

HW1 Island Point Road Roundabout Installation

Submissions report

Transport for NSW | March 2020



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Prepared by Transport for NSW

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Approval and authorisation

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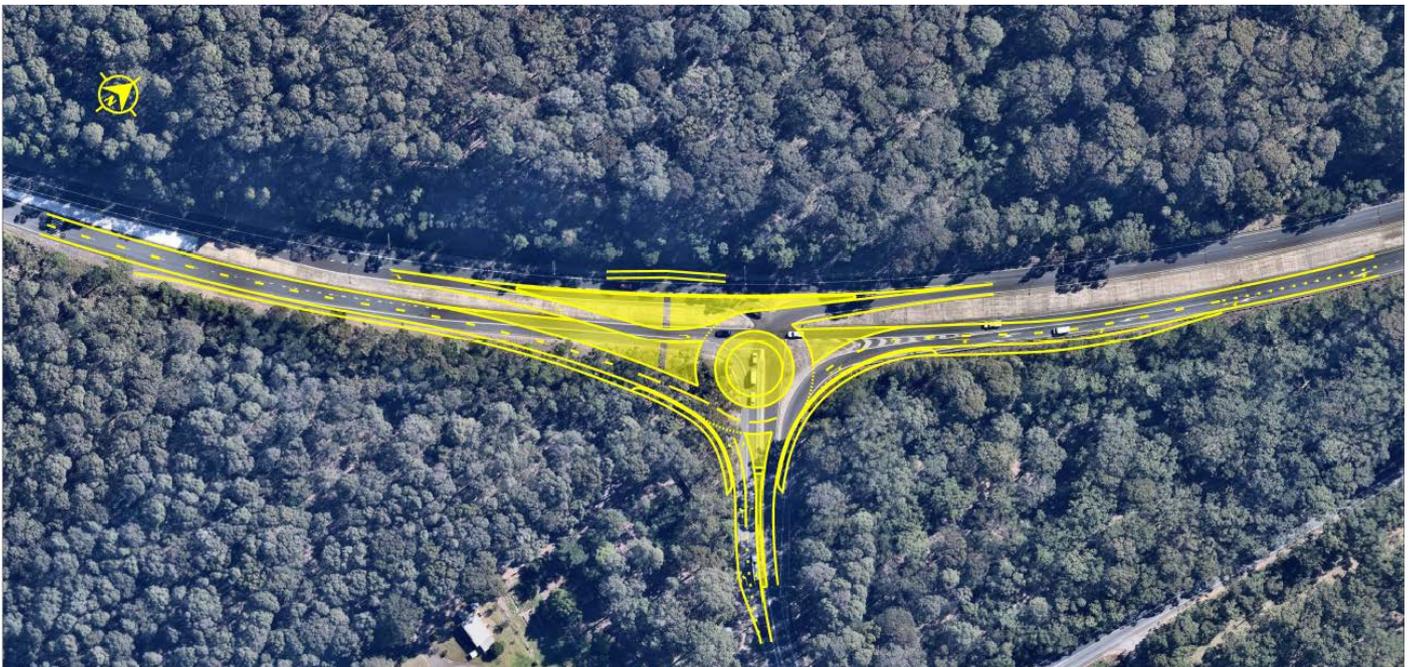
Executive summary

The proposal

Transport for NSW propose to install a roundabout at the Princes Highway and Island Point Road intersection, Tomerong, within the Shoalhaven Local Government Area (LGA). The features of the roundabout include:

- Two southbound lanes entering and exiting the roundabout on Princes Highway
- Two lanes entering the roundabout from Island Point Road
- One northbound lane entering the roundabout and one northbound slip lane on Princes Highway
- Relocation of the existing street lights at the intersection
- A cyclist crossing point for crossing Princes Highway on southern side of roundabout.

The location of the proposal is shown below



Display of the Review of Environmental Factors

Transport for NSW prepared a Review of Environmental Factors (REF) for the HW1 Island Point Road Roundabout Installation. The REF was placed on public display between Friday 13 September 2019 and Monday 7 October 2019 at Sanctuary Point Library. The REF was also published on the Transport for NSW project website and made available for download.

The display locations and website link were advertised in the South Coast Register local newspaper and on Facebook, and via a community update that was distributed to residents in the Basin View, St Georges Basin and Sanctuary Point areas. During this time, Transport for NSW invited the public to provide feedback on the proposal.

Summary of issues and responses

During the display, a total of 30 submissions were received in response to the Island Point Road Roundabout Installation REF from the community, 29 were from the general community and one submission from a community group.

Of these submissions, 13 per cent were in support of the proposal, 13 per cent were partially supportive of the proposal and 60 per cent objected to the proposal. The remaining 14 per cent submissions offered no position on whether they supported or objected to the proposal.

All issues raised in the submissions to the Island Point Road Roundabout Installation have been addressed in this submissions report. The main issues raised are summarised below;

- Strategic need for the proposal
- Safety concerns for a roundabout at the intersection
- Excess noise caused by heavy vehicles stopping and accelerating
- Requests for a grade separated interchange (flyover)
- Loss of informal parking area on southern side of Island Point Road
- Additional road network upgrades outside of the scope of the proposal which included duplication of the Princes Highway

Response to submissions

The main issues raised and responses to those issues are summarised below.

Issue:

Strategic need for the proposal

Response:

A number of respondents questioned the need for intersection upgrade and suggested that the issue is with driver behaviour. The intersection upgrade has been proposed due to the poor road safety performance of the existing intersection. Traffic modelling also concluded the intersection will fail performance criteria in the year 2020. The strategic need for the proposal is detailed in Section 2.1 of the REF.

Issue:

Safety and traffic efficiency performance of the proposed roundabout

Response:

A number of respondents raised concern over the safety and traffic efficiency performance of the proposed roundabout including the speed of southbound vehicles on the Princes Highway from a road safety aspect. The proposed roundabout was selected as the preferred option as it would treat the types of crashes that are prevalent at the intersection, and it would provide a high level of service in regards to traffic efficiency to at least 2048. The roundabout has been designed in accordance with Austroads and includes a number of traffic calming measures to slow approaching vehicles. The options analysis and selection process is detailed in section 2.4.3 of the REF.

Issue:

Grade-separated interchange

Response:

A large number of respondents showed preference for a grade-separated interchange (or flyover). This option was considered during the options analysis and selection process, which is detailed in section 2.4.3 of the REF, however a roundabout was selected as the preferred option as it would treat the crash types prevalent at the intersection, it would significantly improve traffic efficiency and it provides a significantly higher benefit to cost ratio than a grade-separated interchange.

Environmental management

The REF for the Island Point Road Roundabout Installation proposal identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts. After consideration of the issues raised in the public submissions, the safeguard and management measures outlined in the REF are considered appropriate and remain unchanged. There have been no changes to the proposal since the REF was prepared. Should the proposal proceed, environmental management would be guided by the framework and measures outlined in the REF.

Next steps

Transport for NSW as the determining authority will consider the information in the REF and this submissions report and make a decision whether or not to proceed with the proposal.

Transport for NSW will inform the community and stakeholders of this decision and where a decision is made to proceed will continue to consult with the community and stakeholders prior to and during the construction phase.

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1. Introduction and background

1.1 The proposal

Transport for NSW propose to install a roundabout at the Princes Highway and Island Point Road intersection, Tomerong, within the Shoalhaven Local Government Area (LGA). The features of the roundabout include:

- Two southbound lanes entering and exiting the roundabout on Princes Highway
- Two lanes entering the roundabout from Island Point Road
- One northbound lane entering the roundabout and one northbound slip lane on Princes Highway
- Relocation of the existing street lights at the intersection
- A cyclist crossing point for crossing Princes Highway on southern side of roundabout.

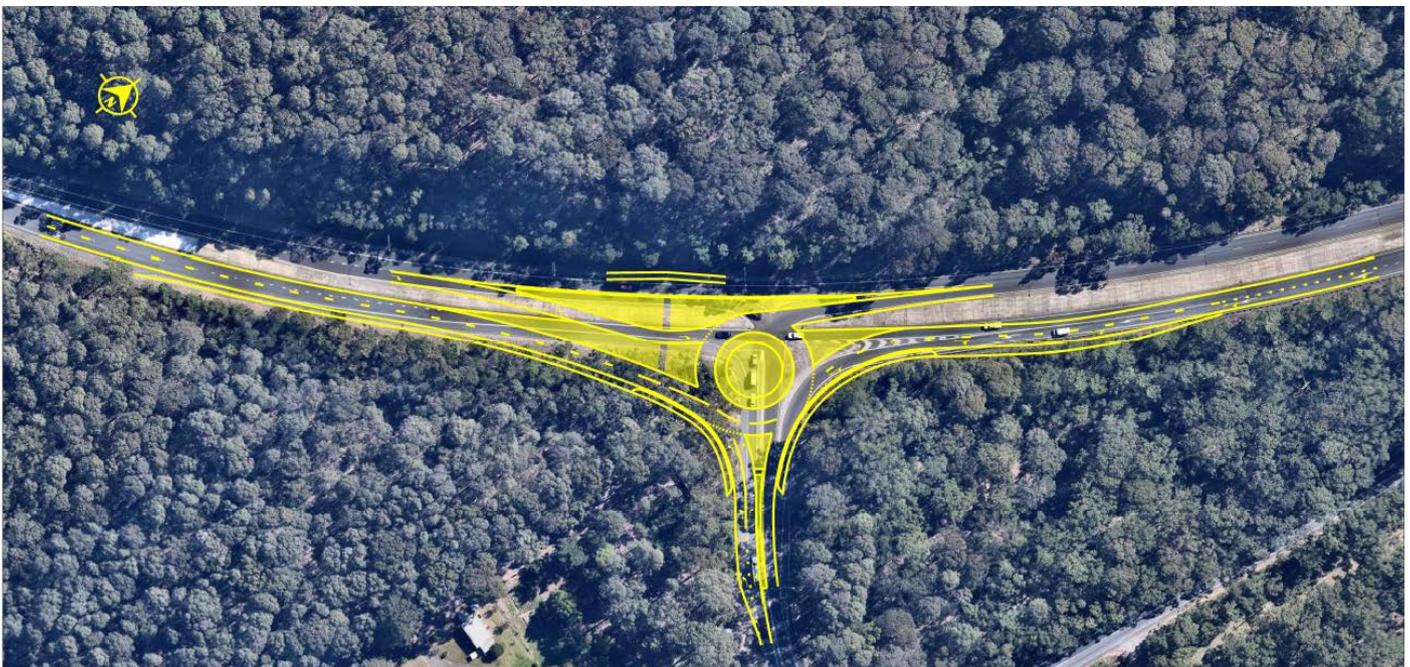


Figure 1-1 – The proposal

A more detailed description of the proposal is found in the HW1 Island Point Road Roundabout Installation Review of Environmental Factors prepared by Transport for NSW in September 2019.

1.2 REF display

Transport for NSW prepared a review of environmental factors (REF) to assess the potential environmental impacts of the proposed works. The REF was publically displayed for 21 days between 13 September 2019 and 7 October 2019 at Sanctuary Point Library. The REF was placed on the Transport for NSW project website and made available for download. The display locations and website link were included in The South Coast Register (local newspaper) and on Facebook.

In addition to the above public display, a community update that included REF display and feedback information was distributed to residents in the Basin View, St Georges Basin and Sanctuary Point areas.

Table 1-1: Display locations

Location	Address
Sanctuary Point Library	Paradise Beach Road, Sanctuary Point NSW 2540
RMS webpage	<u>https://www.rms.nsw.gov.au/projects/south-coast/princes-hwy-island-point-rd-tomerong/index.html</u>

1.3 Purpose of the report

This submissions report relates to the REF prepared for the HW1 Island Point Road Roundabout Installation, and should be read in conjunction with that document.

The REF was placed on public display and submissions relating to the proposal and the REF were received by Transport for NSW. This submissions report summarises the issues raised and provides responses to each issue (Chapter 2).

No proposal changes are proposed that would require the preparation of a preferred infrastructure report. No revisions have been made to the assessment or environmental management measures as described in the environmental impact statement.

2. Response to issues

Transport for NSW received 30 submissions, accepted up until the 7 October 2019. Table 2-1 lists the respondents and each respondent's allocated submission number. The table also indicates where the issues from each submission have been addressed in Chapter 3 of this report.

Table 2-1: Respondents

Respondent	Submission No.	Section number where issues are addressed
Individual	1	2.4.1 Heavy accessibility 2.4.2 Additional access to Grange Road 2.4.4 Informal parking area on Island Point Road
Individual	2	2.2.1 Strategic need for proposal 2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange 2.5.1 Announcement of preferred option
Individual	3	2.2.4 Traffic signals
Individual	4	2.4.1 Heavy accessibility 2.4.3 Additional northbound lane on Princes Highway 2.4.5 Northbound merge lane
Individual	5	2.2.1 Strategic need for proposal 2.2.2 Safety and traffic efficiency of proposed roundabout
Individual	6	2.2.1 Strategic need for proposal 2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange
Individual	7	2.2.1 Strategic need for proposal 2.2.2 Safety and traffic efficiency of proposed roundabout 2.4.6 Left turn lane into Island Point Road
Individual	8	2.3.1 Increased noise from heavy vehicles heading north
Individual	9	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange
Individual	10	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange
Individual	11	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.4 Traffic signals
Individual	12	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange
Individual	13	2.2.3 Grade separated interchange
Individual	14	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange
Individual	15	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange 2.2.4 Traffic signals 2.4.3 Additional northbound lane on Princes Highway 2.4.7 Left turn lane on to the highway

Respondent	Submission No.	Section number where issues are addressed
Individual	16	2.2.2 Safety and traffic efficiency of proposed roundabout
Individual	17	2.2.1 Strategic need for proposal 2.2.3 Grade separated interchange
Individual	18	2.2.1 Strategic need for proposal 2.4.7 Left turn lane on to the highway
Individual	19	2.2.3 Grade separated interchange 2.4.6 Left turn lane into Island Point Road 2.4.8 Cyclists
Individual	20	2.4.3 Additional northbound lane on Princes Highway
Individual	21	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange
Individual	22	2.2.2 Safety and traffic efficiency of proposed roundabout
Individual	23	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange
Individual	24	2.2.2 Safety and traffic efficiency of proposed roundabout
Individual	25	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange
Individual	26	2.2.3 Grade separated interchange
Individual	27	2.2.2 Safety and traffic efficiency of proposed roundabout 2.4.9 Existing signage
Individual	28	2.2.1 Strategic need for proposal
Community group	29	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange 2.4.6 Left turn lane into Island Point Road 2.5.1 Announcement of preferred option
Individual	30	2.2.2 Safety and traffic efficiency of proposed roundabout 2.2.3 Grade separated interchange

2.1 Overview of issues raised

A total of 30 submissions were received in response to the display of the review of environmental factors. All submissions were received from the community, including one response on behalf of a community group.

Each submission has been examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided. Where similar issues have been raised in different submissions, only one response has been provided. The issues raised and Transport for NSW response to these issues forms the basis of this chapter.

Of these submissions, 13 per cent were in support of the proposal, 13 per cent were partially supportive of the proposal and 60 per cent objected to the proposal. The remaining 14 per cent submissions offered no position on whether they supported or objected to the proposal.

2.2 Need and options considered

2.2.1 Strategic need for the proposal

Submission number(s)

2, 5, 6, 7, 17, 18, and 28

Issue description

- There are no issues with the existing intersection and it does not need to be upgraded
- The issue is driver behaviour

Response

- The strategic need for the intersection upgrade is detailed in section 2.1 of the REF
- In the five year period to 30 September 2016 there were 36 recorded crashes resulting in 45 casualties, including 11 serious injury crashes. Doing nothing (Option 5) would not reduce the severity or occurrence of crashes
- Traffic modelling showed that the existing intersection will fail service requirements in 2020
- The proposed roundabout is in line with the safe systems approach to road safety as a crash resulting from driver error would occur at lower speeds

2.2.2 Safety and traffic efficiency performance the proposed roundabout

Submission number(s)

2, 5, 7, 9, 10, 11, 12, 14, 15, 16, 21, 22, 23, 24, 25, 27, 29, 30

Issue description

- Concerns that the roundabout will not address the road safety issues at the intersection due to the high speed of southbound traffic and vehicles turning right out of Island Point Road having to cross two lanes of southbound traffic
- The roundabout would not improve safety due to inexperienced drivers and driver error
- Traffic on the highway should not be impeded
- The roundabout is a “short-term fix” that will not meet increased traffic needs in the future
- The roundabout will cause more traffic congestion
- A roundabout would be slower and more dangerous than the existing intersection
- There should be a stop sign for southbound vehicles on the highway to makes sure they stop

Response

- Options analysis and selection is detailed in section 2.4.3 of the REF
- A roundabout with a free flowing northbound lane was selected as the preferred option as it treats the severity and frequency of crash types that have been recorded at the intersection
- Roundabouts help to make intersections safer by reducing vehicle speeds at intersections and make it easier for motorists to choose a safe gap in traffic
- In the event of a crash, roundabouts reduce the severity of the impact by changing the angles and speeds of a collision
- Roundabouts are one of the safest types of intersections and reduce the risk of being severely injured by up to 90 percent
- The proposed roundabout is in line with the safe systems approach to road safety as a crash resulting from driver error would occur at low speeds
- The design of the roundabout should physically slow approaching vehicles to between 20 and 40km/h
- The roundabout has been designed in accordance with Austroads recommendations for reducing approach speeds including: successive reverse curves; a long median island and kerb on the left side of approach to provide the perception of road narrowing; large advanced warning signs; appropriate speed limit signs; and intersection lighting
- The existing 80km/h speed zone in the southbound direction would remain in place after the construction of the roundabout
- The northbound speed limit would also be reduced to 80km/h
- Installing a stop sign on the approach to the roundabout would significantly reduce the efficiency of the roundabout and would create a safety risk with unnecessary and unexpected stopping
- Traffic modelling ranked the roundabout as the most efficient option (equal with a grade separated interchange), providing a high level of service for at least 30 years
- Traffic modelling showed that the existing intersection will fail service requirements in 2020

2.2.3 Grade separated interchange (flyover or overpass)

Submission number(s)

2, 6, 9, 10, 12, 13, 14, 15, 17, 19, 21, 23, 25, 26, 29, 30

Issue description

- A flyover should be built to cater for increasing traffic volumes
- A flyover would improve safety
- A flyover is the only long-term solution
- A roundabout will have a limited lifespan of less than 20 years
- The additional cost to build a flyover is justified considering future traffic volumes

Response

- Options selection and analysis is detailed in section 2.4.3 of the REF
- A grade separated interchange (flyover) was considered as part of the options analysis (option 4)

- Although a grade separated interchange would meet the project objectives of reducing the severity and incidence of crashes, and improving traffic efficiency, it was eliminated from consideration due to the significantly greater environmental impacts and significantly higher cost (up to nine times higher than the preferred option)
- As the roundabout with free flowing northbound lane would meet the project objectives, it was selected as the preferred option due to its superior benefit to cost ratio and the smaller environmental impact
- Traffic modelling ranked the roundabout as the most efficient option (equal with a grade separated interchange), providing a high level of service for at least 30 years

2.2.4 Traffic signals

Submission number(s)

3, 11

Issue description

- Traffic signals should be installed at the intersection in place of the proposed roundabout to ensure traffic on the highway will slow down for the intersection
- Traffic signals should be installed as an interim measure during construction of the roundabout

Response

- Options selection and analysis is detailed in section 2.4.3 of the REF
- The installation of traffic signals was considered during options analysis, however it was eliminated from consideration as it would introduce significant road safety risks and would negatively impact traffic efficiency
- As per above, using traffic signals as an interim measure during construction would introduce a significant road safety risk

2.3 Noise

2.3.1 Increased noise from heavy vehicles heading north

Submission number(s)

8

Issue description

- Excess noise produced by northbound heavy vehicles that will have to stop at the roundabout, that do not have to stop at the existing intersection. This noise would come from heavy vehicles stopping and accelerating and would impact the residents on Kells Road, Tomerong.

Response

- The proposal includes a northbound slip lane that does not enter the roundabout, therefore, northbound through traffic will not need to slow or stop at the roundabout
- The current northbound through lane will remain and the proposal would not increase the number of northbound vehicles that have to decelerate or accelerate. The proposal is unlikely to result in an increase in traffic noise for the residents of Kells Road.

2.4 Traffic and transport

2.4.1 Heavy vehicle accessibility

Submission number(s)

1, 4

Issue description

- Have heavy vehicles been considered in the design of the roundabout, including those vehicles travel through on the Princes Highway, and those turning into and out of Island Point Road

Response

- The roundabout has been designed to cater for the maximum allowable heavy vehicle on both the Princes Highway and Island Point Road. All turning and through movements have been considered
- The roundabout design incorporates an 'encroachment area' which allows heavy vehicles to traverse the roundabout during turning movements

2.4.2 Additional access to Grange Road

Submission number(s)

1

Issue description

- Provide an additional access to Grange Road from the highway for southbound vehicles to reduce traffic volume through the new roundabout

Response

- Options analysis is detailed in section 2.4.3 of the REF
- Providing an additional access at Grange Road was considered during options analysis and selection (Option 3b)
- It was found that this option would increase the number of conflict points, increasing the risk of crashes, and would have minimal improvement to traffic efficiency compared to the existing intersection

2.4.3 Additional northbound lane on the Princes Highway

Submission number(s)

4, 15, 20

Issue description

- Construct an additional northbound slip lane to accommodate greater future traffic volumes

Response

- The results of traffic modelling showed that the roundabout will provide a high level of service for at least 30 years
- The proposed design does not limit the future construction of an additional northbound slip lane on the western side of the highway
- The results of traffic modelling is discussed in section 6.4 of the REF

2.4.4 Informal parking area on Island Point Road

Submission number(s)

1

Issue description

- Loss of informal parking area on the southern side of Island Point Road

Response

- The small gravel area on the southern side of Island Point Road is within the project footprint and would be replaced with the proposed left turn lane onto the Princes Highway
- Constructing a formal parking area in the short distance between the existing and proposed roundabouts would create a road safety hazard

2.4.5 Northbound merge lane

Submission number(s)

4

Issue description

- The northbound lane exiting the roundabout should be at least 300m long to allow merging at high speeds

Response

- The northbound lane coming out of the roundabout does not merge into the northbound through lane
- Both lanes will continue for approximately 320m north of the roundabout, at which point the left lane merges
- This scenario is the same as the existing arrangement

2.4.6 Left turn lane into Island Point Road

Submission number(s)

7, 19, 29

Issue description

- The left turn lane into Island Point Road should be separated to better delineate the left and through movements
- Conflict exists for northbound right turning traffic distinguishing between southbound through and southbound left turning traffic

Response

- The proposal is detailed in section 3.1 of the REF
- To ensure a high level of traffic efficiency, both southbound lanes will be able to travel directly through the roundabout, that is, there will be no dedicated left turn lane into Island Point Road
- Providing a separate left turn lane would increase additional conflict points and therefore has the potential to increase road safety risk
- The roundabout would eliminate the existing confusion for northbound vehicles as northbound vehicles would no longer have to give way to southbound traffic

2.4.7 Left turn lane on to the highway

Submission number(s)

15, 18

Issue description

- People currently use the shoulder on Island Point Road to skip the traffic queue and turn left on Princes Highway
- The left turn lane out of Island Point Road, to head south on the Princes Highway, should be longer to allow better vision of southbound vehicles on the highway

Response

- The proposal includes a dedicated left turn lane out of Island Point Road
- Sight distances have been checked against design requirements

2.4.8 Cyclists

Submission number(s)

19

Issue description

- Concerns about the safety of cyclists that cross the highway as unclear of detail of proposed cyclist crossing

Response

- The proposal is detailed in section 3.1 of the REF
- A cyclist crossing point is included on the southern side of the roundabout, which provides access across the Princes Highway
- The crossing is staged, meaning that cyclists only need to focus on one direction of traffic for each crossing movement
- A staged cyclist crossing is considered much safer than the existing arrangement

2.4.9 Existing signage

Submission number(s)

27

Issue description

- There is an existing sign in the median on Island Point Road that is obstructing views to the north

Response

- This would not be an issue with the proposed roundabout as the subject sign would be removed. New signs that are proposed for the upgrade would be installed in locations that do not inhibit sight lines

2.5 Consultation

2.5.1 Announcement of preferred option

Submission number(s)

2, 29

Issue description

- Insufficient response to previous community consultation undertaken in 2017
- There has been no public announcement of the roundabout as the preferred option

Response

- Community and stakeholder consultation is detailed in section 5 of the REF
- Initial community consultation was undertaken in April 2017, seeking community feedback on intersection use and issues observed or experienced
- This feedback was considered in developing a list of options and during options analysis
- In June 2018 NSW Member for South Coast, Shelley Hancock, announced that a roundabout would be installed at the intersection
- A community update was distributed in November 2018 which stated that the roundabout was the preferred option, and that Roads and Maritime were proceeding with development activities

- In September 2019 NSW Member for South Coast, Shelley Hancock, announced \$5 million towards the project

3. Environmental management

The REF for the HW1 Island Point Road Roundabout Installation identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (section 7 of the review of environmental factors).

After consideration of the issues raised in the public submissions, the safeguard and management measures outlined in the REF are considered appropriate and remain unchanged. There have been no changes to the proposal since the REF was prepared. Should the proposal proceed, environmental management will be guided by the framework and measures outlined below.

3.1 Environmental management plans (or system)

A number of safeguards and management measures have been identified in order to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the proposal. Should the proposal proceed, these management measures would be incorporated into the detailed design and applied during the construction and operation of the proposal.

A Construction Environmental Management Plan (CEMP) will be prepared to describe safeguards and management measures identified. The CEMP will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The CEMP will be prepared prior to construction of the proposal and must be reviewed and certified by environment staff, Southern Region, prior to the commencement of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements. The CEMP would be developed in accordance with the specifications set out in the QA Specification G36 – Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing and QA Specification G10 – Traffic Management].

3.2 Summary of safeguards and management measures

The REF for the HW1 Island Point Road Roundabout Installation identified a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts.

After consideration of the issues raised in the public submissions, the environmental management measures for the proposal (refer to Chapter 7 of the REF) are considered appropriate and remain unchanged. There have been no changes to the proposal since the REF was prepared. Should the proposal proceed, the environmental management measures in Table 5-1 will guide the subsequent phases of the proposal.

Table 5-1: Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
GEN1	General - minimise environmental impacts during construction	<p>A CEMP will be prepared and submitted for review and endorsement by the Transport for NSW Environment Manager prior to commencement of the activity.</p> <p>As a minimum, the CEMP will address the following:</p> <ul style="list-style-type: none"> • any requirements associated with statutory approvals • details of how the project will implement the identified safeguards outlined in the REF • issue-specific environmental management plans • roles and responsibilities • communication requirements • induction and training requirements • procedures for monitoring and evaluating environmental performance, and for corrective action • reporting requirements and record-keeping • procedures for emergency and incident management • procedures for audit and review. <p>The endorsed CEMP will be implemented during the undertaking of the activity.</p>	Contractor / Transport for NSW project manager	Pre-construction / detailed design	
GEN2	General - notification	All businesses, residential properties and other key stakeholders (eg schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.	Contractor / Transport for NSW project manager	Pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
GEN3	General – environmental awareness	<p>All personnel working on site will receive training to ensure awareness of environment protection requirements to be implemented during the project. This will include up-front site induction and regular "toolbox" style briefings.</p> <p>Site-specific training will be provided to personnel engaged in activities or areas of higher risk. These include:</p> <ul style="list-style-type: none"> • areas of Aboriginal heritage sensitivity • areas of environmental sensitivity and private property boundaries • threatened species habitat • adjoining residential areas requiring particular noise management measures 	Contractor / Transport for NSW project manager	Pre-construction / detailed design	
BD01	Biodiversity	<p>An Environmental Work Method Statement (EWMS) for Clearing and Grubbing must be prepared and implemented. The EWMS must conform to Roads and Maritime Biodiversity Guidelines;</p> <ul style="list-style-type: none"> • Pre-clearing surveys will be undertaken in accordance with <i>Guide 1: Pre-clearing process</i> of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011). • Vegetation removal and habitat will be undertaken in accordance with <i>Guide 4: Clearing of vegetation and removal of bushrock</i> of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011) and <i>Guide 5: Re-use of woody debris and bushrock</i>. Exclusion zones identified and demarcated in accordance with 	Contractor	<p>Prior to construction</p> <p>During construction</p> <p>Post construction</p>	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<p>the <i>Roads and Maritime's Biodiversity Guidelines (Guide 2: Exclusion zones) (RTA 2011)</i>.</p> <ul style="list-style-type: none"> The unexpected species find procedure is to be followed under <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the proposal area. Roads and Maritime QA Specification G40 <p>The EWMS must at least include following:</p> <ul style="list-style-type: none"> A description of the work activity, including the sequence of tasks, any plant and equipment to be used Identification of any environmentally sensitive areas A detailed site diagram showing all work areas, controls, sensitive areas, and no-go-zones. The control measures to be implemented based on the REF Safeguards and management measures 			
BD02	Removal of native vegetation	Exclusion zones are to be identified and demarcated as per the boundary limit on the design.	Contractor	Detailed design	
BD03	Groundwater dependant ecosystems	Prior to construction, implement risk management actions for identified risk matrix level (A) as per the DPI Risk assessment guidelines for groundwater dependent ecosystems Including:	Contractor	<p>Prior to construction</p> <p>During construction</p> <p>Post construction</p>	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> Establish exclusion zones at the GDE boundary limit as per on the design and erect environmental exclusion zone signage Implement erosion and sediment control plan Monitor terrestrial GDE on Lot 8 DP 855413 for one occasion at the completion of works, to compare against the Biodiversity Assessment (baseline data). <p>Monitoring is to comprise vegetation plot (species richness and percent cover) and qualitative health assessment of threatened flora populations and is to be stipulated in the CEMP. Two vegetation plots are to be located within the two vegetation zones comprising the GDE vegetation (PCT 1206). Qualitative health assessment of the two threatened flora species present, <i>Melaleuca biconvexa</i> and <i>Syzygium paniculatum</i>, will comprise descriptions of evidence of die-back, physical damage, stress (yellowing) and signs of infection by flora pathogens (<i>Phytophthora cinnamomi</i> and Myrtle Rust).</p>			
BD04	Injury and mortality of fauna	Fauna will be managed in accordance with <i>Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).	Contractor	During construction	
BD05	Injury and mortality of fauna	Timing of works to avoid large forest owl breeding and microbat torpor periods (autumn/winter).	Contractor	During construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		If works are required to occur within the autumn/winter period, additional survey by a suitably qualified ecologist are to be undertaken for evidence of large forest owl nest presence prior to the commencement of clearing. If evidence of nest presence is determined, expert advice is to be sought to manage nest presence.			
BD06	Injury and mortality of fauna	A microbat management plan must be implemented as part of the CEMP. It will include tool boxing microbat identification, inspecting of potential habitual prior to any disturbance and erect exclusion fencing if required.	Contractor	During construction	
BD07	Invasion and spread of weeds	<p>Weed species will be managed in accordance with Guide 6: Weed management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011).</p> <p>Due to the low density of priority weed species within the Study Area, recommended weed control measures are to comprise physical removal of <i>Lantana camara</i> (Lantana) and <i>Rubus fruticosus</i> agg. (Blackberry) prior to the commencement of clearing. Removed weed material is to be transported off-site following removal for appropriate disposal and is not to be stockpiled on site.</p> <p>Weed management requirements to be documented in the CEMP.</p>	Contractor	During construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
BD08	Invasion and spread of pests	<p>Risk of pathogen contamination will be managed in accordance with <i>Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).</p> <p>The Project may introduce the flora pathogens <i>Phytophthora cinnamomi</i> and exotic Rust Fungi as well as the amphibian chytrid fungus through media such as unclean fill, untreated water and contaminated plants or soil media from imported plants used for any revegetation works.</p> <p>Specific measures to minimise the risk of pathogen infection comprise (with reference to best practice guidelines in Table 7.1 of <i>Guide 7: Pathogen management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).</p> <ul style="list-style-type: none"> • Restrict personnel to designated tracks and trails • Use of onsite fill where possible • Offsite cleaning of soil and plant material from contaminated plant and equipment prior to use on site • Restrict vehicles to designated tracks, trails and parking areas • Use of treated water for dust suppression and other site requirements • Use a certified supply of plants and soil that is disease-free. <p>Pathogen management requirements are to be documented in the CEMP.</p>	Contractor	During construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
SW01	Surface Water, hydrology and flooding	A Soil and Water Management Plan (SWMP) will be prepared and implemented as part of the CEMP. The SWMP will identify all reasonably foreseeable risks relating to soil erosion and water pollution and describe how these risks will be addressed during construction.	Contractor	Detailed design / Pre-construction	Section 2.1 of QA G38 Soil and Water Management
SW02	Erosion and Sediment	A site specific Erosion and Sediment Control Plan/s will be prepared and implemented as part of the CEMP. The Plan will include arrangements for managing wet weather events, including monitoring of potential high risk events (such as storms) and specific controls and follow-up measures to be applied in the event of wet weather.	Contractor	Detailed design / Pre-construction	Section 2.2 of QA G38 Soil and Water Management
SW03	Spill Response	If a spill occurs, the Transport for NSW's Environmental Incident Classification and Management Procedure must be followed and the Transport for NSW Project Manager notified as soon as practicable.	Project Manager, Contractor	Pre-construction / construction	
SW04	Spills and leaks	An emergency spill kit will be kept on site at all times. All staff will be made aware of the location of the spill kit and trained in its use.	Contractor	During Construction	
SW05	Liquid storage	All fuels, chemicals, and liquids will be stored at least 50 m away from waterways (including existing stormwater drainage system) and will be stored in an impervious bunded area within the compound site. Only materials required onsite must be stored in the dedicated area.	Project Manager, Contractor	Pre-construction / construction	
SW06	Contamination of water	The refuelling of plant and maintenance of machinery will be undertaken in impervious	Contractor	During construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		bunded areas.			
S01	General soil management	All stockpiles will be designed, established, operated and decommissioned in accordance with the Stockpile Site Management Procedure.	Contractor	Pre-construction / During construction	
S02	General soil management	Rehabilitation works of disturbed areas are to commence as soon as practicable after works are completed in any area. Where feasible, work should be stage to reduce soil exposure duration	Contractor	During construction	
TT01	Traffic and Transport	<p>A TMP will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the <i>Traffic Control at Work Sites Manual</i> (RTA, 2010) and <i>QA Specification G10 Control of Traffic</i> (Roads and Maritime, 2008). The TMP will include:</p> <ul style="list-style-type: none"> • confirmation of haulage routes • measures to maintain access to local roads and properties • site specific traffic control measures (including signage) to manage and regulate traffic movement • measures to maintain pedestrian and cyclist access • requirements and methods to consult and inform the local community of impacts on the local road network • access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on 	Contractor	Detailed design / Pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<p>public roads.</p> <ul style="list-style-type: none"> • a response plan for any construction traffic incident • consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • monitoring, review and amendment mechanisms. 			
TT02	Traffic and Transport	Local residents would be notified at least five days of any potential delays and detours regarding access and traffic flows during prior to and during construction	Contractor	During construction	
TT03	Traffic and Transport	Consultation would be undertaken at least five days prior to construction with bus companies traveling through and/or stop on Island Point Road.	Contractor	Pre-construction	
TT04	Traffic and Transport	Partial road closures (or any short-term full road closures) will be timed to avoid peak periods such as holiday periods when vehicle traffic is high along the highway	Contractor	During construction	
TT05	Traffic and Transport	Cyclist connectivity across the site would be maintained during construction. The community would be notified at least five days before any access changes including alternative routes.	Contractor	During construction	
NV01	Noise and Vibration	A Noise Management Plan (NMP) will be prepared and implemented as part of the CEMP. The NMP will follow the approach in the Roads and Maritime Construction Noise and Vibration	Contractor	Detailed design / pre-construction / During construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<p>Guideline and include:</p> <ul style="list-style-type: none"> feasible and reasonable mitigation measures to be implemented as per the results for each stage of the Roads and Maritime Maintenance Noise Estimator Tool (Appendix F), arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures 			
NV02	Noise and Vibration	<p>All sensitive receivers (e.g. schools, local residents) likely to be affected will be notified at least 5 days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of:</p> <ul style="list-style-type: none"> the project the construction period and construction hours contact information for project management staff complaint and incident reporting how to obtain further information. 	Contractor	Detailed design / pre-construction	
NV03	Noise and Vibration	<p>Transport for NSW will seek to meet with sensitive receivers within the affected distance, to discuss mitigation options during night works and a duration respite, as per the Roads and Maritime Noise Mitigation Guideline</p>	Transport for NSW	Pre –construction / construction	
NV04	Noise and Vibration	<p>Noisy works would be scheduled to occur in standard day hours or before 11pm where</p>	Contractor	During construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		feasible.			
AH01	Impact to known Aboriginal Heritage	AHIMS site 58-2-0478 is located outside of the area of construction impact. To ensure that impact to the site does not occur, a 10 metre exclusion zone must be established around the AHIMS site 58-2-0478 site during construction works.	Contractor	Construction	
AH02	Unexpected finds	An Aboriginal Heritage Management Plan (AHMP) will be prepared in accordance with the <i>Procedure for Aboriginal cultural heritage consultation and investigation</i> (Roads and Maritime, 2012) and <i>Standard Management Procedure - Unexpected Heritage Items</i> (Roads and Maritime, 2015) and implemented as part of the CEMP. It will provide specific guidance on measures and controls to be implemented for managing impacts on Aboriginal heritage. The AHMP will be prepared in consultation with all relevant Aboriginal groups.	Contractor	Detailed design / pre-construction	Section 4.9 of QA G36 <i>Environment Protection</i>
AH03	Aboriginal constraints	If any changes to the proposed project design a re-analysis of Aboriginal Heritage constraints should be undertaken by suitably qualified personnel	Project Manager	Detailed Design	
AH04	Earthworks	All contractors undertaking earthworks in the study area should undergo an induction on identifying Aboriginal heritage objects and the penalties for damage to these items	Contractor	Pre-construction	
NA01	Non-Aboriginal Heritage	A Non-Aboriginal Heritage Management Plan (NAHMP) will be prepared and implemented as part of the CEMP. It will provide specific guidance	Contractor	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		on measures and controls to be implemented to avoid and mitigate impacts to Non-Aboriginal heritage. [The NAHMP will be prepared in consultation with the Office of Environment and Heritage] <i>[delete if consultation not required]</i> .			
NA02	Non-Aboriginal Heritage	The Standard Management Procedure - Unexpected Heritage Items (Roads and Maritime, 2015) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of Non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Detailed design / pre-construction	
LC01	Visual Impact	A landscape Plan will be prepared and implemented as part of the CEMP. The Plan will include design treatments for: <ul style="list-style-type: none"> proposed landscaped areas, including species to be used cyclist elements including footpath location and paving types The Plan will be prepared in accordance with relevant guidelines, including: <ul style="list-style-type: none"> Landscape Guideline (RTA, 2018) Roads and Maritime Guideline for landscape character and visual impact assessment (2018) Roads and Maritime specification R178 & 	Contractor	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		R179			
PL01	Property and land use	Following completion of the construction works the compound site will be disassembled and returned to near original conditions.	Transport for NSW project manager	Post construction	
SE01	Socio-economic	<p>A Communication Plan (CP) will be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CP will include (as a minimum):</p> <ul style="list-style-type: none"> mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions contact name and number for complaints. <p>The CP will be prepared in accordance with the <i>Community Involvement and Communications Resource Manual</i> (RTA, 2008).</p>	Contractor	Detailed design / pre-construction	
SE02	Socio-economic	<p>A Communication Plan (CP) will be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CP will include (as a minimum):</p> <ul style="list-style-type: none"> mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions contact name and number for complaints. <p>The CP will be prepared in accordance with the <i>Community Involvement and Communications</i></p>	Contractor	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<i>Resource Manual</i> (RTA, 2008).			
SE03	Traffic closure	Any traffic closure and delays of the Princes Highway and Island Point Road would be design to minimise impacts on the local community, freight, businesses and commercial operators using the roads.	Contractor	Pre-construction and during construction	
AQ01	Air quality	<p>Air Quality Management Plan (AQMP) will be prepared and implemented as directly into the CEMP. The AQMP will include, but not be limited to:</p> <ul style="list-style-type: none"> • potential sources of air pollution • air quality management objectives consistent with any relevant published EPA and/or OEH guidelines • mitigation and suppression measures to be implemented • methods to manage work during strong winds or other adverse weather conditions • a progressive rehabilitation strategy for exposed surfaces. 	Contractor	Detailed design / pre-construction	
HR01	Hazard and risk management	<p>A Hazard and Risk Management Plan (HRMP) will be prepared and implemented directly into the CEMP. The HRMP will include, but not be limited to:</p> <ul style="list-style-type: none"> • details of hazards and risks associated with the activity • measures to be implemented during construction to minimise these risks • record keeping arrangements, including information on the materials present on 	Contractor	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		<p>the site, material safety data sheets, and personnel trained and authorised to use such materials</p> <ul style="list-style-type: none"> • a monitoring program to assess performance in managing the identified risks • contingency measures to be implemented in the event of unexpected hazards or risks arising, including emergency situations. <p>The HRMP will be prepared in accordance with relevant guidelines and standards, including relevant Safe Work Australia Codes of Practice, and EPA or Office of Environment and Heritage publications.</p>			
WM01	Waste	<p>A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include but not be limited to:</p> <ul style="list-style-type: none"> • Measures to avoid and minimise waste associated with the project • Classification of wastes and management options (re-use, recycle, stockpile, disposal) • Statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions • Procedures for storage, transport and disposal • Monitoring, record keeping and reporting. <p>The WMP will be prepared taking into account the</p>	Contractor	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		Environmental Procedure - Management of Wastes on Roads and Maritime Services Land (Roads and Maritime, 2014) and relevant Transport for NSW Waste Fact Sheets.			
WM02	Waste	Bulk project waste (e.g. fill) sent to a site not owned by the Transport for NSW (excluding EPA licensed landfills and resource recovery facilities) is to have prior formal written approval from the landowner, in accordance with Environmental Direction No.20 – Legal Off-site Disposal of Roads and Maritime Services Waste. This includes waste transported for reuse, recycling, disposal or stockpiling.	Contractor	Detailed design / pre-construction/ construction	

3.3 Licensing and approvals

Table 5-2 lists the license approval requirements that would need obtaining to cover various activities that would be undertaken in the building proposal. They relate to the planning statutory and planning framework presented in Chapter 4 of the REF.

Table 5-2: Summary of licensing and approval required

Instrument	Requirement	Timing
<i>Roads Act 1993</i>	A Road Occupancy Licence would need to be obtained prior to construction commencing.	Prior to start of the activity

4. References

Roads and Maritime Services 2019, HW1 Island Point Road Roundabout Installation Review of Environmental Factors, Sydney



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