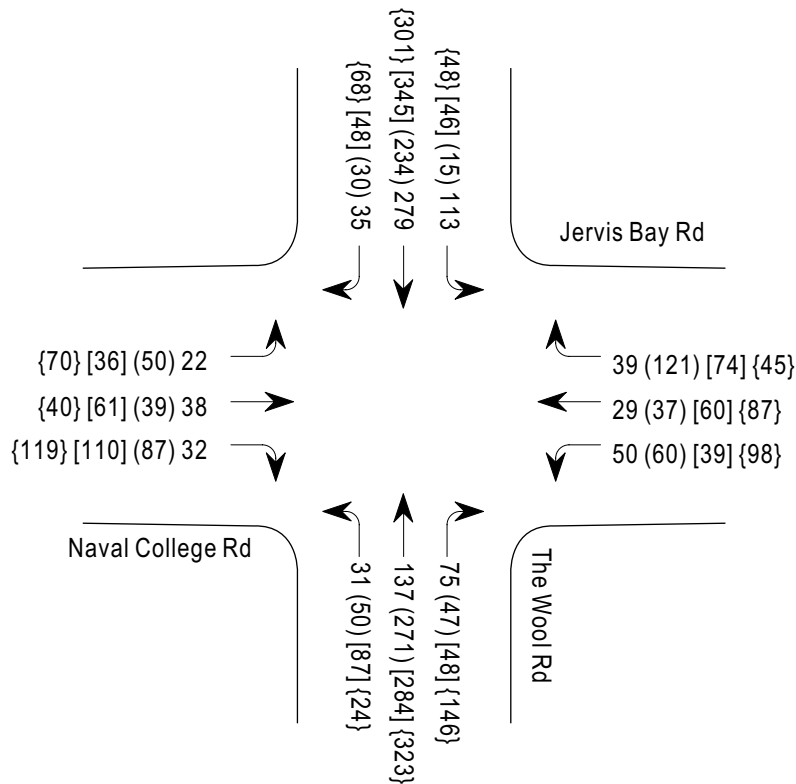
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## Appendix B - Saturday Traffic Counts

# EXISTING TRAFFIC FLOWS

## THE WOOL ROAD/NAVAL COLLEGE ROAD



### Key

#### Thursday (25.09.03)

5 AM Peak 8am-9am

(5) PM Peak 4pm-5pm

#### Saturday (17.01.04)

[5] Peak 11am-12noon

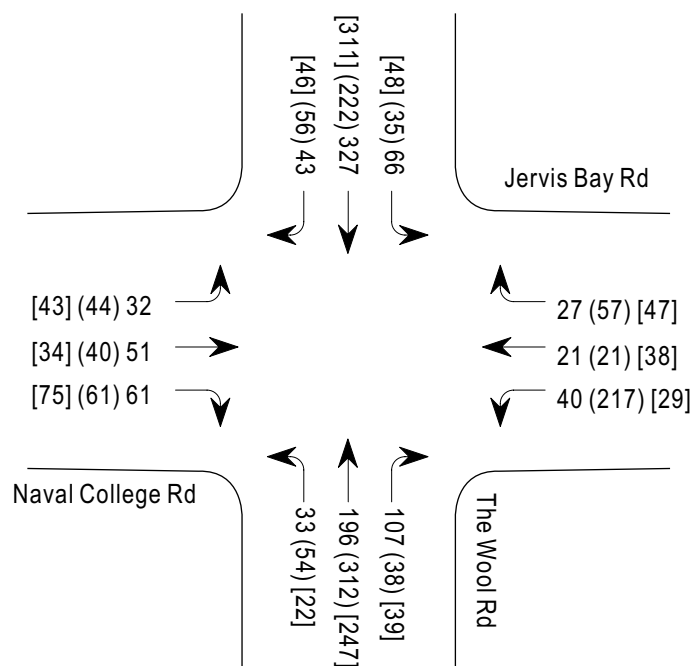
#### Saturday (04.10.03)

{5} Peak 2pm-3pm

Vehicles From	Thursday Morning	Thursday Evening	Saturday 17/01/04	Saturday 4/10/04
East	118	218	173	230
West	92	176	207	233
North	243	368	419	493
South	427	279	439	417
Total	880	1041	1238	1373

# EXISTING TRAFFIC FLOWS

## THE WOOL ROAD/NAVAL COLLEGE ROAD



Vehicles From	Thursday Morning	Thursday Evening	Saturday 29/05/04
East	88	295	114
West	144	140	152
North	336	404	308
South	436	313	405
Total	1004	1152	979

### Key

**Thursday (03.06.04)**

5 AM Peak 7:45am-8:45am

(5) PM Peak 2:30pm-3:30pm

**Saturday (25.05.04)**

[5] AM Peak 11am-12noon

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## Appendix C - Extract from *Jervis Bay Settlement Strategy* Relating to Access Improvements

### ACCESS

**Objective – To ensure that settlements are permeable and accessible to pedestrians, cyclists and public transport, and that adequate access is provided from within and outside of the region.**

#### Actions

- i. New development will be designed to provide for permeability and accessibility by pedestrians and cyclists within the local service network (i.e. schools, shops, recreation areas and so on).
- ii. To ensure that the integrity of the State Road Network, and in particular the Princes Highway, is maintained the cumulative impacts of future development within the Region will be addressed at the rezoning investigation stage. Particular attention will be paid to the existing/proposed access points onto the Highway and to the alignment of Jervis Bay Road.
- iii. Public transport within the region will be encouraged and promoted through the implementation of the *Shoalhaven Integrated Transport Strategy*. In particular, public transport will be encouraged between existing and new settlements and the district centre.
- iv. New development will attempt to minimise the need for car usage within the region, and be designed to maximise opportunities for alternative transport usage. Relevant policy principles arising from the NSW Transport Package *Integrating Landuse and Transport* (2001) will be investigated and explored in assessing new development in the region.
- v. New roads and traffic generating developments will be designed and implemented in accordance with State Government policies and environmental criteria for road traffic noise.
- vi. The existing road network will be maintained with the following road hierarchy for the Region:

Regional Roads – Princes Highway, Greenwell Point/Culburra Roads, Jervis Bay Road, St Georges Basin Bypass and the Currumbene Creek Crossing and Snowwood Road (if constructed).

Collector Roads – Coonemia Road, Currarong Road, Callala Bay Road, Forest Road, Huskisson Road/Elizabeth Drive, The Wool Road/Larmer Avenue/Paradise Beach Road/Walmer Avenue/Lauren Avenue/Island Point Road/The Wool Road and Hawken Road.

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Local Roads – All other roads in the Region.

**Implementation Responsibility**

Council, RTA, and Department of Planning

**Timeframes for Action**

- i. Ongoing
- ii. Ongoing
- iii. Ongoing
- iv. Ongoing
- v. Short term
- vi. Ongoing



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## **Appendix D - Notes on Community Open Day No. 1 (Saturday 20 September 2003)**

1. - Note Beach Street shortcut, police speed trap and enforce STOP sign on The Wool Road
  - Conditions in BiLo car park are poor – customers have to go out of way to exit
2. Note 1300 students at the high school
3. Note high level of congestion at beaches in summer
4. Consider pedestrians crossing The Wool Road at the school
5. - What will bus services be?
  - Are we going to have underground car parking to reduce the development footprint?
6. - Sanctuary Point shopping centre is a “disaster”
  - Difficult to get out of retirement village onto The Wool Road east of Naval College Road
7. - Roads are inadequate
  - Jervis Bay Road is not built for its current volume and has safety problems
8. Concern re camber in The Wool Road where it meets the bypass roundabout at Sanctuary Point that is under construction
9. Too many people in the area now. Extra people will cause chaos
10. - Poor Condition of Jervis Bay Road
  - Traffic on it has doubled in recent years
  - It used to take 25 to 30 minutes to get to Nowra for work, now it takes 35 to 40 minutes
  - There are lots of near misses; people are impatient because of lack of overtaking opportunities
11. - Concern regarding capacity of The Wool Road west of Naval College Road to cater for traffic growth
  - Speed is limited to 60km/h from Vincentia to St John Wood
  - Trouble getting out of McGibbon Parade into Naval College Road
  - Old Errol Bay has access to The Wool Road via only 3 streets
12. - A person was killed on Jervis Bay Road recently
  - Also problems with animals on Jervis Bay Road
  - Should upgrade the road before any more houses are developed
13. Should not provide access to the shopping centre opposite the high school as would be unsafe for school children

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14. Can't get onto The Wool Road in Vincentia
  15. The bypass that is under construction will cause a transfer of traffic from Pine Forest Road to The Wool Road
  16. Hill on The Wool Road at old Errol Bay causes delays
  17. Egress from Henry Kendall Estate is an issue

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## Appendix E - Proposed Masterplan

# PROPOSED MASTERPLAN

## VINCENTIA DEVELOPMENT

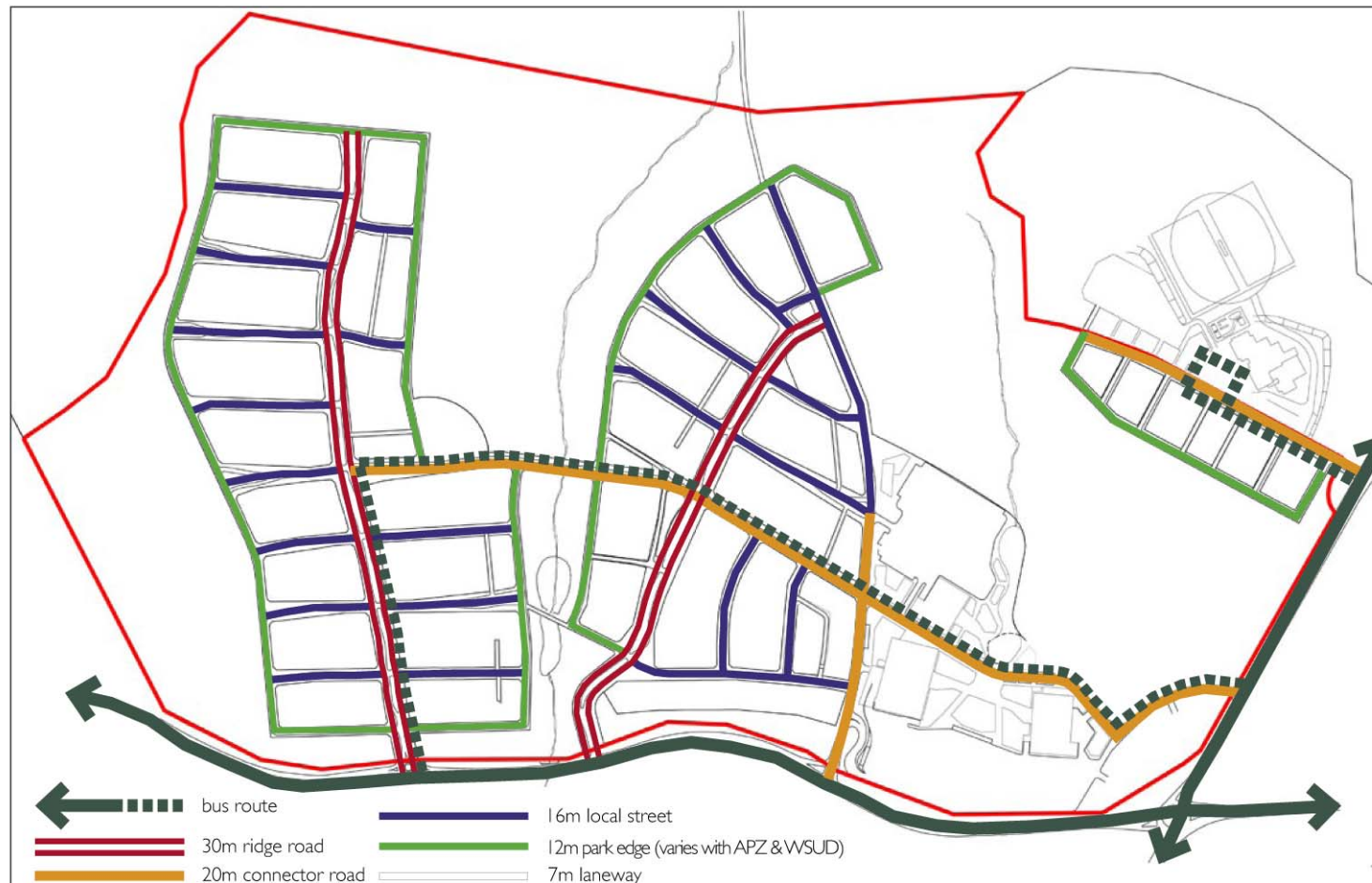


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## **Appendix F - Proposed Public Transport, Cycle and Pedestrian Routes**

# PROPOSED PUBLIC TRANSPORT ROUTE

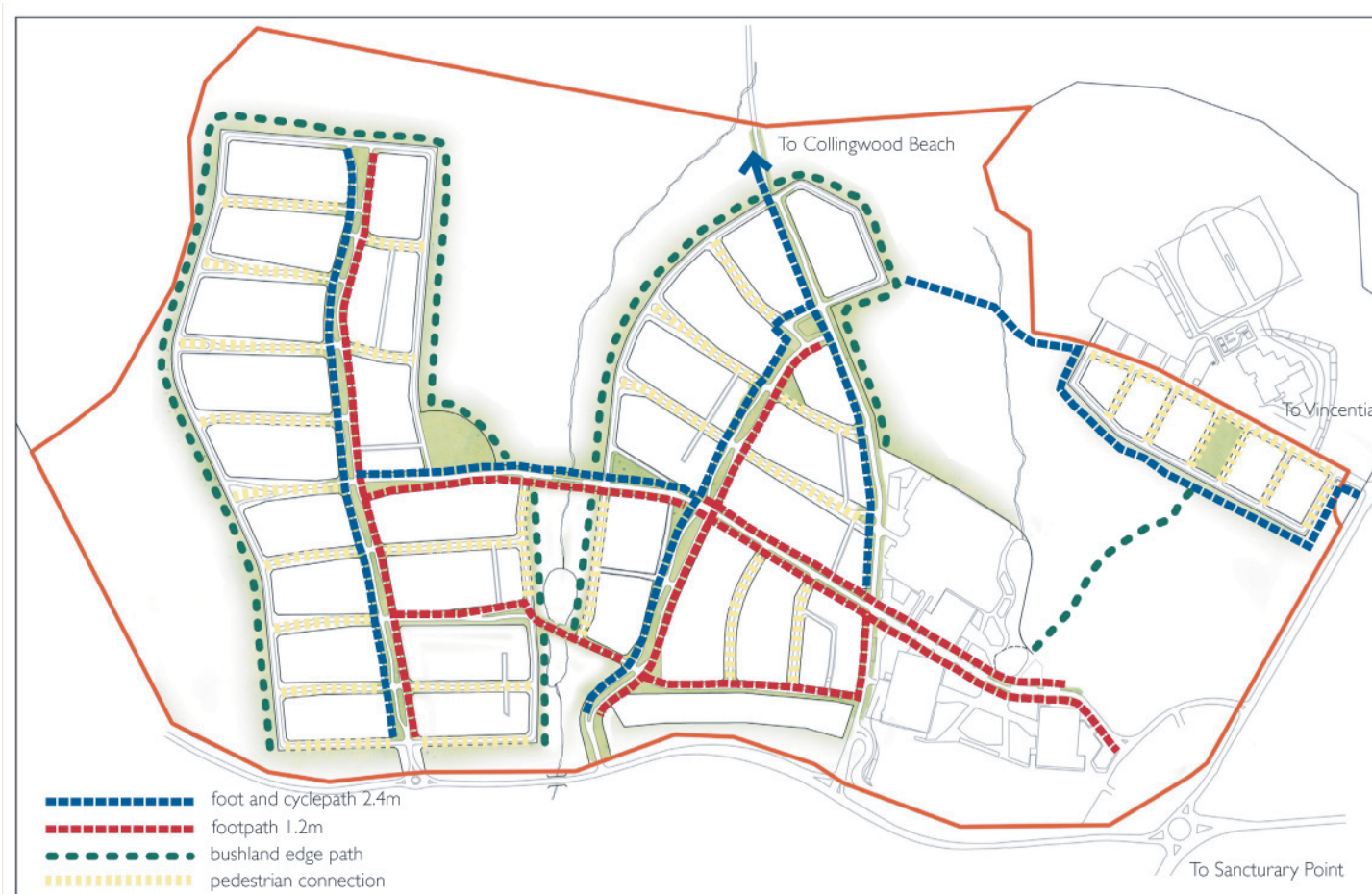
## VINCENTIA DEVELOPMENT





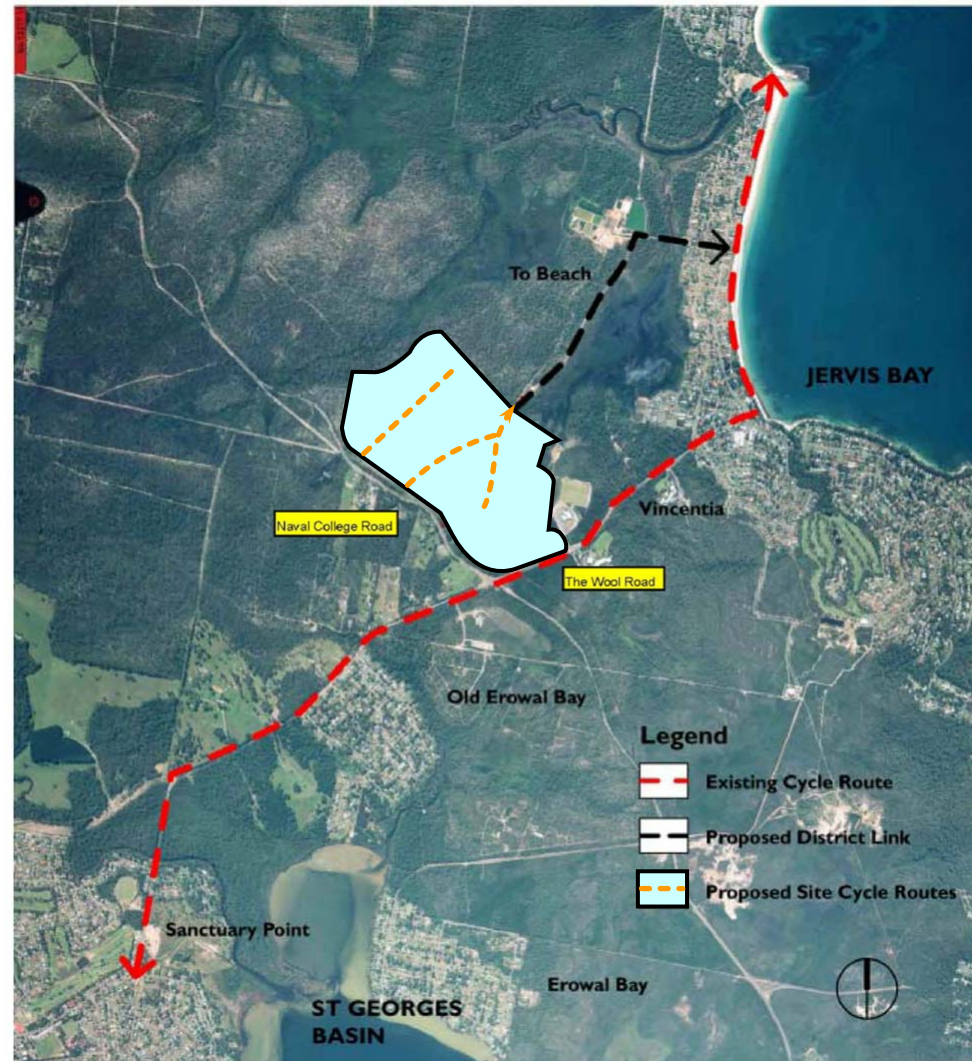
# PROPOSED CYCLE AND PEDESTRIAN ROUTES

## VINCENTIA DEVELOPMENT



# EXISTING AND PROPOSED CYCLE AND PEDESTRIAN ROUTES

## VINCENTIA DEVELOPMENT



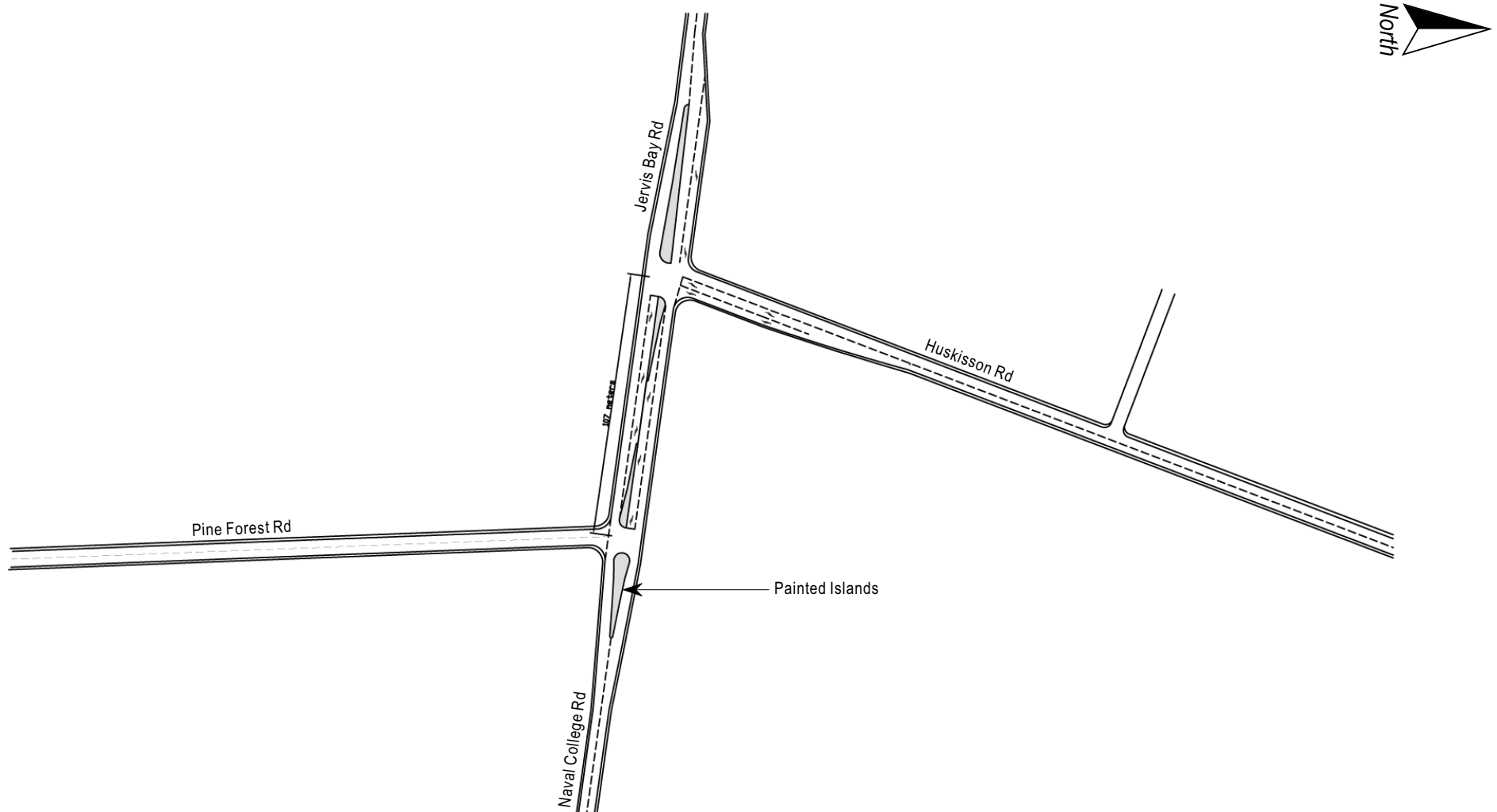


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## **Appendix G - Concept Plan for Jervis Bay Road/Huskisson Road/Pine Forest Road Intersection**

# SUGGESTED UPGRADE OF JERVIS BAY/HUSKISSON/PINE FOREST INTERSECTION

VINCENTIA DEVELOPMENT



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## **Appendix H - Advice to the RTA on Princes Highway/Jervis Bay Road Intersection**

Mr Chris Millet  
Roads and Traffic Authority  
PO Box 477  
WOLLONGONG NSW 2520

Ref: 032132L01 W

9 August 2005

Dear Chris

**Re Proposed Stockland Town Centre Development at Vincentia**

As per your request to Martin Wells, we have analysed the operation of the intersection of Princes Highway with Jervis Bay road for the following cases for normal and holiday periods.

- Existing situation
- Existing situation plus additional town centre development traffic
- Future situation (2016) with background traffic growth added to existing traffic
- Future situation (2016) with development traffic also added.

We note that the town centre development includes the development of about 800 dwellings and along with a retail/commercial centre to serve the Bay and Basin area and act as a public transport focus.

Traffic volumes used in the analysis are indicated in the attached diagrams. The methods of determining future traffic forecasts are explained in the traffic report which accompanied the development/rezoning application submission.

In summary background traffic growth was determined based on historic growth trends as evidenced by RTA AADT records for the Princes Highway. The development traffic growth relates only to the additional residential lots for which rezoning is not required. The estimated traffic increase through the intersection due to this development is 150 vehicle trips per peak hour. This estimate is based on the traffic generating characteristics of existing development within the catchment in the Bay and Basin area that feeds traffic to/from the intersection.

As previously advised, the retail part of the development is expected to contain travel within the local area and would not attract patronage from the direction of Nowra. If anything it would reduce traffic through the intersection by:

- containing shopping trips within the local area as described above, and
- intercepting shopping trips from Ulladulla to Nowra by providing an intermediate opportunity.

To be conservative the analysis has not assumed any reduction in traffic through the intersection due to these occurrences.

The analysis was conducted using the SIDRA intersection analysis program. Results are summarised below on Table 2. Full data reports can be emailed if required. For ease of reference Table 1 sets out standard intersection operation evaluation criteria.

**Table 1 – Level of Service Criteria**

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & Spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Extra capacity required	Extreme delay, traffic signals or other major treatment required

Adapted from RTA Guide to Traffic Generating Developments, 1993.

The results are little different from those provided in the traffic report because for the purpose of this exercise we have added the “development” traffic on top of “background” traffic growth. In the report we analysed only the effects of background traffic growth on the basis that it is new development such as that proposed in Vincentia which produces background traffic growth on a regional road system. Thus the results of the analysis are conservative and most likely represent a time horizon beyond 2016.

The analysis assumed critical gaps for unsignalised right turn movements of 6 seconds with a follow up head way of 3 seconds. Our previous analysis was based on sidra default values of 7.5 and 3 seconds respectively. In retrospect the default values do not appropriately reflect the layout of the intersection which provides an exclusive lane for right turning vehicles to turn into. Accordingly our previous analysis was somewhat pessimistic.

The results in Table 2 indicate that the intersection is currently under stress at level of Service D during holiday peaks (Case 1). Any additional traffic would add to this stress.

The table indicates that signalization of the intersection would be one potential method of overcoming its capacity shortfall.

Under Case 3 with normal background traffic growth the intersection would fail (run out of capacity) operating at level of Service F during even normal evening peaks by 2016. Obviously any additional traffic as per Case 4 would not change the situation but the exceedance of capacity would increase.

The Conclusion of this analysis are that:

- there is an inescapable need to upgrade the intersection of the Princes Highway with Jervis Bay Road as a result of normal background growth
- proposed residential development in the proposed Vincentia town centre will not of itself necessitate any works that would not otherwise needed, and
- the proposed rezoning of land to allow retail/commercial development as a replacement for land already zoned but with ecological constraints will if anything reduce traffic through the intersection and hence delay the timing of the need for an upgrade.

Yours sincerely

A handwritten signature in black ink, appearing to read 'B Masson', with a long horizontal flourish extending to the right.

Bruce Masson  
Director

**Table 2 – Results of AASidra Analysis**

		AM Peak		PM Peak		Sat Peak		Holiday AM Peak		Holiday PM Peak		Holiday Sat Peak	
		AD	LOS	AD	LOS	AD	LOS	AD	LOS	AD	LOS	AD	LOS
<b>Case 1 – Existing Traffic Volumes</b>	Signs – Left turn	14.0	B	27.6	B	21.8	B	15.3	B	39.6	C	28.2	C
	Signs – Right turn	16.1	B	25.8	B	18.3	B	19.8	B	45.1	D	39.4	C
<b>Case 2 – Existing volumes with project</b>	Signs – Left turn	14.0	B	27.6	B	22.7	B	15.3	B	39.6	C	28.2	C
	Signs – Right turn	18.0	B	29.2	C	19.6	B	24.3	B	87.8	F	86.3	F
	Signals - Overall	10.9	A	12.8	A	13.3	A	10.4	A	14.3	B	14.5	B
<b>Case 3 – 2016 Growth Volumes without project</b>	Signs – Left turn	15.9	B	57.7	E	35.2	C	17.2	B	>100	F	64.1	E
	Signs – Right turn	25.0	B	>100	F	32.1	C	>100	F	>100	F	>100	F
	Signals - Overall	10.8	A	14.5	B	14.4	B	12.5	A	23.3	B	19.3	B
<b>Case 4 – 2016 Growth Volumes with project</b>	Signs – Left turn	15.9	B	57.7	E	35.2	C	17.2	B	>100	F	85.0	F
	Signs – Right turn	41.6	C	>100	F	60.8	E	>100	F	>100	F	>100	F
	Signals - Overall	12.1	A	17.1	B	15.9	B	15.1	B	32.3	C	22.2	B

Notes:

- Left turn is left turn out of Jervis Bay Road
- Right turn is right turn out of Jervis Bay Road