

# ACTIVATE BILGOLA: STREETS AS SHARED SPACES

## Transport Management Plan

29 SEPTEMBER 2020





## CONTACT



**NICOLE VUKIC**  
Project Manger

**T** +61 2 8907 3932

**M** +61 417 233 935

**E** [Nicole.Vukic@arcadis.com](mailto:Nicole.Vukic@arcadis.com)

**Arcadis**

Level 16

580 George Street, Sydney 2000

---

# NORTHERN BEACHES COUNCIL ACTIVATE MANLY: STREETS AS SHARED SPACES

## Transport Management Plan

Draft report

**Author** Wendy Hu

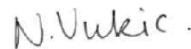
**Checker** Lise Chesnais

**Approver** Nicole Vukic

**Report No** 30054436\_002

**Date** 29/09/2020

**Revision Text** B



This report has been prepared for Northern Beaches Council in accordance with the terms and conditions of appointment for Activate Manly dated 1 September 2020. Arcadis Australia Pacific Pty Limited (ABN 76 104 485 289) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

## REVISIONS

Revision	Date	Description	Prepared by	Approved by
A	23/09/2020	Draft for client review	Lise Chesnais	Nicole Vukic
B	29/09/2020	Final	Lise Chesnais	Nicole Vukic



# CONTENTS

<b>1 INTRODUCTION</b>	<b>1</b>
1.1 Background	1
1.2 Approach	2
1.3 Purpose of this report	3
1.4 Structure of this report	3
<b>2 THE PROPOSAL</b>	<b>4</b>
2.1 Overview	4
2.1.1 Section 1 – between Barrenjoey Road (north) and 27 The Serpentine	5
2.1.2 Section 2 – between 27 The Serpentine and Bilgola Avenue	6
2.1.3 Section 3 – between Bilgola Avenue and Barrenjoey Road (south)	7
2.2 Vehicular access	8
2.3 Public transport	8
2.4 Parking impact	10
2.5 Implementation of proposal	10
2.5.1 Network optimisation	10
2.5.2 Pedestrians and cyclists	11
2.5.3 Stakeholder and community engagement	11
<b>3 MANAGEMENT MEASURES</b>	<b>12</b>
3.1 Urban design elements	12
3.2 Speed limits and control	12
3.3 Road safety audits	12
3.4 Program of inspections	13
3.5 Construction hours	13
3.6 Monitoring and evaluation approach	14
<b>4 SUMMARY OF ACTIONS</b>	<b>15</b>

# 1 INTRODUCTION

## 1.1 Background

The Activate Bilgola project is part of a package of works that seeks to improve and activate the connections around town centres and beaches in the Northern Beaches Council Local Government Area. The Activate Bilgola project creates a walking and cycling-friendly link along The Serpentine, a scenic beachside path in Bilgola, as shown in Figure 1.

The Activate Bilgola project seeks to:

- Increase space for safe cycling
- Connect the connection between Newport and Avalon in as part of the Northern Beaches Coastal Walk
- Ensure the safety of the travelling public by reducing posted speed limits and implementing traffic calming measures along The Serpentine.

This project has been awarded a grant through the Streets as Shared Spaces Grant Program as a medium-term pilot project to improve or activate streets as shared public spaces.



Figure 1 Activate Bilgola project (placeholder before more refined concept plan)

## 1.2 Approach

The Activate Bilgola project will adopt the tactical urbanism approach in the implementation of proposed works.

Tactical urbanism is a community-led approach to neighbourhood building using short-term, low cost and scalable interventions intended to drive long term change. These adaptations large and small can be both from top-down policy or bottom-up intervention and represents a significant opportunity to:

- **Implement projects quicker, cheaper** – Identify opportunities to repurpose spaces in an imaginative and cost-effective manner. Tactical urbanism solutions use temporary, inexpensive materials and rapid planning and design
- **Foster community and political support** – Tactical urbanism can be used as a tool for public engagement due to the location and visibility of local projects. Through demonstrating that a solution is possible ‘on the ground’, project teams can build community, stakeholder, and political support for a project
- **Reduces risk** – Successful interventions clearly demonstrate real, verified, community endorsement of concept, which moreover instils a sense of community ‘ownership’ of the project
- **Address safety needs and infrastructure gaps** – Opportunity to address the immediate safety and infrastructure needs along The Serpentine
- **Enhance placemaking** – Tactical urbanism projects can provide the opportunity to take spaces and make them into places by quickly transforming environments to encourage people to interact
- **Improve equity and access to public spaces** – Repurposing public spaces can address social barriers by creating community facilities and amenity, that all community members can access
- **Reallocate road space** – Tactical urbanism projects have been used to reallocate road space to better serve the needs of road users. For example, road space during the COVID-19 pandemic has been reallocated to provide more space for cycling to meet physical distancing recommendations. This provides physical distancing while encouraging greater mode share to active transport for commuting to work, school, leisure and for other trips.

There are a variety of tactical urbanism solutions currently being implemented around the world. These include pop-up bicycle lanes, temporary parklets and street closures. These projects can be delivered rapidly, from a few hours to days or weeks, and can often be transitioned into permanent projects.

The tactical urbanism approach can help complete the coastal walk connection between Avalon and Newport by addressing The Serpentine’s current challenges, which include the lack of safe and easily traversable space for pedestrians and cyclists.

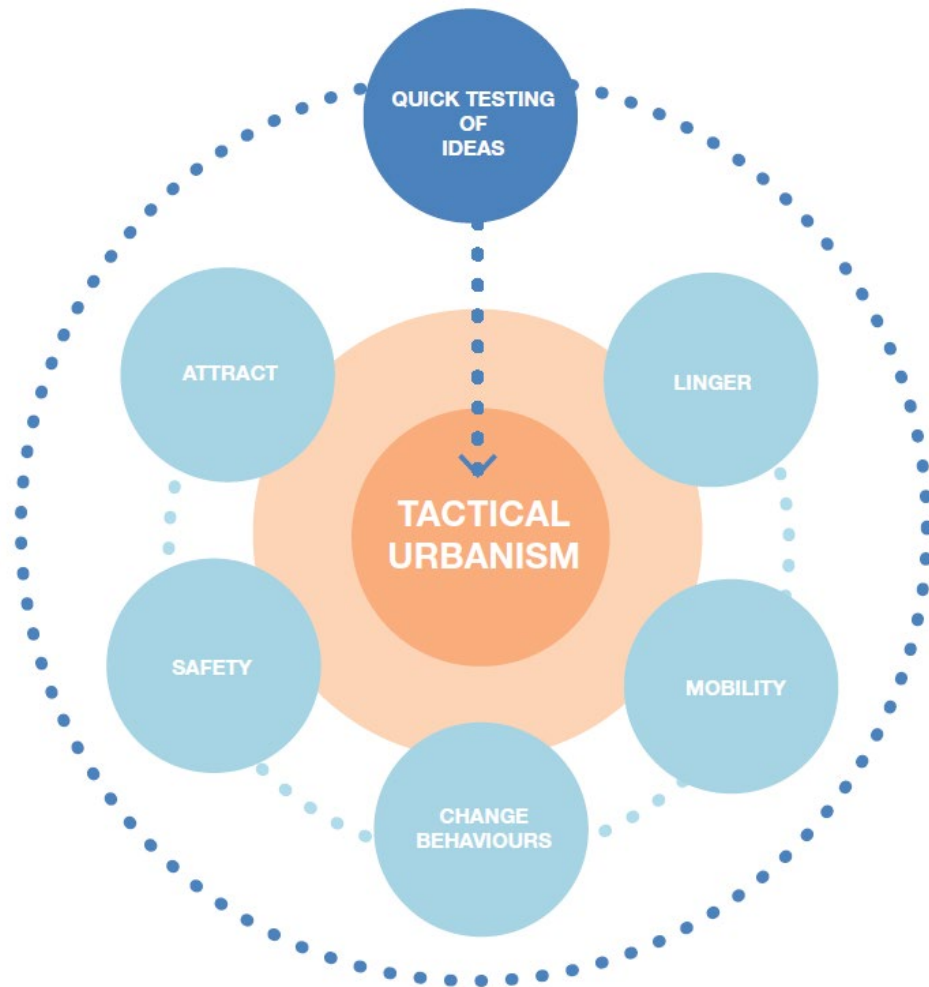


Figure 2 Tactical urbanism benefits

### 1.3 Purpose of this report

This Traffic Management Plan outlines the works and changes proposed under the Activate Bilgola project to facilitate a safer and more attractive environment, including management measures such as threshold treatments and traffic calming measures.

This report will be used for the Traffic Committee meeting in October 2020 to seek approval for the implementation of the proposed arrangement.

### 1.4 Structure of this report

The remainder of this report is structured as follows:

- **Section 2** The Proposal, outlines the access arrangements and changes proposed by the project across all modes
- **Section 3** Management measures, outlines the traffic management measures proposed to enable the implementation of the project
- **Section 4** Summary of actions, provides a summary of the actions required to implement the scheme.

## 2 THE PROPOSAL

### 2.1 Overview

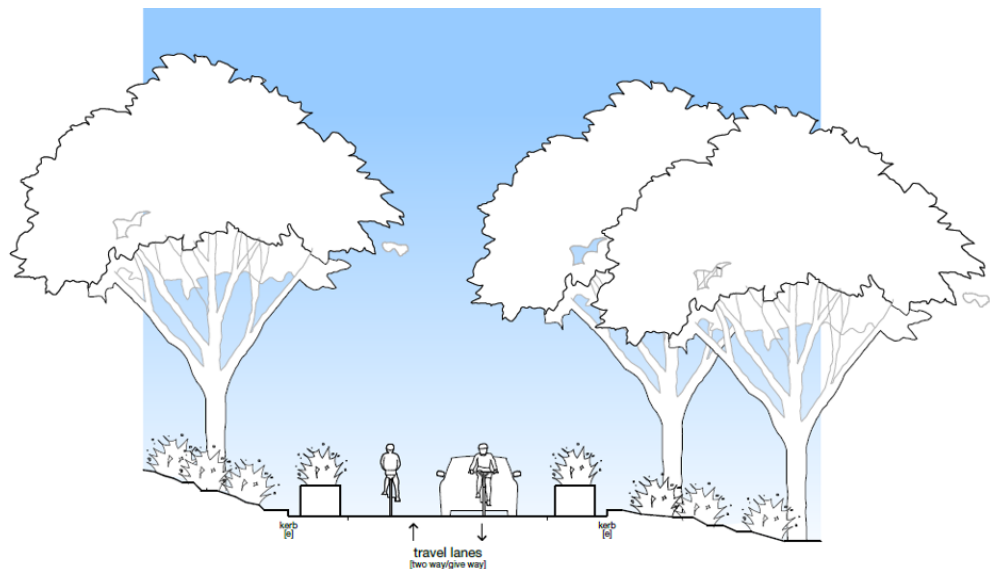
The Activate Bilgola project area runs along The Serpentine, which is classified a local road and under the existing arrangement comprises one lane in each direction, with a 40 km/h posted speed limit. The Serpentine is a residential street, and vehicles park on each side of the street.

The Serpentine is about 1.6 kilometres long, running alongside Bilgola Beach. In its existing configuration it provides one lane in each direction for vehicle access only but has the potential to serve as a scenic walking and cycling track that would take about 20 minutes to complete on foot.

This project proposes to convert The Serpentine into a 10 km/h shared zone, with appropriate threshold treatments and traffic calming measures. The shared zone would connect into the Northern Beaches Coastal Walk, a major attraction within Sydney, and provide the missing connection between Newport to the south and Avalon to the north via Bilgola.

To support the conversion into a shared zone, The Serpentine will require threshold treatments at the road entries and localised narrowing with urban design elements to create slow points and sections of road with single lane, give-way controls. The slow points would be located on the straight sections of The Serpentine to allow for adequate sight distances for opposing traffic to safely stop and pass. Across the entirety of The Serpentine, two-way give way sections are proposed at 10 locations.

Figure 3 shows a proposed cross-section for the two-way give way sections of The Serpentine.



*Figure 3 Proposed cross-section for The Serpentine (two-way give way)*

The Serpentine can be considered in three sections, being:

1. Barrenjoey Road (north) to 27 The Serpentine
2. 27 The Serpentine to Bilgola Avenue
3. Bilgola Avenue to Barrenjoey Road (south).

Figure 4 shows the road sections within the study area.

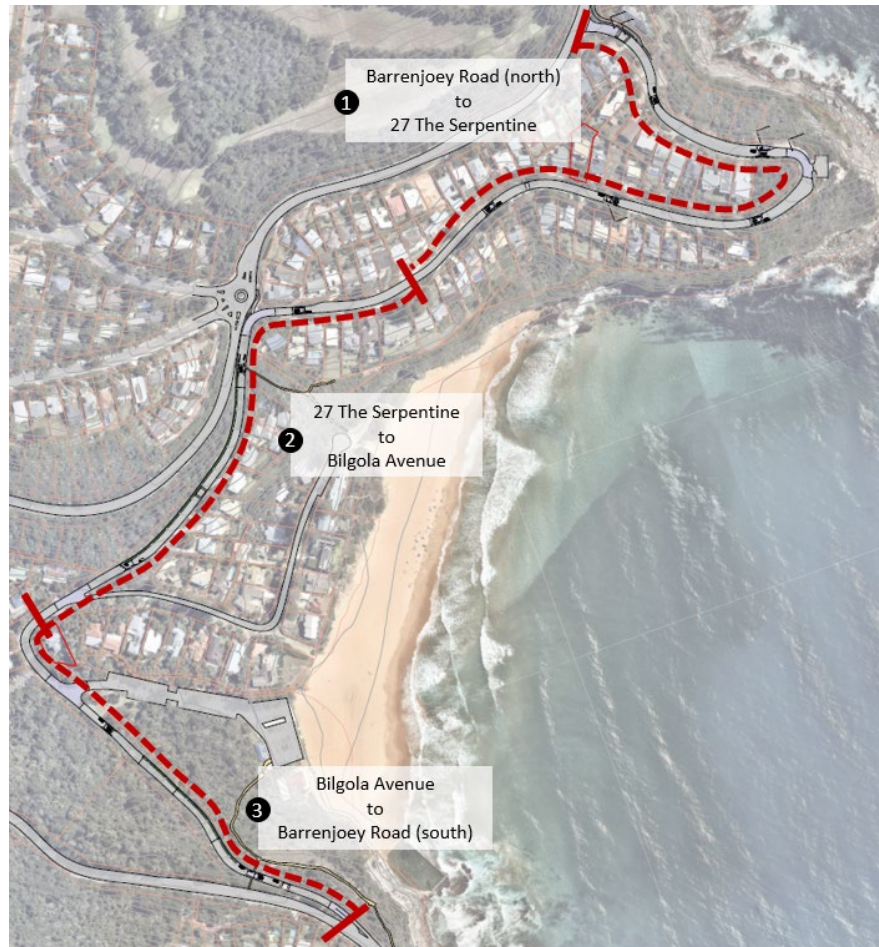


Figure 4 Road sections within the project area

### 2.1.1 Barrenjoey Road (north) to 27 The Serpentine

At the northernmost section of The Serpentine, a stamped feature pavement is proposed at the intersection with Barrenjoey Road to function as a gateway and signal to drivers that they are entering a different road environment. Following the stamped feature pavement is an existing speed hump, which will reduce speeds of southbound vehicles entering The Serpentine.

An additional stamped feature pavement is proposed at the entry to the North Bilgola Lookout and car park.

5 locations of two-way give way road treatments are proposed along this section of The Serpentine to reduce the speed environment, located along areas with good sight distances. One such location is proposed at 39 The Serpentine, across an existing speed hump. No changes are proposed to the existing speed hump at 33A The Serpentine.

For cyclists on the new shared zone, bicycle parking is proposed to be provided at the two-way give way section about 35 metres north of the North Bilgola Lookout, as well as adjacent to the Lookout.

Figure 5 shows the locations of the changes proposed along Section 1 of The Serpentine, including future marked parking bays to meet current usage of the area.



Figure 5 Section 1 – proposed changes

## 2.1.2 27 The Serpentine to Bilgola Avenue

The middle section of The Serpentine is between 27 The Serpentine and Bilgola Avenue, which functions as an access road to additional residential properties as well as Bilgola Beach.

Stamped feature pavements are proposed at the intersection between The Serpentine and Bilgola Avenue, as well as at the sharp curve on the road near the Barrenjoey Road roundabout.

Two-way give way road treatments have been proposed at 3 locations along this section, leading to the stamped feature pavements. One of these locations will connect to the existing pedestrian access to Bilgola Beach.

A new dedicated cycle lane is proposed to run along the eastbound side of the road between Bilgola Avenue and the pedestrian access to provide safe cycling space in this uphill section.

Figure 6 shows the locations of the changes proposed along Section 2 of The Serpentine, including future marked parking bays to meet current usage of the area.



Figure 6 Section 2 – Proposed changes

### 2.1.3 Bilgola Avenue to Barrenjoey Road (south)

The southernmost section of The Serpentine runs from the south of Bilgola Avenue to Barrenjoey Road.

Stamped feature pavements are proposed as a gateway between Barrenjoey Road and The Serpentine, with an existing speed hump to the west to signalise to westbound drivers that they are entering a low speed environment. An additional stamped feature pavement is proposed at the intersection between The Serpentine and the Bilgola Beach car park access.

Two-way give way treatments have been proposed at two locations along this section of The Serpentine, east of the Bilgola Beach car park access and west of the existing speed hump. The eastern give way treatment connects to an existing pedestrian access that runs between the Bilgola Beach car park and Barrenjoey Road, which under the current configuration is disconnected across the roads with no official pedestrian crossings provided. However, with the conversion of The Serpentine into a shared zone, the pedestrian crossing issues are expected to be alleviated by the creation of a speed environment in which pedestrians have the priority.

A cycle lane is proposed along the eastbound side of The Serpentine, between the two-way give way treatments for cyclists travelling in the uphill direction.

Figure 7 shows the locations of the changes proposed along Section 3 of The Serpentine, including future marked parking bays to meet current usage of the area.



Figure 7 Section 3 – Proposed changes

## 2.2 Vehicular access

The Active Bilgola project proposes to narrow the traffic lanes and to reduce the speed limit to 10 km/h to facilitate safe pedestrian and cyclist movements amongst vehicles in a shared zone.

The route is currently used as a rat run by drivers avoiding peak hour congestion on Barrenjoey Road, a classified State road that functions as the major north-south movement corridor between Palm Beach and Mona Vale. However, with the reduction of speed limits these vehicles would be expected to remain on the Barrenjoey Road, which would provide faster trip times. As a result, The Serpentine would be used primarily by vehicles with a destination in Bilgola and see significantly reduced volumes of through traffic.

During the implementation of the project, the access points to the Bilgola Avenue residential street, the Bilgola Beach car park and North Bilgola Lookout are required to be maintained to ensure minimal impacts to visitors.

## 2.3 Public transport

The Serpentine is accessible via buses that run along Barrenjoey Road to the west. Route that service the area include:

- Route 188 – Mona Vale to City Wynyard
- Route 188X – North Avalon Beach to City Wynyard
- Route 189X – Avalon Beach to City Wynyard
- Route 190X – Palm Beach to City Wynyard
- Route 191 – Avalon Beach to Taylors Point
- Route 199 – Palm Beach to Manly.

No changes are proposed to any bus stops or routes as part of the Activate Bilgola project.

Figure 8 shows the location of bus stops near The Serpentine.

Activate Bilgola: streets as shared spaces

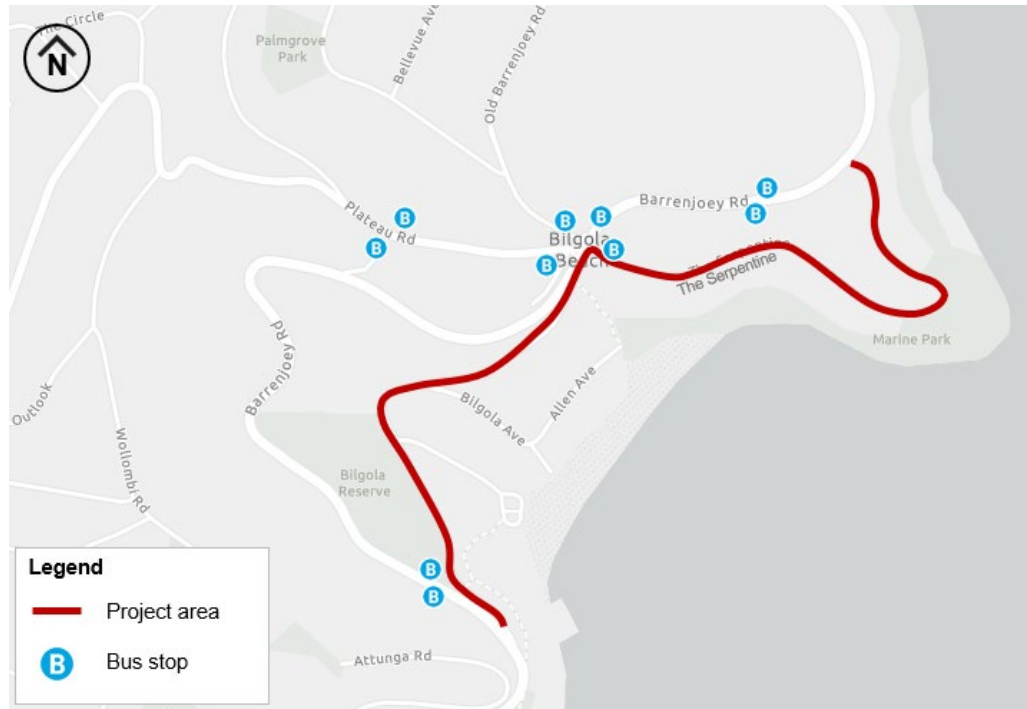


Figure 8 Bus stops around The Serpentine

## 2.4 Parking impact

The activation of The Serpentine proposes to narrow the road to create a shared zone. The road is currently one lane in each direction and 8 metres wide, with no official lanes for parking. However, vehicles have been observed to be parked on either side of the road at certain sections of The Serpentine, in front of residential dwellings. While the extension of the kerb would displace some of these parking spaces, satellite imagery indicates that all dwellings possess driveways that allow residents to park their vehicles on their own property.

Along the full extent of The Serpentine, marked parking bays will be provided to formalise the current practice.

No changes are proposed to the North Bilgola Lookout public car park or the Bilgola Beach public car park, which are expected to be utilised primarily by visitors to the area.

## 2.5 Implementation of proposal

The Activate Bilgola project adopts the tactical urbanism approach to the implementation of proposed works, with a focus on using short-term, low cost and scalable interventions intended to drive long term change. The changes proposed are a temporary arrangement and will be treated as standard temporary traffic work.

Upgrade works would be planned and staged to minimise disruption to the residents of The Serpentine and visitors to Bilgola Beach. In the implementation of the proposal, the road users including vehicles, pedestrians and cyclists, as well as the local residents should be informed on any impacts on normal operations that can be expected during the construction phase.

### 2.5.1 Network optimisation

The traffic impacts in the network surrounding the project area are considered to be minimal during operation. During construction of the proposed scheme, the network optimisation may include changes to facilitate effective use of available network capacity, such as:

- When performing works necessary to convert The Serpentine into a 10 km/h shared zone, the works should be undertaken during off-peak hours to minimise impacts on local residents and visitors to the beach
- Access through work sites would be managed by traffic controllers.

## 2.5.2 Pedestrians and cyclists

As the Activate Bilgola project aims to complete the link between Avalon and Newport as part of the Northern Beaches Coastal Walk, pedestrians and cyclists are expected to account for a significant proportion of road users. Provision of an amenable and safe link for active transport users is therefore a priority for the project. However, in the current configuration there is no footpath, and pedestrians on the road are relegated to the narrow road shoulder. It is important during the construction phase to ensure the upgrade works and presence of construction vehicles do not adversely impact the safety of active transport users on the link. Strategies to maintain pedestrian and cyclist amenity include:

- Minimise disruption to pedestrians and cyclists along existing routes and crossings, ensuring sufficient room for safe passage is available at all times
- Provide safe and amenable access for pedestrians for all stages of project implementation during day and night-time periods, including appropriate design of routes with suitable surfaces, lighting and visibility
- Maintain pedestrian access to residential dwellings, Bilgola Beach and the North Bilgola Lookout during all stages of project implementation
- Manage potential conflicts between pedestrians and construction vehicles through appropriate traffic control.

## 2.5.3 Stakeholder and community engagement

It is critical to effectively and regularly inform the community and local residents impacted by the construction work prior to commencement to manage the public's expectations. Advance notice should be provided to all road users as well as residents of The Serpentine.

This could be done by:

- Installing notice signs for all road users
- Local newspapers and pamphlet distribution
- Project information website
- Project newsletters
- Public notifications in local publications
- Websites for relevant road authorities
- Public notice boards and notices at public transport stops and stations.

Advanced notice of planned work and potential network disruptions through construction period will be provided. This may involve the preparation of information packs detailing the proposed construction activities and temporary arrangements for the following groups:

- Emergency vehicles
- Emergency evacuation plans
- Pedestrians and cyclists (including access to properties)
- Disability access
- Waste collection and other service vehicles
- Noise management.

## 3 MANAGEMENT MEASURES

### 3.1 Urban design elements

Threshold treatments will be installed at intersections along The Serpentine and at both ends. These treatments will signal that road users are entering a different speed environment where pedestrians and cyclists have the priority.

The threshold treatments will be designed as a mix of lane narrowing and asphalt art, the example at Figure 9 shows the polka dot design used in Auckland CBD (NZ).



Figure 9 Example of threshold treatments - Polka dots on Shortland Street, source: Auckland Council

In Bilgola, the asphalt paintings will link with the coastal walk theme of the local place, with potentially whales and sea creatures featured. Attention will have to be paid to providing adequate skid resistance for bicycles on these painted sections, particularly in curves and slowing down locations to avoid falls in wet conditions.

Other elements such as planters, painted concrete barriers, road paint and traffic delineators will be used for traffic calming purposes to create single lane sections.

### 3.2 Speed limits and control

Under the existing configuration, The Serpentine is a local road with a posted speed limit of 50 km/h. Activate Bilgola proposes to create a shared zone along the length of The Serpentine with a posted speed limit of 10 km/h.

Threshold treatments and traffic calming measures will be instated to signal to vehicles upon entry into the shared zone. The following measures will also be undertaken to facilitate a low speed environment:

- Prominent features such as signs and urban design features will be used to indicate a change in the street environment and highlight the start and end of the proposed shared zone
- Installation of pavement artwork will be used to highlight the changed traffic conditions, including tactile or coloured pavement and stencilling of artwork
- Shared zone entry signs will be provided on both sides of the road, for the road entry and exit points along The Serpentine to further enhance the changes in environment and priority.

### 3.3 Road safety audits

Road safety auditing is a formalised procedure, which can be applied to all phases of a road project or to an existing road. The auditor and audit team must be independent of the designer, so that the design is viewed with 'fresh eyes'. The purpose of the

audit is not to rate the design, but rather identify any road safety concerns from the perspective of road users.

The objectives of a road safety audit are to:

- Review the operational site, design and background information and form conclusions about the safety performance and crash potential for the road
- Evaluate the operational site in terms of interaction with its surrounds and nearby roads and to visualise potential impediments and conflicts for road users
- Identify and report on aspects of the design that may result in unnecessary or unreasonable hazards for all road users.

Road Safety Audits are structured around standard checklists provided in the Austroads *Part 6: Road Safety Audit* and Roads and Maritime Service's *Guide to Road Safety Audit Practices* 2011.

For the proposal, Road Safety Audits would be undertaken at the following stages:

- **Design:** This audit stage involves the review of the design drawings, reports and supporting information and an inspection of the site, its approaches and connections. Standard issues such as sight distance, speed zones, safety barriers, alignment, delineation pedestrian facilities and signage (amongst others) are assessed with respect to safety
- **Pre-opening:** Prior to the opening of the completed work a Road Safety Audit is carried out during both day and night time periods to ensure that the work has been constructed to consider all previous Road Safety Audit findings, addresses site constraints appropriately and provides safe facilities for all road users.

### 3.4 Program of inspections

In addition to the Road Safety Audits detailed in Section 3.3, regular inspections are required to ensure that the traffic control measures and urban design elements implemented are safe for all road users, properly installed and undamaged.

It is anticipated that the scheme will be implemented for a period of 12 months. It is recommended that the arrangement is inspected every two months as a minimum.

### 3.5 Construction hours

Construction times during the construction period of the project are proposed to occur between 7am to 6pm from Monday to Friday, in compliance with *NSW Interim Construction Noise Guideline* (Department of Environment and Climate Change, 2009).

As the construction noise guidelines are not mandatory and aim to inform the selection and application of work practices to minimise noise impacts, the construction period may be informed by consultation with local residents and businesses.

### 3.6 Monitoring and evaluation approach

The process to deliver tactical urbanism projects generally follows a four-phase process as outlined in this section for consideration. This report covers planning and design and aims to plan for the implementation timing.



During the design and implementation phases it is essential to plan for the monitoring and evaluation of the project. The *Handbook for Tactical Urbanism in Aotearoa* (NZ Transport Agency, August 2020) recommends developing a Monitoring and Evaluation Plan and nominating a Monitoring and Evaluation Lead person, it defines monitoring and evaluation as follows:

- “Monitoring is the collection of information about a project’s activities and outputs. It is a critical piece of the Learn–Adjust–Improve feedback loop. It shows whether things are going to plan, highlights issues, and informs immediate modifications to the design.
- Evaluation involves determining whether a project is achieving what it set out to do. It uses the qualitative and quantitative data collected before and during the trial to judge success, improve effectiveness, and inform decisions.

In the case of Activate Bilgola monitoring and evaluation are focused on identifying whether the project is achieving its goals, answering questions such as:

Question / Goal	Indicator	Collection method	Collection timeline
<b>Is the project making it safer to walk and ride in the area?</b>	Number of near misses involving walkers / riders Feeling of safety Number of children riding without adult supervision	Visual survey counts of near misses during peak times (weekend, AM, PM) On site survey of people walking and cycling	Before and after implementation
<b>Has the project increased the number of people walking and cycling?</b>	Number of people walking and cycling	Counts	Before construction and then one month, three months and six months after completion.
<b>How can the project be improved to better achieve its goals?</b>	Community and visitors’ satisfaction and feedback	Online survey In person survey, if possible, at community events or via a local “survey” stall. Questions framed more around “how can the project be improved?” rather than “do you support or oppose the project?”	After implementation

The “after” timeframe will be identified by the project team, it can be beneficial to leave some time for the street users to adapt their behaviour to the change after construction, a three months period could be a good basis.

Lastly, analyse collected data and evaluate effectiveness and whether goals were achieved, whether adjustments should be made to the project as needed. Potentially, adjust the project and start a new round of evaluation to refine design and implementation before transitioning it to permanent.

## 4 SUMMARY OF ACTIONS

This Traffic Management Plan highlights a wide range of actions to be implemented before, during and after construction. They are summarised in

*Table 1 Summary of actions*

Theme	Before construction	During construction	After construction
<b>Community/ stakeholder engagement (to be confirmed in consultation with Council)</b>	Notice signs Advance notice provided to all road users Engagement on proposed scheme and construction times	Complaints management	Opening event Engagement stall for locals and visitors
<b>Road Safety Audit</b>	Carryout a Road Safety Audit of the design and modify arrangement to respond to audit findings		Carry out a pre-opening Road Safety Audit to confirm the installation of management measures is safe prior to opening
<b>Urban design elements</b>	Consultation with internal stakeholders for plant types and maintenance plan	Implementation of urban design elements, such as planter boxes and pavement artwork	Handover of planter maintenance and watering to relevant Council team
<b>Monitor and evaluate</b>	Create monitoring and evaluation plan. Select monitoring and evaluation lead "Before" counts and surveys: plan and implement		"After" counts and surveys. Adjustments to arrangement following surveys (as required)
<b>Construction management</b>	Prepare Traffic Guidance Scheme to manage traffic during construction and ensure safe construction zones for the proposed work	Implement approved Traffic Guidance Scheme Provide safe and amenable access for pedestrians	
<b>Other management measures</b>		Removal of existing redundant delineation and pavement markings Covering or temporarily removing existing redundant signage, including parking signs Installation of temporary traffic barriers and delineation associated with the arrangement Installation of threshold treatments Installation of regulatory signage	

