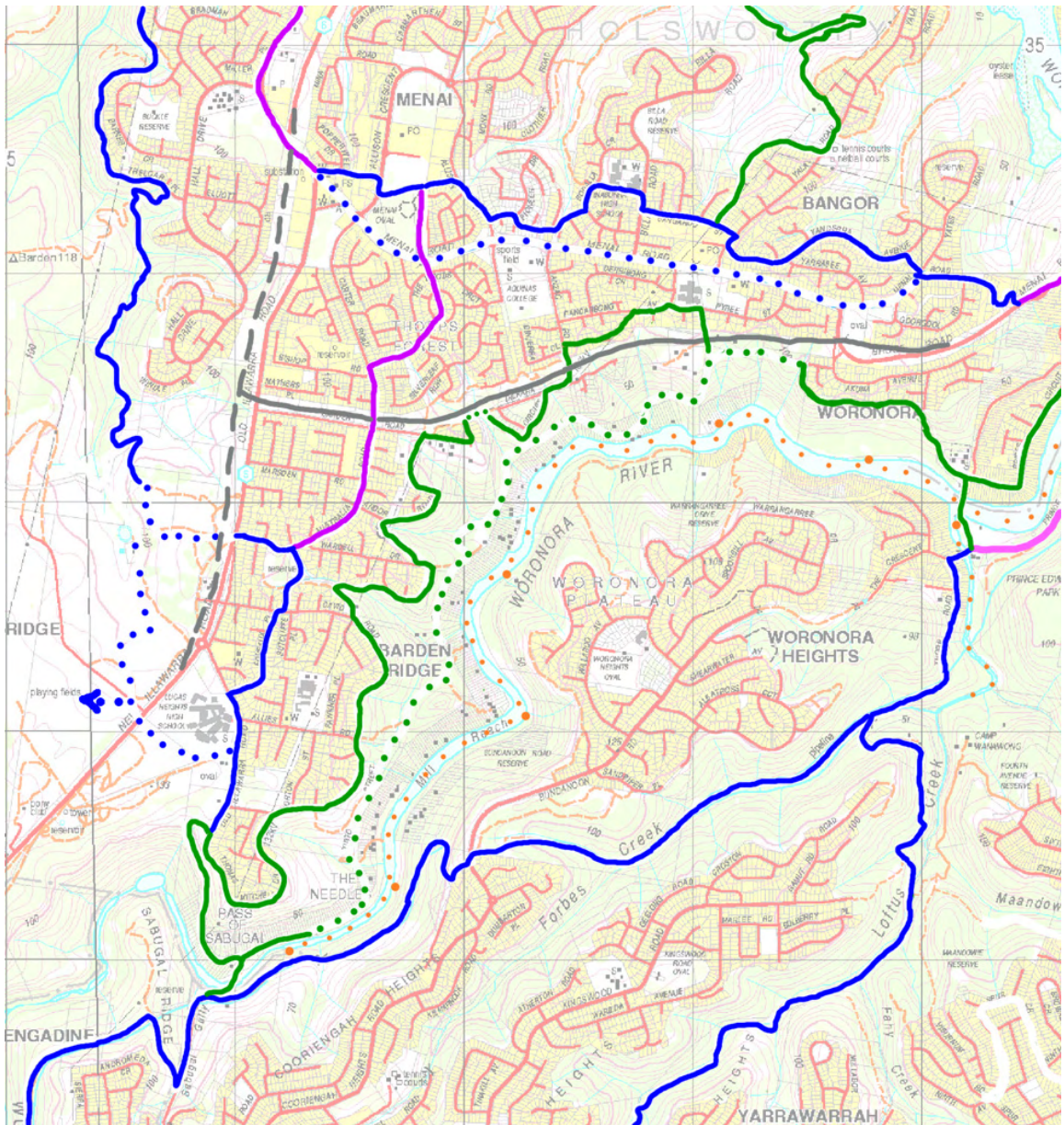


WORONORA WAY
FRESHWATER

SHARED USE ROUTE
*LGA(s) - SUTHERLAND
& WOLLONGONG*

Sub section	Helensburgh Link	W4-A13
Start and finish	Waterfall to Kellys Falls (Stanwell Tops) via Helensburgh	
Distance	12.5 km	
Grade	2-3	
Main Features	<ul style="list-style-type: none"> ● Heathcote National Park - Lake Toolooma and Coutts Gully ● Garrawarra State Conservation Area - Wilsons Creek Dam ● Kellys Falls and Princess Walk ● Sri Venkateswara (Hindu) Temple ● Symbio Wildlife Gardens Zoo and Fauna Park 	
Description	S through Heathcote NP and section leased for Scout Camp Coutts on fire trail 108. Princes H/way shoulder for 100m to join Cawleys Rd. (closed to traffic) to Helensburgh Station. (Walking route heads S and W from Road looping around Wilsons Dam, rejoins shared route at The Ridge). The Ridge, Helensburgh Park, streets/tracks to Cemetery Rd, Walker St. and Kellys Falls.	
Facilities	Waterfall Café, Waterfall and Helensburgh Rail Stations, Helensburgh Shopping Centre, Helensburgh Park - Playground, BBQ, Picnic, Toilets. Helensburgh Caravan Park	
Opportunities and Constraints	<ul style="list-style-type: none"> ● Cross community partnership between SSC and WCC LGAs ● Improve Access Control points along Princes Highway to deter unauthorised 4WDs, illegal trail bikes, dumping, etc, encouraging legitimate access to Garrawarra SRA ● NPWS interested in acquiring riparian lands at Kellys and Gills Creeks - maintaining wildlife corridors and potential to formalise walking track between Walker Street and Kellys Falls ● Safety issue - 80kph speeds on Walker Street with no shoulder for 800 m ● Investigate potential of existing route on private land between Cemetery Road and Temple Road as alternative to Walker Street ● Economic benefits to Helensburgh from increase in visitors ● Rail link from Helensburgh to Waterfall completes a loop ● Partnership with SCMB to use tracks as focus for Hacking River catchment health/biodiversity/cultural education 	
Actions required	<ul style="list-style-type: none"> ● SSEC/SSC/WCC - liase with NPWS and NPA re: suitability of routes and consent to add GKW emblem to existing signage ● NPWS/WCC/Energy Australia - upgrade gates and barriers at ACPs along Princes Highway. Consider surveillance cameras ● SSEC/WCC - negotiate access easement/VCA with land owner behind cemetery ● NPWS - acquire and develop POM for Kellys Creek area ● WCC - install Way display panel in Helensburgh Park 	
Priority level	B	
Estimated cost	\$50 k + aquisition costs	
Stakeholders Community	Waterfall PS, Helensburgh Schools, Health and Youth Centre, Bush Fire Brigade, Helensburgh Progress Assoc., Masonic Centre, Helensburgh Workmens Club, Churches, Landcare Groups, Illawara Escarpment Coalition, NPA	
Agency/Land Manager	SSC, WCC, NPWS, SCMB, DIPNR, SRA, SCA, Sydney Water, Dharawal LALC, Illawarra Tourism	

W5 – Shackles Area



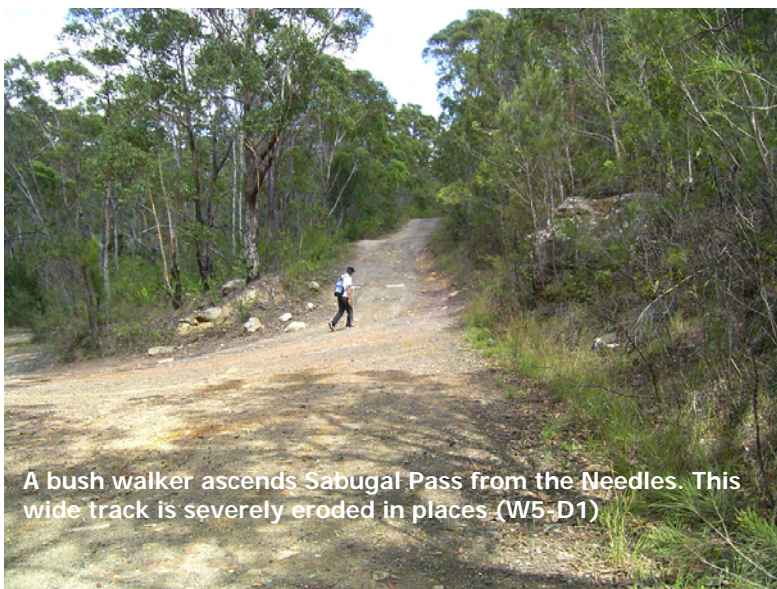
"Cubby house" taking shape along the bushland edge between Bardon Ridge and Mill Reach section of the Woronora River



Green Pool and the Woronora Valley below Lucas Heights viewed from Subugal Pass (W5-D1)



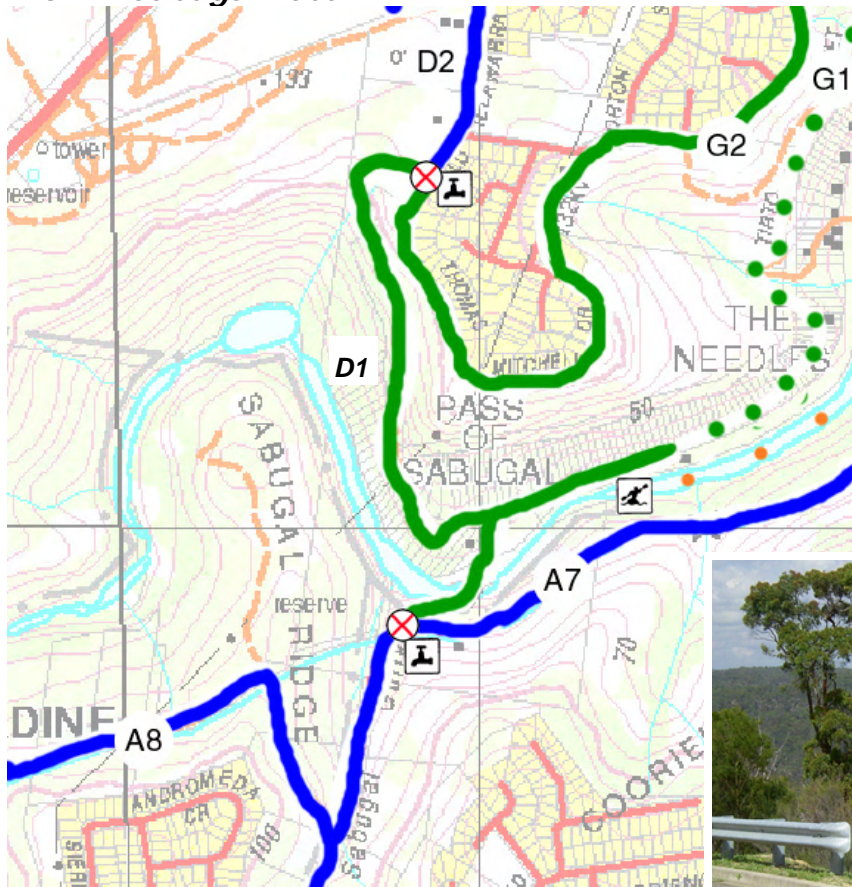
Existing Shared Use Route through Australia Avenue (W5-D2) Note the different surface treatment for cyclists (left) and pedestrians (right). This route is one of a network linking schools in Barden Ridge and Menai



A bush walker ascends Sabugal Pass from the Needles. This wide track is severely eroded in places (W5-D1)

Spine Route 2 – Two Rivers Link

W5-D1 Sabugal Pass



Rationale:

The route chosen is the only one available and the obvious one - the historic Old Illawarra Road, constructed in 1843. The river is forded via a causeway just upstream of the Needles rock formations and the route continues north in a steep cutting, the track as wide as 5 metres in places.

Issues

The area around the causeway is a focus for informal river based recreation, especially during school holidays. It is a natural playground with access from Barden Ridge to the north and Engadine to the South. Littering and weeds result from extensive use. Also there is evidence of illegal dumping on the southern approaches, despite the presence of locked gates. SSC manage 1500m of river frontage.

From the south side of the river the track appears as a huge scar on the landscape - the legacy of more than 150 years of use. Three main factors have led to extreme erosion of the track in places:

1. The steep gradient - during heavy rain the track becomes a creek
2. The majority of the surface is unsealed
3. The impact of 4WD vehicles and trail bikes

Having closed the track to motorised access, repair badly eroded and unsafe steep sections. Use recycled road base to fill holes, and top with crushed sandstone mixed with binding agent – suggest Warajay Natural Pine Resin (see Chapter 5, section 5.3).

At the northern end of the track from Thomas Mitchell Drive, Barden Ridge, there are 3 entry points but only two have barriers/gates to prevent illegal access by 4WD vehicles and trail bikes. An open access point exists on private land.

TWO RIVERS LINK
SHACKELS

PEDESTRIAN ROUTE

Sub section	Sabugal Pass	W5 – D1
Start and Finish	Sabugal Gully to Thomas Mitchell Drive, Barden Ridge	
Distance	0.8 km	
Grade	4	Time Ped. 1 hr (up) 0.5hr (down). Cycle 0.75 hr (up) 0.25 hr (down)
Main Features	Sabugal Causeway The Needles Freshwater Pools River and escarpment views	
Description	Stone-surfaced roadway to concrete causeway fording river just above freshwater/saltwater interface. Steep ascent on rugged track 25% severely eroded mainly stone but sections of tar seen breaking up. Three exits to Thomas Mitchell Drive, 2 with barriers, 3 rd is on private land.	
Facilities	Lucas Heights Schools, Causeway	
Opportunities and Constraints	<ul style="list-style-type: none"> ● The Needles major node for informal recreation eg swimming ● Interpret historical significance of Sabugal Pass, and John Lucas Flour Mill ● Weed Infestation, Litter and Dumping ● Old Ill Road ACP has no barrier to motorbike/4WD access 	
Current Status	Zoned SSC Environmental Protection Bushland, mixed ownership – Council, DIPNR, private. Land tenure issues.	
Actions Required	<ul style="list-style-type: none"> ● 1 x Gate and Stile ● Resolve issue with landowners (SSC/DIPNR/private) ● Reconstruct track sections with recycled road base topped with sandstone, sealed with Warajay binding agent ● 1 x Information Sign ● 3 x waymarker signs ● Bush Regeneration to wide track margins 	
Priority	B	
Estimated Cost	\$15,000	
Community	Lucas Heights PS and High School, West Menai and Barden Ridge PRA, Menai Wildflower Society, NPA, St Pauls Church, Sutherland Shire Christian School	
Land owners/Managers	SSC, DIPNR, Sydney Water, RFS	

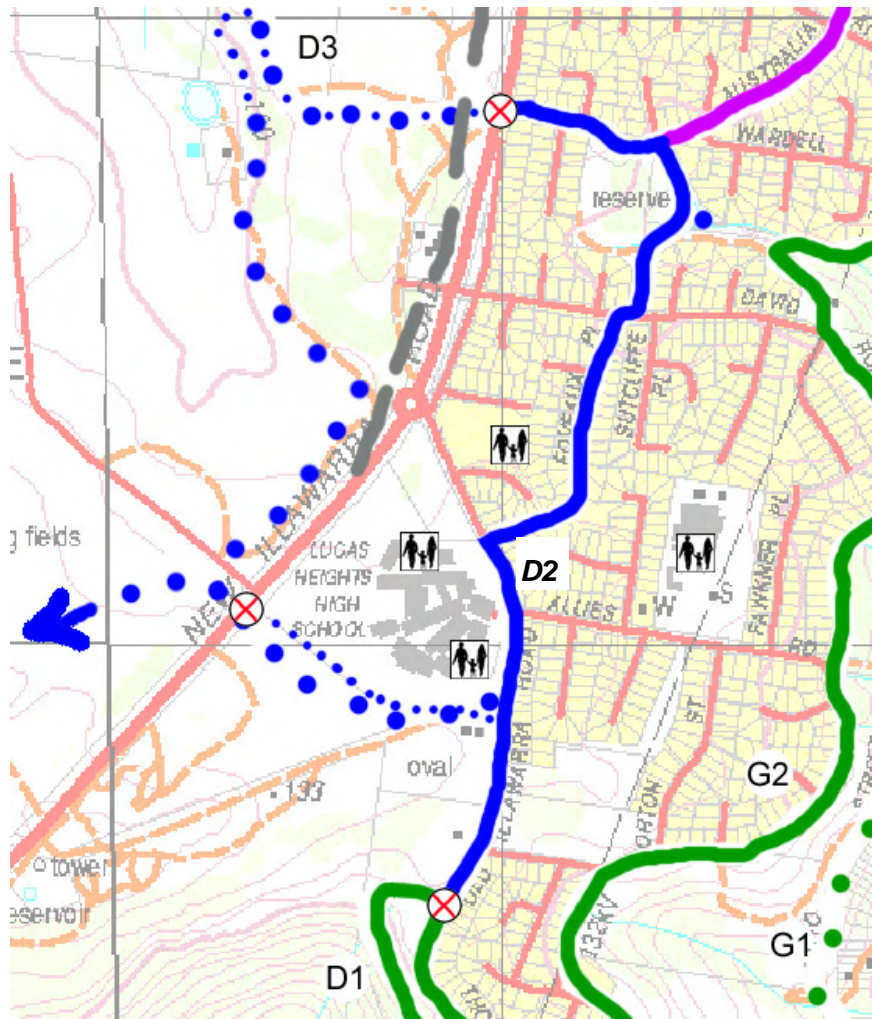
The following management actions are recommended:

1. Designation of the track as a walking only route, with the message to be conveyed on signage and publicity material. Cyclists would be required to carry/walk their bicycles.
2. Installation of galvanised steel cycle racks at both Sabugal Gully and Old Illawarra ACPs.
3. Resolve the land tenure issues at Thomas Mitchell Drive ACP to allow barriers to be installed to deter use of track by Trail Bikes and 4WD vehicles.

Old Illawarra Road was the first surveyed road in the Sutherland Shire. Major Thomas Mitchell investigated the country between Sydney and Wollongong. He decided that a road through Menai area and down through Engadine to Wollongong would be the route of a new road. The survey of the road commenced in March, 1843 and in charge was Roderick Mitchell and later William Darke (after whom Darkes Forest is named), and construction started soon after. Thomas Mitchell used overseers and 20 convicts when he started in June 1843, clearing land at the headwaters of Woronora River. The road he constructed can still be seen today. Starting from Illawong follow the Old Ferry Road to Old Illawarra Road. After a few miles, the road goes down to the Woronora River through a cutting known as the "Pass of Sabugal". Once across the ford, it becomes the Woronora Road, Engadine, until it joins the Princes Highway north of Heathcote. The highway then becomes the surveyed road all the way to Wollongong.

Source: Sutherland Shire Historical Society Bulletin. (2000) . Old Illawarra Road. C1924. Nov. V3, N4.

W5-D2 Barden Ridge



One of many dual access links between streets. These make popular school routes.

2 RIVERS LINK
SHACKELS

SHARED USE ROUTE

Sub section	Barden Ridge	W5 – D2	
Start and Finish	Thomas Mitchell Drive to Junc. Australia Ave/New Illawarra Road, Barden Ridge		
Distance	15 km		
Grade	2	Time	0.75 hr Ped. 0.25 hr Cycle
Main Features	Elevated views of river Australia Road Reserve Constructed wetland		
Description	An intricate network of street pavements and off-road short cuts. Streets and small reserves mainly on firm concrete or tarmac surface from Thomas Mitchell Drive north along Old Illawarra Rd to school crossing. East through small reserve to Foveaux Place, cross David Rd to shared track through Australia Avenue Reserve to Australia Road. Rejoin Old Illawarra Road.		
Facilities	Lucas Heights Schools, Australia Road Reserve		
Opportunities and Constraints	<ul style="list-style-type: none"> ● Develop ties with schools ● No pavement on west side of Old Illawarra Road ● 3 Street Crossings 		
Current Status	Zoned SSC		
Actions Required	4 x waymarker signs		
Priority	B		
Estimated Cost	\$400		
Community	Lucas Heights PS and High School, West Menai and Barden Ridge PRA, Menai Wildflower Society, St Pauls Church, Sutherland Shire Christian School		
Land owners/ Managers	SSC, DIPNR, RTA, Gandangara LALC		

Rationale:

The route chosen makes use of quiet streets and a network of off-road pedestrian/cycle links between cul de sacs and other streets, and a cycleway through Australia Avenue Reserve. The route, extensively used by local school children and parents, is all hard surfaced, safe and only gentle gradients to negotiate.

An alternative would be to continue along Old Illawarra Road to the roundabout junction with New Illawarra Road and on to the corner of Old Illawarra and Australia Avenue.

Long term connections between the 3 schools and SSC's "Ridge" Sports Complex should be investigated further, with potential to take advantage of the proposed light controlled pedestrian crossing of New Illawarra Road part of plans for the North/South link road.

West Menai Nature Trail (Burnum Burnum Track section)

The following 3 sections of the 2 Rivers Link route (W5-D3, W6-D4 and W6-D5) utilise existing management trails identified by The West Menai and Barden Ridge Precinct Residents Association as part of their documented proposal for a "West Menai Nature Trail". Their the aim is to establish "a network of tracks linking conserved lands providing access to the community", with the potential to facilitate... "environmental awareness of Mill Creek and the wider Georges and Woronora River catchments"⁴¹

The 3 sections represent the main spine track (the "brown route" in the residents report) of the Nature Trail; and the community have indicated a desire to name the track after Burnum Burnum, a famous resident of nearby Woronora Valley who was an advocate and campaigner for Aboriginal rights and nature conservation.

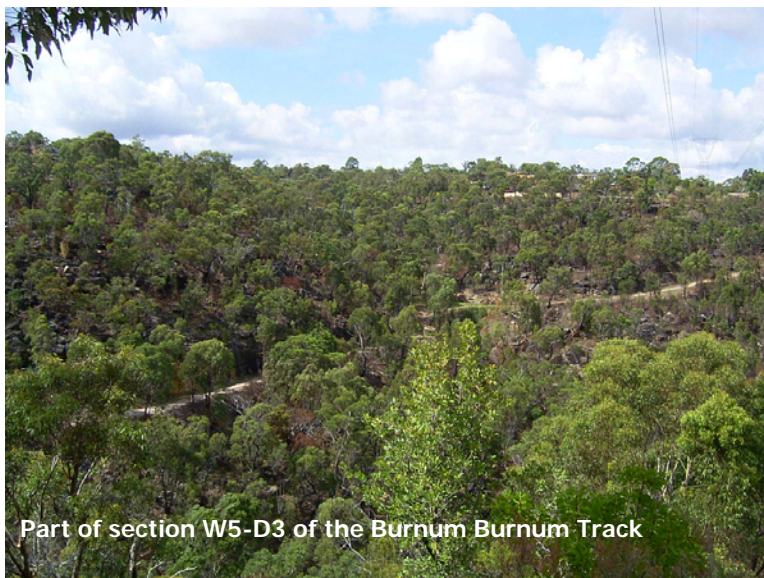
Several loop and spur tracks are linked by the main spine. These allow access for people to experience the diversity of local vegetation such as the Shale Sandstone Transition Forest listed as a threatened ecological community.

Also the rare Paperbark/Red Mahogany Forest: This unique community, containing stands of *Melaleuca linariifolia* and *Eucalyptus resinifera* up to 25m high, contrasts dramatically with surrounding vegetation. This habitat and the flora and fauna which it supports, is under threat from development at two sites on the plateau, and the Residents Association want to use the trail to help raise awareness amongst the community of its value and see the sites protected as conservation areas.

There has been a strong community reaction to the poor road system, traffic build up, lack of infrastructure, loss and degradation of the natural environment and uncoordinated development.



Burnum Burnum



Part of section W5-D3 of the Burnum Burnum Track

The Residents Association argues that the community has to put up with a nuclear reactor (emissions and potential for major accidents) and large waste management tip (odor, roadside litter, illegal dumping and incessant garbage trucks) in their backyard.

" The West Menai Nature Trail would improve the image and amenity of this often neglected part of Sutherland Shire."

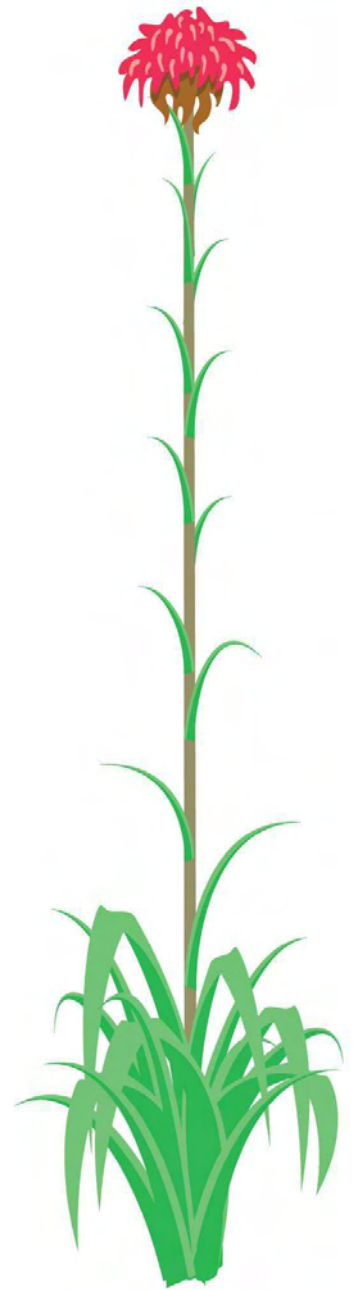
The Association has researched the natural, cultural, historical, social and recreational values of the area. Their findings are presented in Appendix 7 of this report.

⁴¹ West Menai Nature Trail - A Document In Progress
Phil Wells and Roy Dixon, West Menai and Barden Ridge Precinct Residents Association

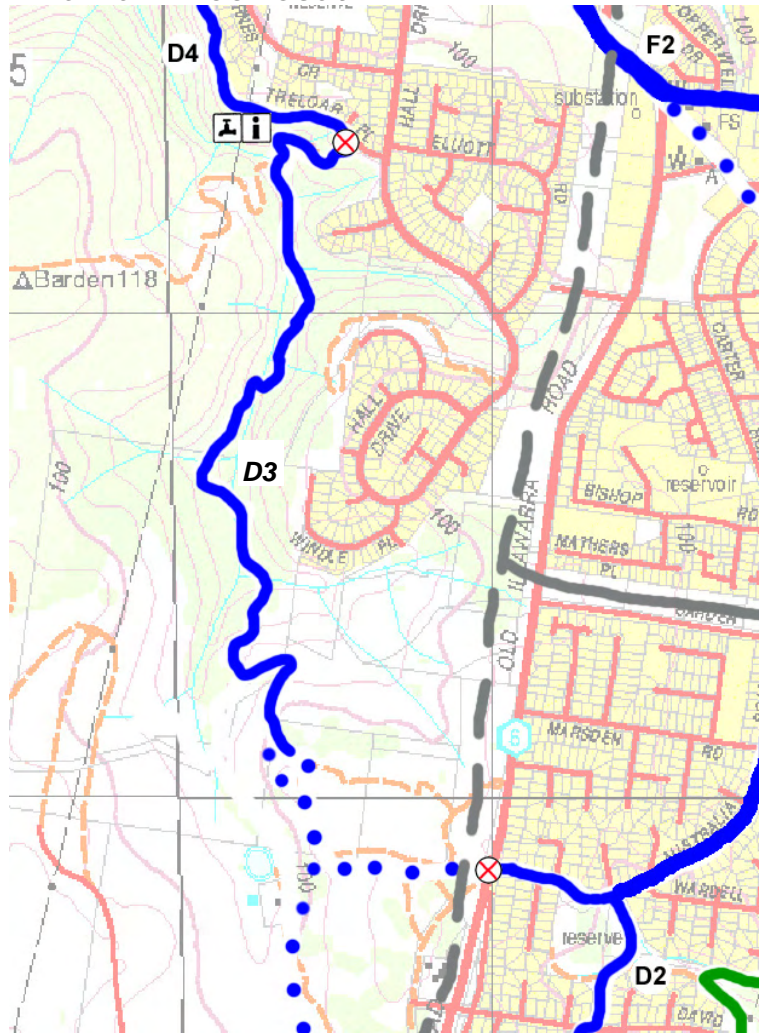
Representatives from Gandangara LALC, West Menai and Barden Ridge PRA and Sandy Point Progress Association gather at the Old Mill Site, on Mill to share ideas on walking track and information on local initiatives with the Great Kai'mia Way Project Team.



One of several vantage points along the Burnum Burnum Track overlooking Mill Creek Valley



W5-D3 Burnum Burnum Track South



Rationale:

The crossing of Old Illawarra Road from Australia Avenue junction is difficult. There is no pedestrian crossing. A light controlled crossing is set to be part of the plans for the north-south section of the Bangor bypass.

Beyond the crossing, a new subdivision is being developed by the Gandangara LALC on the site of an old quarry. The fire trail to the south of the development is the route, but this has been diverted by ground works taking place.

2 RIVERS LINK
SHACKLES

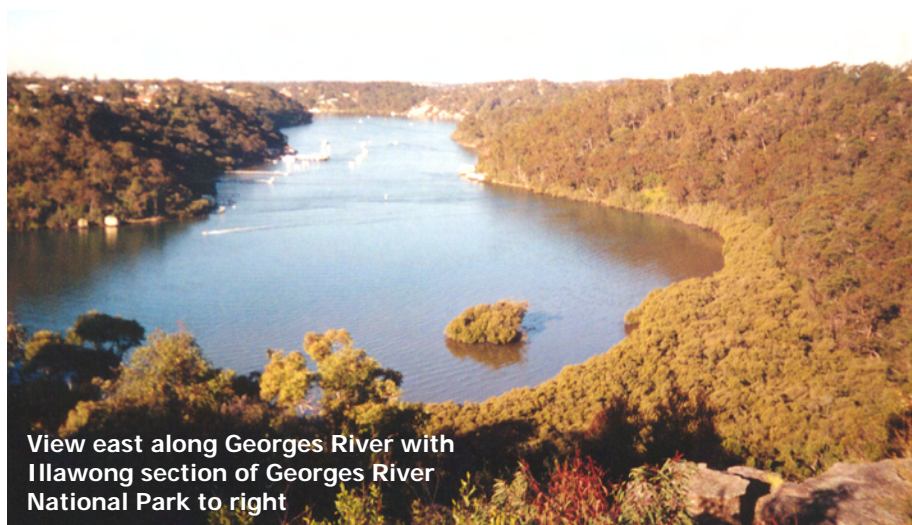
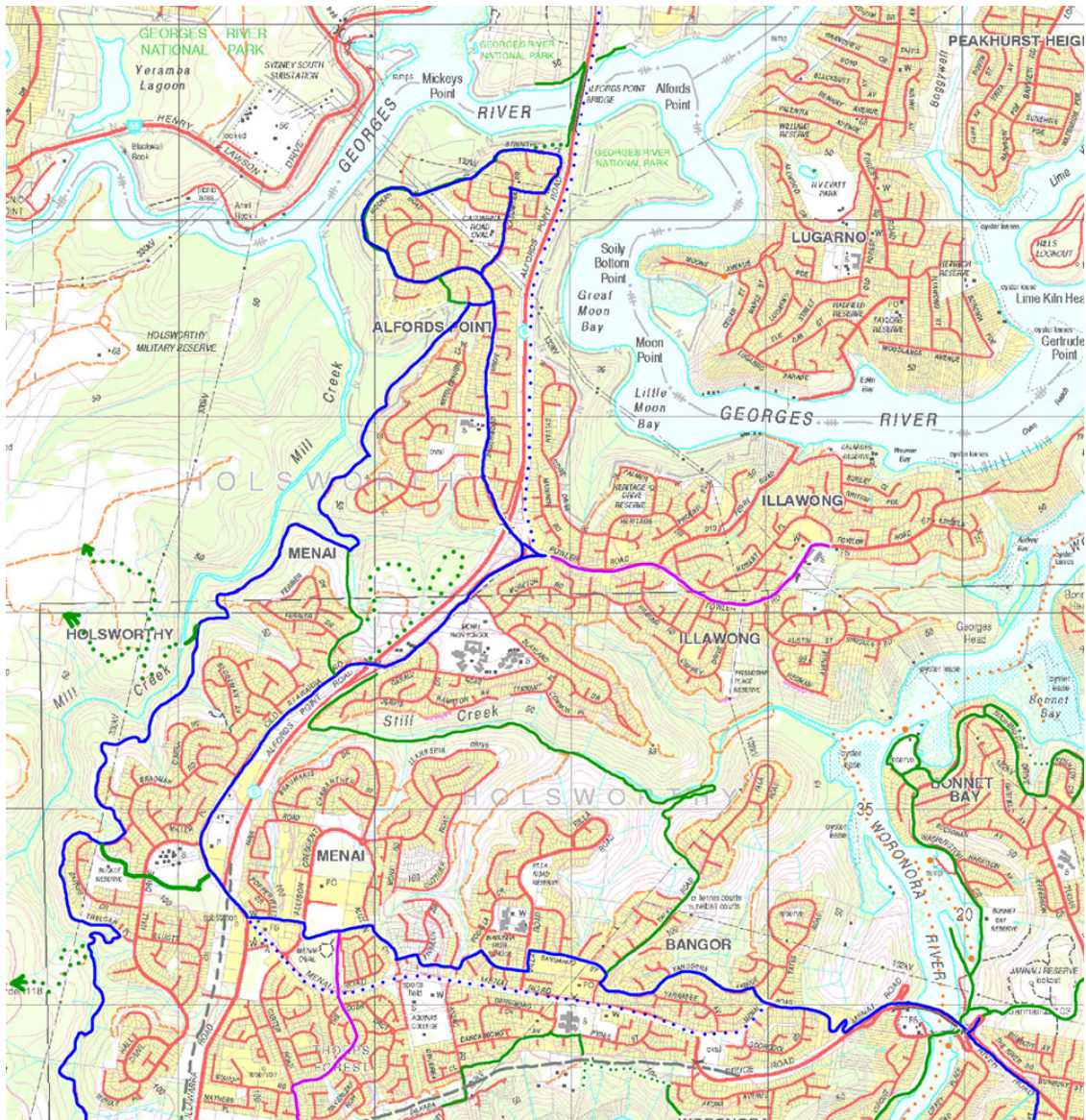
SHARED USE ROUTE

Sub section	Burnum Burnum Track South	W5 – D3	
Start and Finish	Junc. Australia Ave/Old Illawarra Road to Treloar Place		
Distance	1.8 km		
Grade	2-3	Time	1 hr Ped. 0.5 hr Cycle
Main Features	Unnamed creek & remnants of Shale Sandstone Transition forest		
Description	<ul style="list-style-type: none"> ▪ Fire Trail to south ▪ New residential subdivision (under construction Sept '03) ▪ Continue north on deeply eroded track to cross creek ▪ Undulating FT to junction take east steep incline to Treloar Pl. 		
Facilities	Proposed play and passive recreation reserve as part of development		
Opportunities and Constraints	<ul style="list-style-type: none"> ▪ Opportunity to incorporate trail in new residential development ▪ Links to regional sports centre being developed by SSC ▪ Interpret the journey of Barden Creek ▪ Major erosion problems caused by 4WD and motorbike use ▪ Conflict of interest with 4WDs and motorbikes. ▪ Difficult Crossing of Major Road 		
Current Status	Zoned 7(b) by SSC		
Actions Required	<ul style="list-style-type: none"> ▪ Amend zoning to include cycling ▪ Address Access Control as a priority eg POM ▪ Gates, barriers and fencing ▪ Information and Safety Signs at either end ▪ 4 x waymarkers ▪ Educate Trail bikers and 4WD users 		
Priority	A		
Estimated Cost	\$20,000		
Community	Menai Public School, Lucas Heights Schools, West Menai and Barden Ridge PRA, NPA, Menai Wildflower Society, St Pauls Church, Sutherland Shire Christian School		
Landowners/Mgrs	SSC, DIPNR, Gandagara LALC, Sydney Water		

One of the consequences of the development is that trail bikes and four wheeled drive vehicles previously using the Quarry site, are finding their way on to the fire trails to the north and the route of the Burnum Burnum Track on the West Menai Nature Trail. Urgent action is needed to prevent such illegal use is to be halted. The Safety of walkers is an issue as well as degradation of the track and the natural environment through which it passes

The track needs repairs. At several spots the erosion is so severe that bypass tracks have been formed.. SSC are keen to link Burnum Burnum Track (W5 04) to the new regional sports centre on the site of the old Lucas Heights waste tip. Cycleways and parking facilities are planned providing the potential for a major "trackhead" for the Great Kai'mia Way.

W6 – Still Creek



View east along Georges River with Illawong section of Georges River National Park to right



Salt Marsh in Mill Creek

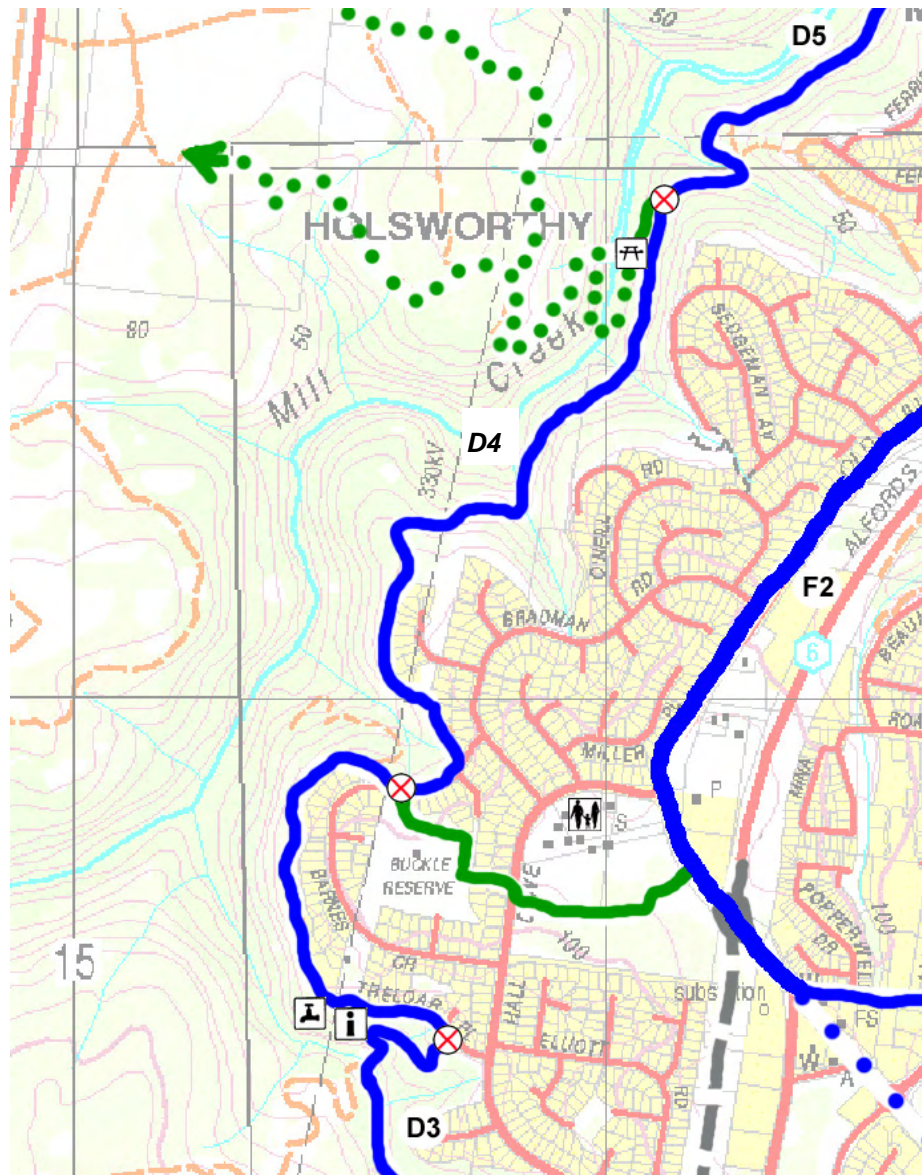


Remnants of the Grain Mill in Mill Creek



Building closer ties between
Aboriginal and non-Aboriginal
communities

W6-D4 Burnum Burnum Track Central



Children from Menai Primary School look out over Barden Creek Valley

2 RIVERS LINK
STILL CREEK

SHARED USE ROUTE

Sub section	Burnum Burnum Track Central	W6 – D4	
Start and Finish	Treloar Place to Mill Creek Access Track		
Distance	2 km		
Grade	2-3	Time	1 hr Ped. 0.5hr Cycle
Main Features	<ul style="list-style-type: none"> ▪ 90% Fire Trails, 10% quiet streets. ▪ Rock shelters ▪ Elevated views of Barden/Mill creeks ▪ Variety of plant communities ▪ Buckle Reserve 		
Description	90% on Sydney Water Sewage maintenance tracks, 10% quiet streets. To end of Treloar PI through Pipecrate FT to Barnes Crescent opposite. Rejoin FT, two steep sections with signs of gullying track junction. South west arm for 300m to Mill Creek.		
Facilities	Menai Public School, Buckle Reserve, Close to shops		
Opportunities and Constraints	<ul style="list-style-type: none"> ▪ Interpret the journey of Barden Creek/Mill Creek - lookouts ▪ Biodiversity, Cultural, Historical, Geographical Education ▪ Local area studies for 10 schools in local area ▪ Develop low key picnic site by Mill Creek ▪ Interpret Old Mill site ▪ Evidence of increasing trail bike use 		
Current Status	Zoned 7(b) by SSC, maintained by SSC and RFS Subject of Metropolitan Greenspace Funding Bid by SSC		
Actions Required	<ul style="list-style-type: none"> ▪ Address Access Control as a priority - eg POM ▪ DA by SSC, Statement of Environmental Effects ▪ 3ACPs - Gates, Stiles, Barriers, Fencing ▪ Information and Safety Sign – Type 3 at Mill Creek, Type 1 at Treloar End ▪ 5 x waymarkers ▪ Educate Trail bikers ▪ Promotional and Curriculum material ▪ Amend zoning regulations to include cycle access. 		
Priority	A		
Estimated Cost	\$30,000		
Community	West Menai and Barden Ridge PRA, Menai Public School, NPA, Menai Wildflower Society, Buckle Reserve Sports Clubs		
Land owners/ Managers	SSC, DIPNR, Gandangara LALC, Sydney Water		

Rationale:

This section of the route utilises a network of fire trails originally constructed by Sydney Water to install sewerage system for the residential development on the plateau. The advantages of the fire trail system are that it is well maintained and roughly follows the 50 metres contour line along the escarpment offering excellent vantage points overlooking the rugged topography of Barden and Mill Creek valleys.

At the junction of the Mill Creek spur it is recommended that a cycle rack be provided and signs showing "no bikes allowed".

Mill Creek Spur - Gandangara Link

A switchback constructed by Sydney Water heads south west from the main fire trail down to Mill Creek where there is a small clearing beside the river suitable for a low key rest/picnic area. Left over large water supply/sewage pipes are stacked up at the bushland edge of the site.

The river is fordable at low tide. The land on the far side is in the custodianship of the Gandangara Local Aboriginal Land Council.

Approximately 200 metres south of the clearing, on the same side of the creek, are remains of an old flour mill dating back to 1920 and a weir which acts as an artificial boundary between the tidal and freshwater sections of Mill Creek.

The weir provides a safe dry weather crossing of the Creek and represents a key link to a proposed walking track network proposed by the Gandangara LALC using existing management trails. The scheme is one element of the Gandangara Living Culture and Learning Centre project on their lands, seeking to address severe environmental degradation within Mill Creek catchment and provide ongoing employment and training opportunities for Aboriginal people from the local area and other parts of Sydney.

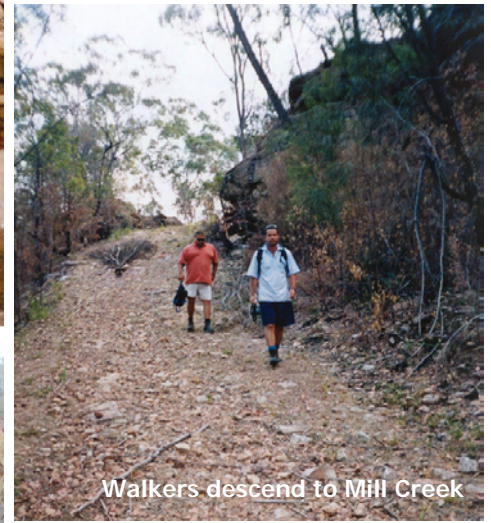
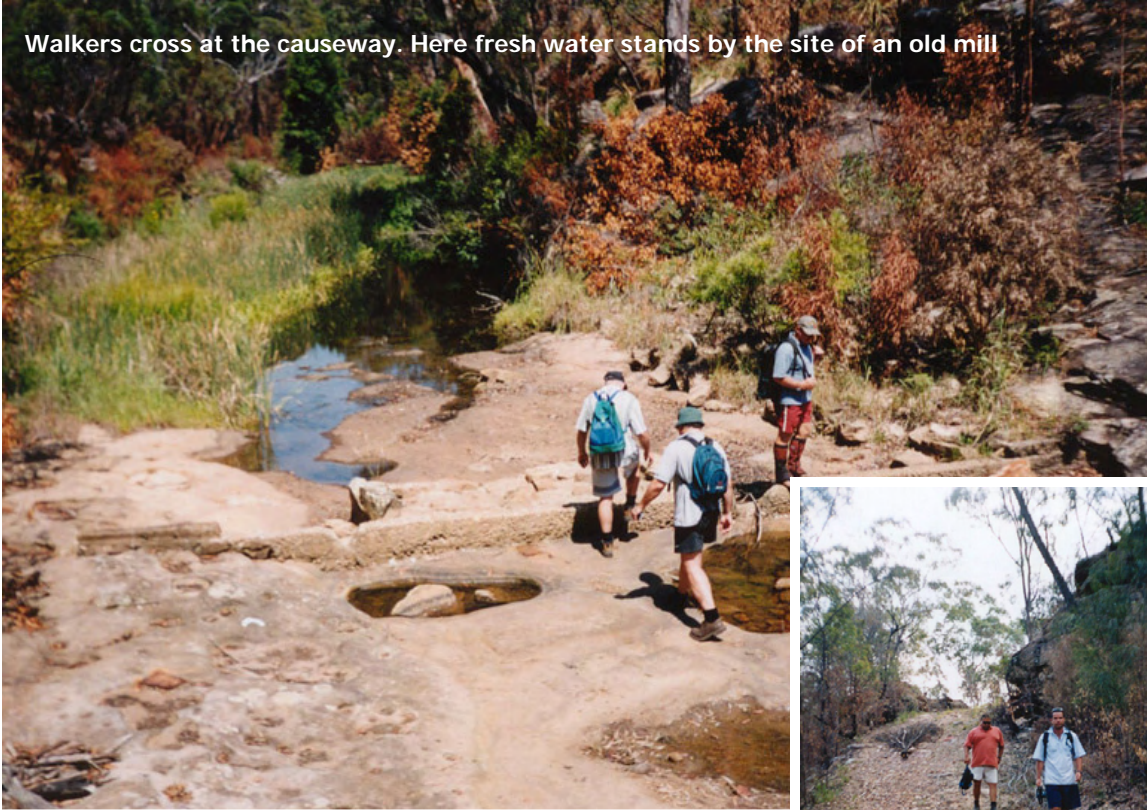
As part of the community consultation for this feasibility study, the project coordinators have made close ties with the Community Park Rangers currently employed by Gandangara LALC to manage the lands and organise community involvement in the ongoing bush regeneration process.

An embryonic partnership of mutual cooperation has developed based on objectives common to both the Great Kai'mia Way vision and the Living Culture and Learning Centre project, namely:

- Creating sustainable routes for people to educate and raise awareness of the value of the catchment, its role in supporting biodiversity, cleaning water, protecting important Aboriginal cultural and spiritual sites.
- Promoting closer ties between indigenous and non-indigenous groups.

The partnership has brought together other community groups including West Menai and Barden Ridge Precinct Residents Association and Sandy Point Progress Association as well as Sutherland Shire Council Officers to examine potential track routes across the entire West Menai area. (These are outlined in more detail in Chapter 3 of the Georges River Way section).

Walkers cross at the causeway. Here fresh water stands by the site of an old mill

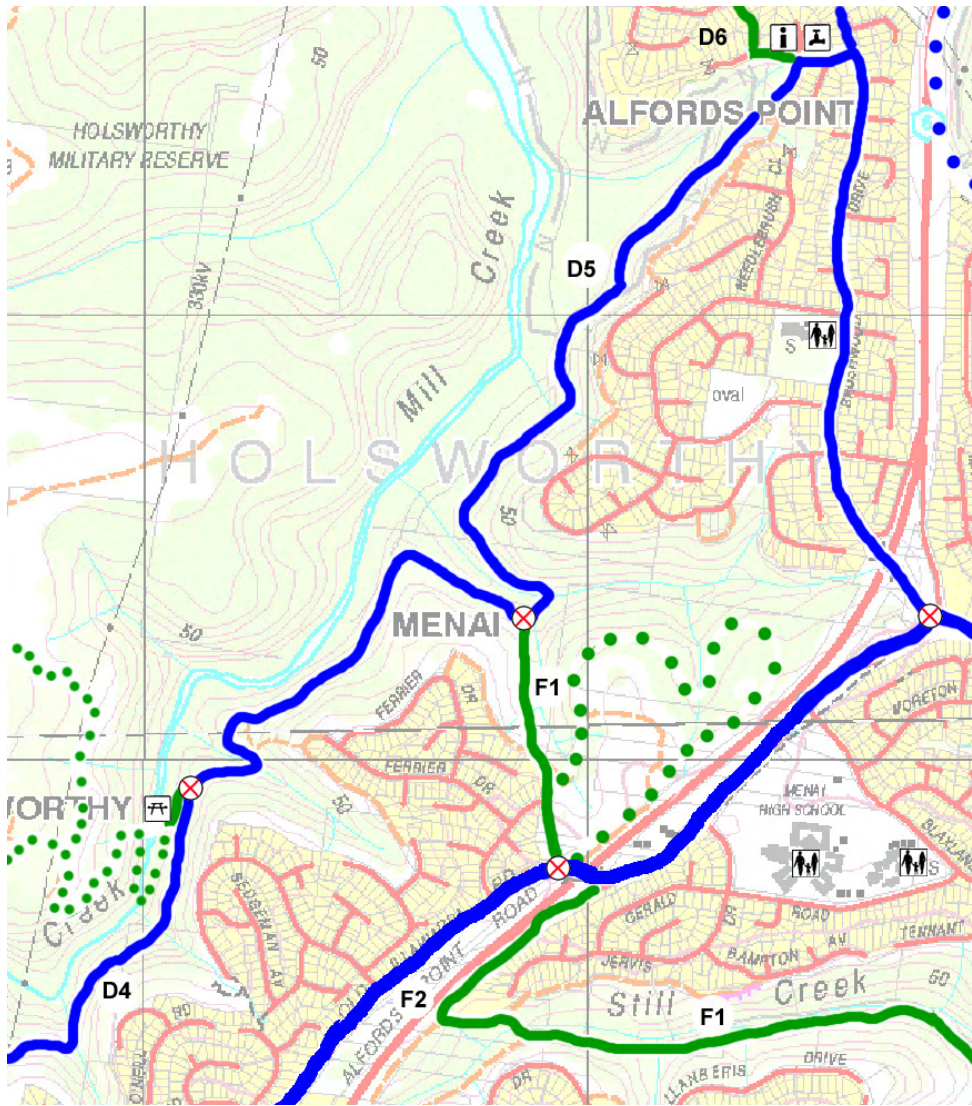


Walkers descend to Mill Creek



Lookout over Mill Creek from Burnum Burnum Track

W6-D5 Burnum Burnum Track North



Lower Mill Creek Valley – River Flat Forest



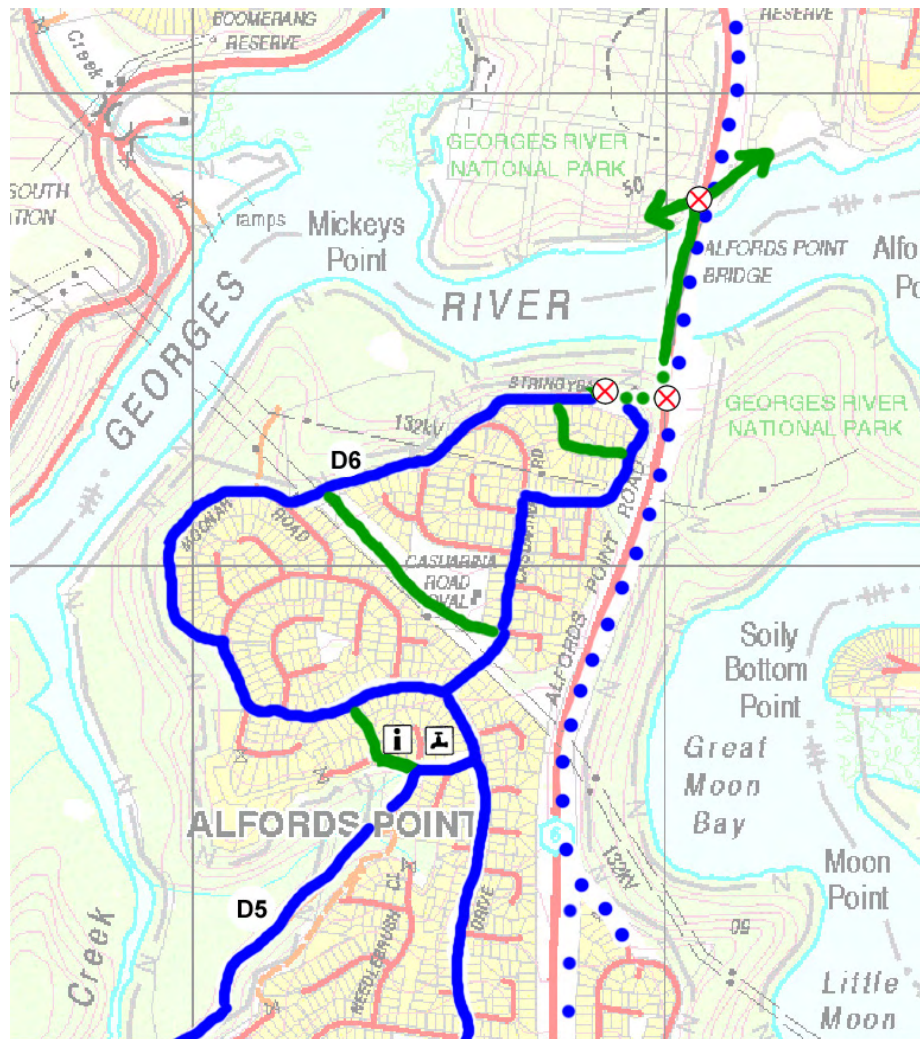
Fire Damage c. December 2002

2 RIVERS LINK
STILL CREEK

SHARED USE ROUTE

Sub section	Burnum Burnum Track North	W6 – D5	
Start and Finish	Mill Creek Access Track to Bottlebrush Place, Alford's Point		
Distance	1.8 km		
Grade	2	Time	1 hr Ped. 0.5hr Cycle
Main features	Panoramic views of wetlands and lower Mill Creek and Georges River National Park.		
Description	Stone surfaced FT, some evidence of bike tracks follows contour line crossing 2 creeks		
Facilities	None		
Opportunities and Constraints	<ul style="list-style-type: none"> ▪ Interpret the journey of Barden Creek/Mill Creek - lookouts ▪ Biodiversity, Cultural, Historical, Geographical Education ▪ Local area studies for 10 schools in local area ▪ Private land tenure issues to be resolved 		
Current Status	Zoned 7(b) by SSC, maintained by SSC, RFS and NPWS Subject of Metropolitan Greenspace Funding Bid by SSC Small section of private land.		
Actions Required	<ul style="list-style-type: none"> ▪ Address Access Control as a priority eg POM ▪ SSC to acquire strip of land or negotiate easement ▪ 3 ACPs - Gates, Stiles, Barriers, Fencing ▪ 1 x display panel at Bottlebrush PI ▪ Information and Safety Sign at Bottlebrush Place ▪ 5 x waymarkers ▪ Educate Trail bikers ▪ Promotional and Curriculum material 		
Priority	A		
Estimated Cost	\$10,000		
Community	West Menai and Barden Ridge PRA, Menai High School, Alford's Point PS, NPA, Illawong and Alford's Point Progress Assoc. Menai Wildflower Society		
Land owners/ Managers	SSC, DIPNR, NPWS, Gandangara LALC, Sydney Water, Private landowners		

W6-D6 Georges River National Park Link



View of the Georges River National Park northern foreshore from Stringy Bark Place Alford's Point

2 RIVERS LINK
STILL CREEK

PEDESTRIAN ROUTE

Sub section	Georges River NP Link	W6 – D6
Start and Finish	Bottlebrush Place to Georges River NP North (via Alford's Point Bridge)	
Distance	2.5 km	
Grade	2-3	Time 1.5 hr Ped.
Main Features	Georges River National Park Elevated panoramic views of Mill Creek Georges River foreshores	
Description	40% on streets, 30% on FT, 10% through corner of NP, 20% pedestrian walkway over bridge	
Facilities	Pay area, Casuarina Rd Oval and Reserve, Bench seats.	
Opportunities and Constraints	<ul style="list-style-type: none"> ▪ Interpret the journey of Barden/Mill Creek - lookouts ▪ Biodiversity, Cultural, Historical, Geographical Education ▪ Consult residents regarding on-street sections of route ▪ Local area studies for 10 schools in local area ▪ NPWS Consent Required for 150M new section of track ▪ Safety Issues at link to Ped. Bridge RTA consent 	
Current Status	Georges River NP/RTA road corridor	
Actions Required	<ul style="list-style-type: none"> ▪ Construct access link from Stringybark Place onto footbridge ▪ 2 ACPs - Gates, Stiles, Barriers, Fencing ▪ Information and Safety Sign at both ends of ped. bridge ▪ 5 x waymarkers ▪ Educate Trail bikers ▪ Promotional and Curriculum material 	
Priority	B	
Estimated Cost	\$25,000	
Community	West Menai and Barden Ridge PRA, Menai High School, Alford's Point PS, NPA, Illawong and Alford's Point Progress Assoc. Menai Wildflower Society	
Land owners/Managers	SSC, DIPNR, NPWS, RTA, NPWS	

Rationale:

The proposed Burnum Burnum Track ends beside the community fire control point alongside Bottlebrush Place in Alford's Point, close to a bus stop and potential transport back to the start. The return journey on foot or by bicycle utilises Brushwood Drive then Old Illawarra Road cycleway to Hall Drive Reserve, completing an 8 kilometres loop via Buckle Reserve.

To complete the Woronora River to Georges River link the following route is suggested from Bottlebrush Place to the north side of Alford's Point Bridge.

The suggested route for this section skirts around the top of the escarpment between Bottlebrush Place and Stringybark Place, along the interface between a section of Georges River National Park and ridge-top houses.

The advantages of this route are that:

- Apart from a 200 metres section (see below), it utilises existing street pavements and connecting fire trails
- The terrain is relatively flat
- The surface is sealed or compacted
- It affords panoramic views of the National Park, Georges River, Mill Creek estuary, and Little Salt Pan Creek

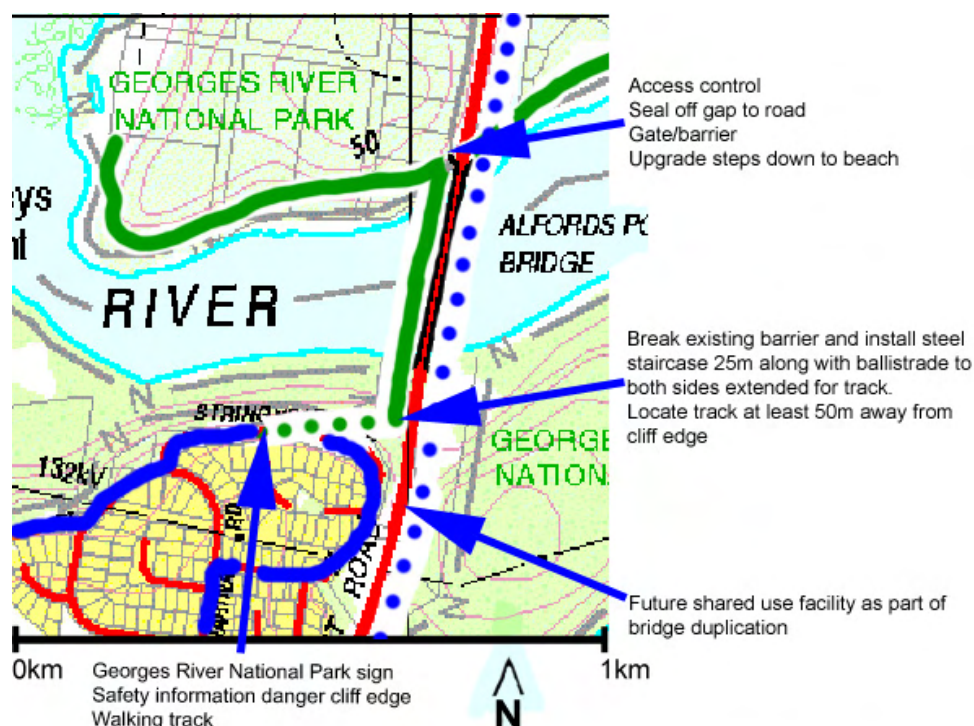
It connects to an access track leading down to the river at Mickeys Point

Georges River National Park – issues to resolve

The Park conserves 354 hectares of steep sandstone terrain with forested hillsides and plateau areas, which are found on either side of the river and its tributary creeks at Alfords Point, Illawong, Padstow Heights, Lugarno, Revesby and Picnic Point.

As well the Park offers southern and south-western Sydney a wide variety of recreational opportunities, including picnicking, boating, fishing, and bushwalking. Its varied landforms, remnant vegetation and proximity to urban areas makes it a valuable resource for environmental education.

Vegetation communities within the park provide native fauna with refuge from adjacent urban development. These include wet and dry sclerophyll forests along the valley slopes, heathlands and modified grasslands on the plateau tops and extensive wetlands and mangrove stands along the foreshores. The Park contains a number of Aboriginal and historic sites that are of local significance. These include rock shelters, hand stencils, stone walls and foundations.



W6-D6 Proposed pedestrian connection to Alfords Point Bridge

The main constraint to the preferred route W6- D6 above, is the missing link which would allow access on to the existing pedestrian walkway across Alford's Point Bridge from Stringybark Place. This would facilitate access down into the Padstow Heights section of Georges River National Park and is a crucial link to the Georges River Way section of The Great Kai'mia Way. (see Chapter 3)

The project team advises that a 200 metres section of bush track should be built along the southern edge of the National Park and across RTA land to a rock platform adjacent to the pedestrian walkway on Alford's Point Bridge.

From the rock platform a flight of 6 steps and a short 1.5 metres bridge be constructed to join the walkway. This necessitates the removal of a portion of the existing walkway balustrade wide enough to pass through, and the installation of safety balustrade to both sides of the proposed structure, because of the length of fall down from the bridge exceeds 2 metres.

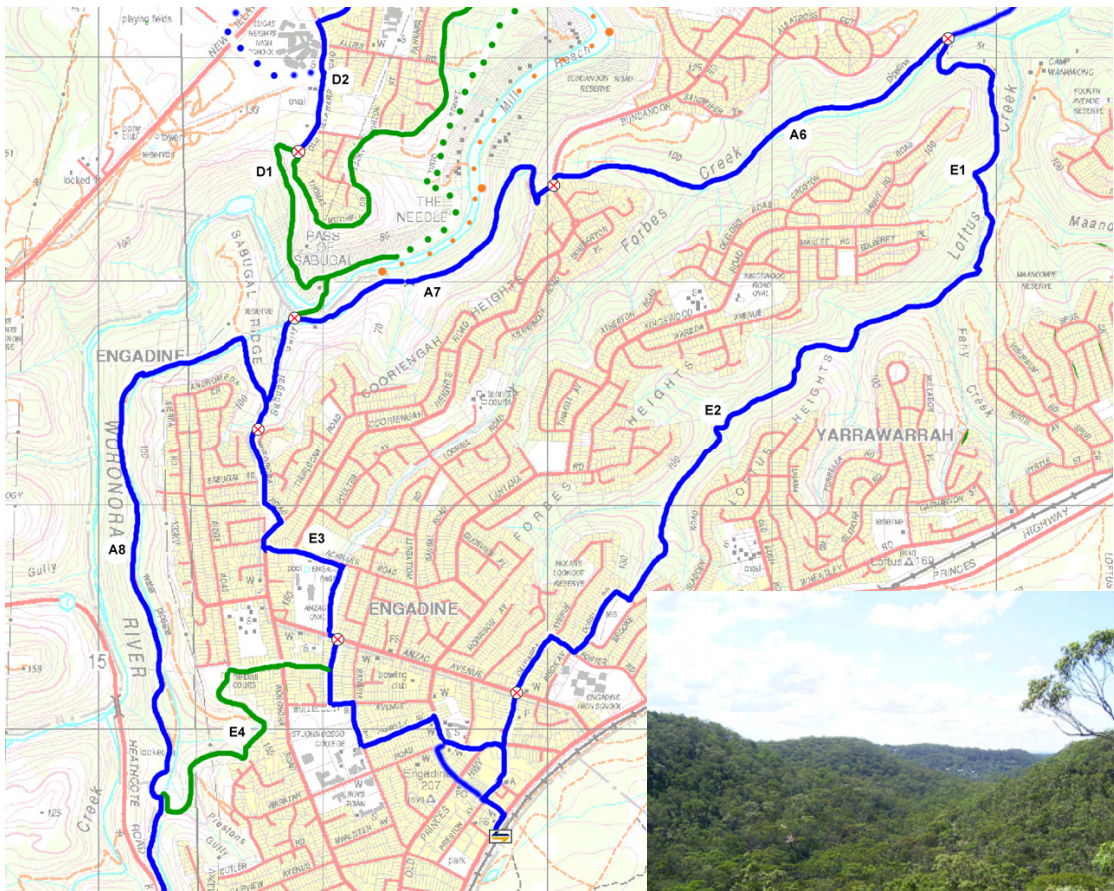
The estimated cost of the track, walkway link and safety measures is \$30,000. This is a vital strategic link in the Great Kai'mia Way, facilitating access across the river, linking the north and south of the National Park.

Currently the bridge walkway is unused because there is no safe pedestrian link from the southern approaches. Only very experienced cyclists are likely to use it veering off the highway where vehicles are travelling at speeds in excess of 100.

Action – It is suggested that a working group of appropriate officers from The National Parks and Wildlife Service, Roads and Traffic Authority and Sutherland Shire Council, together with the National Parks Association as well as members of Illawong and Alford's Point Progress Association evaluate the proposal and allocate resources as a high priority (A - within 2 years) within the action plan for implementing The Great Kai'mia Way.



Route E - Connector



Loftus Creek Valley from Maandowie Bushland Reserve Loftus

Rationale:

Connector E offers a potential spine route, whilst agreements are being negotiated on the viability of the Pipeline Road option.

Sub Sections W2-E1 and W3-E2 utilise a popular existing fire trail exploring the narrow fingers of bushland which extend south along two small tributaries of the Woronora - Forbes and Loftus Creeks. It provides a connection between the Woronora Way (W2-A6) and Engadine, meeting walking tracks (W2-L, W3-N) which descend from the suburbs of Loftus and Yarrawarra on the plateau above.

Presently zoned 7(b) Environmental Protection (Bushland), an amendment is required if cycling is to be permitted.

The surface is in poor condition, with erosion and gullying exacerbated by illegal Trail Bike use. Better access prevention measures are required along the Pipeline Road and at Loftus. Ganadangara LALC have claims on this and nearby vacant Crown land, and their consent is required for any additional works to the track.

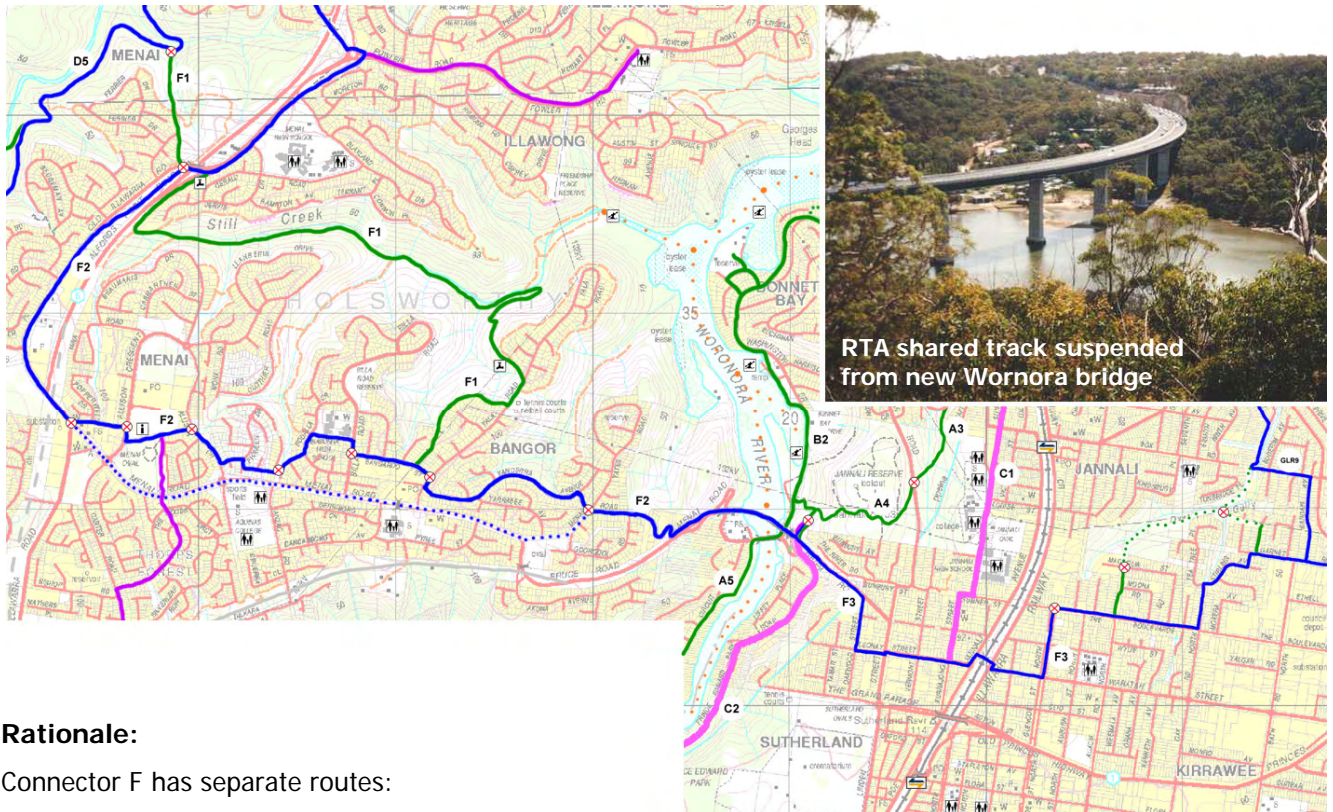
Sub Section W3-E3 is a suggested on street route for pedestrians and cyclists to connect to the spine route "cross-roads" at Sabugal Gully (W3-A7/A8 and W5-D1) and access the Needles passive recreation area, from Engadine Station and Shopping Centre. It links local institutions, schools and parks.

Sub Section W3-E4 is a suggested pedestrian route along streets and fire trails connecting W3 to the Pipeline Road spine route W3-A8. There are panoramic views of the upper Woronora River, Prestons Gully and Heathcote National Park from Ferntree Reserve.

CONNECTOR E*WOOLOONARRA/SABUGAL**SHARED & PEDESTRIAN
ROUTES*

Section	Loftus Creek and Engadine	W2-E1 W3-E2/E3/E4
Start and finish	Sydney Water Gate (GR: LH 187 321) to Sabugal Gully via Engadine Rail Station / Centre	
Distance	E1 = 1.5 km, E2 = 2 km, E3 = 2.5, E4 = 1.5 km	
Grade	2-3	
Main Features	<ul style="list-style-type: none"> ● Loftus Creek ● Waterfalls ● Noorumba Guide Camp ● Sydney Sandstone Gully Forest ● Ferntree Reserve and Views ● Engadine Park / Anzac Oval 	
Description	<p>Route heads SE from Pipeline Road at gate, across Forbes Creek via bridge, fire trail (Sewer Easement) via Noorumba Guide Camp. At Loftus Creek several routes converge. Across creek and go S - detour to waterfall - route is steep for 100 m. Sandstone surface in poor condition - erosion severe in places. Leave fire trail at Dobell Res., then via streets to City Rail Engadine.</p> <p>On local streets to Engadine Park via 3 main street crossings. Then Woronora Rd. and steep descent to access control gate.</p> <p>Walk link E4 goes via Amiens Ave, Ferntree Rd and Fire Trail.</p>	
Facilities	Dobell Reserve, Engadine Shopping Centre, Engadine Park - Swim, BBQ, Picnic, Oval, Play. Ferntree Park - Play, Picnic	
Opportunities and Constraints	<ul style="list-style-type: none"> ● Trail Bikes increasing track and bush degradation around E1 ● User conflict/safety issues ● 2 x waterfalls ideal rest point features ● 7(b) zoning requires amendment by SSC to include cycling ● Display Shelter in Engadine Park and display panels at end of Woronora Rd. and City Rail Station ● Several safer road crossings required in Engadine ● Partner with youth groups such as Boystown / sponsorship from local business 	
Current Status	Crown Land under care and control of SSC - Gandangara LALC land claim / SWC Sewer Maintenance Easement / Public Roads	
Actions required	<ul style="list-style-type: none"> ● SWC/SSC Upgrade Gates at Pipeline Road, Dobell Reserve and Ferntree Res. ACPs ● DIPNR/SSC/SWC Track improvements - sandstone + binding agent on slopes ● SSC/SSEC locate and install 16 x markers ● SSC/SWC 2 x safety info signs ● SSC install 2 x display boards 	
Priority level	B	
Estimated cost	\$ 50 k	
Stakeholders/Community	NPA, Billies Bushies, Sutherland Shire Bushwalking Club, Sharkbike, Scouts and Guides, Maandowie Creek, Loftus Creek and Fahy Creek and Urana Road Bushcare Groups, Yarrawarra PS, Engadine HS and PS, Engadine Rotary Club, St John Bosco Cath. Coll. and PS and Youth Centre, Boystown, Engadine West PS, Engadine Bowling Club, PCYC,	
Agency/Land Manager	SSC, DIPNR, SWC, SSCMB, Gandangara LALC	

Route F - Connector



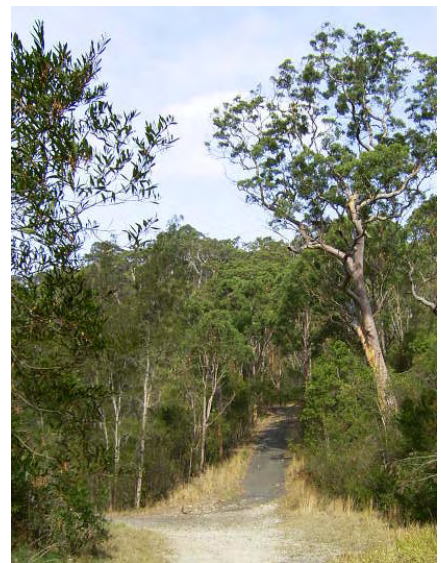
Rationale:

Connector F has separate routes:

W6 - F1 – a strenuous pedestrian route, connecting the 2 Rivers Link to Woronora Way via Still Creek. Utilising Sydney Water Sewer Maintenance tracks, it follows Still Creek downstream, showing the ecological impacts of recent residential development such as weed infestation and siltation. Increased runoff has severely eroded the track in places. The importance of the area as a wildlife conservation corridor is evident as the route ascends (grade 4) to Yala Road, with sweeping bushland views. Still Creek is the subject of a land claim by Gandangara LALC.

W6 - F2 – a shared use route for less mobile pedestrians and cyclists combining the existing shared track facilities alongside Old Illawarra Road, Menai and across the New Road bridge with local streets. The RTA are currently investigating sustainable transport options for Menai Road, including a future shared use track, as part of the Bangor Bypass Urban Design Strategy. The high level crossing affords fine views of the lower Woronora Estuary

W2 - F3 – At the East side of New Bridge, the RTA shared use track connects to W1-A4 across River Road and via a 100m bush track. Section F3 continues along the shared track beside River Road towards Sutherland, then via streets to Garnett Road and connection to Georges River Way - GLR 9. The addition of a 20 m span footbridge over Oyster Creek, would improve the bush track network and provide a long term alternative pedestrian link, and focus for creek restoration and bush regeneration projects.



Fork in track – F1 continues to right, up steep slope (grade 4) to Yala Road and Bangor

CONNECTOR F*STILL CREEK & WOOLLOONARRA**SHARED & PEDESTRIAN**ROUTES*

Section	New Road Bridge Woronora	W6-F1, F2 W2-F3
Start and finish	Burnum Burnum Track (Menai) to Garnett Road (Kirrawee) via New Road Bridge (Woronora)	
Distance	F1 = 6 km, F2 = 6 km, F3 = 3 km	
Grade	F1 = 2-4, F2 = 2, F3 = 2-3	
Main Features	<ul style="list-style-type: none"> ▪ Woodland, Heathland and Open forests ▪ Views of Mill and Still Creek Valleys ▪ High Level Woronora River Crossing ▪ Menai Cycleway 	
Description	<ul style="list-style-type: none"> ▪ F1 - Fire trail from BB Track to Old Illawarra Rd (difficult crossing). join cycleway, to track adjacent to Alfords Point Rd then descend via tarmac track to ford Still Creek and join FT. After 1.5km route ascends to Yala Rd. FT system to Bangaroo St. ▪ F2 - At Old Illawarra Rd. join cycleway to Menai Market Pl. Allison Cres., Pioneer Dr. Parkwood Dr. Beltana Cl., Bodalla Rd. ▪ F1/F2 From Yala Rd. via Yanderra Ave. to Yurreel Cl. Menai Rd. then RTA Shared Track across New Woronora Bridge. (link W1-A4) Alongside River Rd., Oakwood St., Leonay St., footbridge over railway, Waratah St., Glencoe St., The Boulevard, Oak Rd. (N), Stirling Ave. to Garnett Road and join route GLR 8. 	
Facilities	Menai Market Place 7 Bangor Shopping Centre	
Opportunities and Constraints	<ul style="list-style-type: none"> ▪ RTA Proposed Menai Road Shared Track, after completion of Bangor Bypass (East to West) ▪ Creek restoration and bush regeneration in Still Creek and tributaries - local bushcare groups, SSCMB/SSC/EPA/SWC ▪ Private land tenure issues in Monash Rd. area ▪ Gandangara LALC land claim in Still Creek - potential indigenous management/education opportunities. 	
Current Status	Crown Reserve in Still Creek Valley, some private lots, Public Roads/Shared Track managed by RTA/SSC	
Actions required	<ul style="list-style-type: none"> ▪ SSC - formalise route as part of Draft Bicycle Network Plan, and statutory planning instruments eg LEP 2003 ▪ SSC/RTA - upgrade crossing at Linden Road/Leonay St. to Pelican type. ▪ SSC install "Wombat"/traffic calming at Old Illawarra Rd ▪ 1 x display panel (sign type 1) at Menai Marketplace ▪ 3 x direction/safety (sign type 2) ▪ 20 x marker (sign type 4) 	
Priority level	C	
Estimated cost	20 k + Pelican and Wombat Crossings	
Stakeholders Community	NPA, KAC, Sharkbike, Billies Bushies, SSBC, Menai HS and PS, Holy Family Cath. Ch. and PS, St Aquinas Coll., Bangor PS, Inaburra PS and Bapt. Ch., Sutherland (N) PS, Scouts and Guides, Bushcare Groups, WMBRPRA, WVPRA,	
Agency/Land Manager	RTA, SSC, SWC, SSCMB, DIPNR, EPA, BicycleNSW, Gandangara LALC	

W5-G The Shackels Estate - Potential Long Term Walking Route

Introduction

The middle reach of the Woronora River valley, between Woronora Village and Sabugal Causeway (The Needles), has historically suffered from a lack of sustainable management and integrated recreational access provision, because of 5 main factors:

- Topography
- Lack of strategic planning
- Foreshore subdivision
- Inconsistent land use zoning
- Unresolved land tenure issues

Accordingly, the spine route identified by the project team for this section of the Way diverts away from the main river, via Forbes Creek tributary, (refer to section 4.1 tables W1-A6 and A7). It utilises the Sydney Water Pipeline Road as existing infrastructure, which can support shared use by walkers and cyclists.



Riverkeeper calls on a Shackels resident⁴²

Subject to further detailed consultation with Sydney Water, DIPNR, SSC, and NPWS, and formal agreement, this route can be adapted for use within a relatively short time frame, estimated 1 to 2 years.

Also a Canoe Route is suggested as a way to access the Needles on the water (discussed at the end of this chapter).

A long winding route along the escarpment edge, Route W5-G1, linking residential streets is a possibility once the Bangor Bypass East/West link is completed in 2005 (refer to map at the end of this section).

However in the long term (10 to 15 years), it may be feasible to progressively open up a river route along the western side of the valley (study area W5) through land known as the Shackels Estate, Route W5-G2.

Planning Background

The valley is surrounded by residential development - which directly affects the health of the natural bushland through polluted urban runoff, siltation, weed invasion, vandalism, and feral dogs and cats.

⁴² The Riverkeeper Program is jointly funded by NSW Waterways and the Georges River Combined Councils Committee. The Riverkeeper is based at the NSW Waterways office in Sutherland.

The protection of the valley from over-development is vital in maintaining a wildlife corridor, interconnected to the surrounding bushland corridors of Forbes Creek, Loftus Creek and Fahy Creek to form a larger ecosystem.

A Woronora Valley Master Plan (1998) has been formulated by Sutherland Shire Council to rationalise previous ad hoc planning policies and to guide future development of the valley.

The Woronora Valley was proposed for public recreation open space, under the Green Belt zoning in the 1951.

However, a previous decision in 1916, to allow the waterfront on the Shackles side to be subdivided - 314 lots for building of weekender / residential properties with limited services and water access - prevented the zoning being adopted. Nearly all the residents have provided water, power and road access for over 40 years at their own cost.

Eventually in 1961 the valley was excluded from the County of Cumberland Planning Scheme, and was zoned as an undetermined category and controlled as non-urban. Currently dwellings can be constructed on a minimum of 5 acres.

In 1973, the Shackles Estate buy back program, set up jointly between Sutherland Shire Council and DIPNR (previously NSW Dept. of Urban Affairs and Planning), was an initiative to: acquire ownership of Shackles properties; clear all development; restore environmental integrity; and return the area to its original zoning of public recreation open space.⁴³

Situation in 2003

Sutherland Shire Council officers are dissatisfied with the acquisition process as a means of implementing open space policies for the valley contained in the latest Master Plan, and argue that a more pro-active approach is required based on planning for passive recreation around open space already in the care and control of Council.

Residents interviewed, reported that some officers did not respect their use rights, a situation which they felt prevented constructive dialogue on environmental issues.

The Sutherland Shire Council's Draft LEP 2003 proposes land use zoning changes, acquired properties are Public Recreation and remaining properties zoned Future Recreation. Private land above is zoned Environmental Protection (Bushland).

The whole valley is identified in the proposed "Greenweb" Strategy - another layer of environmental protection - for conservation of bio-diversity⁴⁴.

Benefits of a Walking Track

Fulfilling Strategic Planning Objectives

Aside from contributing to the foreshore access and recreation objectives of the GRFIP (refer to Chapter 1), the progressive development of a walking track through the Shackles could help realise the two strategic goals of the Woronora Valley Master Plan⁴⁵, namely:

1. The maintenance and improvement of the environmental health and integrity of the Woronora Valley
2. The introduction of a passive recreation plan that is compatible with the aims of 1

Master Plan Goal 1. In support of the first goal, a walking track provides access to the Shackles for programs to help restore the environmental health of the bushland and the river, such as:

⁴³ Appendix 12 explains the Shackles Estate Acquisition Program in greater detail.

⁴⁴ Greenweb – Sutherland Shire Council initiative to conserve remnant bushland and restore vegetation links between reserves by encouraging residents to plant native trees and bushes.

⁴⁵ Sutherland Shire Council, (1998). Woronora Valley Master Plan

- **Weed eradication and bush regeneration**

As Shackels Estate properties have been vacated, and services provided to Menai and Bangor residents, exotic species have become invasive to the detriment of natives. The track has the potential to be the focus of a bush management plan involving remaining residents, local voluntary bushcare and conservation groups, first offenders and work for the dole participants, supported by professional bush regeneration teams and State and local government resources.

- **Clearing Debris From Vacant Properties**

A coordinated cleanup would help to relieve the area of abandoned motor vehicles (these vehicles have been reported to Council and will be removed when resources are available), as well as building materials from demolished dwellings (including fibrolite) and other waste, which was not removed at the time of acquisition.

- **Restoration of Riparian Vegetation and Improved Stormwater Management**

The creeklines fall steeply from the residential areas on the plateau above, bringing with them pollutants, silt, and debris. There is potential for community "Eco-Action" supported by SSCMB, Sydney Water and the Riverkeeper Program. Some silt traps are installed but there is currently no plan of management for their maintenance.



Pampas grass and abandoned vehicle on a Sydney Water Corporation service road in the Shackels

- **Baseline Data Survey of Biodiversity and Health of the Valley**

Complementing the findings of the Healthy Rivers Commission⁴⁶ on water quality (turbidity, siltation and runoff). Potential for Community Biodiversity

Survey following NPA model (refer to Community Loops section). Involve Shackels residents, local schools supported by scientists, in identifying flora, fauna and varied habitats.

Master Plan Goal 2. The walking track contributes an important facility for future passive recreation in the valley and promotes environmental awareness of residents in the adjacent suburbs along the Menai Plateau. Also as a part of the Great Kai'mia Way it is an important future element of a regional system of routes for recreation and environmental education.

- **General Access**

It provides access for passive primary and secondary contact river based recreation including picnicking, camping, swimming, canoeing, boating, fishing, bird watching, flora and fauna identification, rock climbing. The Valley is an important recreation destination for Greater Sydney and groups such as Scouts, Guides, Bushwalkers in particular.

- **Circular Routes**

⁴⁶ Healthy River Commission, (2001). Independent Inquiry into the Georges River Botany Bay System - Final Report, September

When developed the track creates a potential day trip loop route (approximately 10 km) around the central river reach via the Pipeline Road, or combined with the upper canoe trail a varied recreational experience of the valley.

- **Educational Visits**

Opportunities for core and extra-curricula school activities in a unique setting. It has a close juxtaposition of terrestrial and riverine habitats, landforms and residential development. Also wider benefit to the life long learning of the whole community.

Finally, it offers physical activities and health benefits.

Equity of Access and Compromise

The walking track would progressively allow access for the wider community to a significant stretch of the river foreshore where it has previously been restricted. The key is to design the track sympathetically to consider and address the concerns of remaining residents.

Developing the walking track in stages may act as a catalyst to resolve outstanding issues of social and environmental issues in the Shackels Estate. Project Officers have interviewed two prominent long-term residents to record:

- their experiences of living in the Shackels;
- the changing river environment; an
- their concerns and ideas regarding a through route for walkers.

Along with most residents, they were initially attracted to the area and its "back to nature" way of life, because of its aesthetic beauty, its isolation from urban Sydney, and the fact that the river dominated the environment.

As the unofficial custodians or "gatekeepers" of the valley, residents have noticed the fluctuation in the quality of the terrestrial and riverine environments over time. Currently the major problems identified are:

- Increased bank erosion from power boat wash.
- Water quality has been affected by pollution from urban run-off, storm water and a lack of environmental flow and regular flushing.
- Decline of ecological integrity of the remaining bushland through weed infestation.

However the river's decline has been reversed in recent years. Improvements include:

- Recovery of sea-grass/weed beds – important fish breeding grounds – which had been adversely affected by commercial dredging in the nineteen sixties and seventies.
- Recovery of the sand-flats which are important feeding areas for fish.
- Residents persuaded ANSTO⁴⁷ to cease discharging wastes into the River.
- Sewerage system has been provided to the majority of residents of the Woronora Valley.
- Improved fish numbers and successful fish migration upstream.

Vandalism and Anti-Social Activities

Residents value their privacy and security the most. Residential development has encroached on the Shackels Estate and residents fear vandals and undesirables - "*ghouls and stickybeaks*" - will increasingly threaten their seclusion. The Estate is accessed by several different tracks. A lack of surveillance and barriers at track entrances has added to the problems, which include:

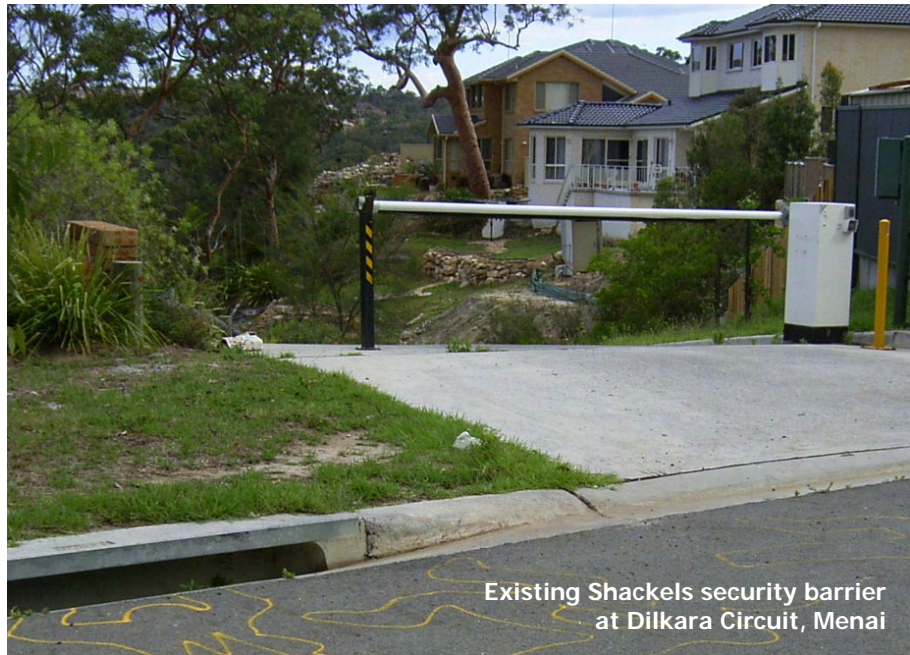
- Trail Bikes damaging access tracks and vegetation
- Vandalism to properties and potential for arson
- Abandoning of burnt-out cars and waste dumping
- Anti-social activities such as drug taking
- Illegal Fishing and Crab Potting

⁴⁷ Australian Nuclear Science and Technologies Organisation based at Lucas Heights

The Way and Potential Solutions

The staged development of a walking route over time could help solve a number of the problems:

- An important component of walking route development would be installation of security gate barriers, (see photo) at all access track entrances, to prevent unauthorised vehicular access. Emergency services would be able to gain entry.



- The addition of stroller accessible kissing gate stiles (refer to Chapter 5) would allow entry to pedestrians - residents and bushwalkers - yet keep out trail bikes and cycles.
- The increased presence of responsible bushwalkers and other legitimate recreation seekers in the Estate, would act as a deterrent to persons seeking to use the bush for anti-social purposes.
- Vandalism at track entrances such as the destruction of mail boxes could be deterred by installing real and dummy surveillance cameras. As the viability of the area for recreation is strengthened, increased ranger presence and policing would improve law enforcement.
- Where the track intersects with property approach paths, gates could be installed for added security. Way-marker posts would aid orientation of walkers, helping to keep them to the environmentally sustainable track system.

Constraints to Developing the Way

Aside from the concerns of residents, two main issues will need to be addressed:

- **Land Tenure**

Although the acquired properties are in the public domain, the narrow bushland strip above is divided into large blocks generally in private ownership, apart from the two extremities of the valley, which are managed as Recreation Reserves by Council.

The future walking route utilises almost 2 km of existing access tracks which criss-cross private land. Solutions may include:

1. Changing access agreements to include public right of way - likely to be a protracted and costly process with no guarantee of success.
2. Acquisition of land by DIPNR/Council - the future zoning of the land is Environmental Protection (Bushland) and development is unlikely.
3. Voluntary Conservation Agreements⁴⁸ between landowners and the NSW Minister for the Environment, negotiated by NPWS the benefit to the environment is that land will be

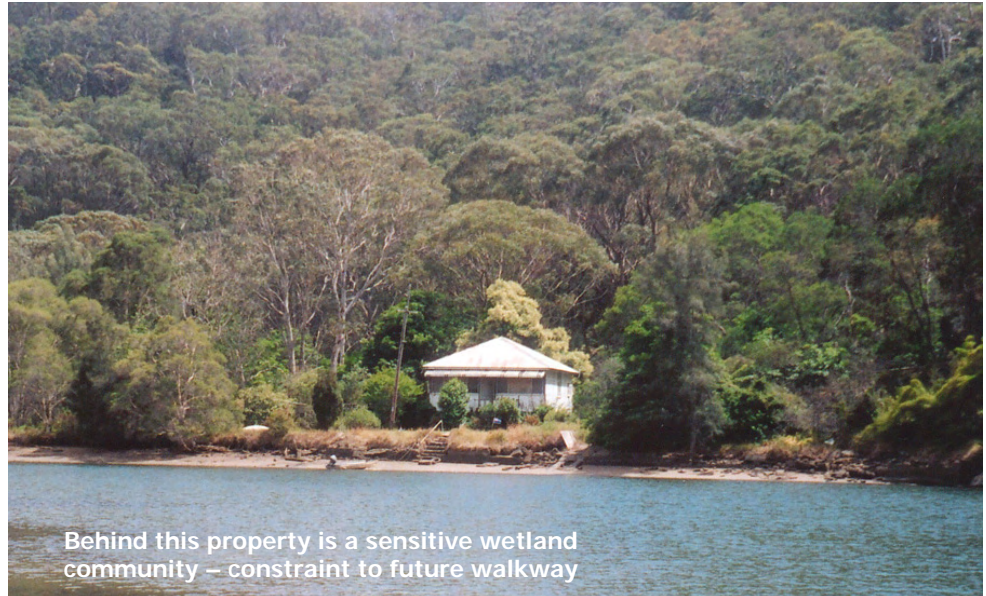
⁴⁸ A description of Voluntary Conservation Agreements is available on-line at www.npws.nsw.gov.au under "how you can help" section and in Appendix 11

permanently conserved under present and future ownership. The landowner may be eligible for rate relief and tax deductions as well as receiving assistance in the form of fencing materials to control access from the track.

- **Threatened Species and Conservation**

To create a continuous link requires the construction of approximately 1 km of new track, including 2 creek crossings and a 100 m crossing of a wetland. A full review of environmental effects is required.

Presently, not enough data is available to measure potential environmental impacts. Detailed Aboriginal archaeology, heritage and biodiversity studies will be needed before the route can be finalised.



A Community Partnership for Action

A partnership bringing together residents from both sides of the valley, private landowners, local Police, Woronora Bushfire Brigade, Council, Sydney Water, SSCMB, NPA, Riverkeeper and other stakeholders, would help steer implementation of the proposal, and potentially strengthen ties between the communities either side of the river.

Project officers have initiated consultation with individual residents and brought together community representatives from both sides of the valley using the forum of the Woronora Valley Precinct Residents Association meeting in June 2003.

Options for routes in the Woronora Valley as a whole and the issue of a viable long term walking route through the Shackles were discussed. Initial indications from Shackles residents are that walkway is viable provided that all individual residents and their families have opportunities to air their concerns and that these be addressed in the final plan.

A high level route incorporating residential streets, fire trails and walking tracks was feasible at completion of the Bangor Bypass in 2005.

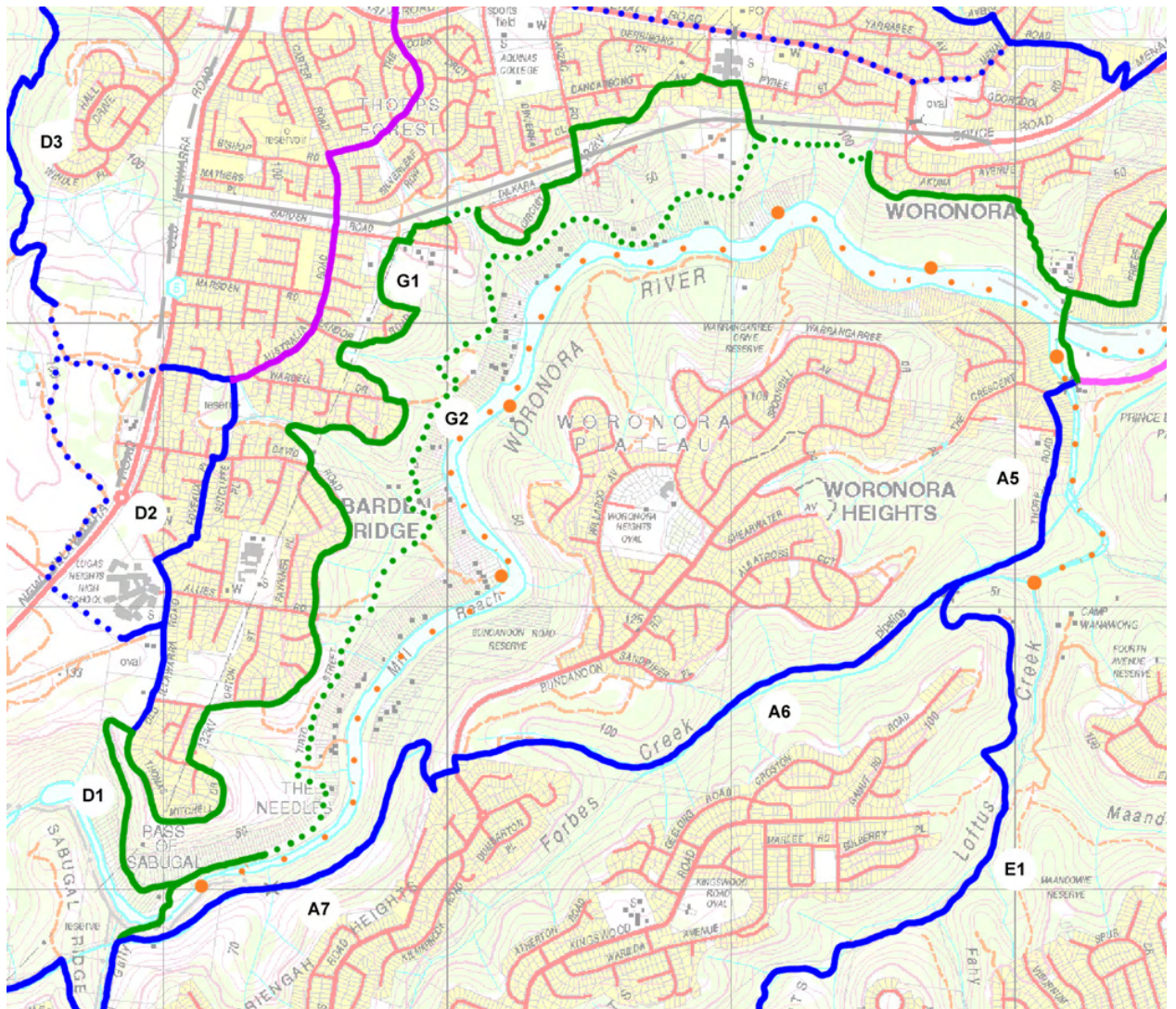
Staging

Develop the walking route from either end of the valley, using existing approach routes in SSC Recreation Reserves at The Needles and Woronora. Ongoing bush regeneration work should accompany track development.

Future Management

The issue of potential future management of the whole valley by NPWS could be revisited. However environmental improvements work should be continued now through the vehicle of the community partnership action discussed above. In 1992 The National Parks Association recommended that the Woronora Valley be given National Parks status. NPWS rejected the idea noting that: "proportionately

the ratio of boundaries to the total area of the proposed park was very high and this would prove a difficult park to manage and protect from feral flora and fauna species.”⁴⁹



⁴⁹ Sutherland Shire Council (May, 1998). Draft Woronora Valley Masterplan.

Community Loop Walks

A Vehicle for Local Environmental Stewardship

This section of the report looks at how the two main spine trail proposals, The Woronora Way and the Woronora/Georges Link might be integrated with public access to and from the residential suburbs, through the development of circular or loop routes for each community.

It goes on to examine ways in which the community based loop track projects can strengthen people's ties to their surroundings, improve quality of life, increase people's appreciation of and desire to conserve remaining natural areas, and promote the long term sustainable management of these areas for future generations.

Value of Loop Walks

Loop walks are important as they provide access for walkers with small children, limited time or poor mobility, or those who rely on public transport. They also provide school groups with a good circuit for educational purposes.

Value of the Woronora River to the Community

As the population of the Sutherland Shire expanded in the last fifty years, the settlement pattern has extended westwards, consuming all but the remaining ridge top bushland of the lower Woronora catchment.

As a result the Woronora River, its tributaries and surrounding bushland are an increasingly important and essential community recreational, educational, and heritage resource. The River and creeks are integral to the natural processes and functioning of the ecosystem.

Conservation Values

Estuarine waterways, riverbeds and shorelines create essential habitats for flora and fauna including seagrass meadows, saltmarshes mangroves and estuarine vegetation communities including the endangered Sydney Coastal Riverflat Forests. These communities support a diverse range of animals including fish, crustaceans, molluscs and other invertebrates, as well as shore and migratory birds.

The freshwater river and creeks and riparian vegetation provide habitat for a range of mammals, birds reptiles, fish, amphibians and invertebrates.

Vegetation within the catchment forms extensive bushland fingers into the Woronora, Mill and Still Creek valleys that are critical fauna and flora corridors. These areas function as refuges to a variety of species when other areas such as the Royal and Heathcote National parks are burnt. Swamp wallabies, eastern grey kangaroos, sooty owls, powerful owls as well as more common species of mammals and birds are known to move between burnt and unburnt areas. Appendix 8 shows a table of threatened and significant species occurring in the Woronora catchment.

The conservation of the catchment is acknowledged in several planning instruments, (including the Sutherland Shire Council's Local Environment Plan 2000 and Draft LEP 2003), and supported actively by the National Parks Association of New South Wales. The Upper catchment has increased protection in the form of Heathcote National Park and the Special Area lands managed by Sydney Catchment Authority.

The Greenweb Initiative

Sutherland Shire Council has identified and acknowledged bushland areas of high conservation value and included them in the SSC "Greenweb". The objectives of the strategy are:

1. To identify, conserve and enhance biodiversity, environmental health, natural health and landscape amenity.
2. To maintain and enhance the unique bushland character of the Shire.
3. To protect habitat from degradation caused by inappropriate use and management

4. To create and conserve core habitat areas for the conservation of native flora and fauna.
 5. To create and conserve wildlife corridors between core habitat areas for the movement of flora and fauna.
 6. To encourage natural regeneration and encourage planting of native vegetation on public and private lands.
 7. To maintain and enhance aquatic ecosystems.
 8. To maintain and enhance and protect riparian vegetation for its contribution to water quality.
 9. To assist the council with implementation under its obligations under the *Threatened Species Conservation Act 1995*.
 10. To provide for public access to publicly owned bushland.
 11. To facilitate pedestrian movement through the Shire via a network of green corridors.
 12. To identify options for funding of biodiversity conservation measures.
 13. To conserve and enhance links with bushland and corridors in adjoining local government areas.
- Objectives 10 and 11 are consistent with the aims of the Great Kai'mia Way project.

Recreational Values

The River, its tributaries, bushland reserves and open space are extensively used by the residents of Sutherland Shire and visitors for a variety of recreational purposes. Also there are several kilometres of interface between urban areas and Crown Land within the catchment that allows access for passive recreation for residents. Several foreshore reserves provided with seating, tables and BBQ facilities encourage picnicking and recreation facilities, including sports ovals and community halls are located along the foreshores.

Boating

Boat ramps provide public access to river for boating, fishing and canoeing at Jannali Reserve, Prince Edward Park, Menai Road and from Como (located in Scylla Bay, Georges River). A public jetty is provided at River Road Woronora.

Fishing and swimming

Swimming and fishing are popular forms of primary contact recreation in the saltwater and freshwater sections of the Woronora river. There is an amateur swimming club in Como Pleasure grounds using tidal baths and an in grounds pool, and a life saving club based at Prince Edward Park.

Bushwalking

There are a number of small existing tracks and fire trails, some formalised by SSC or local bushcare groups, but many tracks are isolated linear routes to vantage points for example, and overall there is a lack of formal access, lack of linkage and lack of promotion of walks.

This problem was highlighted in the 1995 *Sutherland Shire Open Space and Recreation Needs Survey* (SSC). Strong support was given by surveyed residents to improving access with walking tracks/boardwalks. Bushland regeneration was also high in the list of priorities. The survey also found that bushwalking was the most popular activity, chosen by 70% of all respondents.

Cycling

There is a general lack of cycling facilities in the valley, in part due to the terrain and steep access to the foreshore. However there are linear cycleways: across Como bridge, on the Menai plateau between Menai Centre and Illawong High School, across the new Woronora Bridge as well as cycle tracks for youngsters located in parks at Sutherland and Engadine.

Educational Values

The natural and cultural resources of the Woronora valley are important for community education purposes. Students from primary, secondary and tertiary education facilities as well as scouts guides and community groups utilise waterways, bushland, wetlands and other natural areas to study a range

of topics including: ecology, botany, fauna, soils, geology, geography, history, Aboriginal culture, pollution, fire, etc.

Community education promoting the value of bushland and waterways and raising awareness of the impacts of urbanisation, including pollution, weed invasion, erosion and feral animals is also achieved through the Bushcare Program run by SSC.

Over 40 Bushcare Groups involving local volunteers are actively working in the study area, to rehabilitate several kilometres of creeks and unnamed watercourses. The construction and maintenance of walking tracks to promote improved public access and protection of vegetation is often accomplished through bushcare projects.

Appendix 9 provides a list of Woronora Foreshore Reserves and features of interest.

The Circular Route Concept in the Woronora

The key to developing the Woronora Way and the two rivers Link is through a chain of pedestrian loops "owned" by the communities through which they pass.

Characteristics of the Loop

There are 8 common characteristics identifying these initiatives and they provide a tentative guide to the sustainable development of future loops in the valley. These are:

- Developed by local people for local people
- Celebrating culture, heritage, environment and community
- An educational and recreational resource
- Linking suburban centres to bushland and the Woronora River
- Linking schools, shops and other amenities
- Linking train stations and bus routes to the River
- Making the best use of existing routes
- Way marking to aid navigation and enjoyment

H	Como Heritage and Environment Trail (CHET)
J	Jannali and Bonnet Bay
K	Sutherland & Woronora
L	Loftus
M	Woronora Heights
N	Yarrowarra
P	Engadine
Q	Heathcote
R	Barden Ridge
S	West Menai
T	Menai & Menai Schools
U	Bangor

Legend - Woronora Way

Community Loop Walks	
	Existing
	Proposed
Pedestrian Routes	
	Existing
	Proposed
Shared Routes (Walking/Cycling)	
	Existing
	Proposed
Community Loop Walks	
	Related Access
	Woronora River Canoe Trail
	Cycle Route
	Bangor Bypass
	Each grid square on the maps is 1km x 1km

Potential Loop Projects

The logical way forward is to build on the CHET initiative and apply the loop concept to the suburbs of Jannali and Bonnet Bay incorporating sections W1- A2 to A4 of the Woronora Way spine trail.

In all 11 loops are discussed - refer to list below. The maps show suggestions only, subject to amendment by the communities themselves. They offer routes of varying length and difficulty:

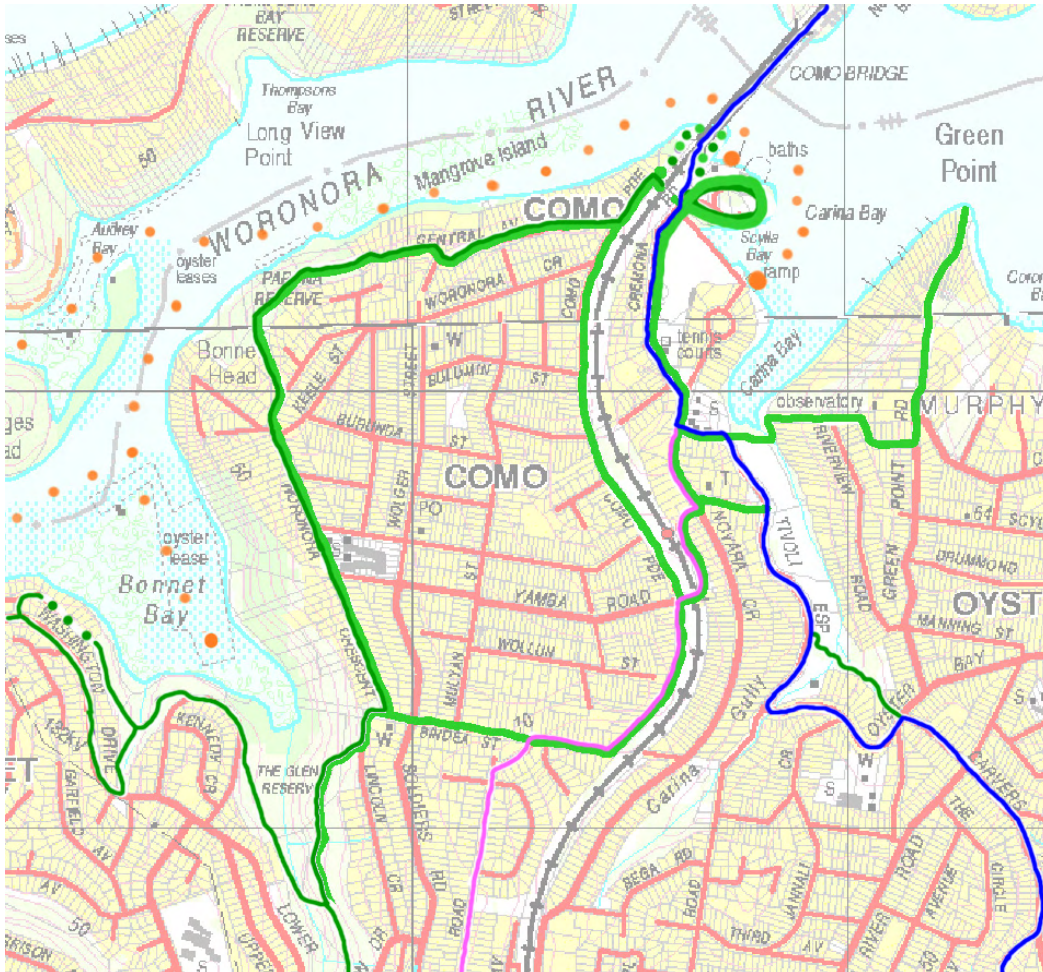
- Short neighbourhood walks on level plateaux 1-3km
- Longer combination walks of streets, bushland reserves, river foreshores of 2-6km

They provide opportunities to tell the stories of Aboriginal and non-Aboriginal occupation of the Woronora catchment, interpret its natural values and ecosystem biodiversity.

Existing Loop Project - The Como Heritage and Environment Trail (CHET)

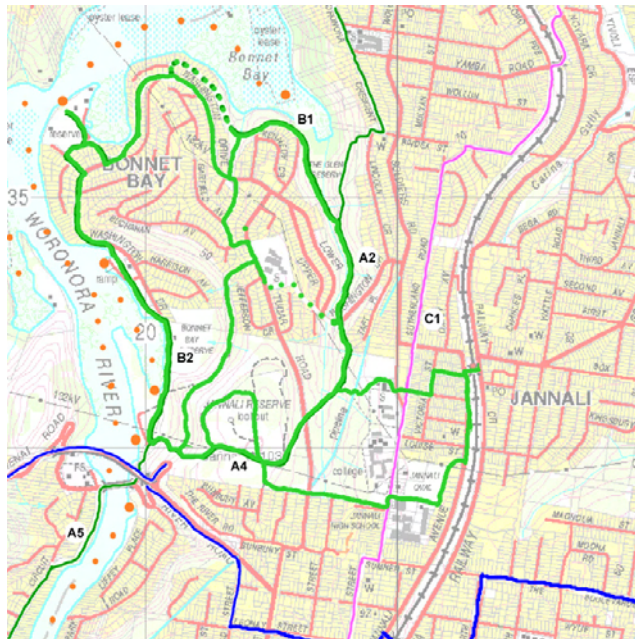
The CHET has already been planned as a community initiative involving residents, business schools and bushcare groups. SSC have acquired funding under the GRFIP to implement the plan and work is due to start in financial year 2004 - 2005 helping to fulfil proposed Woronora Way section **W1-A1**.

The CHET is approximately 5 kilometres of connections between the environmental and historically significant Como Pleasure Grounds, Paruna Bushcare Reserve and Green Point Reserve, as well as the Como Rail Bridge, Como Hotel, Como train Station, Como Schools and Como Marina.



H – Como Heritage and Environment Trail

W1-J Jannali and Bonnet Bay



Links

- Spine Routes W1-A2 to A4, Alternative W1-B1 and B2, Connector W2-E1, W6-E2
- Como Heritage and Environment Trail, Sutherland and Woronora Loop
- Woronora River Canoe Trail
- City Rail Jannali, Bus Routes 964/66/67/68
- Jannali and Bonnet Bay Centres

Opportunities

- Tell the story of both Aboriginal and non-Aboriginal occupation of the area.
- Create inter-reserve nature yrail including constructed wetlands, for education and to showcase the efforts of local bushcare groups.
- Bush regeneration and potential focus for Streamwatch project in Skinners Creek.
- Rationalise track network in Burnum Burnum Sanctuary - Waymark GKW routes and revegetate degraded tracks.
- Consider feasibility of shared off road pathway between Sutherland and Como/Jannali Stations via Soldiers Road as "safe route" to cluster of schools, colleges, and public amenities.



Burnum Burnum Sanctuary and foreshore from New Bridge



Example of up and over steel steps

Issues

- Negotiating formal access across Sydney Water Pipeline - requires up and over steel steps.
- Safer road crossing points at Washington Drive and Tudar Road.
- Clarification of land tenure and desirability of creating link from Koolangarra Res. to Arthur Street.
- Missing link from Washington Drive to Bonnet Bay Public School.

Community

- Kurunulla Aboriginal Corporation, Elders and local Aboriginal people.
- Bushcare Groups, Church groups, Schools, St George and Sutherland Community College.
- Scouts, Guides, PCYC and Youth Organisations.

W2-K Sutherland and Woronora

Links

- Spine Routes
W2-A5, W2-C2
- Bonnet Bay and Jannali, Loftus and Woronora Heights Loops
- Woronora River Canoe Trail
- City Rail Sutherland, Connex routes 960/62/63/64/65/66/91
- West Sutherland Shopping Centre

Opportunities

- Tracks already in place to link rail/bus station through Prince Edward Park Bushland Reserve to spine route and river-upgrading and waymarking required
- Close eroded dead-end tracks in PEP Reserve and restore
- Several good vantage points to view river
- Interpret important Aboriginal Prices cave and other sites in PEP Reserve
- Integrate foreshore walkway with potential sea wall upgrade in Prince Edward Park
- Tell story of original railway terminus at the Woronora Cemetery

Issues

- Safer road crossing point required on Prince Edward Park Road
- Exit onto First Avenue requires steps and restoration of slope

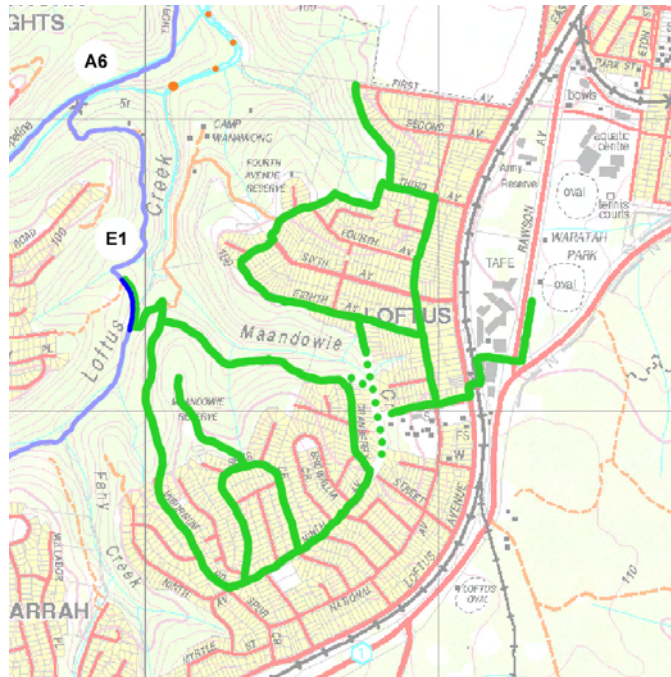
Community

- Woronora Bushfire Brigade, Woronora Caravan Park
- Woronora General Cemetery and Crematorium Trust
- Woronora Valley Precinct Residents Association, Woronora Life Saving and River Patrol Club
- Sutherland United Services Club, Woronora RSL
- Woronora Public School, Prince Edward Park and Forbes Creek Bushcare Groups



Walking track cared for by Forbes Creek Bush Care Group in Prince Edward Park Bushland Reserve

W2-L Loftus



Links

- Spine Route W2-A6, Connector W2-F1
- Sutherland/Woronora and Yarrowarra Loops
- Woronora River Canoe Trail
- City Rail Loftus, Connex 991
- Loftus Shopping Centre, TAFE, Tram Museum, Waratah Park

Opportunities

- Reputedly traditional travel route for Dharawal peoples between coast and Cumberland Plain
- Interpret Maandowie Creek Littoral Rainforest
- Sweeping Bushland Views from Maandowie Reserve
- Maandowie Creek Bushcare Group to improve track from Loftus PS to Cranberry Street FT



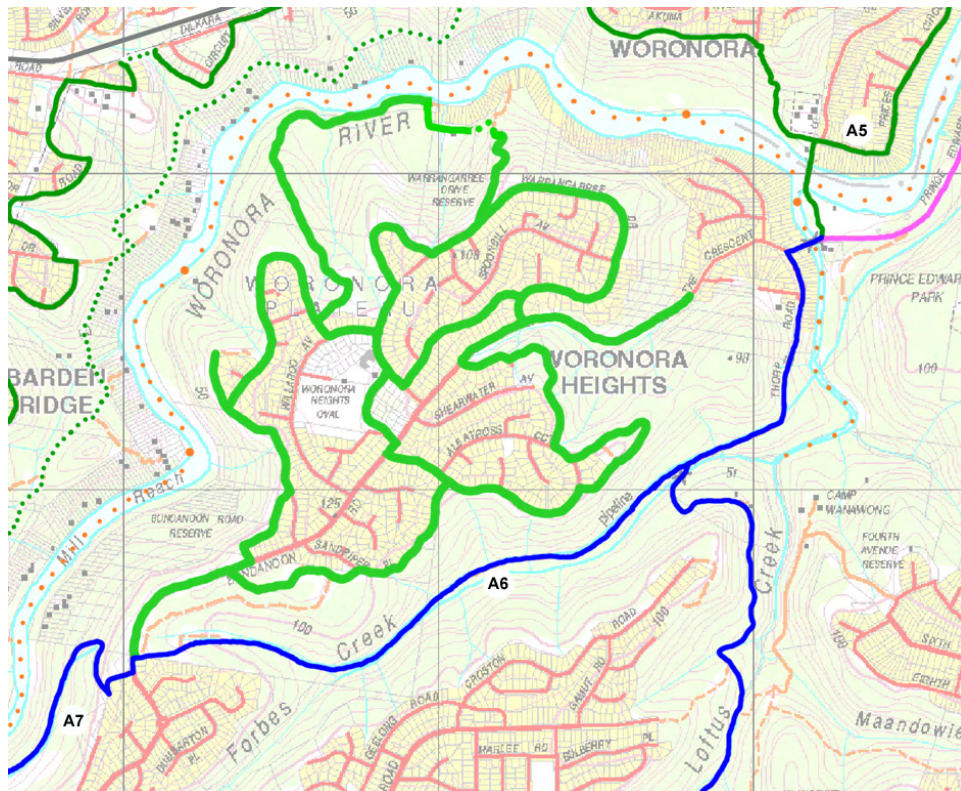
Issues

- Trail Bikes are an increasing threat to ecology and safety of walkers - since drought and fire, bushland has become more vulnerable to Bike access from ridgetop streets.
- Steep sections of fire trails surfaced in Bluemetal stone chippings - unstable to walk on

Community

- Maandowie Creek, Ninth Ave., Ninth Ave (N), Eighth Ave., and Myra Creek Bushcare Groups
- Camp Wannawong, Noorumba Guide Camp, Loftus Public School, Loftus TAFE

W2-M Woronora Heights



Links

- Spine route W2-A6, W3-A7, Sutherland/Woronora Loop
- Woronora River Canoe Trail
- Woronora Hts. Shopping Centre, Oval
- Bus 993

Opportunities

- Connect suburb to southern river foreshore
- Create link between SSC Recreation Reserve and Warrangarree Fire Trail
- Bench seats/look outs for panoramic views of Woronora River, Loftus and Forbes Creeks
- Provide "kissing gate" to allow access for strollers from Woronora Hts. to Woronora village through fire trail barrier.

Issues

- Sensitive habitat requires series of steps to prevent erosion in SSC Reserve
- RFS and SSC consent for adjustments to northern access road barriers
- Make safe 2 x crossings of Bundanoon Road

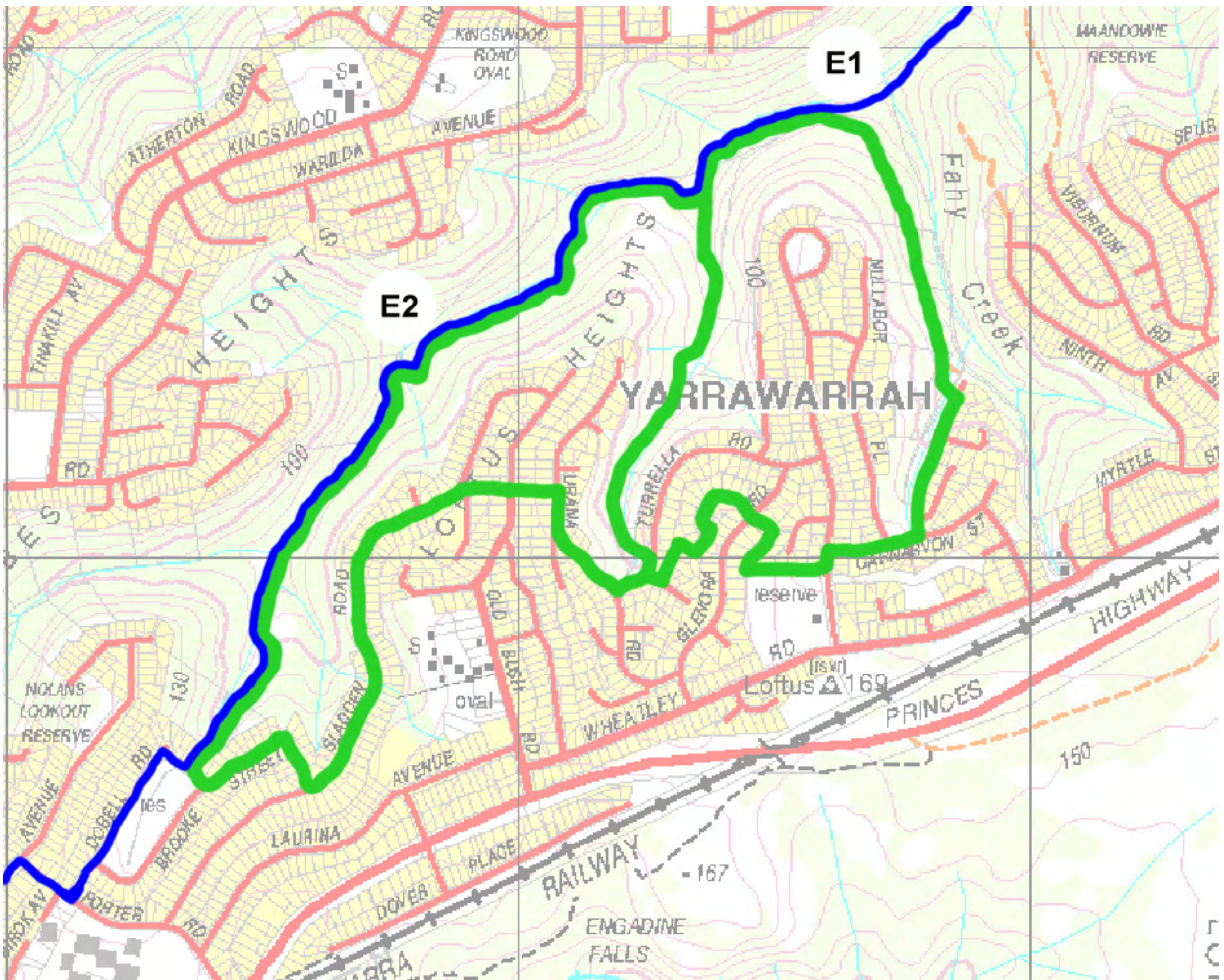
Community

- The Crescent, Bundanoon Rd Res. and local Bushcare Groups, Riverkeeper



Northern fire trail access – current access too narrow for strollers. Residents have suggested a kissing gate (see Chapter 5)

W3-N Yarrawarra



Links

- Connector Route W3-E2, Loftus and Engadine Loops
- Bus 991
- Yarrawarra Shopping Centre

Opportunities

- Panoramic views of Blue Mountains and Sydney
- Waterfall viewpoint beside Loftus Creek

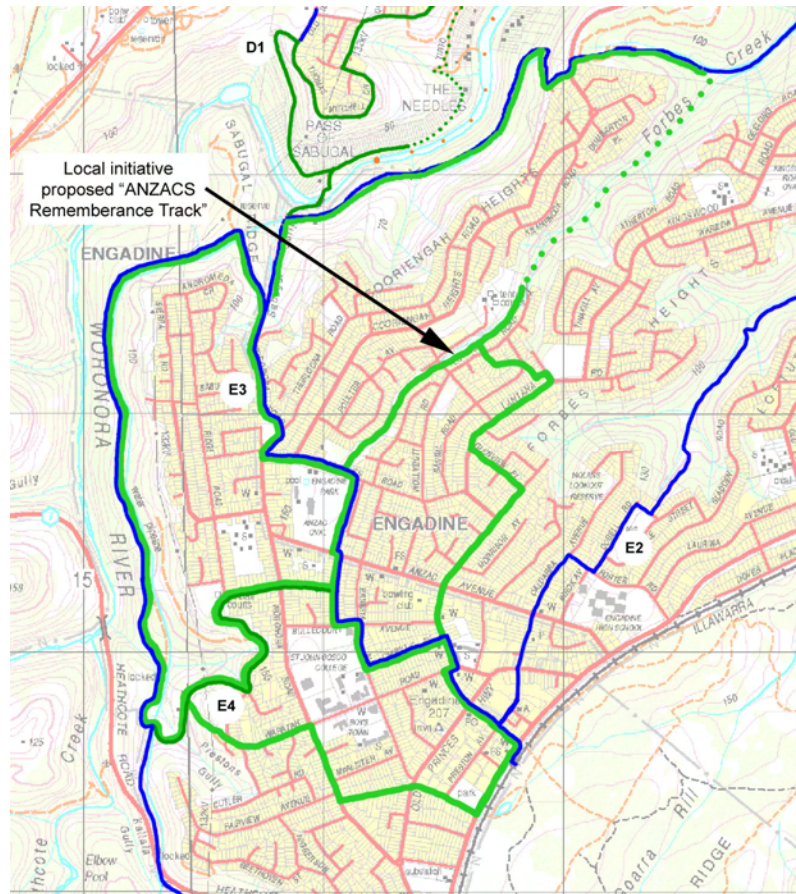
Issues

- Heavily eroded fire trails require upgrading
- Weed infestation and silting of creeks from urban runoff

Community

- Fahy Creek, Urana Rd. Crown Reserve, and Freemantle Pl. Bushcare Groups
- Yarrawarra PS, Engadine HS

W3-P Engadine



Links

- Spine routes: W2-A6, W3-A7/A8; W5-D1, Connector W3-E2/E3/E4
- Yarrowarra and Barden Ridge Loops
- City Rail Engadine, Bus 991/92/93/96/97
- Engadine Shopping Centre, Parks, Ovals, Bowling Club

Opportunities

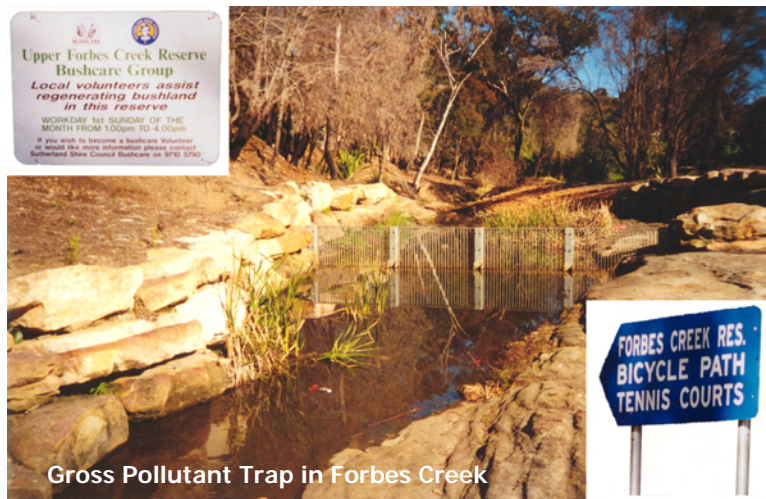
- Incorporate community initiative - "Remembrance Walway" alongside Upper Forbes Creek
- Interpret Aboriginal sites and historical growth of Engadine

Issues

- Several road crossings to negotiate

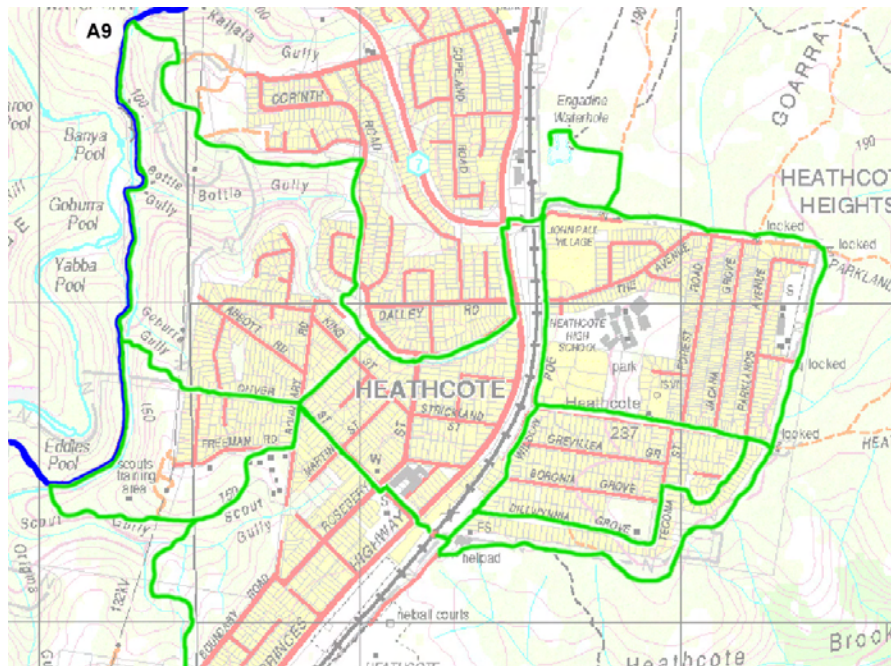
Community

- Engadine Rotary Club, Upper Forbes Creek, Forbes Creek (S), Orion St., Cooriengah Road and Prestons Gully Bushcare Groups
- Engadine HS and PS, Engadine West PS, St John Bosco Cath. Coll. and PS, Boys Town, Scouts and Guides, Engadine Bowling Club, local churches



Gross Pollutant Trap in Forbes Creek

W4-Q Heathcote



Links

- Spine route W4-A9, alternative W4-B3/B4
- Access on Foot to Heathcote and Royal National Parks
- City Rail Heathcote, Bus 996/97
- Heathcote Shopping Centre, Caravan Park, Ovals

Opportunities

- Closer ties between East and West Heathcote
- Interpret natural and cultural values of Bottle Gully
- Incorporate "Friendly Track" through Scout Centre Res.
- Upgrade walk around Engadine Waterhole to improve educational potential

Issues

- Consent for public access through Jon Kaye Scout Centre Res.
- East Loop is through part of Fire Radiation Zone - safety concerns
- Two crossings of Princes Highway

Community

- Bottle Creek, Forum Dr., Corinth Rd., Abbot Rd., Whitton St. Res. and Bottle Forest Bushcare Groups
- Jon Kaye Scout Centre, Scouts and Guides, Heathcote HS, Heathcote East PS, Heathcote PS
- Heathcote Bush Fire Brigade, John Paul Village
- Heathcote Progress Association, Heathcote Services Club

