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GTAconsultants

Woollahra Bicycle Strategy 2009

Woollahra Municipal Council
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Document Issue

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Executive Summary

In 2000 Woollahra Council adopted the Woollahra Waverley Bike Plan 2000. This Plan was developed in consultation with Waverley Council. In 2008, Woollahra Council commissioned GTA Consultants to review progress with implementation of the 2000 Bike Plan and to develop a Bicycle Strategy for future implementation.

The Woollahra Bicycle Strategy 2009 is a comprehensive strategy to facilitate cycling, which will have benefits for the environment, for the health and fitness of Woollahra residents, and for better transport mobility for all, cyclists and non-cyclists.

The review has been conducted with due consideration to:

- Concerns that have been expressed about the appropriateness of some routes proposed in the Woollahra Bike Plan 2000, the visual impact of bike logos and signs, and the cost of implementation of bike routes;
- Competition for limited road and footpath space between motorists, pedestrians and cyclists;
- Increased community support for cycling as a form of alternative transport, particularly in inner-city areas;
- Benefits in regard to motor vehicle emissions and air pollution, traffic congestion and demand for parking spaces, and health-related issues such as obesity; and
- The South Sydney Regional Organisation of Councils Regional Bicycle Network Plan - to ensure the compatibility of the Woollahra Bike Plan with adjoining Local Government Areas, namely, City of Sydney, Randwick City and Waverley Municipality.

Since the Bike Plan was adopted in 2000, about 50% of the works proposed in the Plan have been constructed. This study reviews the effectiveness of works which have been completed, and assesses the routes which are yet to be completed and their appropriateness for inclusion in the future Bike Strategy. This study also proposes specific treatments and actions for those routes recommended to be retained as part of the bicycle network.

The key elements of the Woollahra Bicycle Strategy 2009 are:

- Completing major (regional) routes that provide regional connectivity;
- Every Street a Cycling Street – promoting and facilitating cycling on all local roads with minimum new construction;
- Recreational routes for safe and family-friendly cycling in the vicinity of parks and reserves;
- Developing cycle facilities at/to public transport Interchanges and urban villages;
- Integrated policies and planning instruments – inclusion of cycle facilities and considerations within road construction and maintenance programs as well as in development planning; and
- Targets to provide a balance between civil works and encouraged programs, including a ride-to-school strategy to develop sustainable travel habits and cycling confidence from a young age.

The recommended actions are summarised in Table 1, Page iii. The estimated cost of short term works is $389,860 which will achieve approximately 66% of the total cycling network for the Woollahra Local Government Area.

The review has resulted in 13 routes or part routes identified in the 2000 Plan but not yet implemented being excluded from the 2009 plan (See Table 5, Page 37). Some of these routes now fall into other jurisdictions. Others will be treated under the Every Street is a Cycle Street Strategy or are now considered inappropriate. The removal of these routes will result in a potential saving of approximately $105,000 for the routes transferred to Waverley Council and a further $325,000 for the other routes.

Appendix E includes a detailed route plan.

Table 1: 2009 Woollahra Bicycle Strategy in Summary

2009 Route No. and Description		Review Comments	Summary of Recommended Action	Description of Recommended Treatment	Priority and Cost Estimate for Short Term Projects
Regional Routes					
Route A1: Bondi Junction to Paddington (City)		Completed	High benefit	Publish map	Short term ($5,000)
Route A2: Vaucluse to Rushcutters Bay	New South Head Road	Not commenced. Requires further investigation and concurrence of RTA.	High benefit, generally low feasibility, very high cost	Defer works. Investigate alternatives with RTA	Short to long term
	Bypass of Rose Bay Shopping Centre	Not commenced. Interim bypass route.	High benefit, high feasibility, moderate cost	Install mixed traffic signage	Short term ($121,830)
Route A3: Edgecliff to Bondi Junction		Completed but some pinch points and missing link in Waverley	Medium feasibility, high benefit, low cost (to Woollahra)	Investigate improvements to pinch points	Medium term
				Lobby Waverley Council to complete route	Short to long term ($630)
Route A4: North Bondi (Waverley Council) to Bondi Junction	Old South Head Road/Victoria Road/Birriga Road	Parts completed, parts need signage, removal of some impediments, etc to improve shared paths	Medium feasibility, high benefit, low cost	Install signage and remove impediments	Short term ($5,190)
	Intersection of Birriga Road/O'Sullivan Road/Old South Head Road	Birriga/O'Sullivan/Blair/OSH intersection needs treatment	Medium feasibility, high benefit, high cost (to be shared)	Investigate intersection options with RTA and Waverley Council	Medium term
Route A5: Bondi Beach to Rose Bay Wharf (via O'Sullivan Rd)		Completed but some pinch points	Medium feasibility, medium benefit, unknown cost	Investigate improvements to pinch points	Medium term
		Possible off road alternative	Medium feasibility, high benefit, high cost	Defer for future consideration	Long term

2009 Route No. and Description		Review Comments	Summary of Recommended Action	Description of Recommended Treatment	Priority and Cost Estimate for Short Term Projects
Regional Routes					
Route A6: Bondi Beach to Rose Bay and Vaucluse	Old South Head Road (O'Sullivan Road to Newcastle Street)	Not commenced	High feasibility, high benefit, very high cost	This is a critical link and should be considered for future works program	Long term
	Newcastle Street	Not commenced	High feasibility, high benefit, moderate cost	Install shoulder lanes. A critical link to Rose Bay shops and should be considered for future works program	Short term ($28,430)
	Old South Head Road	Not commenced	High feasibility, high benefit, moderate cost	Install off road path and shoulder lanes.	Short term ($117,610)
Route A7: Bondi to Double Bay		Parts completed	High feasibility, high benefit, low cost	Install mixed traffic route signage	Short term ($5,970)
Route A8: Bondi Junction to Double Bay		Not commenced. Includes steep grades to Edgecliff Rd	Medium feasibility, medium benefit, moderate cost	Install shoulder lanes and mixed traffic signage	Medium term
				Install part with Kiaora Rd upgrade	Medium term
Route A9: Woollahra to Edgecliff		Part completed	High feasibility, medium benefit, low cost	Install mixed traffic signage	Short term ($4,830)
Route A10: Watsons Bay to Vaucluse		Not commenced, alternative routes proposed	Medium feasibility, medium benefit, cost to be reviewed	Investigate alternatives, including shared paths in open space	Medium term
				Install various treatments as finalised	Short to long term ($13,880)
Route A11: Watsons Bay to Bondi Beach		Not commenced	Medium feasibility, medium benefit, moderate cost	Install shoulder lanes	Medium term

2009 Route No. and Description		Review Comments	Summary of Recommended Action	Description of Recommended Treatment	Priority and Cost Estimate for Short Term Projects
Sub-Regional and Local Routes					
B1	Boundary Street Campbell Ave to Neild Avenue	Not commenced	Medium feasibility, medium benefit, high cost	Various treatments	Long term
B2 Rushcutters Bay Park	Neild Avenue to waterfront	Part completed	High feasibility, medium benefit, low cost	Install shared path signage	Short term ($3,450)
B3 Lawson Street, Glenmore Road	Neild Avenue to Cascade Street	Not commenced	High feasibility, medium benefit, low cost	Install mixed traffic signage	Short term ($3,420)
B4 Glenmore Road	Oxford Street to Brown Street	Not commenced	High feasibility, medium benefit, low cost	Install mixed traffic signage	Short term ($2,570)
B5 Glenmore Road	Lawson Street to Goodhope Street	New link	High feasibility, medium benefit, low cost	Install mixed traffic signage	Short term ($1,830)
B6 William Street	Paddington Street to Oxford Street	Not commenced	High feasibility, medium benefit, low cost	Install mixed traffic signage	Short term ($4,710)
Elizabeth Street	Oxford Street to Paddington Street				
Cascade Street	Paddington Street to Windsor Lane				
	Windsor Lane to Glenmore Road/Hampden Street				
Glenmore Road	Cascade Street to South Street				
	South Street to New South Head Road				

2009 Route No. and Description		Review Comments	Summary of Recommended Action	Description of Recommended Treatment	Priority and Cost Estimate for Short Term Projects
Sub-Regional and Local Routes					
B7 Oxford Street	(1) Glenmore Road to Greens Road	Not commenced	Medium feasibility, medium benefit, high cost	Liaise with City of Sydney. Install signage – shared path OR "cyclists to dismount"	Short term ($44,400)
	(2) William Street to Regent Street				
	(3) Elizabeth Street (Nth) to Elizabeth Street (Sth)				
B8 Queen Street	Oxford Street to Edgecliffe Road	Completed	High benefit	No Further Action	
B9 Ocean Street	John Street to Jersey Road	Not commenced	Medium feasibility, high benefit, moderate cost	Defer for consideration of alternatives	Medium to long term
	Jersey Road to New South Head Road				
B10 Trelawney Street	Jersey Road to Edgecliff Road	Completed	High benefit	No Further Action	
B11 Nelson Street	Wallis Street to Queen Street	Part completed	High feasibility, high benefit, low cost	Install signage, logos and kerb ramps	Short term ($2,880)
	Queen Street to Edgecliff Road				
B12 Darling Point Road	New South Head Road to Mitchell Road	Not commenced. Includes some steep grades	Medium feasibility, medium benefit, moderate cost	Install mixed traffic signage and logos	Medium term
B13 Ocean Ave, Cooper Street	New South Head Road to Bay Street	Not commenced. Includes some steep grades	Medium feasibility, medium benefit, low cost	Install mixed traffic signage and logos	Short term ($3,060)
B14 Manning Road	New South Head Road to Epping Road	Not commenced	Medium feasibility, low benefit, moderate cost	Review necessity for these works	Medium term

2009 Route No. and Description		Review Comments	Summary of Recommended Action	Description of Recommended Treatment	Priority and Cost Estimate for Short Term Projects
Sub-Regional and Local Routes					
B15 Victoria Road	New South Head Road to Birriga Road	Completed	Medium benefit	No Further Action	
B16 Wilberforce Avenue	Car park south of Newcastle Street to Old South Head Road	Not commenced	High feasibility, low benefit, moderate cost	Install mixed traffic signage and logos	Medium term
B17 Towns Road	Chamberlain Ave to Old South Head Road	Not commenced	High feasibility, low benefit, moderate cost	Install mixed traffic signage and logos	Medium term
B18 Captain Pipers Road	New South Head Road to Clarendon Street	New link	Medium feasibility, high benefit, low cost	Install mixed traffic signage and logos	Short term ($5,740)
	Clarendon Street to Old South Head Road				
Clarendon Street	Captain Pipers Road to Old South Head Road				
B19 New South Head Road	Hopetoun Avenue to Laguna Street	New link to Vaucluse shops	High feasibility, low benefit, low cost	Install mixed traffic signage and logos	Short term ($3,700)
Laguna Street	New South Head Road to Old South Head Road				
Petrarch Avenue	Hopetoun Avenue to New South Head Road				
B20 Vaucluse Road, Wentworth Road, Fitzwilliam Road Parsley Bay Reserve	New South Head Road to Parsley Bay Reserve	Not commenced	Medium feasibility, medium benefit, moderate cost	Install mixed traffic signage and logos	Medium term
	Fitzwilliam Rd to The Crescent				
The Crescent	Parsley Bay Reserve to Hopetoun Ave				

2009 Route No. and Description		Review Comments	Summary of Recommended Action	Description of Recommended Treatment	Priority and Cost Estimate for Short Term Projects
Recreational Routes					
C1 Rushcutters Bay Park	From waterfront recreational cycle path adjacent to Reg Bartley oval to New Beach Road (near marinas)	Part completed – path constructed	Medium feasibility, medium benefit, low cost	Install shared path signage	Short term ($4,600)
C2 Trumper Park	Harris Street to Cecil Street	Part completed – path constructed	Medium feasibility, medium benefit, low cost	Install shared path signage	Short term ($6,130)
C3 Gap Park	Military Road to Old South Head Road	Part completed – some path constructed	Medium feasibility, medium benefit, low cost	Install shared path signage. Signage for new paths associated with Gap Park masterplan	Short term ($0)

Table 1a: 2009 Woollahra Bicycle Strategy Short Term Works Summary

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Regional Routes					
Route A1: Bondi Junction To Paddington (City) [Corresponding 2000 Bike Plan Route 1: Bondi Junction To Paddington (City)]	To encourage use of route, publish a single page leaflet/map of this route and distribute to residents within the route's catchment to make them aware of the route and its connections to Bondi Junction, Sydney CBD, Woollahra shops and Paddington Five Ways.	Whole of route	2455	Publish map	**$ 5,000**
Route A2: Vaucluse to Rushcutters Bay Corresponding 2000 Bike Plan Route 2: Rushcutters Bay to Vaucluse		New South Head Road -- *Hopetoun Ave to Vaucluse Road*	0	Reinforce route with signage and pavement markings	$ 8,580
		Vaucluse Road to Towns Road	40	Reinforce route with signage and pavement markings	$610
			0	Signalised bicycle crossing facilities at Vaucluse Road intersection	$5,620
				Kerb ramps x2 at Vaucluse Road Intersection	$1,760
		Towns Road, Chamberlain Avenue, Fernleigh Avenue, Carlisle Street, Dover Road, Car Park, Wilberforce Avenue, Newcastle Street, Richmond Road, Norwich Road - *New South Head Road to Richmond* Road	1650	On-road mixed traffic with signage (alternative route to New South Head Road)	$10,080

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Route A2: Vaucluse to Rushcutters Bay Corresponding 2000 Bike Plan Route 2: Rushcutters Bay to Vaucluse		Norwich Road to Kent Road	0	Reinforce route with signage and pavement markings	$3,830
		Kent Road to Wolseley Road	0	Reinforce route with signage and pavement markings	$21,450
			0	Signalised bicycle crossing facilities at Kent Road	$5,620
		Wolseley Road to William Street	0	Reinforce route with signage and pavement markings	$10,730
			0	Signalised bicycle crossing facilities at Lyne Park entrance intersection	$ 2,810
		William Street, Bay Street- New South Head Rd to New South Head Rd	800	On-road mixed traffic with mixed traffic intersection treatments	$4,890
			0	Signalised bicycle crossing facilities at William St/New South Head Rd intersection	$2,810
		New South Head Road- Bay Street/Manning Road to Ocean Ave/Ocean Street	435	Use existing footpaths both sides of New South Head Rd. Minor pavement repairs. Rationalise street furniture to maximise clear zone for walking and cycling.	
			0	Reinforce route with signage and pavement markings	$6,670
			0	Signalised bicycle crossing facilities at Ocean Ave intersection	$5,620

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Route A2: Vaucluse to Rushcutters Bay Corresponding 2000 Bike Plan Route 2: Rushcutters Bay to Vaucluse		Darling Point Road/New McLean Street to Mona Road/Glenmore Road	0	Reinforce route with signage and pavement markings	$3,060
			0	Signalised bicycle crossing facilities at Darling Point Road intersection and crossing east of Darling Point Road	$8,430
		Mona Road/Glenmore Road to New Beach Road/Mahoney Lane	0	Reinforce route with signage and pavement markings	$ 2,150
			0	Signalised bicycle crossing facilities at Mona Road intersection	$5,620
		New Beach Road/Mahoney Lane to Neild Avenue	200	Off-road paths on both sides of New South Head Road carriageway - minor repairs to existing footpaths on north side, use existing footpath on south side (min. 2.0m).	
			0	Reinforce route with signage and pavement markings	$3,060
			0	Signalised bicycle crossing facilities at Neild Ave and New Beach Road intersections	$8,430
	In the long term, Council should lobby the RTA to implement a separated cycleway facility which separates cyclists, pedestrians and vehicles.	Whole of the route	**3125**	Lobby RTA	**$121,830**

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Route A3: Edgecliff to Bondi Junction [Corresponding 2000 Bike Plan Route 3: Edgecliff to Bondi Junction]		North side of Syd Einfeld Drive retaining wall - *Adelaide Street to Fern Place*	**75**	Off-road shared path. Lobby Waverley Council	**$630**
Route A4: North Bondi (Waverley Council) to Bondi Junction [Corresponding 2000 Bike Plan Route 4: Bondi Junction to North Bondi]		Old South Head Rd - *Bondi Road to Victoria Road*	0	Improve signage for all road users (cyclists, pedestrians and drivers) to ensure that driveway conflicts are minimised along off-road sections	$ 2,660
		Victoria Road - *Old South Head Road to Birriga Rd*	0	Improve signage for all road users (cyclists, pedestrians and drivers) to ensure that driveway conflicts are minimised along off-road sections	$ 2,530
					$5,190
Route A6: Bondi Beach to Rose Bay and Vaucluse [Corresponding 2000 Bike Plan Route 43: Newcastle Street]	Newcastle Street is an important link to Rose Bay and the shops which is recommended to be implemented as a bicycle shoulder lane treatment.	Newcastle Street - Old South Head Road to Richmond Road	830	12.8m road width, standard bicycle shoulder lane treatment would fit with adjustments to existing linemarking	$28,430
[Corresponding 2000 Bike Plan Route 47: Old South Head Road]	Woollahra Bike Plan 2000 recommends the majority of this route be treated as bicycle shoulder lanes, with separate bicycle and parking lanes at locations where parking is heavy. This treatment is yet to be implemented.	Old South Head Road - Newcastle Street to Albemarle Ave	300	Off-road shared paths on west side of carriageway - widen existing footpath (1.8m) to a minimum of 2.5m	$37,740

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
[Corresponding 2000 Bike Plan Route 47: Old South Head Road]	Important North-South link which is recommended to be implemented as a bicycle shoulder lane treatment. Off-road shared path between Newcastle Street and Albemarle Avenue (including widening). Bicycle crossing of Old South Head Road (adjust existing mid-block crossing). Bicycle shoulder lanes north of Albemarle Avenue.		0	Adjust mid-block signalised crossing for bicycles	$2,810
[Corresponding 2000 Bike Plan Route 47: Old South Head Road]		Albemarle Ave to New South Head Road/Christison Park	2250	Bicycle shoulder lanes	$77,060
			3380		**$146,040**
Route A7: Bondi to Double Bay [Corresponding 2000 Bike Plan Route 34: Bellevue Road]	Woollahra Bike Plan 2000 identified a bicycle shoulder lane treatment for the section of Bellevue Road between Rivers Street and Victoria Road, which is yet to be implemented.	Rivers Street to Victoria Road	400	On-road mixed traffic treatment as part of 40km/h high pedestrian area	$2,440
[Corresponding 2000 Bike Plan Route 35: Cross Street]	A mixed traffic treatment would be suitable for implemented as part of the 40km/h high pedestrian area speed zone in the vicinity of the Bellevue Hill shops.	Cross Street - *New South Head Road to Bay Street*	250	On-road mixed traffic	$1,530

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
[Corresponding 2000 Bike Plan Route 35: Cross Street]	Woollahra Bike Plan 2000 identified a bicycle shoulder lane treatment for this route, which is yet to be implemented. This is an important link across the LGA along Bellevue Road into the centre of Double Bay. The links into Double Bay at Cross Street need to be established.		50	Bicycle lanes on approach to New South Head Road, including intersection storage boxes at signals	$2,000
	Woollahra Bike Plan 2000 identified a bicycle shoulder lane treatment for this route, which is yet to be implemented. This is an important link across the LGA along Bellevue Road into the centre of Double Bay. The links into Double Bay at Cross Street need to be established.		**700**		**$5,970**
Route A9: Woollahra to Edgecliff [Corresponding 2000 Bike Plan Route 8: Jersey Road]	Jersey Road is currently implemented as an on-road mixed traffic arrangement. However, Council is currently in the process of redesigning the treatment layout in conjunction with the Paddington PAMP.	Jersey Road - *Paddington Street to Ocean Street*	620	On-road mixed traffic. To be considered in conjunction with the Paddington PAMP.	$3,790
[Corresponding 2000 Bike Plan Route 25: New McLean St, Herbert Road, Glebe St, Cameron St, Thorne St]		New McLean Street - *Cameron Street to New South Head Road*	170	On-road mixed traffic	$1,040
			790	0	**$ 4,830**

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Route A10: Watsons Bay to Vaucluse [Corresponding 2000 Bike Plan Route 41: Clovelly Street]	An on-road mixed traffic layout is proposed for between The Crescent and Marine Parade but is yet to be implemented.		500	Series of off-road two-way shared paths (path signage only)	$7,660
			0	Crossing treatment at Military Road	$1,030
[Corresponding 2000 Bike Plan Route 40: Hopetoun Avenue, Clovelly Street]	The mixed traffic layout along Hopetoun Avenue should be continued along the route between Marine Parade and The Crescent to provide a route to Watsons Bay.	Hopetoun Avenue - *Marine Parade to The Crescent*	850	On-road mixed traffic	$ 5,190
			1350	0	**$13,880**
Totals Regional Routes			**11875**		**$ 303,370**
Sub-Regional and Local Routes					
Route B2 [Corresponding 2000 Bike Plan Route 12: Rushcutters Bay Park]	The dimensions of the path within the park are satisfactory, but appropriate regulatory signage is yet to be implemented to formalise as a shared path.	Rushcutters Bay Park - *Neild Avenue to waterfront*	225	Off-road shared bicycle/pedestrian path - install shared path signage	$3,450
	Path constructed, signage on paths through the park will be provided in 2009/10 so that cyclists can share the space with pedestrians and other park users, including patrons of the cafe.				
Route B3 [Corresponding 2000 Bike Plan Route 13: Boundary Street, Lawson Street, Glenmore Rd]	Woollahra Bike Plan 2000 identified bicycle shoulder lanes for this route, which are yet to be implemented.	Lawson Street, Glenmore Road - *Neild Avenue to Cascade Street*	500	On-road mixed traffic - signage only	$3,420

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
	A mixed traffic layout would be suitable for Lawson Street and Glenmore Road due to the local street environment of low traffic volumes and speeds.				
Route B4 [Corresponding 2000 Bike Plan Route 19: Glenmore Road]	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. Would accommodate one of the links across Oxford Street between the City of Sydney and Paddington and is recommended to be implemented as an on-road mixed traffic treatment.	Glenmore Road - *Oxford Street to Brown Street*	375	On-road mixed traffic - signage only	$2,570
Route B5 [N/A - New link]	This new link does not correspond to a route in the 2000 Bike Plan. However, it provides an important link into Paddington and the Five Ways intersection to and from the north. Implement a mixed traffic treatment on this section of Glenmore Road.	Glenmore Road - Lawson Street to Goodhope Street	300	On-road mixed traffic - signage only	$1,830
Route B6 [Corresponding 2000 Bike Plan Route 22: William Street]	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. This route is one-directional in the southbound direction and would operate as a one-way pair with the route along Elizabeth Street.	William Street - Paddington Street to Oxford Street	220	On-road mixed traffic - One-way southbound - signage only	$1,340

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
[Corresponding 2000 Bike Plan Route 23: Elizabeth Street]	Recommended to operate as a one-way pair with Elizabeth Street between Oxford Street and Paddington Street, with an on-road mixed traffic treatment. Provides link to routes into Edgecliff and to New South Head Road.	Elizabeth Street - *Oxford Street to Paddington Street*	250	On-road mixed traffic - one-way northbound - signage only	$1,530
[Corresponding 2000 Bike Plan Route 6: Glenmore Road, Cascade Street]	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. This route is one-directional in the northbound direction and would operate as a one-way pair with the route along William Street.	Cascade Street - Paddington Street to Windsor Lane	150	On-road mixed traffic	$ 920
[Corresponding 2000 Bike Plan Route 6: Glenmore Road, Cascade Street]	Recommended to operate as a one-way pair William Street between Oxford Street and Paddington Street, with an on-road mixed traffic treatment. Provides links to routes into Edgecliff and to New South Head Road. The section north of Paddington Street is a local link only with low traffic volumes and speeds, so formal bicycle facilities not required.	*South Street to New South Head Road*			

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
[Corresponding 2000 Bike Plan Route 6: Glenmore Road, Cascade Street]	Glenmore Road has an on-road mixed traffic layout from Cascade Street to South Street, but no treatment between South Street and New South Head Road. Cascade Street to the north of Windsor Lane is treated with an uphill/southbound bicycle shoulder lane and a downhill/northbound mixed traffic treatment, with no treatment south of Windsor Lane. This route provides link to routes into Edgecliff and to New South Head Road and is incomplete at the north and south extents. The on-road mixed traffic treatment on Glenmore Road and Cascade Street should be extended to New South Head Road to the north and to the south to Paddington Street.	*South Street to New South Head Road*	150	On-road mixed traffic	$920
			770		**$ 4,710**
Route B7 [Corresponding 2000 Bike Plan Route 24: Oxford Street]	This route consists of three off-road shared path links from Woollahra LGA into the adjoining City of Sydney LGA, which are yet to be implemented. Note - Cost allowance only	Oxford Street - (1) Glenmore Road to Greens Road	0	Shared path on southern side of Oxford Street adjacent to Victoria Barracks. Cyclists to cross Oxford Street at the intersection of Glenmore Road/Oxford Street. Signage improvements and conversion to shared path.	$14,800

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
[Corresponding 2000 Bike Plan Route 24: Oxford Street]	Although it is acknowledged that Woollahra Council policies currently do not support shared footpaths in retail precincts, current work by the City of Sydney may assist in addressing some of these concerns. This may include an interim measure of installing "Cyclists to Dismount" signage before a shared arrangement can be established. The three links involved are of a significant importance as local links to access shops and to connect local areas. Note - Cost allowance only	(2) William Street to Regent Street	0	One-directional shared path on northern side of Oxford Street between William Street and traffic lights opposite Regent Street. Signage improvements and conversion to shared path	$14,800
[Corresponding 2000 Bike Plan Route 24: Oxford Street]	Note - Cost allowance only	(3) Elizabeth Street (Nth) to Elizabeth Street (Sth)	0	One-directional shared path between Elizabeth St (Nth), traffic lights at Village church centre and Elizabeth Street (Sth) walkway. Signage improvements and conversion to shared path	$14,800
			0		**$ 44,400**

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Route B11 [Corresponding 2000 Bike Plan Route 27: Nelson Street]	This route extends only between Edgecliff Road and Wallis Street as the section between Grafton Street and Oxford Street is no longer within the Woollahra LGA. The section of Nelson Street from Wallis Street to Queen Street has been implemented as a mixed traffic treatment. Woollahra Bike Plan 2000 identified a mixed traffic treatment for the section between Queen Street and Edgecliff Road which is yet to be implemented.	Queen Street to Edgecliff Road	80	On-road mixed traffic	$490
[Corresponding 2000 Bike Plan Route 27: Nelson Street]	It is recommended to complete the route between Queen Street and Edgecliff Road with a mixed traffic layout and formalise the off-road link from the Nelson Street dead end to Edgecliff Road with signage and kerb ramps.		0	Formalise off-road link from Nelson Street dead end to Edgecliff Road - signage	$630
[Corresponding 2000 Bike Plan Route 27: Nelson Street]			0	Formalise off-road link from Nelson Street dead end to Edgecliff Road - kerb ramps x 2	$1,760
			80		**$ 2,880**

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Route B13 [Corresponding 2000 Bike Plan Route 32: Ocean Avenue, Cooper Street]	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. Ocean Avenue and Cooper Street provide a link to Double Bay which is recommended to be retained in the 2009 Bike Plan. It is to be implemented as a mixed traffic layout.	Ocean Ave, Cooper Street - *New South Head Road to Bay Street*	500	On-road mixed traffic	$3,060
Route B18 N/A - New link	This new link does not correspond to a route in the 2000 Bike Plan. However, it provides a link between New South Head Road and Old South Head Road in Vaucluse.	Captain Pipers Road - New South Head Road to Clarendon Street	350	On-road mixed traffic	$2,140
N/A - New link	Captain Pipers Road - on-road mixed traffic between New South Head Road and Clarendon Street, one-way northbound between Clarendon Street and Old South Head Road Clarendon Street - on-road mixed traffic between New South Head Road and Captain Pipers Road	*Clarendon Street to Old South Head Road*	350	On-road mixed traffic - one way northbound	$2,380
N/A - New link		Clarendon Street - *Captain Pipers Road to Old South Head Road*	180	On-road mixed traffic	$1,220
			880		**$ 5,740**

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Route B19 N/A - New links	These new links do not correspond to a route in the 2000 Bike Plan. However, they provide links to the Vaucluse shops.	New South Head Road - Hopetoun Avenue to Laguna Street	360	On-road mixed traffic	$2,200
N/A - New links	On-road mixed traffic treatments along these routes are recommended	Laguna Street - New South Head Road to Old South Head Road	135	On-road mixed traffic	$ 830
N/A - New links		Petrarch Avenue - Hopetoun Avenue to New South Head Road	110	On-road mixed traffic	$670
			605		**$3,700**
Sub-Regional and Local Routes			**4235**		**$ 75,760**
Recreational Routes					
Route C1 [Corresponding 2000 Bike Plan Route 52: Rushcutters Bay Park]	The dimensions of the paths within the park are satisfactory, but appropriate regulatory signage is required to formalise as shared paths.	Rushcutters Bay Park - From waterfront recreational cycle path adjacent to Reg Bartley oval to New Beach Road (near marinas)	300	Off-road shared path - existing path, implement signage	$4,600
	Signage needs to be implemented so that cyclists can share the path with pedestrians and other park users, including patrons of cafe.		300		

2009 Route No. and Description	Review Comments & Summary Of Recommended Action	Detailed Route Description	Length m	Description of Recommended Action	Total Item Cost
Route C2 [Corresponding 2000 Bike Plan Route 26: Trumper Park, Cecil Street, Hampden Street]	Trumper Park has a path that needs to be signposted as a shared path.	Trumper Park - *Harris Street to Cecil Street*	400	Footpath in Trumper Park is existing but signage required	$6,130
	Implement signage at Trumper Park path so that cyclists can share with pedestrians.		400		
Route C3 [Corresponding 2000 Bike Plan Route 49: Gap Park]	Woollahra Bike Plan 2000 identified an off-road shared path treatment through Gap Park for this route, which is yet to be implemented.	Gap Park - *Military Road to Old South Head Road*	0	Some path already exists, refer to Gap Park Masterplan	
	Any treatment must be consistent with the Gap Park Masterplan. Any paths to be implemented in Gap Park need to be suitable for shared use bicycle/pedestrian.		0		
Recreational Routes			**700**		**$ 10,730**

Table of Contents

1. Introduction

1.1 Brief

Woollahra Municipal Council's existing bike plan was adopted by Council in 2000. Since this time, progressive implementation has occurred, resulting in nearly 50% of the Woollahra Bike Plan 2000 works being constructed up to 2008. Woollahra Municipal Council seeks to revisit and improve the existing bike strategy for reasons including:

- Completion of many of the works recommended by the Woollahra Bike Plan 2000;
- Concerns about the current relevance and appropriateness of some items within the Woollahra Bike Plan 2000;
- Increasing community concerns over transport-related issues such as increased motor vehicle traffic and the associated congestion as well as health-related issues such as obesity;
- Increased incidence of and support for cycling and other forms of active transport in the community, particularly inner-city areas; and
- A desire for improved conditions for cycling and other forms of active transport.

GTA Consultants was commissioned by Woollahra Municipal Council in 2008 to undertake the Woollahra Bicycle Strategy and Bicycle Plan review, including an evaluation of the existing completed and proposed routes and treatments identified within the Bicycle Plan and preparation of updated strategies to ensure that both cycling and walking are viable, safe and attractive transport options. This report gives due consideration to the South Sydney Regional Organisation of Councils Regional Bicycle Network Plan to ensure coordination with the adjoining Local Government Areas. This report details the findings and recommendations of the Woollahra Bicycle Strategy and Woollahra Bike Plan 2000 review.

1.2 Strategy Objective

The objective of the Bicycle Strategy (as defined by Council) is to develop an appropriate, practical bike strategy consistent with the topography, needs and demographics of Woollahra's resident and business community so that cycling becomes a legitimate and viable form of transport which is frequently used within Woollahra.

The Woollahra Bicycle Strategy seeks to improve the bicycle network within the Woollahra local government area and adjacent areas with respect to:

- Coherence (with logical connections);
- Directness;
- Safety;
- Comfort;

- Attractiveness; and
- Equal access for all user groups in the community.

The purpose of the review is to:

- Analyse the Woollahra street layout, topography and the current Woollahra Bike Plan and identify a bicycle route network and associated facilities consistent with the NSW Bicycle Guidelines and with regard to the bicycle network of the surrounding councils and the SSROC Bicycle Network Mapping Project;
- Consult with relevant stakeholders as well as residents and businesses in Woollahra;
- Identify gaps, deficiencies, mismatches and opportunities, as well as redundant and/or impractical routes, in the existing/ planned bicycle network;
- Make recommendations to Council for a local bicycle network with appropriate links to regional and state bicycle routes to serve the transport and access needs of the community; and
- Raise community awareness of the potential benefits of cycling and of the Woollahra Bicycle Strategy.

With the pressure on funding sources, a key element of the Bicycle Strategy is to identify ways to balance the cost of new facilities and upgrade of older ones, including priorities for a program of works that ensures that walking and cycling are viable, safe and attractive transport choices for residents and visitors with the associated aim of increasing cycling and pedestrian activity.

With respect to the Bike Plan (2000) review, the methodology adopted was to:

- Review the existing Bike Plan (2000), existing facilities, mapping data and key destinations;
- Conduct saddle surveys throughout Woollahra;
- Undertake peak hour cyclist counts;
- Undertake consultation with BIKEast representatives and the Woollahra Bicycle Working Party;
- Develop and map a network of new and amended routes and associated facilities, focusing on consolidation of the existing network;
- Prepare a map with an agreed bike network, routes and end-of-trip facilities;
- Prepare a works program, cost estimates and priorities (matched to Council resources);
- Report the priorities and rationale for the network and the works program;
- Develop an education and encouragement action plan with measures to increase cycling participation;
- Provide a map of the agreed Draft Bike Plan for public exhibition; and
- Review the submissions and amend the draft plan.

1.3 Policy Context

In Australia, there has been considerable discussion about policies on congestion and pollution, the promotion of local accessibility, and of personal health. An increase in cycling can be a central factor in offering an environmentally sustainable and health promoting local transport option. Over the years moves to highlight the role for cycling have been taken in a series of key strategic Government policy documents and guidelines as follows:

- National Cycling Strategy 2005-2010;
- RTA Action for Bikes 2010;
- Planning Guidelines for Walking and Cycling (Department of Planning);
- NSW Bicycle Guidelines 2003;
- Austroads Part 14 – Bicycle; and
- SSROC Regional Bicycle Network Plan.

At a local level Councils are also developing policies and plans which aim to encourage and promote cycling or reduce dependency on car travel. Key existing Woollahra Municipal Council documents include:

- Woollahra Traffic and Transport Study 2000;
- Woollahra Bike Plan 2000;
- Woollahra Social and Cultural Plan 2008-2013;
- Woollahra Management Plan 2008-2011;
- Woollahra Local Environmental Plan 1995; and
- Woollahra Recreational Needs Assessment and Strategy 2006.

2. Background

2.1 Global Issues

Cycling and walking have been defined as "Healthy and Active Transport". Public transport is also considered an active transport mode as it invariably involves a component of walking to and from bus stops and rail stations. There is substantive evidence that healthy and active transport provides a strong and effective policy response to key global public policy issues, including:

- Public Health
  Physical inactivity is one of the major causes of ill health in Australia. Half the Australian adult population are insufficiently active to protect against sedentary lifestyle disease, such as diabetes. It is well-documented that regular physical activity, such as cycling and walking, significantly reduces the incidence and fatality rate from cardiovascular disease;
- Congestion
  Private automobile use is considered the major cause of congestion in Sydney. The Bureau of Transport and Regional Economics found that the cost of congestion in Sydney for 2005 was $3.5 billion and estimated to rise to $7.8 billion by 2020. Cycling is an effective method of reducing unnecessary car use;
- Climate Change
  Motorised transport is a significant and growing source of greenhouse gas emissions. As a zero emission form of transport, cycling is increasingly seen both in Australia and internationally as a way of reducing greenhouse gas emissions. The Commonwealth Carbon Pollution Reduction Scheme, due for implementation in 2010 will include transport. This increases the importance of providing carbon free forms of transport, to lower the cost to the community of responding to climate change; and
- Peak Oil and Petrol Prices
  Since 2004, world oil prices have increased significantly and hit record levels in 2008. The rise in petrol prices strongly relates to the increase in bicycle sales, both in Australia and in the United States. Strategic transport modelling emphasises strong sensitivities to increases in petrol prices with shifts to public transport, walking and cycling. The provision of cycling infrastructure and encouragement programs, in combination with public transport improvements offers a very effective method of increasing the resilience to higher fuel prices.

Further detail on each of these global policy issues is included in Appendix A.

Investment in physical, social and organisational infrastructure to support healthy and active transport can deliver positive benefit:cost ratios for each of these five global policy issues individually, especially when considering externalities. The real benefit of investment in infrastructure for healthy and active transport, however, lies in recognition of the cross-disciplinary benefits.

2.2 Local and Metropolitan Issues

In Sydney, 55% of all car journeys are less than five kilometres and 33% are less than three kilometres (PCAL, 2007). These distances represent a travel time of 10-20 minutes by bicycle. Cycling is the fourth most popular physical activity for adults in Australia, it can be undertaken by a wide variety of ages and fitness levels, it is affordable and can be integrated into people's daily life and used as a form of transport (CPF, 2008).

Journey-to-work data from 2006 Census indicates that Woollahra has a 30% higher cycling mode split than the Greater Sydney average.

Key factors that influence the higher levels of cycling participation in Woollahra include:

- Relatively high density housing and land uses generally within the LGA;
- Close proximity of trip attractors and generators to residential areas, making bicycle travel a convenient mode choice;
- Limited availability of parking;
- Traffic congestion on key roads, resulting in comparable travel times by bicycle; and
- Proximity to central Sydney for CBD trips.

Car travel distances of only a few hundred metres use valuable space (such as on- and off-street parking) and network resources (resulting in congestion or additional provisions). With the appropriate facilities, education and management to address and overcome actual or perceived issues, people can be persuaded to change their car-based behaviour and shift to greater use of walking, cycling and public transport.

Increased cycling offers a number of benefits to both the individual and the wider community. These include:

- Increased road safety;
- Travel time reductions;
- Decongestion benefits for other road users;
- Reduced greenhouse emissions and associated climate change impacts;
- Improved workplace productivity and reduced sick leave;
- Public health improvements;
- Reduced external costs;
- Reduced household fuel costs; and
- Reduced parking costs for employers.

There are significant benefits for Woollahra Municipal Council from the provision and encouragement of cycling. Key benefits include:

- Reduction in traffic congestion and Greenhouse Gas emissions. Cycling uses very little space. Substituting car trips for cycling trips frees up road space and reduces transport related pollution and carbon emissions;
- Minimal investment in infrastructure is required for cycling. For example, bike parking is typically only 2-5% of the unit cost of car parking;
- By encouraging cycling, the potential catchment area of public transport is increased by up to 16 times over a walking catchment only, providing access to increased patronage;
- Cycling can stimulate local economic activity and provide an increased level of security through passive surveillance; and
- Cycling is a healthy and sustainable form of transport for local and regional trips. Nationally, a relatively small number of cyclists (less than 1% of total trips) save $227M per annum in terms of health, congestion and the environment.

In contrast, however, concerns have been raised in Woollahra about the initial installation costs of some facilities, the visual impacts of bicycle logos and green lanes in historic areas, the limited amount of road space available, the impact on car travel and the slow uptake of cycling on new facilities.

An effective and supported bicycle strategy for Woollahra must therefore address the concerns, while realising the potential benefits.

The provision of high quality bicycle routes, both on- and off-road, is considered fundamental to encourage cycling. Various treatments are available for bicycle routes, ranging from mixed traffic to bike lanes and off-street cycle paths depending on the speed and volume of traffic, availability of space and level of use. As part of any future Transport Management and Access Plans (TMAPs), bicycle routes to transport interchanges need to be identified to maximise ease of access by bicycle.

One of the reasons people choose not to cycle is a lack of end-of-trip facilities such as secure bicycle parking. Provision of these facilities is increasingly seen as an important method of encouraging cycling and associated rail trips. High quality bicycle parking encourages train passengers to arrive at the station by bicycle and leave their bike at the station, rather than bringing it on board the train, freeing up space inside the carriage as well as in car parks.

Bicycle parking at transport interchanges needs to cater for both the regular and infrequent users. Regular users generally prefer high security bicycle enclosures, while infrequent users generally have their needs met by on-street racks.

The integration of active travel initiatives (such as cycling) with Council's planning processes is consistent with the current initiatives of the Premier's Council on Active Living (PCAL, 2007). The need for a coordinated whole-of-Government approach to cycling in NSW has been recognised by the NSW Government. The August 2008 joint media release from the Minister for Roads and Minister for Environment and Climate Change announced that the Premier's Council on Active Living had been commissioned to start work on a new Bicycle Strategy for NSW.

2.3 Characteristics of Woollahra

2.3.1 General

Woollahra LGA is located directly east of the Sydney CBD. Along with the City of Sydney LGA to the west, other bordering LGAs include Waverley to the east/south and Randwick to the south. The LGA includes some commercial and retail centres, including Edgecliff and Double Bay, along with a number of smaller strip shopping areas such as Rose Bay and Woollahra.

2.3.2 Topography

The Woollahra area is typical of a harbour foreshore LGA with major roads following the ridgelines which descend steeply as they approach sea level. Areas which are steep (i.e. greater than 1:12) can be deterrents for some cyclists.

2.3.3 Trip Attractors and Generators

Trip attractors and generators are the important places which cyclists most commonly visit and are the main determinant of cyclist desire lines.[1] The main trip attractors/generators within the Woollahra LGA include commercial and retail centres and strip shopping, Edgecliff Railway Station, ferry wharves, schools or educational establishments, recreational areas and hospital/medical facilities.

Figure 1, Page 8 indicates the main land uses and key trip attractors for the Woollahra LGA.

Other major trip attractors outside of the LGA but in close proximity include Bondi Junction CBD and transport interchange, Centennial Park, Moore Park and the Sydney CBD.

2.4 Existing Bicycle Use

Journey-to-work data from the 2006 Census shows that approximately 190 residents from within the Woollahra LGA travelled to work by bicycle (0.9% of commuter trips). This compares with 0.7% of commuter trips made by bicycle for the Greater Sydney region, indicating that Woollahra had a 30% higher use of cycling than the Greater Sydney average.

Key factors that could encourage higher levels of cycling participation in Woollahra include:

- Relatively high density housing and land uses generally within the LGA;
- Higher number of households without a car - 17% compared to the Greater Sydney average of 14%;
- Close proximity of trip attractors and generators to residential areas, making bicycle travel a convenient choice;
- Limited availability of parking;
- Traffic congestion, resulting in comparable travel times by bicycle; and
- Proximity to central Sydney for CBD trips.

[1] A Trip Attractor is defined as an activity, facility or event which attracts or generates the need for travel.

Figure 1: Woollahra LGA Trip Attractors and Road Hierarchy

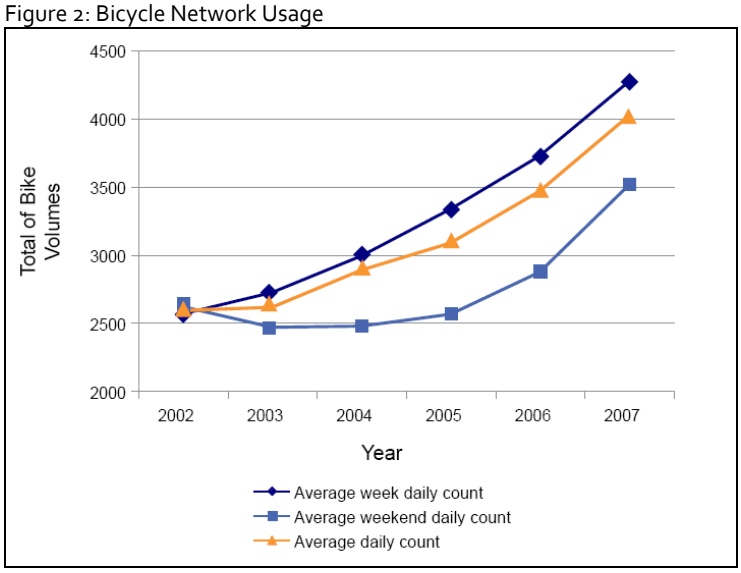
2.5 Potential for Cycling

As indicated in Section 2.4, there are above average levels of cycling within the Woollahra area, compared to Greater Sydney. Because a large portion of the Woollahra LGA is within 30-minutes cycling of major trip attractors, there is strong potential for cycling to become a serious mode of transport in the Woollahra Municipality.

The RTA has installed bicycle counters throughout Sydney since 2002 to monitor bicycle usage (RTA, 2008b). The data from the bicycle counters has been summarised in terms of average weekday usage (5 days), average weekend usage (2 days) and average daily usage (7 days) (see Figure 2, Page 9). This data indicates that:

- Average weekday daily bicycle volumes (7-day average) have increased by 68% between 2002 and 2007;
- Average weekend daily bicycle volumes have increased by 33% between 2002 and 2007; and
- Average daily bicycle volumes (7-day average) have increased by 57% between 2002 and 2007.

Figure 2: Bicycle Network Usage



Source: RTA, 2008b

Cycling participation levels are typically the highest along key corridors that connect residential and employment locations as well as corridors where high quality cycle infrastructure is provided. Improvements in cycle infrastructure (in particular off-road paths) and connectivity have significantly helped increase the use of cycling identified in Figure 2, Page 9.

2.6 Benefits and Barriers

The Bicycle Strategy provides Council with a proactive policy to increase bicycle use as an important sustainable form of transport, with health and economic benefits for the community. Bicycle travel also provides additional recreational activities and experiences for visitors.

The Bicycle Strategy aims to build strategically on the benefits of bicycle travel and at the same time to consider ways to remove barriers to greater participation.

General Community Benefits

- The bicycle is ideal for convenient, door to door travel. It starts instantly, it is easy to park and impervious to traffic congestion. It is particularly suited for trips up to 5km. This includes a large number of local trips within the Woollahra LGA;
- Cycling travel times are predictable and reliable;
- Construction of a workable bicycle network is relatively cheap, and bicycle infrastructure can be easily (and cost effectively) included with road upgrades and maintenance works;
- Bicycle traffic does not pollute, does not emit greenhouse gases, is not noisy and is a practical way of reducing dependency on oil;
- Bicycles take up very little space, either when being ridden or when parked;
- Bicycle traffic has a humanising effect on neighbourhoods;
- Cycling is good for staying in shape and is relaxing; and
- Bicycle travel is affordable and accessible to all able-bodied people.

Physical Barriers to Cycling

- Fragmented cycling networks with a lack of continuity and connectivity;
- Limited number of safe and convenient opportunities to cross major roads;
- Lack of end-of-trip and parking facilities;
- Poor integration with general road transport system - high speed and high volume roads along popular trip desire lines, threatening behaviour of motorists;
- Unsafe routes or pinch points;
- Terrain and weather; and
- Narrow and poorly maintained roads, shoulders and footpaths.

Perceived or Subjective Barriers to Cycling

- Lack of confidence and cycling experience;
- Insufficient knowledge of available network facilities and alternative back street routes;
- Perception of cycling as a physical activity (too hard, too hot, too hilly, too dangerous, too difficult etc);
- Lack of 'how to' knowledge on cycling as an activity, eg where to ride, what to wear, what type of bike suits, equipment issues, navigation issues; and
- Perceived unsafe road layouts.

While some of these barriers are beyond intervention, a majority can be managed or addressed by individuals, communities and governments through physical works and education. The actions outlined in the Bicycle Strategy seek to address these issues and create an environment with minimal barriers to cycling.

2.7 Council Policies and Plans

This section provides an overview of the cycling issues as referenced in the various planning instruments in the Woollahra Municipal Council, including:

- Woollahra Traffic and Transport Study 2000;
- Woollahra Bike Plan 2000;
- Woollahra Social and Cultural Plan 2008-2013;
- Woollahra Management Plan 2008-2011;
- Woollahra Local Environmental Plan 1995; and
- Woollahra Recreational Needs Assessment and Strategy (2006).

Woollahra Traffic and Transport Study 2000

The Woollahra Traffic and Transport Study details the performance of the existing traffic and transport system and identifies its effect on Woollahra and surrounding areas. The study aims to develop strategies which will improve the existing system, reduce the need to travel by car and encourage travel in more sustainable ways such as by bicycle. Through stakeholder consultation and background studies, it was discovered that there were very few bicycle facilities within Woollahra or cycle routes to adjoining municipalities. The study recommends the implementation of the 'Woollahra Bike Plan'.

Woollahra Bike Plan 2000

The Woollahra Bike Plan adopted by Council in 2000 details recommended routes and treatments for safe and convenient bicycle access within the LGA. The study identifies a two level hierarchy of regional and sub-regional routes for the bicycle network.

Since the adoption of this plan, approximately 47% of the total length of the proposed bicycle network has been implemented. The Bike Plan routes and their current status are assessed in subsequent sections of this report.

Woollahra Social and Cultural Plan 2008-2013

The Woollahra Social and Cultural Plan describes Woollahra as a connected, liveable, vibrant and creative community. Recreation, culture and community events contribute significantly to quality of life in Woollahra. As part of its aim to encourage a healthy and active community and a sustainable environment, the five year plan recognises the value of cycling for transport, exercise and recreation.

The desired outcomes of the Plan include:

- *"Improved and accessible public transport to promote a liveable community;*
- *Safe cycle ways across the LGA to encourage cycling as recreational activity and mode of transport; and*
- *Cycleways to provide access to leisure activities."*

The above statements point to a future where the road and transport network maximises community accessibility and safety, through well-maintained and integrated walking, cycling, road, and public transport networks.

A Bike Strategy is one way to achieve the outcomes of the Social Plan.

Woollahra Management Plan 2008-2011

The Management Plan, developed in accordance with the Local Government Act 1993 (Sections 402-406), presents a rolling three-year plan for services, facilities and projects.

Woollahra's strategic vision for delivering these services is 'to support and promote active community participation to achieve a healthy social environment, appropriate cultural services and an efficient infrastructure'. Residents of the LGA have a high level of car ownership which increases congestion significantly. Through the construction, line marking and signposting of bicycle routes, Woollahra Municipal Council encourages more people to adopt the bicycle as a form as transport and improve the accessibility on roads.

It is noted that a new integrated planning framework, including a Community Strategic Plan, Delivery Program and Operational Plan will supersede the Management Plan in the future.

Woollahra Local Environmental Plan 1995

The Woollahra Local Environmental Plan 1995 encourages a balanced transport system for road users, pedestrians and cyclists, as well as providing facilities that reduce the level of conflict between different transport modes.

The Woollahra LEP is currently being updated in accordance with the New South Wales Department of Planning's requirements.

Woollahra Recreational Needs Assessment and Strategy 2006

The Woollahra Recreational Needs Assessment and Strategy provides an understanding of the community's recreation needs, existing opportunities, and trends impacting on recreation services or facilities. The Strategy makes the following recommendations relevant to cycling:

- Review and implement the Woollahra Bike Plan (Bicycle Route Network) as this will provide opportunities for shared walking/cycle trails;
- Upgrade and widen the Cliff Walk (outer South Head) in accordance with the Austroads Guide to Traffic Engineering Practices, Bicycles Part 14 and ensure appropriate consultation with the community regarding possible shared pedestrian and cycle use of this path;
- Investigate opportunities to develop a linear cycle trail along the old tram route behind Gap Park, thereby freeing the cliff walk predominantly for walkers; and
- Continue the development of an integrated network of off-road and on-road bicycle and linear trails to facilitate recreational cycling, walking and jogging and which links with neighbouring LGA's, key activity nodes and regional trails in accordance with the Woollahra Bike Plan.

2.8 Other Relevant Plans

Other relevant Plans of Management, plans from adjacent LGAs or at a regional level include:

- Plans of Management - Parks and Reserves (various);
- City of Sydney Cycle Strategy and Action Plan: 2007-2017;
- Waverley Bike Plan (1999);
- SSROC Regional Bicycle Network Plan; and
- East Sydney Sub-Regional Plan.

3. Data Collection and Consultation

3.1 Cycle Counts

Cycle counts, including categorisation of cyclist user group, were undertaken during peak periods at locations in the Woollahra area on Thursday 11 September 2008. The peak periods were chosen based on surrounding land uses and expected levels of activity. For example, locations near railway stations or along recognised commuter routes to the Sydney CBD were surveyed during the AM and PM journey-to-work peak periods, whilst the shopping and retail areas were surveyed during the midday peak.

The locations and times of the surveys are as follows:

- Paddington Five Ways– Glenmore Road, Broughton Street and Heeley Street intersection (7:00am – 9:00am, 4:00pm – 6:00pm);
- Double Bay – New South Head Road, Bellevue Road, Kiaora Road and Cross Street intersection (7:00am – 9:00am, 4:00pm – 6:00pm);
- Bellevue Hill – Victoria Road and Bellevue Road intersection (7:30am – 9:00am, 4:00pm – 6:00pm);
- Rose Bay – O'Sullivan Road and Latimer Road intersection (7:00am – 9:00am, 4:00pm – 6:00pm);
- Vaucluse – New South Head Road and Hopetoun Avenue intersection (7:45am – 9:00am, 4:30pm – 6:00pm);
- Woollahra – Queen Street between Alton Street and Spicer Street (7:00am – 9:00am, 11:00am – 1:00pm and 4:00pm – 6:00pm); and
- Paddington – Oxford Street between William Street and Elizabeth Street (7:00am – 9:00am, 11:00am – 1:00pm and 4:00pm – 6:00pm).

The weather on the survey day was fine with a moderate temperature.

The peak hour results for each location are summarised in Table 2, Page 15 with full details in Appendix B.

Table 2, Page 15 indicates that a significant number of cyclists were observed using Oxford Street. These volumes were more than double those observed at any of the other survey locations. With the exception of Oxford Street and Queen Street, the number of cyclists observed during the AM and PM peak periods was similar.

Table 2: Summary of Cyclist Counts

Site Details	Total No. of Cyclists		
	AM – 7am-9am	Midday – 11am-1pm	PM – 4pm-6pm
Paddington Five Ways Glenmore Road, Broughton Street and Heeley Street intersection	31 cyclists	not counted	25 cyclists
Double Bay New South Head Road, Bellevue Road, Kiaora Road and Cross Street intersection	23 cyclists	not counted	21 cyclists
Bellevue Hill Victoria Road and Bellevue Road intersection	40 cyclists	not counted	39 cyclists
Rose Bay O'Sullivan Road and Latimer Road intersection	24 cyclists	not counted	22 cyclists
Vaucluse New South Head Road and Hopetoun Avenue intersection	4 cyclists	not counted	4 cyclists
Woollahra Queen Street between Alton Street and Spicer Street	32 cyclists	6 cyclists	9 cyclists
Paddington Oxford Street between William Street and Elizabeth Street	150 cyclists	25 cyclists	96 cyclists
TOTAL	**304**	**N/A**	**216**

3.2 School Cycling Questionnaire

A cycling and walking questionnaire was distributed to each school in the Woollahra LGA. A total of 18 schools received a questionnaire, with 11 completed responses received.

The main findings from this questionnaire were as follows:

- A majority of the students live locally to the school;
- Most schools permitted their students to ride to school;
- Sustainable transport or environmental topics were covered in the curricula of 6 out of the 10 schools surveyed (60%);
- The most popular transport modes used by students at the schools surveyed were the private vehicle, followed by walking and the bus. The lowest ranked mode used overall was train;
- The majority of schools surveyed (66%) noted that they do not have issues with bicycle access;
- Bicycle safety education is covered in the curricula of 3 out of the 10 schools surveyed (33%);

- The majority of schools noted that they allowed their students to ride to school (17, or 70%). Only 1 school (10%) noted that they had a bicycle policy;
- Bicycle racks were the only type of bicycle parking provided (3 out of 10 schools or 30%). The other schools did not provide any bicycle parking facilities;
- In general, very few students were noted as riding their bicycles to school, with numbers generally less than 10 students per school;
- Safety was one of the main reasons why more students weren't riding to school. Another reason noted was that children are driven by their parents as they believe their children are too young; and
- Bicycle facility improvements requested by schools included dedicated cycleways, pedestrian crossings at schools, and marked bicycle routes.

3.3 BIKEast Saddle Surveys

As part of the preparation of this report, GTA Consultants made survey trips of the Woollahra LGA by bicycle, including a half-day cycling site inspection held on 3 November 2008, accompanied by representatives of BIKEast, the bicycle user group for Eastern Sydney. This inspection included locations where there are difficulties with existing facilities or missing links, and locations where current facilities operate relatively well.

3.4 Bicycle Working Party Meetings

During the data collection and consultation stage of the Bicycle Strategy project, GTA Consultants attended two Bicycle Working Party meetings, on 19 August and 18 November 2008. The issues raised were considered in the preparation of the proposed cycling network discussed in this report.

The August meeting introduced the study and its objectives and discussed some of the wider issues that make cycling an important transport mode. Some concerns with the bicycle network were discussed, including issues associated with the Regional Route 2 along New South Head Road. GTA Consultants presented to the November meeting a preliminary bicycle network that had prepared using the information collected to date, and invited feedback and discussion.

4. Woollahra Bicycle Strategy

4.1 Key Elements of the Bicycle Strategy

The preparation of a Bicycle Strategy for the Woollahra LGA recognises the unique challenges and distinctive character of the local area, including:

- Heritage quality, particularly in the vicinity of Paddington;
- Topography, with steep descents to sea level from the Bondi Junction plateau as well as ridge lines and spurs;
- Constrained and variable road reserve cross-sections and alignment due to topography and historical development and subdivision of the area;
- Significant on-street parking pressures due to the historical development of the area with limited off-street residential parking;
- A congested state and regional road network with limited alternative local routes to key destinations;
- Competing priorities for the limited road reserves available and the associated attitudes towards cycling from the local community; and
- Existing above-average cycling participation levels.

The key elements of the Woollahra Bicycle Strategy have been identified as follows:

- Completing major (regional) routes that provide regional connectivity;
- Every Street a Cycling Street – promoting and facilitating cycling on all local roads with minimum new construction;
- Recreational routes for safe and family-friendly cycling in the vicinity of parks and reserves;
- Developing cycle facilities at/to public transport Interchanges and urban villages;
- Integrated policies and planning instruments – inclusion of cycle facilities and considerations within road construction and maintenance programs as well as in development planning; and
- Targets to provide a balance between civil works and encouraged programs, including a ride-to-school strategy to develop sustainable travel habits and cycling confidence from a young age.

Appendix E shows the proposed route network.

4.2 Major (Regional) Routes

4.2.1 Overview

There are two State Roads in Woollahra:

- State Road 173, New South Head Road; and
- State Road 172/339, Oxford Street, Syd Einfeld Drive, Old South Head Road.

These roads follow the principal desire lines for travel within and to/from the Eastern Suburbs. As these roads also follow the ridge lines and take the best grades available, cycling alternatives are hilly and disconnected due to the steep terrain across most of the LGA.

Both State Roads are heavily trafficked throughout the week and currently offer a poor cycling environment. Recent community surveys conducted in the neighbouring City of Sydney LGA found that a large majority of people considering taking up cycling will not do so on this type of road if current conditions prevail.

It is recommended that Woollahra Council actively engage the RTA to develop a long term strategic approach to the management, maintenance and reconstruction of State Roads in the LGA which will provide for the progressive implementation of principal bicycle routes along these State Road corridors. Key objectives of such a strategy would be to provide fully off-road facilities along either or both footpaths through a combination of new construction, widening, and low key upgrades. There may be limited opportunities for road space re-allocation when RTA are undertaking upgrading work (reconstruction, resheeting etc). On Old South Head Road, northwards from Rose Bay traffic volumes reduce significantly and marked bicycle shoulder lanes are recommended, although it is recognised that these do not cater for all user groups.

In the short term, there are a number of projects on these State Roads which will enhance the existing bicycle network and encourage more cycling trips in the area. These are:

- Conversion of footpaths to shared paths along some sections, including pavement repairs, localised pavement widening and signs and markings as appropriate;
- Detours via back streets at town centres such as Rose Bay and Double Bay; and
- Construction of a two-way separated path along the western edge of Old South Head Road between Birriga Road and Newcastle Street, Rose Bay.

Other opportunities include:

- Connection of existing off-road cycle facilities along Old South Head Road between Edgecliff Road and Bondi Road to the Bondi Junction CBD, via on-road lanes or separated paths (in conjunction with Waverley Council);
- Construction of separated bicycle facilities along both sides of Oxford Street linking the existing high quality bicycle lanes running the length of Moore Park Road and the Paddington shops to the Paddington and Woollahra shopping villages and Bondi Junction

CBD (in conjunction with various RTA, Sydney Water, Waverley Council, Randwick Council and Centennial Park); and

- Upgrading of the heavily used shared paths on both sides of Old South Head Road between Bondi Road and Victoria Road, including a new marked footcrossing across Syd Einfeld Drive at its intersection with Oxford Street and Bondi Road.

4.2.2 Review of Existing Regional Bicycle Network

GTA Consultants undertook a review of the existing bicycle network to determine those works that have been completed and those that remain as proposed routes. The review assesses whether the proposed routes are still appropriate for inclusion in the latest Bicycle Strategy, and suggests specific treatment and action for those routes recommended to be retained as part of the bicycle network.

Table 3, Page 22 includes a summary of the completed Woollahra Bike Plan 2000 routes and comments on those that remain outstanding.

It is noted that as a result of the 2003 realignment of the Woollahra/Waverley LGA boundary from Oxford Street to the bypass road, Syd Einfeld Drive, some of the route sections in the Woollahra Bike Plan 2000 are no longer under the control of Woollahra Municipal Council.

Concerns have been raised during the implementation of the Woollahra Bike Plan 2000 about the installation costs of some facilities, the visual impacts of bicycle logos and green lanes in historic areas, the limited amount of road space available, the impact of bicycle facilities on car travel and the slow uptake of cycling.

Over the past seven years Woollahra Municipal Council has implemented a large proportion of the network recommended in the 2000 Bike Plan. Much of this work has been carried out in a very cost effective manner by installing cycle lanes and intersection improvements only as part of street improvements (re-sheeting) and traffic calming works. Important cycle routes were installed as part of integrated traffic calming works along O'Sullivan Road, Hopetoun Avenue, Victoria Road and Bellevue Road. Many other improvements have been carried out which similarly benefit other road users and generally improve the safe operation of Woollahra streets and roads.

Installation of shared path facilities has benefited pedestrian mobility through pavement upgrades. Improvements to crossings (refuges and signals) have benefited both cyclists and pedestrians while maintaining traffic flows.

While there is an ongoing need to reduce signage and road marking clutter, this has to be balanced with Council's duty of care to provide a safe operating environment for all users, whether motorists, cyclists or pedestrians. Recommendations are made elsewhere in this Strategy on the need to provide effective way-finding signage which is compatible and in harmony with the local streetscape environment.

Woollahra shares the problem of narrow urban streets with all its adjoining councils. Region-wide the problem of retro-fitting cycle facilities to these streets is an ongoing challenge to cycle network development. The *NSW Bicycle Guidelines* were developed in 2003 by the RTA in response to these issues and these guidelines contain a number of innovative treatments designed specifically to

integrate cycle facilities into narrow urban streetscapes. A number of these treatments have been recommended, where appropriate, in the Woollahra Bicycle Strategy.

High levels of car ownership, combined with the existing pattern of narrow street development, place great stress on the broad community through traffic congestion, pollution, parking difficulties and noise. High levels of traffic congestion experienced in Woollahra are directly related to high car use not to bicycle use. These conditions are a major disincentive to cycling and particularly disadvantage children, the elderly and new and inexperienced cyclists.

Cycling as a transport mode requires very little operating space. At the same time cycling offers great benefits to Council and the community. To extend these benefits requires relatively modest resources.

4.2.3 Proposed Regional Cycle Network

The Regional Routes form the 'main roads' of the bicycle network. Separated facilities are generally recommended where possible, due to traffic speeds, composition and volumes.

There are eleven Regional Routes:

- Route 1 – Bondi Junction to Paddington – Connects to City
  This route has been implemented with some linemarking, mixed traffic streets and directional signage;
- Route 2 –Vaucluse to Rushcutters Bay – Connects to City
  This route is predominantly off-road and follows the alignment of New South Head Road with on-road detours around shopping and commercial centres. This route is not yet implemented. The proposed off-road sections include construction of new footpath areas (or widening) to provide a sealed width of 2.5m. Cycle signage and pavement markings need to be provided. The existing footpaths adjacent to residential land use are generally of insufficient width;
- Route 3 – Edgecliff to Bondi Junction
  This route includes on-road facilities along Edgecliff Road, which have been implemented, along with connections through to Old South Head Road to the east of Bondi Junction commercial centre. The missing link for this route is the off-road path adjacent to the Syd Einfeld Drive retaining wall, which is within the Waverley LGA;
- Route 4 – North Bondi (Waverley Council) to Bondi Junction
  This route has been implemented and includes a combination of on-road and off-road facilities. Off-road facilities are provided along both sides of Old South Head Road and Victoria Road between Syd Einfeld Drive and Bellevue Road, with the north side located within the Woollahra LGA and the south side located within the Waverley LGA. From Bellevue Road, the route follows Birriga Road, with uphill on-road lanes and downhill mixed traffic;
- Route 5 – Bondi Beach to Rose Bay Wharf (via O'Sullivan Road)
  This route follows O'Sullivan Road between Old South Head Road and New South Head Road and provides an important commuter link from Blair Street/Curlewis Street in Bondi to Rose Bay Wharf. The facilities are currently in the form of bicycle shoulder lanes, with future potential to be established off-road;

- Route 6 – Bondi Beach to Rose Bay
  This route consists of both off-road and on-road facilities and follows Old South Head Road and Newcastle Street. It provides an important link between Blair Street/Curlewis Street in Bondi and the Rose Bay shops. To the west, the route links to Regional Route 4 to Bondi Junction and links are also available for travel into the City;
- Route 7 – Bondi to Double Bay
  This route is predominantly on-road along Bellevue Road and Cross Street. This is an important link across the LGA into the centre of Double Bay. The majority of Bellevue Road has already been completed as bicycle shoulder lanes uphill/southbound and mixed traffic downhill/northbound. The links into Double Bay at Cross Street need to be established;
- Route 8 – Bondi Junction to Double Bay
  This route follows the roads of Bathurst Street, Edward Street, Manning Road and Kiaora Road to link Bondi Junction and Double Bay. It consists of bicycle shoulder lanes and mixed traffic and provides the most direct link between these centres;
- Route 9 – Woollahra to Edgecliff
  This route follows local streets with low traffic speeds and volumes. Jersey Road, Cameron Street and Thorne Street have all been implemented with bicycle logos for mixed traffic. The remaining link at New Maclean Street needs to be established for access into Edgecliff;
- Route 10 – Watsons Bay to Vaucluse
  Watsons Bay is both a public transport node (ferry wharf/bus terminus) and a tourist attraction. The use of off-road paths as shared paths through Robertson Park separates the cyclists from the vehicular traffic and bus movements, as well as providing a scenic route through the park. This route then connects to Vaucluse via an on-road mixed traffic arrangement on Hopetoun Road which is partially completed; and
- Route 11 – Watsons Bay to Bondi Beach
  This route connects Watsons Bay with Bondi Beach, and through to Botany Bay via the Coastal Cycle Route. Route 11 includes facilities through Gap Park and along Old South Head Road. The facilities within Gap Park need to be consistent with the Gap Park Master Plan.

Table 3, Page 22 summarises the proposed works for Regional Routes.

Table 3: Regional Cycle Route Evaluation and Strategy

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
Route A1: Bondi Junction To Paddington (City)	Route 1: Bondi Junction To Paddington (City)	Route is well signposted, with a mix of on-road marked lanes, on-road mixed traffic and off-road shared paths. Some sections of the original route no longer apply due to changes to the route alignment (such as the contra-flow lane in Broughton Street) and changes to the Woollahra/Waverley LGA boundaries. Directional signage is provided along the length of the route.	Route is satisfactorily completed.	Wallis Street	Nelson Street (LGA boundary) to Woods Ave	0.12	100%	Bicycle shoulder lanes (Nelson St to Woods Ave), off-road shared path on north side of Wallis St (Woods Ave to Ocean St)	COMPLETED	High	$0	COMPLETED
					Woods Ave to Ocean Street	0.1	100%	Off-road shared path on north side of carriageway	COMPLETED	High	$0	COMPLETED
				Ocean Street	Wallis Street to John Street	0.085	100%	Off-road shared path (west side)	COMPLETED	High	$0	COMPLETED
				John Street	Ocean Street to Victoria Ave	0.425	100%	On-road mixed traffic	COMPLETED	High	$0	COMPLETED
				Victoria Ave, Queen Street, Halls Lane	John Street to Jersey Road	0.2	100%	Victoria Ave and Halls Lane mixed traffic, Queen Street bicycle shoulder lanes	COMPLETED	High	$0	COMPLETED
				Jersey Road, Paddington Street	Halls Lane to William Street	0.6	100%	On-road mixed traffic for both roads	COMPLETED	High	$0	COMPLETED
				Hopetoun Street, Broughton Street	William Street to Heeley Street	0.375	100%	On-road mixed traffic	COMPLETED	High	$0	COMPLETED
				Glenmore Road	Heeley Street to Brown Street	0.35	100%	On-road mixed traffic	COMPLETED	High	$0	COMPLETED
				Brown Street, MacDonald Street	Glenmore Road to Boundary Street (LGA boundary)	0.2	100%	Brown Street mixed traffic northbound and shoulder lane southbound, MacDonald Street mixed traffic westbound and shoulder lane eastbound	COMPLETED	High	$0	COMPLETED
			To encourage use of route, publish a single page leaflet/map of this route and distribute to residents within the route's catchment to make them aware of the route and its connections to Bondi Junction, Sydney CBD, Woollahra shops and Paddington Five Ways.	Whole of route				Publish map	High	High	$5,000	Short Term
						2.455	***100%***				***$5,000***	
Route A2: Vaucluse to Rushcutters Bay	Route 2: Rushcutters Bay to Vaucluse	New South Head Road is a key east-west transport route and is as important for cycling access as it is for general traffic. Due to the high traffic volumes the route should be off-road, ideally with cyclists separated from both pedestrians, parking and general traffic. The corridor width, the land uses and topography make it difficult to achieve such a high quality facility in the short term, although this should remain the longer term objective. In the shorter term there is potential for a compromise with detours into lower speed and volume roads in some places (eg in existing commercial areas), while outside the commercial areas there are generally good opportunities for shared paths by widening and improving existing footpaths.	In the short term, it is feasible for sections of this route to be signposted for off-road use following the alignment of New South Head Road with on-road detours around shopping and commercial centres. It seeks to make use of existing footpaths where possible by creating shared paths from existing footpaths through signage and pavement markings and pavement widening where the width is inadequate. In the long term, some sections require an additional footpath width of 1.0-1.5m to achieve a sealed width of 2.5m. The existing footpaths adjacent to residential land use are	New South Head Road	Hopetoun Ave to Vaucluse Road	0.56	0%	Off-road path on north/west side of New South Head Road carriageway (approx. 1.5m) - widen existing footpath to a minimum of 2.5m	Low	High	$70,450	Long Term
						-	0%	Reinforce route with signage and pavement markings	High	High	$8,580	Short Term
					Vaucluse Road to Towns Road	0.04	0%	Off-road path on east side of New South Head Road - widen existing footpath (1.2m width) to a minimum of 2.5m	Low	High	$6,540	Long Term
						-	0%	Reinforce route with signage and pavement markings	High	High	$610	Short Term
						-	0%	Signalised bicycle crossing facilities at Vaucluse Road intersection	High	High	$5,620	Short Term
						-	0%	Kerb ramps x 2 at Vaucluse Road intersection	High	High	$1,760	Short Term
				Towns Road, Chamberlain Avenue, Fernleigh Avenue, Carlisle Street, Dover	New South Head Road to Richmond Road	1.65	0%	On-road mixed traffic with signage (alternative route to New South Head Road)	High	High	$10,080	Short Term

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
			generally of insufficient width. Through Rose Bay, there is a detour route proposed to the rear of the shops to avoid the steep and winding section of New South Head Road. On-road mixed traffic facilities as part of detour to east of Rose Bay.	Road, Car Park, Wilberforce Avenue, Newcastle Street, Richmond Road, Norwich Road								
				New South Head Road	Norwich Road to Kent Road	0.25	0%	Off-road path on south side of New South Head Road carriageway - widen existing footpath (1.2m) up to a minimum of 2.5m	Low	High	$40,890	Long Term
						-	0%	Reinforce route with signage and pavement markings	High	High	$3,830	Short Term
					Kent Road to Wolseley Road	1.4	0%	Off-road path on north side of New South Head Road carriageway - use existing footpath (2.0m to 4.0m)	High	High	$0	COMPLETED
						-	0%	Reinforce route with signage and pavement markings	High	High	$21,450	Short Term
						-	0%	Signalised bicycle crossing facilities at Kent Road intersection	High	High	$5,620	Short Term
					Wolseley Road to William Street	0.70	0%	Off-road path on north side of New South Head Road carriageway - widen existing footpath (1.5m) up to a minimum of 2.5m	Low	High	$88,060	Long Term
						-	0%	Reinforce route with signage and pavement markings	High	High	$10,730	Short Term
						-	0%	Signalised bicycle crossing facilities at Lyne Park entrance intersection	High	High	$2,810	Short Term
				William Street, Bay Street	New South Head Rd to New South Head Rd	0.8	0%	On-road mixed traffic with mixed traffic intersection treatments	High	High	$4,890	Short Term
						-	0%	Signalised bicycle crossing facilities at William St/New South Head Rd intersection	High	High	$2,810	Short Term
				New South Head Road	Bay Street/Manning Road to Ocean Ave/Ocean Street	0.435	0%	Use existing footpaths both sides of New South Head Rd. Minor pavement repairs. Rationalise street furniture to maximise clear zone for walking and cycling.	High	High	$0	Short Term
						-	0%	Reinforce route with signage and pavement markings	High	High	$6,670	Short Term
						-	0%	Signalised bicycle crossing facilities at Ocean Ave intersection	High	High	$5,620	Short Term
					Ocean Ave/Ocean Street to Darling Point Road/New McLean Street	0.21	0%	Network gap	Low	High	$0	Long Term
					Darling Point Road/New McLean Street to Mona Road/Glenmore Road	0.2	0%	Off-road path on both sides of New South Head Road carriageway - use existing footpath (min. 2.0m)	High	High	$0	COMPLETED
						-	0%	Reinforce route with signage and pavement markings	High	High	$3,060	Short Term
						-	0%	Signalised bicycle crossing facilities at Darling Point Road	High	High	$8,430	Short Term

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
								intersection and crossing east of Darling Point Road				
					Mona Road/Glenmore Road to New Beach Road/Mahoney Lane	0.14	0%	Off-road path on both sides of New South Head Road carriageway - use existing footpath (min. 2.0m)	High	High	$0	COMPLETED
						-	0%	Reinforce route with signage and pavement markings	High	High	$2,150	Short Term
						-	0%	Signalised bicycle crossing facilities at Mona Road intersection	High	High	$5,620	Short Term
					New Beach Road/Mahoney Lane to Neild Avenue	0.2	0%	Off-road paths on both sides of New South Head Road carriageway - minor repairs to existing footpaths on north side, use existing footpath on south side (min. 2.0m).	High	High	$0	Short Term
							0%	In the medium to long term, consider a new path on the northern side clear of the trees (min 2.5m).	Low	High	$62,900	Medium Term
						-	0%	Reinforce route with signage and pavement markings	High	High	$3,060	Short Term
						-	0%	Signalised bicycle crossing facilities at Neild Ave and New Beach Road intersections	High	High	$8,430	Short Term
			In the long term, Council should lobby the RTA to implement a separated cycleway facility which separates cyclists, pedestrians and vehicles.	Whole of route				Lobby RTA	Low	High	$0	Short Term and ongoing
						6.585	***0%***				***$390,670***	
Route A3: Edgecliff to Bondi Junction	Route 3: Edgecliff to Bondi Junction	This route includes on-road bicycle shoulder lanes along Edgecliff Road, which have been implemented, along with connections through to Old South Head Road to the east of Bondi Junction commercial centre. The section adjacent to Bondi Junction is now located within the Waverley LGA. The missing link for this route is the off-road path adjacent to the Syd Einfeld Drive retaining wall, which is within the Waverley LGA. Some sections of the route do not meet standards, with narrowing on the curves. Parking is an issue and contributes to the pinch points.	Need to investigate treatments for pinch points along length of Edgecliff Road (intersections and width on curves). Work with Waverley Council to establish a link adjacent to Syd Einfeld Drive retaining wall to complete route connectivity.	Edgecliff Road	New South Head Road to Grosvenor Street	2.0	0%	Investigate potential treatments for pinch points along length of Edgecliff Road (intersections and width on curves).	Medium	Medium	$84,270	Medium Term
				Grosvenor Street	Edgecliff Road to Grafton Street	0.15	100%	Bicycle shoulder lanes southbound, on-road mixed traffic northbound	COMPLETED	High	$0	COMPLETED
				North side of Syd Einfeld Drive retaining wall	Adelaide Street to Fern Place	0.075	n/a	Off-road shared path. Lobby Waverley Council	Medium	High	$630	Short Term and ongoing
				Fern Place, Magney Lane	Off-road link to Old South Head Road	0.16	100%	On-road mixed traffic including link to Old South Head Road footpath	COMPLETED	High	$0	COMPLETED
						2.385	***100%***				***$84,900***	
Route A4: North Bondi (Waverley Council) to Bondi Junction	Route 4: Bondi Junction to North Bondi	Old South Head Road and Victoria Road have off-road shared paths on both sides of the carriageway, with the north side located within Woollahra LGA and the south side located within Waverley LGA. Off-road facilities are provided along both sides of Old South Head Road and Victoria Road between Syd Einfeld Drive and Bellevue Road, with	Improve signage for all road users (cyclists, pedestrians and drivers) to minimise driveway conflicts along off-road sections. Investigate removal/relocation of obstacles within off-road sections, particularly the seating at the intersection	Old South Head Rd	Bondi Road to Victoria Road	0.42	100%	Off-road shared path on north side of carriageway	COMPLETED	High	$0	COMPLETED
				0	0	-	0%	Improve signage for all road users (cyclists, pedestrians and drivers) to ensure that driveway conflicts are minimised along off-road sections	High	High	$2,660	Short Term

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
		the north side located within the Woollahra LGA and the south side located within the Waverley LGA. Some issues exist for these off-road shared paths, including conflicts between cyclists, pedestrians and drivers and physical obstructions and obstacles located within the travel path (such as the seating at the intersection of Old South Head Road and Bellevue Road).	of Old South Head Road and Bellevue Road.	Victoria Road	Old South Head Road to Birriga Rd	0.4	100%	Off-road shared path on west/north side of Victoria Road	COMPLETED	High	$0	COMPLETED
				0	0	-	0%	Improve signage for all road users (cyclists, pedestrians and drivers) to ensure that driveway conflicts are minimised along off-road sections	High	High	$2,530	Short Term
		Birriga Road is treated with on-road mixed traffic eastbound (downhill) and bicycle shoulder lane westbound (uphill). From Bellevue Road, the route follows Birriga Road, with uphill on-road lanes and downhill mixed traffic.	Investigate suitable treatment of the intersection of Birriga Road/O'Sullivan Road/Old South Head Road at the eastern extent of the route, to reduce crossing/travel times between O'Sullivan Road and Birriga Road.	Birriga Road	Victoria Road to Old South Head Road	1.2	100%	On-road mixed traffic eastbound (downhill), bicycle shoulder lane westbound (uphill)	COMPLETED	High	$0	COMPLETED
				Intersection of Birriga Road/O'Sullivan Road/Old South Head Road	0	-	0%	Investigate suitable treatment to reduce crossing time and distance between Birriga Rd and O'Sullivan Rd facilities. Options include: - one- or two-stage crossing on O'Sullivan Rd leg - refuge crossing on O'Sullivan Road to the north/west of signals	Medium	High	$33,710	Medium Term
	Route 10: Edgecliff Road (Grosvenor Street to Old South Head Road)	Existing on-road bicycle shoulder lanes	Satisfactorily completed, ongoing maintenance	Edgecliff Road	Grosvenor Street to Old South Head Road	0.6	100%	Bicycle shoulder lanes, treatment at Old South Head Road intersection	COMPLETED	High	$0	COMPLETED
						2.62	***90%***				***$38,900***	
Route A5: Bondi Beach to Rose Bay Wharf (via O'Sullivan Road)	Route 38: O'Sullivan Road	O'Sullivan Road has been treated with bicycle shoulder lanes.	In some sections the carriageway width is not adequate for this type of treatment, particularly on corners. Need to investigate treatments for pinch points along length of O'Sullivan Road (intersections and width on curves) to ensure it is safe for cyclists. This may include in the long term an off-road path on the eastern side of the carriageway.	O'Sullivan Road	New South Head Road to Old South Head Road	1.65	100%	Existing bicycle shoulder lanes.	COMPLETED	High	$0	COMPLETED
								Facility has a varying width due to the road not quite achieving the preferred 12.8m width, some issues associated with inadequate lane widths particularly on corners. Investigate improvement options	Medium	Medium	$3,170	Medium Term
								Future consideration - shared path adjacent to golf club/sports ground	Low	High	$518,930	Long Term
						1.65	***100%***				***$522,100***	
Route A6: Bondi Beach to Rose Bay and Vaucluse	Route 46: Old South Head Road	Woollahra Bike Plan 2000 identified a two-way off-road shared path on the northern/western side of Old South Head Road adjacent to the golf club/sports grounds and a bicycle shoulder lane treatment along Newcastle Street. These routes are yet to be implemented. This route provides an important link between Blair Street/Curlewis Street in Bondi and the Rose Bay shops. To the west, the route links to the North Bondi (Waverley Council) to Bondi Junction Regional Route and links	Because Old South Head Road carries heavy traffic, a two-way shared path would provide a much-needed safe bicycle route. This path is recommended as a vital link in the bicycle network because of the lack of safe alternative routes in surrounding streets. A shared path should be in the order of 2.2m-2.5m wide to accommodate	Old South Head Road	O'Sullivan Road to Newcastle Street	0.85	0%	Two-way off-road shared path (2.5m width) adjacent to golf club/sports grounds	Medium	High	$267,330	Long Term

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
		are also available for travel into the City	two-way cyclist flows. Consultation between Council and the golf club may need to occur.									
	Route 43: Newcastle Street		Newcastle Street is an important link to Rose Bay and the shops which is recommended to be implemented as a bicycle shoulder lane treatment.	Newcastle Street	Old South Head Road to Richmond Road	0.83	0%	12.8m road width, standard bicycle shoulder lane treatment would fit with adjustments to existing linemarking	High	High	$28,430	Short Term
	Route 47: Old South Head Road	Woollahra Bike Plan 2000 recommends the majority of this route be treated as bicycle shoulder lanes, with separate bicycle and parking lanes at locations where parking is heavy. This treatment is yet to be implemented.	Important North-South link which is recommended to be implemented as a bicycle shoulder lane treatment. Off-road shared path between Newcastle Street and Albemarle Avenue (including widening). Bicycle crossing of Old South Head Road (adjust existing mid-block crossing). Bicycle shoulder lanes north of Albemarle Avenue.	Old South Head Road	Newcastle Street to Albemarle Ave	0.3	0%	Off-road shared paths on west side of carriageway - widen existing footpath (1.8m) to a minimum of 2.5m	High	High	$37,740	Short Term
				0	0	-	0%	Adjust mid-block signalised crossing for bicycles	High	High	$2,810	Short Term
				0	Albemarle Ave to New South Head Road/Christison Park	2.25	0%	Bicycle shoulder lanes	High	High	$77,060	Short Term
						4.23	***0%***				***$413,370***	
Route A7: Bondi to Double Bay	Route 34: Bellevue Road	This route predominantly features bicycle shoulder lanes uphill/southbound and mixed traffic downhill/northbound to the north of Rivers Street. An off-road shared path is provided for southbound/uphill cyclists from New South Head Road to Fairfax Road at the northern end of the route.	Satisfactorily completed, ongoing maintenance	Bellevue Road	New South Head Road to Rivers Street	1.35	100%	Off-road shared path for southbound/uphill cyclists from NSH Rd to Fairfax Rd, bicycle shoulder lanes uphill/southbound & mixed traffic downhill/northbound north of Rivers St	COMPLETED	High	$0	COMPLETED
		Woollahra Bike Plan 2000 identified a bicycle shoulder lane treatment for the section of Bellevue Road between Rivers Street and Victoria Road, which is yet to be implemented.	A mixed traffic treatment would be suitable for implemented as part of the 40km/h high pedestrian area speed zone in the vicinity of the Bellevue Hill shops.		Rivers Street to Victoria Road	0.4	0%	On-road mixed traffic treatment as part of 40km/h high pedestrian area	High	High	$2,440	Short Term
	Route 35: Cross Street	Woollahra Bike Plan 2000 identified a bicycle shoulder lane treatment for this route, which is yet to be implemented. This is an important link across the LGA along Bellevue Road into the centre of Double Bay. The links into Double Bay at Cross Street need to be established.	Cross Street is an important link through Double Bay which is recommended to be implemented as a bicycle shoulder lane treatment. An approach lane treatment is to be included at New South Head Road.	Cross Street	New South Head Road to Bay Street	0.25	0%	On-road mixed traffic	High	High	$1,530	Short Term
				0	0	0.05	0%	Bicycle lanes on approach to New South Head Road, including intersection storage boxes at signals	High	High	$2,000	Short Term
						2.05	***70%***				***$5,970***	
Route A8: Bondi Junction to Double Bay	Route 36: New South Head Road, Manning Road, Edward Street, Bathurst Street	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. This facilitates the link between Bondi Junction and Double Bay and provides the most direct link between these centres.	This is an important Link between Double Bay and Edgecliff which is recommended to be implemented as a mixed traffic treatment.	Bathurst Street, Edward Street, Manning Road	Edgecliff Road to Epping Road	0.45	0%	Edward Street, Bathurst Street - bicycle shoulder lanes. Need to investigate during detailed design the potential loss of parking on steep uphill sections.	Medium	Medium	$15,410	Medium Term
				0	0	0.35	0%	Manning Road - on-road mixed traffic	Medium	Medium	$2,140	Medium Term
	Route 37: Kiaora	Woollahra Bike Plan 2000 identified a	This is an important link	Kiaora Road	Manning Road to	1.05	0%	On-road mixed traffic	Medium	Medium	$6,420	Medium Term

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
	Road	mixed traffic treatment for this route, which is yet to be implemented. This facilitates the link between Bondi Junction and Double Bay and provides the most direct link between these centres.	between Double Bay and Edgecliff which is recommended to be implemented as a mixed traffic treatment. Need to formalise the bicycle off-road link through to Manning Road from Kiaora Road with signage and pavement markings.		Bellevue Road							
				0	0	-	0%	Formalise bicycle off-road link through reserve to Manning Road - signs	Medium	Medium	$630	Medium Term
						1.85	***0%***				***$24,600***	
Route A9: Woollahra to Edgecliff	Route 8: Jersey Road	Jersey Road is currently implemented as an on-road mixed traffic arrangement. However, Council is currently in the process of redesigning the treatment layout in conjunction with the Paddington PAMP.	The treatment for Jersey Road should be implemented once a suitable design has been prepared by Council.	Jersey Road	Paddington Street to Ocean Street	0.62	20%	On-road mixed traffic. To be considered in conjunction with the Paddington PAMP.	High	Medium	$3,790	Short Term
	Route 25: New McLean St, Herbert Road, Glebe St, Cameron St, Thorne St	Cameron Street and Thorne Street have both been treated with mixed traffic logos. The same treatment is yet to be implemented in New McLean Street to complete the link for access into Edgecliff. Herbert Road and Glebe Street are no longer included in the route.	It is important to complete the link at New Maclean Street to connect to Edgecliff. The recommended treatment is a mixed traffic layout.	Cameron Street, Thorne Street	Jersey Road to New McLean Street	0.43	100%	On-road mixed traffic	COMPLETED	Medium	$0	COMPLETED
				New McLean Street	Cameron Street to New South Head Road	0.17	0%	On-road mixed traffic	High	Medium	$1,040	Short Term
						1.22	***45%***				***$4,830***	
Route A10: Watsons Bay to Vaucluse	Route 41: Clovelly Street	Woollahra Bike Plan 2000 identified a 2.0m wide two-way bike lane on the opposite side to parked vehicles as the treatment for this route, which is yet to be implemented.	It would be more appropriate to bring cyclists through Robertson Park to connect with the wharf and other tourist attractions of Watsons Bay. As such, omit Clovelly Street from the 2009 Bike Plan. In Watsons Bay, a series of off-road two-way shared paths is to be delineated; including some new 2.5m wide shared paths and some signage of existing paths. The use of off-road paths as shared paths through Robertson Park separates the cyclists from the vehicular traffic and bus movements, as well as providing a scenic route through the park. This would include an upgrade of the crossing treatment at Military Road for use by cyclists.	Robertson Park	Watsons Bay	0.15	100%	Series of off-road two-way shared paths (2.5m wide)	COMPLETED	Medium	$0	COMPLETED
				0	0	0.5	0%	Series of off-road two-way shared paths (path signage only)	Medium	Medium	$7,660	Short Term
				0	0	-	0%	Crossing treatment at Military Road	Medium	Medium	$1,030	Short Term
	Route 40: Hopetoun Avenue, Clovelly Street	An on-road mixed traffic layout is proposed for between The Crescent and Marine Parade but is yet to be implemented.	The mixed traffic layout along Hopetoun Avenue should be continued along the route between Marine Parade and The Crescent to provide a route to Watsons Bay.	Hopetoun Avenue	Marine Parade to The Crescent	0.85	0%	On-road mixed traffic	High	Medium	$5,190	Short Term
		Hopetoun Avenue is treated with	Satisfactorily completed,		The Crescent to	1.50	100%	Bicycle shoulder lanes/mixed	COMPLETED	Medium	$0	COMPLETED

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
		bicycle shoulder lanes/mixed traffic between New South Head Road and the north end of The Crescent.	ongoing maintenance		New South Head Road			traffic between New South Head Road and the north end of The Crescent				
						3.0	***50%***				***$13,880***	
Route A11: Watsons Bay to Bondi Beach	Route 48: Old South Head Road	Woollahra Bike Plan 2000 identified a bicycle shoulder lane treatment for this route, which is yet to be implemented.	This route connects Watsons Bay with Bondi Beach, and through to Botany Bay via the Coastal Cycle Route. It is an important North-South link which is recommended to be implemented as a bicycle shoulder lane treatment.	Old South Head Road	Gap Park (opposite Derby Street) to New South Head Road	1.21	0%	Bicycle shoulder lanes	Medium	Medium	$41,440	Medium Term
						1.21	***0%***				***$41,440***	
Total - Regional Routes						**29.255**					**$1,545,660**	

4.3 Every Street a Cycling Street

4.3.1 Overview

Depending on trip origin and destination, many Woollahra residents will undertake part of bicycle trip on local roads that do not have formal bicycle route provisions. Cycling on local roads with low traffic volumes should be encouraged though cycle-friendly road maintenance, local area traffic management (LATM) and reconstruction projects, as well as through community education. This promotes sharing of the road reserve between all road users as well as raising the expectation and awareness of cycling activity. Improved amenity for cyclists also benefits pedestrians and mobility-impaired road users.

In accordance with the *NSW Bicycle Guidelines*, streets with low traffic volumes and slow speeds can operate with mixed traffic environments, without the need for formal cycling facilities as shown in Figure 3, Page 29 (green area). Figure 3, Page 29 also indicates that as traffic volumes and speeds increase, separated cycle facilities should be provided in the form of bicycle lanes/ bicycle shoulder lanes (yellow area) or separate paths (orange area).

The mixed traffic environment applies to many quiet residential streets throughout the Woollahra Municipality. Under the Bicycle Strategy, wherever possible simple directional signposting (see Figure 4, Page 30) will be used instead of engineering intervention such as line marking, pavement logos, signage and physical devices where these are obtrusive and not of clear benefit for new local routes.

Figure 3: Methods of Separation

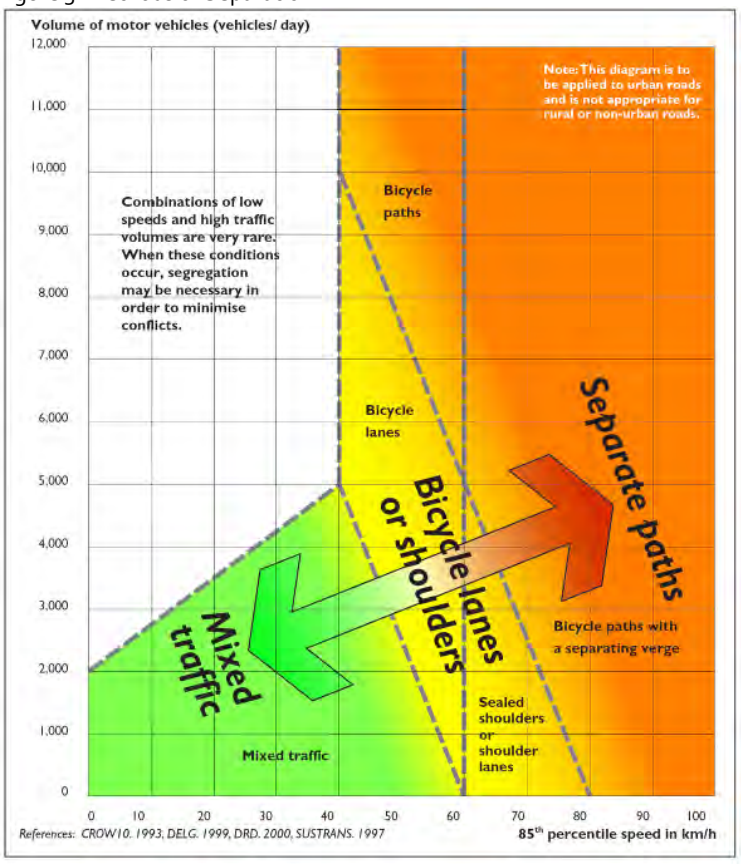
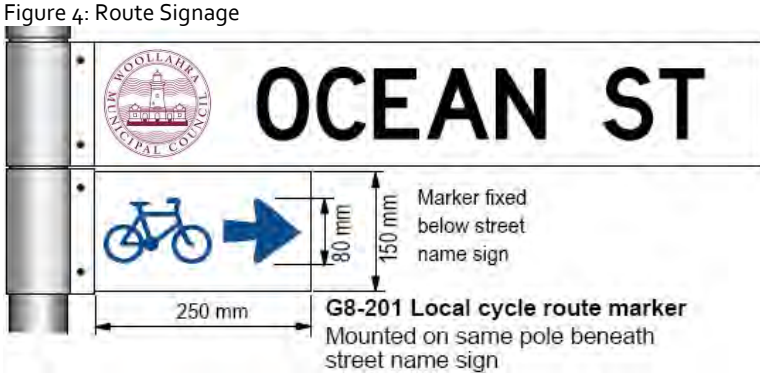


Figure 4: Route Signage



Adopting this strategy will allow Woollahra Council to minimise the use of intrusive bicycle facility treatments in the local street network, which has been subject to criticism due to visual impact in historic precincts such as Paddington. A focal point map is required to assist in the planning of the network.

This strategy has the added advantage of recognising cyclists in all future traffic management works and not just along formal cycle "routes". There is also a need to update the Woollahra and Waverley Cycle Map to include all local streets as cycle streets. This presents a good marketing opportunity to promote cycling for local access.

It should be noted, however, that there is still a significant role for line marking and pavement bicycle logos, particularly on key bicycle network links where driver awareness and cyclist confidence should be improved. Line marking, and in particular edge lines, also benefit motorists in providing clear delineation of the travel lanes during wet weather and at night-time, as well as improving on-street parallel parking compliance.

4.3.2 Selection of Bicycle Facilities

Mixed traffic environments for bicycles and motor vehicles are the preferred means of bicycle access along local roads with low traffic speeds and volumes such as residential areas, and on very narrow inner-city streets, where the aim is to keep all vehicle speeds low. Two key issues for this type of street are:

- The type of operating space for shared road environments. *NSW Bicycle Guidelines* recognise three types of shared space: spacious profile (it is clear that a car can safely pass a cyclist); tight profile (no passing, suitable for short distances); and critical profile (an ambiguous message which should be avoided); and
- Slow speeds and good inter-visibility between road users are important. These are general road safety requirements for dense inner urban environments. Effective speed management over the past few years is widely recognised to have contributed to the strong reduction in the NSW road toll, with 2008 recording an historic 64-year low.[2]

Mixed traffic facilities are not suitable, however, for busier roads, where visual or physical separation for bicycles is required. The *NSW Bicycle Guidelines* state that when separation is provided for bicycles,

2 NSW Minister for Roads (2009). News Release - Historic Low Road Toll for NSW. 1 January 2009.

there are equally great benefits to motorists. Bicyclists normally travel much slower than motorised traffic. When bicycles are required to share normal road lanes, they often find themselves in a very stressful and unpopular position. This can create disruption to the motor-vehicle flows and also increase the risk to the rider. By allocating road space to bicycles, road designers/builders can improve safety for all users, and increase the efficiency of the roadway.

Research conducted for the City of Sydney Bicycle Strategy (2007) confirms a strong community need for separated facilities: "75% of non-regular cyclists said off-road routes would make them cycle more regularly."

Separated facilities are important on many roads that provide access to Woollahra's urban villages and public transport hubs.

4.4 Sub-Regional and Local Cycle Network

4.4.1 Review of the Existing Network

GTA Consultants undertook a review of the existing bicycle network to determine those works that have been completed and those that remain as proposed routes. The review assesses whether the proposed routes are still appropriate for inclusion in the latest Bicycle Strategy, and suggests specific treatment and action for those routes recommended to be retained as part of the bicycle network.

Table 4, Page 32 includes a summary of the completed Woollahra Bike Plan 2000 routes.

4.4.2 Proposed Network

The Sub-Regional and Local Routes support the Regional Routes of the bicycle network and connect to local attractors and key places of interest including schools, playing fields, shopping areas and employment areas. A combination of separated facilities, high quality on-road facilities and mixed traffic facilities are recommended for these routes, each suited to the characteristics of the road network traffic speeds, composition and volumes. Sub-Regional and Local Routes extend the network 'web' further out into the municipality.

Many of the routes are located on local streets and roads which need only minor engineering improvements to enable bicycle riders to get to trip destinations more easily and with less stress than on the existing road network.

Some of the Sub-Regional and Local Routes include bicycle and pedestrians links at cul-de-sacs, which provide a competitive advantage and encourage travel on foot and by bike.

Table 4, Page 32 details the proposed works for Sub-Regional and Local Routes.

Table 4: Local Cycle Route Evaluation and Strategy

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
Route B1	Route 13: Boundary Street, Lawson Street, Glenmore Road	Woollahra Bike Plan 2000 identified bicycle shoulder lanes for this route, which are yet to be implemented. This route would link the City of Sydney and the large sporting facilities at White City.	Boundary Street is recommended to be treated as bicycle shoulder lanes.	Boundary Street	Campbell Ave to Neild Avenue	0.52	0%	On-road bicycle shoulder lanes	Medium	Medium	$17,810	Long Term
	Route 11: Neild Avenue	Woollahra Bike Plan 2000 identified bicycle shoulder lanes for this route, which are yet to be implemented. Neild Avenue is one-way in the southbound direction, forming a one-way vehicle pair with McLachlan Avenue to the west. The RTA has approved the installation of signals at its intersection with New South Head Road, providing an important link between this route and Rushcutters Bay Park and the harbour foreshore.	A treatment would need to be implemented that allows two-way bicycle travel on the one-way roadway. There is adequate width in the road reserve on the east side of the carriageway on the park frontage, which is recommended to be designated as a shared path. Minor works would be required to repair some sections of this existing asphalt footpath.	Neild Avenue	Lawson Street to Rushcutters Bay Park	0.29	0%	Shared path on east side of carriageway (pavement works) Note - Cost includes general allowance for maintenance works (repair potholes, pavement failure at tree roots, etc)	Medium	Medium	$14,800	Long Term
				0	0	-	0%	Shared path on east side of carriageway (signs and lines)	Medium	Medium	$4,440	Long Term
						0. 81	***0%***				***$37,050***	
Route B2	Route 12: Rushcutters Bay Park	The dimensions of the path within the park are satisfactory, but appropriate regulatory signage is yet to be implemented to formalise as a shared path.	Path constructed, signage on paths through the park will be provided in 2009/10 so that cyclists can share the space with pedestrians and other park users, including patrons of the cafe.	Rushcutters Bay Park	Neild Avenue to waterfront	0.225	80%	Off-road shared bicycle/pedestrian path - install shared path signage	High	Medium	$3,450	Short Term
						0.225	***80%***				***$3,450***	
Route B3	Route 13: Boundary Street, Lawson Street, Glenmore Road	Woollahra Bike Plan 2000 identified bicycle shoulder lanes for this route, which are yet to be implemented.	A mixed traffic layout would be suitable for Lawson Street and Glenmore Road due to the local street environment of low traffic volumes and speeds.	Lawson Street, Glenmore Road	Neild Avenue to Cascade Street	0.5	0%	On-road mixed traffic - signage only	High	Medium	$3,420	Short Term
						0.5	***0%***				***$3,420***	
Route B4	Route 19: Glenmore Road	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	Would accommodate one of the links across Oxford Street between the City of Sydney and Paddington and is recommended to be implemented as an on-road mixed traffic treatment.	Glenmore Road	Oxford Street to Brown Street	0.375	0%	On-road mixed traffic - signage only	High	Medium	$2,570	Short Term
						0.375	***0%***				***$2,570***	

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
Route B5	N/A - New link	This new link does not correspond to a route in the 2000 Bike Plan. However, it provides an important link into Paddington and the Five Ways intersection to and from the north.	Implement a mixed traffic treatment on this section of Glenmore Road.	Glenmore Road	Lawson Street to Goodhope Street	0.3	0%	On-road mixed traffic - signage only	High	Medium	$1,830	Short Term
						300	***0%***				***$1,830***	
Route B6	Route 22: William Street	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. This route is one-directional in the southbound direction and would operate as a one-way pair with the route along Elizabeth Street.	Recommended to operate as a one-way pair with Elizabeth Street between Oxford Street and Paddington Street, with an on-road mixed traffic treatment. Provides link to routes into Edgecliff and to New South Head Road.	William Street	Paddington Street to Oxford Street	0.22	0%	On-road mixed traffic - One-way southbound - signage only	High	Medium	$1,340	Short Term
	Route 23: Elizabeth Street	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. This route is one-directional in the northbound direction and would operate as a one-way pair with the route along William Street.	Recommended to operate as a one-way pair William Street between Oxford Street and Paddington Street, with an on-road mixed traffic treatment. Provides links to routes into Edgecliff and to New South Head Road. The section north of Paddington Street is a local link only with low traffic volumes and speeds, so formal bicycle facilities not required.	Elizabeth Street	Oxford Street to Paddington Street	0.25	0%	On-road mixed traffic - one-way northbound - signage only	High	Medium	$1,530	Short Term
	Route 6: Glenmore Road, Cascade Street	Glenmore Road has an on-road mixed traffic layout from Cascade Street to South Street, but no treatment between South Street and New South Head Road. Cascade Street to the north of Windsor Lane is treated with an uphill/southbound bicycle shoulder lane and a downhill/northbound mixed traffic treatment, with no treatment south of Windsor Lane.	This route provides link to routes into Edgecliff and to New South Head Road and is incomplete at the north and south extents. The on-road mixed traffic treatment on Glenmore Road and Cascade Street should be extended to New South Head Road to the north and to the south to Paddington Street.	Cascade Street	Paddington Street to Windsor Lane	0.15	0%	On-road mixed traffic	High	Medium	$920	Short Term
				0	Windsor Lane to Glenmore Road/Hampden Street	0.32	100%	Uphill/southbound bicycle shoulder lane, downhill/northbound mixed traffic	COMPLETED	Medium	$0	COMPLETED
				Glenmore Road	Cascade Street to South Street	0.25	100%	On-road mixed traffic	COMPLETED	Medium	$0	COMPLETED
				0	South Street to New South Head Road	0.15	0%	On-road mixed traffic	High	Medium	$920	Short Term
						1.34	***43%***				***$4,710***	
Route B7	Route 24: Oxford Street	This route consists of three off-road shared path links from Woollahra LGA into the adjoining City of Sydney LGA, which are yet to be implemented.	Although it is acknowledged that Woollahra Council policies currently do not support shared footpaths in retail precincts, current	Oxford Street	(1) Glenmore Road to Greens Road	-	0%	Shared path on southern side of Oxford Street adjacent to Victoria Barracks. Cyclists to cross Oxford Street at the intersection of Glenmore Road/Oxford Street. Signage improvements and conversion	Medium	Medium	$14,800	Short Term

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
			work by the City of Sydney may assist in addressing some of these concerns. This may include an interim measure of installing "Cyclists to Dismount" signage before a shared arrangement can be established. The three links involved are of a significant importance as local links to access shops and to connect local areas.					to shared path Note - Cost allowance only				
				0	(2) William Street to Regent Street	-	0%	One-directional shared path on northern side of Oxford Street between William Street and traffic lights opposite Regent Street. Signage improvements and conversion to shared path Note - Cost allowance only	Medium	Medium	$14,800	Short Term
				0	(3) Elizabeth Street (Nth) to Elizabeth Street (Sth)	-	0%	One-directional shared path between Elizabeth St (Nth), traffic lights at Village church centre and Elizabeth Street (Sth) walkway. Signage improvements and conversion to shared path Note - Cost allowance only	Medium	Medium	$14,800	Short Term
						-	***0%***				***$44,400***	
Route B8	Route 5: Queen Street	On-road bicycle shoulder lanes have been implemented along this route.	Satisfactorily completed, ongoing maintenance	Queen Street	Oxford Street to Edgecliffe Road	1.0	100%	Bicycle shoulder lanes	COMPLETED	High	$0	COMPLETED
						1.0	***100%***				***$0***	
Route B9	Route 7: Ocean Street	The section of this route between Oxford Street and John Street has been completed with an off-road treatment on the west side of carriageway. This section of Ocean Street is now part of Regional Route A1. The remaining section of road between John Street and New South Head Road remains untreated. The preferred treatment would be to implement an on-road treatment from John Street to Jersey Road. Implementation of a shared path on either side of the carriageway through this section is restricted by bus shelter structures. In 2002, Jamieson Foley and Sustainable Transport Consultants developed a treatment for the length of this route. However, this treatment was not adopted by Council on grounds of high traffic volumes and loss of parking.	Implement an uphill bicycle shoulder lane from Jersey Road to John Street. In the downhill direction there would be a wide mixed traffic lane (min. 3.7m). At Jersey Road cyclists would link to the route that uses Jersey Road, Thorne Street and Cameron Street into Edgecliff. Key intersections are to be marked with green paint in the uphill direction in the bicycle shoulder lane. The feasibility of an off-road facility north of Jersey Road to link to Double Bay may be investigated in the future.	Ocean Street	John Street to Jersey Road	0.75	0%	On-road bicycle shoulder lane (uphill/northbound direction)	Medium	High	$12,840	Medium Term
				0	0	0.75	0%	On-road mixed traffic - wide downhill/southbound lane (min. 3.7m lane width)	Medium	Medium	$2,290	Medium Term
				0	0	-	0%	Key intersections to be marked with green paint	Medium	Medium	$58,210	Long Term
				0	Jersey Road to New South Head Road	-	0%	The feasibility of an off-road facility to link to Double Bay is to be investigated in the future.	Medium	High	$0	Medium Term
						1.5	***0%***				***$73,340***	
Route B10	Route 29: Trelawney Street	An on-road mixed traffic treatment has been implemented along this route.	Satisfactorily completed, ongoing maintenance	Trelawney Street	Jersey Road to Edgecliff Road	0.4	100%	On-road mixed traffic	COMPLETED	High	$0	COMPLETED
						0.4	***100%***				***$0***	
Route B11	Route 27: Nelson Street	This route extends only between Edgecliff Road and Wallis Street as the section between Grafton Street and Oxford Street is no longer within the Woollahra LGA. The section of Nelson Street from Wallis Street to Queen Street has been implemented as a mixed traffic treatment. Woollahra Bike	It is recommended to complete the route between Queen Street and Edgecliff Road with a mixed traffic layout and formalise the off-road link from the Nelson Street dead	Nelson Street	Wallis Street to Queen Street	0.2	100%	On-road mixed traffic	COMPLETED	High	$0	COMPLETED
				0	Queen Street to Edgecliff Road	0.80	0%	On-road mixed traffic	High	High	$490	Short Term
				0	0	-	0%	Formalise off-road link from Nelson Street dead end to Edgecliff Road - signage	High	High	$630	Short Term
				0	0	-	0%	Formalise off-road link from Nelson Street dead end to	High	High	$1,760	Short Term

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
		Plan 2000 identified a mixed traffic treatment for the section between Queen Street and Edgecliff Road which is yet to be implemented.	end to Edgecliff Road with signage and kerb ramps.					Edgecliff Road - kerb ramps x 2				
						0.28	***70%***				***$2,880***	
Route B12	Route 30: Darling Point Road	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. Steep grades exist north and south of Marathon Road.	Despite the steep grades, the route links into Darling Point and the ferry wharf, and needs to be made suitable for bicycle use. As it is a local road, a mixed traffic arrangement is appropriate.	Darling Point Road	New South Head Road to Mitchell Road	1.4	0%	On-road mixed traffic	Medium	Medium	$8,560	Medium Term
						1.4	***0%***				***$8,560***	
Route B13	Route 32: Ocean Avenue, Cooper Street	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	Ocean Avenue and Cooper Street provide a link to Double Bay which is recommended to be retained in the 2009 Bike Plan. It is to be implemented as a mixed traffic layout.	Ocean Ave, Cooper Street	New South Head Road to Bay Street	0.5	0%	On-road mixed traffic	High	Medium	$3,060	Short Term
						0.5	***0%***				***$3,060***	
Route B14	Route 36: New South Head Road, Manning Road, Edward Street, Bathurst Street	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	Manning Road provides a link between Double Bay and Edgecliff which is recommended to be retained in the 2009 Bike Plan. It is to be implemented as a mixed traffic treatment. The existing signalised crossing of New South Head Road is to be adjusted for cyclist use.	Manning Road	New South Head Road to Epping Road	-	0%	Signalised bicycle crossing on west leg of New South Head Road/Manning Road intersection	Medium	Low	$2,810	Medium Term
				0	0	0.7	0%	Manning Road - on-road mixed traffic	Medium	Low	$4,280	Medium Term
						0.7	***0%***				***$7,090***	
Route B15	Route 9: Victoria Road	On-road bicycle shoulder lanes have been implemented with some sections of on-road mixed traffic.	Satisfactorily completed, ongoing maintenance	Victoria Road	New South Head Road to Birriga Road	2.1	100%	Bicycle shoulder lanes with some mixed traffic layouts	COMPLETED	Medium	$0	COMPLETED
						2.1	***100%***				***$0***	
Route B16	Route 44: Wilberforce Avenue	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	Wilberforce Avenue provides a link from Rose Bay into Waverley LGA which is recommended to be retained in the 2009 Bike Plan. It is to be implemented as a mixed traffic treatment.	Wilberforce Avenue	Car park south of Newcastle Street to Old South Head Road	0.52	0%	On-road mixed traffic	High	Low	$3,180	Medium Term
						0.52	***0%***				***$3,180***	

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
Route B17	Route 45: Towns Road	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	Towns Road provides a link into Waverley LGA which is recommended to be retained in the 2009 Bike Plan. It is to be implemented as a mixed traffic treatment.	Towns Road	Chamberlain Ave to Old South Head Road	0.35	0%	On-road mixed traffic	High	Low	$2,140	Medium Term
						0.35	***0%***				***$2,140***	
Route B18	N/A - New link	This new link does not correspond to a route in the 2000 Bike Plan. However, it provides a link between New South Head Road and Old South Head Road in Vaucluse.	Captain Pipers Road - on-road mixed traffic between New South Head Road and Clarendon Street, one-way northbound between Clarendon Street and Old South Head Road Clarendon Street - on-road mixed traffic between New South Head Road and Captain Pipers Road	Captain Pipers Road	New South Head Road to Clarendon Street	0.35	0%	On-road mixed traffic	Medium	High	$2,140	Short Term
				0	Clarendon Street to Old South Head Road	0.35	0%	On-road mixed traffic - one way northbound	Medium	High	$2,380	Short Term
				Clarendon Street	Captain Pipers Road to Old South Head Road	0.18	100%	On-road mixed traffic	Medium	High	$1,220	Short Term
						0.88	***0%***				***$5,740***	
Route B19	N/A - New links	These new links do not correspond to a route in the 2000 Bike Plan. However, they provide links to the Vaucluse shops.	On-road mixed traffic treatments along these routes are recommended.	New South Head Road	Hopetoun Avenue to Laguna Street	0.36	0%	On-road mixed traffic	High	Low	$2,200	Short Term
				Laguna Street	New South Head Road to Old South Head Road	0.135	0%	On-road mixed traffic	High	Low	$830	Short Term
				Petrarch Avenue	Hopetoun Avenue to New South Head Road	0.11	0%	On-road mixed traffic	High	Low	$670	Short Term
						0.605	***0%***				***$3,700***	
Route B20	Route 42: Vaucluse Road, Wentworth Road, Fitzwilliam Road, Parsley Bay Reserve, The Crescent	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented. Buses run along Vaucluse Road, Wentworth Road and Fitzwilliam Road.	Important local link which also functions as a tourist link through Parsley Bay Reserve. Recommended to be implemented as a mixed traffic layout. Appropriate delineation and education would highlight the presence of cyclists to all other vehicles, including the buses. At Parsley Bay Reserve, on-road mixed traffic is to be implemented for both approaches to the reserve, with a steel channel at Parsley Bay stairs at Fitzwilliam Street and signage on the bridge.	Vaucluse Road, Wentworth Road, Fitzwilliam Road	New South Head Road to Parsley Bay Reserve	2.5	0%	On-road mixed traffic	Medium	Medium	$15,280	Medium Term
				Parsley Bay Reserve	Fitzwilliam Rd to The Crescent	-	0%	Off-road shared path using existing paths - implement signage	Medium	Medium	$1,270	Medium Term
				0	0	-	0%	A steel channel needs to be inserted on the stairs from Fitzwilliam St down into the path to bridge over Parsley Bay	Medium	Medium	$0	Medium Term
				0	0	-	0%	Cyclists watch for pedestrian signs needed on the bridge	Medium	Medium	$1,270	Medium Term
				The Crescent	Parsley Bay Reserve to Hopetoun Ave	0.475	0%	On-road mixed traffic	Medium	Medium	$2,900	Medium Term
						2.975	**0%**				**$20,720**	
Total - Sub-Regional and Local Routes						**16.76**					**$227,840**	

4.4.3 Routes Removed

The review has resulted in a number of routes identified in the 2000 Plan but not yet implemented being excluded from the 2009 plan. This is because the Every Street is a Cycle Street Strategy will remove the need to create many minor routes (see Table 5, Page 37).

Table 5: Routes removed from the network

Route Description		Item
Route 14-17: Oxford Street, Oxford Mall	The sections of Oxford Street and Oxford Mall as part of Routes 14 to 17 are no longer within the Woollahra LGA and are now under Waverley Council control.	Liaise with Waverley to ensure that these routes are included in future bicycle planning for the Waverley LGA.
Route 18: Nelson Street	This section of Nelson Street is no longer located within the Woollahra LGA and is now under the control of Waverley Council.	Liaise with Waverley to ensure that these routes are included in future bicycle planning for the Waverley LGA.
Route 20: Campbell Avenue	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	Local link only with low traffic volumes and speeds. Formal bicycle facilities not required.
Route 26: Trumper Park, Cecil Street, Hampden Street	Cecil Street and Hampden Street are yet to be treated with a mixed traffic treatment.	Cecil and Hampden Streets act as local links only with low traffic volumes and speeds. Formal bicycle facilities are not required on these streets.
Route 28: Harris Street	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	Local link only with low traffic volumes and speeds. Formal bicycle facilities not required.
Route 31: Mona Road	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	This route includes a steep uphill grade from south to north. The road has low speeds and volumes. As such it is deemed a local link only so formal bicycle facilities are not required.
Route 33: Greenoaks Avenue	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	This route has a steep uphill grade from east to west and inadequate width for a bicycle facility for uphill cyclists (road layout of two travel lanes and a parking lane). Removal of parking is the only way to provide more width to safely accommodate cyclists in both directions. In the short term, this is to be removed from the network.
Route 39: Bundarra Road, Latimer Road	Woollahra Bike Plan 2000 identified a mixed traffic treatment for this route, which is yet to be implemented.	Local link only with low traffic volumes and speeds. Formal bicycle facilities not required.
Route 50: Military Road	Woollahra Bike Plan 2000 identified this route to be a footpath for cyclist use between Clovelly Street and the pedestrian crossing on Military Road. This route is yet to be implemented.	This footpath is located adjacent to the bus terminus and would not be suitable for cyclist use.
Route 51: Pedestrian Laneway	Woollahra Bike Plan 2000 identified that a dropped kerb is needed at the Birriga Road end of the laneway so that cyclists can access the laneway to link with O'Brien Street (Waverley Bike Plan). This treatment is yet to be implemented	The laneway contains a steep staircase (and four smaller sets of stairs) and was previously deleted from Council's implementation program due to low feasibility. Still deemed to have low feasibility

4.5 Recreational Routes

4.5.1 Overview

Recreational Routes are off-road routes which provide a safe and family-friendly environment in the vicinity of parks and reserves where people can enjoy recreational cycling.

4.5.2 Review of Existing Recreational Cycle Network

GTA Consultants undertook a review of the existing bicycle network to determine those works that have been completed and those that remain as proposed routes. The review assesses whether the proposed routes are still appropriate for inclusion in the latest Bicycle Strategy, and suggests specific treatment and action for those routes recommended to be retained as part of the bicycle network.

Table 6, Page 39 includes a summary of the completed Woollahra Bike Plan 2000 routes and comments on those that remain outstanding.

4.5.3 Proposed Recreational Cycle Network

Recreational Routes provide convenient local access for recreational purposes. The following Recreational Routes have been identified for Woollahra:

- Rushcutters Bay Park;
- Trumper Park; and
- Gap Park.

Table 6, Page 39 details the proposed works for Recreational Routes.

4.5.4 Cycle Tourism and Recreation

Cycle tourism and recreation provide strategic opportunities to promote Woollahra's villages and its natural and cultural heritage. Similar initiatives in Manly recently featured on Channel 9's "Getaway" program (19 February 2009) - http://getaway.ninemsn.com.au/article.aspx?id=754314

Figure 5: Channel 9's "Getaway" Story on Cycle Tourism in Manly

Table 6: Recreational Cycle Route Evaluation and Strategy

2009 Route No. and Description	Corresponding 2000 Bike Plan Route No(s)	Review Comments	Summary of Recommended Action	Detailed Route Description		Length (km)	% Completed	Description of Recommended Action	Feasibility	Potential Benefits	Total Item Cost	Action
Route C1	Route 52: Rushcutters Bay Park	The dimensions of the paths within the park are satisfactory, but appropriate regulatory signage is required to formalise as shared paths.	Signage needs to be implemented so that cyclists can share the path with pedestrians and other park users, including patrons of cafe.	Rushcutters Bay Park	From waterfront recreational cycle path adjacent to Reg Bartley oval to New Beach Road (near marinas)	0.3	80%	Off-road shared path - existing path, implement signage	Medium	Medium	$4,600	Short Term
						0.3	***80%***				***$4,600***	
Route C2	Route 26: Trumper Park, Cecil Street, Hampden Street	Trumper Park has a path that needs to be signposted as a shared path.	Implement signage at Trumper Park path so that cyclists can share with pedestrians.	Trumper Park	Harris Street to Cecil Street	0.4	80%	Footpath in Trumper Park is existing but signage required	Medium	Medium	$6,130	Short Term
						0.4	***80%***				***$6,130***	
Route C3	Route 49: Gap Park	Woollahra Bike Plan 2000 identified an off-road shared path treatment through Gap Park for this route, which is yet to be implemented.	Any treatment must be consistent with the Gap Park Masterplan. Any paths to be implemented in Gap Park need to be suitable for shared use bicycle/pedestrian.	Gap Park	Military Road to Old South Head Road	-		Some path already exists, refer to Gap Park Masterplan	Medium	Medium	$0	Short Term
						-					***$0***	
Total - Recreational Routes						**0.7**					**$10,730**	

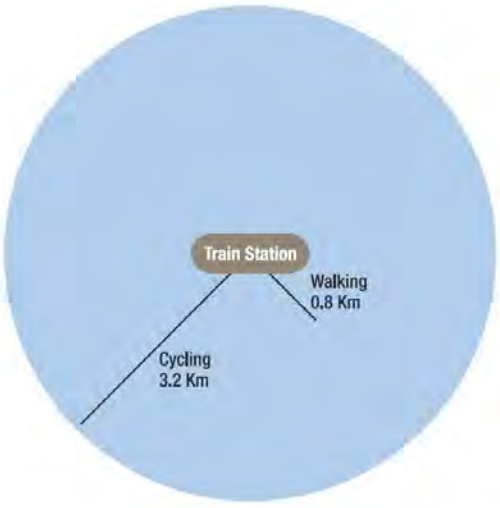
4.6 Developing Cycle Facilities at/to Public Transport Interchanges and Urban Villages

4.6.1 Overview

To gain maximum benefit, the Woollahra Bicycle Strategy will focus future cycling investment on public transport interchanges and Woollahra's urban villages, including Paddington, Edgecliff, Woollahra, Rose Bay, Lyne Park Ferry Wharf, Edgecliff Railway Station and Bondi Junction Public Transport Interchange. Although the Bondi Junction interchange is not located within the Woollahra LGA boundaries, many of the access routes are, and the interchange is used by many Woollahra residents. Key elements of this strategy include quality routes that are suitable for a wide range of user groups and the provision of suitable parking facilities.

Adopting this strategy will provide Woollahra with an effective and practical way of increasing the catchment areas of its urban villages and transport hubs without increasing the number of car parks - potentially by a factor of 15 compared with walking (see Figure 6, Page 40). When combined with public transport, cycling can offer a viable alternative to private motor vehicle use, even for those journeys covering a significant distance.

Figure 6: Potential Catchment Increase from Cycling



	Average Speed	Distance Covered	Catchment Area
Walking	5 Km/h	0.8 Km	2 Km^2
Cycling	20 Km/h	3.2 Km	32 Km^2

Source: Cycling Promotion Fund, 2007

Priority should be given to routes that link centres or lead to major destinations. Many of the direct links to key centres, villages and transport nodes also coincide with the vehicular access routes to these locations and carry significant traffic volumes. The Bicycle Strategy will require investment in quality cycling facilities for these priority routes to construct separated bicycle lanes and shared paths to provide safe and convenient bicycle access along some busy roads, in accordance with the *NSW Bicycle Guidelines*.

For access to some Ferry Wharfs and villages, the locally based network would consist of residential streets. The Bicycle Strategy would therefore focus on linking these streets, creating short cuts and removing barriers and hazards.

In addition to the bicycle route infrastructure, investment in suitably designed, well positioned and secure bicycle parking facilities is required. The Rose Bay Ferry Wharf (Lyne Park – see Figure 7, Page 41) currently has a mix of secure bike lockers and prominently placed U-rails. The demand for facilities at this location is high, with commuters often securing bikes to nearby sign posts and fences when demand exceeds the capacity of existing facilities. Initially facilities can provide modest bicycle parking capacity which can be increased as usage rises. Consideration should be given to weather protection and higher density bicycle parking facilities at high demand locations.

Figure 7: Bicycle Parking at Lyne Park, Rose Bay

In the context of the Woollahra Bicycle Strategy, it is important to emphasise the role of the local street network in providing fine-grained access from residential areas to a local retail and commercial centres, with a view to encouraging local trips and local business.

Promotion of cycling to public transport interchanges and urban villages is essential to its success. Bicycle funding from Council should consider a suitable balance between infrastructure and education/ awareness. Leaflet/maps showing routes to and between centres could be produced and distributed throughout the community via direct letterbox drop or delivered with Council rates notices.

4.6.2 Existing Bicycle Parking

Woollahra Municipal Council is responsible for parking within the public domain and within Council property. It provides parking facilities for bicycle riders as a direct response to the unsustainable growth of demand for on-street car parking. Existing bicycle parking facilities within the LGA include:

- 4 secure bike lockers and 10 U-rails for Rose Bay ferry commuters at Lyne Park;
- Steyne Park (Double Bay Ferry Wharf) – 2 U-rails;
- Queen Street rails – approximately 4 locations;

- Oxford Street rails – approximately 9 locations; and
- Edgecliff (New South Head Road) – approximately 2 locations.

Bicycle parking is also available at the Council offices.

Schools and businesses have a responsibility for providing parking for their staff, students and customers. Council has a role to promote cycling in the area and to assist them in developing positive parking programs. A useful reference is the City of Sydney website which includes a page on *Cycle Friendly Work Pla*ces. This page provides information to assist organisations to determine the optimal number and type of bicycle facilities for a cycle friendly workplace, along with a spreadsheet to help determine the number of bike parking facilities for a workplace.

4.6.3 Improving and Expanding Bicycle Parking

People who ride regularly or casually need more than a network of bicycle routes. They also need secure places and parking facilities to store their bicycles at either end of the trip. The lack of bicycle parking remains one of the main barriers to cycling even though, in most cases, this is a relatively easy facility to design, fund and implement. Improved bicycle parking and end-of-trip facilities are critical for achieving the objectives of the bicycle plan.

Key aspects of high quality bicycle parking include:

- Security: to minimise the risk of theft;
- Visibility: located in an area of high pedestrian traffic, to deter theft;
- Shelter: to protect against rain;
- Convenient: positioned as close as possible to likely destinations, or in a prominent area; and
- Signage: to give people clear direction to bicycle parking facilities from areas where the parking facility is not visible.

Cycle Parking Types and Standards

To conform to Australian Standards (AS2890.3-1993 Part 3: Bicycle Parking Facilities) parking rails must allow the wheels and frame of a bike to be locked to it securely, and provide sufficient support to prevent the bike from falling over.

The three classes of bicycle parking are:

i Class 1 facilities provide a high level of security such as enclosed individual lockers;

ii Class 2 facilities provide a medium level of security such as locked compounds with internal bike rails and racks; and

iii Class 3 facilities provide a low level of security such as external bicycle rails and racks.

Proposed Bicycle Parking

The bicycle plan identifies suitable cycle parking locations based on the connectivity of the cycle network and main trip attractors. Examples of the main trip attractors are railway stations, retail and commercial centres/strips, neighbourhood centres and recreational areas.

The most important issues to consider with cycle parking are to ensure that:

i The number of spaces provided meets the current demand as a minimum;
ii The facility is located where people want to go;
iii It is easily accessible;
iv It is secure (whether passive or active); and
v It is easy to use and enables cyclists to secure front and rear wheels and frame.

It is important that a consistent approach be taken to cycle parking to ensure that the types of racks used are practical and appropriate for the location.

Table 7, Page 43 includes a list of proposed priority bicycle parking sites.

Table 7: Proposed Bicycle Parking

General Location	Existing Parking Capacity	Future Parking Recommendations			
		No. of Additional Locations (minimum)	Rails	Bicycle Cages with rails	Priority
Oxford Street	9	6	✓		1
Five Ways Intersection, Paddington	2	1	✓		2
Glenmore Road, Paddington	0	1	✓		2
Broughton Street, Paddington	0	1	✓		2
Queen Street, Woollahra	3	1	✓		1
New South Head Road, Edgecliff	2	2	✓		1
New South Head Road, Double Bay	0	7	✓		2
Bay Street, Double Bay	0	2	✓		1
Knox Street, Double Bay	0	3	✓		2
New South Head Road, Rose Bay	0	3	✓		1
Plumer Road, Rose Bay	0	2	✓		2
Bellevue Road, Bellevue Hill	0	1	✓		2
Rose Bay Ferry Wharf (Lyne Park)	10	1		✓	1
Double Bay Ferry Wharf (Steyne Park)	2	1	✓		2

4.7 Integrated Policies and Planning Instruments

4.7.1 Overview

Integration of the Woollahra Bicycle Strategy with general Council programs, policies and planning instruments will increase the cost-effectiveness of ***all*** Woollahra public domain infrastructure investment. Coordination and integration of new public works is a logical strategy to maximise its benefits, both across Council divisions and with adjacent jurisdictions.

To ensure the maximum integration of cycling provision across all operational departments of the Woollahra Municipal Council, a number of recommendations are included below. It is noted that Council may already have implemented some of these recommendations, partially or fully:

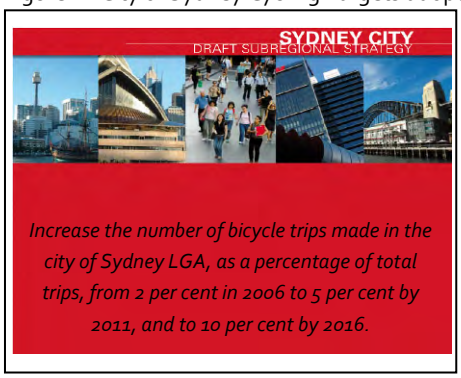
- Include all bicycle routes and recommendations for physical infrastructure improvements in Council's geographic information system (GIS) to ensure that all future works are coordinated with other street improvements, including road resealing and maintenance works. Coordinate with the RTA to ensure that this also applies to works undertaken within the LGA by the RTA;
- Encourage key council staff to attend RTA training courses "Designing for Bicycles and Pedestrians" for technical staff, and "Bicycles and Pedestrians for Managers" as part of their normal training requirement;
- Review Council's road- and path-based engineering standards to ensure that bicycle riders are always included and implicitly planned for. This is to ensure that roads and facilities which are potentially hazardous to bicycle riders are not inadvertently installed. This particularly applies to road-lane widths, intersection layouts, path clearances/widths, standard LATM designs, etc;
- Include provision for cycling in all future Council plans and developments;
- Review Council's current planning policies to include provision for cycling requirement in development control plans (DCPs) and local environment plans (LEPs) for new and modified developments as detailed in the *Planning Guidelines for Walking and Cycling* (DOP 2004). Such provision will include but not be confined to the provision of parking and end of trip facilities, access to buildings and developments, and the requirement for cycling to be included in site/place/workplace-based transport plans;
- Develop internal process and procedures whereby all Council departments can coordinate and support the development and delivery of their separate cycling programs and projects;
- Continue to operate regular meetings of the Bicycle Working Party to discuss and develop the bicycle infrastructure and support plan outlined in the Bicycle Plan, along with discussions of any other cycling-related issues. This group should also continue to provide representation at Traffic Committee meetings to discuss treatment of cyclists in new works. This allows an opportunity to progress cycling proposals and provide input to influence the final decision on other proposals;
- Introduce and implement a regular cycleway maintenance program as part of the existing maintenance programs to ensure that on-road and off-road bicycle facilities are kept in good repair;
- Continue the Council program of removal of old-style drainage grates;

- Develop a Council policy on provision for road works that includes cyclists regardless of the existence of marked bicycle routes (refer Section 10, *NSW Bicycle Guidelines* (RTA 2003); and
- Expand Woollahra Council's phone notification system for the reporting of deficiencies or faults, so that an on-line component can be included, with the potential for immediate reporting through mobile phone internet access.

4.7.2 Active Travel Targets

To maximise return on investment in new facilities, the Woollahra Bicycle Strategy will adopt cycling targets and develop encouragement programs.

Figure 8: City of Sydney Cycling Targets adopted in the Metropolitan Strategy



Adopting cycling targets and developing encouragement programs will maximise the return on investment in infrastructure. While, to some extent, the concept of "build it and they will come" applies to cycling infrastructure, a lot more can be done to encourage cycling.

Recommendations for Woollahra Council include:

- Make a policy statement outlining the need to provide proactively for bicycle travel and the key benefits:
  - reduced road and parking costs,
  - reduced overcrowding on public transport,
  - reduced traffic congestion,
  - lower greenhouse gas emissions,
  - lower air pollution,
  - reduced accidents,
  - reduced health costs from increasing physical activity; and
- Adoption of mode share, ride quality and safety targets similar to those of the City of Sydney. The City of Sydney's targets as outlined in the City of Sydney Cycle Strategy and Action Plan: 2007-2017 include:
  - Increase the number of bicycle trips made in the City of Sydney, as a percentage of total trips, from less than 2% in 2006 to 5% by 2011, and to 10% by 2016,
  - Increase the number of bicycle trips between 2 and 20 km made in the City of Sydney, as a percentage of total trips to 20% by 2016,

- Achieve an minimum 80% good level of confidence and comfort for cyclists that ride in the City of Sydney by 2016,
- Measure and monitor the number of collisions and injuries involving bicycles, and achieve a reduction in the number of incidents,
- These targets can all be measured using standard RTA and MoT data.

Table 8: Program for Integrated Policies and Planning Instruments

Objective	Recommended program or initiative	Partners
To improve and expand bicycle parking and supporting infrastructure	Improve and expand the level and quality of bicycle parking in the public domain (refer Section 6.6). Encourage input from the wider community to help identify suitable locations where parking can be provided to meet demand. For example, BIKEast has provided detailed advice to the City of Sydney on bicycle rack locations based on extensive field work.	Woollahra Municipal Council BIKEast Bike shops
	Require and encourage the private sector and government agencies to provide bicycle parking and end-of-trip facilities in and around their buildings.	Woollahra Municipal Council State Government agencies Private sector (major employers)
	Develop strategies to reduce bicycle theft, including: • Availability of secure bike parking facilities; • Use of high security locking devices by bike riders; • Effective stolen bike recovery system and policing; and • Lack of a ready market for stolen bikes. If and when bicycle theft becomes an issue, a joint program is required with Council, Police and the Bicycle User Group.	Woollahra Municipal Council BIKEast Police
To integrate support for the Bicycle Strategy into all areas of Council operation	Ensure coordination and integration of cycling within Council's policies and operations – GIS, internal policies, planning instruments (DCPs and LEPs), tourism strategies, staff training, etc).	Woollahra Municipal Council
	Maintenance, repair and roadworks – Hazard reporting scheme. Regular maintenance, provision for cyclists in road works (refer Section 7.2)	Woollahra Municipal Council RTA
	Bicycle Working Party – Continue to operate regular meetings (quarterly or as required) of the Bicycle Working Party to discuss and develop the bicycle infrastructure and support plan.	Woollahra Municipal Council (Road Safety, Traffic, Social Planning) BIKEast Councillors Bicycle shops Police RTA

4.8 Community Information and Education Programs

4.8.1 Overview

Supporting increased bicycle use is the "software" component of the Bicycle Strategy which helps bicycle riders to use the "hardware" – the bicycle network and the road system generally. The Bicycle Strategy proposes a support program designed to assist both the community and visitors to the area to share in the benefits of cycling (and walking) in and around the LGA and ensure a thorough and coordinated implementation of the Strategy as a whole.

A number of these recommended programs and initiatives support and encourage cycling by seeking to improve the operating skills of new and existing bicycle riders of all ages. Other programs provide support in the form of practical information such as maps and guides, while others encourage and celebrate cycling in the region with events and activities.

Some programs and initiatives will be directly undertaken by Council in partnership with external organisations and the community, while others will be undertaken by third party organisations with encouragement from Council.

4.8.2 Ride to School Strategy

The Woollahra Bicycle Strategy will develop specific actions aimed at encouraging more riding to school and lifting the current low level of cycling to the large number of school campuses in the area. The Bicycle Strategy will incorporate working with schools in the area to:

- Identify barriers to cycling access within a school's catchment area;
- Identify possible key feeder routes to each school and where possible develop a program of initiatives to upgrade these routes to a high standard;
- Identify parking and end of trip issues within schools and provide advice to schools on raising these facilities to a higher standard;
- Support existing State Government sponsored Ride to School campaigns and initiatives, and assist schools to access these programs and their resources; and
- Investigate innovative alternatives to car-based journeys for students coming from other parts of Sydney, such as: Drop and Ride (drop children at a central park-like area which is well connected to the school via a high quality separated route); and, Bike Bus (groups of parents in an area take turns at escorting groups of children to school by bike).

4.8.3 Increasing Bicycle Use – Support Programs

Table 9, Page 48 provides a detailed overview of the recommended support program.

It is recommended that the Support Program be reviewed in detail to set target dates and allocate suitable financial and staffing resources, noting that many items are low-cost management programs or "low hanging fruit".

Table 9: Support Program

Objective	Recommended program or initiative	Partners
To increase community and visitor information, education, awareness and basic skills	Woollahra Cycling Central - An information-rich web based resource for cycling in Woollahra and surrounds, which aims to provide links to the Bicycle Strategy's support programs and initiatives. This could be run through the Woollahra Municipal Council website, and needs to include downloadable cycling maps.	Woollahra Municipal Council BIKEast
	Bicycle Map - There is currently a published map "Cycling in Waverley and Woollahra" which shows details for five recreational and fitness rides around the two LGAs. This needs to be made continually available in print and downloadable from Council's website and the BIKEast website. The map of the full bicycle network also needs to be made available through the Council and BIKEast websites.	Woollahra Municipal Council BIKEast
	When a new regional, local or recreational route from the 2009 Woollahra Bike Plan is completed, publish a single page leaflet/map of this route to encourage its use. Distribute the brochure to residents within the route's catchment to make them aware of the route and its connections to Bondi Junction, Sydney CBD, Woollahra shops and Paddington five ways. The existing Woollahra Waverley Bicycle is a good example which shows the whole of the existing network as well as a series of specific. New routes, however, are not included.	Woollahra Municipal Council BIKEast
	Introduction to cycling - 'Give it a go!' - A series of 'experiences' for beginners to introduce them to the joys of cycling and to address their issues and concerns.	Woollahra Municipal Council BIKEast NSW Sport and Recreation Bicycle NSW Private trainers Bike shops Racing clubs
	Ride a Bike - Promoting courses for children and adults to train and improve riding skills. A range of courses are provided by other organisations, and could be promoted by Council and BIKEast, including the NSW Police program for children and Sydney Community College adult commuter cycling course (both held at the Community and Road Education Scheme (CARES) centre in Sydney Park St Peters) and the Gear Up Girl workshops for women cyclists, facilitated by Bicycle NSW. Bike Buddies can be organised through BIKEast contacts (currently advertised on their website).	Woollahra Municipal Council BIKEast TAFE/Education Department Private trainers NSW Police
	Signs and Art Work in parks to promote safe cycling and the work by local artists	Woollahra Municipal Council Local artists
	Woollahra Heritage Trail - A self-guided bicycle tour of historic sites in and around the LGA. Interpretive signage is a key element. This could be incorporated into the existing recreational and fitness routes detailed in the "Cycling in Waverley and Woollahra" published map.	Woollahra Local History Centre Woollahra libraries Woollahra Municipal Council BIKEast
	Driver education - Promote to motorists the road rules and responsibilities for sharing the road with cyclists.	Woollahra Municipal Council RTA Police

Objective	Recommended program or initiative	Partners
To encourage practical use of the bicycle as transport to school and work	Ride2Work – Bicycle NSW program based on the successful Bicycle Victoria program which encourages workplaces to set up self help groups.	Bicycle NSW Bicycle Victoria Business community Unions
	Ride2School – Bicycle NSW runs a program which supports schools to educate students and break down barriers to active living, encouraging families and students to ride or walk to school. Councils are invited to work in partnership with Ride2School NSW to help get kids back on bikes and reduce traffic congestion from parents' cars (see Appendix C).	Woollahra Municipal Council Education Department Bicycle NSW
	Transport Access Guides (TAGs) – Showing suggested bicycle and walking routes and other sustainable transport information for major employment areas and schools. A useful tool used to encourage people to take up riding to school or work by informing of the available routes. The RTA website provides valuable guidance for the development of TAGs: http://www.rta.nsw.gov.au/usingroads/traveldemandmanagement/transportaccessguides/index.html	Woollahra Municipal Council Major corporations Chamber of commerce Private and public schools RTA and other State Government departments
	Woollahra Bike Buddies - A simple self help scheme to assist individuals to get going on their cycle to work. Currently a service provided by BIKEast through its website.	BIKEast Bicycle NSW
	Woollahra Municipal Council - Leading by Example. Council to set up a program to encourage staff to ride to work and for short work trips. This has been successful in Sydney, Brisbane and many other places of work.	Woollahra Municipal Council City of Sydney pilot program Bicycle NSW
To provide opportunities for the community to ride in Woollahra	Ride around Woollahra – Group rides in the area hosted by BIKEast. BIKEast, affiliated with Bicycle NSW, currently hold regular group rides within the Woollahra LGA and Sydney's eastern suburbs.	BIKEast Woollahra Municipal Council Bicycle NSW
	NSW Bike Week – Celebration of Cycling Event. This joint event involving Woollahra, Waverley and Randwick Councils was first held in 2008 to celebrate NSW Bike Week. It included guided bike rides into Centennial Park from surrounding areas with free bike checkups, photo competition, workshops, food and drinks. This event aims to promote bicycle routes and facilities within the three Council areas and increase awareness of cycling as a viable alternative transport mode. It is recommended that this event be continued. It could be expanded to include making some of the suburbs main streets car-free for a part of the day. Local cafes and restaurants could become involved by providing breakfast/lunch for cyclists.	Woollahra, Waverley and Randwick Councils BIKEast Business community Café and restaurant owners Bicycle NSW RTA

[#] *All organised events require formal applications and approvals, such as Traffic Management Plans, Planning approvals and Local Traffic Committee approvals.*

5. Costs and Priorities

Table 10, Page 50 provides an overview of the costs and priorities for the proposed bicycle network works, allocating short term, medium term and long term works.

The following recommendations are made for implementation of the bicycle plan:

- Provide sufficient funds for the construction of the Priority 1 works over a 5-10 year implementation, including regular Council budget allocation and external funding sources such as grants, joint funding programs, etc (refer Section 6); and
- Develop suitable management programs to recognise early implementation opportunities for Priority 2 and 3 works as they arise, e.g. through regular road and footpath maintenance and upgrading programs, formal planning instruments.

Table 10: Woollahra Bicycle Strategy – Summary of Costs and Priorities

Route Name	Short Term Item Cost	Medium Term Item Cost	Long Term Item Cost	Total Item Cost
Regional Routes				
Route A1: Bondi Junction To Paddington (City)	$5,000	$0	$0	$5,000
Route A2: Vaucluse to Rushcutters Bay	$121,830	$62,900	$205,940	$390,670
Route A3: Edgecliff to Bondi Junction	$630	$84,270	$0	$84,900
Route A4: North Bondi (Waverley Council) to Bondi Junction	$5,190	$33,710	$0	$38,900
Route A5: Bondi Beach to Rose Bay Wharf (via O'Sullivan Road)	$0	$3,170	$518,930	$522,100
Route A6: Bondi Beach to Rose Bay and Vaucluse	$146,040	$0	$267,330	$413,370
Route A7: Bondi to Double Bay	$5,970	$0	$0	$5,970
Route A8: Bondi Junction to Double Bay	$0	$24,600	$0	$24,600
Route A9: Woollahra to Edgecliff	$4,830	$0	$0	$4,830
Route A10: Watsons Bay to Vaucluse	$13,880	$0	$0	$13,880
Route A11: Watsons Bay to Bondi Beach	$0	$41,440	$0	$41,440
Total - Regional Routes	**$303,370**	**$250,090**	**$992,200**	**$1,545,660**
Total Sub-Regional and Local Routes (B1-B20)	$75,760	$115,030	$37,050	$227,840
Total Recreational Routes (C1-C3)	$10,730	$0	$0	$10,730
GRAND TOTAL	**$389,860**	**$365,120**	**$1,029,250**	**$1,784,230**

6. Funding Opportunities

The recommended bicycle network plan proposes high quality infrastructure in line with contemporary community aspirations for bicycle use. There are a number of funding programs which may provide the additional financial support necessary for implementation of both the physical infrastructure and the related social plan to meet current and future community needs.

There are two websites that provide further detail:
http://www.cyclingresourcecentre.org.au/7/Funding
http://www.cyclingpromotion.com.au/content/view/28/51/

Council

- Annual budget allocation for walking and cycling infrastructure; and
- Developer contributions.

Australian Government Jobs Fund

- Up to $40 million of funding available for bicycle paths through the Local Jobs Fund. Bicycle path funding is available for **new routes** and **extensions or refurbishment of existing infrastructure,** including:
  - Off road bicycle paths (but not dedicated mountain bike trails),
  - On-road bicycle lanes (e.g. road-widening and marking bike lanes on existing roads),
  - Bicycle parking facilities;
- Projects up to $2m can be funded under the Local Jobs components of the funding;
- While the closing date for the first round of funding applications is now closed further applications will be accepted after 1st July 2009 over the two years of the operation of the jobs fund; and
- A joint funding of 50% will be expected.

RTA

The RTA's Bicycle Program allocates $5 million annually to NSW Council bicycle projects, which includes over $1 million for Sydney Metropolitan Councils. The dollar for dollar funding is to assist Councils with the development and implementation of their local bicycle networks. Detailed information on RTA funding for Sydney Council projects is available from the website www.rta.nsw.gov.au. Programs for potential funding include:

- Regional Road Block Grants; The RTA assists Council with the costs for maintaining regional roads. For the maintenance, construction, resurfacing, shoulder widening and upgrades of regional roads, cycling infrastructure can easily be included within this cost;
- Black-spots and "black-areas"; The NSW Black Spot Program is funded by the NSW government and is also part of the Australian Government's AusLink Black Spot Program.

Its objective is to reduce the occurrence and severity of crashes at known locations by installing cost effective treatments. This funding benefits cycling infrastructure by increasing cyclist safety and reducing crash rates at intersections and other known crash locations. Any unsuccessful conforming nominations in the AusLink Black Spot Program will be automatically considered for the NSW Government's Black Spot Program;

- NSW Bike Week Funding; This program is a government funded initiative that raises the profile of cycling as a healthy, easy, low cost and environmentally friendly transport alternative for driving short trips. RTA funding is only provided for the promotion and advertising component of an event's budget. Funding is not fixed and will be assessed and valued independently. The RTA encourages both local government and community based organisations to apply for funding if they fulfil criteria;
- Co-Funding Program for bicycle infrastructure; the Government recognises that most cycling takes place on local roads. The development and implementation of local cycling networks is important to increase cycling within communities. The Government provides dollar for dollar funding to local councils which assists improving and developing cycling infrastructure within the Local Government Area; and
- Bicycle User Support; the program supports the use of cycling through research, training and promotion. Funding of bicycle use promotions, bike plan preparation, development and production of cycleway maps, research into bicycle facilities and the implementation of bicycle training facilities can increase the number of cyclists and improve skills and knowledge on bicycle facilities design and implementation.

Premiers Department

Premiers Council on Active Living; a new Bike Plan for NSW is currently being developed. PCAL is also involved in many projects to promote active living. The NSW Government is committed to promoting cycling and improving cycling facilities as part of a balanced transport system. National Ride to Work Day is a program which combines cycling with a daily commute. Through funding and organisation, this event aims to encourage and involve employees to cycle in order to improve health and reduce greenhouse emissions.

Sport and Recreation

Grants and financial assistance: The NSW Sport and Recreation department provides funding for local councils to build and upgrade sporting facilities. This could include cycling tracks and training facilities. The 2008-2009 Capital Assistance Program can provide up to $30,000 for each local government and can be used for cycling sport and recreation facilities throughout the LGA.

Department for Infrastructure, Transport, Regional Development and Local Government (DITRDLG)

- AusLink Roads to Recovery Program:
  In November 2000, this program was introduced as a single intervention by the Commonwealth to address the specific problem of local roads reaching the end of their economic life, and their replacement being beyond the capacity of local government. Over four years from 1 July 2005, the Australian Government, will provide additional funding of $1.23 billion. This is in addition to its untied Financial Assistance Grants to councils for roads and other purposes. On 8 May 2007, the Australian Government announced that it will further extend the Roads to Recovery Program until June 2014. Funding for the program will

also be increased from $307.5 million a year at present to $350 million a year from 2009-10. This program has been used by many Councils throughout Australia to fund bicycle infrastructure development and upgrades. It is administered by the Commonwealth Department of Transport and Regional Services;

- AusLink Black Spot Program:
  The Black Spot program began in 1996-97. In recognition of its success the Australian Government has now extended the program until 30 June 2014 and Black Spot funding under AusLink 2 will be increased to $60 million annually from 2009-10 to 2013-14. That is an increase of 33 % on current program funding. The government will also provide $45 million for black spot projects in 2008-09 as part of its current AusLink program. This program has been used by many councils throughout Australia to fund bicycle infrastructure development and upgrades. It is administered by the Commonwealth Department of Transport and Regional Services;
- Infrastructure Australia fund; is a new, national approach to planning, funding and implementing the nations future infrastructure needs. It will provide advice to Australian Governments about infrastructure gaps which can include cycling infrastructure. (www.infrastructure.gov.au/department/infrastructureaustralia); and
- Sustainable Cities.

Department of Climate Change

Various grants can be awarded for projects addressing climate change, and reducing Australia's green house gas emissions. Councils can apply for the grants up to $50,000. Cycling infrastructure can be incorporated into projects as a way to reduce green house gas emissions by reducing car dependency and increasing cycling.

Business and Clubs

- Advertising (ped bridges, bus shelters); Revenue from business and clubs in the local area can provide funding for advertising within the LGA. These advertisements could be cycling related by providing cycle maps and information as well as encouragement advertisements;
- Clubs NSW – CDSE funding; Clubs that earn over $1 million annually in gaming machine revenue provide funding for community projects and services, and in turn receive dollar-for-dollar gaming tax deductions. In 2008, clubs reported CDSE expenditure of over $58 million across New South Wales. This funding can be used to implement cycling encouragement initiatives like cycling programs, workshops and distributing maps. (www.clubsnsw.com.au/AM/ContentManagerNet/HTMLDisplay.aspx?ContentID=11935&Section=Community_Support); and
- Developers; Can also choose to fund local cycling infrastructure in the local area. If a major development is occurring, eg. Shopping Centre- Bicycle parking facilities and safe bicycle routes around the centre can be integrated into the plans to increase cycling and encourage cycling for short trips.

Cycling Promotion Fund

- Innovative projects to promote and encourage cycling; in the past the Cycling Promotion Fund has funded a number of innovative projects that promote and encourage cycling to assist in developing the evidence base that such projects are effective in encouraging and

promoting cycling. CPF assists by listing potential funding sources for cycling encouragement and promotion programs; and

- Continue to provide advice and guidance on the development of effective cycling programs and initiatives.

Metropolitan Greenspace Program

The Metropolitan Greenspace Program (MGP) has provided over $15m to over 300 projects since 1990. It allocates over $1 million annually to Councils on a matching dollar basis and last year provided almost $1.5 million to Councils. The key objective of the program is to assist local government in the development and planning of regionally significant open space and to enable more effective use of these areas by the public. The program aims to promote partnerships between State and Local Government.

DECC – Environmental Trust

The Environmental Trust is an independent statutory body established by the NSW government to support exceptional environmental projects that do not receive funds from the usual government sources. The Trust is empowered under the Environmental Trust Act 1998, and its main responsibility is to make and supervise the expenditure of grants. The Trust is administered by the Department of Environment and Climate Change.

Cycle Connect

The Australian Government has funded the installation of secure bicycle parking at public transport nodes. Cycle Connect, a $2.4 million initiative, was part of the Australian Government's 'Sustainable Cities' urban environment program*. Cycle Connect which ended in 2005-06, was a two-year grant initiative to provide secure parking, principally in the form of bike lockers, at suburban bus and train stations.

This project extended the 'catchment' areas of public transport networks by offering facilities for those who find it too far to walk to their local station but who are happy to cycle. Substituting short car trips with bicycle rides is one way of keeping fit and healthy, while reducing congestion, greenhouse gas and pollution at the same time. For each three kilometres that are cycled rather than driven, we save about a kilogram of greenhouse gas emissions.

Cycle Connect has helped to improve air quality so we have better places to live and work and help create sustainable cities. Over the duration of the project the number of secure bike lockers provided in major cities will have been boosted by approximately 3,000. It was targeted at those commuters who would use public transport regularly. Secure bike lockers and cages are a low-cost alternative for those who currently pay for their car to sit all day at their local bus or train station.

Healthy and Active Transport (HEAT) Program

This initiative of the Bicycle Sector (consisting of the bicycle industry and national and state cycling organisations) has put this proposal onto the national political agenda. The proposal calls on the Commonwealth Government to establish an infrastructure funding program of $50 million each year for four years for local government to build cycling and walking facilities. The program would fund significant, high-quality cycling and walking infrastructure projects, providing health, transport, environment and community benefits across urban, regional and rural areas.

draft

appendix a

Appendix A

Cycling and Global Policy Issues

Cycling and Global Policy Issues

Cycling and walking are also coined "Healthy and Active Transport". Public transport is also included as it invariably involves walking to and from bus stops and rail stations. There is substantive evidence that healthy and active transport provides a strong and effective policy response to key global public policy issues, including:

- Public Health;
- Congestion;
- Climate Change; and
- Peak Oil and Petrol Prices.

Investment in physical, social and organisational infrastructure to support healthy and active transport can deliver positive benefit:cost ratios for each of these five global policy issues individually, especially when considering externalities. The real benefit of investment in infrastructure for healthy and active transport, however, lies in recognition of the cross-disciplinary benefits.

Health Benefits

Physical inactivity is one of the major causes of ill health in Australia. Half the Australian adult population are insufficiently active to protect against sedentary lifestyle disease, such as diabetes (Australian Institute of Health and Welfare, 2006). Research shows that regular physical activity throughout life reduces the incidence and fatality rate from cardiovascular disease by up to 50% (Heart Foundation, 2007).

The direct gross cost of physical inactivity to the Australian health budget in 2006/07 was $1.49 billion (Econtech, 2007). This translates to **$198.57 per adult, per year**. Cycling provides a practical, sustainable opportunity to help get more Australians active, and reduce the cost of physical inactivity.

In 2006, over 1.68 million Australians cycled for recreation and of those, 417,400 cycled more than 104 times a year (Australian Sports Commission, 2006). These individuals can be classified as meeting the levels of physical activity to protect against sedentary lifestyle diseases from cycling alone.

By including the cycling that takes place for commuting purposes (to/from work) as well, bicycle riding participation cuts sedentary lifestyle disease costs by approximately $154 million (Bauman et al, 2008). There is also a significant amount of additional transport-based cycling that is not collected by the Census, such as visiting friends, or trips to local shops. According to the Australian Greenhouse Office (2006), around 66% of journeys are for non-commuting purposes.

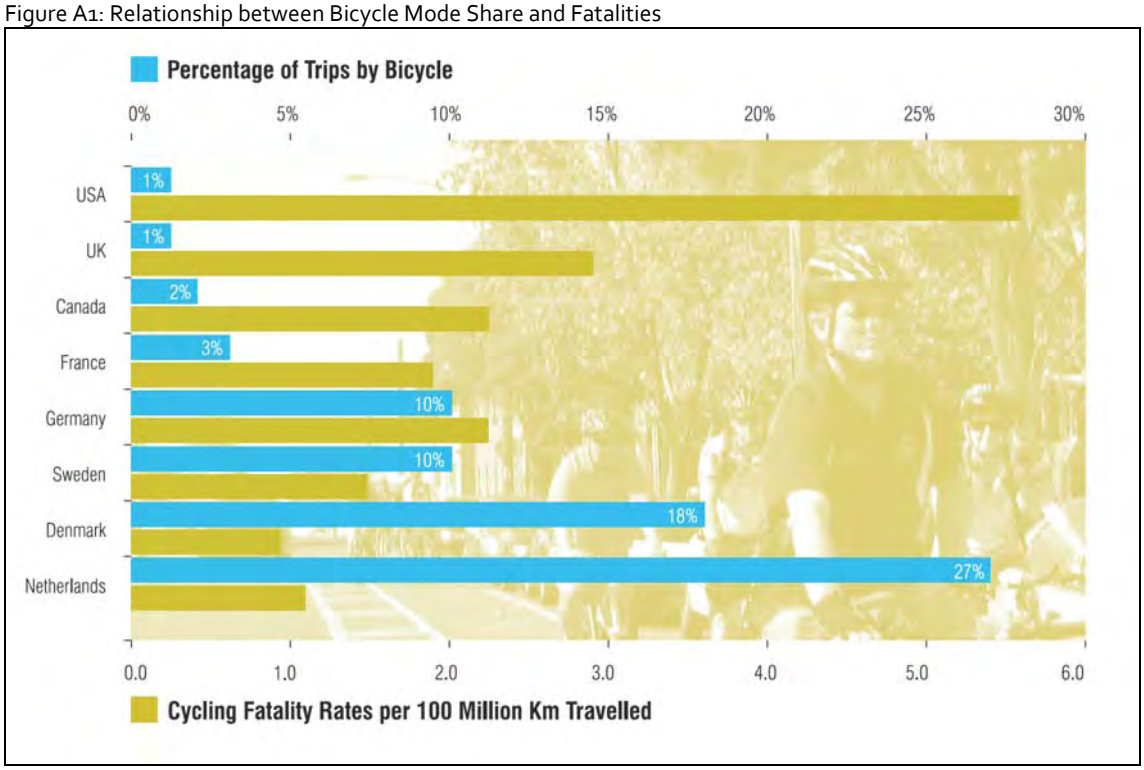
Cycling has been shown by the World Health Organisation to be effective in the treatment and prevention of mental health (Dora & Phillips, 2000). Depression and anxiety have been found to cost Australian businesses almost $10 billion a year. This includes $6.6 billion for sick days and $3 billion for poor work performance (Hilton, 2005).

Cycling can provide benefits in terms of air quality. Air pollution caused by motor vehicles, especially in urban areas, is a major source of respiratory illness (Standing Committee on Environment and Heritage, 2005; Commissioner for Environmental Sustainability, 2007; Bureau of Transport and Regional Economics, 2005). Between 900 and 4500 cases of cardio-vascular and respiratory disease occurred due to motor vehicle related air pollution in 2000, costing between $0.4 billion to $1.2 billion. Air pollution caused by motor vehicles accounted for between 900 and 2000 premature deaths, with an estimated cost of between $1.1 billion and $2.6 billion (Bureau of Transport and Regional Economics, 2005). Cycling, as a zero emission form of transport, offers significant potential to reduce this cost, particularly in urban areas where typical journey distances are short.

Cycling as a replacement for car use can have significant benefits in reducing road trauma. In Australia, road trauma costs $17 billion a year (Connelly & Supangan, 2006). Evidence is increasing that providing alternatives to motor vehicle use is an effective method of minimizing the incidence and severity of road trauma (Litman & Fitzroy, 2005).

Cyclists' safety is a crucial component of road trauma reduction. A recent review of the literature found that safety concerns are a primary reason why people choose *not* to cycle, and that the more cyclists there are, the safer cycling becomes. Figure A1 below demonstrates that the countries with the highest rates of cycling have the lowest levels of cyclists' fatality on a kilometre travelled basis.

Figure A1: Relationship between Bicycle Mode Share and Fatalities



Source: Pucher & Buehler 2008; Organisation for Economic Cooperation and Development, 2005, European Union 2003, US Department of Transportation, 2003 & 2005 (cited in Pucher, 2006).

The data presented in Figure A1 is consistent with the findings of other road safety researchers who have discovered that when cyclist rates double, cyclist injury can be expected to fall by around 34% (Jacobsen, 2003, cited in Robinson, 2005).

Congestion Benefits

Cycling is an effective method of reducing unnecessary car use, and this has a congestion reduction benefit. Private automobile use is considered the major cause of congestion in Sydney (Bureau of Transport and Regional Economics, 2007). The Bureau of Transport and Regional Economics found that the cost of congestion in Sydney for 2005 was $3.5 billion and estimated to rise to $7.8 billion by 2020. Cycling by Australians travelling to work in capital cities reduces congestion costs in Sydney by $23.7 million per year (based on calculations made in Bauman et al, 2008 using 2006 Census figures).

Climate Change

As a zero emission form of transport, cycling is increasingly seen both in Australia and internationally as a way of reducing greenhouse gas emissions.

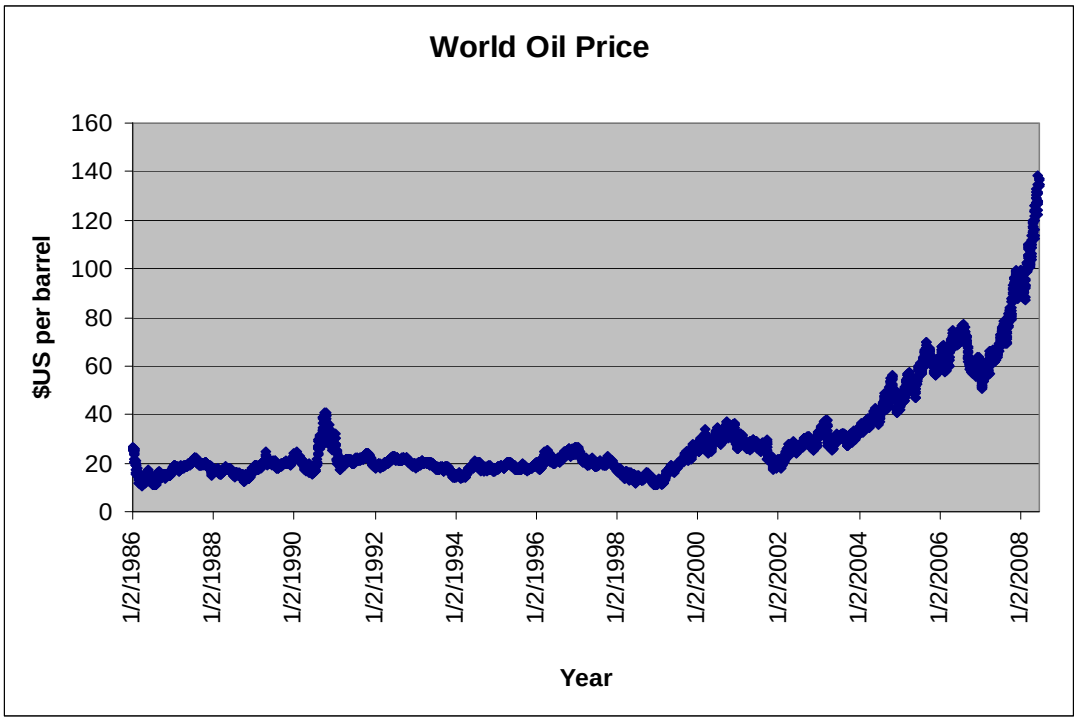
Motorised transport is currently a significant and growing source of greenhouse gas emissions. The Australian Greenhouse Office reports that 34% of household emissions are generated from transport (2006). Transport emissions increased 30% between 1990 and 2005 and this is expected to jump 67% above 1990 levels by 2020 (Department of Climate Change, 2008).

The Commonwealth *Carbon Pollution Reduction Scheme*, due for implementation in 2010 will include transport. This increases the importance of providing carbon free forms of transport, to lower the cost to the community of responding to climate change.

Fuel costs

Cycling has the potential to reduce household fuel costs as cycling is a petrol-free form of transport. Since 2004, world oil prices have increased significantly, as illustrated in the Figure A2.

Figure A2: World Oil Prices, 1996-2008

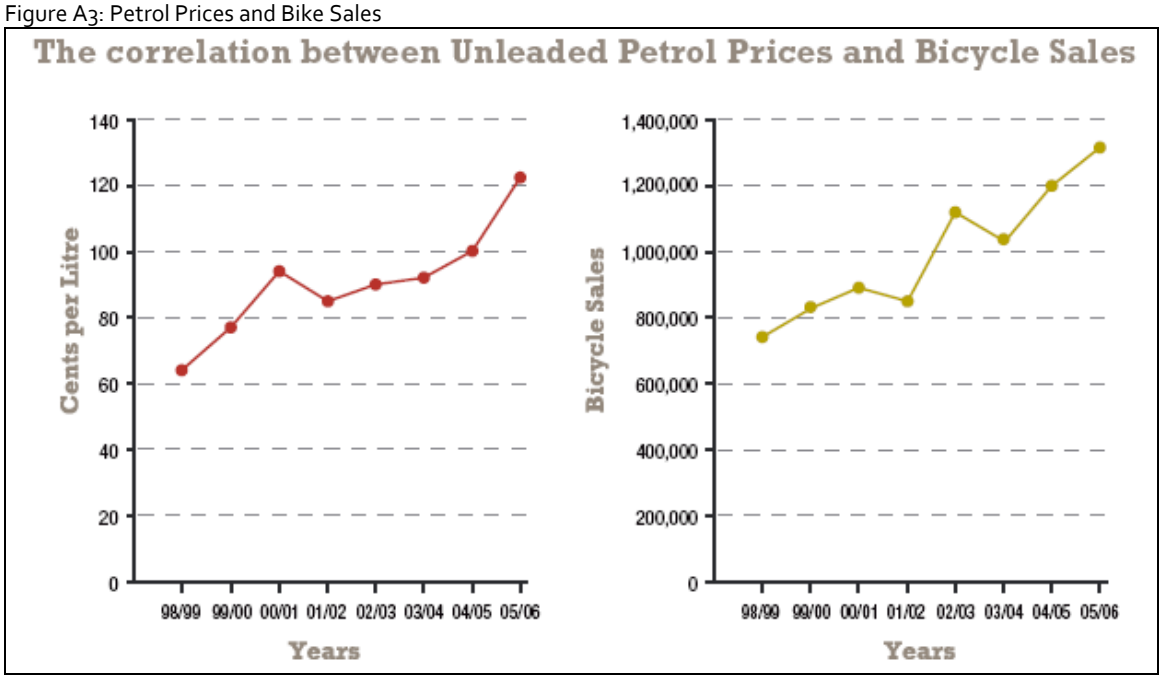


Source: Energy Information Administration, US Government.

In 2008, the cost of oil hit record levels and caused a significant increase in household fuel expenditure highlighting the vulnerability of Australian cities (Dodson & Sipe, 2008). Though oil prices have fallen since, there is growing evidence that a world production peak is imminent, bringing with it an era of greatly fluctuating oil prices and accompanying oil supply disturbances.

The rise in petrol prices over recent years has coincided with an increase in Australian bicycle sales, as demonstrated by the two graphs below in Figure A3.

Figure A3: Petrol Prices and Bike Sales



Taken from Cycling Promotion Fund, 2007

This relationship between fuel prices and bicycle sales is supported by research in the United States which showed that the vast majority of transport related bicycle expenditure has been influenced in part by the surge in petrol prices (Bikes Belong, 2008).

The provision of cycling infrastructure and encouragement programs, in combination with public transport improvements offers a very effective method of increasing the resilience to higher fuel prices (Litman, 2008; Pucher & Buehler, 2008).

The CSIRO found that the price of petrol in 2018 could reach $8 per litre (CSIRO, 2008). Even a rise to half that amount would put significant pressure on the transport system and strengthen public demand for the seamless integration of cycling and public transport.

Recent strategic transport modelling by Hensher for Melbourne and Northern Sydney further emphasises strong sensitivities to increases in petrol prices with shifts to public transport, walking and cycling (Hensher & Stanley 2008, Hensher & Li 2008, Sydney Morning Herald 2008).

Appendix B

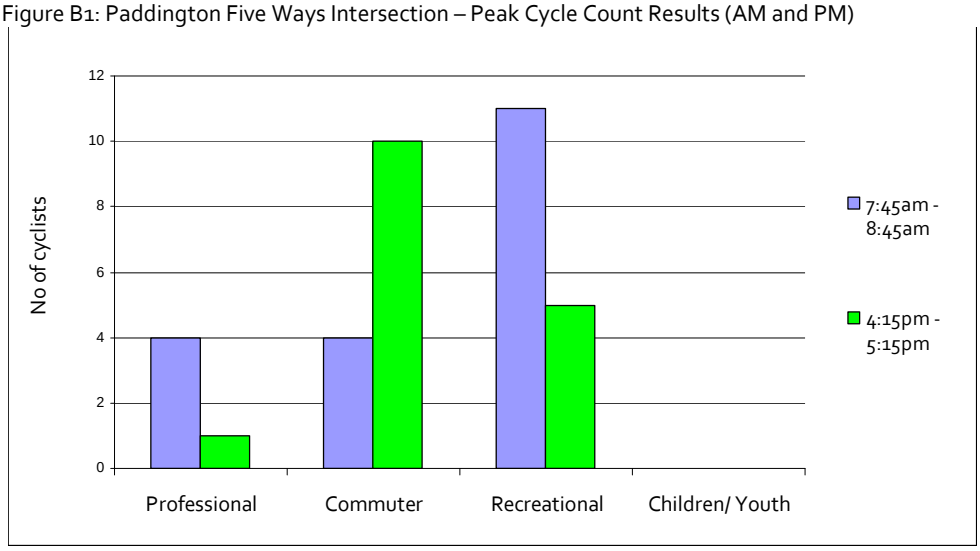
appendix b

Cycle Count Data

Paddington Five Ways Intersection

The results of surveys undertaken at the Paddington Five Ways intersection found that the peak cyclist activity occurred from 7:45am to 8:45am in the AM peak and 4:15pm to 5:15pm in the PM peak. Recreational riders were the most represented group observed during the AM peak period while commuters were the most represented group observed during the PM peak period. This is summarised in Figure B1.

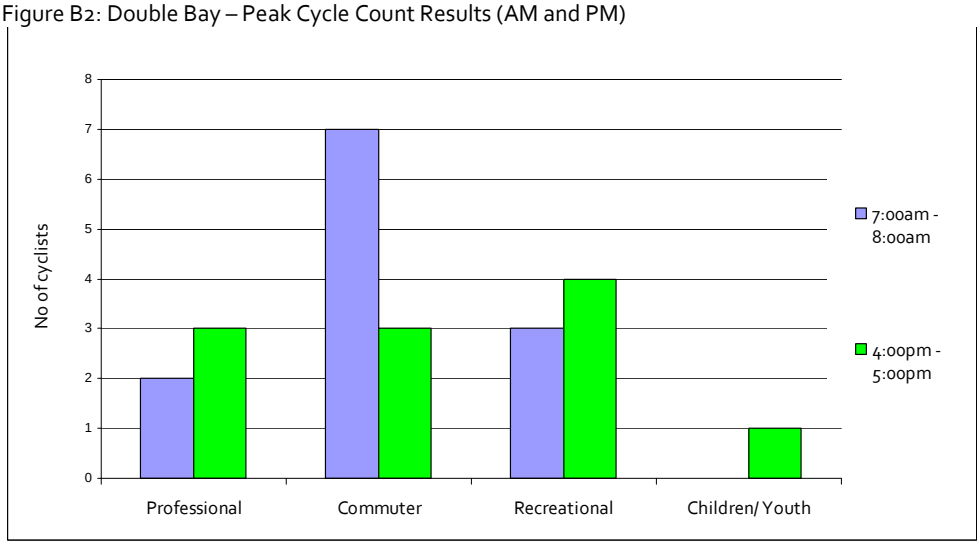
Figure B1: Paddington Five Ways Intersection – Peak Cycle Count Results (AM and PM)



Double Bay

The results of surveys undertaken at the intersection of New South Head Road, Bellevue Road, Kiaora Road and Cross Street found that the peak cyclist activity occurred from 7:00am to 8:00am in the AM peak and 4:00pm to 5:00pm in the PM peak. Commuters were the most represented group observed during the AM peak period while recreational riders were the most represented group observed during the PM peak period. This is summarised in Figure B2.

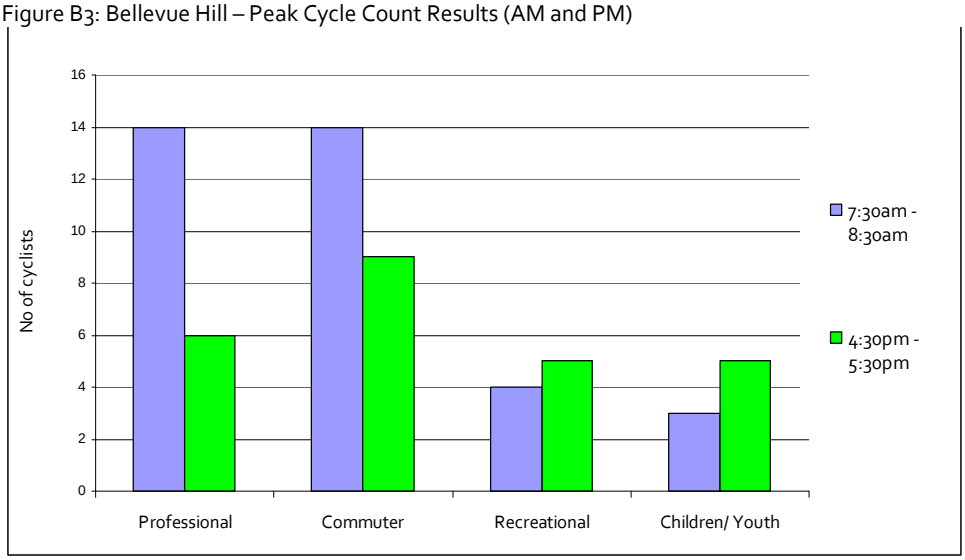
Figure B2: Double Bay – Peak Cycle Count Results (AM and PM)



Bellevue Hill

The results of surveys undertaken at the intersection of Victoria Road and Bellevue Road found that the peak cyclist activity occurred from 7:30am to 8:30am in the AM peak and 4:30pm to 5:30pm in the PM peak. Commuters and professionals were the most represented groups observed during the AM peak period while commuters were the most represented group observed during the PM peak period. This is summarised in Figure B3.

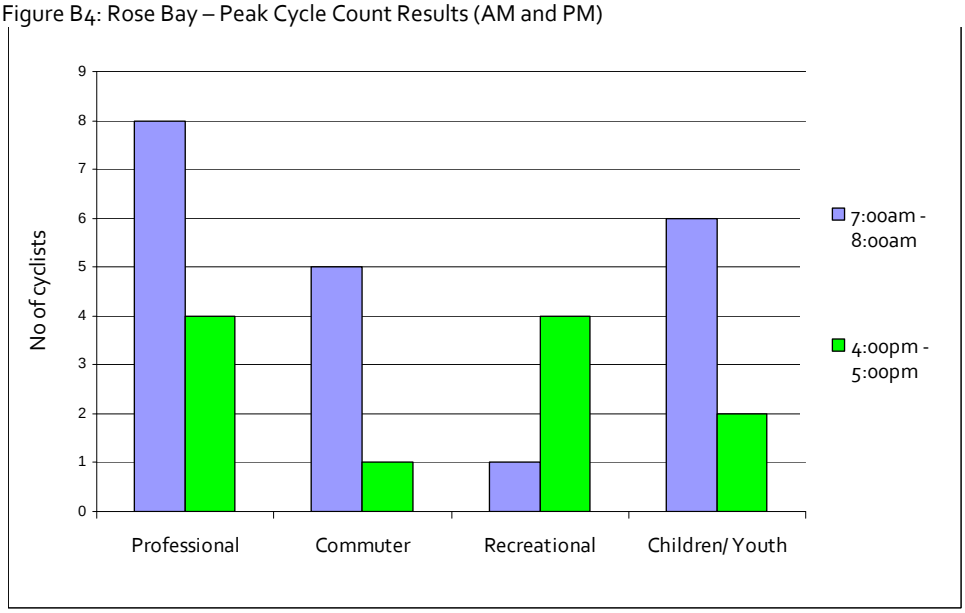
Figure B3: Bellevue Hill – Peak Cycle Count Results (AM and PM)



Rose Bay

The results of surveys undertaken at the intersection of O'Sullivan Road and Latimer Road found that the peak cyclist activity occurred from 7:00am to 8:00am in the AM peak and 4:00pm to 5:00pm in the PM peak. Professionals were the most represented group observed during the AM peak period while recreational riders and professionals were the most represented groups observed during the PM peak period. This is summarised in Figure B4.

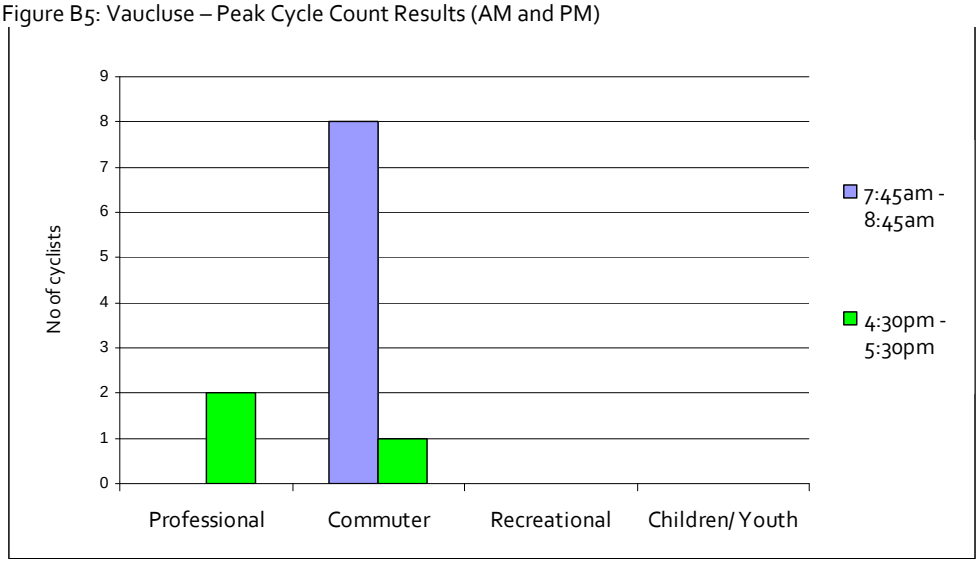
Figure B4: Rose Bay – Peak Cycle Count Results (AM and PM)



Vaucluse

The results of surveys undertaken at the intersection of New South Head Road and Hopetoun Avenue found that the peak cyclist activity occurred from 7:45am to 8:45am in the AM peak and 4:30pm to 5:30pm in the PM peak. Commuters were the most represented group observed during the AM peak period while professionals were the most represented group observed during the PM peak period. This is summarised in Figure B5.

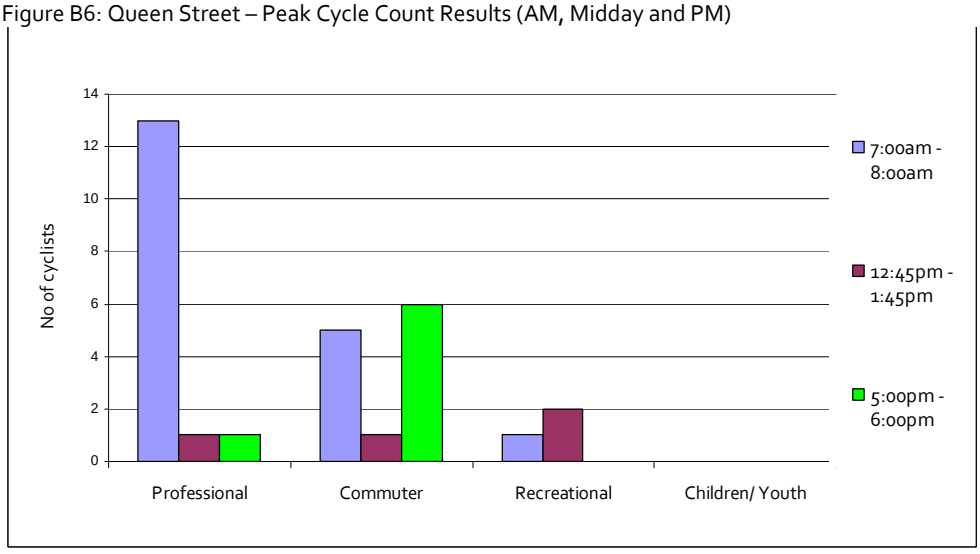
Figure B5: Vaucluse – Peak Cycle Count Results (AM and PM)



Queen Street

The results of surveys undertaken on Queen Street between Alton Street and Spicer Street found that the peak cyclist activity occurred from 7:00am to 8:00am in the AM peak, 11:45am to 12:45pm in the midday peak and 5:00pm to 6:00pm in the PM peak. Professionals were the most represented group observed during the AM peak period, recreational riders were the most represented group observed during the midday peak period and commuters were the most represented group observed during the PM peak period. This is summarised in Figure B6.

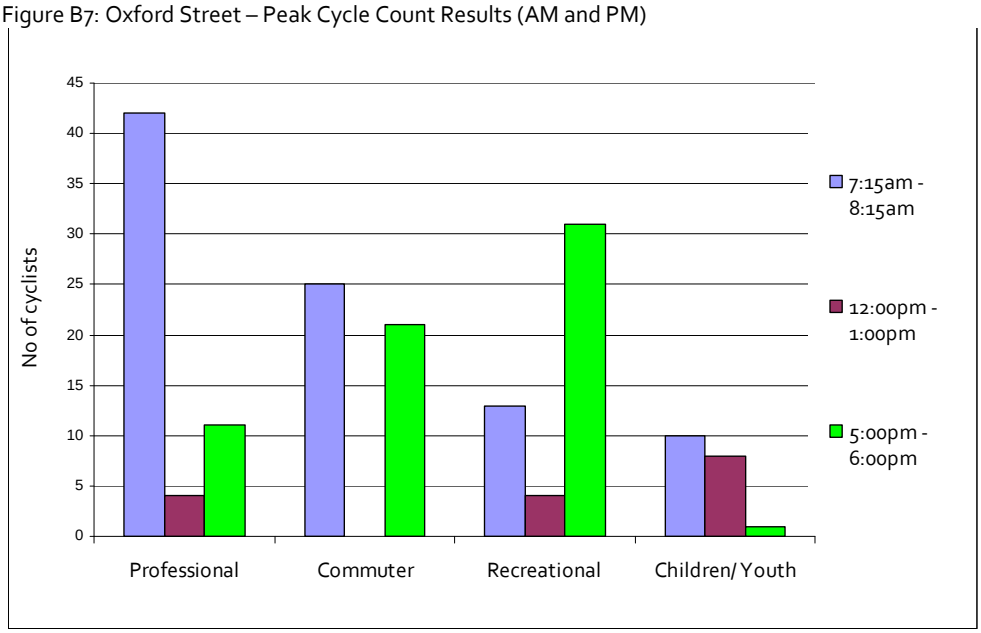
Figure B6: Queen Street – Peak Cycle Count Results (AM, Midday and PM)



Oxford Street

The results of surveys undertaken on Oxford Street between William Street and Elizabeth Street found that the peak cyclist activity occurred from 7:15am to 8:15am in the AM peak, 12:00pm to 1:00pm in the midday peak and 5:00pm to 6:00pm in the PM peak. Professionals were the most represented group observed during the AM peak period, children/youth riders were the most represented group observed during the midday peak period and recreational riders were the most represented group observed during the PM peak period. This is summarised in Figure B7.

Figure B7: Oxford Street – Peak Cycle Count Results (AM and PM)



Appendix C

Ride2School Local Council Flyer

Would you like to promote active travel in your local community and play a role in getting more students, more active, more often?

Ride2School NSW is looking to work in partnership with council's across NSW to break down barriers to more students and their families choosing to walk or ride the school journey.

The Hands Up! survey is a monitoring tool that motivates students and provides ongoing stimulus to choose to walk or ride. Schools taking part in this survey can win a range of prizes from Ride2School including bicycles, helmets, t shirts and much more.

We are inviting local councils to provide additional prizes for schools in your LGA, such as family leisure centre vouchers. Ride2School NSW can inform you of the schools involved and their results. After which you can allocate the prizes.

Being involved with Ride2School is a fantastic way to promote safe, responsible active travel in your local community and highlight your commitment to improving the health of your residents and local environment.

Enquire today by sending an e mail to ride2school@bicyclensw.org.au or by calling (02) 9218 5405

Appendix D

Bicycle Facility Defect Report Form

Bicycle Facility Defect Report

Location of bicycle facility or road defect

☐ Road ☐ Off-road path ☐ Other

Road or street name: _____

Suburb or locality: _____

Precise location on street or road *(house number, nearby landmark, power pole number, intersecting road and distance from it):* _____

Side of road/path or travel direction. _____

Type of bicycle facility or road defect

☐ **Road surface** (pothole, surface roughness or cracking, loose gravel, linemarking, excessive lip on kerb ramp etc)

☐ **Debris on the path or road** (glass, gravel, vehicle debris, fallen trees, overhanging branches etc)

☐ **Roadside/pathside furniture and fittings** (signs, guard fencing, holding rails, bridge railings, lighting etc)

☐ **Lights and crossings** (activation of traffic signals, visibility of lights, lamps not functioning etc)

☐ **Drainage** (water ponding, drainage grate, running water across path etc)

☐ **Squeeze points** (speed humps, chicanes, turn lanes etc)

☐ **Other -** please provide details below:

_____

_____

Comments or suggestions: _____

_____

_____

Defect reported by: **Date reported:** / /

Your name: _____

Address: _____

Locality/postcode: _____

Email address: _____

Phone (H): ( ) _____ Phone (W): ( ) _____

BIKEast

Representing cyclists in Sydney's Eastern Suburbs

Send Completed Form To:

Botany Bay Council	Fax: 02 9366 3777	Council@botanybay.nsw.gov.au
City Of Sydney	Fax: 02 9265 9222	council@cityofsydney.nsw.gov.au
Centennial Parklands	Fax: 02 9332 2148	info@cp.nsw.gov.au
Randwick Council	Fax: 02 9319 1510	general.manager@randwick.nsw.gov.au
Waverley Council	Fax: 02 9387 1820	waver@waverley.nsw.gov.au
Woollahra Council	Fax: 02 9391 7044	records@woollahra.nsw.gov.au

Also Forward to BIKEast:

Fax: 02 9386 5484 report@bikeast.org.au

Source:RTA NSW Bicycle Guidelines 2003 – Fig 10.1

Appendix E

Existing and Proposed Bike Network Plan


Darling Point Ferry
Double Bay Ferry
KINGS CROSS STN
BONDI JUNCTION STN
Centennial Park
Sydney (C)
Randwick (C)
Waverley (A)
B12
B2
C1
B6
A2
B1
B3
A1
B5
B4
B7
A9
C2
B9
B10
B11
B8
B13
B14
A3
A7
A8
A4
NEW BEACH RD
GREENOAKS AV
NEILD AV
BOUNDARY ST
GLENMORE RD
BROWN ST
CASCADE ST
GURNER ST
HARGRAVE ST
JERSEY RD
MONCUR ST
QUEEN ST
OCEAN AV
NEW SOUTH HEAD RD
WILLIAM ST
VICTORIA RD
TRELAWNEY ST
OXFORD ST
EDGECLIFF RD
SYD EINFELD DR
BELLEVUE RD
YARRANABBE RD
DARLING POINT RD
THORNTON ST
EDGECLIFF ST
BAYSWATER RD
CRAIGEND ST
BURTON ST
OATLEY RD
MOORE PARK RD
GREENS RD
RUTHVEN ST
BRONTE RD
WOLSELEY RD
Legend
LEP Zoning
Residential
Business
School
Park/ Open Space
Community Facility
Hospital
Rail Station/ Interchange
Bike Route
Existing Off-Road
Existing On-Road
Proposed Off-Road
Proposed On-Road
Connecting Bike Routes
P7 | 26-08-09 | BDM | BDM | DVD
Issue | Date | By | Chkd | Appd
Client
Woollahra Municipal Council
Job Title
Woollahra Bike Strategy
Drawing Title
Existing and Proposed Bike Network
Metres
0 150 300 600
GTAconsultants
www.gta.com.au
Scale at A3
1:12,000
Drawing Status
Final Draft
Job No
GS11920
Drawing No
Figure E1-1
Issue
P7

Legend

LEP Zoning

- Residential
- Business
- School
- Park/ Open Space
- Community Facility
- Hospital
- Rail Station/ Interchange

Bike Route

- Existing Off-Road
- Existing On-Road
- Proposed Off-Road
- Proposed On-Road
- Connecting Bike Routes

Issue	Date	By	Chkd	Appd
P7	26-08-09	BDM	BDM	DVD

Client: **Woollahra Municipal Council**

Job Title: **Woollahra Bike Strategy**

Drawing Title: **Existing and Proposed Bike Network**

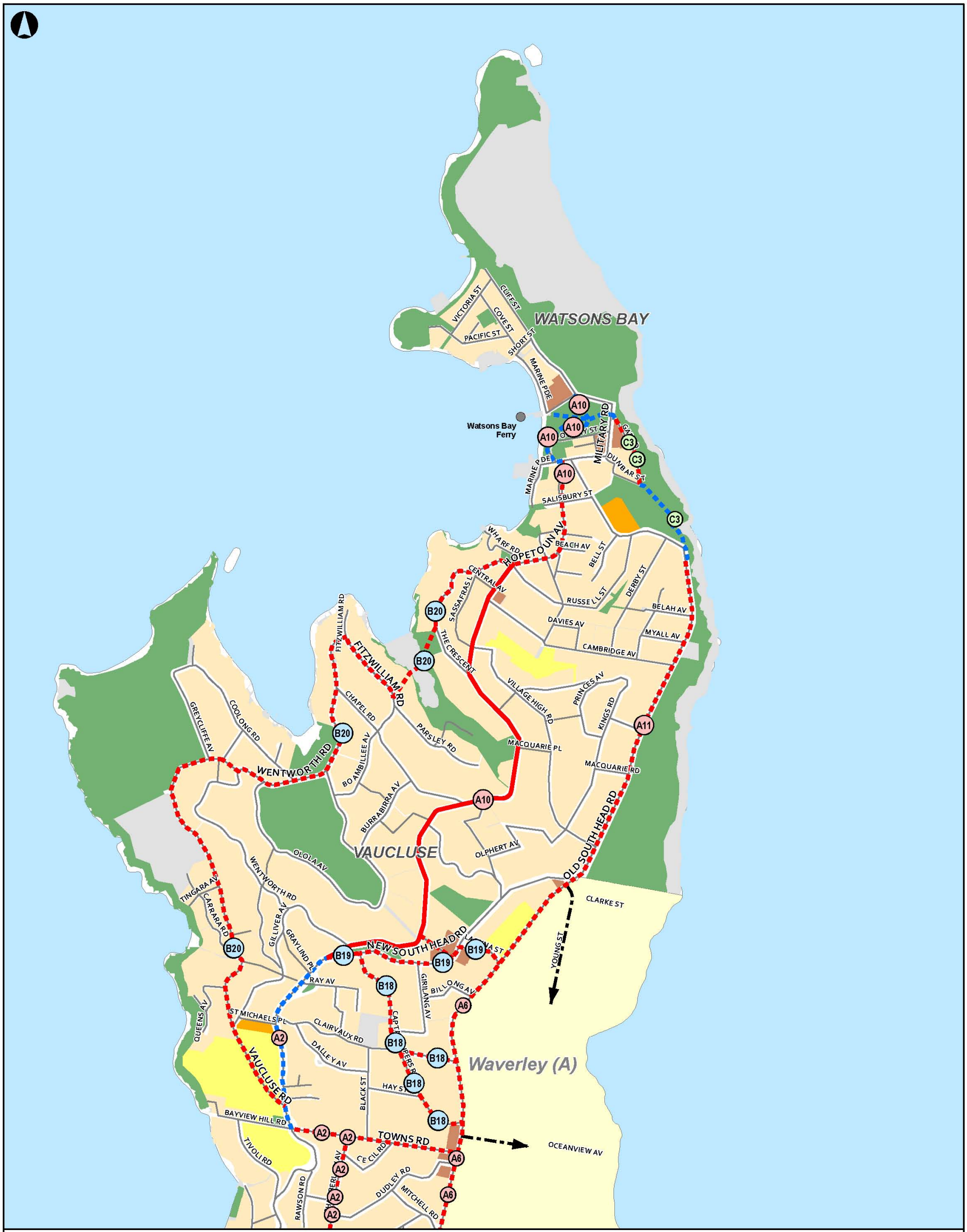
Metres: 0 150 300 600

GTAconsultants
www.gta.com.au

Scale at A3: **1:12,000**

Drawing Status: **Final Draft**

Job No	Drawing No	Issue
GS11920	Figure E1-2	P7



Legend

LEP Zoning

- Residential
- Business
- School
- Park/ Open Space
- Community Facility
- Hospital
- Rail Station/ Interchange

Bike Route

- Existing Off-Road
- Existing On-Road
- Proposed Off-Road
- Proposed On-Road
- Connecting Bike Routes

Issue	Date	By	Chkd	Appd
P7	26-08-09	BDM	BDM	DVD

Client
Woollahra Municipal Council

Job Title
Woollahra Bike Strategy

Drawing Title
Existing and Proposed Bike Network

Metres
0 150 300 600

GTAconsultants
www.gta.com.au

Scale at A3
1:12,000

Drawing Status
Final Draft

Job No	Drawing No	Issue
GS11920	Figure E1-3	P7