

DEE WHY TOWN CENTRE

CONCEPT DESIGN- VOLUME 1

*Dee Why Town Centre Public Infrastructure Upgrades
Feasibility and Investigations Stage*



Prepared by Tract Consultants
for Warringah Council

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1 INTRODUCTION

1.1 BACKGROUND AND PURPOSE

Tract Consultants was appointed by Warringah Council in May 2014 to undertake the *Investigations and Design for Dee Why Town Centre Public Infrastructure Upgrades*. This work builds on previous work, in particular the Dee Why Town Centre (DYTC) Master Plan (Master Plan), July 2013 prepared by Place Design Group.

The aims of the DYTC Master Plan encompassed the following:

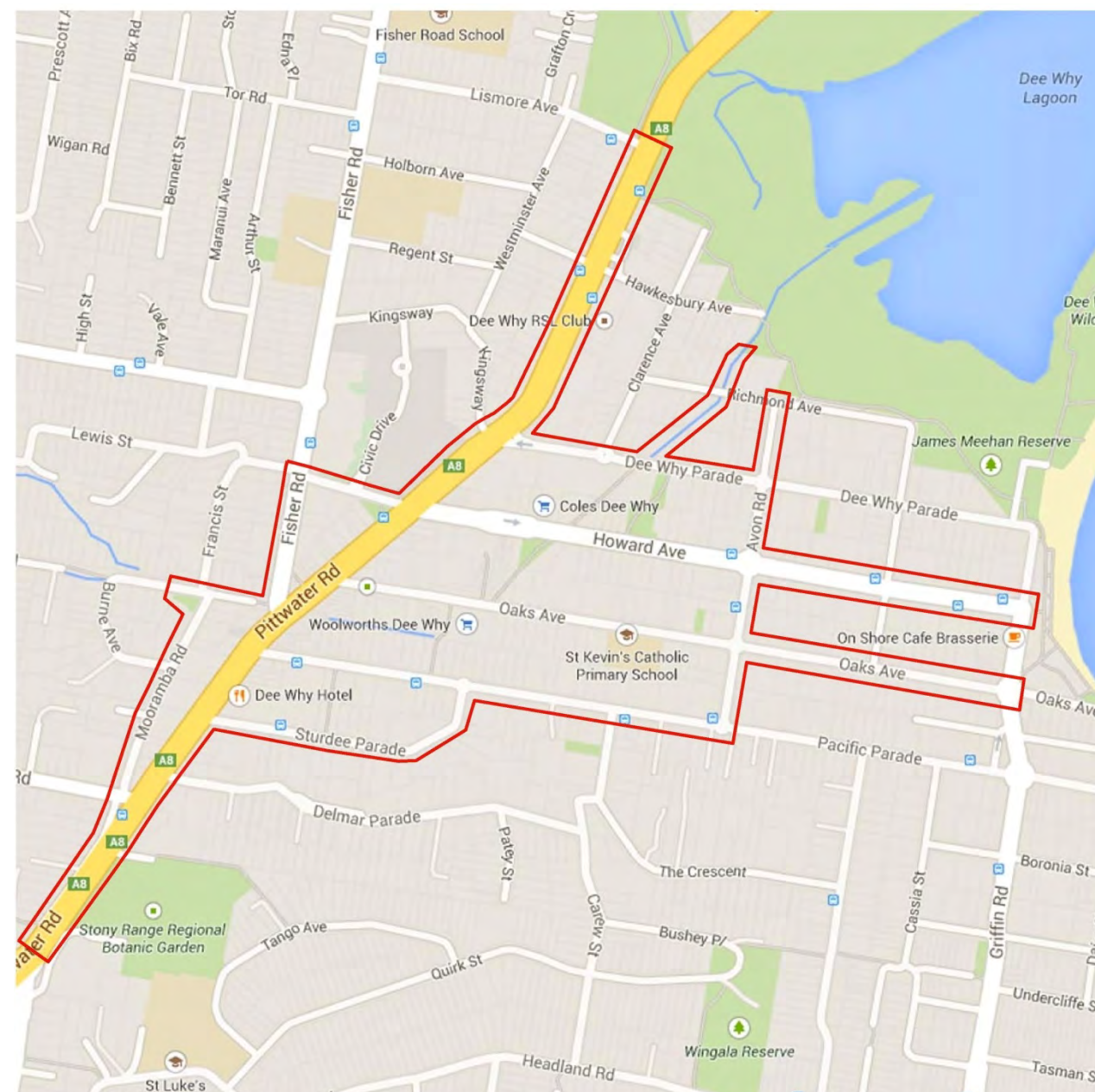
- Reconnect Dee Why with its natural environment
- Create a well-connected town centre
- Foster community sense of pride of place
- Enhance open spaces
- Consolidate buildings for the future
- Provide safe and enjoyable public spaces
- Generate investment through creating an attractive and vibrant town centre

The purpose of this *Investigations and Design Phase* is to revitalise Dee Why Town Centre (DYTC) and to specifically co-ordinate the following elements:

1. Findings from the *Floodplain Risk Management Study*, Cardno (July 2014) and drainage amplification assessment.
2. Water Sensitive Urban Design (WSUD) opportunities identified in the Master Plan.
3. Place making and public art opportunities identified by place making consultants.
4. Landscaping and urban design identified in the Master Plan.
5. Changes to traffic, parking, the cycle way network and public transport.

1.2 OBJECTIVE

The objective of this assessment as identified in the project brief is to **“to critically review all the concepts, ideas and visions for streetscape, park and other public space infrastructure upgrades proposed in the Dee Why Town Centre Master Plan 2013, and determine the feasibility of each, and where necessary propose alternative options.”**



Dee Why Town Centre study area Source Google maps

The Dee Why Town Centre Public Infrastructure Upgrades Feasibility and Investigations Stage comprises two volumes.

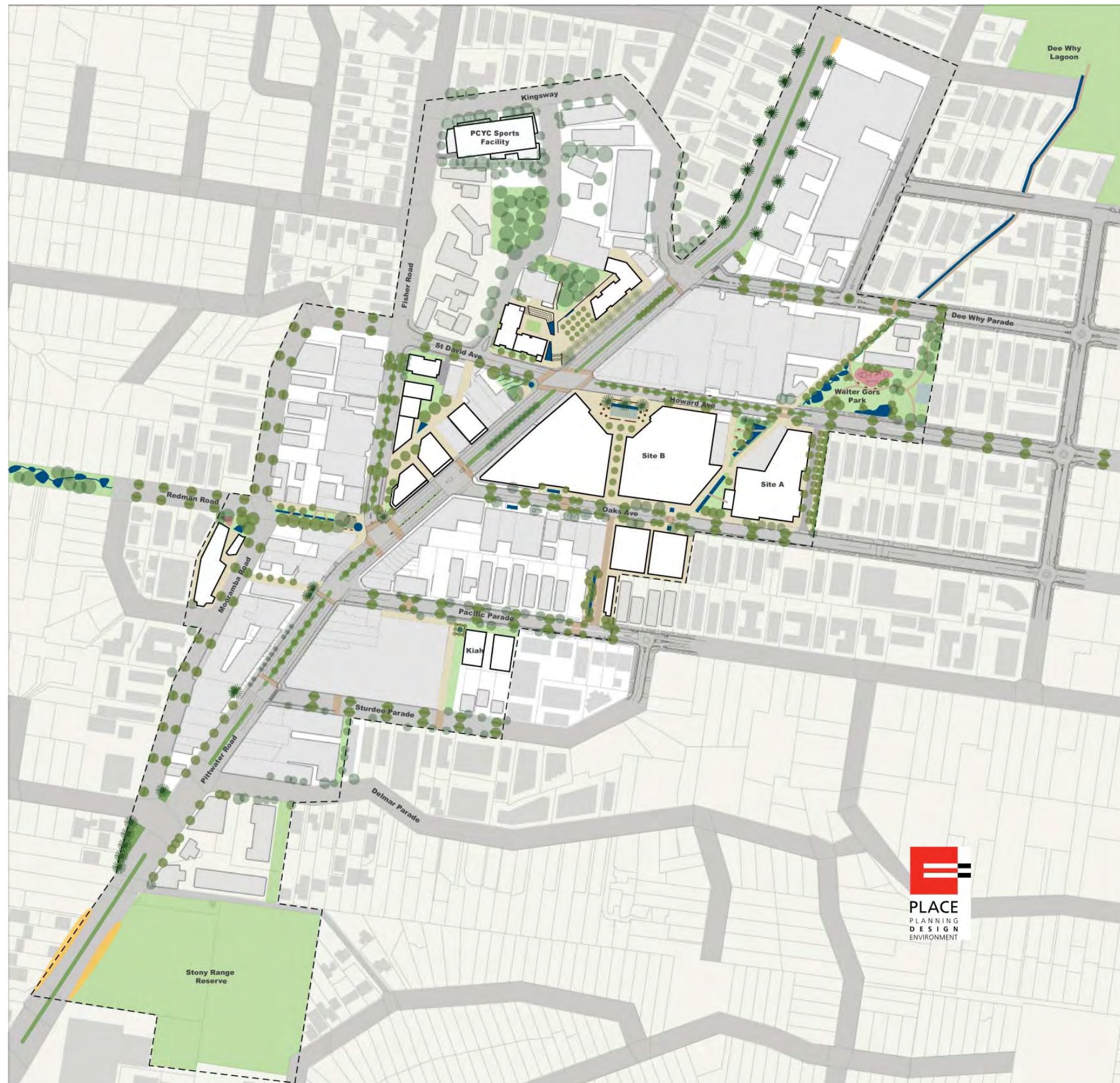
Volume 1 is the detailed review of the concept from a design perspective with consideration of stormwater, cost planning, traffic and transport, lighting and contamination.

Volume 2 comprises of the detailed reports that support the investigation of the Dee Why Town Centre Master Plan and contains the following reports:

- Contamination report *EIS*
- Traffic Report *Parsons Brinckerhoff*
- Cost Plans *Wild & Woollard*
- Lighting report *Lighting Art+Science*
- Stormwater report *Woolacotts*



Dee Why Town Centre Masterplan Tract Consultant

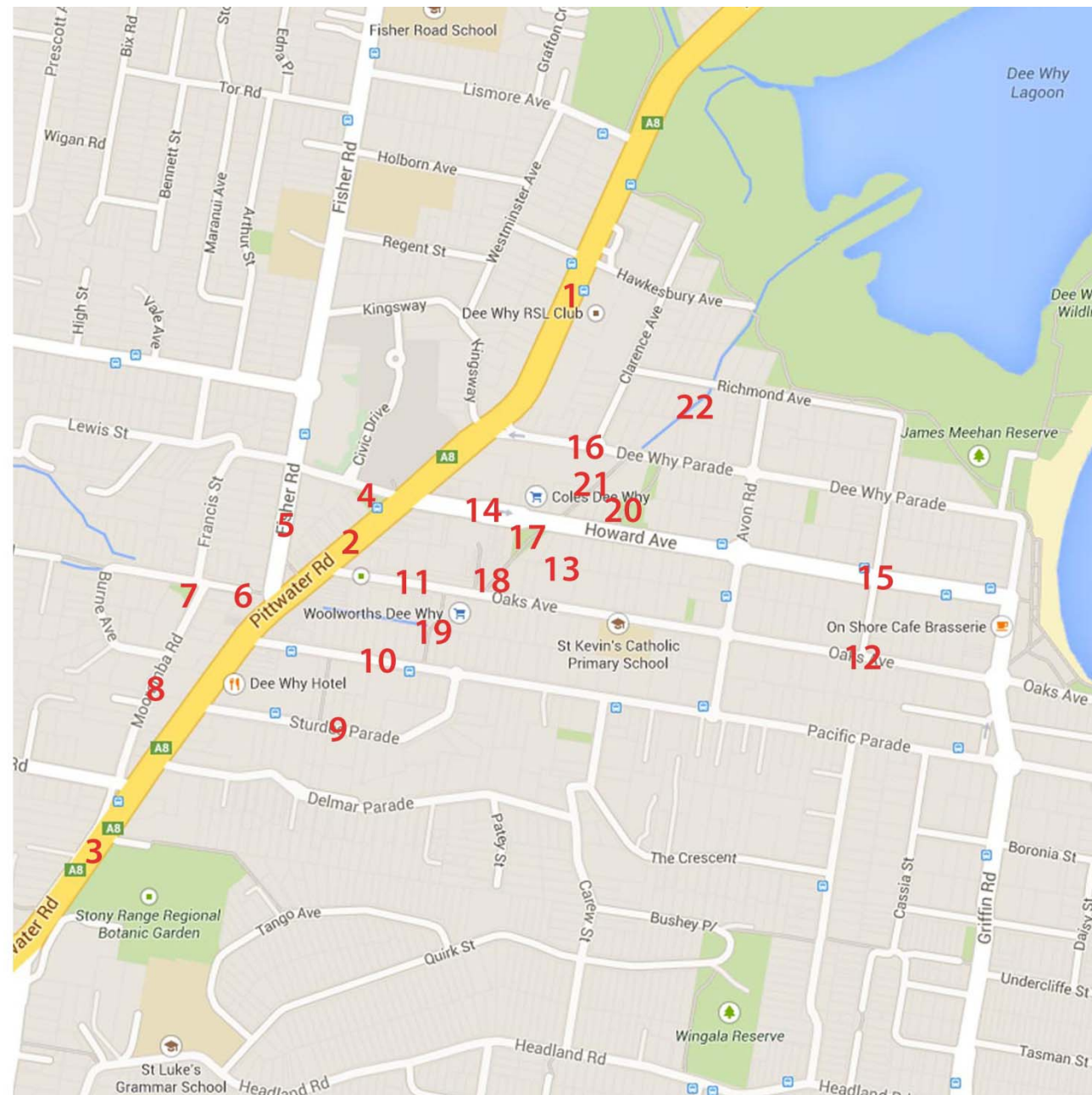


Dee Why Town Centre Master Plan Place Design Group

1.3 THE PROJECT AREA

Project areas investigated in detail include:

1. Pittwater Road North (Gateway)
2. Pittwater Road Central
3. Pittwater Road South (Gateway)
4. St David Avenue and Pocket Park
5. Fisher Road streetscape
6. Redman Road pocket park
7. Mooramba Road pocket Park
8. Mooramba Road
9. Sturdee Parade
10. Pacific Parade
11. Oaks Avenue (Pittwater Road to New Link Road)
12. Oaks Avenue (New Link Road to The Strand)
13. New Laneway between Oaks Avenue and Howard Avenue
14. Howard Avenue (Pittwater Road to New Link Road)
15. Howard Avenue (New Link Road to The Strand)
16. Dee Why Parade
17. Triangle Park North
18. Triangle Park South
19. Woolworths Lane
20. Walter Gors Park
21. Walter Gors Park stormwater easement
22. Drainage channel between Dee Why Parade and Hawkesbury Avenue



Dee Why Town Centre project areas Source Google maps

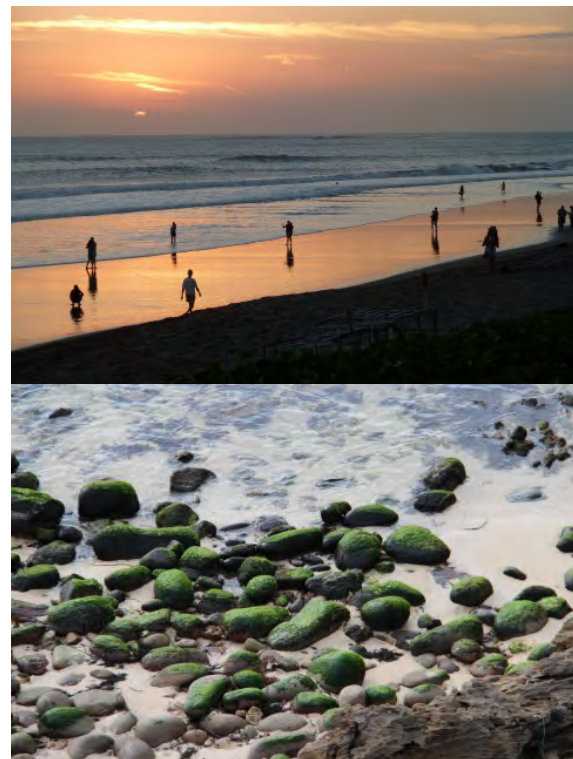
2 LANDSCAPE AND PUBLIC DOMAIN STRATEGY

2.1 DRIVERS FOR POSITIVE CHANGE

The Master Plan identified five character drivers for the new Dee Why Town Centre. The design proposals reinforce these key drivers.

CITY BY THE SEA

- Create a place that people want to live, work and shop.
- Promote the area's coastal heritage and proximity to the beach and lagoon.
- Reposition Dee Why Town Centre to embrace its coastal location.
- Create a point of difference



MEET DEE WHY

- Meet Dee Why refers to the physical changes of the place
- Emphasise the importance of the Dee Why community and their cultural heritage to the renewal of the Town Centre.
- Materials and planting to respond to place
- Interpretative elements to add historical and cultural value
- The landscape and public domain strategies should be flexible to attract a diverse range of uses.

LIVING STREETS

- Create accessible and attractive street for users of all ages and abilities.
- Provide habitat and microclimate.

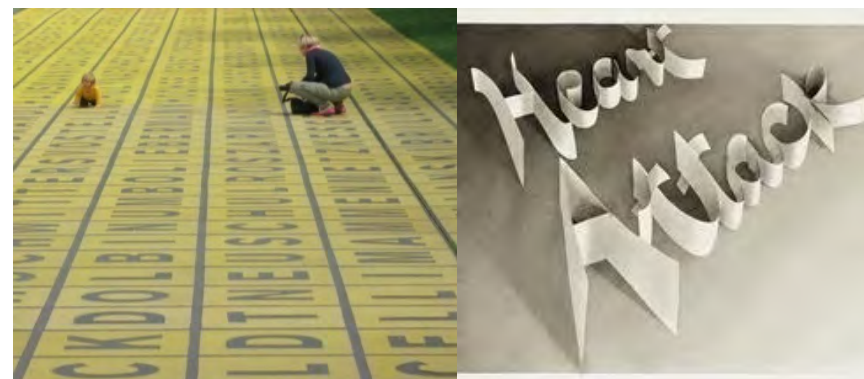


RESTORING THE BALANCE

- Landscape initiatives to restore the community's environmental, social and economic fabric.
- Work with natural and engineered systems, social practices, community values and stakeholder interests to restore the balance between dichotomies such as:
 - urban vs coastal
 - native vs exotic flora and fauna
 - hard vs soft surface treatments
 - car vs pedestrian priority
 - natural vs engineered systems and processes
 - commerce vs community
 - public vs private ownership and use
 - character vs lack of character
 - history vs progress

**ART FOR ARTS SAKE**

- Integrate unique contemporary art works that respond to Dee Why's natural qualities and histories.
- Incorporate art that assists in creating a place that rewards exploration while engaging the community, telling stories and fostering pride of place.



In reviewing each specific project area *The Drivers for Positive Change* have been considered with the clear objective of combining these drivers with feasible outcomes.

3 ACCESS AND CIRCULATION

3.1 INTRODUCTION

The DWTC Master Plan identifies changes to the traffic network to improve access and circulation to cater for future development capacity. These changes will influence access, destinations, public transport, cycling and pedestrian activity.

This report is the first stage critical review of the DWTC Master Plan. The concept proposals will be further tested and developed during *Stage 2 - Preliminary Design* and *Stage 3 - Detailed Design*.

In particular, road layouts and traffic changes will require modelling, and proposed signalised intersections and pedestrian crossings need confirmation and approval by RMS. This process will evolve to achieve the optimum outcome for the Town Centre and all users.

3.2 PEDESTRIAN ACCESS

Warringah Council has identified the need to improve access and mobility in the LGA and developed the *Warringah Pedestrian Access Mobility Plan (WPAMP) 8 June 2011 Aurecon*. The plan identified specific areas within the Dee Why Town Centre that required review and potential improvement.

The goals identified in the WPAMP include:

An important step towards achieving Warringah Council's aspiration to be a fully inclusive and accessible community, including a commitment to providing high quality pedestrian facilities for its residents and visitors, and to encourage walking as a sustainable and legitimate mode of transport.

To achieve this, Council aims to:

- Provide a continuous accessible path of travel linking key places and public transport stops throughout the LGA, with well-maintained footpaths (including shared paths), safe and convenient crossing locations, effective directional and information signage at a scale appropriate for pedestrians to key landmarks and attractors (such as shopping centres, recreational areas, community facilities, schools);
- Improve the environment around pedestrian footpaths so that it is safe for, and conducive to, walking, with active frontages, opportunities for casual surveillance, provision of good non-glare lighting, seating or rest areas, frequently-maintained vegetation, and clear of obstructions;

- Support or lead programs that encourage walking and cycling to replace trips that would otherwise have been made by private motor vehicles.

In conjunction with WPAMP, the *High Pedestrian Activity Areas (HPAA) Dee Why - 40km/H Speed Limit* identifies a forty (40) kilometre per hour speed zone for the town centre to improve the nature of the pedestrian environment in the prioritising of pedestrians over vehicles. The HPAA covered the core area bounded by Pittwater Road, Dee Why Parade, Avon Road (west thereof) and Sturdee Parade

A series of raised pedestrian crossings and traffic calming measures were also identified of which some were implemented. The Master Plan identifies possible locations for pedestrian crossings and these have been reviewed in conjunction with the changed traffic conditions described in the next section.

3.3 DEE WHY TOWN CENTRE PEDESTRIAN ENVIRONMENT

The WPAMP identifies in detail the areas where the pedestrian environment can be improved. The aim of these provisions is to support all uses and recognises that the facilities need to provide and support access for all users, and provides capacity for growth in pedestrian activity.

Dee Why Town Centre and Dee Why Beach were identified in the WPAMP as the two most visited pedestrian focus areas in the local Government area. The opportunities to develop the connections between these two precincts and improve facilities within the Town Centre have been explored in the concept development.

The WPAMP categorised the following routes as areas of improvement:

PRIMARY ROUTES

Pittwater Road (between Sturdee Parade and Hawkesbury Avenue):

This is the main focus of the Dee Why town centre area. It is a strip retail and commercial centre with a wide variety of pedestrian attractors and generators. There are footpaths on both sides of the road with the majority of it over 2m wide. There are signalised crossings along this route, although some crossings do not provide adequate kerb ramps, and some kerb ramps are missing altogether.

Civic Drive and Fisher Road (between Pittwater Road and Kingsway):

There are footpaths on both sides of these routes, but they are narrower than preferred for a Primary route. These routes provide access around the western side of Pittwater Road, including to the Council offices, library and medical centre, and connections to public transport stops.

Oaks Avenue (between Pittwater Road and Avon Road), Howard Avenue, and Dee Why Parade between (Pittwater Road and Clarence Avenue):

On this eastern side of Pittwater Road, these routes provide connections between the retail and transport links on Pittwater Road and Dee Why Beach/ The Strand, and pass through high-density residential generators. These routes currently have footpaths, but the provision of wider footpaths in the area would facilitate additional pedestrian activity and accommodate the proposed growth in the area (as outlined in the draft Warringah LEP and DCP). The roundabouts along Howard Avenue were raised as a safety concern for vision-impaired users, by Vision Australia.

SECONDARY ROUTES**Oaks Avenue (between Avon Road and Dee Why Beach), Pacific Parade (between Sturdee Parade and Dee Why Beach), Monash Parade:**

completes the link between the Primary routes from Pittwater Road to Dee Why Beach/ The Strand.

Pittwater Road (between Sturdee Avenue and Warringah Road):

provides a link between Dee Why and its twin town centre, Brookvale. Pittwater Road between these two parts of the Major Centre has been identified as having the potential to be an 'enterprise corridor'. Pedestrian activity along this route could increase in importance when such a corridor succeeds.



Pedestrian crossings to be reviewed

COLLECTOR ROUTES

Most of the streets leading into Dee Why town centre could be considered Collector routes. The majority of these routes have footpath on both sides of the road and provide links to the Secondary and Primary routes in the areas. The provision of improved pedestrian facilities in this area would also provide better access between the employment areas and public transport.

Mooramba Road, Francis Street and Redman Road:

provides pedestrian access roughly parallel to Pittwater Road. Installation of a pedestrian refuge island on Francis Street at Redman Road would improve pedestrian safety there.

WPAMP issues raised during consultation within the study area include:

- Fisher Road near Council – pedestrian crossing required;
- Howard Avenue at Pittwater Road, and various locations on Pittwater Road – kerb ramps missing or need fixing.

The WPAMP found the footpath conditions on Dee Why Parade, Howard Avenue, and Oaks Avenue need improvement, with many locations where there is tree damage and trip/fall hazards. The zone within the core between Pittwater Road and the proposed New Link Road has been addressed with upgrading in the Concept proposals. Further detail review of the footpaths impacted by trees can be locally treated over time.

The Concept and Preliminary Design stage of the project will develop key pedestrian facilities by reviewing and upgrading where possible:

- Footpath widths;
- Kerb ramps;
- Road crossings;
- Gradients;
- Vertical clearance; and
- Shared Paths.

The concept design has been developed with the new one way system and two new roads as identified in the diagram by GTA.



3.5 BUS NETWORK

The *Interchange Program Scoping Study Dee Why / Brookvale Transport Interchanges* GHD March 2012 for Transport for NSW (TfNSW) has identified proposed interchanges in the DWTC.

Improvements to Pittwater Road interchanges are identified on the Dee Why Rapid Transport diagram. Refer Pittwater Road section of report. The adjoining proposed development at 701 Pittwater Road (Cobalt) and public amenities are to be incorporated into this development.

The one way loop system for Oaks and Howard Avenue will impact on Bus services and bus shelter locations and consultation with TfNSW and STA will need to occur to confirm new bus routes and Bus Zones.

The following issues were specifically identified for Dee Why:

The bus shelter on the southwest corner of Pittwater Road and St David Avenue does not have DDA compliant access from adjacent footpaths. The amenity and attractiveness of the Bus Shelter is poor and anti-social behaviour has been observed at the bus stop.



3.6 TAXIS

Taxi zones have been identified as an important interchange component with the bus routes. The altered routes and bus zone will impact on the location of taxi stands and two (2) taxi shelters. Consultation with the Taxi Council needs to occur to confirm suitable locations for all taxi ranks within the town centre.



3.7 CYCLE NETWORK

The *Warringah Bike Plan* Warringah Council provides the basis for cycling infrastructure and education to deliver a better environment for cycling in Warringah. The Master Plan identifies a number of cycling networks that will encourage more people to ride their bikes for local trips to the beach, the shops, school or the bus, for transport, recreation, to encourage fitness and fun.



Warringah Council Cycle network

The vision of the Warringah Bike Plan is defined by the outcomes, whereby:

- *Warringah is a bicycle friendly environment where the preferred choice for a short or medium trip is riding or walking.*
- *Cycling in Warringah meets key federal, state and local government objectives in transport, health, the environment and energy savings (including carbon footprint reduction).*
- *Warringah is connected by a safe and enjoyable cycling network, with links to Pittwater, Manly, Willoughby and Ku-ring-gai.*
- *Warringah recognises that more cycling improves the health of individuals and the community, offers more choice in transport options, improves sustainability by reducing greenhouse and other gas emissions, and reduces dependence on foreign oil imports.*

Key benefits expected through this Bike Plan are:

- *Improved cyclist safety*
- *Reduced bicycle crashes*
- *Reduced traffic conflict*
- *Facilitating a healthy and active community*
- *Increased number of cyclists in the community*
- *Increased social interaction in the community*
- *Positive impact on tourism and local businesses*
- *Reduced motor vehicle transport expenses*
- *Increased casual community surveillance*
- *Improved environment*

Separated cycleway and shared paths are identified in the Master Plan which will be complimented with on road facilities.

3.7.1 CYCLEWAY WIDTH

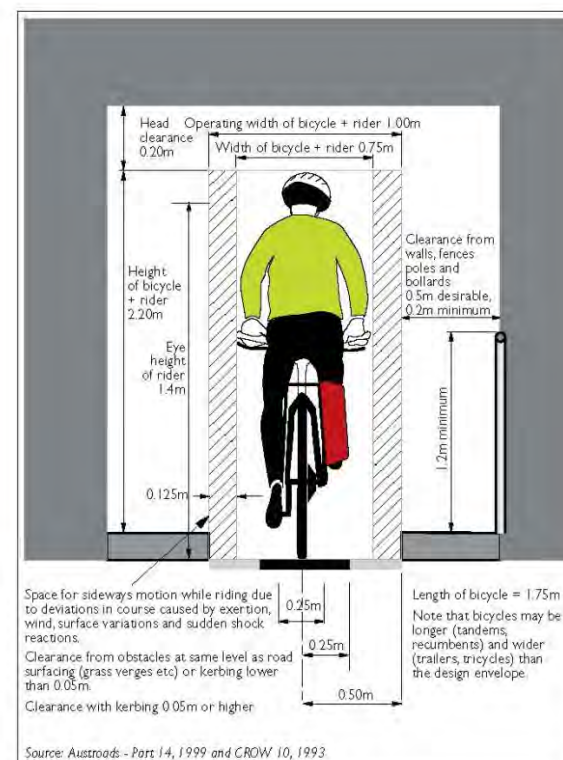
The width recommended for two-way separated cycle ways in the guidelines (RMS 2005, Austroads 2009) is 2.0 – 3.5m. This minimum path width of 2.0m for a two way separated cycleway has been derived from the width of the bicycle design envelope of 1.0m (refer opposite). However, this minimum width does not include clearance for two-way cycling and should therefore be avoided.

Clearance to oncoming cyclists and clearances to objects at the side of the cycleway are important for cyclists due to the ‘wobble factor’ – a recognised operational characteristic of the bicycle vehicle. This ‘wobble’ occurs when a cyclist is travelling slowly (usually uphill) and has to steer and oversteer to maintain stability at slower speeds.

As a bicycle is a two-wheeled vehicle the ‘wobble factor’ can also occur at normal speeds due to inexperience or lack of rider confidence and diversionary actions due to surface irregularities, interaction with other cyclists and cross winds.

Austroads 2009 recommends a minimum lateral clearance of 400mm between opposing bicycle operating spaces for paths with operating speeds up to 20km/h (i.e. closing speed of 40km/h) requiring a cycleway width of 2.4m. For cycle ways built with raised kerbs or medians on each side, this horizontal separation between opposite flows of riders is critical as there is no run-off area to the sides of the path. For these reasons the recommended minimum width for cycle ways with vertical kerbed edges is 2.4m.

It is not recommended that two-way separated cycle ways be constructed below minimum widths except in retrofit situations where such ‘squeeze points’ can be clearly marked and managed in spot locations rather than over sustained distances. The guidelines (RMS 2005, Austroads 2009) recommend that all separated cycle ways be edge lined and centre-lined to assist cyclists to track within the provided bicycle travel lane, and to maintain safe clearances between oncoming riders and path-side structures and vegetation. Edge lining is an essential safety feature, particularly on paths built to near minimum clearances, in heavily shaded locations and at night time.



The bicycle Design Envelope (figure 2.3 RMS 2005)

Separator median width

The separating median provides physical clearance between cyclists and vehicles using the adjacent roadway. On roads with a high cross-fall, additional width should be provided in the median to compensate for large vehicle tilt and roll. A 400mm dividing median is recommended by the guidelines (RMS 2005, Austroads 2009) adjacent to separated cycle ways on streets where parking is not permitted. Where on-street parking is present, the minimum clearance is 1.0m. This is required primarily as clearance from the car door opening zone. Maximum clearance is particularly important in situations where cyclists are travelling on separated cycle ways adjacent to parked vehicles facing in the cyclists' direction of travel. Cyclists in this situation are vulnerable to serious injury in the event of a collision with an opening car door as vehicle occupants are facing the opposite direction to approaching riders who are presented with the non-frangible portion of the car door opening at an acute angle.

Cycleway dimensions proposed for Dee Why Town Centre

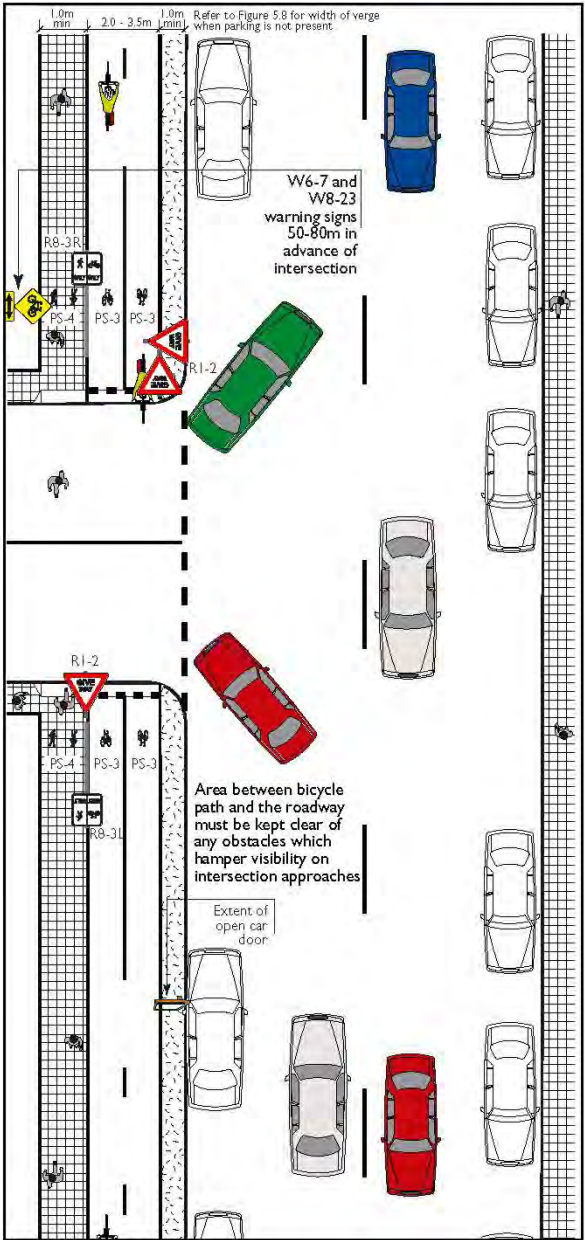
Based on the above standards the following dimensions have been used in the design studies for the separated and shared cycle ways for Dee Why Town Centre.

	Cycleway width	Median
Separated cycleway, no car parking adjoining.	2.4 m	0.4 m
Separated cycleway with car parking adjoining	2.4 m	1.0 m
Shared pathway	2.5-3.0m	NA

Shared Paths

Austroads Guide to road Design Park 6A Pedestrian and Cycling Paths recommends the following: Shared path widths

	Path widths (m)		
	Local access path	Commuter path	Recreation path
Desirable Minimum width	2.5	3.0	3.5
Maximum width – Typical maximum	2.5 -3.0	2.4-4.0	3.0-4.0



Bicycle path (two way) off road in the road reserve and crossing a side street (Figure 5.11 RMS 2005)

3.7.2 PROPOSED CYCLEWAY NETWORK

Howard Avenue was selected as the preferred route for a separated cycleway linking The Strand to the town centre for its central location and more even gradient than Oaks Avenue.

The route will terminate at Walter Gors Park and connect to the proposed separated cycle way link from Howard Avenue to Dee Why Parade and the proposed shared path on the New Link Road.

The existing on road pathway on Pacific Parade provides a link on the southern side of the town centre.

Given the space constraints and capital costs associated with separated cycle ways, the Master Plan proposal to include a separated cycleway along Oaks Avenue was not pursued. However, a shared path could be implemented along Oaks Avenue.

The Master Plan proposes a shared path along the existing open channel between Dee Why Parade and Hawkesbury Avenue, linking the town centre to Dee Why lagoon. An alternative route along Dee Why Parade and Avon Road is recommended due restrictive and dangerous space along the drain and potential impacts on the existing open channel.

The new link road will have a shared path on the eastern side linking Howard Avenue to Oaks Avenue.

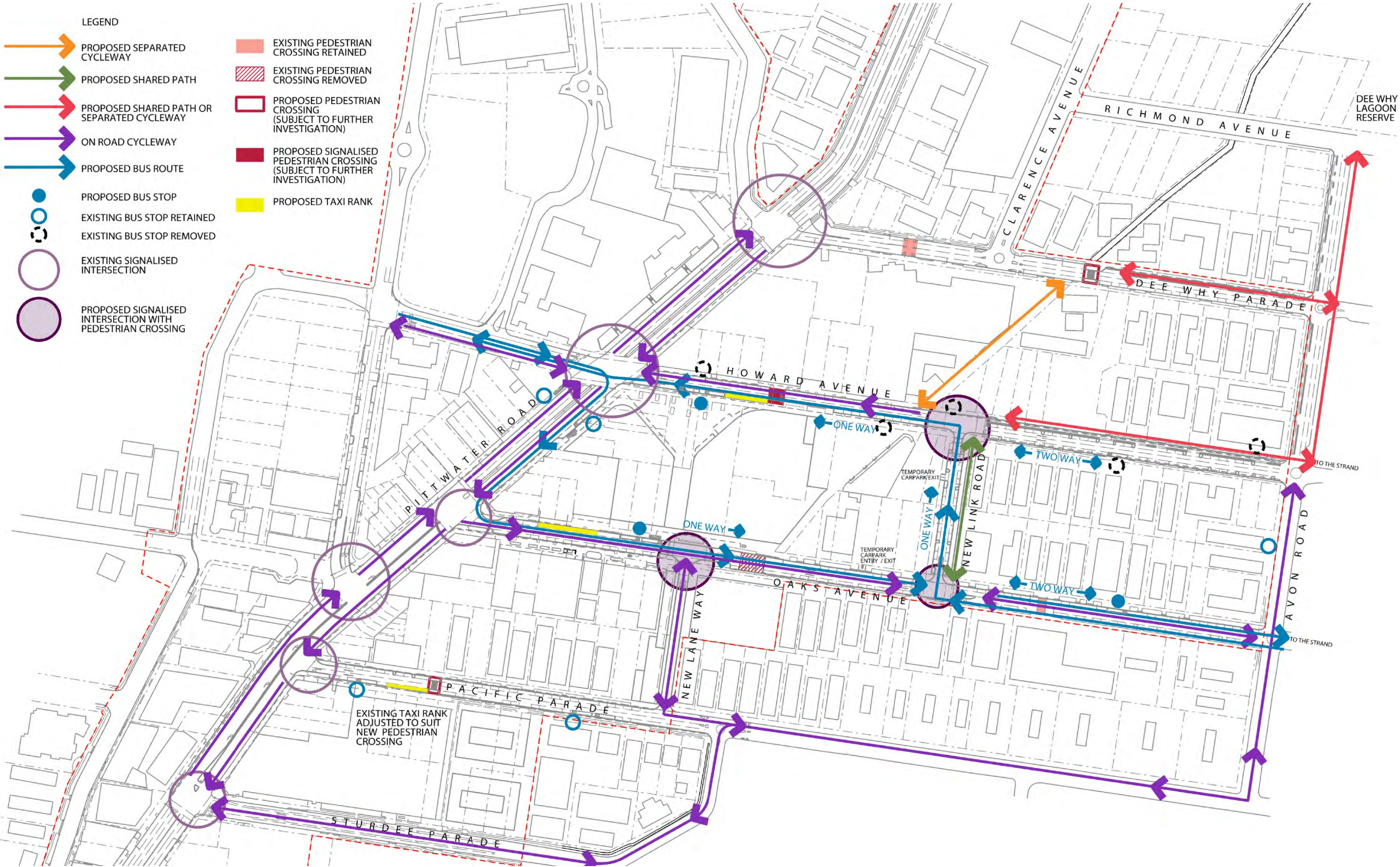
Interchanges and end of trip facilities

The town centre should provide end of trip facilities for cyclist and reinforce the interchange points with the bus network and taxi ranks. Proposed new developments should provide end of trip facilities for residents, employees and customers.

Facilities could include on site bicycle storage and showers, bike racks near interchanges, drinking fountains and bottle refill stations.



Separated cycleway adjoining Walter Gors Park



Dee Why Town Centre Proposed bus and cycleway routes

4 WATER SENSITIVE URBAN DESIGN (WSUD) AND STORMWATER

4.1 INTRODUCTION

Water Sensitive Urban Design (WSUD) is key component of the Master Plan, and has been extensively depicted in the streetscape proposals, predominately as detention and bio filtration systems.

“WSUD has a strong presence within the Master Plan, and is recognised as a key factor which would contribute to urban sustainability and provide the conditions for attractive, human-scale living environments through integration of urban planning and design with the management, protection and conservation of the whole water cycle.” Place Design Group

What is water sensitive urban design?

Water sensitive urban design (WSUD) is most simply defined as the sustainable management of water within urban areas through intelligent and integrated design. It looks at the urban water cycle as a whole, taking into account all three urban water sources: potable water, wastewater, and stormwater.

The aims of water sensitive urban design are to:

1. Reduce runoff flows while minimising on-site flood risk.
2. Reduce potable water use through the use of efficient fixtures and appliances and through rainwater, stormwater and grey water reuse.
3. Minimise wastewater generation, treating wastewater to a standard suitable for reuse and/or discharge to receiving waters.
4. Protect natural systems by treating stormwater before discharge to receiving waters.
5. Integrate stormwater treatment into the landscape to enhance the recreational and aesthetic quality of the urban environment.

What can be done in Dee Why?

1. Capture water before it leaves private property from rooftops and hard surfaces using rainwater tanks, swales and rain gardens.
2. Slow the flow of stormwater through smart landscape design, placing garden beds on contour for passive irrigation.
3. Implement landscaping and drainage elements that ensure sediments, leaves, grass clippings and nutrients do not enter the natural system.
4. Reduce or eliminate the use of water soluble fertilisers as these cause algal blooms in waterways.
5. Plumb rainwater into facilities such as public toilets to reduce potable water use.

4.2 FLOODPLAIN RISK MANAGEMENT

One of the key constraints to the implementation of WSUDs in the town centre is its location within the Dee Why South drainage catchment and therefore large parts of the public domain are subject to inundation during peak events.

All concept proposals require review and assessment against flooding constraints, in particular if they reduce available catchment capacity.

The *Floodplain Risk Management Study (FRMS) DRAFT* for the Dee Why South Catchment was undertaken by Cardno, 2013. Existing flood behaviour has been mapped and many of the streets within the town centre are subject to inundation. The assessment of the flood mitigation measures was undertaken based on economic, social and environmental considerations and the following relevant outcomes were assessed.

Options (flood modification, property modification and emergency response modification) were scored based on the following criteria:

- Economic: Benefit Cost Ratio, Reduction in Risk to Property, Essential Infrastructure, Capital Cost, Operating Costs;
- Social: Reduction in Risk to Life, Reduction in Social Disruption, Compatibility with Council Policies & Plans, Community & Stakeholder Support; and
- Environmental: Compatibility with Water Quality Objective, Compatibility with Water Reuse Schemes, Fauna/Flora Impact - including street trees.

Specific to this project, the following areas were assessed:

OAKS AVENUE DRAINAGE AMPLIFICATION

Increasing the drainage capacity along Oaks Avenue was ranked high in the Cardno Assessment for the drainage amplification in the Dee Why South Catchment. Further refinement of the concept will be undertaken to balance the benefits in Oaks Avenue to potential adverse impacts downstream. Refinement may comprise changes in the road profile and cross fall, culvert sizes and inlet capacity. This project is being undertaken separately by Council.

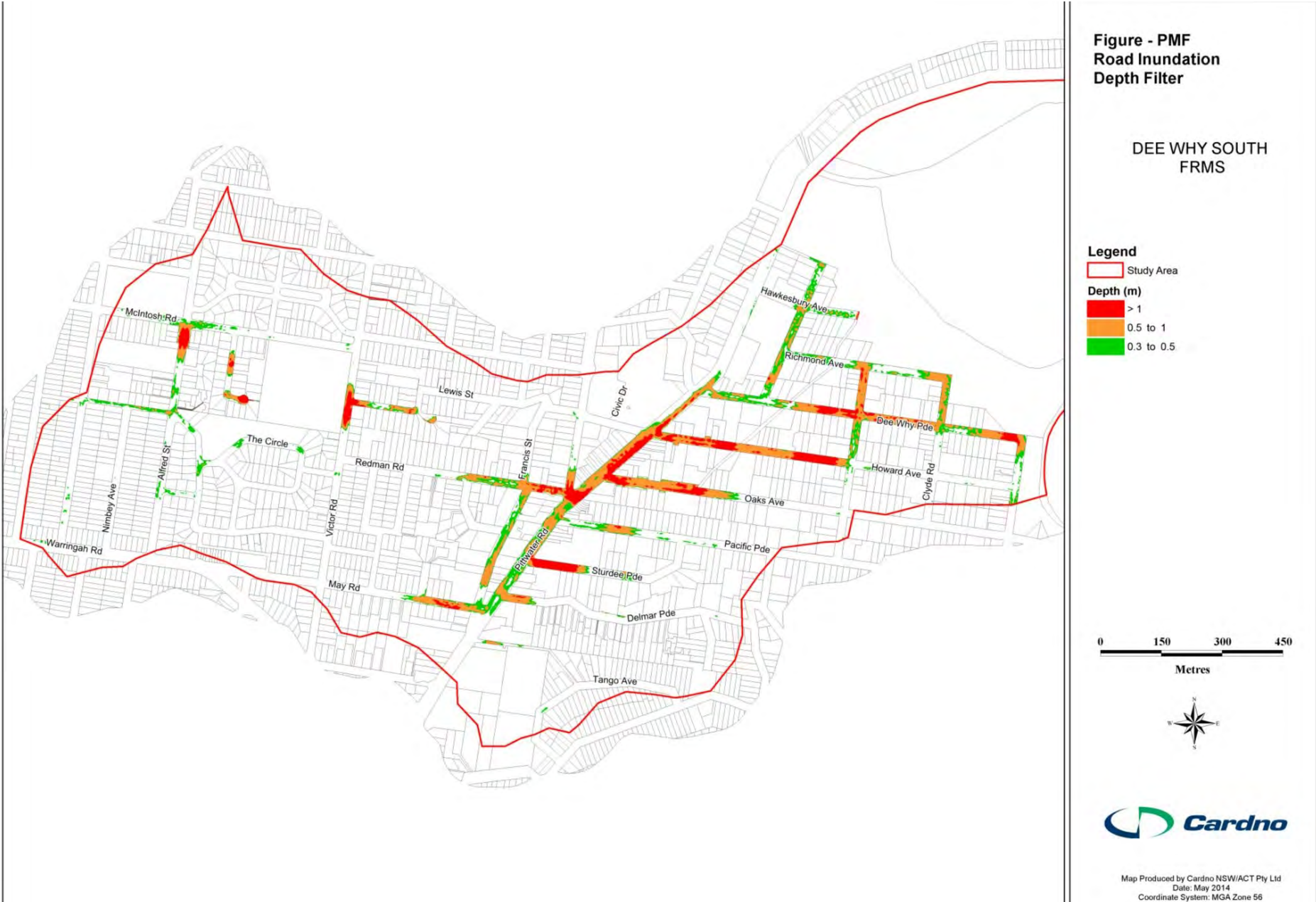
BOX CULVERT BETWEEN HOWARD AVENUE AND DEE WHY PARADE

The daylighting of box culvert between Howard Avenue and Dee Why Parade was assessed to be of low priority.

4.3 WSUD OPPORTUNITIES

The following table outlines the project area and floodplain risk and restrictions to changes in road profile and cross section.

Location	Depth (m)	Comment
Dee Why Parade Pittwater Road to drainage channel	0.5 to 1 0.3 to 0.5	Limited WSUD opportunities
Dee Why Parade , existing drainage channel Parade to The Strand	0.3 to 0.5 0.5 to 1 >1	Limited WSUD opportunities
Howard Avenue – Pittwater Road to the Avon Road	0.5 to 1 >1	Addition garden beds with passive irrigation
Howard Avenue – Avon Road to the Strand	NA	WSUD opportunities
Oaks Avenue – to New Link Road	0.5 to 1 >1	Addition garden beds with passive irrigation
Oaks Avenue - Avon Road to the Strand	NA	WSUD opportunities
Pacific Parade	0.5 to 1 0.3 to 0.5 >1	Opportunities where there is no flooding
Sturdee Parade	>1	No WSUD opportunities
St David Avenue Pittwater Road to Francis	>1	No WSUD opportunities. Steep gradient
Redman Road Plaza	0.5 to 1 >1	Possible WSUD opportunity in creating plaza.
Walter Gors Park	NA	WSUD opportunities



Road Inundation depth Filters Cardno

4.4 SUSTAINABLE DESIGN PRINCIPLES

VISION FOR DEE WHY TOWN CENTRE

The environmental challenge for this project is to incorporate sustainable design principles and outcomes that demonstrate the Warringah Council's commitment to sustainability. Our initial concept identifies the following areas that will be considered further during the *Preliminary Design* stage:

- **Low-impact materials:** choose non-toxic, sustainably produced or recycled materials which require little energy to process where appropriate.
- **Energy efficiency:** select materials that use manufacturing processes and produce products which require less energy
- **Quality and durability:** select longer-lasting and better-functioning products that will have to be replaced less frequently, reducing the impacts of producing replacements
- **Design for reuse and recycling:** "Products, processes, and systems should be designed for performance in a commercial 'afterlife'.
- **Renewability:** materials should come from nearby (local or bioregional), sustainably managed renewable sources that can be composted when their usefulness has been exhausted.
- **Improvement of micro-climate** through the introduction of additional trees and planted areas.
- **Choice of drought resistant, low water usage plants** that attract wildlife, requiring low inputs of energy, water, fertiliser etc

Design techniques that will be considered include:

- Planting trees for the purpose of providing shade.
- Reducing the heat island effect with the incorporation of planted areas and minimizing pavement areas as appropriate.

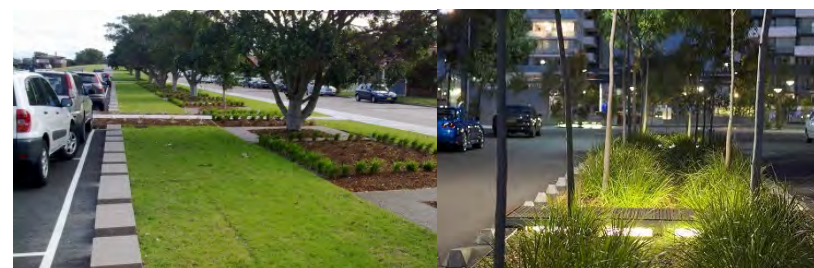
WATER SENSITIVE URBAN DESIGN SOLUTIONS

The area of greatest impact this project can demonstrate is in the development of Water Sensitive Urban Design (WSUD) solutions.

This holistic approach to the sustainable and integrated management of the urban water cycle encompasses the reduction in the use of potable mains water, waste water and stormwater minimisation.

The reduction in use of potable water can be achieved:

- Through water efficient fixtures e.g. drinking bubblers. In addition, waste water from the bubbler can be recycled to planted areas or street trees and not discharged into the stormwater system.
- Natural watering systems (segmented kerbs) for new trees and garden areas along roads
- Utilising storm water for the watering of new planting and trees
- Increasing the areas of permeable surfaces to reduce stormwater runoff.



L - R: Heffron Park and Victoria Park segmented kerbs for passive irrigation

4.5 WSUD OPPORTUNITIES

The concept proposal has identified two possible locations for the incorporation of WSUDs.

WALTER GORS PARK STORMWATER EASEMENT LINK BETWEEN HOWARD AVENUE AND DEE WHY PARADE

The narrow planted separation strip between the separated cycleway and pedestrian path along the drainage channel could be constructed as a rain garden.

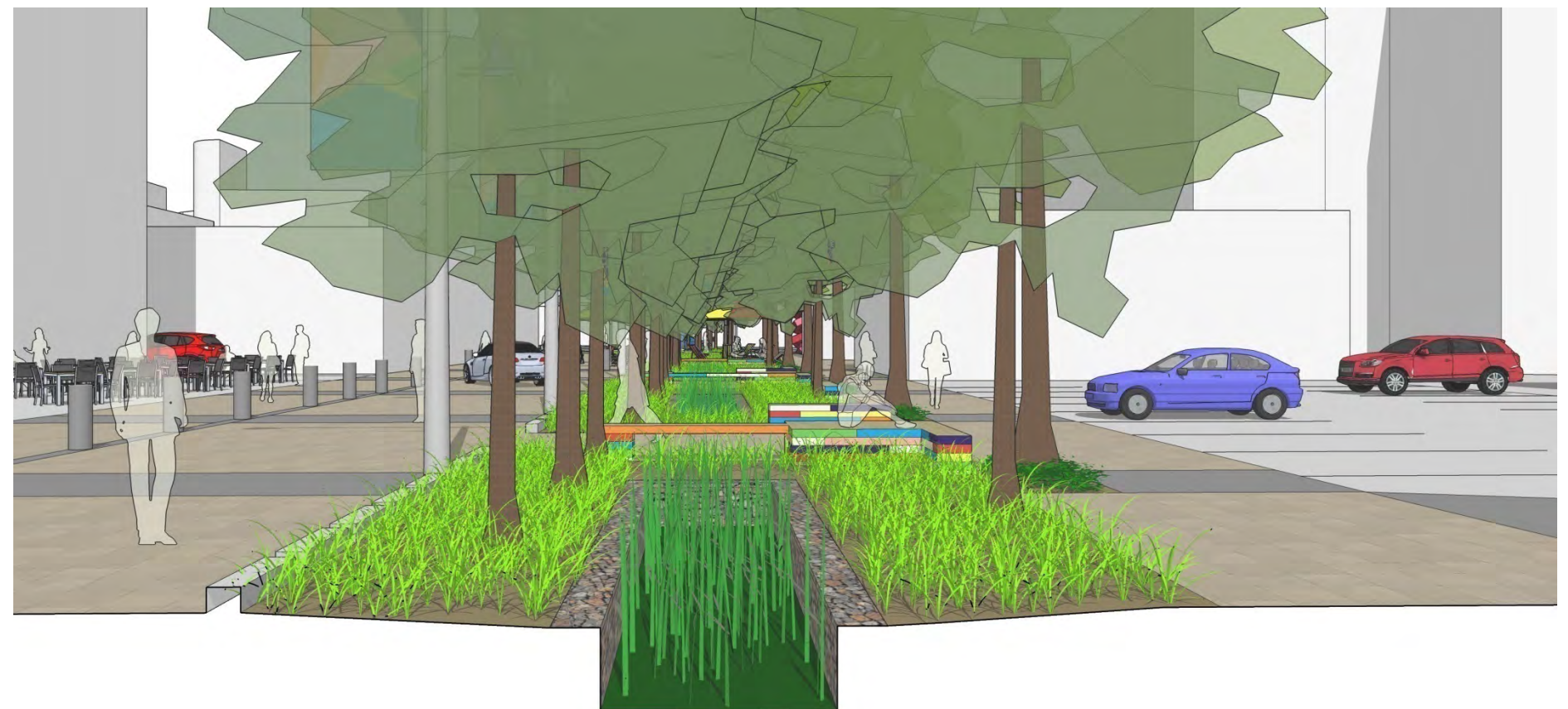
The bio retention swale can provide both stormwater treatment and a conveyance function for the runoff from the two adjoining pathways. The paths will be designed to fall towards the swale. The bio retention treatment could be constructed for the full length of the swale. Further investigation of this component of the project will be required during the Preliminary design stage to confirm if there are any underground services that may be a constraint.

REDMAN PLACE

Three rectangular WSUDs are proposed for Redman Place. The plaza will be regraded to fall toward the centreline with segmented kerbs to allow water flow into the WSUDs.

The WSUDs are proposed as bio retention basins to maximise the volume of runoff treated through the filtration media. The design will convey above design flows through overflow pits and will not convey flood flows over the filtration surface. This method will reduce the amount of dislodgement of collected pollutants and the scouring of vegetation.

The system will convey collected water to downstream waters with runoff loss assisting in maintained soil moisture in the growing media for the vegetation. The vegetation in the filter media will enhance its function and maintain porosity of the filtration layer.



Redman Place WSUD

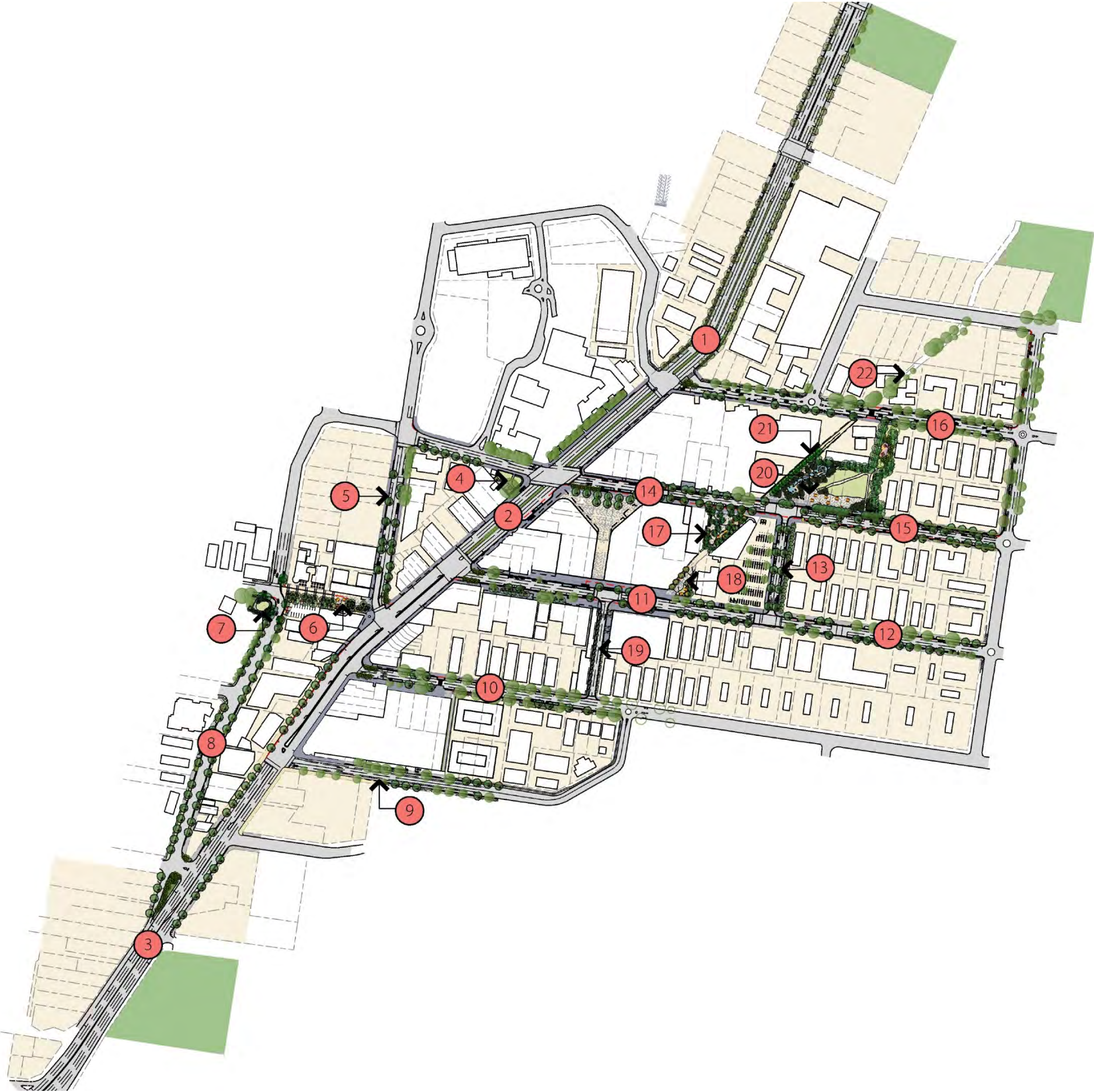
5 THE CONCEPT DESIGN

The following section of the report reviews each project area identified in the Master Plan against Council’s project brief.

5.1 The Project Area

Project areas investigated in detail include:

- 1. Pittwater Road North (Gateway)
- 2. Pittwater Road Central
- 3. Pittwater Road South (Gateway)
- 4. St David Avenue and Pocket Park
- 5. Fisher Road streetscape
- 6. Redman Road pocket park
- 7. Mooramba Road pocket Park
- 8. Mooramba Road
- 9. Sturdee Parade
- 10. Pacific Parade
- 11. Oaks Avenue (Pittwater Road to New Link Road)
- 12. Oaks Avenue (New Link Road to The Strand)
- 13. New Laneway between Oaks Avenue and Howard Avenue
- 14. Howard Avenue (Pittwater Road to New Link Road)
- 15. Howard Avenue (New Link Road to The Strand)
- 16. Dee Why Parade
- 17. Triangle Park North
- 18. Triangle Park South
- 19. Woolworths Lane
- 20. Walter Gors Park
- 21. Walter Gors Park stormwater easement
- 22. Drainage channel between Dee Why Parade and Hawkesbury Avenue



Concept Plan Project areas

6 PITTWATER ROAD

6.1 PITTWATER ROAD

General

Pittwater Road is a main arterial road and carries substantial volumes of daily traffic which effectively divides the town centre in half. Linking to Pittwater Road are four collector roads being Dee Why Parade, Howard Avenue and Oaks Avenue on the eastern side and Fisher Road on the western side. All other roads in the project area are classified as local roads.

Master plan Objectives

The Master plan identifies the following for Pittwater Road:

Pittwater Road will receive various upgrade treatments along its length, from Stony Range Reserve in the south to the Dee Why RSL in the north. These treatments will be coordinated with the public art and lighting strategy and will complement the character and feel of the rest of the Town Centre. They aim to offer a unique experience for motorists and pedestrians. General interventions considered are:

- *Pedestrian crossing points –emphasised through material changes and lighting*
- *Road surface upgrade to a uniform finish*
- *Median upgrades*
- *Median and roadside planting (subject to RMS approval)*

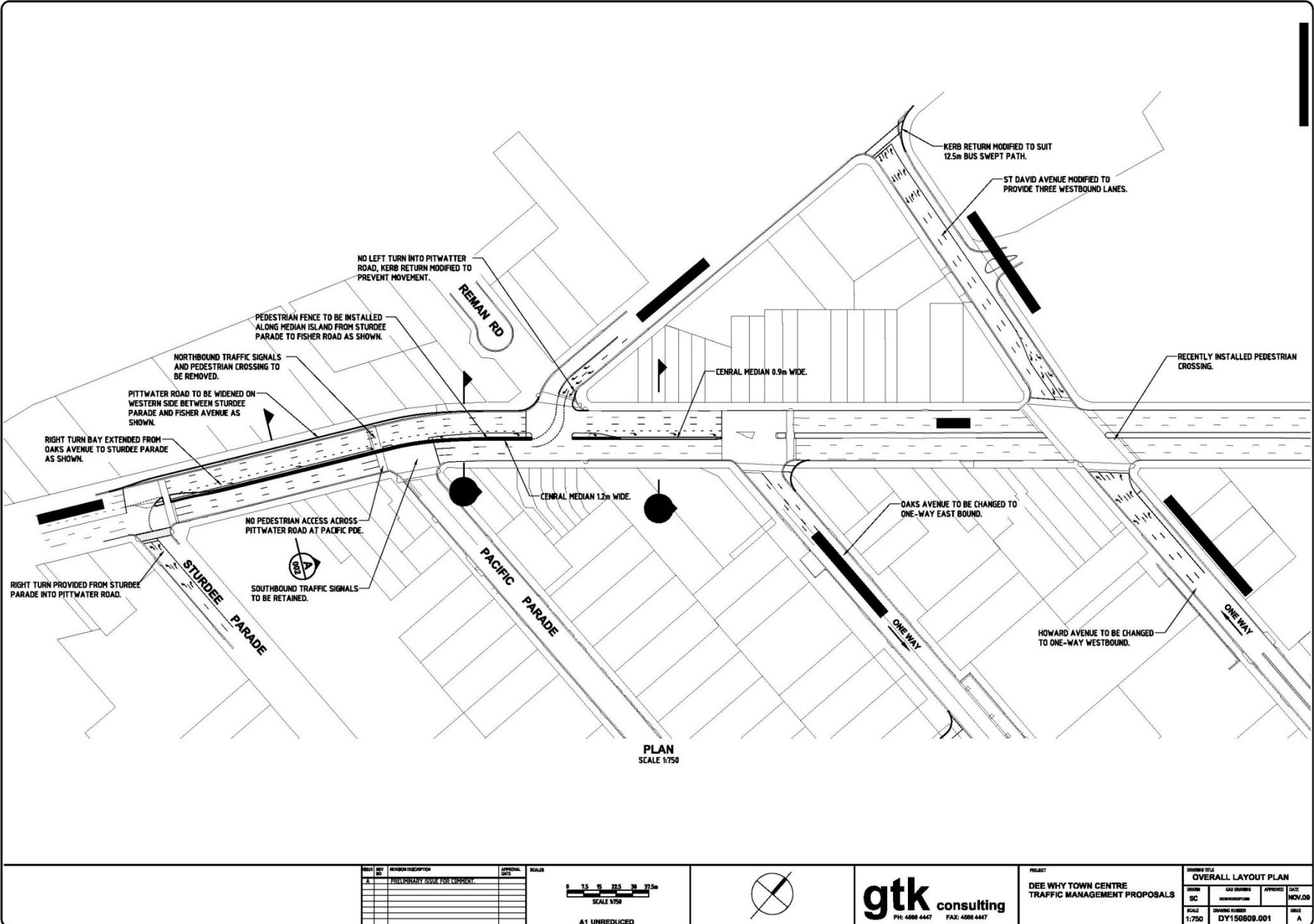


6.2 BACKGROUND

Pittwater Road adjustments are planned as part of Dee Why traffic management proposals undertaken by GTK consulting in November 2009. The proposed one way anti clock wise loop to Oaks and Howard Avenue with a new road connection will result in changes to kerb alignments and lane configurations along Pittwater Road. These changes have been progressed by Council separately to this study but include the following:

- A new right hand turn bay on Pittwater Road at Sturdee Parade
- Median on Pacific Parade at Dee Why Hotel entrance (to be confirmed)
- Widen Pittwater Rd (west side) between Fisher Rd and Sturdee Parade
- Adjusted lane widths/line marking on north and south bound carriageways
- Modification of the central median and installation of pedestrian fencing
- Modification of traffic signal control at Pacific Parade/Pittwater Road and Oaks Avenue/Pittwater Road d.
- Adjustment of kerb radius at the intersection of Oaks Avenue and Pittwater Road to permit buses to turn left into Oaks Av (if buses cannot be redirected to Pacific Parade)
- Proposed traffic signal changes include :
 - Sturdee Pd/Pittwater Rd: Provide right turn phase from Sturdee Pd into Pittwater Rd (completed)
 - Pacific Pd/Pittwater Rd: Median closure across Pacific Pd involving removal of right turn from Pittwater Rd into Pacific Pd and right turn from Pacific Pd into Pittwater Rd
 - Remove traffic signals on northbound carriageway Pittwater Rd. together with pedestrian crossing across Pittwater Rd
 - Fisher Rd/Pittwater Rd: Remove left turn from Fisher Rd into Pittwater Rd (to be delivered in conjunction with new laneway proposal)
 - Oakes Av/Pittwater Rd: Remove left turn from Oaks Av into Pittwater Rd
 - Howard Av/St David Av/ Remove through lane from St David Av into Pittwater Rd Howard Av
 - Provide bus only right turn into Pittwater Rd from St David Av
 - St David Av/Fisher Rd Provide dual right turn and shared left/through into Fisher Rd from St David Av

Refer to Traffic report by PB in Volume 2 Appendices for additional detail.



Pittwater Road Traffic Management proposals

Bus Operations

Buses are the primary public transport mode servicing Dee Why and the Northern Beaches. There are over 30 bus routes which service the Dee Why Town Centre, with the majority of these travelling north and south along Pittwater Road.

There are bus stops located on both sides of Pittwater Road through Dee Why. The two main stops servicing the Dee Why Town Centre are the northbound stop near St. David Avenue and the southbound stop near Howard Avenue.

Transport for New South Wales (TfNSW) has identified potential interchange nodes along Pittwater Road at the St David Avenue north bound stop and on the opposite side outside the proposed 888 Pittwater Road (Meriton) development. A bus indent has been identified for this location.

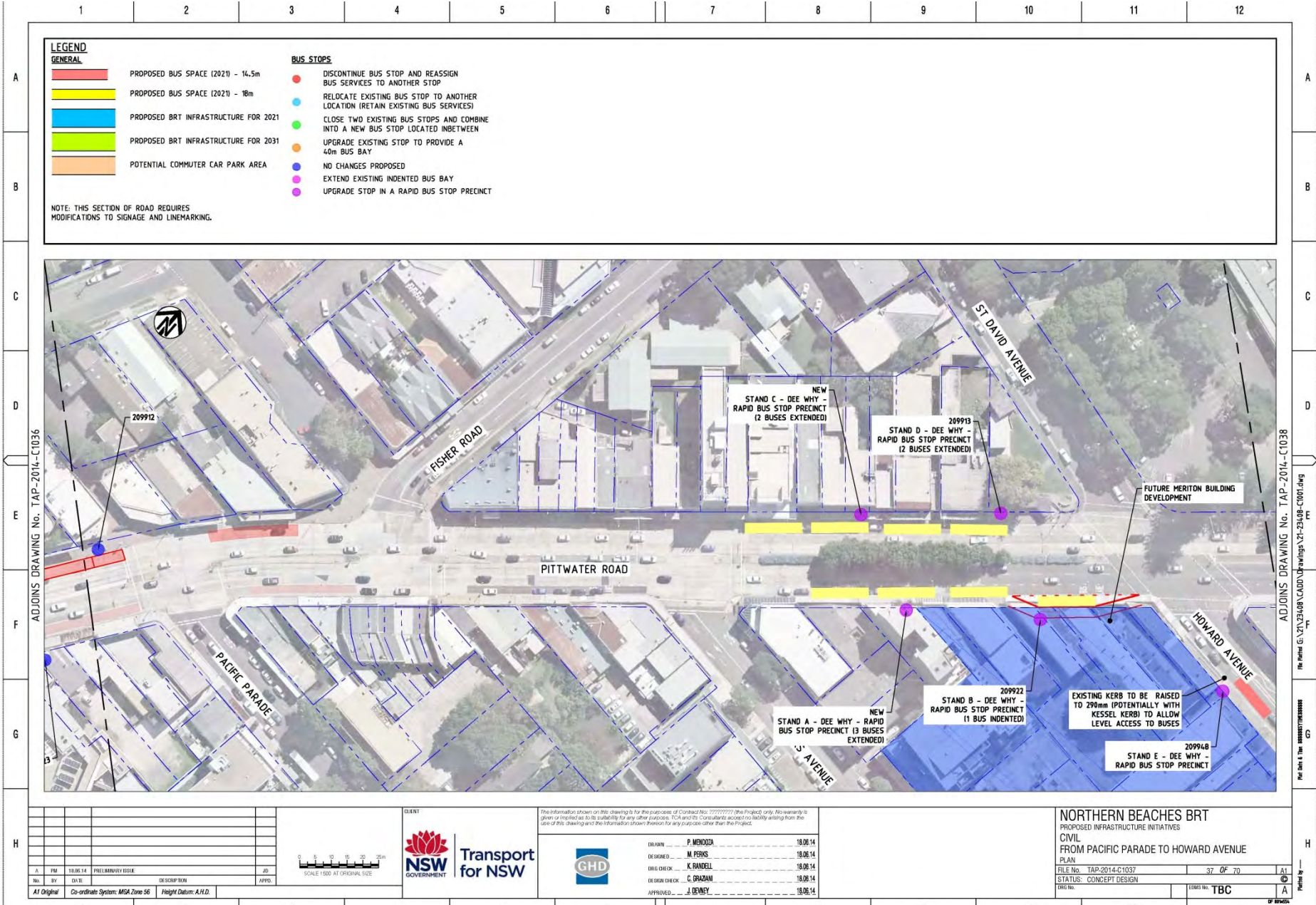
Refer *Pittwater Road provision of Bus facilities diagram*.

The Master Plan identifies three distinct precincts along Pittwater Road:

- Pittwater Road North (Gateway)
- Pittwater Road Central including town centre crossing.
- Pittwater Road South (Gateway)

The next section reviews each sector of Pittwater Road separately.

All proposals for Pittwater Road will be subject to RMS agreement and approval.

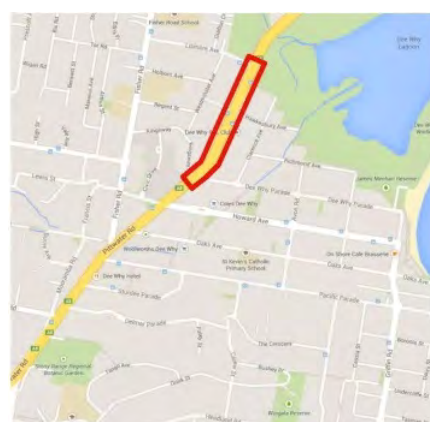


Pittwater Road provision of Bus facilities TfNSW

7 PITTWATER ROAD NORTH (GATEWAY)



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – NORTH , Dee Why Parade to Lismore Avenue

Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	State road	➤ RMS is the Authority	RMS approval required for all proposals
1.2	Retail	➤ Limited	
1.3	Commercial	➤ Limited	
1.4	Residential	➤ Apartments of varying scale, predominately residential zone of Pittwater road.	
1.5	Activities	➤ Main arterial traffic corridor, some retail / commercial .Dee Why RSL Club forms a key node.	
1.6	Nodes and Activation Points	➤ Intersections with side streets. ➤ Dee Why RSL Club	Assess opportunity for banner poles as entrance markers.
2.0	SCALE		
2.1	Existing	Built form of varying scale. No proposed developments in this zone.	
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Significant tree cover is associated with private properties e.g. row of large <i>Eucalyptus sp</i> along frontage of Medical and Dental Centre ➤ Very limited streetscape planting. ➤ Existing streetscape comprises of grass verges with no trees. ➤ Median is not planted. ➤ Small palms in verge adjacent Dee Why RSL Club. ➤ Planting associated with Dee Why Lagoon and Dee Why Park forms the northern gateway to this section of road.	Master Plan identifies scope for median planting with potential for trees. Tree lined pavements. Establish green connection with Dee Why Lagoon. Assess potential restrictions from services and available road width.
3.2	Safety, Security & Visibility	➤ No pedestrian scale lighting. ➤ Vehicle centric.	



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – NORTH , Dee Why Parade to Lismore Avenue

Item	Audit Area	Location/Comment	Further Action
		<ul style="list-style-type: none"> ➤ Hostile pedestrian environment. ➤ Passive surveillance from residences and motorists. 	
3.3	Seating & furniture	<ul style="list-style-type: none"> ➤ Limited provision. ➤ Bus shelter at bus stop. 	
3.4	Footpath condition	<ul style="list-style-type: none"> ➤ Insitu-concrete with grass verges of mixed condition. 	Review in conjunction with proposed planting.
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	<ul style="list-style-type: none"> ➤ 60 km per hour 	Review scope to reduce speed on approach to Town Centre to improve pedestrian amenity.
4.2	Cyclist access/future provision	<ul style="list-style-type: none"> ➤ Cycle share way crosses the road from Dee Why Lagoon 	Review cycle network in conjunction with cycle plan
4.3	Public Transport	<ul style="list-style-type: none"> ➤ Major Bus route. Dedicated bus lane northbound. 	
4.4	Taxi Bays	<ul style="list-style-type: none"> ➤ No current provision 	
4.5	Loading Bays	<ul style="list-style-type: none"> ➤ Some access across pavement 	
4.6	Parking	<ul style="list-style-type: none"> ➤ Restricted, some areas of parallel parking southbound 	
4.7	Access & linkages	<ul style="list-style-type: none"> ➤ Arterial road for northern beaches. ➤ Links with Dee Why Town/Beach to the east. ➤ Link with residential areas to the west. Link with Dee Why Lagoon 	Review reinforcing linkages and gateway potential of this zone
4.8	Crossing points	<ul style="list-style-type: none"> ➤ At main intersections but non-compliant. 	Assess potential improvements to all pedestrian crossing points
4.9	Congestion	<ul style="list-style-type: none"> ➤ Traffic volumes 	
4.10	Conflicts	<ul style="list-style-type: none"> ➤ Varying level changes, large falls across road associate with 	Review opportunities to improve



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – NORTH , Dee Why Parade to Lismore Avenue

Item	Audit Area	Location/Comment	Further Action
		overland flow. ➤ Non-compliant pram ramps. High traffic volumes and road speed. ➤ Pedestrians/Cars/Crossing Points	pedestrian environment.
5.0	INFRASTRUCTURE & SERVICES		
5.1	Lighting	No pedestrian scale lighting as it is an arterial road.	
5.2	Existing infrastructure services that may be a constraint in the upgrade	Stormwater, underground utilities, road levels, median cross falls	Confirm if infrastructure conflicts or restricts concept proposals.
5.3	Proposed infrastructure services	New median works	Confirm any future service upgrades
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	Not identified on Master Plan. No space available.	Any proposals will need to be assessed against the impacts on overland flow paths
6.2	Stormwater Infrastructure	TBC	
7.0	OTHER		
7.1	Way finding	Limited	Improving way finding to be incorporated into Stage 2 – Detailed Design.
7.2	Public art opportunity	Yes for a significant scale piece.	Potential gateway feature close to Dee Why Lagoon. Liaise with Place Making consultant.
7.3	Views	Bend in road just after Dee why Parade. View to ridgelines .Channelled views. Some vistas along adjoining streets	

PITTWATER ROAD NORTH- EXISTING AND PROPOSED CROSS SECTION

The master plan proposed the following:

Section A through Pittwater Road north of Dee Why Parade (Pittwater Road 1) will remain largely unchanged with the only enhancements being a redirective median kerb, median planting, central feature fencing, custom lighting poles and large character plantings to verges.

- Pedestrian crossing points - emphasised through material changes and lighting
- Road surface upgrade to a uniform finish
- Median upgrades
- Median and roadside planting

The Table below compares the Master Proposal with the existing available space

Pittwater Road North

Location	Master Plan	Existing	Comment
Western footpath	4 m +	TBC	Footpath with grass verge
Northern travel lanes 3 lanes incl. bus/cycle lane	10.0 m	TBC	
Median	1.5 m	TBC	
Southern travel lanes 3 lanes incl. bus/cycle lane	10.0 m	TBC	
Eastern footpath	3.6 m	TBC	Footpath with grass verge



Master Plan section Pittwater Road North, Place Design Group

7.1 PITTWATER ROAD NORTH CONCEPT PROPOSAL

Pittwater Road North Concept Design

Location	Proposal	Comment
Western footpath and grass verge	Retain as existing width. Upgrade paving. Install multifunction poles. Install trees where space allows.	New trees should be advanced stock with clear trunks adjoining bus lane.
Northern travel lanes 3 lanes incl. bus/cycle lane	Retain as existing	
Median	Install planting. Install banner poles and new median edge to RMS standards near Dee Why Parade. Consider decorative fencing to median	Median planting and banner poles to be confirmed with RMS. Confirm if decorative fence is required
Southern travel lanes 3 lanes incl. bus/cycle lane	Retain as existing	
Eastern footpath and grass verge	Retain as existing width. Upgrade paving. Install multifunction poles. Install trees where space allows.	New trees should be advanced stock with clear trunks adjoining bus lane.



Barrenjoey Road Newport showing central banners

Source: Google Streetview



Pittwater Road at Dee Why Parade intersection showing Palm gateway



Pittwater Road North

8 PITTWATER ROAD CENTRAL - TOWN CENTRE



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – TOWN CENTRE , Sturdee Parade to Dee Why Parade

Item	Audit Area	Location/Comment	Further Action
1.0 USE			
1.1	Retail	➤ High density ground floor retail with awnings	
1.2	Commercial	➤ Interspersed between retail	
1.3	Residential	➤ Apartments of varying scale over retail and commercial.	
1.4	Activities	➤ Main arterial traffic corridor, retail / commercial, Dee Why Hotel. High pedestrian activity around transport node and retail.	➤ Review improving pedestrian amenity connections across Pittwater Road
1.6	Nodes and Activation Points	➤ Intersections with side streets are pedestrian links connecting east and western sides of town centre. ➤ Bus interchanges on eastern and western side.	➤ Review improving pedestrian amenity connections across Pittwater Road
2.0 SCALE			
2.1	Existing	➤ Predominantly two to four storey buildings of mixed architectural merit with no distinguishing character. ➤ Dee Why Grand is the most significant development along this precinct.	
2.2	Proposed	➤ Proposed development 701 Pittwater Road next to St David Avenue Park. ➤ 888 Pittwater Road (Meriton) proposed development on the corner of Howard Avenue.	➤ Bus indent and building setback proposed for 888 Pittwater Road. ➤ Bus interchange proposed for area adjoining St David Avenue Park.
2.3	Future development sites	➤ Community Hub adjoining St David Avenue and Pittwater Road	➤ Consider proposal in concept.
3.0 COMFORT & IMAGE			
3.1	Trees & Vegetation	➤ Planting of <i>Ficus</i> sp. trees and <i>plumbago</i> within median on the approach to St David Avenue. Large plane tree in St David Avenue Park. Stand of <i>Araucaria heterophylla</i> Norfolk Island Pines outside community hub precinct.	➤ Norfolk Island pines could be enhanced with feature up lighting. Review opportunities for additional planting in medians and along



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – TOWN CENTRE , Sturdee Parade to Dee Why Parade

Item	Audit Area	Location/Comment	Further Action
3.2	Safety, Security & Visibility	➤ Median Planting can be improved. ➤ No pedestrian scale lighting, Vehicle centric. Advertisement dominance. Scale of road creates unpleasant environment. Passive surveillance from apartments and motorists.	➤ footpath zone. ➤ Review opportunities to improve pedestrian amenity
3.3	Seating & furniture	➤ Limited provision due to space restrictions and unpleasant environment	➤ Review addition of banner poles to act as markers.
3.4	Footpath condition	➤ Brick paving, insitu-concrete with grass verge outside community hub. Town Centre pallet of precast concrete paving outside Dee Why Grand	➤ To be upgraded with Town Centre paving pallet and new kerbs and gutters
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	➤ 60 km per hour	➤ Review scope to reduce speed within this zone to improve pedestrian amenity.
4.2	Cyclist access/future provision	➤ On road in bus lane along Pittwater Road. Shared path along eastern pavement terminating at Sturdee Parade. Pacific Parade on road path	➤ Review cycle plan, routes and connections and incorporate cycle paths/connections where feasible. .
4.3	Public Transport	➤ Major bus corridor .Primary bus interchange at junction with St David's Avenue in north direction. New southbound bus zone proposed outside of 888 Pittwater Road, proposed Meriton development.	➤ Further consultation required with TfNSW and STA to confirm bus interchanges. Shelters to be made accessible at St David Park stop.
4.4	Taxi Bays	➤ No current provision	➤ No taxi bays will be provided
4.5	Loading Bays	➤ Premises mostly rear access, some loading from road.	
4.6	Parking	➤ Restricted some areas of parallel parking	➤ Parking to be maintained
4.7	Access & linkages	➤ Main traffic corridor for northern beaches. Links with Dee Why Town/Beach to the east and with residential areas to the west.	➤ Review in conjunction with traffic management changes associated with town centre one way loop.
4.8	Crossing points	➤ Signalised pedestrian crossings at main intersections but	➤ Review further to improve safety ,



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – TOWN CENTRE , Sturdee Parade to Dee Why Parade

Item	Audit Area	Location/Comment	Further Action
		ramps are non-compliant.	complaint ramps are restricted by existing cross falls.
4.9	Congestion	➤ Traffic volumes are high and will continue to increase.	
4.10	Conflicts	➤ Varying level changes. Grade change across road associated with drainage mitigation. Non-compliant pram ramps and high kerbs. Overland flood path. Unfriendly pedestrian environment and high traffic volumes Pedestrians/Cars/Crossing Points. Bus Interchange	➤ Bus interchanges to be developed. ➤ Review public amenity and improve access where possible.
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ No pedestrian scale lighting	➤ Review lighting
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Stormwater, underground utilities, road levels, median cross falls	➤ Confirm services location and proposed future upgrades
5.3	Proposed infrastructure	➤ New median works	➤ Confirm any future service upgrades
6.0 STORMWATER & DRAINAGE			
6.1	WSUD opportunities	➤ Not identified in Master Plan. Limited opportunities.	
6.2	Stormwater Infrastructure	➤ TBC	
7.0 OTHER			
7.1	Way finding	➤ Limited	➤ Way finding should be considered at transport nodes.
7.2	Public art opportunity	➤ Yes	➤ Review in conjunction with Place Making consultant.
7.3	Views	➤ Views to ridgelines. Channelled views. Some vistas along adjoining streets	

EXISTING AND PROPOSED CROSS SECTION

The master plan proposed the following:

At Pittwater Road - Section B, opposite the Civic Centre, provision for an extra bus bay has been included on the north bound lane with associated bus terminal facilities included along the footpath.

Other features include: raised barrier median, low shrub planting, median tree plantings, central feature fencing, custom light poles, feature lighting strategy and improved definition of pedestrian crossings through grading, surface finishes and lighting.

The Table below compares the Master Proposal with the existing available space

Pittwater Road Central

Location	Master Plan	Existing	Comment
Western footpath	3.6 m	3.4 m	All paved
Northern travel lanes 3 lanes incl. bus/cycle lane	12.5 m	10.0m	
Median	1.5 m	2.7	Section planted with trees and groundcover
Southern travel lanes 3 lanes incl. bus/cycle lane	10.0 m	10.0 m	
Eastern footpath	3.6 m	3.5 m	All paved



Master Plan Section for Pittwater Road Central Place Design Group

8.1 THE PROPOSAL

Pittwater Road Central Concept Design

Location	Proposal	Comment
Western footpath	Retain as existing width. Increase area in front and on corner of St David Avenue Park Upgrade paving. Install multifunction poles. Install trees where space allows.	New trees should be advanced stock with clear trunks adjoining bus lane.
Northern travel lanes 3 lanes incl. bus/cycle lane	Retain as existing	
Median	Install planting. Install banner poles and new median edge to RMS standards. Consider decorative fencing to median	Confirm if decorative fence is required
Southern travel lanes 3 lanes incl. bus/cycle lane	Retain as existing	
Eastern footpath and grass verge	Retain as existing width. Upgrade paving. Install multifunction poles. Install trees where space allows.	New trees should be advanced stock with clear trunks adjoining bus lane.

The relocation of bus shelter has made access to the shelter compliant.



Pittwater Road, looking south from Howard Avenue showing bus indent outside 888 Pittwater Road



Pittwater Road Central



Pittwater Road at Howard Avenue

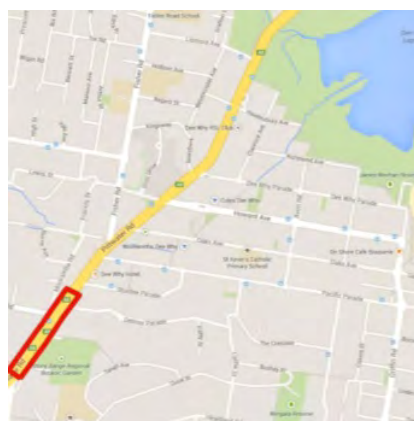


Pittwater Road at Oaks Avenue

9 PITTWATER ROAD SOUTH



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – SOUTH, Warringah Road to Sturdee Parade

Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	➤ Service station, car rental and car servicing. Ground floor units closer to town centre. Office works at Warringah Road intersection forms a gateway point.	
1.2	Commercial	➤ Interspersed between retail. Low density.	
1.3	Residential	➤ Along western side but set back from road	
1.4	Activities	➤ Main arterial traffic corridor ➤ Some retail/commercial ➤ Stoney Range Reserve to the east.	
1.6	Nodes and Activation Points	➤ Some retail/commercial. Predominately car orientated. ➤ Links to Town Centre along Mooramba Road and Sturdee Parade.	➤ Reinforce linkages and gateway character in concept design
2.0	SCALE		
2.1	Existing	➤ Entrance cutting at Warringah Road. ➤ Predominantly open with built form setback some distance from road at gateway zone. ➤ Gradually incline towards Town Centre.	➤ Master Plan identifies significant Gateway treatment. Review further against available space.
2.2	Proposed	➤ Seven (7) storey development proposals at 818 and 822 Pittwater Road	
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Green edge at Stoney Range Reserve, other smaller areas of planting. ➤ Native grasses on roadside cutting ➤ Median is currently concrete ➤ Small green area at junction with May Road.	➤ Master Plan identifies significant Gateway treatment and scope for further trees, median planting along road. Addition tree opportunities to be explored during Stage 2. Explore potential



DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – SOUTH, Warringah Road to Sturdee Parade			
Item	Audit Area	Location/Comment	Further Action
			along roadside cutting and associated walkways
3.2	Safety, Security & Visibility	<ul style="list-style-type: none">➤ No pedestrian scale lighting➤ Open road corridor with passive surveillance from motorists and residents.	➤ Review lighting
3.3	Seating & furniture	<ul style="list-style-type: none">➤ No provision	
3.4	Footpath condition	<ul style="list-style-type: none">➤ Insitu concrete with some grass verges	➤ Review in conjunction with Town Centre materials pallet.
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	<ul style="list-style-type: none">➤ 60 km per hour	
4.2	Cyclist access/future provision	<ul style="list-style-type: none">➤ Shared path along eastern pavement	➤ Review in conjunction with cycleway strategy
4.3	Public Transport	<ul style="list-style-type: none">➤ Major Bus route between the Peninsular and the City.➤ Bus stop at junction with May Road	
4.4	Taxi Bays	<ul style="list-style-type: none">➤ No current provision	
4.6	Parking	<ul style="list-style-type: none">➤ Parallel parking along both sides of street	
4.7	Access & linkages	<ul style="list-style-type: none">➤ Arterial road for northern beaches➤ Links to Stoney Range Reserve and Mooramba Road.	
4.8	Crossing points	<ul style="list-style-type: none">➤ No pedestrian crossing points	
4.9	Congestion	<ul style="list-style-type: none">➤ Traffic volumes	



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

PITTWATER ROAD – SOUTH, Warringah Road to Sturdee Parade			
Item	Audit Area	Location/Comment	Further Action
4.10	Conflicts	➤ Varying level changes	
5.0	INFRASTRUCTURE & SERVICES		
5.1	Lighting	➤ No pedestrian scale lighting	
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Overhead power lines on western edge, upper level of cutting zone. ➤ Stormwater, underground utilities, road levels, median cross falls	➤ Review in conjunction with design proposals
5.3	Proposed infrastructure services		➤ Confirm any future service upgrades against design proposals.
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	➤ Not identified within Master Plan	
6.2	Stormwater Infrastructure	➤ TBC	
7.0	OTHER		
7.1	Way finding	➤ Limited	
7.2	Public art opportunity	➤ Junction with May Road ➤ Road cutting and elevated walkways	➤ Review in conjunction with Place making Consultant.
7.3	Views	➤ Channelled views east and west and are contained by rising topography	

EXISTING AND PROPOSED CROSS SECTION

The master plan proposed the following:

The median treatment at Section C, to be established where an extra right hand turn lane for north bound traffic has been included, utilises a redirective kerb to enable low ground cover planting and the consideration of feature poles and banner signage.

Pedestrians are separated from moving traffic by feature fencing to the kerb edge and within the median.

Features include: raised barrier median, central median feature fencing, kerb edge feature fencing, low shrub planting, custom street lighting poles, banners, and defined pedestrian crossings

Pittwater Road South

Location	Master Plan	Existing	Comment
Western footpath	4m	3.80m	Footpath all paved
Northern travel lanes 3 lanes incl. bus/cycle lane +1 lane turning	12.5 m	9.8 m	
Median	1 m	Slip Lane 2.8 m	
Southern travel lanes 3 lanes incl. bus/cycle lane	10 m	10.0 m	
Eastern footpath	3.6 m	3.35m	Footpath all paved



MASTER PLAN PROPOSAL

The Pittwater Road streetscape at Section D will utilise the extra width to improve amenity by planting the median with a mix of shrubs and grasses below native palm plantings, such as *Livistonia australis* (Cabbage Tree Palm) or other plantings considered appropriate to the location.

Features include: raised barrier median, low shrub planting, character tree plantings, central feature fencing, kerb edge seating / planting barriers, banner poles, custom light poles, feature lighting strategy and improved definition of pedestrian crossings

Pittwater Road South

Location	Master Plan	Existing	Comment
Western footpath	4 m +	3.80 m	Footpath all paving
Northern travel lanes 3 lanes incl. bus/cycle lane	10.0 m	10.0 m	
Median	2.75 m	2.57 m	
Southern travel lanes 3 lanes incl. bus/cycle lane	10.0m	10.0 m	
Eastern footpath	3.6 m	3.6m	Footpath all paving

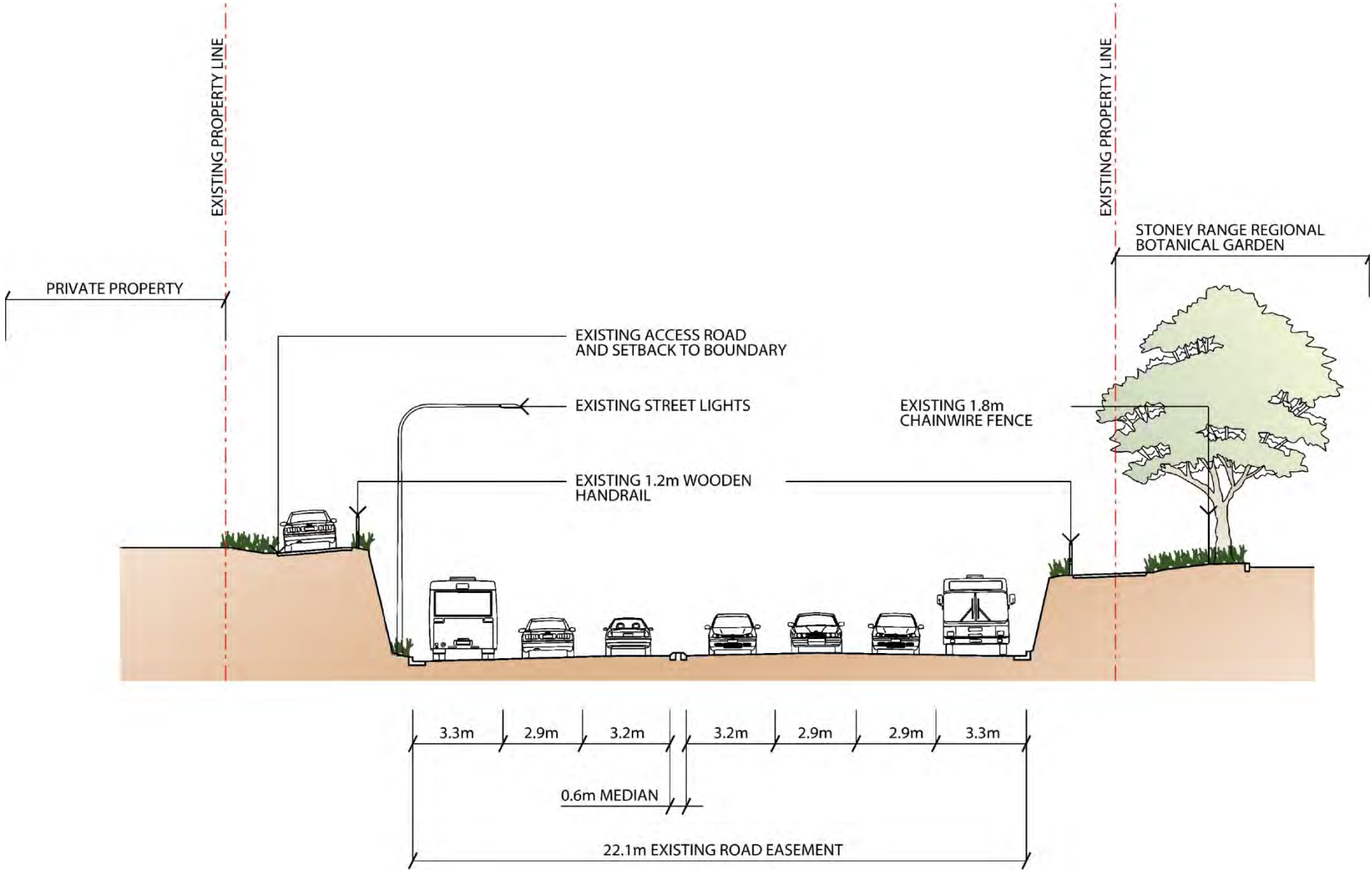


Pittwater Road South Concept Design (between Warringah Road to Sturdee Parade)

Location	Proposal	Comment
Western footpath	Retain as existing width. Footpath proposed to be narrowed between Sturdee Parade and Pacific Parade Upgrade paving. Install multifunction poles. Install trees where space allows.	New trees should be advanced stock with clear trunks adjoining bus lane.
Northern travel lanes 3 lanes incl. bus/cycle lane	Retain as existing	
Median	Median is not 1 m	No space available for planting
Southern travel lanes 3 lanes incl. bus/cycle lane	Retain as existing	
Eastern footpath and grass verge	Retain as existing width. Upgrade paving. Install multifunction poles. Install trees where space allows.	New trees should be advanced stock with clear trunks adjoining bus lane.

Gateway planting

The concept proposed gateway planting of *Livistonia australis* (Cabbage tree Palm) to the pocket park at the entrance to May Road. The palms have been used on the approach to the Town centre at the bus stop zone near Warringah Road. at This location will also be suitable for a gateway artwork piece.



Pittwater Road South Existing road cross section at cutting

GATEWAY STATEMENT

The proposed gateway statement in the Master Plan has been reviewed. There are a number of constraints associated with this proposal. The major issue is the limitation of available space and the Master Plan gateway concept will require land acquisition on the western side in an already limited corridor or realignment of the road to the east. Refer following detail sections.

Additional space requirements to achieve Master Plan Concept

- To include the median will require an addition of 1.0 m.
- To include a separated on road cycleway will require 1.5 m for the western side, 3.0 m for cycleway on both sides.

Actions required in achieving Master Plan Concept

- An additional 4.0 m is required in the road corridor.
- Acquisition of 2.0 m required on the western side, adjoining the service road to provide sufficient space for gateway foundations.
- Relocation of shared path into Stony Range Regional Botanical Gardens



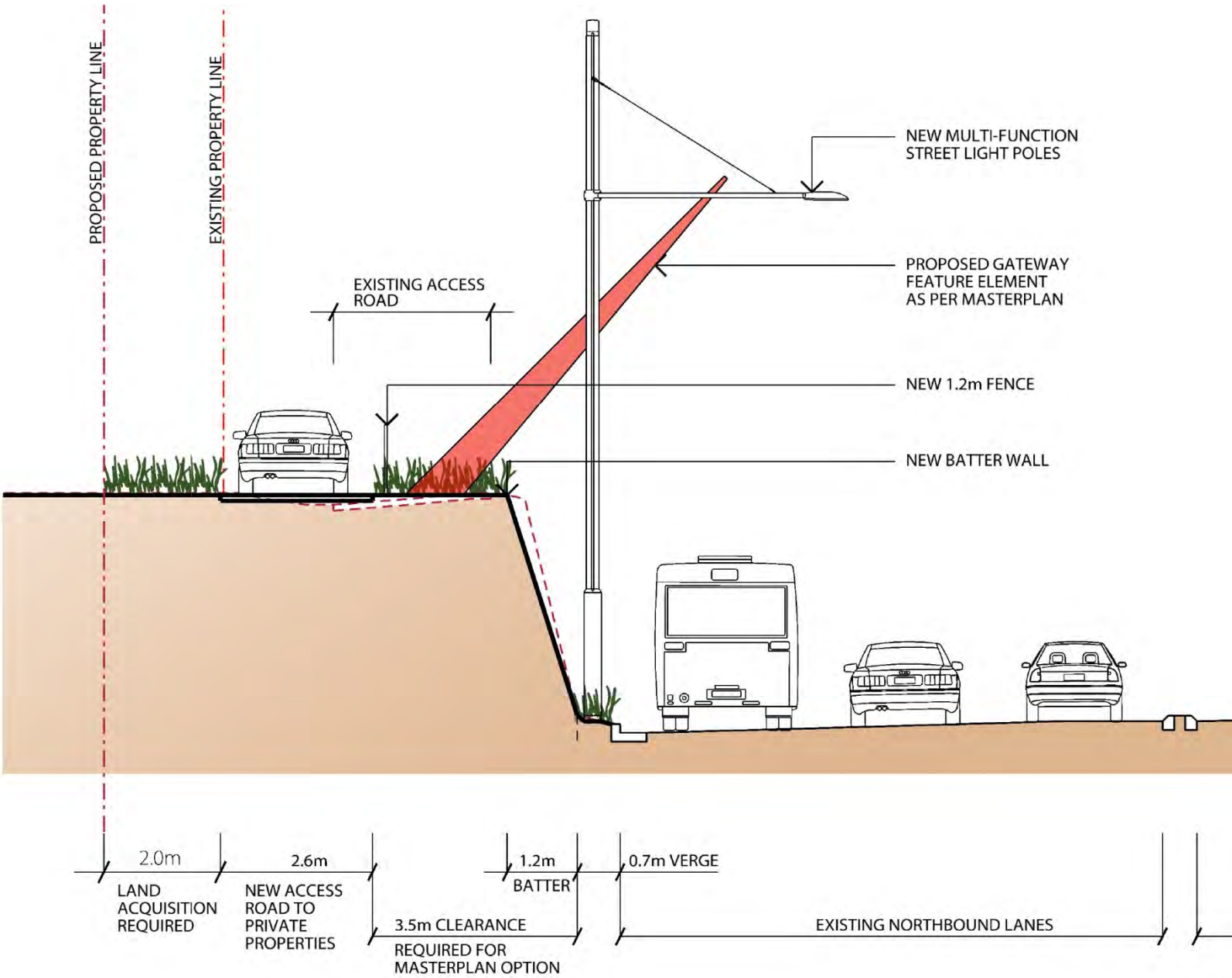
Master Plan Gateway image Place Design Group



Pittwater Road South

On the Western side

Land acquisition will be required to achieve the proposal, relocation of overhead power line, relocation of access road and footpath zone to 589-677 Pittwater Road



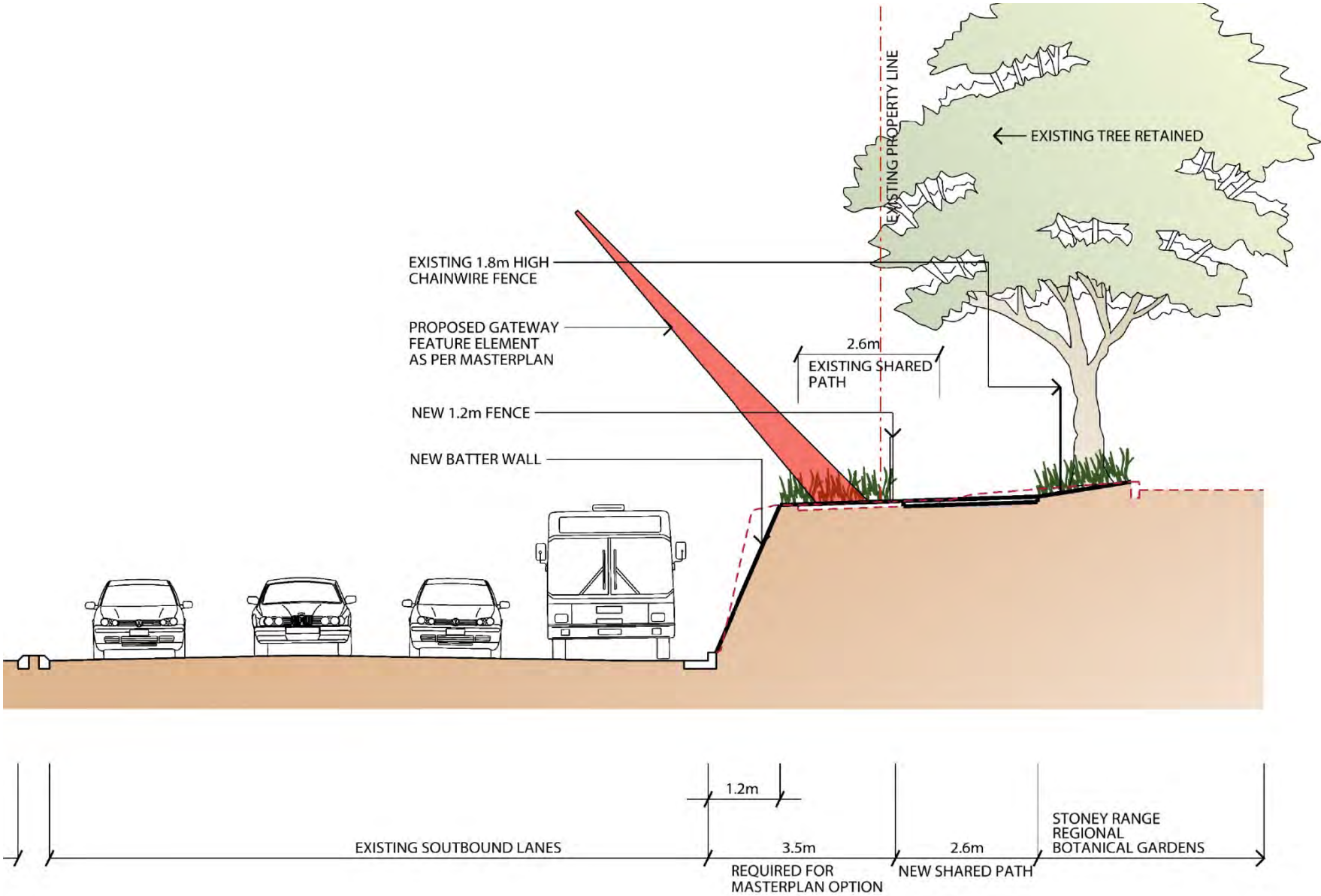
Pittwater Road South western edge showing Master Plan gateway

On the eastern side

The existing shared path will require realignment into Stoney Range Regional Botanical Gardens.

Recommendation

Further review of more cost effective gateway solutions should be assessed in Stage Two.

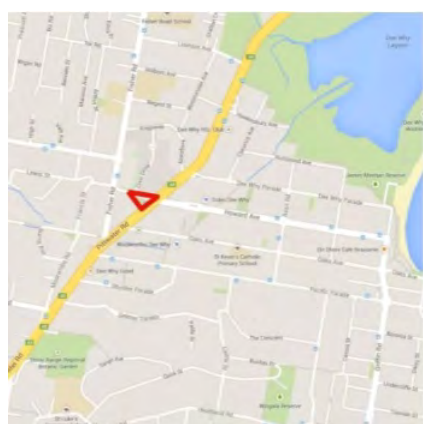


Pittwater Road South eastern edge showing Master Plan gateway

10 ST DAVID AVENUE AND POCKET PARK



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

ST DAVIDS AVENUE – Pittwater Road to Fisher Road

Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	➤ Limited. KFC drive through, on corner of Fisher Road	
1.2	Commercial	➤ No commercial activity	
1.3	Residential	➤ Very limited, occasional property after Fisher Road intersection	
1.4	Activities	➤ Transient route for residential area into Dee Why Town centre ➤ St David Avenue Pocket Park has public toilets	➤ Public toilets are proposed to be integrated into 701 Pittwater Road (Cobalt) development.
1.6	Nodes and Activation Points	➤ St David's Park. ➤ Bus interchange on Pittwater Road ➤ St David's Church and Fire station ➤ Police Station, (proposed to be relocated into Community hub). ➤ Proposed 701 Pittwater Road (Cobalt) development and Community Hub Development	➤ The proposals will alter the pedestrian activity ➤ The community hub will become a key destination.
2.0	SCALE		
2.1	Existing	➤ Regional Road ➤ Wide street on steep gradient with narrow footpaths	➤ Existing levels prohibit the opportunity to achieve compliant cross falls on pedestrian paths.
2.2	Proposed	➤ Upgrade of St David's Park ➤ 701 Pittwater Road (Cobalt) building ➤ Community Hub	➤ Review Cobalt plans



DEE WHY TOWN CENTRE PLACE AUDIT

ST DAVIDS AVENUE – Pittwater Road to Fisher Road			
Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	➤ Limited. KFC drive through, on corner of Fisher Road	
1.2	Commercial	➤ No commercial activity	
1.3	Residential	➤ Very limited, occasional property after Fisher Road intersection	
1.4	Activities	➤ Transient route for residential area into Dee Why Town centre ➤ St David Avenue Pocket Park has public toilets	➤ Public toilets are proposed to be integrated into 701 Pittwater Road (Cobalt) development.
1.6	Nodes and Activation Points	➤ St David's Park. ➤ Bus interchange on Pittwater Road ➤ St David's Church and Fire station ➤ Police Station, (proposed to be relocated into Community hub). ➤ Proposed 701 Pittwater Road (Cobalt) development and Community Hub Development	➤ The proposals will alter the pedestrian activity ➤ The community hub will become a key destination.
2.0	SCALE		
2.1	Existing	➤ Regional Road ➤ Wide street on steep gradient with narrow footpaths	➤ Existing levels prohibit the opportunity to achieve compliant cross falls on pedestrian paths.
2.2	Proposed	➤ Upgrade of St David's Park ➤ 701 Pittwater Road (Cobalt) building ➤ Community Hub	➤ Review Cobalt plans



DEE WHY TOWN CENTRE PLACE AUDIT

ST DAVIDS AVENUE – Pittwater Road to Fisher Road

Item	Audit Area	Location/Comment	Further Action
		➤ Pittwater Road bus interchange integrated with St David's Park	introduction of one way loop. ➤ Review bus interchange
4.4	Taxi Bays	➤ No current provision or demand	
	Loading Bays	➤ No on street loading bays or demand	
	Parking	➤ Parallel parking ➤ Police parking to be relocated when Community hub is completed. ➤ Council Chambers car park accessed off St David Avenue	
4.5	Access & linkages	➤ Access to public toilets in St David Park, ➤ Access to church. ➤ Road serves as a secondary connector route between the town centre and the wider residential district to the west ➤ Narrow footpath on northern side , poor access across civic drive – link to salvation army ➤ Community Hub development ➤ Some property consolidation identified as potential future development in Master Plan	➤ Review park design to access new toilet location. ➤ Review footpath widths
4.7	Crossing points	➤ Crossings at intersections with roads ➤ No further crossings identified by Master Plan ➤ Assess compliance of existing crossing points	➤ Review kerb ramps for accessibility during Preliminary design stage.
4.8	Congestion	➤ Not apparent	
4.9	Conflicts	➤ Large level changes ➤ Sections of narrow footpath at intersections	➤ Review issues during Preliminary design stage



DEE WHY TOWN CENTRE PLACE AUDIT

ST DAVIDS AVENUE – Pittwater Road to Fisher Road

Item	Audit Area	Location/Comment	Further Action
4.10	Traffic Changes	<ul style="list-style-type: none">➤ Removal of through lane (east bound) into Howard Ave➤ Provide bus only right turn onto Pittwater Road	<ul style="list-style-type: none">➤ Incorporate traffic changes in concept.
5.0	INFRASTRUCTURE & SERVICES		
5.1	Lighting	<ul style="list-style-type: none">➤ No pedestrian scale lighting	<ul style="list-style-type: none">➤ Review lighting during concept stage
5.2	Existing infrastructure services that may be a constraint in the upgrade	<ul style="list-style-type: none">➤ TBC	
5.3	Proposed infrastructure services		<ul style="list-style-type: none">➤ Confirm any future service upgrades
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	<ul style="list-style-type: none">➤ Topography would not make it suitable➤ Not included in the WSUD proposals	
7.0	OTHER		
7.1	Wayfinding	<ul style="list-style-type: none">➤ St David's Church spire acts as a key landmark➤ Community Hub development would add another distinct landmark feature	<ul style="list-style-type: none">➤ Incorporate locations into future way finding proposals.
7.2	Public art opportunity	<ul style="list-style-type: none">➤ St David's Park and Bus interchange	<ul style="list-style-type: none">➤ Liaise with Place making consultants
7.3	Views	<ul style="list-style-type: none">➤ Views constrained by topography to the west. Elevated views to the east are contained partially by trees and surrounding built form	

ST DAVID AVENUE PARK CONCEPT PROPOSAL

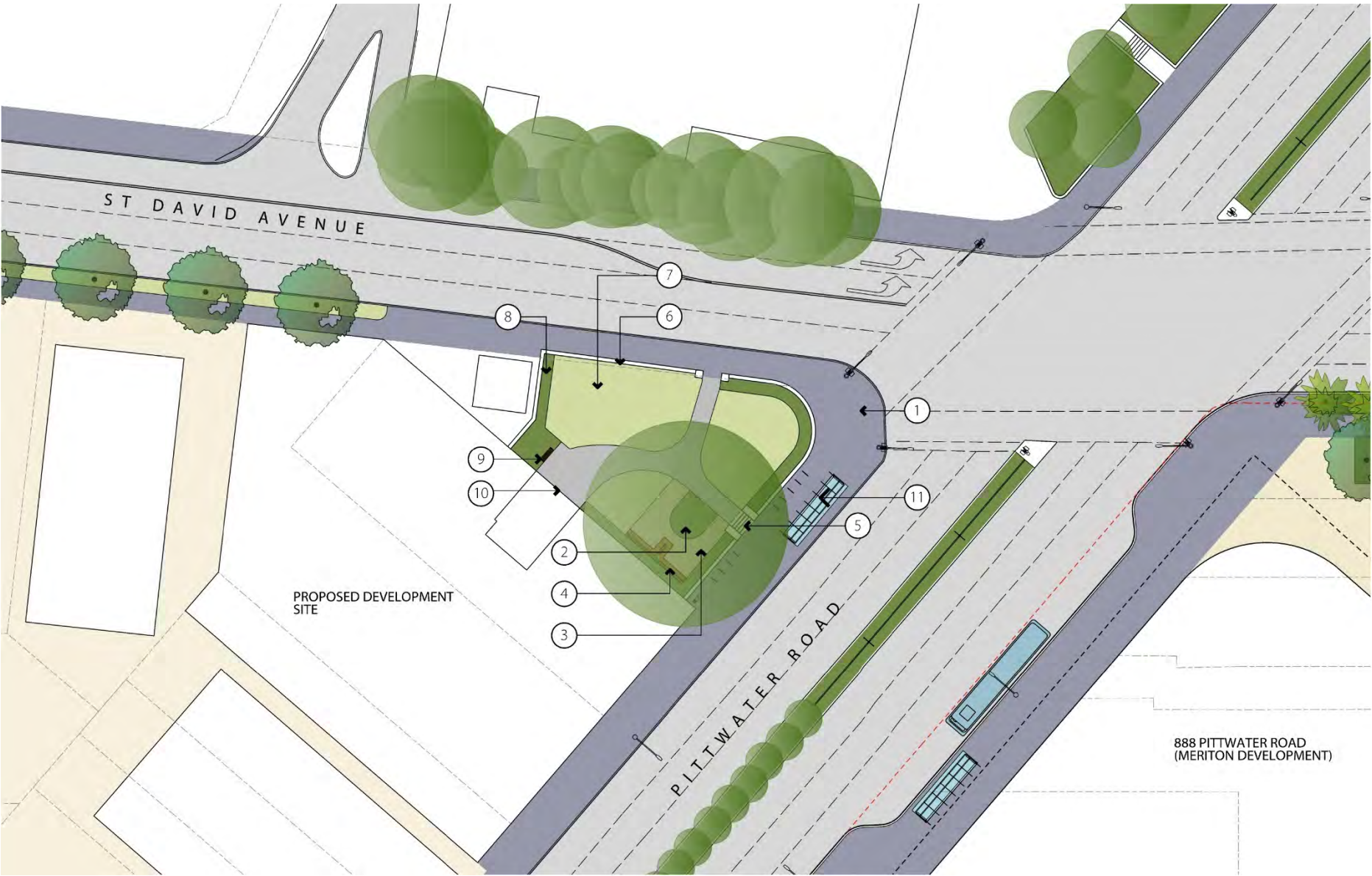
1. Existing wall removed to create wider footpath zone
2. Existing Plane tree retained
3. New brick paving
4. Existing sandstone wall retained, timber seating reconstructed
5. New access steps
6. New stone edge to park
7. Regraded grass embankment
8. Garden bed
9. Bench seat
10. Access to public toilets in proposed development
11. New eight (8.0) metre bus shelter with bicycle parking behind, or integration of shelter into 701 Pittwater Road Cobalt Development.

The concept is preliminary and will be developed in conjunction with the development proposals at 701 Pittwater Road and the Bus interchange requirements of TfNSW.

ST DAVID AVENUE CONCEPT

The concept proposes adding trees and a nature strip to the southern side of St David Avenue after the relocation of the police station parking.

Footpath widths will be reviewed in conjunction with the Civic Hub development.



St David Avenue Pocket Park

11 FISHER ROAD STREETSCAPE



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

FISHER ROAD

Item	Audit Area	Location/Comment	Further Action
1.0 USE			
1.1	Retail	<ul style="list-style-type: none"> ➤ Small amount close to Pittwater Road ➤ Some awning cover 	➤ Council to consider the preparation of an Awning Policy to guide future development
1.2	Commercial	<ul style="list-style-type: none"> ➤ No current commercial activity 	
1.3	Residential	<ul style="list-style-type: none"> ➤ Some apartments ➤ Residential homes after intersection with St David's Avenue 	
1.4	Activities	<ul style="list-style-type: none"> ➤ Link road between Cromer with Dee Why town centre ➤ Retail 	
1.5	Nodes and Activation Points	<ul style="list-style-type: none"> ➤ Retail ➤ Master Builders Site proposed residential redevelopment ➤ Salvation Army ➤ Fast food drive through on corner of St David's Avenue 	➤ The redevelopment will alter the pedestrian activity
2.0 SCALE			
2.1	Existing	<ul style="list-style-type: none"> ➤ Regional Road , wide cross section 	➤ RMS approval required for any proposals
2.2	Proposed	<ul style="list-style-type: none"> ➤ Introduction of tree planting will reduce built form dominance 	➤ Review Planting opportunities
2.3	Future development sites	<ul style="list-style-type: none"> ➤ Master Builders proposed redevelopment ➤ Triangular Block plan identified in Master Plan as potential amalgamation area 	➤ Review proposals
3.0 COMFORT & IMAGE			
3.1	Trees & Vegetation	<ul style="list-style-type: none"> ➤ Trees along eastern pavement ➤ Some areas of grass verge ➤ Planting associated with private properties 	➤ Existing corridor does not provide sufficient space allowance for proposed median and planted parking bays as per Master Plan.



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

FISHER ROAD

Item	Audit Area	Location/Comment	Further Action
		<ul style="list-style-type: none"> ➤ Master Plan indicates tree and WSUD rain gardens and intersperse parking bays. ➤ Planted central median with tree planting 	<ul style="list-style-type: none"> ➤ Review alternative design opportunities in concept stage.
3.2	Safety, Security & Visibility	<ul style="list-style-type: none"> ➤ No pedestrian scale lighting ➤ Steep pavements ➤ Lack of passive surveillance ➤ Views contained by trees and built form 	<ul style="list-style-type: none"> ➤ Review lighting
3.3	Seating & furniture	<ul style="list-style-type: none"> ➤ No current provision ➤ Little demand 	
3.4	Footpath condition	<ul style="list-style-type: none"> ➤ Footpaths are in-situ concrete and asphalt and generally in medium/poor condition and steep in gradient. ➤ Master Plan indicates improved pavements 	<ul style="list-style-type: none"> ➤ Incorporate public domain upgrades
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	<ul style="list-style-type: none"> ➤ 50 km per hour dropping to a 40 km per hour zone. 	<ul style="list-style-type: none"> ➤ Confirm if road speed will be dropped to 40 km per hour
4.2	Cyclist access/future provision	<ul style="list-style-type: none"> ➤ Between St David Avenue and Macintosh Street identified as useful unmarked link 	<ul style="list-style-type: none"> ➤ Review in conjunction with cycle routes.
4.3	Public Transport	<ul style="list-style-type: none"> ➤ Forms part of a bus route but only from St David Avenue onwards 	
4.4	Taxi Bays	<ul style="list-style-type: none"> ➤ No current provision or demand 	
4.5	Loading Bays	<ul style="list-style-type: none"> ➤ Access across pavement, no on street loading areas 	
4.6	Parking	<ul style="list-style-type: none"> ➤ Parallel parking , Police parking ➤ Council chambers car park accessed off St Davis Avenue 	
4.7	Access & linkages	<ul style="list-style-type: none"> ➤ Road serves as a connector route between Dee Why and Cromer to the west. 	



DEE WHY TOWN CENTRE PLACE AUDIT

FISHER ROAD

Item	Audit Area	Location/Comment	Further Action
4.7	Crossing points	➤ Crossings only at intersections with roads	
4.8	Congestion	➤ Not apparent	
4.9	Conflicts	➤ Large level changes and overhead power lines	➤ Review if overhead power lines should be relocated underground to improve streetscape
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ No pedestrian lighting only Ausgrid road lighting	
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Overhead power lines	➤ Confirm location and impact on planting proposals.
5.3	Proposed infrastructure services	➤ Extra turning lanes at intersections ➤ Raised crossing points	➤ Confirm any future service upgrades
6.0 STORMWATER & DRAINAGE			
6.1	WSUD opportunities	➤ Topography is steep and not suitable for WSUD.	➤ Review planting alternatives in lieu of WSUD
6.2	Stormwater	➤ Proposed planting beds in parking zones	➤ Review impact on drainage.
7.0 OTHER			
7.1	Wayfinding	➤ Views to St David's Church spire	
7.2	Public art opportunity	➤ Not currently used for art installations. ➤ Intersection with Pittwater Road and Redman Road forms an important junction.	➤ Review art opportunities
7.3	Views	➤ Views constrained by topography and built form. Street acts as a mini vista from Pittwater Road	

EXISTING AND PROPOSED CROSS SECTION

Fisher Road will cater for two-way traffic with limited parallel parking to both sides. This parking would be interspersed with WSUD rain gardens and associated tree plantings at regular intervals.

A raised median is to be introduced with character planting.

Cycle traffic would be encouraged to use St David Ave to link to Howard Ave. Pedestrian amenity would be enhanced through definition of crossings, materiality and planting.

Other features of the streetscape include:

- New street lighting
- Continuous awnings
- Raised pedestrian crossings
- Extra turning lanes at intersections

Fisher Road

Location	Master Plan	Existing	Comment
Western footpath	4.0 m	3.57 m	All paved
Western parking lane	2.5 m	2.875	
Through lanes incl. bus/cycle lane	3.5 m each	3.5 m each	
Median	2.0 m	NA	
Eastern parking lane	2.5 m	2.875	
Eastern footpath	3.6 m	3.40 m	All paved



Master Plan Section Fisher Road Place Design Group

11.1 THE PROPOSAL

Fisher Road

Location	Proposal	Comment
Western footpath footpath	3.7m (existing retained)	Passive irrigation using segmented kerbs to proposed planting areas.
	Upgrade paving, kerbs and gutters. Install multifunction poles. Install trees and garden beds where space allows.	
Western parking Lane	Existing retained	Planting blisters to be confirmed against traffic modelling
Travel lanes	3 m (existing retained)	
Eastern parking lane	Existing retained	Planting blisters to be confirmed against traffic modelling
Eastern footpath	3.6 m (existing retained) Upgrade paving. Install multifunction poles. Install trees where space allows.	



Fisher Road

DEPARTURE FROM MASTER PLAN

- 1. WSUDS not included due to road gradient and reduction in drainage capacity of road.
- 2. Planted median not included due to space restrictions and reduction in drainage capacity of road.

11.1.1 Furniture

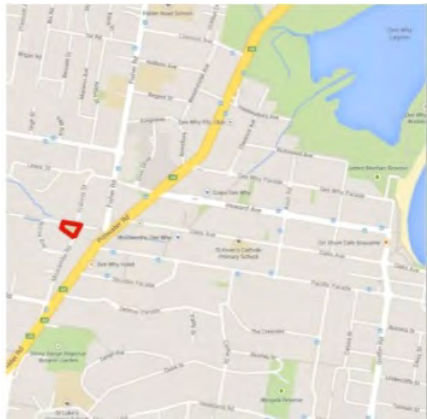
The following public domain elements are part of the proposed design.

- 1. Multifunction light poles
- 2. Bins, bench seats
- 3. Bike racks
- 4. Way finding

11.1.2 Further actions to confirm proposal

- 1. Confirm if overhead power lines are to be relocated underground
- 2. Confirm interface with Redman Road pocket park
- 3. Confirm Master Builder development proposals and interface with streetscape.
- 4. Confirm all existing underground services and impact of proposals
- 5. Confirm additional infrastructure requirements.

12 REDMAN ROAD POCKET PARK (REDMAN PLACE)



DEE WHY TOWN CENTRE PLACE AUDIT

REDMAN ROAD			
Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	➤ Located in the block between Mooramba and Pittwater Road	
1.2	Commercial	➤ No current commercial activity	
1.3	Residential	➤ Not many residential units until after Mooramba Park	
1.4	Activities	➤ Some retail ➤ Council car park facilities ➤ Nursery ➤ Children's playground	
1.6	Nodes and Activation Points	➤ Mooramba Park ➤ Proposed Redman plaza area with WSUD integration and potential alfresco dining ➤ Triangular block amalgamation plan identified in Master Plan 18 Fisher Road, Masters Builders development proposal	➤ The redevelopment will alter the pedestrian activity
2.0	SCALE		
2.1	Existing	➤ Predominantly 2 storey developments with landform rising to the west	
2.2	Proposed	➤ Redman Road plaza	
2.3	Future development sites	➤ Triangular Block amalgamation identified in Master Plan on Fisher Road ➤ Mooramba Road car park potentially developed as a multi storey car park ➤ 18 Fisher Road, Masters Builders development proposal	➤ Incorporate proposals in concept design
3.0	COMFORT & IMAGE		



DEE WHY TOWN CENTRE PLACE AUDIT

REDMAN ROAD

Item	Audit Area	Location/Comment	Further Action
3.1	Trees & Vegetation	<ul style="list-style-type: none"> ➤ Very few trees predominantly small in size ➤ Planting associated with private properties ➤ Master Plan indicates further tree planting ➤ New WSUD related plaza 	➤ Review Planting opportunities
3.2	Safety, Security & Visibility	<ul style="list-style-type: none"> ➤ No pedestrian scale lighting ➤ Views contained by built form and rising topography to the west ➤ Architecture is poor quality 	➤ Review Planting opportunities
3.3	Seating & furniture	<ul style="list-style-type: none"> ➤ Limited, some at Mooramba Park ➤ Demand will be increased around Redman Road Plaza 	➤ Plaza design to incorporate seating areas
3.4	Footpath condition	<ul style="list-style-type: none"> ➤ Footpaths are brick and in-situ concrete generally in fair condition ➤ Master Plan indicates improved streetscape 	➤ Incorporate public domain upgrades
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	<ul style="list-style-type: none"> ➤ 50 km per hour ➤ Closing of part of Redman Road Plaza as part of new park area 	
4.2	Cyclist access/future provision	<ul style="list-style-type: none"> ➤ Not part of the cycle network 	
4.3	Public Transport	<ul style="list-style-type: none"> ➤ No part of current public transport network 	
4.4	Taxi Bays	<ul style="list-style-type: none"> ➤ No current provision or demand 	



DEE WHY TOWN CENTRE PLACE AUDIT

REDMAN ROAD

Item	Audit Area	Location/Comment	Further Action
	Loading Bays	➤ Access across pavement, no on street loading areas	
	Parking	➤ Parallel parking ➤ Council car park ➤ Private parking adjoin proposed plaza area ➤ Future potential for multi-storey council owned car park	
4.5	Access & linkages	➤ Vehicle access still required in plaza ➤ Improved pedestrian crossing at Pittwater Road	➤ Incorporate vehicle access into plaza design
4.7	Crossing points	➤ Crossings only at intersections with roads	
4.8	Congestion	➤ Not apparent	
4.9	Conflicts	➤ Part of overland flow path ➤ Overhead power lines ➤ Pedestrian crossings ➤ Proposed Builders Association development will need to maintain service vehicle access across proposed plaza	➤ Concept proposal to allow for access. Confirm types and sizes of vehicles
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ No pedestrian scale lighting	
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Overhead power lines, review undergrounding of overhead wires in plaza block	➤ Confirm that undergrounding is within scope
5.3	Proposed infrastructure	➤ Removing part of the road and creating new WSUD plaza	➤ Confirm any future service



DEE WHY TOWN CENTRE PLACE AUDIT

REDMAN ROAD			
Item	Audit Area	Location/Comment	Further Action
	services	➤ Confirm impact of proposals on Floodplain	upgrades ➤ Confirm design does not increase flooding
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	➤ Redman Road plaza has scope for WSUD	
6.2	Stormwater	➤ TBC	
7.0	OTHER		
7.1	Way finding	➤ Currently poor levels of way finding ➤ Increased connectivity with DYTC and information on local area would be advantageous	
7.2	Public art opportunity	➤ Potential at Redman Road Plaza and children's play associated with Mooramba Park ➤ Gateway opportunity for art at Fisher Road , Pittwater Road junction	
7.3	Views	➤ Views constrained by topography and built form.	
7.4	Australia Post Box	➤ Relocation required if street closed	➤ Alternative location required.

12.1 THE PROPOSAL

Departure from Master Plan

- No central water feature
- No lawn areas
- WSUD incorporated into plaza
- Small water feature at junction with Fisher Road



12.1.1 Redman Place –The Concept

Redman Place will form a significant hub to the western side of the town centre, providing a pleasant pedestrian linkage to the eastern side of DYTIC. The design will connect the Council owned car park site to the pedestrian crossing point at Pittwater Road.

The space has been designed through the closure of Redman Road from Fisher Road to Mooramba Road to create a local destination.

Redman Place will form a visual termination and provide an outlook for the adjoining properties and proposed apartments. The southern frontage will offer good quality outdoor dining space with year round solar exposure.

The theme that has been established for the town centre upgrade is extended into Redman Place i.e. a “casual atmosphere” that can be used by the local population as their “backyard”. Reinforcing the characteristic coastal feel of the region into Redman Place reflects the special essence that is Dee Why.

The space has been designed with three parts:

- 1. The formal entry with water feature
- 2. The flexible central zone
- 3. The shared zone and WSUD



View from Fisher Road showing possible gateway sculpture

REDMAN PLACE

- 1. Shared zone (10km/hr) access to private properties and for service vehicles
- 2. Access from Mooramba Road, proposed changed kerb alignment at intersection
- 3. Water Sensitive Urban Design areas with seating
- 4. Flexible Central zone with removable umbrellas and sun lounges supplied by Council.
- 5. Formal entry with water feature and curved seating and Banksia grove
- 6. Pedestrian circulation and outdoor eating zone
- 7. Possible location for gateway artwork at the junction of Redman Plaza and Fisher Road to mark this precinct. The final location and type of artwork will be determined in conjunction with Place Making Action Plan.
- 8. Deciduous trees
- 9. Central multifunction poles with double mast arms
- 10. Turning circle for delivery vehicles



Redman Place

The Flexible Central zone

The core of Redman Place will allow for an overlay of activities either in a casual or structured manner. A space (16 x16 metres) is available for buskers, street theatre, outdoor classes or market stalls.



The formal entry with water feature

The entry will be marked with a radial pattern of *Banksia integrifolia* planted to form a seating grove that focusses onto an ornamental water feature. This space will become a meeting place and comfortable seating area during the day



View from Fisher Road showing water feature and sitting area.



View from Mooramba Road looking towards Fisher road showing WSUDs and seating.



View looking toward Moomba Road with Shared zone behind.



Redman Place long section with Mooramba Road to the left and Fisher road to the right

The shared zone and WSUD

The intersection of Mooramba Road and Redman Road has been adjusted to improve pedestrian amenity.

Private property and servicing access has been maintained through the introducing of a shared zone six (6) metres in width, with entry and exit from Mooramba Road and further circulation through to Fisher Road for emergency vehicles..

Paralleling the shared space are three rectangular WSUDs. The road will be regraded to fall toward the centreline with segmented kerbs to allow water flow into the WSUDs.

A series of timber benches and platforms will edge the WSUDs providing casual seating spaces.

The WSUDs will be designed as bio retention basins to maximise the volume of runoff treated through the filtration media. The design will convey above design flows through overflow pits and will not convey flood flows over the filtration surface. This method will reduce the amount of dislodgement of collected pollutants and the scouring of vegetation.

The system will convey collected water to downstream waters with runoff loss assisting in maintained soil moisture in the growing media for the vegetation.

The vegetation in the filter media will enhance its function and maintain porosity of the filtration layer. Proposed species include:

<i>Carex fascicularis</i>	Tassel sedge
<i>Dianell alongifolia var longifolia</i>	Pale Flax lily
<i>Lomandra fiformis ssp. Filiformis</i>	Wattle Mat rush
<i>Microlaena parviflimum</i>	Creeping boobialla
<i>Poa labillardieri</i>	Common Tussock Grass



Shared zone on the left with WSUD's.

Market overlays for events.

Redman Place can be used for street markets with the shared zone and central space having capacity for a series of market stalls.

Lighting

Centrally located double out-reach multifunction poles are proposed. Within the poles, power supply for events can also be provided.

12.1.2 Furniture

The following public domain elements are part of the proposed design.

1. Multifunction light poles
2. Bins, bench seats
3. Drinking fountain and water refill station
4. Bike racks
5. Way finding
6. Art street furnishings

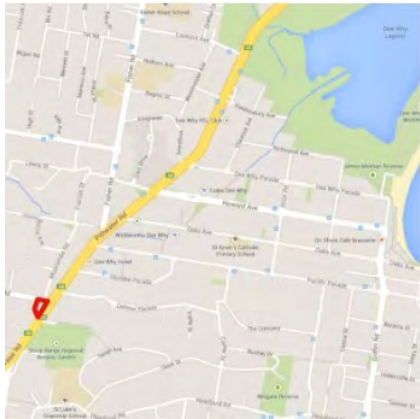
12.1.3 Further actions to confirm proposal

1. Review impact on overland drainage flow on road profile and proposed
2. Confirm road cross section in conjunction with drainage capacity.
3. Confirm driveway access points for Masters Builders development and all other properties.
4. Confirm emergency access requirements.
5. Confirm if overhead power will be installed below ground
6. Confirm intersection realignment of Redman Road and Mooramba Road
7. Confirm all existing underground services and impact of proposals
8. Confirm additional infrastructure requirements.
9. Consult and co-ordinate relocation of Australia Post Boxes

13 MOORAMBA ROAD AND MOORAMBA POCKET PARK



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

MOORAMBA ROAD			
Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	➤ Small amount, predominately on eastern side of road.	
1.2	Commercial	➤ Limited commercial activity	
1.3	Residential	➤ Apartments , predominately 4 storey in height	
1.4	Activities	➤ Residential area ➤ Petrol Station on corner with Pittwater Road ➤ Car parking to commercial premises and Council car park.	
1.6	Nodes and Activation Points	➤ Mooramba Park with playground	
2.0	SCALE		
2.1	Existing	➤ Ranging from 2 to 4 storey developments with landform rising to the west	
2.2	Future development sites	➤ Council car park site identified as multi-storey car park	➤ Incorporate proposals into concept
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Some trees, predominantly small scale along road ➤ Planting associated with private properties ➤ Master Plan indicates further tree planting	➤ Incorporate addition planting where possible.
3.2	Safety, Security & Visibility	➤ No pedestrian scale lighting ➤ Views contained by built form and rising topography to the west	➤ Review lighting
3.3	Seating & furniture	➤ No current provision ➤ Little demand	➤
3.4	Footpath condition	➤ Footpaths are in-situ concrete and tarmac generally in	➤ Review in concept proposals



Source; Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

MOORAMBA ROAD			
Item	Audit Area	Location/Comment	Further Action
		medium/poor condition and steep in gradient	
		➤ Master Plan indicates improved pavements	
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	➤ 50 km per hour	➤ Confirm if to be reduced to 40kmh
4.2	Cyclist access/future provision	➤ Identified as useful unmarked route in Council's cycle strategy	
4.3	Public Transport	➤ Not part of current public transport network	
4.4	Taxi Bays	➤ No current provision or demand	
	Loading Bays	➤ Access across pavement, no on street loading areas	
	Parking	➤ Parallel parking ➤ Council car park ➤ Future potential for multi-storey council owned car park	
4.5	Access & linkages	➤ Major link to Pittwater Road and access to western side of DYTIC for vehicles ➤ Pedestrian link to Pittwater Road	
4.7	Crossing points	➤ Crossings only at intersections with roads	
4.8	Congestion	➤ Not apparent	
4.9	Conflicts	➤ Part of overland flow path ➤ Overhead power lines ➤ Pedestrian crossings	
5.0	INFRASTRUCTURE & SERVICES		



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

MOORAMBA ROAD

Item	Audit Area	Location/Comment	Further Action
5.1	Lighting	➤ No pedestrian lighting	➤ Review lighting
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Overhead power lines on western side of street	➤ Constraint on tree planting
5.3	Proposed infrastructure services	➤ Nothing indicated by Master Plan	➤ Confirm any future service upgrades
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	➤ Street not included in the WSUD proposals ➤ Indicated Mooramba road park has capacity for WSUD ➤ Investigate potential for interspersed parking with WSUD rain gardens along street	➤ Review in concept proposals
6.2	Stormwater	➤ Currently runs along eastern side and then joins Pittwater Road system via though way	
7.0	OTHER		
7.1	Way finding	➤ Limited	
7.2	Public art opportunity	➤ Yes ➤ Pedestrian Link to Pittwater Road ➤ Future Mooramba Road car park development	➤ Liaise with Place making consultants.
7.3	Views	➤ Views constrained by topography and built form. ➤ Street acts as a mini vista from Pittwater Road	

13.1 THE PROPOSAL

Mooramba Park

Mooramba Park has been designed as a grassed detention basin. The park is proposed to be incorporated into the overall site development for a Council car park building and has not been included in the cost plan.

Children's playground

The children's playground will require relocation if the site development proposal proceeds. The location of the playground is to be confirmed in conjunction with car park development, either on site or nearby.

Mooramba Road

- No changes to kerb alignments
- New tree planting where possible
- Undergrounding of overhead electrical wires.

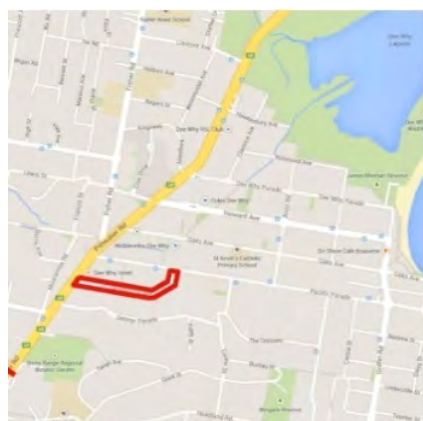


Mooramba Road

14 STURDEE PARADE



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

STURDEE PARADE

Item	Audit Area	Location/Comment	Further Action
1.0 USE			
1.1	Retail	<ul style="list-style-type: none"> ➤ Located towards Pittwater Rd on southern side ➤ Dee Why Hotel located on the northern side ➤ Access into Dee Why Grand ➤ Footpath has awning 	
1.2	Commercial	<ul style="list-style-type: none"> ➤ Dee Why Grand has commercial suits for lease on level one, not currently occupied 	
1.3	Residential	<ul style="list-style-type: none"> ➤ Mainly 3/4 storey apartment blocks with the occasional 2 storey and single storey homes. Apartments on level 2 and 3 at Dee Why Grand 	
1.4	Activities	<ul style="list-style-type: none"> ➤ Retail, commercial and residential 	
1.6	Nodes and Activation Points	<ul style="list-style-type: none"> ➤ Dee Why Grand ➤ Through site link to Pacific Parade 	
2.0 SCALE			
2.1	Existing	<ul style="list-style-type: none"> ➤ Scale of street is more confined towards Pittwater Road with reduced setbacks. ➤ Beyond the retail commercial sector, setbacks increase within residential zone. 	
2.2	Future development sites	<ul style="list-style-type: none"> ➤ 18-22 Sturdee Parade (Kiah Proposal) for 2 stage residential development 	
3.0 COMFORT & IMAGE			
3.1	Trees & Vegetation	<ul style="list-style-type: none"> ➤ Predominantly <i>Lophostemon</i> sp. with grass verges. Small area of verge planting. ➤ Scope for further tree planting shown on Master Plan 	<ul style="list-style-type: none"> ➤ Review opportunities for additional planting
3.2	Safety, Security & Visibility	<ul style="list-style-type: none"> ➤ No pedestrian scale lighting but street is well overlooked by 	



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

STURDEE PARADE

Item	Audit Area	Location/Comment	Further Action
		residences. Visibility is restricted by built form and trees	
3.3	Seating & furniture	➤ No current provision	
3.4	Footpath condition	➤ Generally in good condition. New pre cast concrete paved to streetscape adjoining Dee Why Grand. ➤ Brick paving in front of adjacent retail zone. ➤ Residential footpaths are in-situ concrete and in good condition	➤ Confirm extent of proposed paving upgrades in concept proposal.
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	➤ 50 km per hour	➤ Confirm if to be reduced to 40kmh
4.2	Cyclist access/future provision	➤ Existing marked on road route. Joins Pacific Parade on road facility.	➤ Additional linkages to be confirmed during Stage 2
4.3	Public Transport	➤ Bus operates eastbound along Sturdee Parade	➤ Confirm if stops are to change with traffic proposals.
4.4	Taxi Bays	➤ No current provision or future scope	
4.5	Loading Bays	➤ Main loading access into Dee Why Grand across pavement	
4.6	Parking	➤ Parallel parking along both sides of street	
4.5	Access & linkages	➤ Acts as a local road between Pittwater Rd and Pacific Parade. ➤ Pedestrian through site link to Pacific Parade on eastern side of Dee Why Grand. ➤ Future widening of thoroughway.	
4.7	Crossing points	➤ Single crossing point at Pittwater Road interchange. ➤ Proposed for two new pedestrian crossings at Dee Why Grand and the thoroughway	➤ Review pedestrian crossings in Stage 2. RMS approval required.
4.8	Congestion	➤ Not apparent	



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

STURDEE PARADE			
Item	Audit Area	Location/Comment	Further Action
4.9	Conflicts	➤ Not apparent	
4.10	Traffic Changes	➤ Provide right turn phase onto Pittwater Road	
5.0	INFRASTRUCTURE & SERVICES		
5.1	Lighting	➤ No pedestrian scale lighting ➤ Improve pedestrian lighting both on street and within pedestrian link to Pacific Parade	➤ Review lighting design.
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Overhead power lines	➤ Confirm location and impact on planting proposals
5.3	Proposed infrastructure services		➤ Confirm
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	➤ Low point collects water during extreme flood events ➤ Not currently identified	
6.2	Stormwater	➤ Stormwater pipes close to Pittwater Road running along northern kerbside	
7.0	OTHER		
7.1	Way finding	➤ Limited	
7.2	Public art opportunity	➤ No	
7.3	Views	➤ Channelled views east and west	

14.1 THE PROPOSAL

- No changes to kerb alignments
- New tree planting where possible
- Multifunction poles
- New paving
- Undergrounding of overhead electrical wires.

Further action

Confirm if traffic changes impact on bus stops locations with STA.

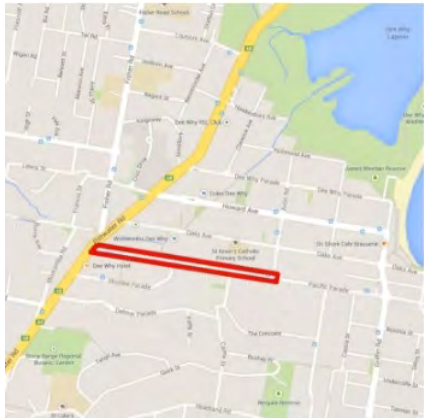


Sturdee Parade

15 PACIFIC PARADE



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

PACIFIC PARADE – TOWN CENTRE AND RESIDENTIAL ZONE			
Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	<ul style="list-style-type: none">➤ Terraced outlets towards Pittwater Road➤ Dee Why Grand, Dee Why Markets.➤ Continuous awnings along streetscape	
1.2	Commercial	<ul style="list-style-type: none">➤ Some commercial activity on 1st floors	
1.3	Residential	<ul style="list-style-type: none">➤ Mainly 3/4 storey apartment blocks with the occasional 2 storey and single storey homes.➤ Proposed development at 23- 29 Pacific Parade (Kiah site)➤ Proposed development at Dee Why Markets site	
1.4	Activities	<ul style="list-style-type: none">➤ Retail with occasional alfresco dining➤ Dee Why Grand➤ Pedestrian linkage from residential apartments	
1.6	Nodes and Activation Points	<ul style="list-style-type: none">➤ Dee Why Grand and Dee Why Markets➤ Through site link to Sturdee Parade➤ Dee Why Markets re-development with activated 'eat street'	<ul style="list-style-type: none">➤ Review proposed street connection from Oaks Avenue
2.0	SCALE		
2.1	Existing	<ul style="list-style-type: none">➤ The built form is closer to kerb near Pittwater Road,➤ Beyond the retail /commercial precinct, building line is set back.	<ul style="list-style-type: none">➤ Review footpath widening opportunities in conjunction with traffic modelling.
2.3	Future development sites	<ul style="list-style-type: none">➤ 23-29 Pacific Parade (Kiah site) proposals are currently for a 6 storey apartment block. This will only be 4 storeys at street	



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

PACIFIC PARADE – TOWN CENTRE AND RESIDENTIAL ZONE

Item	Audit Area	Location/Comment	Further Action
level with the upper levels stepped back. Prosed as two stages.			
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	<ul style="list-style-type: none"> Predominately mature <i>Lophostemon sp.</i> Some raised planters associated with Dee Why Grand forecourt 	<ul style="list-style-type: none"> Scope for further tree planting shown on Master Plan
3.2	Safety, Security & Visibility	<ul style="list-style-type: none"> No pedestrian scale lighting but street is well overlooked by residences. Visibility is restricted by built form and trees 	
3.3	Seating & furniture	<ul style="list-style-type: none"> Some public seating at Dee Why Grand forecourt Master Plan identifies widened footpaths and widened footpaths and "alfresco dining" 	<ul style="list-style-type: none"> Review opportunities for footpath widening
3.4	Footpath condition	<ul style="list-style-type: none"> Generally in good condition. New pre cast concrete paving along Dee Why Grand streetscape with variable level changes and step access. Brick paving in front of terraced retail area. Residential footpaths are in-situ concrete in fair condition. Grass verges against property boundaries have evidence of wearing. 	<ul style="list-style-type: none"> Review scope for footpath upgrades.
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	<ul style="list-style-type: none"> 50 km per hour 	<ul style="list-style-type: none"> Review if speed can be reduced 40 km per hour.
4.2	Cyclist access/future provision	<ul style="list-style-type: none"> On road cycleway line markings from intersection Avon Avenue. Master Plan indicates separated cycle ways along Oaks Avenue and Howard Avenue . 	<ul style="list-style-type: none"> Review cycleway network strategy



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

PACIFIC PARADE – TOWN CENTRE AND RESIDENTIAL ZONE			
Item	Audit Area	Location/Comment	Further Action
4.3	Public Transport	➤ Bus operates westbound along Pacific Parade picking up from outside the rear of Dee Why Markets and from the entrance to Dee Why Grand shopping centre	➤ Confirm bus routes in conjunction with change traffic conditions.
4.4	Taxi Bays	➤ No current provision	➤ Confirm if required
4.5	Loading Bays	➤ Rear loading bays across pavement close to Pittwater Road and at Dee Why Markets	➤ Confirm loading configuration of Dee Why Grand
4.6	Parking	➤ Parallel parking along both sides of street and basement parking available at Dee Why Grand	
4.7	Access & linkages	➤ Access is primarily east west with north south movement restricted. ➤ Pedestrian link through to Sturdee Parade. ➤ Link to Oaks Avenue though Dee Why Markets during opening hours. ➤ Level change creates awkward transition from street level into Dee Why Markets ➤ Pedestrian link through to Sturdee Parade identified as part of the public domain improvement works. ➤ Proposed new lane link related to Dee Why Markets development	➤ Review proposed new lane link from Oaks Avenue to Pacific Parade and confirm intersection geometry and signalisation.
4.7	Crossing points	➤ Single crossing point adjacent rear of Dee Why Market	➤ Master Plan indicates a new pedestrian crossing point outside the front of Dee Why Grand entrance.
4.8	Congestion	➤ AM/PM/Weekend congestion at Pittwater Road and Dee Why Grand entry/exit.	



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

PACIFIC PARADE – TOWN CENTRE AND RESIDENTIAL ZONE			
Item	Audit Area	Location/Comment	Further Action
4.9	Conflicts	➤ Level changes between road, public domain and FFL's of buildings	
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ No pedestrian scale lighting along street or along pedestrian link to Sturdee Parade.	➤ Improve pedestrian lighting both on street and within pedestrian link to Pacific Parade
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Stormwater	
5.3	Proposed infrastructure services	➤ Removing right hand turn from Pittwater Road in to Pacific Parade ➤ Removing signals from Pittwater Road interchange	➤ To be further reviewed ➤ Confirm any future service upgrades
6.0 STORMWATER & DRAINAGE			
6.1	WSUD opportunities	➤ Master Plan identifies parking will be interspersed with WSUD rain gardens	➤ Review during concept stage against floodplain implications.
6.2	Stormwater Infrastructure	➤ Stormwater crosses in the same alignment as the throughway	
7.0 OTHER			
7.1	Way finding	➤ Limited	
7.2	Public art opportunity	➤ Limited	
7.3	Views	➤ Channelled views east and west and are contained by rising topography	

15.1 PACIFIC PARADE MASTER PLAN PROPOSAL

Pacific Parade will cater for two-way traffic with parallel parking to both sides. This parking would be interspersed with WSUD rain gardens and associated tree planting in addition to existing street trees. Cycle traffic would be encouraged to use Oaks Ave or Howard Ave while pedestrians would be directed to defined crossing points. Other features of the streetscape include:

- New street lighting
- Wider footpaths with continuous awnings
- Narrower traffic lanes for slower speeds and pedestrian safety
- Raised pedestrian crossings
- Segmented kerbs

Pacific Parade

Location	Master Plan dimension	Existing dimension	Comment
Northern footpath	4 m	3.45 m	Footpath width
Parking lane north	2.5 m	2.9 m	Including WSUDs
Traffic lanes 2 no.	3.5 m each	3.5 m each	
Parking lane south	2.5 m	2.9 m	Includes WSUDs
Southern footpath	4 m	3.25 m	Footpath width



Master Plan Pacific Parade section Place Design Group

15.2 THE PROPOSAL

Pacific Parade

Location	Proposal	Comment
Northern footpath	3.7m (existing retained) Upgrade paving, kerbs and gutters. Install multifunction poles. Install trees and garden beds where space allows.	On the corner of Oaks d and Pittwater Road , kerb realigned for proposed one way loop Cabbage Tree Palms introduced as gateway planting, existing trees retained where possible.
Northern kerbside parking	2.5 m	Parallel parking Tree planting and garden beds
Travel lanes	3.2 m each	
Southern kerbside Parking Lane	3.2 m	Bus Zone Taxi zone Parallel Parking
Southern footpath	4.6 m generally 9.6 m to existing building setback (Dee Why Markets) Upgrade paving. Install multifunction poles. Install trees where space allows.	Relocated kerb Levels changes retained as existing floor levels are below road level.



Pacific Parade

15.2.1 Furniture

The following public domain elements are proposed:

1. Multifunction light poles
2. Bins, bench seats
3. Bike racks
4. Way finding

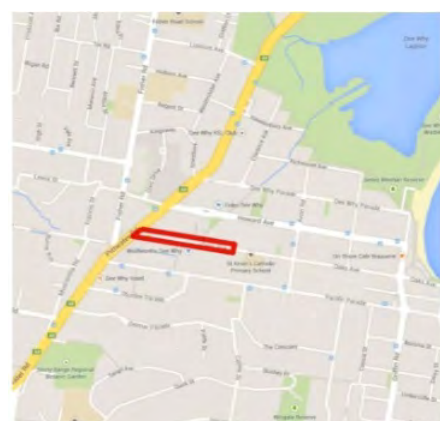
15.2.2 Further actions to confirm proposal

1. Consult with Transport for New South Wales on changes to bus route and bus zones
2. Consult with State Transit Authority on bus zones.
3. Consult with Taxi Council if taxi zone required.
4. Review impact on overland drainage flow on altered kerb alignments
5. New lane link. Confirm intersection design and swept paths for corners.
6. Confirm new pedestrian crossing point .
7. Confirm and co-ordinate all existing underground services and impact of proposals.
8. Confirm additional infrastructure requirements.
9. Confirm blisters to do not impact floodplain risk.
10. Confirm relocation of phone booths



Pacific Parade at Pittwater Road showing gateway palms

16 OAKS AVENUE –PITTWATER ROAD TO NEW LINK ROAD



DEE WHY TOWN CENTRE PLACE AUDIT

PRECINCT

OAKS AVENUE – TOWN CENTRE ZONE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	<ul style="list-style-type: none"> ➤ High density of retail activity located towards Pittwater Road and around Dee Why Market, Vumbaca Fruit Market and associated outlets, site of proposed development at 888 Pittwater Road (Meriton). Retail also includes Post office and 24 hour gym. ➤ Continuous awning cover not achieved due to Inconsistent building setbacks ➤ Proposed development at 888 Pittwater Road (Meriton) will create new retail frontage and through site link to Howard Avenue. ➤ New Link Road adjoins Site A development opportunity (currently car park). ➤ 27-33 Oaks Avenue (Woolworths) redevelopment and new road will add additional retail. 	<ul style="list-style-type: none"> ➤ Retail use generates high pedestrian activity. Review pedestrian amenity opportunities including footpath widening and additional greening. ➤ Council to consider the preparation of an Awning policy for the Town Centre
1.2	Commercial	<ul style="list-style-type: none"> ➤ Commercial activity is predominantly financial or health related and appears to be on a small scale. ➤ 27-33 Oaks Avenue (Woolworths) and proposed development at 888 Pittwater Road (Meriton).will increase commercial activity. 	
1.3	Residential	<ul style="list-style-type: none"> ➤ Residential apartments are located above ground level within two buildings one at 4 storeys and the other 5 storeys. They all have balconies overlooking the street below. ➤ proposed development at 888 Pittwater Road (Meriton). and 27-33 Oaks Avenue (Woolworths) proposal will bring a significant number of residents to precinct. 	<ul style="list-style-type: none"> ➤ Opportunity to improve pedestrian amenity.
1.4	Activities	<ul style="list-style-type: none"> ➤ Primary shopping precinct in conjunction with Howard Avenue. ➤ Outdoor dining on southern side of street which has better 	<ul style="list-style-type: none"> ➤ Confirm extent of public domain works in private property, owners approval required. Council

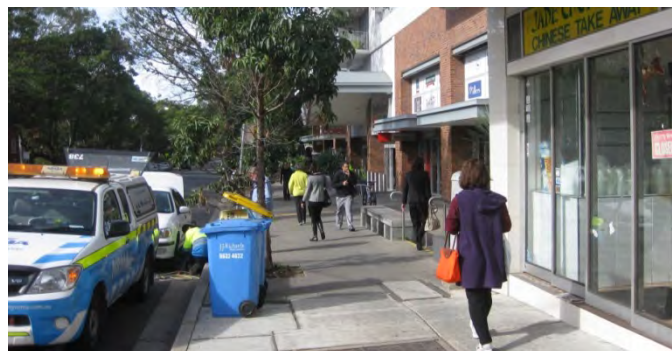


DEE WHY TOWN CENTRE PLACE AUDIT

PRECINCT

OAKS AVENUE – TOWN CENTRE ZONE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
		<ul style="list-style-type: none"> solar access. ➤ St Kevin's Church ➤ Gathering areas outside of Dee Why Market and TAB. 	<ul style="list-style-type: none"> resolution and payment by property owner as per Local Government Act to be considered. ➤ Reinforce vibrancy and role of precinct. ➤ Crossing for school to be resolved with new road link
1.6	Nodes and Activation Points	<ul style="list-style-type: none"> ➤ Existing Markets which will be replaced by 888 Pittwater Road Meriton Development. ➤ Alfresco dining at both the eastern and western end. ➤ Dee Why Markets at 27 to 33 Oaks Avenue. <p>Proposed Activation areas:</p> <ul style="list-style-type: none"> ➤ 888 Pittwater Road (Meriton) development street frontage and through site link. ➤ Woolworths Re-development – 'Eat Street' ➤ New Link Road, cycleway connection and car park site 	<ul style="list-style-type: none"> ➤ Build on existing nodes, connections and activation points and incorporate improvements to integrate proposed activity zones and connections. ➤ Reinforce place making through activity overlays in conjunction with Place Making consultant and Council.
2.0	SCALE		
2.1	Existing	<ul style="list-style-type: none"> ➤ Two story terraces ➤ Variety of built form and scale with varying setbacks 	
2.2	Proposed	<ul style="list-style-type: none"> ➤ 888 Pittwater Road (Meriton) and 27-33 Oaks Avenue (Woolworths) will have residential towers set on podiums 	<ul style="list-style-type: none"> ➤ Design to incorporate proposed developments.
2.3	Future development sites	<ul style="list-style-type: none"> ➤ Site A - Howard Avenue car park as a potential future development site adjoining the new link road. 	<ul style="list-style-type: none"> ➤ Design to incorporate future development site and new link road proposal.
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	<ul style="list-style-type: none"> ➤ Predominantly <i>Lophostemon conferta</i> with occasional plane tree. ➤ A pair of <i>Lophostemon</i> at the Pittwater Road act as 	<ul style="list-style-type: none"> ➤ Review use of deciduous tree species to improve solar access.



DEE WHY TOWN CENTRE PLACE AUDIT

PRECINCT

OAKS AVENUE – TOWN CENTRE ZONE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
		gateway feature ➤ Little vegetation cover, occasional raised planter	➤ Review planting opportunities to increase cover. ➤ Consider plant species that reflect locality.
3.2	Safety, Security & Visibility	➤ Limited pedestrian scale lighting ➤ Northern footpath zone is in poor condition. Blank walls and loading zones. ➤ Little residential occupancy so limited surveillance ➤ Visibility restricted by mature trees and high density (some 90 degree car parking). ➤ Proposed developments will improve passive surveillance	➤ Improve light levels.
3.3	Seating & street furniture	➤ Limited seating in poor condition, non-uniform in style. ➤ Small groups observed sitting outside the TAB building.	➤ Explore further seating opportunities predominantly on the south side due to wider pavement
3.4	Footpath condition (quality of the public realm)	➤ Generally poor, miss match of pavement treatments with some broken kerb and gutters.	➤ Pavements will be upgraded in concept proposals.
4.0 TRAFFIC & TRANSPORT			
4.1	Road Speed	➤ 50 km per hour dropping to 40 km per hour zone. Opportunity to introduce narrower lane widths to further reduce traffic speeds.	➤ HPAA states "the construction of kerb extensions at gateways " as a measure to reinforce the 40km/h pedestrian activity zone. ➤ Review kerb realignment opportunities in conjunction with drainage inundation.
4.2	Cyclist provision	access/future ➤ No current cycle infrastructure. ➤ Master Plan proposed separated cycleway, but dropped in favour of Howard Avenue	➤ Review cycleway implementation in conjunction with cycle routes and strategy. ➤ Incorporate cycle racks



DEE WHY TOWN CENTRE PLACE AUDIT

PRECINCT

OAKS AVENUE – TOWN CENTRE ZONE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
4.3	Public Transport	<ul style="list-style-type: none"> ➤ Bus routes will alter as part of the new one way loop. Eastbound services will travel along Oaks Avenue with two bus stops. One adjacent to the Meriton development and one opposite St Kevin's Catholic Primary School. 	<ul style="list-style-type: none"> ➤ Bus routes and stop locations to be conformed with Transport for NSW and STA.
4.4	Taxi Bays	<ul style="list-style-type: none"> ➤ No taxi bays are allocated in the current street scape. ➤ Potential to create a new taxi rank to cater for evening pick ups relating to changed bus routes and interchange nodes. 	<ul style="list-style-type: none"> ➤ Review taxi bay locations. Consult with Taxi Council.
4.5	Loading Bays	<ul style="list-style-type: none"> ➤ Loading bays for Dee Why Markets crosses pavement ➤ Vambuca Fruit Markets loading in street (proposed Meriton Development) ➤ 888 Pittwater Road (Meriton) development proposing internal loading bay with in and out onto Oaks Avenue 	<ul style="list-style-type: none"> ➤ Confirm future scope and impacts of development proposals.
4.4	Parking	<ul style="list-style-type: none"> ➤ Both parallel and 90 degree parking along street. ➤ Large Council car park adjacent to Church, which will be reduced in size after installation of proposed Link Road. ➤ Future 3 levels of basement parking associated with 888 Pittwater Road (Meriton) development 	<ul style="list-style-type: none"> ➤ Remove 90degree parking to improve streetscape for pedestrians. ➤ Co-ordinate new crossing locations with development proposals.
4.5	Access & linkages	<ul style="list-style-type: none"> ➤ No pedestrian linkage to Pacific Parade. ➤ Two through site linkages to Howard Avenue. ➤ Linkage across Pittwater Road and to the beach further to the east. ➤ Proposed pedestrian through site link to Howard Avenue through 888 Pittwater Road Meriton development ➤ Proposed vehicle and pedestrian link via New Access road to 	<ul style="list-style-type: none"> ➤ Consider linkages and access points in proposed developments and new link road and lane.



DEE WHY TOWN CENTRE PLACE AUDIT

PRECINCT

OAKS AVENUE – TOWN CENTRE ZONE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
		Pacific Parade	
		➤ Proposed vehicle and pedestrian link via New Link Road between Oaks Avenue and Howard Avenue.	
4.6	Desire Lines	➤ The existing link from through Triangle Park connects Oaks Avenue to Howard Avenue and Dee Why Parade.	➤ Reinforce linkages in concept proposals
4.7	Crossing points	➤ Signalised Pedestrian Crossing at Pittwater Road ➤ Pedestrian crossing linking Triangle Park to Dee Why Markets.	➤ Review proposed development plans and potential crossing locations.
		➤ Proposed signalised intersection at New Lane connection to Pacific Parade.	
4.8	Congestion	➤ Vehicle manoeuvring, traffic flow and parking density creates a congested appearance.	➤ Removal of 90 degree parking would improve congestion.
4.9	Conflicts	➤ Variable level changes between road, footpaths and retail floor levels.	➤ Review if areas of level changes can be improved.
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ No pedestrian lighting and limited street lighting combined with the dense tree cover has create a lower light level environment. ➤ Pedestrian lighting is along laneway to Howard Avenue	➤ Review light levels and lighting upgrades.
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Existing Substation outside 888 Pittwater Road (Meriton) development within footpath.	➤ Review relocation from footpath zone.
5.3	Proposed infrastructure services		➤ Confirm upgrades



DEE WHY TOWN CENTRE PLACE AUDIT

PRECINCT

OAKS AVENUE – TOWN CENTRE ZONE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
6.0 STORMWATER & DRAINAGE			
6.1	WSUD opportunities	<ul style="list-style-type: none"> ➤ Master Plan identifies scope for WSUD rain gardens to intersperse parking ➤ Road and laneway forms part of the main overland flow path route during extreme flood events 	➤ Review in conjunction with flood levels.
6.2	Stormwater	<ul style="list-style-type: none"> ➤ Drainage Amplification Works are being undertaken separately by Council ➤ Currently the main drain crosses in alignment with laneway 	➤ Co-ordinate amplification works with streetscape proposals and road cross section.
7.0 OTHER			
7.1	Way finding / Legibility	<ul style="list-style-type: none"> ➤ Legibility is generally poor when using through site links due to poor visibility to nodes <p>Opportunities</p> <ul style="list-style-type: none"> ➤ Opportunity to expose western side of St Kevin's Church as a landmark feature. ➤ Proposed New Lane link between Pacific Parade and Oaks Avenue ➤ Through site link through 888 Pittwater Road (Meriton) development ➤ Proposed New Link Road between Oaks Avenue and Howard Avenue 	➤ Review opportunities to improve way finding
7.2	Public art opportunities	<ul style="list-style-type: none"> ➤ Spaces can be used for "Art Bomb" programme ➤ Opportunity for integrated art. 	➤ Review integrated art opportunities
7.3	Views	<ul style="list-style-type: none"> ➤ Large mature tree avenue contains the views 	

16.1 OAKS AVENUE MASTER PLAN PROPOSAL

Following the proposed traffic plan, Oaks Avenue will become one way with traffic heading east. Generally 2 lanes of traffic are provided with parallel parking to the northern edge. This parking would be interspersed with WSUD rain gardens and associated tree planting.

The southern side of the road would provide a 2.5m, two-way cycle lane with a segmented, raised kerb separating traffic but allowing surface drainage through to rain gardens.

The north facing footpath would be widened and interspersed with areas of seating / dining, bicycle facilities, rain gardens and street trees.

Other features of the streetscape include:

- New street lighting with banners
- Wider footpaths with continuous awnings
- Narrower traffic lanes for pedestrian safety
- Increased setbacks as per planning controls
- Raised pedestrian crossings

Oaks Avenue between Pittwater Road and New Link Road

Location	Master Plan dimension	Existing dimension	Comment
Northern footpath	5 m	4.6 m average	Footpath width Including WSUDs
Cycle lane	2.5 m	NA	2.8 m required
Traffic lanes 2 no.	6 m	7.0 m	
Parking lane south	2.5 m	2.8 m	Includes WSUDs Not sufficient for Bus pull in
Southern footpath	4 m	9.5 m	Footpath width plus setbacks to building line



Master Plan Oaks Avenue Section Place Design Group

16.1.1 Departure from Master Plan

1. A separated cycleway is not incorporated along Oaks Avenue as Howard Avenue is proposed as the preferred cycle route in the concept. *Refer to Access and Circulation section of report.*
2. The palm planted median as part of cycleway edge has not been adopted due to the impact on the floodplain risk.
3. An opportunity for parking on the northern side has been incorporated through removing the separated cycle way.
4. Blisters within parking bays are not incorporated due to impact on the floodplain risk.



Master Plan perspective view Oaks Avenue Place Design group



Oaks Avenue

16.2 THE PROPOSAL

Oaks Avenue - Pittwater Road to New Link Road

Location	Proposal	Comment
Northern footpath	3.7m (existing retained) Upgrade paving, kerbs and gutters. Install multifunction poles. Install trees and garden beds where space allows.	On the corner of Oaks d and Pittwater Road , kerb realigned for proposed one way loop. Cabbage Tree Palms introduced as gateway planting, existing trees retained where possible .
Northern kerbside parking up to new link Lane	3.0 m	Taxi zone and Bus Stop. Bus zone for two buses. Double length shelter 8 m long or under cover utilising proposed development awning
Northern kerbside parking between new Link Lane and New Link Road	2.6 m	Parallel parking
Southern Travel lanes	3.2 m	
Junction with New Link Lane	Signalised crossing	To be confirmed after traffic modelling
Southern kerbside Parking Lane	2.6 m	Parallel Parking
Southern footpath	4.8m Upgrade paving. Install multifunction poles. Install trees and planting where space allows.	Relocated kerb Widened to include parking zone for bicycle parking area



Oaks Avenue looking east



Oaks Avenue planted footpath zone



Oaks Avenue looking east



Oaks Avenue intersection with Pittwater Road and palm gateway planting

16.2.1 Furniture

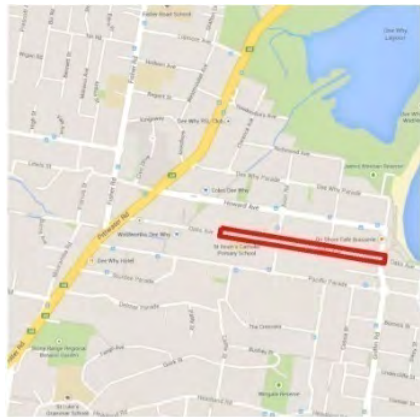
The following public domain elements are part of the proposed design.

- 1. Multifunction light poles
- 2. Double bus shelter
- 3. Bins, bench seats
- 4. Drinking fountain sand water refill station
- 5. Bike racks
- 6. Way finding
- 7. Art street furnishings

16.2.2 Further actions to confirm proposal

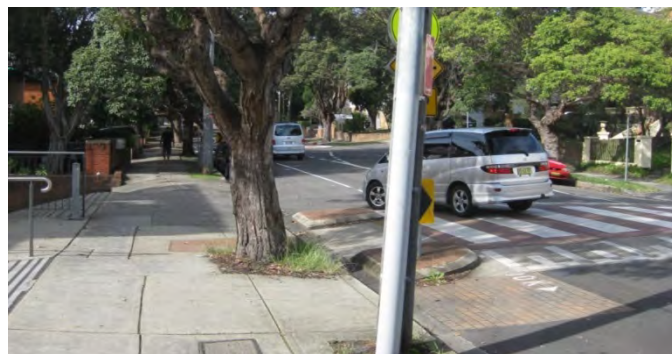
- 1. Consult with Transport for New South Wales on changes to bus route and bus zones
- 2. Consult with State Transit Authority on bus zones.
- 3. Consult with Taxi Council on new taxi rank
- 4. Review impact on overland drainage flow on altered kerb alignments
- 5. Confirm road cross section in conjunction with drainage capacity.
- 6. Confirm driveway access points for 888 Pittwater Road (Meriton proposal)
- 7. Model and confirm signalisation of New Link Road with RMS.
- 8. Model and confirm signalisation New Lane Link with RMS
- 9. Co-ordinate drainage amplification works, additional drainage culvert/s, road capacity, inlet sizes and cross fall.
- 10. Confirm and co-ordinate all existing underground services and impact of proposals. Location of box culvert crossing the street at 27-33 Oaks Avenue. .
- 11. Confirm additional infrastructure requirements.
- 12. Confirm blisters to Oaks Avenue at Pittwater Road do not impact floodplain risk.
- 13. Consider relocation of Electrical substation from pedestrian zone on north side.
- 14. Changes to Council operations e.g. waste collection
- 15. Consider the impact of retained existing trees on proposed light levels an pole locations.

17 OAKS AVENUE – LINK ROAD TO THE STRAND



DEE WHY TOWN CENTRE PLACE AUDIT

OAKS AVENUE – Residential Zone, New Link road to The Strand			
Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	➤ A few outlets located at the junction with The Strand	
1.2	Commercial	➤ No commercial activity	
1.3	Residential	➤ Predominantly uniform masonry three storey apartment blocks with the occasional rendered building finish. Two eight (8) storey blocks. ➤ Generally higher density towards Pittwater Road. Between Avon Road and The Strand, the buildings often have a greater set back from the road with landscaped lawns creating a pleasant neighbourhood street scape experience.	
1.4	Activities	➤ Pedestrian movement from residential precinct.	
1.6	Nodes and Activation Points	➤ St Kevin's Church and associated Primary School	
2.0	SCALE		
2.1	Existing	➤ Wide road and pavement with predominantly three story residential buildings	
2.2	Proposed		➤ Review proposed development plans
2.3	Future development sites		➤ Review proposed development plans
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Mature avenue of <i>Lophostemon</i> with grass verges	
3.2	Safety, Security & Visibility	➤ The street is overlooked by the residential apartment blocks. ➤ Mature trees restrict long range visibility.	
3.3	Seating & furniture	➤ There is no existing street furniture located within this section of Oaks Ave. There is potential for seating and bin provision close to	➤ Review in concept design



DEE WHY TOWN CENTRE PLACE AUDIT

OAKS AVENUE – Residential Zone, New Link road to The Strand

Item	Audit Area	Location/Comment	Further Action
		the commercial strip.	
3.4	Footpath condition	<ul style="list-style-type: none"> ➤ In-situ concrete footpaths in fair condition ➤ Grass verge against property boundary has evidence of wear 	➤ Consolidate verge to roadside kerb and move footpath to property boundary line
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	➤ 50 km per hour	➤ Review if it speed will be reduced to 40 km per hour.
4.2	Cyclist access/future provision	<ul style="list-style-type: none"> ➤ No current provision. ➤ Master Plan proposed separated cycleway along Oaks Avenue and Howard Avenue. 	➤ Review cycle link in conjunction with bicycle network.
4.3	Public Transport	➤ No current provision	➤ Confirm if bus stop will be located near school after implementation of one way loop.
4.4	Taxi Bays	➤ No current provision or demand	
4.5	Loading Bays	➤ No current provision or demand	
4.6	Parking	➤ Parallel parking along both sides of road	
4.5	Access & linkages	➤ Links to beach, Pittwater Road and surrounding streets	
4.6	Crossing points	➤ Signalised crossing adjacent the primary school and a pedestrian crossing at the Strand	➤ Confirm location of school crossing
4.7	Congestion	➤ Non recorded	➤ Check compliance
4.8	Conflicts	➤ Non recorded	
5.0	INFRASTRUCTURE & SERVICES		
5.1	Lighting	➤ No pedestrian scale lighting	



DEE WHY TOWN CENTRE PLACE AUDIT

OAKS AVENUE – Residential Zone, New Link road to The Strand			
Item	Audit Area		Further Action
5.2	Existing infrastructure services that may be a constraint in the upgrade		
5.3	Proposed infrastructure services		➤ Confirm if there are to be any service upgrades
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	➤ Potential within no parking areas and out of floodplain	➤ Review in Concept Design
7.0	OTHER		
7.1	Way finding	➤ Limited	
7.2	Public art opportunity	➤ Less demand as residential area	
7.3	Views	➤ Predominantly contained by trees ➤ Ocean glimpses	

17.1 THE PROPOSAL – Oaks Avenue, New Link Road to The Strand

Departure from master plan

No separated cycleway proposed for Oaks Avenue. Consider shared path along northern footpath 2.5 m to improve cycle linkages.

17.1.1 Proposal

- Upgrade footpaths to a minimum of 2m wide paths along boundary to maximise street tree planting zone and improve access to letterboxes.
- Include driveway and fence/ wall adjustments to improve footpath levels and maintain longitudinal grades. There may be some internal property adjustments at boundary to accommodate new footpath levels – either batters or low walls
- Ensure all pathways drain.
- Review existing trees and supplement with additional planting.
- Opportunity for WSUD beds to be maintained by residents
- Upgrade street lights to multifunction poles
- Nature strips, replace with planted beds.



Oaks Avenue intersection with New Link Road

17.1.2 Further actions to confirm proposal

1. Consult with Transport for New South Wales on changes to bus route and bus zones , in particular outside of the school
2. Consult with State Transit Authority on bus zones.
3. Confirm relocation of signalised pedestrian crossing near school.
4. Review impact on overland drainage flow on altered kerb alignments
5. Confirm road cross section in conjunction with drainage capacity if WSUDs are introduced..
6. Model and confirm signalisation of New Link Road with RMS.
7. Confirm and co-ordinate all existing underground services and impact of proposals.
8. Confirm additional infrastructure requirements.
9. Confirm blisters to do not impact floodplain risk.
10. Consider location of underground power plinths which are just off property lines and their relationship with proposed path widening

18 NEW LINK ROAD

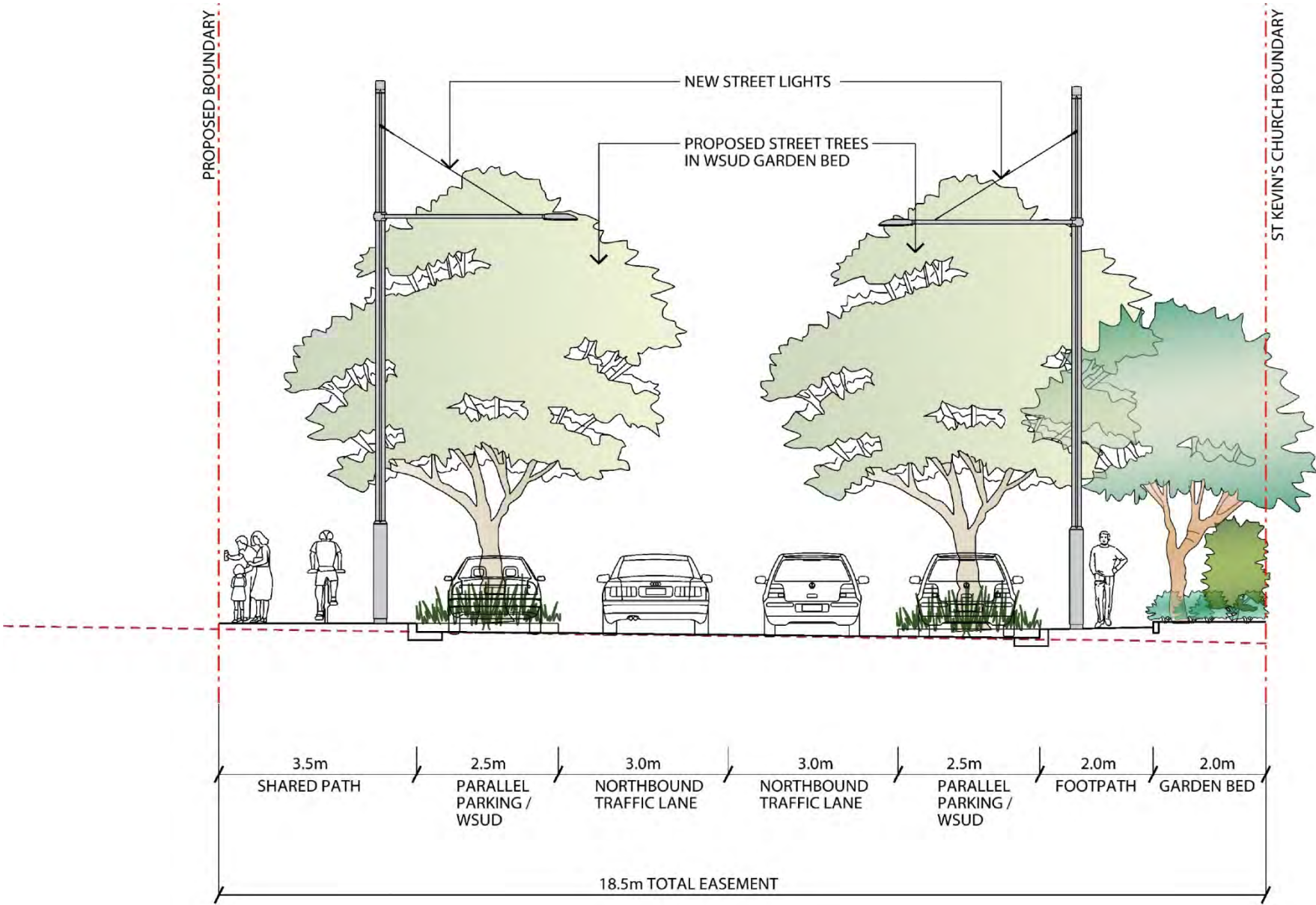
The new Link Road between Oaks Avenue and Howard Avenue is part of the one way loop traffic changes. .

On the western side is the existing Council car park which will remain operational until the site is redeveloped in the future.

New Link Road

Location	Master Plan dimension	Existing dimension	Comment
Western footpath	5m WSUD +Boardwalk	NA	
Parking lane West	NA	NA	
Traffic lanes 2 no. North Bound	7 m	NA	
Parking lane south	2.5 m	NA	Includes WSUDs
Southern footpath	3.5 m plus garden zone	NA	Shared path





New Link Road design study with shared path on western side.

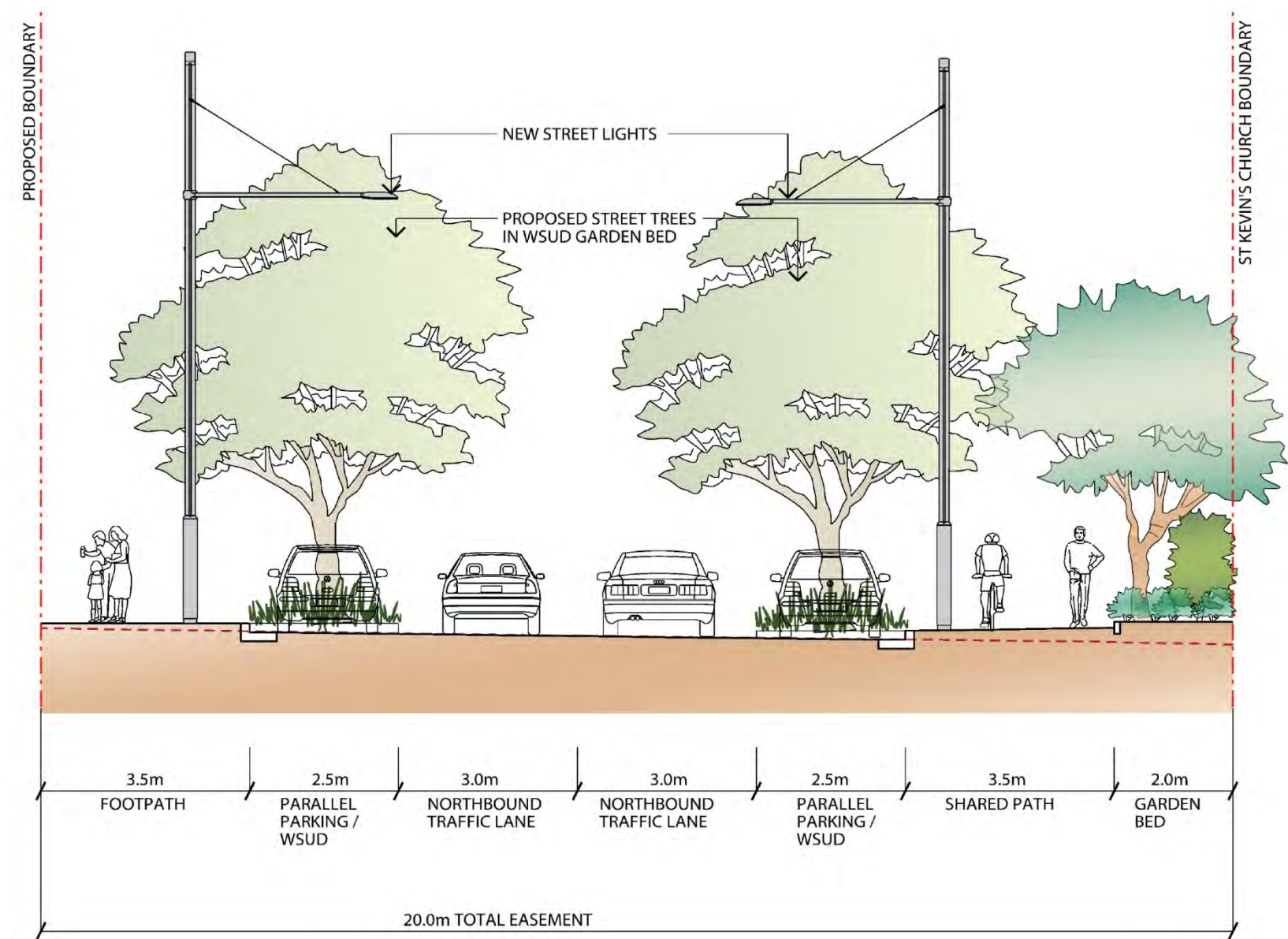
18.1 THE PROPOSAL - NEW LINK ROAD

Location	Proposal	Comment
Western Footpath	3.5m	New kerbs and paving, multifunction poles and new trees and planting.
Western kerbside parking	2.5 m	Parallel Parking
Travel lanes 2 No.	3.0 m each	Confirm if buses are to use this link
Eastern kerbside Parking	2.5 m	Parallel Parking
Eastern footpath	3.5 m with 2.0m planting bed	Shared path with cyclists New kerbs and paving, multifunction poles and new trees and planting. Path to drain toward garden bed to provide passive irrigation.

Driveway access points to existing car park are proposed as temporary. Final vehicle access to be reviewed when Site A is developed.



New Link Road



New Link Road proposed cross section

18.1.1 Furniture

The following public domain elements are part of the proposed design.

1. Multifunction light poles
2. Bins, bench seats
3. Way finding for pedestrians and cyclists
4. Proposed street trees and planted areas



New Road Link looking south towards Oaks Avenue

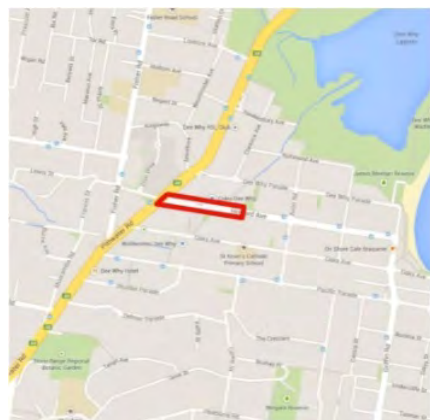
18.1.2 Further actions to confirm proposal

1. Consult with Transport for New South Wales on changes to bus route to confirm if New Link Road will be used by buses. To confirm dimensions.
2. Review impact of road on overland drainage flow Confirm road cross section in conjunction with drainage capacity.
3. Confirm temporary driveway access points to existing car park.
4. Model and confirm signalisation at each end of New Link Road with RMS.
5. Model and confirm signalisation New Lane Link with RMS
6. Confirm and co-ordinate all existing underground services and impact of proposal.
7. Confirm additional infrastructure requirements.
8. Consider lowering of fencing around Church to open up side elevation.



New Road link, view from Oaks avenue

19 HOWARD AVENUE – PITTWATER ROAD TO NEW LINK ROAD



DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE – TOWN CENTRE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	<ul style="list-style-type: none"> ➤ High density of retail activity located towards Pittwater Road ➤ Some empty premises adjoining Triangle Park north. ➤ Continuous awning cover not achieved due to inconsistent building setbacks ➤ Development at 888 Pittwater Road (Meriton proposal) will create new retail and supermarket adjoining a large plaza. ➤ New Link Road adjoins Site A development opportunity (currently car park) ➤ 18 Howard Avenue proposes retail at ground floor level. 	➤ Retail use generates high pedestrian activity. Review pedestrian amenity opportunities including footpath widening and additional greening.
1.2	Commercial	<ul style="list-style-type: none"> ➤ Limited commercial activity. ➤ First floor commercial office space is currently unoccupied at buildings 27 & 29 Howard Avenue. ➤ Development at 888 Pittwater Road (Meriton proposal) will increase commercial activity. 	
1.3	Residential	<ul style="list-style-type: none"> ➤ Range of unit blocks of varying size. ➤ Apartments at 27 and 29 Howard Avenue on upper levels above car parking. ➤ Development at 888 Pittwater Road (Meriton proposal) residential tower development will bring a significant number residents to precinct ➤ 18 Howard Avenue, 9 storey apartment development proposed. 	➤ Opportunity to improve pedestrian amenity.
1.4	Activities	<ul style="list-style-type: none"> ➤ Primary shopping precinct and hub in conjunction with Oaks Avenue. ➤ Triangle Park and development at 888 Pittwater Road (Meriton proposal) forecourt have good solar access ➤ Alfresco dining opportunities on south side of street with north orientation ➤ Walter Gors Park has potential to be an extension of the town centre ➤ Community neighbourhood services are to be relocated 	➤ Reinforce vibrancy and role of precinct.
1.6	Nodes and Activation	<ul style="list-style-type: none"> ➤ Dee Why Square Car Park 	➤ Build on existing nodes,



DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE – TOWN CENTRE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
	Points	<ul style="list-style-type: none"> ➤ Triangle Park North ➤ Walter Gors Park ➤ Neighbourhood Service Buildings ➤ Howard Avenue Car Park ➤ Access to Coles ➤ Pedestrian connections to Oaks Avenue ➤ Proposed Activation areas ➤ Development at 888 Pittwater Road (Meriton proposal) plaza ➤ Triangle Park north and south link to Oaks Ave– markets / events space ➤ Laneway though to Dee Why Parade Upgrade ➤ Relocating neighbourhood service buildings to enlarge Walter Gors Park ➤ Expansion of Walter Gors Park – recreation, interactive recreation ➤ Future development of Site A ➤ New Link Road <p>Cycleway connection with Dee Why Lagoon to the north and beach to the east</p>	<p>connections and activation points and incorporate improvements to integrate proposed activity zones and connections.</p> <ul style="list-style-type: none"> ➤ Reinforce place making through activity overlays in conjunction with Place Making consultant and Council. ➤ Improve pedestrian amenity
2.0	SCALE		
2.1	Existing	➤ Variety of built form and scale with varying setbacks	
2.2	Proposed	<ul style="list-style-type: none"> ➤ Development at 888 Pittwater Road (Meriton proposal) will have two residential towers set on podiums. ➤ 18 Howard Avenue is proposed an eight (8) storey residential development. ➤ Expansion of Walter Gors Park will increase town centre green space. 	➤ Design to incorporate proposed developments.
2.3	Future development sites	➤ Site A – Howard Avenue car park as a potential future development site adjoining the new link road.	➤ Design to incorporate future development site and new link road proposal.
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Limited planting along streetscape	➤ Master plan proposes WSUD/Tree



DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE – TOWN CENTRE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
		<ul style="list-style-type: none"> ➤ Some mature <i>Lophostemon conferta</i> Brush Box near Walter Gors Park. ➤ Small street trees at Triangle Park ➤ Walter Gors Park has mature tree cover. 	<ul style="list-style-type: none"> planting interspersed with parking. ➤ Review planting opportunities to increase cover. ➤ Consider plant species that reflect locality.
3.2	Safety, Security & Visibility	<ul style="list-style-type: none"> ➤ Residential areas provide passive surveillance. ➤ Walter Gors Park has high fencing which reduces surveillance. ➤ Clear sight lines along linkages 	<ul style="list-style-type: none"> ➤ Review lighting ➤ Review Walter Gors Park safety & security.
3.3	Seating & furniture	<ul style="list-style-type: none"> ➤ Shelter and seating provided at taxi rank and bus stop ➤ Triangle Park has seating and recycling bins 	<ul style="list-style-type: none"> ➤ Review shelters and locations ➤ Review seating and furniture opportunities at Walter Gors Park, Triangle Park, laneways and incidental seating along streetscape. ➤ Incorporate bicycle parking at transport interchange
3.4	Footpath condition	<ul style="list-style-type: none"> ➤ Mixture of brick and in-situ concrete 	<ul style="list-style-type: none"> ➤ Review opportunities for footpath widening. ➤ Review in conjunction with Town Centre paving Palette.
3.5	Plaza paving	<ul style="list-style-type: none"> ➤ Walter Gors Park and Triangle Park North. 	<ul style="list-style-type: none"> ➤ Review in conjunction with Town Centre paving palette. ➤ Opportunity to use paving to reflect locality and create community places.
4.0 TRAFFIC & TRANSPORT			
4.1	Road Speed	<ul style="list-style-type: none"> ➤ Currently 50 km per hour. Proposed to be reduced to 40 km per hour. ➤ Proposal to change to one way westbound from new link road. 	<ul style="list-style-type: none"> ➤ Confirm if speed limit will be reduced to 40kmh. Review lane widths associated with changed road conditions and opportunities



DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE – TOWN CENTRE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
4.2	Cyclist access/future provision	<ul style="list-style-type: none"> ➤ No current provision ➤ Master Plan proposes separated cycleway along Howard Avenue and connecting to Dee Why Lagoon along the drainage channels and along new link road to Oaks Avenue. 	<ul style="list-style-type: none"> ➤ Review cycleway connections and locations. Include provision of bicycle storage facilities both at Walter Gors Park and closer to bus interchange to cover inter-nodal and residential commuters.
4.3	Public Transport	<ul style="list-style-type: none"> ➤ Buses currently operate east and westbound along Pacific Parade picking up at regular intervals. ➤ Propose one way loop will have buses stopping outside the Development at 888 Pittwater Road (Meriton proposal) heading west. 	<ul style="list-style-type: none"> ➤ Confirm future route and impacts of one way system. Confirm bus stop size.
4.4	Taxi Bays	<ul style="list-style-type: none"> ➤ Dedicated on street taxi zone adjacent Town Square car park is existing and to be retained. Possible minor relocation 	<ul style="list-style-type: none"> ➤ Review taxi rank location in conjunction with transport Interchange.
	Loading Bays	<ul style="list-style-type: none"> ➤ No on street loading bays. Access to rear loading bays across pavement 	
	Parking	<ul style="list-style-type: none"> ➤ No on street parking until beyond Walter Gors Park ➤ Existing car park at Future development site. ➤ All development proposals offer off street parking 	<ul style="list-style-type: none"> ➤ Review opportunity to introduce parking on the northern side of Howard Avenue from Pittwater Road to Water Gors Park
4.5	Access & linkages	<ul style="list-style-type: none"> ➤ Daytime access to Oaks Avenue though Dee Why Fruit Markets. This through site access is maintained in development at 888 Pittwater Road (Meriton proposal). ➤ Upgraded access within laneways to North and South ➤ New link road proposes shared cycle and pedestrian path. ➤ There will be increased traffic volumes associated with the Development at 888 Pittwater Road (Meriton proposal) Vehicular entry and exits along Oaks Avenue and Howard Avenue. ➤ Upgrading connectivity along laneway and through WGP to Dee Why Parade 	<ul style="list-style-type: none"> ➤ Review all access and connections to improve pedestrian amenity



DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE – TOWN CENTRE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
4.7	Crossing points	<ul style="list-style-type: none"> ➤ Existing pedestrian crossing mid-block. ➤ Signalised crossing at Pittwater Road. ➤ Master plan identifies raised pedestrian crossing connection from Triangle Park to Walter Gors Park. 	<ul style="list-style-type: none"> ➤ Review crossing points in relation to one way loop road, location of driveways and signalisation of the new link road and the requirement to signalised pedestrian crossings on one way roads.
4.8	Congestion	<ul style="list-style-type: none"> ➤ Not apparent ➤ Development at 888 Pittwater Road (Meriton proposal) will increase traffic volumes 	<ul style="list-style-type: none"> ➤ Review traffic impacts of one way loop and exits from proposed developments.
4.9	Conflicts and constraints	<ul style="list-style-type: none"> ➤ Pedestrian Crossings ➤ Decking area at Triangle Park is a higher level in relation to park. ➤ Public domain, road levels and existing FFL's ➤ Shared zone relating to Triangle Park and Walter Gors Park ➤ Overland flood path ➤ Water Detention 	<ul style="list-style-type: none"> ➤ Review and refine pedestrian crossing points ➤ Review relationship between one way system, contraflow cycleway and public transport. ➤ Review timber decking on east side of Triangle Park.
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	<ul style="list-style-type: none"> ➤ No pedestrian scale lighting along road ➤ Pedestrian lighting installed though Triangle Park and Laneway ➤ No Lighting in Walter Gors Park or Laneway to Dee Why Parade 	<ul style="list-style-type: none"> ➤ Review lighting in concept
5.2	Existing infrastructure services that may be a constraint in the upgrade	<ul style="list-style-type: none"> ➤ Stormwater, underground services ➤ Asbestos pits 	<ul style="list-style-type: none"> ➤ Review underground service locations and their relationship to public domain upgrades.
5.3	Proposed infrastructure services	<ul style="list-style-type: none"> ➤ Some upgrading of services associated with development proposals 	<ul style="list-style-type: none"> ➤ Confirm any future service upgrades ➤ Include additional conduiting to future proof proposals.



DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE – TOWN CENTRE, Pittwater Road to New Link Road

Item	Audit Area	Location/Comment	Further Action
6.1	Water Sensitive Urban Design (WSUD) opportunities	<ul style="list-style-type: none"> ➤ Howard Avenue is part of main overland flood path from both Pittwater Road and Avon Road ➤ Laneway from Oaks Avenue to Dee Why Parade is also main overland flood path route. <p>Master Plan proposes:</p> <ul style="list-style-type: none"> ➤ WSUD proposed interspersing parking bays. ➤ WSUD detention basin in Walter Gors Park. ➤ WSUD along laneway in both directions 	➤ Review as part of Concept design.
6.2	Stormwater	➤ Located on southern side of Howard Avenue, then crosses at Walter Gors Park from Avon Road. Joins into the main drain network located in laneway and channel falling towards Dee Why Lagoon.	➤ Confirm location and depth an impact on proposed design.
7.0	OTHER		
7.1	Way finding	<ul style="list-style-type: none"> ➤ Landmark -spire of St David's Church visible to west. ➤ Filtered views to the east of ocean ➤ Development at 888 Pittwater Road (Meriton proposal) will create a new landmark building. ➤ Exposing the western elevation of St Kevin's Church by lowering fence will add a further landmark feature. ➤ Reinforce pedestrian and cycle link through to Dee Why Lagoon 	➤ Incorporate way finding
7.2	Public art opportunity	<p>Opportunities at the following locations :</p> <ul style="list-style-type: none"> ➤ Public spaces and through site linkages ➤ Development at 888 Pittwater Road (Meriton proposal) ➤ Triangle Park and Walter Gors Park 	➤ Develop in conjunction with Place Making and Public Art Consultant
7.3	Views	<ul style="list-style-type: none"> ➤ Views constrained by trees and rising topography. ➤ Beyond the crest views are more open towards Dee Why Beach 	

19.1 MASTERPLAN PROPOSAL

The Master Plan proposed the following:

Adhering to the proposed traffic plan, Howard Avenue will become one way with traffic heading west. 2 lanes of traffic are provided with limited parallel parking to both street edges. This parking would be interspersed with WSUD rain gardens and associated tree planting.

A separated 2 way cycleway would run adjacent to the northern footpath. It is expected that this conduit would continue all the way to the beach, beyond the study area.

Narrower traffic lanes improve pedestrian safety with well defined, at grade crossing points.

Other features of the streetscape include:

- New custom Dee Why street light poles
- Continuous awnings
- Sections of custom barrier seating to footpath edge

Howard Avenue between Pittwater Road and New Link Road

Location	Master Plan dimension	Existing dimension	Comment
Northern footpath	4m +	3.52 m	Footpath width All paved
Parking lane north	2.5 m	2.885 m	Includes WSUDs
Traffic lanes 2 no.	6.0 m	7.0m	
Parking lane south	2.5 m	2.885m	Includes WSUDs Not sufficient for Bus pull in
Southern footpath	4 m	3.46	Footpath width A



Master Plan Howard Avenue section Place Design Group

Departure from Master Plan

- Separated cycleway not between New Link road and Pittwater Road due to dimensional constraints in road corridor.
- Palm planted median as part of cycleway edge not included due to the influence on the inundation impact during floods.
- The creation of the opportunity for parking on the northern kerbside through not including the separated cycle way.



19.2 THE PROPOSAL - HOWARD AVENUE PITTWATER ROAD TO
NEW LINK ROAD

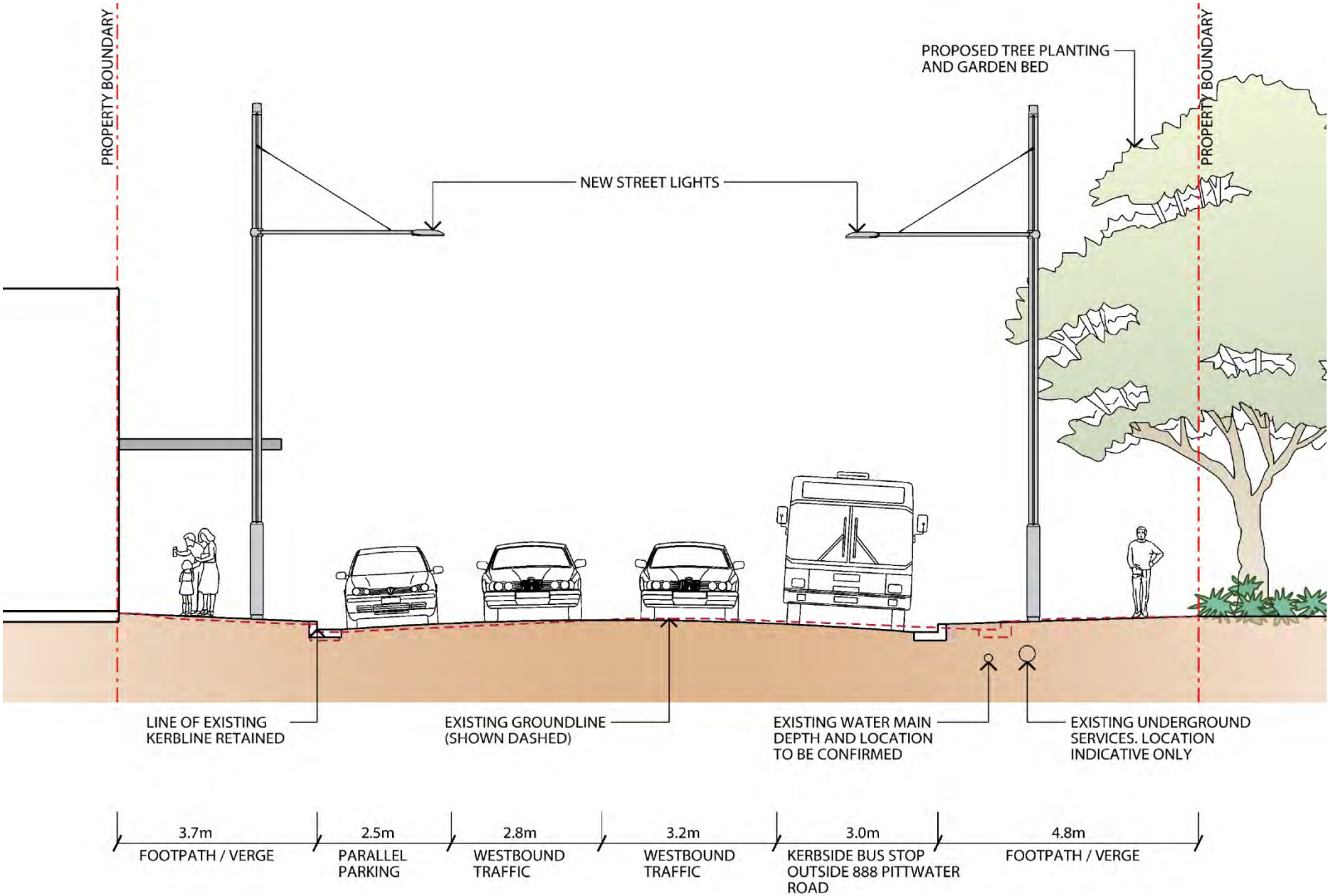
One way west bound traffic as part of changed traffic loop.

Location	Proposal	Comment
Northern footpath	3.7m (existing retained) Upgrade paving, kerbs and gutters. Install multifunction poles. Install trees and garden beds where space allows.	On the corner of Howard and Pittwater Road , no trees possible due to existing awnings Passive irrigation using segmented kerbs to proposed planting areas.
Parallel Parking , north side	2.5 m	
Westbound Traffic lane	2.8 m	
Westbound Traffic lane	3.2 m	Bus use
Mid-block crossing	Signalised crossing	To be confirmed after traffic modelling
Bus and taxi zone	3.0 m	Bus zone for two buses. Double length shelter 8 m long
Parking lane south	Retain as existing width. Upgrade paving. Install multifunction poles. Install trees where space allows.	New trees should be advanced stock with clear trunks adjoining bus lane.
Southern footpath	4.8 m Upgrade paving. Install multifunction poles. Install trees where space allows.	Relocated kerb Widened to include parking zone for bicycle parking area



Howard Avenue

DESIGN STUDIES

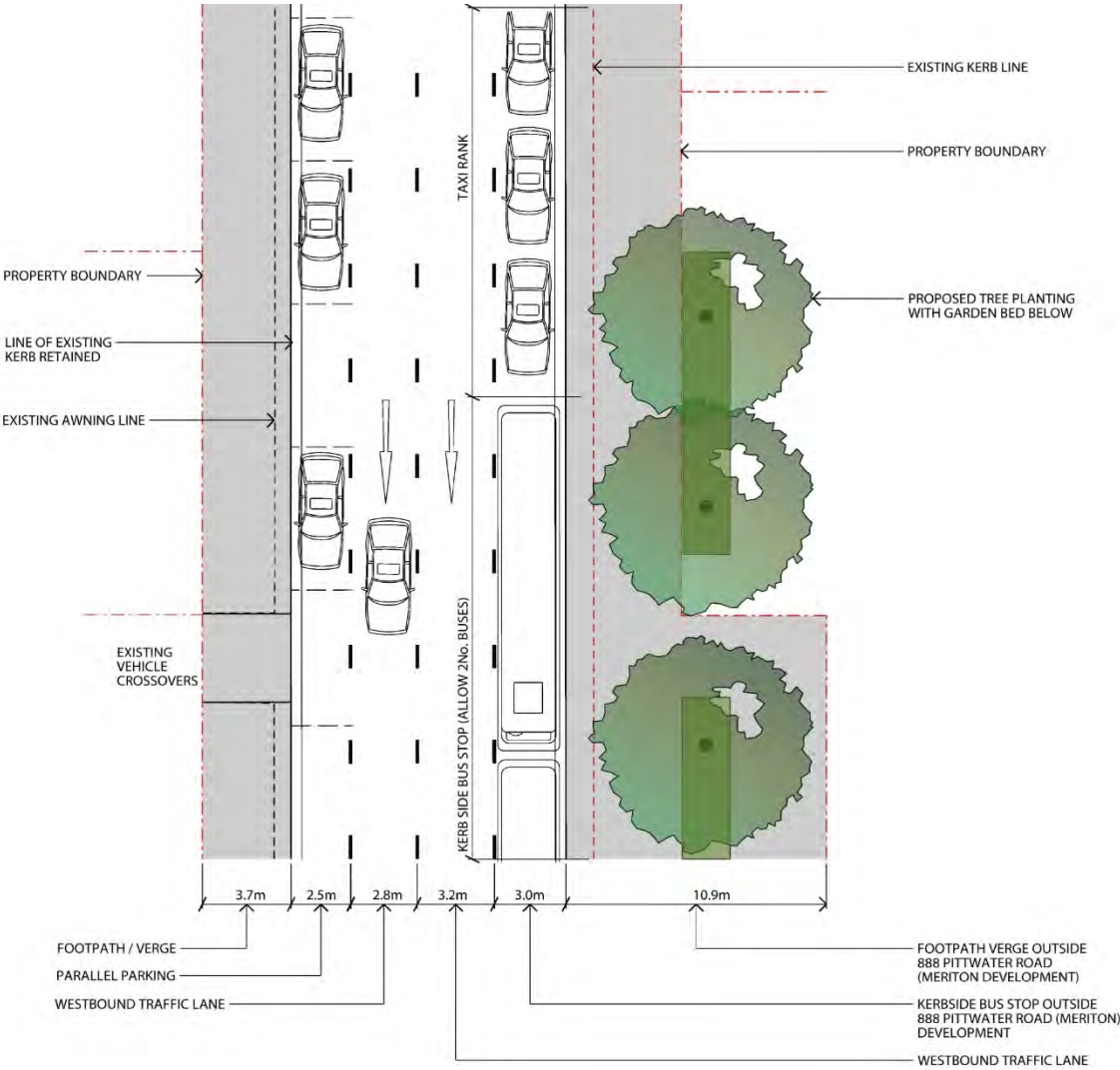


Note: Further action required to review road cross fall against floodplain risk management study to confirm capacity and if road should be fall one way or be centrally crowned.

Howard Avenue section adjoining bus stop



Howard Avenue looking East showing Bus and Taxi Zone



Howard Avenue plan adjoining bus stop



Howard Avenue View of Bus zone with proposed development plaza behind

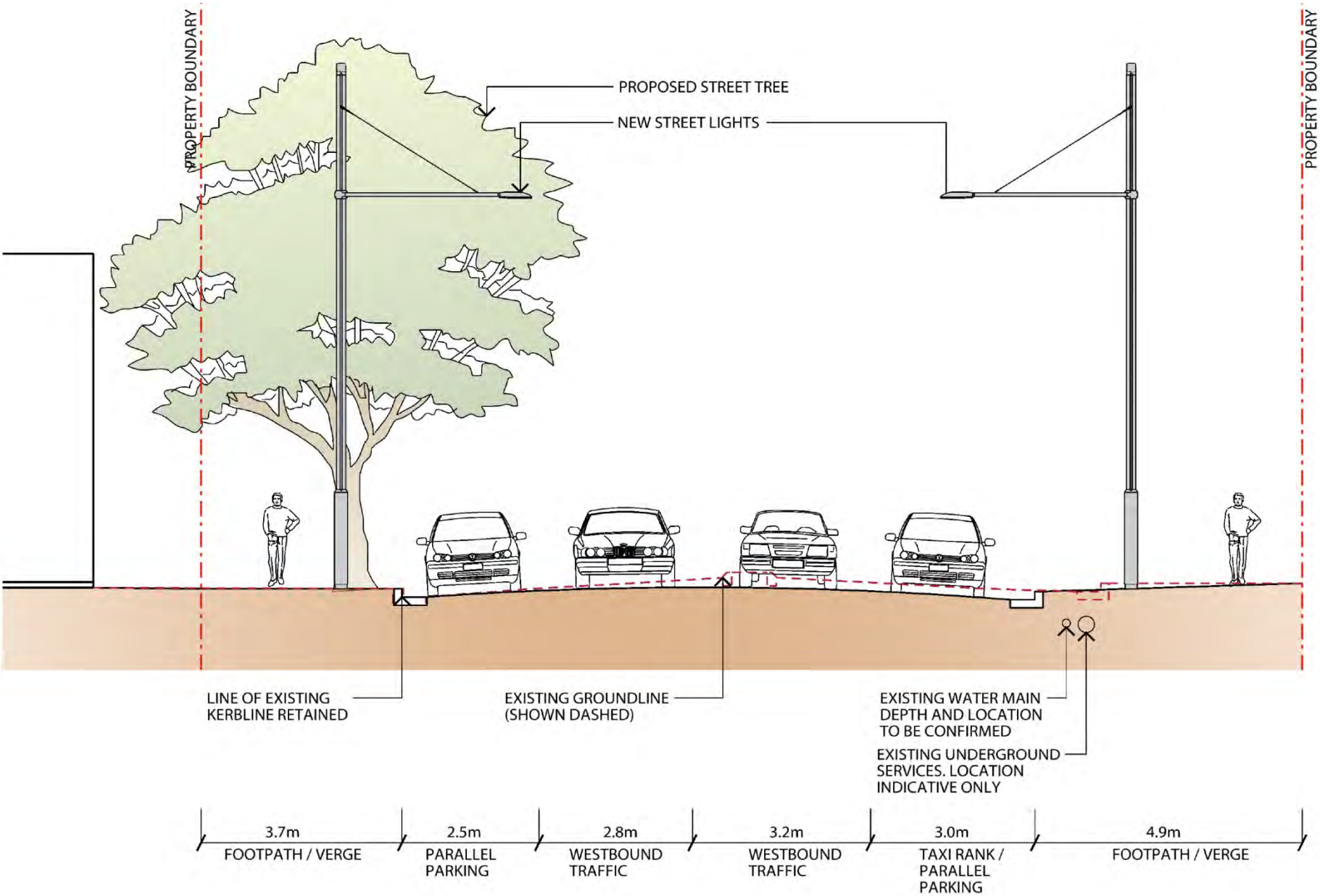


View from 888 Pittwater Road (Meriton) development to Howard Avenue



View from proposed pedestrian cross looking west

Note: Further action required to review road cross fall against floodplain risk management study to confirm capacity and if road should be fall one way or be centrally crowned.



Howard Avenue section –typical

19.2.1 Furniture

The following public domain elements are part of the proposed design.

- 1. Multifunction light poles
- 2. Double bus shelter
- 3. Bins, bench seats
- 4. Drinking fountain and water refill station
- 5. Bike racks
- 6. Way finding
- 7. Art street furnishings

19.2.2 Further actions to confirm proposal

- 1. Consult with Transport for New South Wales on changes to bus route and bus zones
- 2. Consult with State Transit Authority on bus zones.
- 3. Consult with Taxi Council on changes to taxi rank
- 4. Review impact on overland drainage flow on altered kerb alignments
- 5. Confirm road cross section in conjunction with drainage capacity.
- 6. Confirm driveway access point for 888 Pittwater Road (Meriton proposal)
- 7. Model and confirm signalisation of New Link Road with RMS.
- 8. Model and confirm signalised mid-block pedestrian crossing
- 9. Confirm all existing underground services and impact of proposals
- 10. Confirm additional infrastructure requirements.
- 11. Changes to Council operations eg waste collection

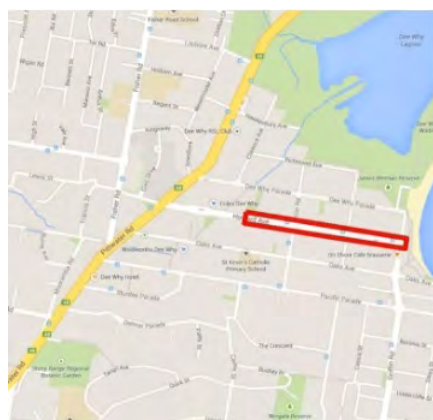


Howard Avenue looking east at Bus zone and taxi rank.

20 HOWARD AVENUE NEW LINK ROAD TO THE STRAND



Source: Google Streetview



DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE- RESIDENTIAL ZONE – New Link Road to The Strand

Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	➤ Some minor retail units operating at the intersection with the Strand	
1.2	Commercial	➤ No current commercial activity	
1.3	Residential	➤ 3 storey apartment blocks ➤ Some single storey homes ➤ Brick built and rendered finishes	
1.4	Activities	➤ Residential street ➤ The Strand is a hub ➤ Dee Why Beach is a focus point	➤ Develop improved pedestrian amenity to connect the Town Centre to the beach.
1.6	Nodes and Activation Points	➤ The Strand has high levels of activity during the day and night across the week. ➤ Proposed Cycleway will improve linkage.	➤ Review improving pedestrian connection between the beach zone and the Town Centre
2.0	SCALE		
2.1	Existing	➤ Consistent built form setback and scale	➤ Review opportunities for additional street trees
2.2	Future development sites	➤ No proposals identified within Master Plan	
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Mature <i>Lophostemon conferta</i> with grass verges. Varying in scale	➤ Impacts to existing footpath levels. ➤ Review opportunities for additional street trees to improve microclimate
3.2	Safety, Security & Visibility	➤ No pedestrian scale lighting but street is well overlooked by residences. ➤ Visibility is restricted by trees. ➤ Channelled view to Dee Why Beach along road	➤ Review street lighting in conjunction with cycleway implementation.



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE- RESIDENTIAL ZONE – New Link Road to The Strand			
Item	Audit Area	Location/Comment	Further Action
3.3	Seating & furniture	➤ Seating provided at some bus stops only	➤ Review bus shelter locations
3.4	Footpath condition	➤ Footpaths are in-situ concrete with grass verges either side. Issues with footpath levels associated with driveway access and tree roots impacting on pavements.	➤ Working within properties may be required to improve pathways.
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	➤ 50 km per hour	➤ Confirm if speed will be reduced to 40 km per hour.
4.2	Cyclist access/future provision	➤ No current provision. ➤ Proposed on road contraflow cycleway.	➤ Confirm preferred cycleway option
4.3	Public Transport	➤ Bus operates east and westbound along Howard Avenue picking up at regular intervals.	➤ Confirm bus routes and shelter requirements with proposed route changes.
4.4	Taxi Bays	➤ No current provision or demand	
4.5	Parking	➤ Parallel parking along both sides of street	➤ Parking will be impacted by cycleway option that retains existing kerb locations and trees.
4.6	Access & linkages	➤ Key access link between Town Centre and Dee Why Beach.	➤ One way loop at the western end of Howard Avenue will impact on traffic movements. ➤ Reinforce walkability and cycling in precinct to connect residents to Town Centre and beach.
4.7	Crossing points	➤ Only at road intersections	➤ Cycleway crossing points to be designed to allow connectivity.
4.8	Congestion	➤ Not apparent	
4.9	Conflicts	➤ Not apparent	



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

HOWARD AVENUE- RESIDENTIAL ZONE – New Link Road to The Strand			
Item	Audit Area	Location/Comment	Further Action
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ No pedestrian scale lighting	➤ Review lighting in conjunction with cycleway implementation.
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Locations of electrical pillar boxes are within proposed widened footpaths. ➤ Underground services that may be impacted by kerb realignments associated with proposed cycleway.	➤ Review all underground services locations during Preliminary Design stage ➤ Confirm depth of services for kerb relocations
5.3	Proposed infrastructure services	➤ To be confirmed	➤ Confirm any future service upgrades during Preliminary Design stage
6.0 STORMWATER & DRAINAGE			
6.1	WSUD opportunities	➤ Not identified in Master Plan	➤ Review opportunities for additional garden areas.
6.2	Stormwater	➤ To be confirmed	➤ Stormwater adjustments may be required for cycleway implementation based on option selected.
7.0 OTHER			
7.1	Way finding	➤ No way finding in place	➤ Review cyclist way finding
7.2	Public art opportunity	➤ Not identified in Master Plan	
7.3	Views	➤ Views narrowed by tree canopy and channelled to Dee Why Beach. Towards the eastern end, the Norfolk Island Pines form a gate way edge and reinforce the views to the ocean.	
7.4	Waste collection	➤ Cycleway will impact on waste collection operations	➤ Review further during Preliminary design stage

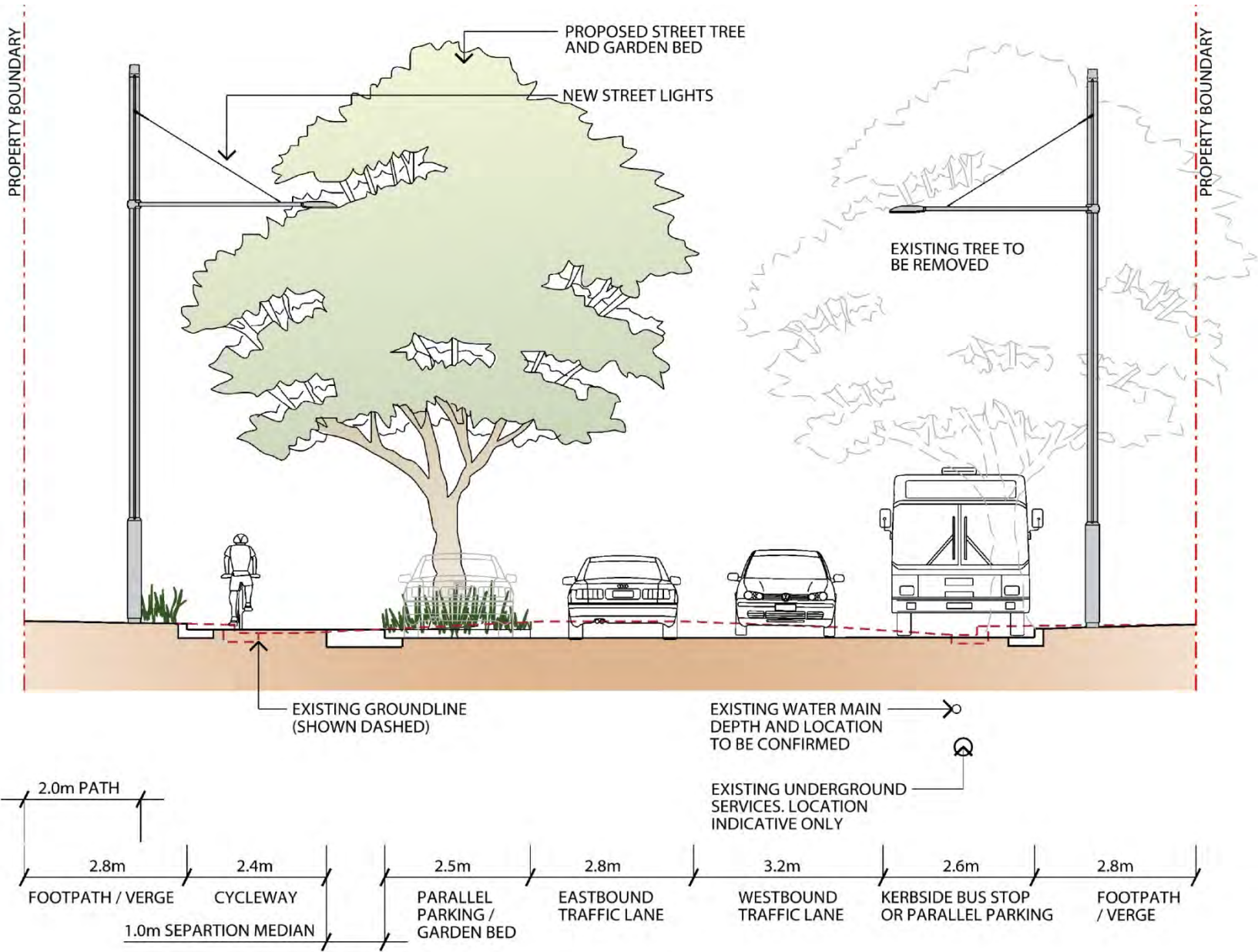


Howard Avenue residential zone

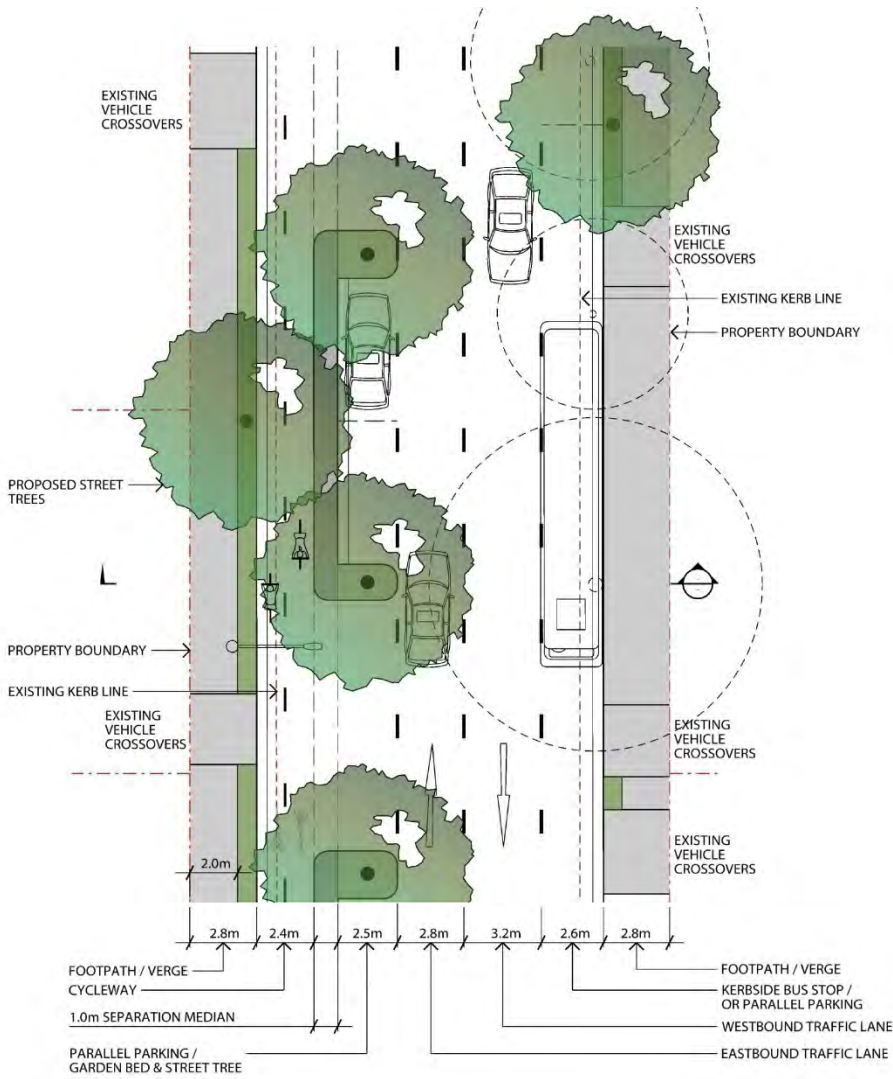
20.1 HOWARD AVENUE OPTION A , SEPARATED CYCLEWAY WITH PARKING TO BOTH SIDES (AT BUS STOP)

- Separated Cycleway on north side with 1.0 m separation median and parking on both sides
- Northern Kerb - 1.6m footpath + 1.2m verge OR 2.0 footpath +0.8 planted strip
- Southern Kerb - 2.8 footpath (bus stop area)
- Both kerbs realigned
- Existing trees removed, new trees installed where possible.

Note: Further action required to review road cross fall against floodplain risk management study to confirm capacity and if road should be fall one way or be centrally crowned.



Howard Avenue New Link Road to The Strand, Section showing separated cycleway with parking retained at bus stop

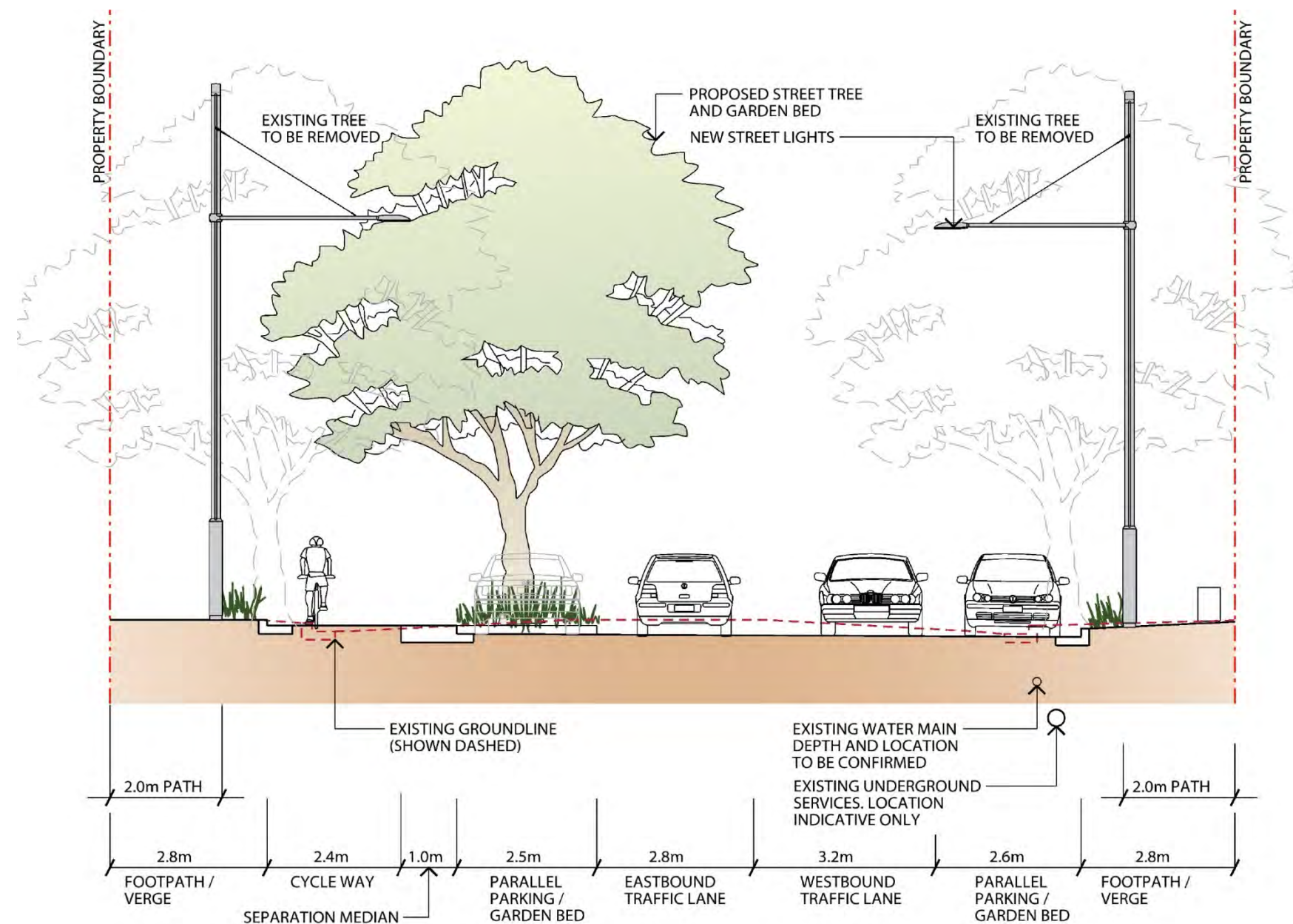


Howard Avenue New Link Road to The Strand, Plan showing separated cycleway with parking retained at bus stop

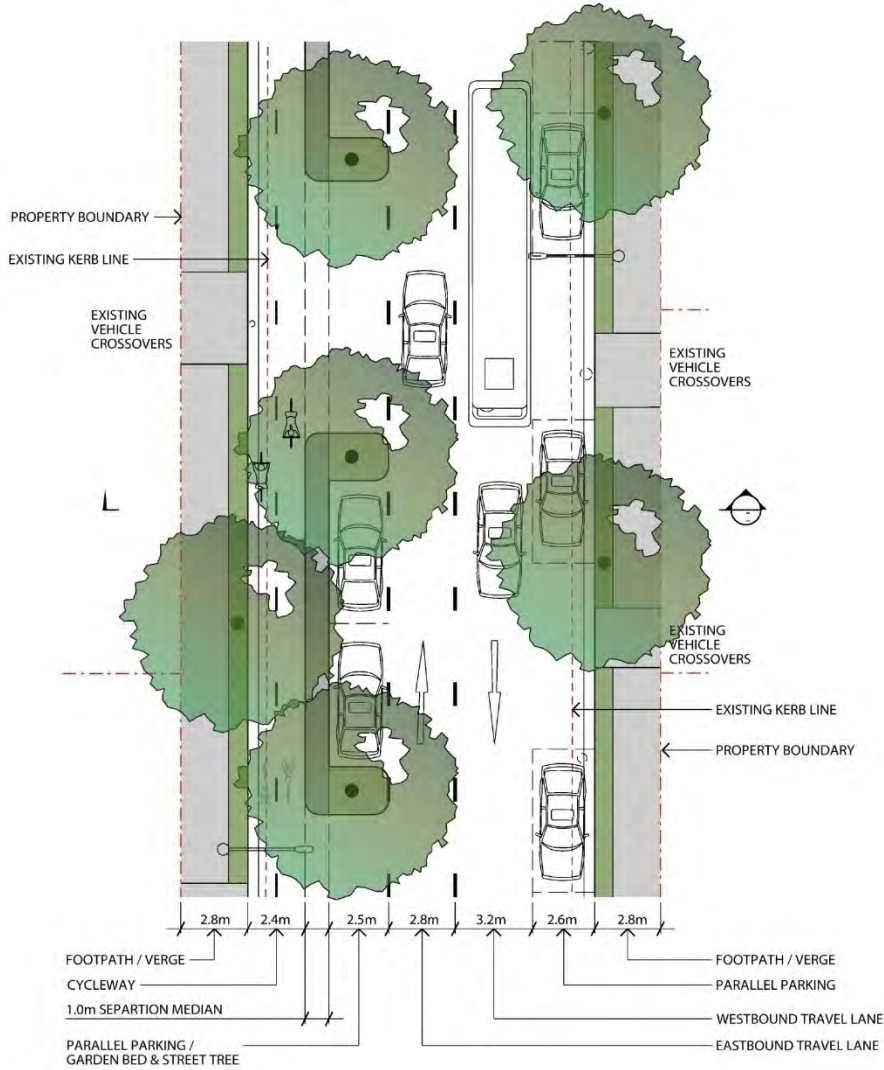
20.2 HOWARD AVENUE OPTION A, SEPARATED CYCLEWAY - TYPICAL

- Separated Cycleway on north side with 1.0 m separation median and parking on both sides
- Northern Kerb - 1.6m footpath + 1.2m verge OR 2.0 footpath + 0.8 planted strip
- Southern Kerb - 1.6m footpath + 1.2m verge OR 2.0 footpath + 0.8 planted strip
- Existing trees to be removed on both sides, new trees installed where possible

Note: Further action required to review road cross fall against floodplain risk management study to confirm capacity and if road should fall one way or be centrally crowned.



Howard Avenue New Link Road to The Strand, section showing separated cycleway with parking retained typical



Howard Avenue New Link Road to The Strand, plan showing separated cycleway with parking retained typical

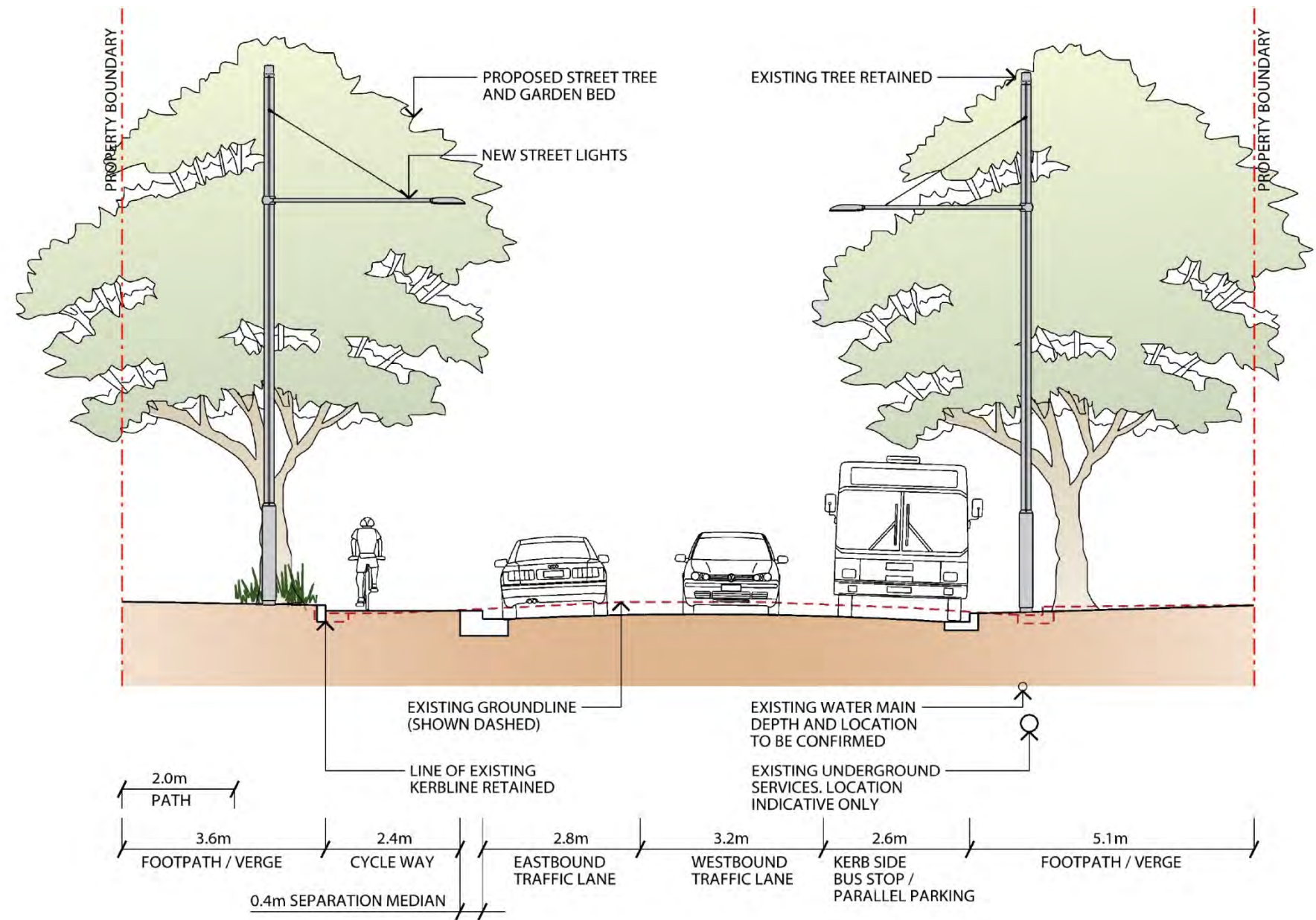


Howard Avenue looking west showing separated cycleway and parking to both sides

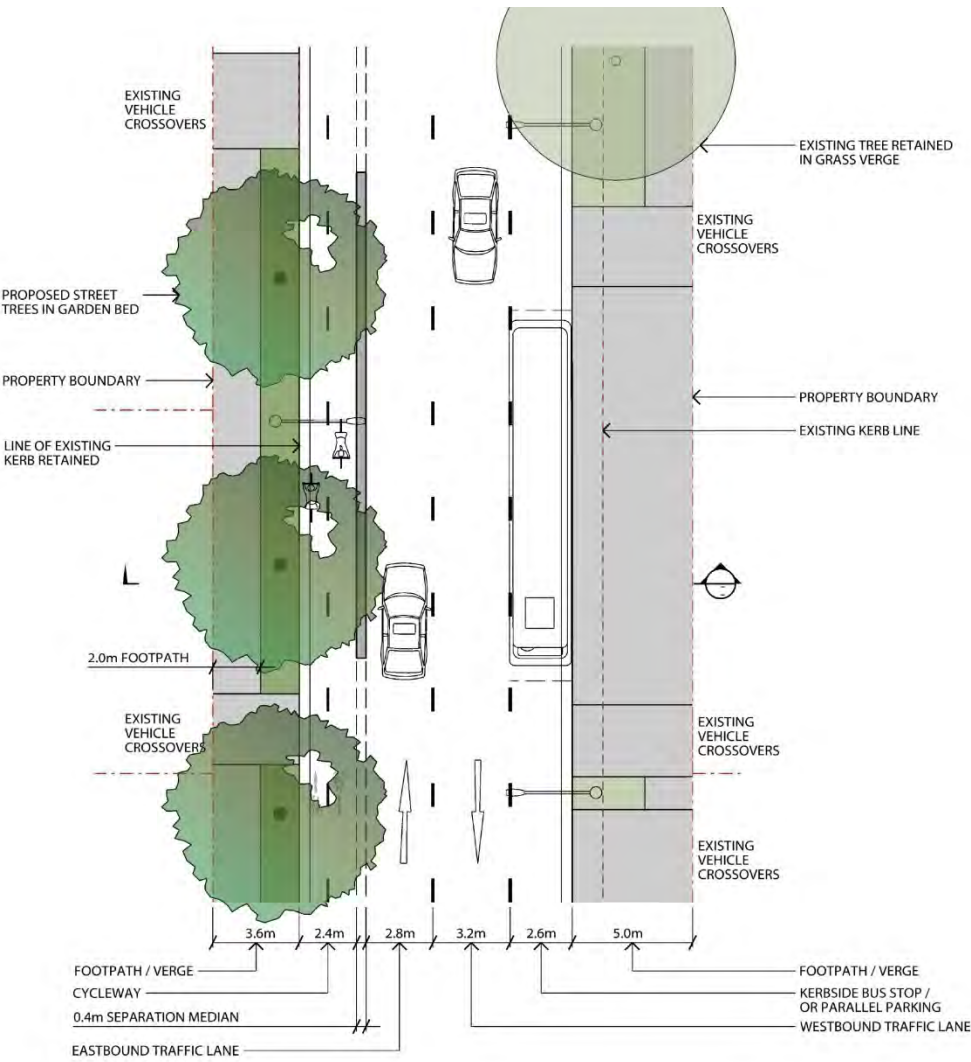
20.3 HOWARD AVENUE OPTION B - SEPARATED CYCLEWAY, NO PARKING ON NORTH SIDE AT BUS STOP

- Separated Cycleway with 400mm separation median and parking along southern kerb only
- Northern Kerb relocated – 2m footpath + 1.6m verge
- Southern Kerb relocated – 5.1m footpath (bus stop zone)
2.0 m footpath, 3.1 grass /planted verge

Note: Further action required to review road cross fall against floodplain risk management study to confirm capacity and if road should fall one way or be centrally crowned.



Howard Avenue New Link Road to The Strand, section showing separated cycleway with parking removed on northern side and Bus Stop



Howard Avenue New Link Road to The Strand, plan showing separated cycleway with parking removed on northern side and bus stop

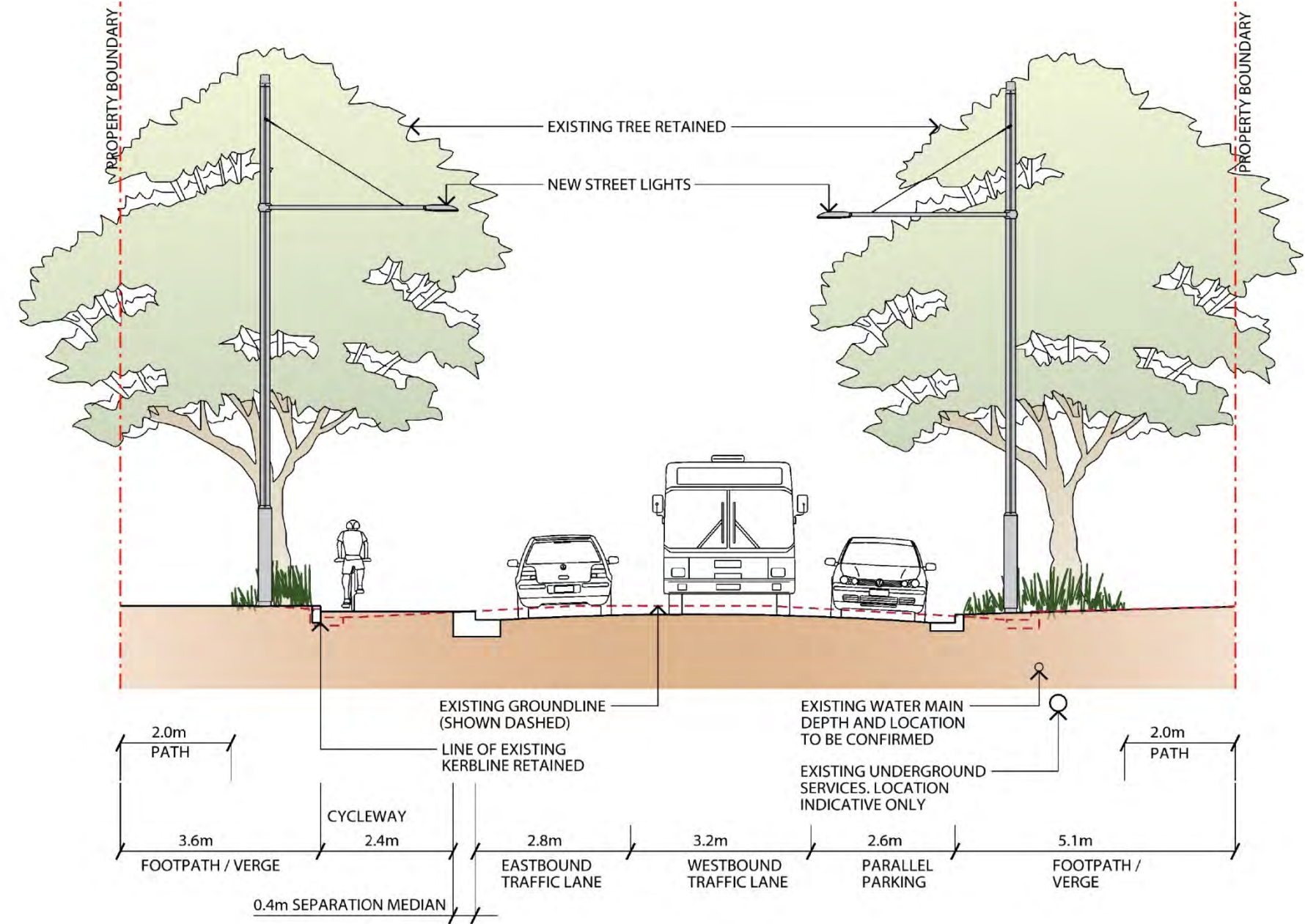


Howard Avenue looking west with separated cycleway , no parking on northern side

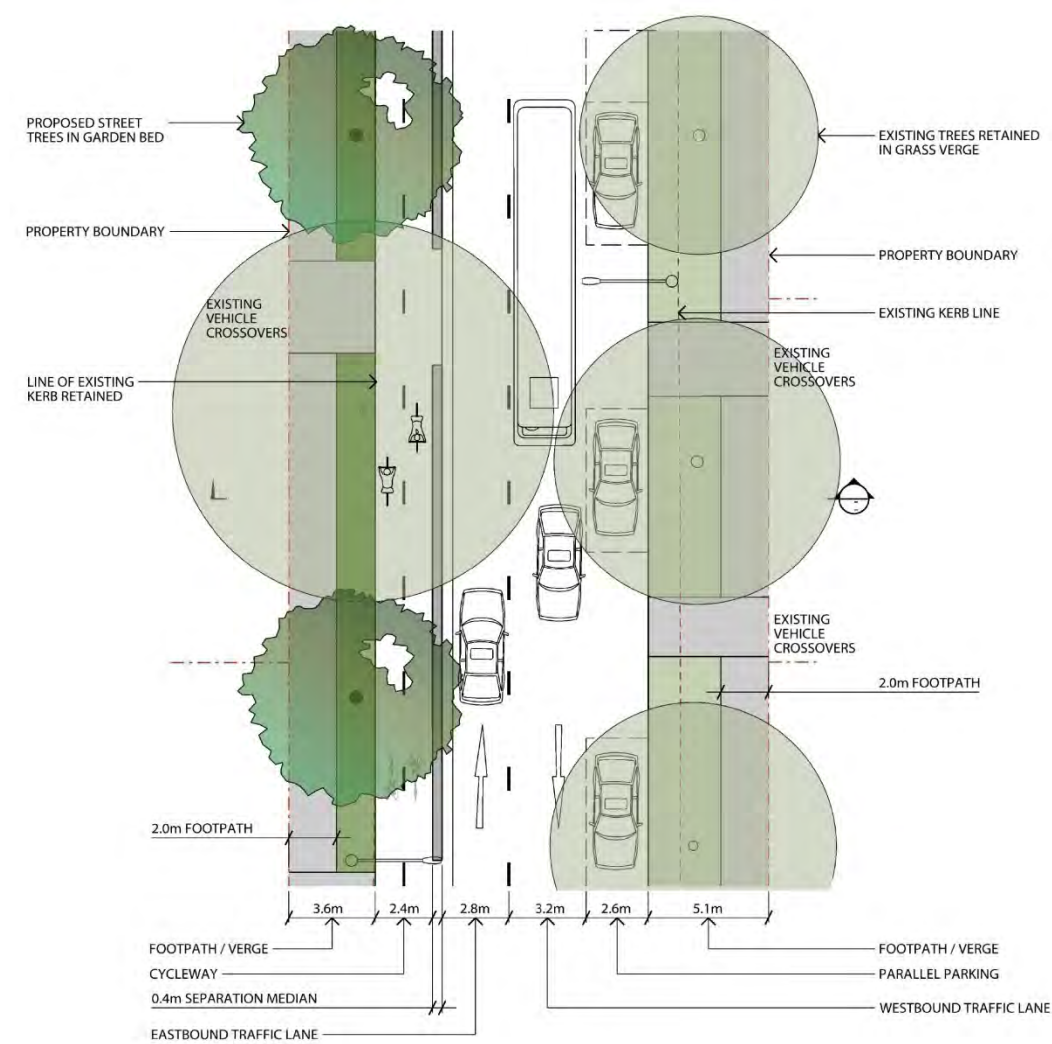
20.4 HOWARD AVENUE OPTION B - SEPARATED CYCLEWAY, NO PARKING ON NORTH SIDE, TYPICAL

- Separated Cycleway with 400 mm separation median and parking along southern kerb only
- Northern Kerb – 2.0 m footpath + 1.6 m verge
- Southern Kerb – 2.0 m footpath + 3.1m verge
- Southern kerb shown relocated to increase planting opportunities, can also be retained or both kerbs realigned to equalise footpath widths on both sides.

Note: Further action required to review road cross fall against floodplain risk management study to confirm capacity and if road should fall one way or be centrally crowned.



Howard Avenue New Link Road to The Strand, plan showing separated cycleway with parking removed on northern side typical

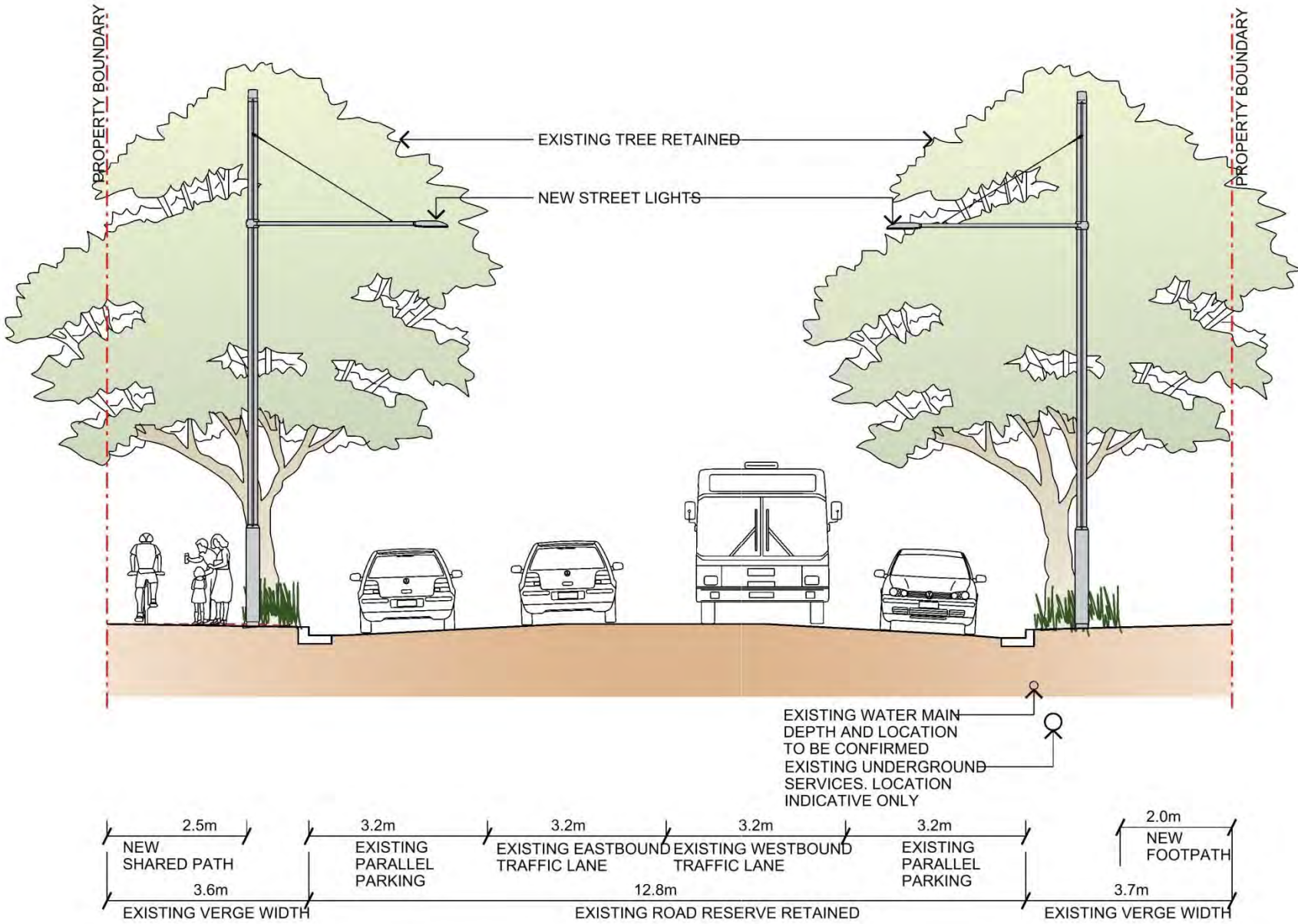


Howard Avenue New Link Road to The Strand, plan showing separated cycleway with parking removed on northern side typical

20.5 HOWARD AVENUE OPTION C - SHARED PATH

An alternative to the separated cycleway options for this section of Howard Avenue is to install a shared path (2.5 m) on the northern side. This option retains all existing trees and kerbs.

Some adjustments next to private properties may be required to remove low points and steep sections of pavements.



Howard Avenue New Link Road to The Strand, section showing shared path on northern side

20.5.1 Proposed changes

At Roundabouts cyclists to follow road rules to proceed

- Upgrade footpaths to a minimum of 2m wide paths along boundary to maximise street tree planting zone and improve access to letterboxes.
- Include driveway and fence/ wall adjustments to improve footpath levels and maintain longitudinal grades. There may be some internal property adjustments at boundary to accommodate new footpath levels – either batters or low walls
- Ensure all pathways drain.
- Review existing trees (if to be retained) and supplement with additional planting.
- Opportunity for WSUD beds to be maintained by residents
- Upgrade street lights to multifunction poles
- Nature strips, replace with planted beds.

20.5.2 Further actions to confirm proposal

1. Consult with Transport for New South Wales on changes to bus route and bus zone locations.
2. Consult with State Transit Authority on bus zones.
3. Review impact on overland drainage flow on altered kerb alignments
4. Confirm road cross section in conjunction with drainage capacity if WSUDs are introduced..
5. Model and confirm signalisation of New Link Road with RMS.
6. Confirm and co-ordinate all existing underground services and impact of proposals.
7. Confirm additional infrastructure requirements.

8. Confirm cycleway proposals do not impact floodplain risk.
9. Consider location of underground power plinths which are just off property lines and their relationship with proposed path widening

21 DEE WHY PARADE



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

DEE WHY PARADE – TOWN CENTRE			
Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	➤ Ground floor units at intersection with Pittwater Rd. Village Plaza. Coles Supermarket	
1.2	Commercial	➤ No current commercial activity	
1.3	Residential	➤ Mainly 3/4 storey apartment blocks. ➤ Medium density apartment blocks at intersection with Pittwater Road.	
1.4	Activities	➤ Small amount of retail	
1.6	Links ,nodes and activation Points	➤ Retail. Pedestrian linkages from Howard Avenue along drainage easement and through Walter Gors Park	➤ Review incorporation of cycle linkages.
2.0	SCALE		
2.1	Existing	➤ Building setbacks vary. Predominately residential with some commercial near Pittwater Road.	
2.2	Proposed	➤ No current proposals	
2.3	Future development sites	➤ No current proposals	
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Good mature <i>Lophostemon sp</i> interspersed with parking	➤ Scope for further tree planting shown on Master Plan ➤ Garden beds outside of the Village Plaza and Coles supermarket have the potential for new planting
3.2	Safety, Security & Visibility	➤ No pedestrian scale lighting but street is well overlooked by residences. Visibility is restricted by built form and trees	
3.3	Seating & furniture	➤ No furniture at present	➤ Review opportunities



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

DEE WHY PARADE – TOWN CENTRE			
Item	Audit Area	Location/Comment	Further Action
3.4	Footpath condition	➤ Insitu-concrete and brick paving.	➤ Review in conjunction with Town Centre materials pallet.
4.0	TRAFFIC & TRANSPORT		
4.1	Road Speed	➤ Regional road ➤ 50 km per hour dropping to a 40 km per hour zone	
4.2	Cyclist access/future provision	➤ No current provision	➤ Master Plan preference to direct cyclists down Oaks Avenue and Howard Avenue. Drainage culvert to be explored as a potential cycleway. Option to direct cyclist along part of Dee Why Parade as an alternative option
4.3	Public Transport	➤ No public transport	
4.4	Taxi Bays	➤ No current provision or demand	
4.5	Loading Bays	➤ Rear loading bays across pavement into Village Plaza and Coles Supermarket	
4.6	Parking	➤ Parallel parking along both sides of street	➤ Review in conjunction with planting opportunities.
4.7	Access & linkages	➤ Access is primarily east west. Pedestrian link through to Howard Avenue. Pedestrian through site link to Oaks Avenue though Dee Why Markets during opening hours. ➤ Pedestrian crossing at Coles to link to Dee Why RSL. ➤ Link to Coles Arcade underground parking	➤ Review proposed share way link along main drain through to Dee Why Lagoon
4.8	Crossing points	➤ Single crossing point adjacent rear of Dee Why Market and at Pittwater Road.	➤ Review proposed pedestrian crossing adjacent to drainage culvert pedestrian linkage. Warrant will be required.



Source: Google Streetview

DEE WHY TOWN CENTRE PLACE AUDIT

DEE WHY PARADE – TOWN CENTRE

Item	Audit Area	Location/Comment	Further Action
4.9	Congestion	➤ Congestion at Pittwater road during peak hours and on weekends.	➤ Possible increased traffic volume due to one way system, current lane widths are sufficient, to be further reviewed in Stage 2.
5.0	INFRASTRUCTURE & SERVICES		
5.1	Lighting	➤ No pedestrian scale lighting along street or within Walter Gors Park	➤ Review in conjunction with lighting audit. Review lighting at pedestrian crossing
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Stormwater, underground utilities, road cross fall and kerb heights, driveway access levels.	➤ Review during Stage 2.
5.3	Proposed infrastructure services	➤ TBC	➤ Review during Stage 2.
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	➤ Parking to be interspersed with WSUD planting	➤ Review in concept
6.2	Stormwater Infrastructure	➤ Stormwater crosses in the same alignment as the throughway	➤ Review constraints during stage 2
7.0	OTHER		
7.1	Way finding	➤ Limited	➤ Opportunity to provide informative signage linking destinations and heritage.
7.2	Public art opportunity	➤ Potential to incorporate within canal cycleway concept	➤ Liaise with Place Making consultant
7.3	Views	➤ Views contained along road in both directions with ocean glimpses to the east. Street trees help provide a good avenue.	➤ Enhance planting corridor where possible.



Dee Why Parade

21.1 DEE WHY PARADE MASTER PLAN PROPOSAL

Dee Why Parade will respond to traffic planning by catering for two-way traffic. It is anticipated that vehicular movements to / from the beach will increase along this street due to the one way system proposed for Howard / Oaks Avenues.

WSUD rain garden functions are to be added to both street edges with filtration planting and native street trees. Parallel parking is provided in between rain gardens and driveways.

Existing street tree planting is to be retained with buffer planting within lots to be encouraged.

Dee Why Parade

Location	Master Plan dimension	Existing dimension	Comment
Northern footpath	Coles setback 4 m	3.4 m	1.2m Footpath width with 1.0m and 1.2m grass verges
Parking lane north	2.5 m	2.85 m	Including WSUDs
Traffic lanes 2 no.	3.75 m each	3.5m each	
Parking lane south	2.5 m	2.85 m	Includes WSUDs
Southern footpath	4 m	3.6	Footpath width All paved



21.2 THE PROPOSAL

Departure from Master Plan

No WSUDs have been incorporated due to inundation issues associated with the flood plain.

Dee Why Parade

Location	Proposal	Comment
Northern footpath	3.7m (existing retained) Upgrade paving, kerbs and gutters. Install multifunction poles. Install trees and garden beds where space allows.	Cabbage Tree Palms introduced as gateway planting, existing trees retained where possible.
Northern kerbside parking	3.0 m	
Travel lanes	3.2 m	
Southern kerbside Parking Lane	2.6 m	Parallel Parking
Southern footpath	4.8m Upgrade paving. Install multifunction poles. Install trees where space allows.	Relocated kerb Widened to include parking zone for bicycle parking area



Dee why Parade Gateway Planting



Dee Why Parade -separated cycleway connecting Walter Gors Park to Dee Why Lagoon

21.2.1 Furniture

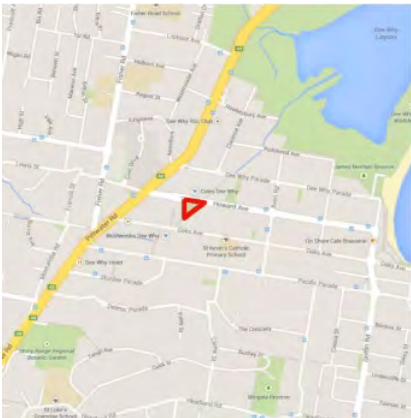
The following public domain elements are proposed:

- 1. Multifunction light poles
- 2. Bins, bench seats
- 3. Bike racks
- 4. Way finding

21.2.2 Further actions to confirm proposal

- 1. Confirm if separated cycleway is to be incorporated into design.
- 2. Review impact on overland drainage flow on altered kerb alignments
- 3. Confirm new pedestrian crossing point.
- 4. Confirm and co-ordinate all existing underground services and impact of proposals.
- 5. Confirm additional infrastructure requirements.
- 6. Confirm pedestrian crossing blisters to do not impact floodplain risk.
- 7. Improve accessibility at chemist/ Pittwater Road

22 TRIANGLE PARK NORTH AND SOUTH



DEE WHY TOWN CENTRE PLACE AUDIT

STREET NAME – TRIANGLE PARK NORTH & SOUTH			
Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Retail	<ul style="list-style-type: none">➤ Along east and west sides of Triangle Park north. Not all the premises are occupied.➤ No active frontages proposed for Triangle Park South➤ Proposed 888 Pittwater Road (Meriton) proposal loading dock will be on the western side of Triangle Park south	<ul style="list-style-type: none">➤ Review opportunities to improve physical and visual accessibility to adjoining retail.
1.2	Commercial	<ul style="list-style-type: none">➤ No commercial	
1.3	Residential	<ul style="list-style-type: none">➤ Within adjoining residential towers	
1.4	Activities	<ul style="list-style-type: none">➤ Triangle Park north currently is a grassed space with some seating	
1.6	Nodes and Activation Points	<ul style="list-style-type: none">➤ Both spaces are nodes and form a major town centre pedestrian connection between Oaks Avenue and Howard Avenue.	<ul style="list-style-type: none">➤ Retain linking function of spaces in design.
2.0	SCALE		
2.1	Existing	<ul style="list-style-type: none">➤ Triangle Park north is enclosed by six storey residential developments which overlook the space.	
2.2	Proposed	<ul style="list-style-type: none">➤ Triangle Park south will be created through the demolition of the building on the east side, and will have the proposed 888 Pittwater Road (Meriton) development on the west.	<ul style="list-style-type: none">➤ Incorporate into concept proposals
2.3	Future development sites	<ul style="list-style-type: none">➤ 888 Pittwater Road (Meriton) development.	<ul style="list-style-type: none">➤ Incorporate into concept proposals



DEE WHY TOWN CENTRE PLACE AUDIT

STREET NAME – TRIANGLE PARK NORTH & SOUTH			
Item	Audit Area	Location/Comment	Further Action
3.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Trees and shrubs planted as part of Triangle Park north .Recently planted, small in scale	➤ Review planting opportunities
3.2	Safety, Security & Visibility	➤ Clear visibility. Retail overlooks space.	➤ Retain Visibility along link
3.3	Seating & furniture	➤ Seating is available	
3.4	Footpath condition	➤ Good	
3.5	Orientation	➤ Good northern exposure in Triangle Park north. ➤ Triangle Park south solar access will be dependent on the scale of the proposed development.	➤ Review during concept design phase.
4.0	ACCESS		
4.1	Cyclist access/future provision	➤ Review cycle access	➤ Review in relation to cycle network proposals.
4.2	Desire Lines	➤ Through site link	➤ Maintain through site link
4.3	Conflicts	➤ Pinch point, six (6) metres wide where parks meet.	➤ Maintain overland flow path.
	Accessibility	➤ The floor levels to the adjoining development are above the park levels and the ramp and stair transitions between the two spaces are a barrier. ➤ Triangle Park south development site proposed a loading facility with a large driveway adjoining the park.	➤ Review in concept design.



DEE WHY TOWN CENTRE PLACE AUDIT

STREET NAME – TRIANGLE PARK NORTH & SOUTH			
Item	Audit Area	Location/Comment	Further Action
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ Pedestrian lighting in Triangle Park north and Triangle Park south	➤ Review lighting with proposed design
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Drainage overland flow path and underground services	➤ Review location in relation to design development. ➤ Overland drainage capacity is not to be reduced.
5.3	Proposed infrastructure services		➤ Confirm if additional infrastructure will be installed.
6.0 STORMWATER & DRAINAGE			
6.1	WSUD opportunities	➤ Inundation zone. ➤ Opportunities for water harvesting	➤ Review opportunities for incorporation ➤ Review water harvesting opportunities
7.0 OTHER			
7.1	Way finding	➤ No way finding	➤ Incorporate way finding into concept proposals.
7.2	Public art opportunity	➤ Spaces used for “Art Bomb” programme	➤ Review integrate art opportunities
7.3	Views	➤ Maintain view across park and along link.	

22.1 TRIANGLE PARK NORTH AND SOUTH –THE CONCEPT

Triangle Park North and Triangle Park South form a significant link between Oaks Avenue and Howard Avenue. In combination with Walter Gors Park, these spaces will form Dee Why's Town Centre hub.

These two triangular spaces are within the town centre and are designed as one space with the same design language. They are visually and physically linked to Walter Gors Park through the utilisation of a similar palette of materials and planting.

The theme that for the town centre upgrade is extended into these two park spaces i.e. a ***"casual atmosphere"*** that can be used by the local population as their ***"backyard"***. By bringing the characteristic coastal feel of the area into the Town Centre, the spaces reflect the special essence that is Dee Why.

The two parks have been designed to be flexible, and as destinations, to cater for a variety of activities including public entertainment, passive recreation, markets and play.

22.1.1 Access and Circulation

Triangle Park North has a broad forty (40) metre frontage to Howard Avenue with an apex of six (6) metres where it joins Triangle Park South.

The parks need to retain their important linking function, remain engaged with the adjacent perimeter retail premises and offer facilities within its open space areas.

Triangle Park North currently has an awkward relationship with the adjoining retail areas that flank the space to the east and west. The variable floor levels which range in height from 450 to 1200mm above the park levels has reduced accessibility to the shops. A series of constructed ramps, balustrades and handrails to provide access to each tenancy that clutter the space and restrict visual and physical freedom in the space.



Existing ramps and platforms disconnects retail from the park.

22.1.2 Cycling

Due to the potential of high levels of pedestrians in this space, both during the day, and in particular, through peak times such as market days, a cycling route is not proposed through these spaces.

A shared cycleway is proposed for the New Link Road just to the south of this zone which will reduce conflict and reinforce these parks as destinations. The alternative route also offers safer connections and junctions at signalised intersections.

Triangle Park South is created through the removal of the property along its eastern boundary. New development will be located on the park's western boundary. Both edges will not be activated, with a loading zone proposed for the development frontage to adjoining the park. A large driveway to allow delivery vehicles to enter and exit will be in close proximity to the pedestrian area of Triangle Park South.



Triangle Park south will be created through the removal of the Medical Centre.

22.1.3 Orientation

Both parks face north and have excellent solar access throughout the year. By installing the right framework and amenity for a comfortable and inviting space, the parks will become extremely popular.

Deciduous trees are proposed on the perimeter of the space with native evergreen trees towards the centre.

22.1.4 The people spaces

The parks are designed to be casual, to allow for spontaneous sitting and reclining to engage or observe passers-by, while still feeling that you are within a comfortable familiar place of human scale.

The design is reinforced through the use of welcoming materials such as timber for the seating areas and the proposed selection of coastal planting.

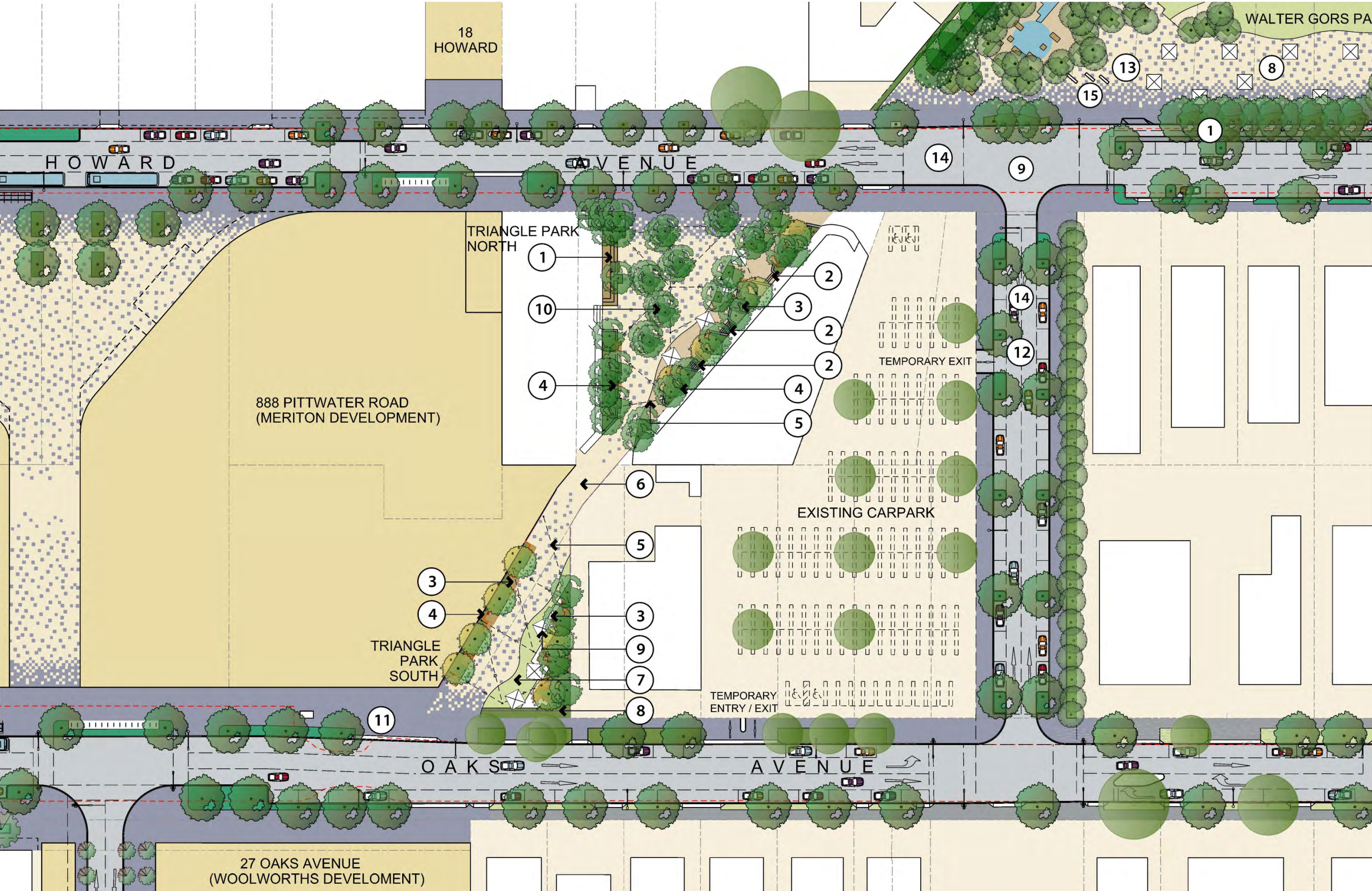
Triangle Park South is designed as a small lawn area adjoining the eastern seating zone.

The spaces can be overlaid with a variety of activities including:

- Seating and permanent umbrellas
- Chess tables and chair's
- Art classes
- Markets on weekends (local and growers)

TRIANGLE PARK NORTH AND SOUTH

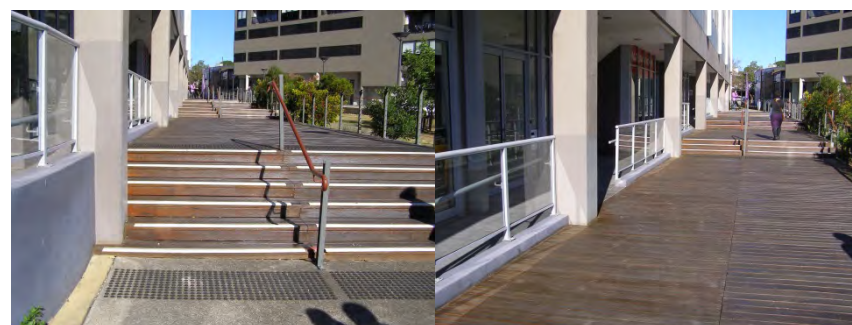
- 1. Enlarged deck and timber seating and steps
- 2. Access steps to shops
- 3. Seating areas with timber benches and platforms with coastal planting replacing existing timber platform and ramp.
- 4. Metal blade screen in “Dee Why” colours or graffiti wall to be developed in conjunction with the *Dee Why Place Making Action Plan*.
- 5. Catenary lights over space
- 6. Overland flow path retained.
- 7. Lawn area
- 8. Low metal blade fence to Oaks Avenue entry
- 9. Permanent umbrellas l
- 10. Oval planters, seat height with power supply for market overlay
- 11. Driveway access to loading dock
- 12. New Link Road
- 13. Walter Gors Park
- 14. New Link Road Intersection and connection to Walter Gors Park



Triangle Park North and Triangle Park South

22.2.5 Maximising space

The concept design for Triangle Park North proposes removing the timber access steps and decking (on Council owned property) along the eastern edge, to ensure overland drainage flow paths are maintained, and to utilise the available space to create a comfortable transition from the built form to the park.



Design proposes to remove existing timber platform to improve relationship between park and built form

Making Triangle Park accessible

The concept design proposes a series of access steps to the building interspaced within timber seating and benches. The timber is painted with a palette of Dee Why colours to theme this space with Walter Gors Park, and to reinforce the casual qualities of the park. The timber platforms are of varying heights to allow seating, reclining and play for children. At the park level, there is the opportunity for tenancies to use the space for outdoor dining, subject to council approval.

Additional summer shade is provided by permanent umbrellas. The concrete deck and ramps to the western side of the park remain as constructed as they are on private property. Timber extension of the existing is proposed to the northern most section to assist with the transitioning of these tenancies to the park and to allow the removal of some sections of balustrading. Stairs and seat steps will link the park to the tenancy terraces

To the south of the western side will have planting beds and timber benches added.



Triangle Park North , view from Howard Avenue



Triangle Park North during market day.

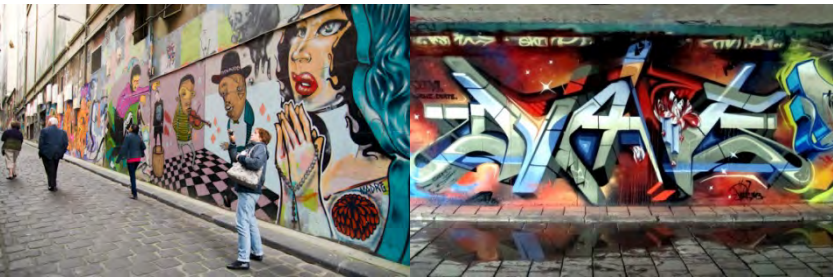


Triangle Park North at dusk showing catenary lights and feature lighting to base of oval planters and timber benches

Creating a setting

A multi coloured, angled metal blade screen is proposed to flank the edges of the Triangle North Park where possible and will continue to form the boundary fence along Triangle Park South. A lower section of fence (800 mm) will be used along the Oaks Avenue Frontage to define the entry zone. This fence/screen will also be used in Walter Gors Park to further tie these spaces together.

There is an opportunity to incorporate a graffiti wall to the western boundary of Triangle Park South. This will be developed in conjunction with the Dee why Place Making action Plan.



Graffiti wall



Fence /screen to park edges



Triangle Park South during Market day looking north



Triangle Park South at Dusk

22.3 PARK ELEMENTS

Retaining overland flow paths

The two parks are within the main drainage easement that links the town centre to Dee Why. The design maintains the overland drainage path during peak storm events.

Oval planters and Market Overlay

A series of oval planters are strategically located to fit within a market overlay. The planters are seat height and also house the power supply for use by the market stalls. They will be planted with coastal groundcovers and trees.

Individual market stalls will be demarcated permanently in the paving to assist with market day operations.

Catenary lights

The parks are proposed to be illuminated using a catenary system that will define the spaces by creating a distinctive space. The catenary pole will be able to support banners and also have power supplies in their base.

22.3.1 Designed to be adaptable for day and night

The Triangle Parks are designed as a platform for numerous activities that can occur throughout the day and all week. The focus is to create unique spaces that are spatially integrated with their surrounds providing range of opportunities for the community to come together.

Triangle Park South opportunities

If the site to the east was to be developed, an activated edge should be encouraged to face the park so that it has the potential for outdoor eating and interface with a public open space.

Graffiti wall opportunity

The edge on the western side of Triangle Park South can also be developed as a graffiti wall as part of the Art Trail in conjunction with the *Dee Why Place Making Action Plan*.



Catenary lights at Oxford Street Mall Bondi Junction Bondi Junction



Bourke Street Mall Melbourne

22.3.2 Furniture

The following public domain elements are part of the proposed design.

- 1. Catenary lighting system
- 2. Park lighting including feature lighting to oval planters and Timber, Wi-Fi access
- 3. Bins, bespoke bench seats and platforms sun lounges and permanent umbrellas.
- 4. The provision of power and water for event overlays
- 5. Bike racks
- 6. Way finding
- 7. Art

22.3.3 Further actions to confirm proposal

- 1. Confirm extent and level of contamination within park area including to inform design and cost plan.
- 2. Review impact on overland drainage flow of park proposal
- 3. Confirm locations for all underground infrastructure
- 4. Confirm the connection points to harvest rainwater for use in the park for irrigation
- 5. Confirm all existing underground services and impact of proposals
- 6. Confirm additional infrastructure requirements.
- 7. Confirm the management and maintenance implication of proposals.
- 8. Co –ordinate art locations and opportunities with Place Making consultants.

23 NEW LANE BETWEEN OAKS AVENUE AND PACIFIC PARADE

23.1 PROPOSED REDEVELOPMENT SCHEME

A development proposal has been prepared for the site which includes a proposed lane to deliver a new street connection between Oaks Avenue and Pacific Parade. (as part of Council’s Master Plan) Within the existing and new street, a high quality public domain is proposed with activated by ground level food and retail uses.

Comparison of Master Plan and concept Proposal

Location	Master Plan	Concept Proposal
Western Footpath	2.0 m plus WSUD	Development proposal has retail frontage to streetscape so WSUDS are not viable. New kerbs and paving, multifunction poles and new trees and planting.
Travel lanes 2 No.	7.0 m two way shared	Shared zone Signalised intersection at Howard Avenue.
Eastern footpath	3.5 m	Shared path with cyclists New kerbs and paving, multifunction poles and new trees and planting.



Master Plan New Lane Link Section Place Design Group .

23.1.1 Further actions to confirm proposal

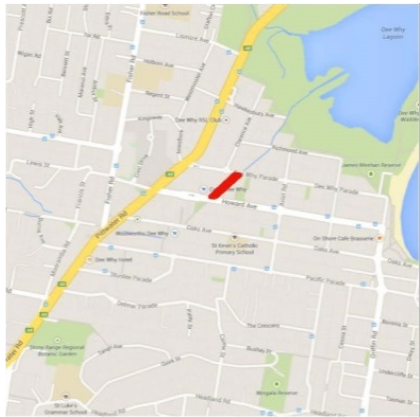
- 1. Confirm if road is to be a share way?
- 2. Consult with Transport for New South Wales on changes to bus route to confirm if New Lane Link Road will not be by buses.
- 3. Review impact of road on overland drainage flow Confirm road cross section in conjunction with drainage capacity.
- 4. Model and confirm signalisation at Howard Avenue with RMS.
- 5. Model and confirm intersection design at Oaks Avenue with RMS
- 6. Confirm and co-ordinate all existing and propose underground services and impact of proposal. Depth of 900 mm drain under eastern footpath
- 7. Confirm additional infrastructure requirements.



New Lane Link



New Lane Link



DEE WHY TOWN CENTRE PLACE AUDIT

STREET NAME – WALTER GORS PARK AND STORMWATER EASEMENT			
Item	Audit Area	Location/Comment	Further Action
1.0	USE		
1.1	Residential	➤ Residential apartments along boundary edges	➤ Consider lowering of fencing where possible.
1.4	Activities	➤ Park is predominately used for passive recreation. Stormwater easement is a link between Howard Avenue and Dee Why parade.	
1.6	Nodes and Activation Points	➤ Park will become a key destination and potential to link with town centre.	➤ Incorporated into development of design.
2.0	COMFORT & IMAGE		
3.1	Trees & Vegetation	➤ Good cover of mature trees (<i>Casuarina sp</i> , <i>Eucalyptus sp</i> , <i>Plantanus sp</i>). in narrow section of Park. Mature trees are senescing. ➤ No vegetation in stormwater easement.	➤ Review existing planting in concept development.
3.2	Safety, Security & Visibility	➤ Visibility is restricted across park but will improve with proposed park expansion.	➤ Improve visibility
3.3	Seating & furniture	➤ Some seating in park. No seating along stormwater easement.	➤ Incorporate appropriate seating types in concept proposal.
3.4	Footpath condition	➤ Reasonable along stormwater easement. ➤ Poor in park due to lifting by tree roots.	➤ Paving will be upgrade as part of the upgrade.
3.5	Orientation	➤ Good northern exposure in Walter Gors Park at Howard Avenue side. ➤ Apartments and mature trees restrict solar access.	➤ Consider solar access in design.

24 WALTER GORS PARK & STORMWATER EASEMENT



DEE WHY TOWN CENTRE PLACE AUDIT

STREET NAME – WALTER GORS PARK AND STORMWATER EASEMENT			
Item	Audit Area	Location/Comment	Further Action
4.0 ACCESS			
4.1	Cyclist access/future provision	➤ Review cycle access along Stormwater easement	➤ Review in relation to cycle network proposals. ➤ Allow for cycle racks and facilities
4.2	Desire Lines	➤ Along stormwater easement and through Walter Gors Park. Both Links connect Howard Avenue top Dee Why Parade.	➤ Maintain and improve through site linkages
4.3	Conflicts	➤ Potential pedestrian and cyclist conflicts.	➤ Review on concept proposal.
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ Pedestrian scale lighting in Walter Gors Park. ➤ No pedestrian scale lighting along Stormwater easement.	➤ Review lighting with proposed design
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Drainage overland flow path and underground services ➤ Sewer line runs through park. ➤ Stormwater drainage easement.	➤ Review infrastructure locations in relation to design development. ➤ Overland drainage capacity is not to be reduced. ➤ Confirm depth of stormwater drainage line in relation to proposed tree planting
5.3	Proposed infrastructure services	➤ New infrastructure required for proposed Park facilities.	➤ Co-ordinate addition infrastructure requirements. ➤ Services for amenities building



DEE WHY TOWN CENTRE PLACE AUDIT

STREET NAME – WALTER GORS PARK AND STORMWATER EASEMENT			
Item	Audit Area	Location/Comment	Further Action
6.0 STORMWATER & DRAINAGE			
6.1	WSUD opportunities	<ul style="list-style-type: none">➤ Inundation zone➤ Opportunity to harvest water for reuse.	<ul style="list-style-type: none">➤ Review opportunities for incorporation➤ Review water harvesting opportunities
7.0 OTHER			
7.1	Way finding	<ul style="list-style-type: none">➤ No way finding	<ul style="list-style-type: none">➤ Review opportunities for incorporation of way finding
7.2	Public art opportunity	<ul style="list-style-type: none">➤ Park can be used for “Art Bomb” programme	<ul style="list-style-type: none">➤ Review and integrate art opportunities
7.3	Views	<ul style="list-style-type: none">➤ Maintain view across park and along link.	
7.4	Contamination	<ul style="list-style-type: none">➤ Confirm extent of possible contamination	<ul style="list-style-type: none">➤ Confirm proposed depths of excavation and scope of work to ascertain cost implications of contamination.

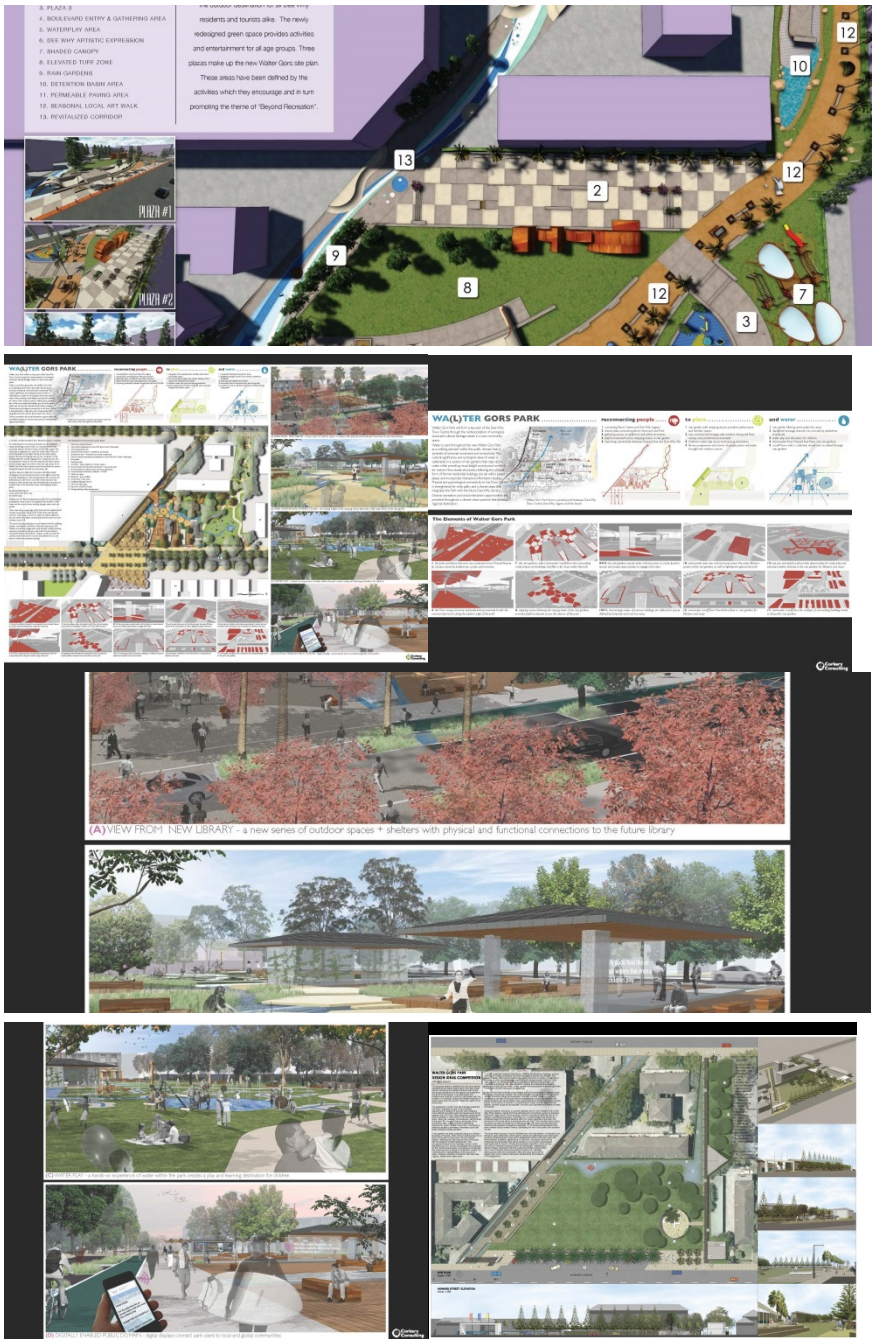
24.1 WALTER GORS PARK PUBLIC DESIGN COMPETITION

In March 2014, Warringah Council held a public design completion for the re-development of Walter Gors Park .

Recurring themes in the submissions included:

- 1. The creation of public plaza spaces
- 2. The development of a clear sense of entry from both Howard Avenue and Dee Why Parade
- 3. Seating and shade
- 4. Play facilities for different ages
- 5. Strong water play themes that reflected the local drainage systems
- 6. Inclusion of barbeque and picnic facilities
- 7. Large lawn areas
- 8. Accessibility

The consultancy brief proposed that some of the competition ideas could be incorporated into the development of the design for Walter Gors Park. . The above elements are strategically suitable for the park and developed forms of these ideas have been included in the concept.



24.2 THE CONCEPT DESIGN

Introduction

The Master plan identifies the following for Walter Gors Park:

“Expanded park with facilities for all ages. Proposed on site detention/WSUD. Removal of existing Council Cottages.”

The proposed removal of the cottages enlarges the park’s frontage to Howard Avenue as well as providing a more distinct connection back to the town centre and reinforcing connections through Triangle Park and along the stormwater easement creating a new expansive park.

This fresh space, in conjunction with Triangle Park will become the new heart of DWTC .

The Design

Walter Gors Park is conceived as an extension of the Dee Why Town Centre, with a **“casual atmosphere”** that can be used by the local population as their **“backyard”**. Through conveying the characteristic coastal feel of Dee Why, into the town centre, the park will reflect the special spirit that is Dee Why.

The design will facilitate strong connections beyond its boundaries while also being a key community hub.

The new park is designed for a diversity of activities including public entertainment, passive and active recreation, markets and play. Walter Gors Park will connect the local population and visitors to the town centre. The proposal extends the natural systems of the local environment through the interpretation of the drainage corridor and the use of coastal flora. An overlay of colour is used on built and introduced elements such sun lounges to create vibrancy and reinforce the coastal, casual feel.

The design promotes inclusiveness and openness by promoting a sense of community through permanent and overlaid activities.

Throughout the park, the beach side nature of Dee Why is celebrated with an aesthetic created through the use of a distinct design language permeating all elements to create a unique sense of place.

24.2.1 Access and Circulation

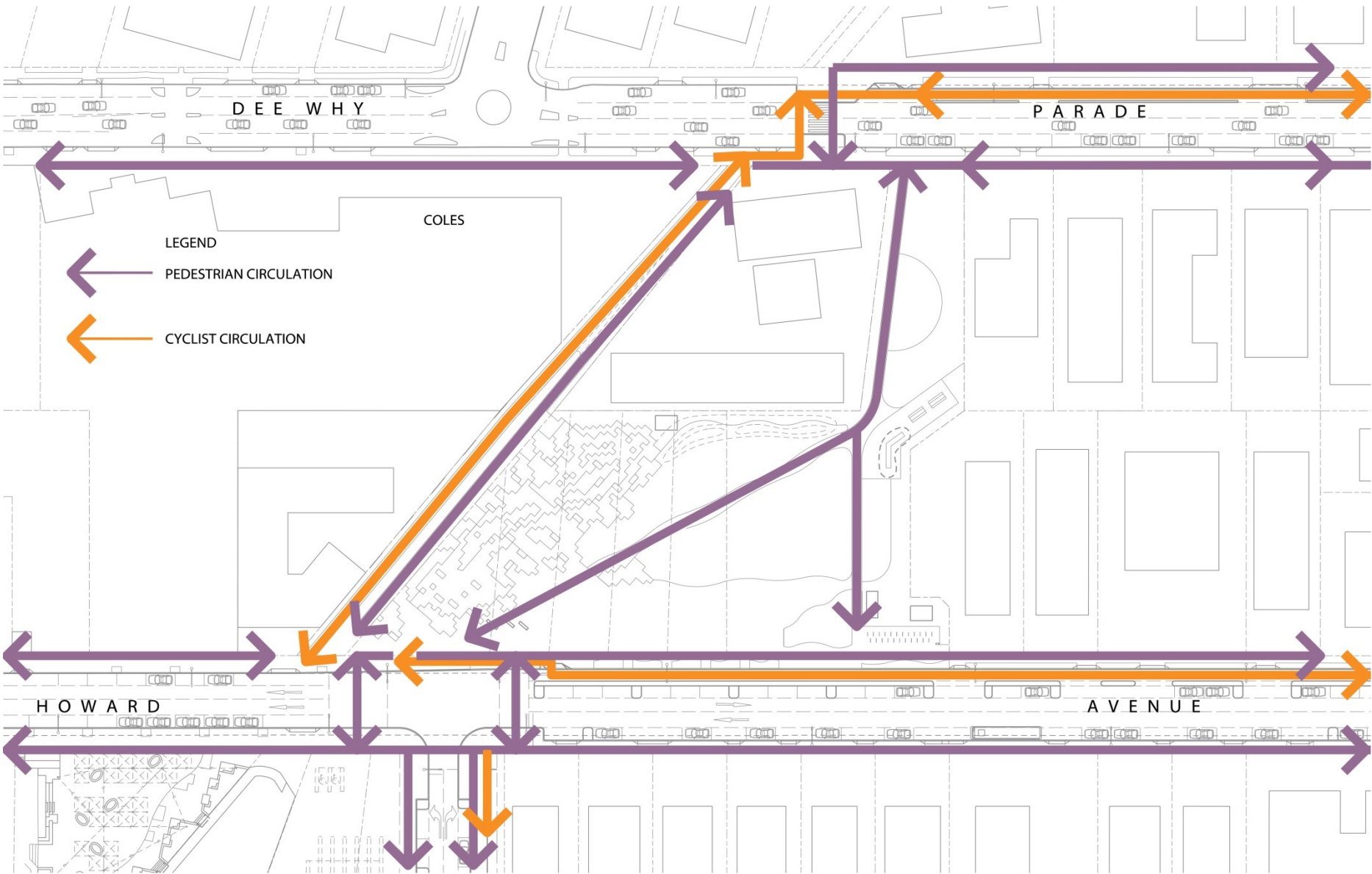
Walter Gors Park is served by a key movement spine for pedestrians and cyclists along the existing western stormwater easement. Secondary movements across the park are catered for by a diagonal and linear path from Howard Avenue to the proposed multicultural kitchen which connects through to Dee Why Parade.

These proposed pathways will promote permeability and connectivity across the park and through to the adjoining neighbourhood.

Cycle network

Walter Gors Park will be the termination of two separated/shared cycleway routes. It is also the logical destination point where many cycle journeys will end and cyclists will dismount before proceeding on foot.

A cycle parking area and water filling station is provided in the park.



Walter Gors Park Access and Circulation

24.2.2 Designed to be adaptable for day and night

The park is designed as a platform for numerous activities that can occur throughout the day and all week.

The focus is to create a unique *Dee Why Park* that is spatially rich providing a range of opportunities for the community to come together.

The key is the creation of a large flat platform in lawn and paving, measuring 50 x 60 metres, that allows event overlays as well as everyday passive recreation. The design focuses on the creation of a human scale so all visitors feel comfortable and welcome.

The design includes a variety of seating types to cater for the different user groups and event modes. Walter Gors Park will have a central lawn, stone seating blocks, bench seats, the long table for gatherings and sun lounges. Bespoke elements and detailing will be used to reinforce and reveal the special locality of the park. The park is designed as a highly functional and flexible space, the area will be completely WIFI enabled, and is suited to pop-up events, festivals, outdoor cinema, picnics and play.

24.2.3 Branding the park

The design introduces the letters WGP in large format on the plaza. This will act as a marker and be used for play.



WGP signage and play letters

WALTER GORS PARK CONCEPT

- 1. Separated cycle way
- 2. The Estuary water feature
- 3. The lawn and detention basin
- 4. The plaza and market place
- 5. Children’s playground (toddler to 12 years) and palm grove
- 6. The outdoor kitchen and long table
- 7. The amenities building, two unisex cubicles including change tables
- 8. Water Feature pump and services building (irrigation control box)
- 9. New link road intersection and connection to Triangle Park
- 10. Pathway
- 11. Space for event overlay e.g. stage or movie screen
- 12. Bike parking, water refill station
- 13. WSUD garden
- 14. New link road with shared cycle path
- 15. Large WGP letters as park signage



Walter Gors Park

24.3 Walter Gors Park Alternative Concept

A concept alternative has been developed with the relocation of the children’s play area and inclusion of a zone for a café.

Key elements include:

- Area of 100m2 for café
- Reduced water feature and water play zone next to relocated children’s play area.
- Toile block relocated closer to the playground/café zone.
- The pump room has be relocated next to the toilet block
- Paving area reduced.
- Howard Avenue footpath wide enough for shared bike path to connect to shared path on new road link.
- Larger area of tables and benches adjoin bbq facilities.



M Pavilion Melbourne

WALTER GORS PARK ALTERNATIVE CONCEPT

1. Separated cycle way ‘
2. The Estuary water feature
3. The lawn and detention basin
4. Proposed café area
5. Children’s playground and water play (toddler to 12 years)
6. The outdoor kitchen and long tables
7. The amenities building, two unisex cubicles including adult change tables
8. Water Feature pump and services building (irrigation control box)
9. New link road intersection and connection to Triangle Park
10. Pathway
11. Space for event overlay e.g. stage or movie screen
12. Bike parking , water refill station
13. WSUD garden
14. New link road with shared cycle path
15. Large WGP letters as park signage



Walter Gors Park – Alternative concept

24.4 THE ESTUARY WATER FEATURE

The Estuary water feature has been designed as an artistic interpretation of a natural estuary and reflective of the drainage corridor that Walter Gors Park is located within.

The Estuary is an alternative to the daylighting of the existing box culvert and boardwalk, proposed in the Master Plan .The daylighting of box culvert between Howard Avenue and Dee Why Parade was considered but assessed to be of low priority in the *Dee Why South Catchment Flood Study, Cardno 2013*. When assessed against economic, social and environmental parameters, the daylighting of the box culvert is constrained by capital costs, work, health and safety constraints as well as on going management consideration.

The Estuary reflects the transitional zone between Dee Why Lagoon and the Town Centre. It is designed for play, to reflect riverine influences of nature.

Influences

The layout mimics water in a channelized form, with a source, low spillways, textured surfaces, static and moving water.



The detailing is inspired by the sculptural installation *California Scenario* by Isamu Noguchi. This piece is recognised as one of the world's preeminent sculpture gardens which is publicly accessible. The garden in its design symbolizes various geographical characteristics in California, incorporating indigenous plants and materials.



L - R: *California Scenario* by Isamu Noguchi



L - R: Images of texture and flow , *Princes Diana Memorial* London

The water storage area for the Estuary water feature will be under ground and harvested rainwater for this tank system will be considered during the Preliminary design stage.

Large stone plinths will be incorporated into the design for seating and as play opportunities. In addition, accessible seating will be located under the planting groves.



The Estuary water feature and WGP signage & play letters

Coastal landscape

The Estuary will feature vegetation that reflects the coastal and alluvial environment of the Warringah Local Government area. It will be ecologically diverse but will have a characteristic textured quality of small leaved and grassy groundcovers and a the dominant tree canopy will be *Banksia integrifolia* (Coast banksia) with its dark twisted and knarled trunk , white underside and dark green serrated foliage and distinctive golden conical flowers .

Refer to Planting Palette section for full plant list.





The Estuary water feature looking towards Howard Avenue



Walter Gors Park The Plaza

24.5 THE PEOPLE SPACES

Walter Gors Park plaza

The paved zone between Howard Avenue and the lawn is a platform for activities. The space is a large expanse (50 metres long by 8 metres wide) without permanent fixtures. This area can be overlaid for a variety of activities including:

- Morning, afternoon and evening exercise groups
- Casual seating on council supplied moveable sun lounges and umbrellas
- Chess tables and chairs
- Permanent table tennis
- Festivals
- Art classes
- Markets on weekends (local and growers)
- Noodle markets in the evening
- Coffee and food carts



Portable seating in Sydney's CBD



Community overlay

THE LAWN

The lawn is constructed as a high quality natural grass surface to allow for everyday use for numerous activities and events.

In conjunction with the plaza, the lawn is a flexible area. When combined with the paved plaza, there is an area of approximately 3000 square metres of open space within the park.

During the day, the lawn can be used by individuals who visit and work in Dee Why and by residents seeking a park experience. Numerous small groups can comfortably gather within the space.

The lawn will compliment market activities by providing a large expanse for seating and relaxing and can also be utilised for outdoor classes.

Children can play and families can picnic on the lush grass surface.



Above: The Lawn



Above (L – R): Princess Diana Memorial Park London, Battery Park New York



Walter Gors Park The lawn

Event overlay

To the east of the lawn is a section of park that can accommodate a stage or large format movie screen.

24.6 THE BUILT STRUCTURES

Within the new Walter Gors Park there are a number of built structures.

- 1. The pump and service shed
- 2. The outdoor kitchen and dining area hub
- 3. Amenity block
- 4. Playground

The Pump and service shed

To accommodate the plant and equipment required to service the Estuary water feature and the park facilities, a small building is proposed. The structure is located at the northern end of the water feature near the park boundary. It houses pumps, mains switch board, irrigation control box and provide some storage for maintenance equipment.





Walter Gors Park on Market Day

The outdoor kitchen and dining hub

Located on the north eastern corner of the main park space will be the culinary and eating hub of the park. The space is located at the junction of the larger park space and the tapered linkage space to Dee Why Parade.

The hub overlooks both the lawn and playground, assisting in the supervision of younger children.

The outdoor kitchen and dining area is designed to cater for large gathering of families and friends. The long table area seats up to thirty people.

The outdoor covered kitchen has a sink, BBQs and other cooking facilities to allow for the preparation of meals for a number of groups at the one time. The space could be used for outdoor cooking classes.



The outdoor kitchen



The long table

Amenity block

An automatic toilet building with two unisex and accessible toilets is provided in the park near Howard Avenue. The amenity block has been located so that it can be seen from the road and close to the proposed market stall area.

The block can be integrated with the latest technologies that can improve water and power efficiency reducing their carbon footprint. Options include rainwater harvesting, water efficient toilet pans and flushing systems. Extensive use of stainless steel in most accessories and components also ensures any future needs for recycling are catered for.

Web based remote monitoring system could be integrated into the automated toilets that will enable instant access to extensive data including number of occupations, water usage, power consumption, programmable time settings and provide solutions to troubleshooting.



Automated unisex amenity block



Walter Gors Park during outdoor cinema and Noodle Market

The playground

The playground is to be designed with the same coastal theme as the park. A series of play experiences suitable for toddlers to children 12 years in age is proposed for the zone between the main park area and Dee Why Parade.

Bespoke elements will also be incorporated into the play experience. The semicircular landform around the playground will be shaped to form a low enclosure with groves of *Livistonia australis* (Cabbage palms) proposed as feature planting.

Healthy existing trees are to be retained and replacement planting to provide privacy to adjoining properties will be incorporated into the design.





Walter Gors Park Playground artist impression

Bringing the park into the setting

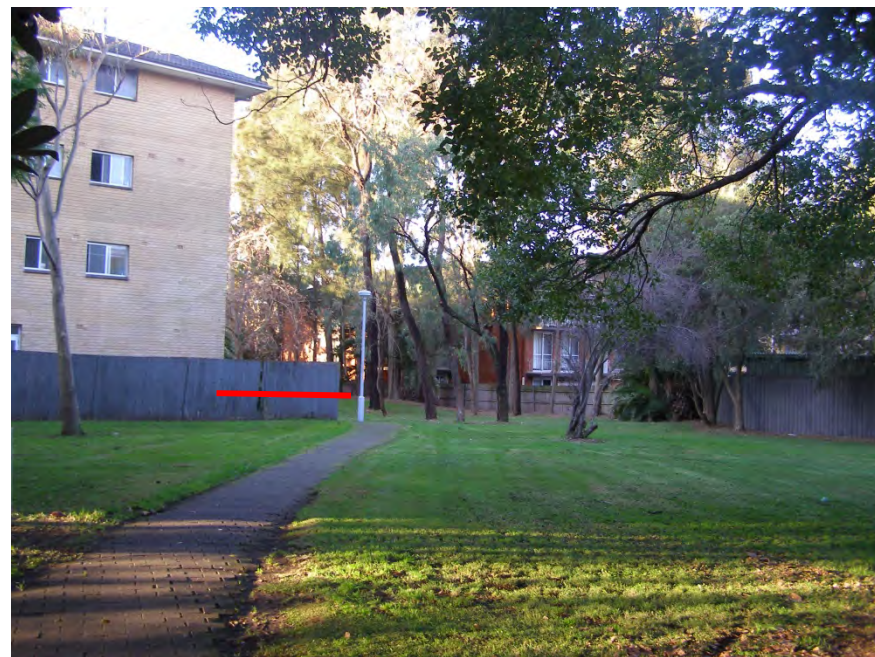
The successful integration of the park into within its surrounding environment will be achieved by improving the visual connections between the park and neighbouring properties.

This will create a safer environment for both the neighbouring properties and park users.

The existing boundary fencing around the edges of the park can be reviewed and where possible, fences lowered to approximately 900mm high would significantly help the interrelationship of the park and its surrounds.

The residents of adjoining properties can provide passive surveillance.

Gates can be incorporated into sections of lowered fence so children can readily access the park without going to Dee Why Parade or Howard Avenue.



Lowering fence at the corner will improve views into the narrow section of the park.



Lowering fence at strategic locations will improve access to the park for residents and provide additional surveillance.

Water Sensitive Urban Design – Walter Gors Park

The narrow planted separation strip between the separated cycleway and pedestrian path along the drainage channel can be constructed as a rain garden.

The bio retention swale can provide both stormwater treatment and a conveyance function for the runoff from the two adjoining pathways. The paths can be designed to fall towards the swale.

The bio retention treatment can be constructed for the full length of the swale. Further investigation of this component of the project is required during the Preliminary Design stage to confirm if there are any underground services that may be a constraint.

The remaining garden areas can be passively irrigated from runoff, reducing the amount of flow from the site.

Underground storage tanks for harvested rain water from adjoining properties can be used for irrigating the park.

24.6.1 Furniture

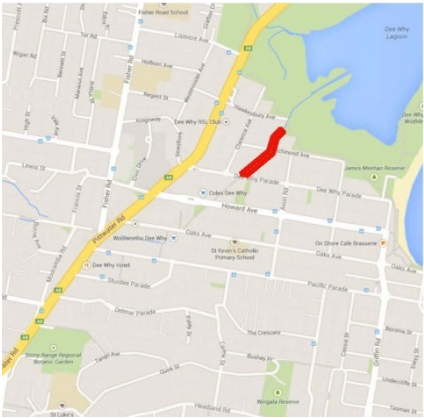
The following public domain elements are part of the proposed design.

1. Multifunction light poles along Howard Avenue
2. Park lighting including feature lighting to the Estuary water feature
3. Bins, bench seats , tables, sun lounges and permanent umbrellas
4. The provision of power and water for event overlays
5. Outdoor kitchen
6. Drinking fountain and water refill station
7. Bike racks
8. Way finding
9. Art

24.6.2 Further actions to confirm proposal

1. Confirm extent and level of contamination within park area including proposed buildings to be demolished, to inform design and cost plan.
 2. Review impact on overland drainage flow of park proposal.
 3. Confirm location and depth of existing stormwater culvert to confirm if WSUD and trees can be installed along stormwater easement.
 4. Confirm location and depth of sewer in park to confirm impact on proposed lawn detention basin and general design layout.
 5. Confirm locations for all underground infrastructure associated with water feature and irrigation system.
 6. Confirm the connection points to harvest rainwater for use in the park for irrigation and amenities building and water feature top up.
 7. Confirm trees to be retained and removed.
 8. Confirm if neighbouring boundary fences can be lowered in selected sections.
-
1. Confirm all existing underground services and impact of proposals
 2. Confirm additional infrastructure requirements.
 3. Confirm the management and maintenance implication of proposals.
 4. Co –ordinate art locations and opportunities with Place making consultants.

25 DRAINAGE CHANNEL BETWEEN DEE WHY PDE AND HAWKESBURY AVE



DEE WHY TOWN CENTRE PLACE AUDIT

STREET NAME – DRAINAGE CHANNEL BETWEEN DEE WHY PARADE AND HAWKESBURY AVENUE			
Item	Audit Area	Location/Comment	Further Action
1.0 USE			
1.1	Use	➤ Drainage channel , no pedestrian access	
2.0 SCALE			
2.1	Existing	➤ Narrow easement within existing residential areas	
2.2	Proposed	➤ No change	
3.0 COMFORT & IMAGE			
3.1	Trees & Vegetation	➤ Some vegetation overhanging from adjoining properties and within easement, overgrown.	
3.2	Safety, Security & Visibility	➤ Visibility is restricted because of overgrowth and narrow corridor.	➤ Review improving visibility.
4.0 ACCESS			
4.1	Cyclist access/future provision	➤ Review pedestrian and cycle access along stormwater easement	➤ Review in relation to cycle network proposals.
4.2	Accessibility	➤ Review connectivity with other pathways. ➤ Master Plan proposes board walk link to Dee Why Lagoon	➤ Review and reinforce in concept design.
5.0 INFRASTRUCTURE & SERVICES			
5.1	Lighting	➤ No pedestrian scale lighting along stormwater easement	➤ Review lighting with proposed design
5.2	Existing infrastructure services that may be a constraint in the upgrade	➤ Drainage overland flow path and underground services	➤ Review location in relation to design development. ➤ Overland drainage capacity is not to be reduced.

DEE WHY TOWN CENTRE PLACE AUDIT

STREET NAME – DRAINAGE CHANNEL BETWEEN DEE WHY PARADE AND HAWKESBURY AVENUE			
Item	Audit Area	Location/Comment	Further Action
6.0	STORMWATER & DRAINAGE		
6.1	WSUD opportunities	➤ Inundation zone	➤ Ensure proposals do not impact drainage
7.0	OTHER		
7.1	Way finding	➤ No way finding	➤ Incorporate into design proposals.
7.2	Public art opportunity	➤ Spaces can be used for “Art Bomb” programme ➤ Opportunity for integrated art.	➤ Review integrate art opportunities
7.3	Views	➤ Maintain view across park and along link.	

25.1 MASTER PLAN PROPOSAL

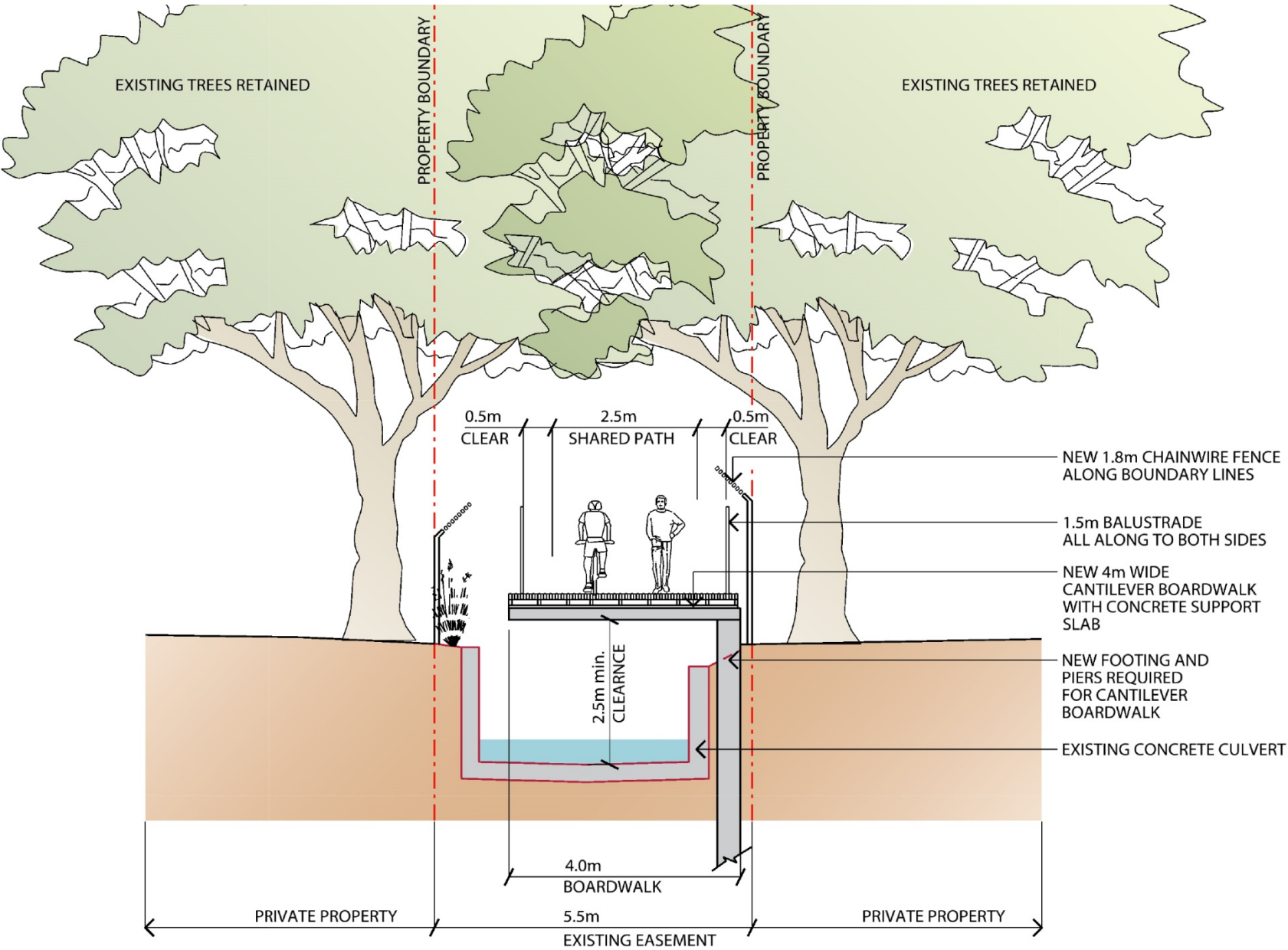
Proposed board walk over current open channel creates a pedestrian link to/from Lagoon walk/storm water easement

The design section indicates a typical cross section depicting the Master Plan proposal.

- Due to the depth of the potential stormwater during peak events, the board walk has been set at 2.5m above the drain.
- The existing stormwater easement is 5.5m in width.
- The board walk will need to be 3.5m width to allow for vertical clearance for the cyclists' envelope
- The board walk will require a cantilever footing and may involve the reconstruction of the sides of the channel.
- Adjoining residents may not want pedestrian access along the easement
- The shared path connection could be constructed using FRP fibreglass board walk material.

Recommendation

The width and length of the easement is not conducive to a safe and pleasant walking and cycling experience. We recommend alternative pedestrian/cyclist links to be considered along Dee Why Parade to Dee Why Lagoon, utilising exiting footpaths and/or creating separated cycleway links.



Drainage Channel - Master Plan proposal typical cross section study

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LARGE EVENT OVERLAY

Walter Gors Park and the two Triangle Parks can be linked during major events by closing Howard Avenue between Pittwater Road and the New Link Road.

Traffic can turn right from the New Link Road and head east along Howard Avenue.



Large event overlay

27 PAVING PALETTE

Four paving types are proposed for Dee Why town centre

- 1. Public Domain paving
- 2. Plaza Paving
- 3. General streetscape
- 4. Parks

The paving type and finishes will be further developed as part of Stage 2 Preliminary Design.

Location	Paving type
Public domain Paving (Streetscapes)	Urbanstone ‘Golden Gunmetal’ precast concrete paver
Plaza paving Walter Gors Park, Triangle Park north and South Redman Place	Body paving colour Urbanstone Golden Gunmetal’ ‘precast concrete paver Highlights, banding and blending with streetscape paver Urbanstone ‘Albany Grey’ ’
General Streetscape and paving areas	Type 1 - Insitu concrete paving, saw cut joints
Parks	Type 2 - Insitu concrete paving, saw cut joints, with coloured oxide

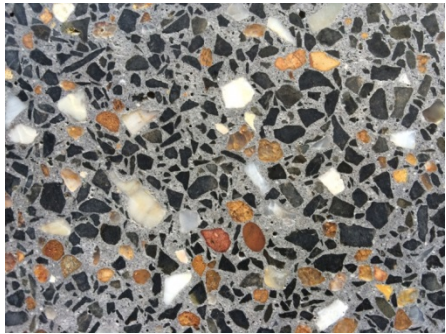
Paving details	Description
Public domain Paving (Streetscapes) and Plaza paving	<p>Urban stone concrete pavers and tactile indicators:</p> <p>Pavers: 200 x 200 ‘Finish: honed finish. Size: 200x200, 200 x 400, 400 x 600 40mm thickness pedestrian areas, 60mm thickness on vehicular areas Installation: 30mm mortar bed, butt jointed 32Mpa concrete slab base;</p> <ul style="list-style-type: none">➤ Pedestrian areas: 110mm thick –reinforced, SL 72➤ Light Vehicular traffic: 150mm thick reinforced with SL 82 mesh➤ Heavy vehicular traffic: 200mm thick reinforced with SL82 <p>Tactile Indicators: Size: 300 x 300 x 40/60 Finish: Type ‘B’ (hazard tactiles) Type ‘C’ (directional tactiles) as required, shotblast finish</p>
General streetscape and park areas	<p>Insitu concrete paving</p> <ul style="list-style-type: none">➤ Pedestrian areas: 110mm thick –reinforced, SL 72➤ Light Vehicular traffic: 150mm thick reinforced with SL 82 mesh➤ Heavy vehicular traffic: 200mm thick reinforced with SL82
New concrete kerb and gutters	200mm wide kerb, 450mm gutter



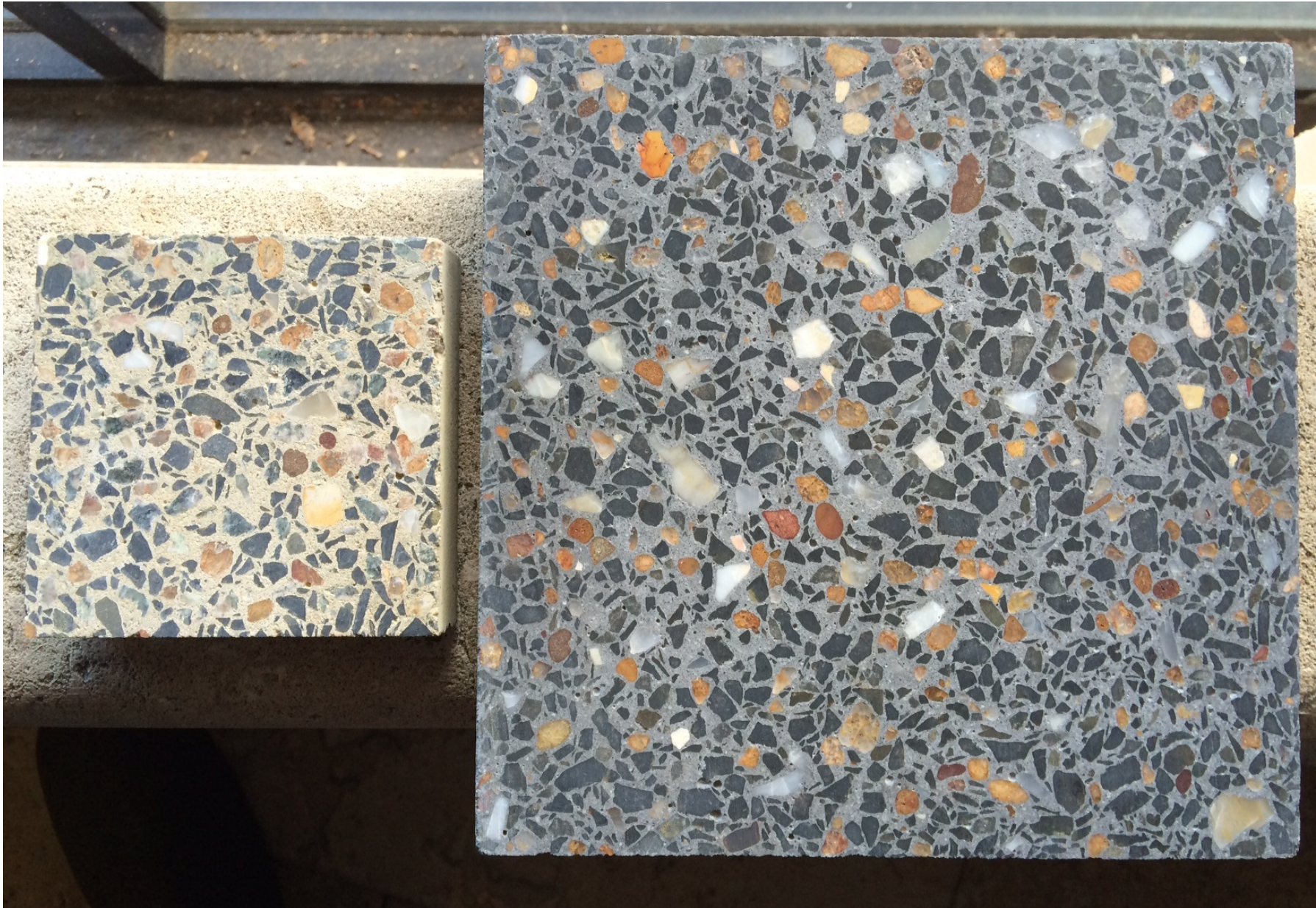
Tactile Indicator



Urbanstone Albany Grey



Urbanstone Golden Gunmetal



Urban stone Samples together



Insitu concrete paving with saw cut joint, broom finish.

8 PLANTING PALETTE

The planting palette will reflect the local coastal environment interspersed with a selection of deciduous trees for solar access.

Indigenous plants will be used to reinforce the locality of the town centre and to reinforce the casual seaside experience of the peninsular.

The palette can be divided into the following categories:

STREET TREES

Botanical Name	Common Name	Mature Size (Height x Width)
EVERGREEN SPECIES		
<i>Cupaniopsis anarcardioides</i>	Tuckeroo	10 x 8 m
<i>Livistona australis</i>	Cabbage Palm	3 metre canopy 12-15m tall
<i>Tristaniopsis laurina</i> 'Luscious'	Water Gum	9m x 7m
DECIDUOUS TREES		
<i>Acer buergerianum</i>	Trident Maple	6 x 8m
<i>Catalpa bignonioides</i>	Southern Catalpa	8 x 12m
<i>Cornus florida</i>	Flowering dogwood	10 x 10m
<i>Pistacia chinensis</i>	Chinese Pistachio	10 x7m
<i>Toona australia</i>	Red cedar	18 x 30m

PARK PLANTING

Botanical Name	Common Name	Mature Size (Height x Width)
TREES		
<i>Angophora costata</i>	Sydney Red Gum	20m x 12m
<i>Banksia integrifolia</i>	Coastal Banksia	8-10m x 5-7m
<i>Banksia serrata</i>	Old Man Banksia	10-12m x 6-8m
<i>Cupaniopsis anarcardioides</i>	Tuckeroo	8m x 6m
<i>Eucalyptus robusta</i>	Swamp mahogany	15 x 25m
<i>Livistona australis</i>	Cabbage Palm	3 metre canopy 12-15m tall
<i>Melaleuca decora</i>	White Feather Honey Myrtle	4-6m x 2-4m
<i>Melaleuca linarifolia</i>	Snow in summer	5 x 8m
<i>Melaleuca styphelioides</i>	Prickly Leaved Paperbark	6-8m x 3-5m
<i>Pistacia chinensis</i>	Chinese Pistachio	10 x7m
<i>Plumeria acutifolia</i>	Frangipani	6m x 4m
<i>Tristaniopsis laurina</i> 'Luscious'	Water Gum	9m x 7m
SHRUBS		
<i>Banksia ericifolia</i>	Heath Banksia	5m x 4m
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	6-8m x 3-4m
<i>Doryanthes excelsa</i>	Gynea Lilly	1.5m x 1.5m
<i>Metrosideros excelsa</i> variety	NZ Christmas Bush	3-4m x 1-2m
<i>Syzygium australe</i> 'Elite'	Lilly Pilly	3m x 1.5m
<i>Westringia fruticosa</i>	Westringia	1.5 x 1m

Botanical Name	Common Name	Mature Size (Height x Width)
GRASSES AND GROWDCOVERS		
<i>Carpobrotus glaucescens</i>	Pig Face	0.15-0.3m x 1-2m
<i>Chrysocephalum apiculatum</i>	Yellow Buttons	0.3m x 1m
<i>Dianella caerulea</i>	Blue Flax-Lily	0.5m x 4m
<i>Dichondra repens</i>	Kidney weed	Prostrate
<i>Dichelachne crinita</i>	Longhair Plume Grass	0.3m x 1.5m
<i>Erigeron karvinskianus</i>	Seaside Daisy	0.3m x 1m
<i>Ficinia nodosa</i>	Knobby Club-Rush	0.6-0.7m x0.8-1m
<i>Grevillea lanigera</i> 'Mt Tamboritha'	Mt Tamboritha Form	0.3m x 1.5m
<i>Hardenbergia violacea</i> 'Meema'	Purple Coral Pea	0.3m x 1.5m
<i>Lomandra longifolia</i> 'Tanika'	Spiny-Head Matt-Rush	0.5-0.7m x 0.5-0.6m
<i>Myoporum parvifolium</i> 'Yareena'	Creeping Boobialla	0.5 x 3m
<i>Osteospermum ecklonis</i>	Veldt Daisy	0.2-0.4m x 1m
<i>Poa labillardieri</i> 'Eskdale'	Tussock Grass	0.7-0.9m x 0.5-0.6m
<i>Scaevola humilis</i> 'Purple Fusion'	Sandplain Fan Flower	0.2m x 1.5m
<i>Themeda australis</i>	Kangaroo Grass	0.7-0.9m x 0.5-0.6m
<i>Westringia fruticosa</i> 'Mundi'	Coastal Rosemary	0.4-0.5m x 1.5m
<i>Viola hederacea</i>	Native Violet	0.1m x 1.5m

Botanical Name	Common Name	Mature Size (Height x Width)
WSUD PLANTS		
<i>Banksia robur</i>	Swamp Banksia	1m x 2.5m
<i>Callistemon viminalis</i>	Weeping Bottlebrush	2m x 6m
<i>Carex appressa</i>	Sedge	1m x 1m
<i>Carex fascicularis</i>	Tassel Sedge	0.5m-1.0m
<i>Dianella caerulea</i>	Blue Flax-Lily	0.5m x 4m
<i>Dianella longifolia</i> var <i>longifolia</i>	Pale Flax Lily	0.3m-0.8m
<i>Dichondra repens</i>	Kidney Weed	Prostrate
<i>Dichelachne crinita</i>	Longhair Plume Grass	0.1m-1.5m
<i>Imperata cylindra</i>	Blady Grass	0.2m – 0.3m
<i>Juncus usitatus</i>	Twelfth Rush	0.5m x 1.0m
<i>Lomandra filiformis</i> ssp. <i>Filiformis</i>	Wattle Mat Rush	0.5m-1.0m
<i>Microlaena stipoides</i>	Weeping Grass	0.5m- 0.7m
<i>Poa labillardieri</i>	Common Tussock Grass	0.3m-0.8m



29 FURNITURE PALETTE

Refer to Volume 2 for Lighting.

The following section offers a selection of proprietary products that can be used for the DYTC furniture palette.

Fixtures can be coloured to create a furniture suit for Dee Why.

All furniture to be surface mounted.

The furniture elements for the project can be further developed during the preliminary design stage. The opportunity for the incorporation of art will also be developed in conjunction with the place making consultants.

29.1 BENCH SEATS

Details	Location
BENCH SEAT OPTION METRO TIMBER BENCH SEAT <i>Town and Park</i>	
The frame is made up of Cast Marine Grade Aluminium legs and end frames with FSC® 100% Hardwood slats.	All areas where required
Product Details Fixing: Surface / sub-surface fixed Frame: Cast Marine Grade Aluminium legs and end frames Length :Varies up to 4000mm Seat: FSC® 100% Hardwood 63mm x 30mm	
Standard Product Code SSD Metro Timber Bench Seat	



Timber Bench Seat

29.2 BINS

Details	Location
BIN OPTION FORESHORE WHEEL-IN BIN <i>Gossi Park</i>	
240 litre Manufactured from maintenance free aluminium Anodised finish ensures graffiti can be easily removed Fireproof seals Waste and recycle styles available Optional smokers set available	Town Centre Streetscapes and parks Recycle option for parks



Public Bins

29.3 BIKE RACKS

Details	Location
BIKE RACK OPTION 'HOOP' BIKE RACK (Grade 316) <i>Town and Park</i>	
Galvanised Steel CHS with Galvanised Steel baseplate (Grade 316) 4 x M8 installation fixings Dynabolts, cast-in hold down bolts or chemical anchors Standard Hoop H 850mm x W 845mm x D 42mm	Town Centre Streetscapes and parks Recycle option for parks



Galvanised Steel Bike Rack

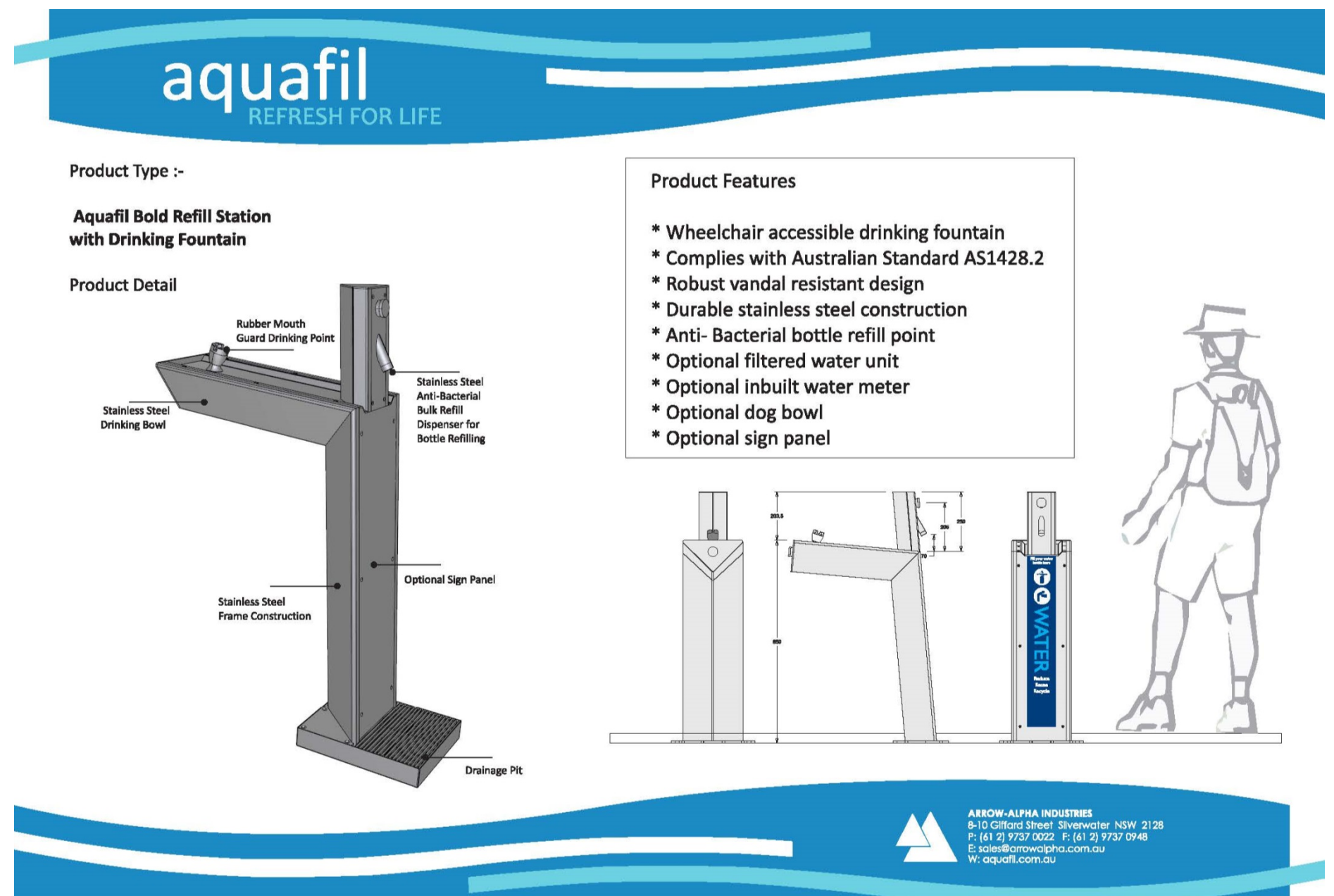
29.4 BOLLARDS

Details	Location
BOLLARD <i>S205 BOLLARD (Grade 316) Hub Street Equipment</i>	
STANDARD SPECIFICATION Bead Blasted Stainless Steel (304) Dimensions: l 100mm w 115mm h 900mm	Town Centre Streetscapes and parks Recycle option for parks
Options Badging options available Surface or sub surface mounting	
SEMI-BESPOKE This piece can be customised to suit specific needs.	



Bollards

Details	Location
DRINKING FOUNTAIN AND BOTTLE FILLING REFILL STATION	
Description Stainless steel structure and drinking bowl.	Town Centre Streetscapes and parks. Near interchanges and bike parking locations at Walter Gors Park, Oaks Avenue and Howard Avenue.



29.5 BUS SHELTERS

Product	Details	Location
Bespoke	Streamlined bus shelter with timber bench seating and armrests. Glass panels, steel frame. Lighting 4.0m and 8.0 m lengths	At bus stops within town centre



Bespoke Bus Shelter

29.6 LIGHTING

Refer to Lighting Art+Science Report in Volume 2 for details of lighting.

29.6.1 Multi function Poles

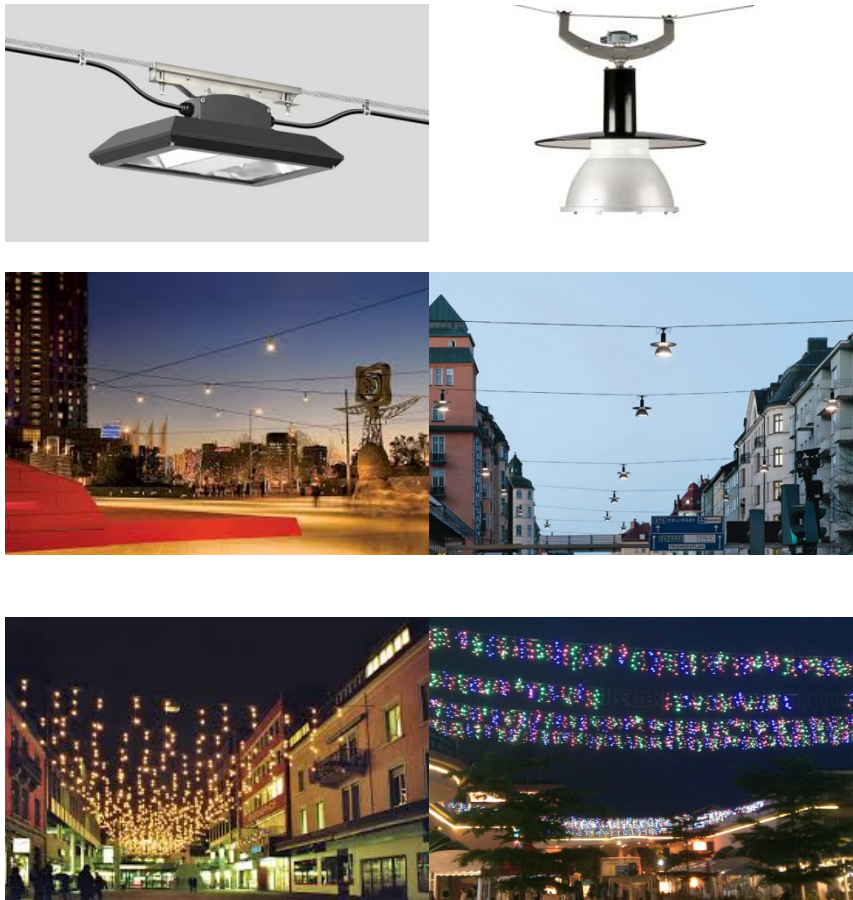


Multifunction poles



Multifunction poles

29.6.2 Catenary Lights



Catenary Lights

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REFERENCES

Dee Why Town Centre Master Plan Place Design Group July 2013

Warringah Council Policies

Bushland Policy ENV-PL005
Community engagement policy
Cultural Plan
Cultural Policy CCS PL210
Environmental Sustainability Policy STR PL830
Environmental Sustainability Strategy 2012
Graffiti Management Plan
Outdoor eating Policy STR-PL340
Public Art Policy PL010
Public Space Design Guidelines July 2013
Recreation Strategy 2009
Social Plan June 2010
Species List for Street Tree Planting Fact Sheets
Street tree Planting Policy
Warringah Pedestrian an Access Mobility Plan June 2001
WSUD Policy STR-PL820
Youth strategy 2013

Warringah Council Documents

Dee why Town Square Plan of Management June 2003

Warringah Natural Area Survey
Vegetation Communities and Plant Species August 2005

Geotechnical

Geotechnical Investigation 36-48 Kingsway Dee Why JK Geotechnics April 2013

Traffic & transport

Dee Why Town Centre Traffic study Final Traffic, transport and Parking report
GTA Consultants 2008
Report for Brookvale Dee Why Transport Management and Accessibility
Study (Vol 1)
GHD
Dee Why Town Centre – 40 km/h High Pedestrian Activity Area council memo
2007
Dee Why Town Centre Traffic Management proposals

Pittwater Road Concept plans for RTA GTA consulting Nov 2009
Warringah Pedestrian Access and Mobility Plan 8 June 2011 Aurecon

Stormwater and Drainage

De Why Lagoon Data Compilation Study Manly Hydraulic Laboratory January 1997

Dee Why south Catchment – Drainage amplification assessment to inform
Dee Why Master Plan July 2013
Floodplain Risk Management Study, Dee Why South Catchment, Cardno June 2014

2009 058823 Dee Why Town Centre Survey - Craig & Rhodes Surveyors - DWG
File – 2008

Future Development proposals

18 Howard Avenue
27-33 Oaks Avenue (Woolworths site)
16-20 Fisher Road (Masters Builders Site)
701 Pittwater Road (Cobalt)
818 Pittwater Road
822 Pittwater Road
18-22 Sturdee parade (Kiah site)
888 Pittwater Road (Meriton proposal)
PCYC development proposal
Mooramba Road Car park

Walter Gors Ideas competition entries