



# CONCEPT OPTIONS REPORT

Vallances Road, Mullumbimby

Prepared for Byron Shire Council  
By Planit Consulting Pty Ltd

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**Version B**



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# Executive Summary

This Concept Options Report has been prepared by Planit Consulting Pty Ltd on behalf of Byron Shire Council (BSC) to assist in the options study into potential new uses for the land referred to as Vallances Road (the site).

The site is accessed from Coolamon Scenic Drive via Vallances Road and is located in Mullumbimby on the northern side of the Brunswick River, approximately 1 kilometre northeast of the Mullumbimby Town Centre. The site is approximately 113 hectares in area and comprises 7 land parcels including Lot 1 DP 952598, Lot 1 DP 129374, Lot 14 DP 251938, Lot 15 DP 251938, Lot 17 DP 251938, Lot 18 DP 251938 and Lot 19 DP 251938. This area of land is currently classified as operational land under provisions of the Local Government Act 1993 and Environmental Planning and Assessment Act 1979.

BSC is currently investigating development options for the following land uses:

- Plant Nursery;
- Natural Burial Ground;
- Affordable Housing;
- Sustainability Centre (education); and
- Sewer Treatment Plant duplication and transfer from Ocean Shores, including constructed wetland.

It is understood each option may be undertaken separately or in conjunction with any of the other uses. It is also understood that there is uncertainty around the operation of the Plant Nursery, which could operate as a Retail Garden Centre (open to public) or a Wholesale Nursery (not open to the public). Accordingly, traffic volumes, internal circulation requirements and parking demands have been estimated for all possible (24) scenarios, each with a different combination of the proposed development uses.

TBC

# 1 Introduction

## 1.1 Background

This Concept Options Report has been prepared by Planit Consulting Pty Ltd on behalf of Byron Shire Council (BSC) to assist in the options study into potential new uses for the land referred to as Vallances Road (the site).

BSC is currently investigating development options for the following land uses:

- Plant Nursery;
- Natural Burial Ground;
- Affordable Housing;
- Sustainability Centre (education); and
- Sewer Treatment Plant duplication and transfer from Ocean Shores, including constructed wetland.

It is understood the options may be undertaken in full, separately or in conjunction with any of the other uses. It is also understood that a staged approach for the options may be undertaken. Refer to Figure 1-1 below for approximate locations for proposed development options.

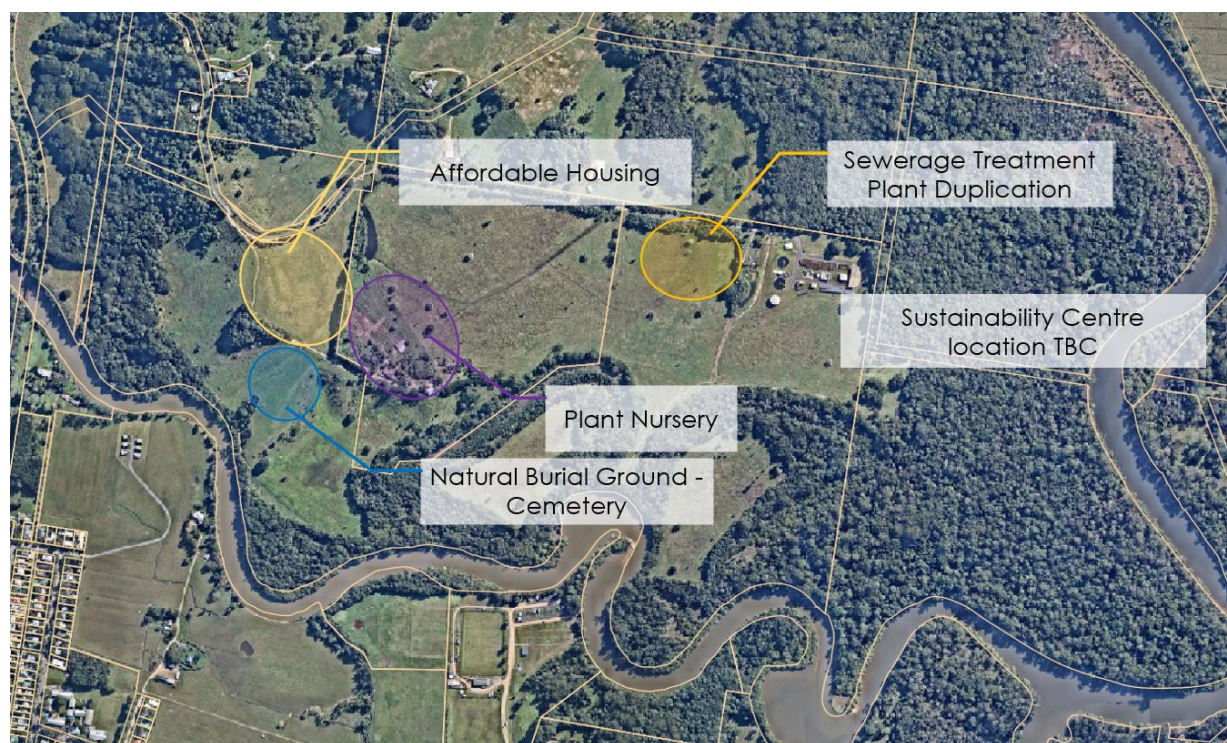


Figure 1-1 Proposed Locations for Development Options.

## 1.2 Scope

The objectives of this Concept Options Report are to sufficiently describe and detail the project concept design options to enable the Council representatives to undertake a critical review and evaluation. The report includes:

- Description of the site, locality and development proposal;
- Overview of the existing and estimated future traffic on road network;

- Discussion on option development and threshold criteria;
- Description of potential options;
- Opportunities and Constraints Assessment of potential options; and
- Conclusion and recommendations.

### **1.3 Previous Reports**

This report references the information contained within the following Planit reports:

- Vallances Road Planning Report (J7574-Vallances\_Rd\_Development-REP) – Appendix B; and
- Vallances Road Traffic Impact Assessment (J7574-Vallances\_Rd\_Development-TIA) – Appendix C.

### **1.4 Relevant Standards**

This report references the requirements of the following guidelines:

- AS2890 Parking Facilities: All Parts;
- Austroads Guide to Road Design;
- RFS Specification 'Planning for Bushfire Protection' (November 2019);
- Northern Rivers Local Government Development Design Specifications D1; and
- Chapter B4 of the Byron Shire Council DCP.

## 2 Site Details

### 2.1 Site Description

The site is located in Mullumbimby on the northern side of the Brunswick River, approximately 1 kilometre northeast of the Mullumbimby Town Centre. The site is approximately 113 hectares in area and comprises seven (7) land parcels including Lot 1 DP 952598, Lot 1 DP 129374, Lot 14 DP 251938, Lot 15 DP 251938, Lot 17 DP 251938, Lot 18 DP 251938 and Lot 19 DP 251938 (refer to Figure 2-1). This area of land is currently classified as operational land under provisions of the *Local Government Act 1993* and *Environmental Planning and Assessment Act 1979*.

The site currently contains the Brunswick Valley Sewage Treatment Plant (BVSTP), located within Lot 1 DP 129374 towards the east of the site and a cluster of buildings located on Lot 1 DP 952598 including two dwellings and a disused nursery. The site is predominantly cleared and has historically been used for cattle grazing.

The site is accessed from Coolamon Scenic Drive via Vallances Road. Within the site, Vallances Road forks off with the main section of the road linking into the BVSTP via a narrow sealed road formation with passing bays. The second road section off Vallances Road links into the former nursery with a narrow gravel formation.

Topographic levels across the site vary from approximately 2m AHD at the banks of the Brunswick River (south) to 48m AHD at the hill top east of the former nursery (centre).

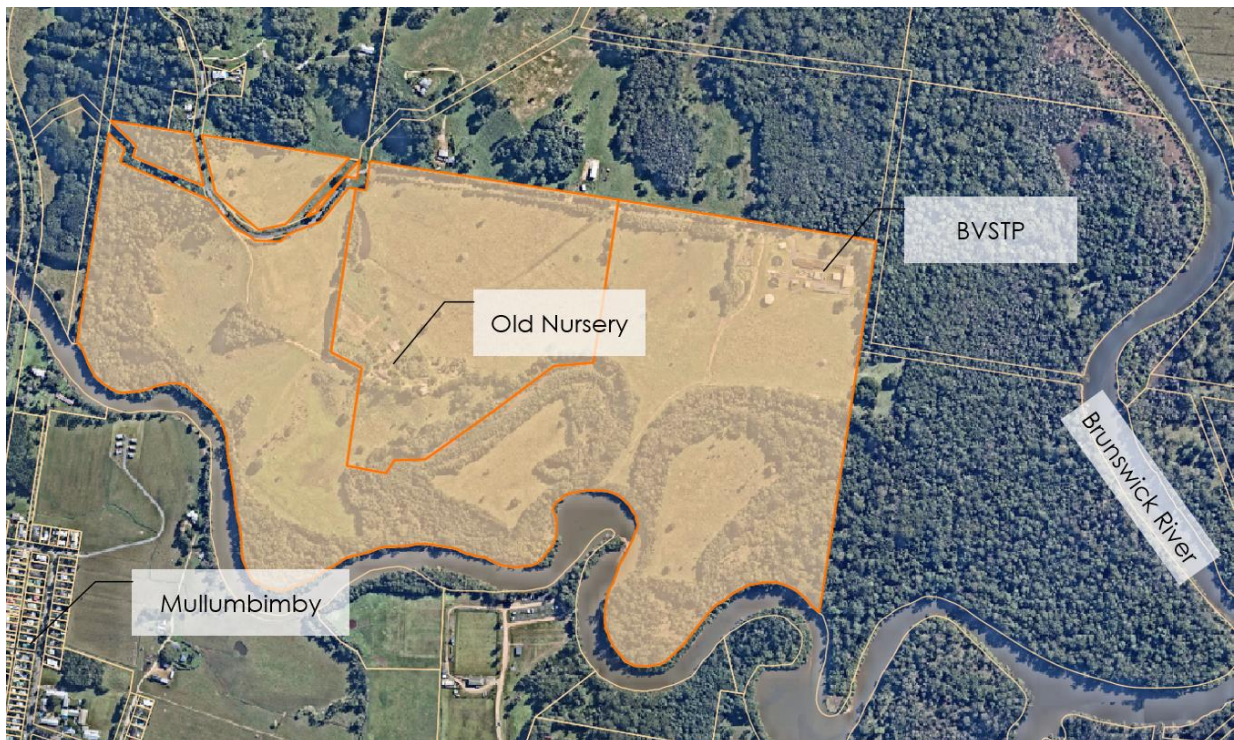


Figure 2-1 Project Site.



## 2.2 Existing Conditions

The site is accessed from Coolamon Scenic Drive via Vallances Road. Within the site, Vallances Road forks off with the main section of the road linking into the BVSTP via a 3.7m wide sealed road formation. The Old Nursery Access Road off Vallances Road links into the former nursery with a narrow gravel formation approximately 2-3m wide.

Existing traffic within the development site is limited to local residential traffic and operational traffic of the BVSTP. The Traffic Impact Assessment (TIA) undertaken by Planit estimate the existing traffic to be as follows:

- Daily trips: 50.4 trips / day; and
- Peak hour trips: 7.68 trips / hour.

The existing network is considered to be sufficient given the current low traffic volume on the roads. However, there are potential upgrades which would improve users' safety, most notably:

- Intersection improvements for Coolamon Scenic Drive / Vallances Road;
- Compliance with RFS requirements, including road width, vegetation removal requirements;
- Compliance with passing bay requirements; and
- Improvements to shoulders or widening of pavement along Vallances Road for safer passing opportunities.

The above upgrade options would reduce the risk (and impact) of conflict between road users.

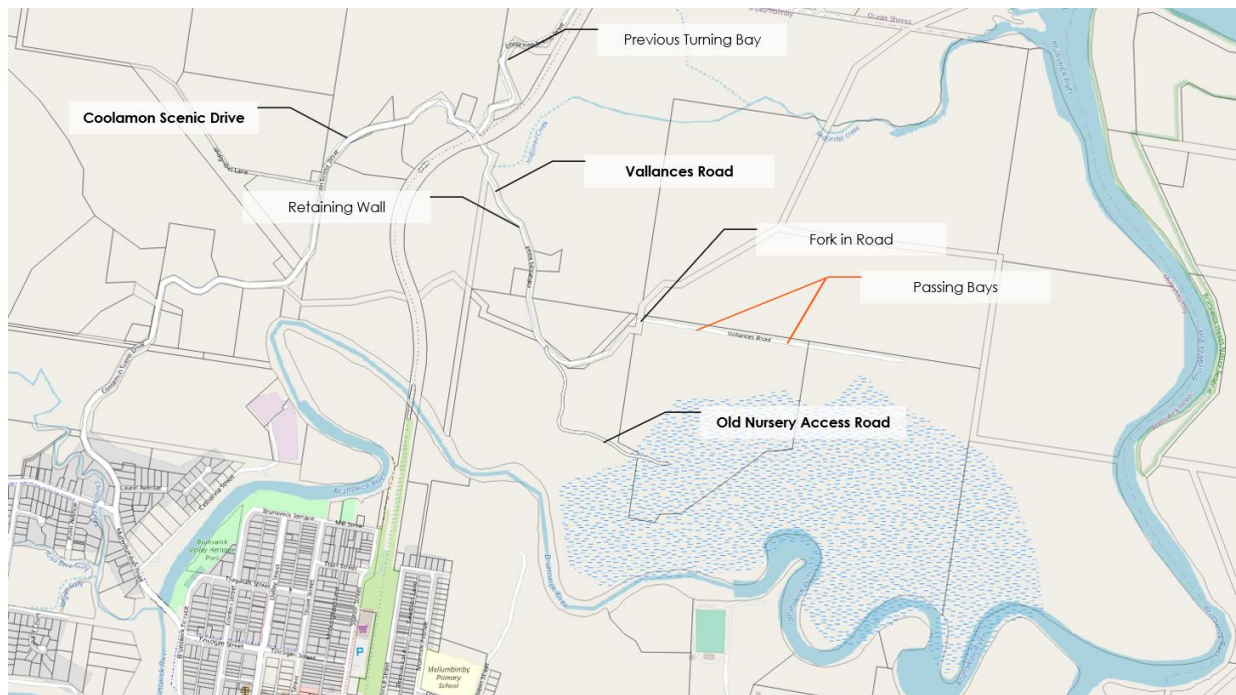


Figure 2-2 Existing Road Network near Proposed Development.

## 2.3 Future Conditions

The future traffic conditions depend on which scenario of development uses are included within the project site. The Traffic Impact Assessment undertaken by Planit, provided in Appendix B (J7574-Vallances\_Rd\_Development-TIA), details the traffic impact for the development for each of the considered scenarios.

## 2.4 Sections Considered in Assessment

Three (3) separate road sections have been identified by the TIA, as noted in Figure 2-3:

- The first ~700m of Vallances Road;
- The Old Nursery Access Road; and
- The intersection of Coolamon Scenic Drive / Vallances Road.

The three (3) sections have been identified due to the different AADT and peak hour traffic needing to be accommodated by each section. Accordingly, each section will be assigned an infrastructure upgrade option based on the individual estimated traffic impact for that section.



Figure 2-3 Road sections considered in assessment.

## 2.5 Opportunities and Constraints

Several constraints have been identified as potential to cause issues with the road network improvements / upgrades to accommodate the proposed development.

### 2.5.1 Environmental

The following environmental constraints have been identified in the Planning Report (J7574-Vallances\_Rd\_Development-REP) – Appendix B:

- Native vegetation;
- Koala habitat;
- Area of High Environmental Value;
- Flood prone land;
- Bushfire prone land; and
- Regionally significant farmland (non-contiguous).

The above constraints, most notably the Koala Habitat, is a significant constraint for any improvements to the road infrastructure within the development site. The areas noted as Koala Habitat and High Environmental Value overlaps with the road reserve of Vallances Road and Coolamon Scenic Drive and covers the upslope of the Coolamon Scenic Drive / Vallances Road intersection, refer to Figure 2-4 and Figure 2-5.

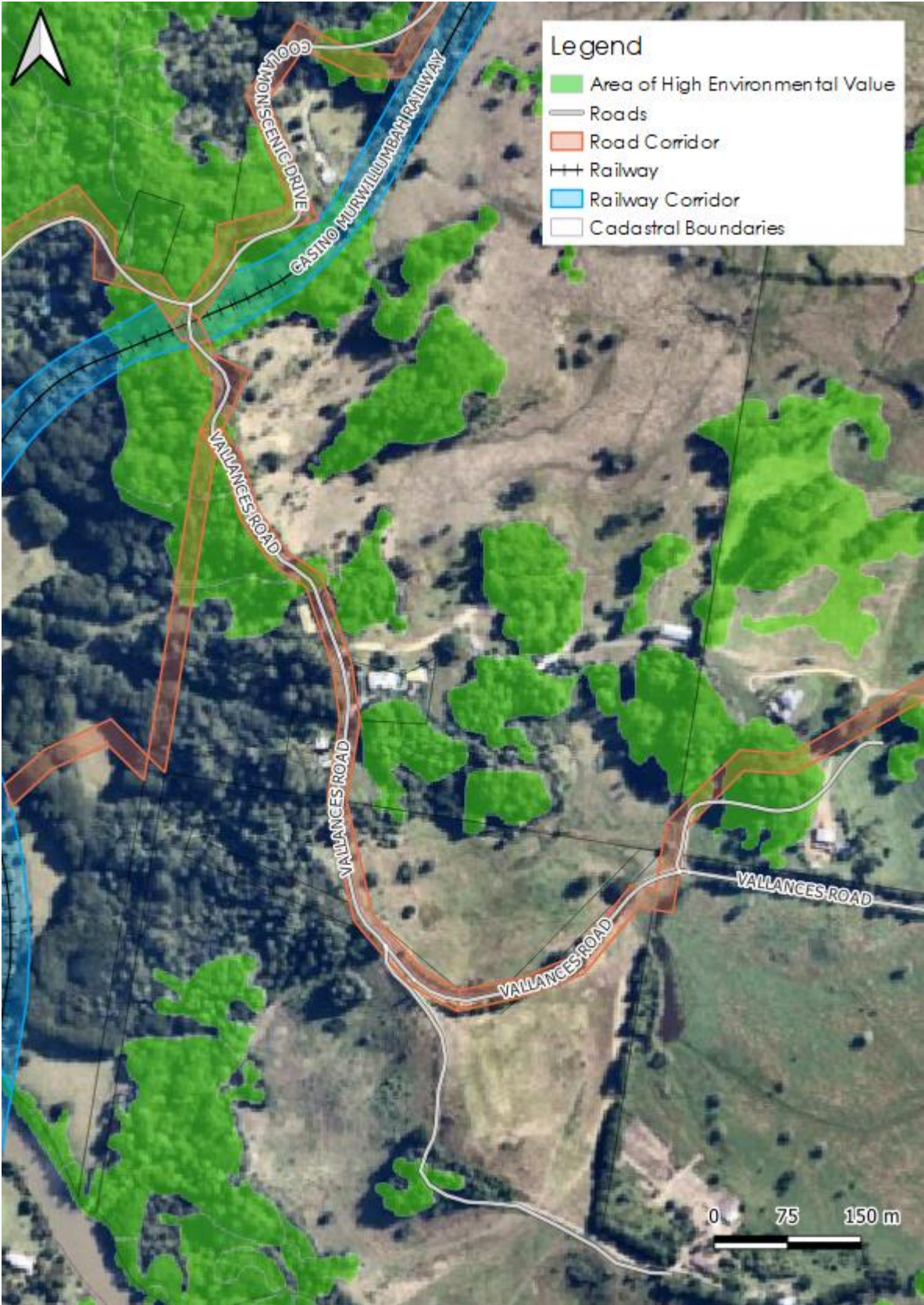


Figure 2-4 Area of High Environmental Value mapped against the road reserves.



Figure 2-5 Koala Habitat mapped against the road reserves.

### 2.5.2 Cadastral Boundaries

The following cadastral boundary issues have been identified for the Intersection of Coolamon Scenic Drive / Vallances Road:

- The intersection is currently not completely contained within road reserve;
- The rail corridor for the disused Casino-Murwillumbah rail line may limit widening opportunities and will add an additional stakeholder for approvals for any works; and
- The location for the U-Turn Bay to the north is located out of the road reserve in LOT1DP964580.

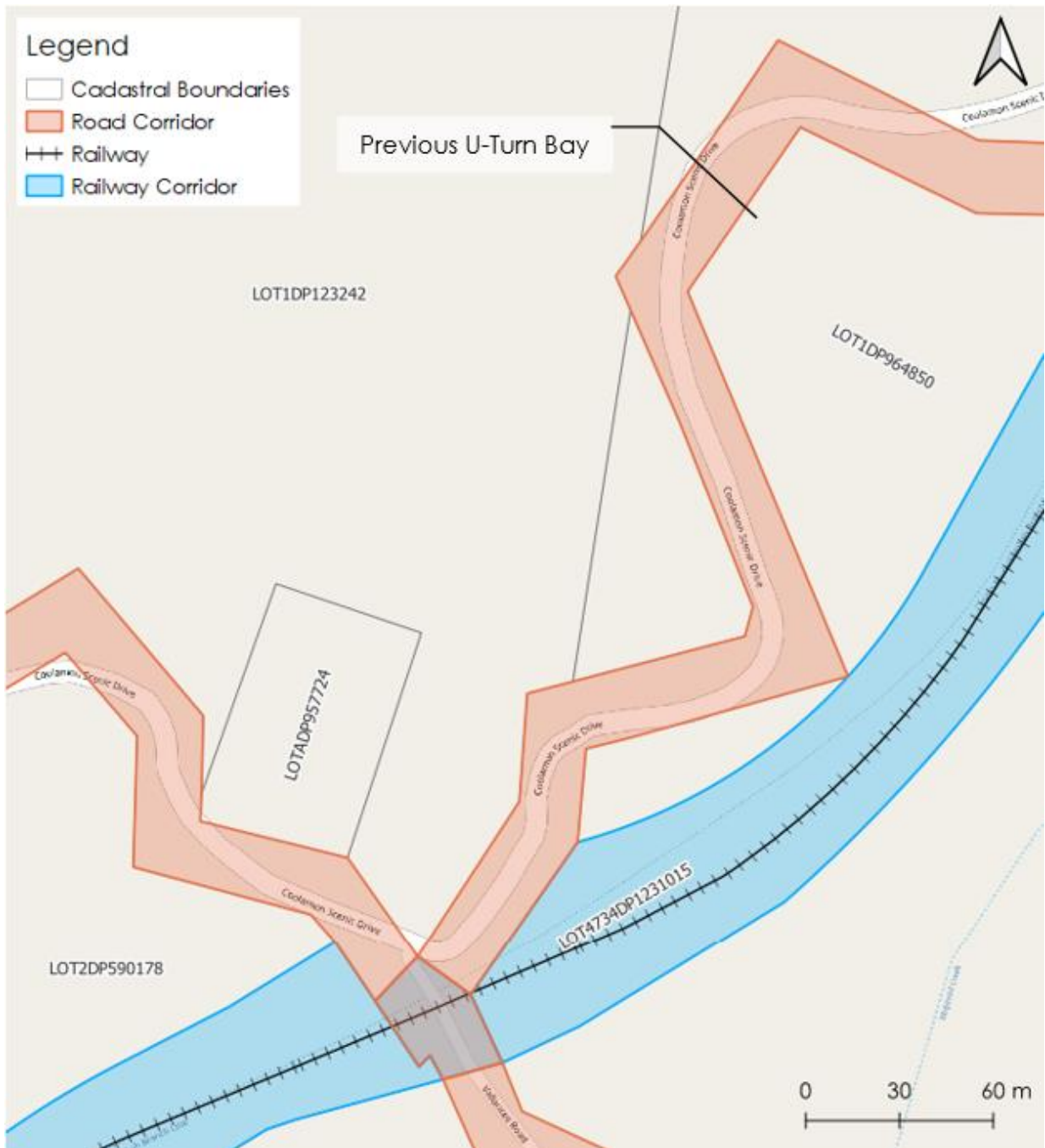
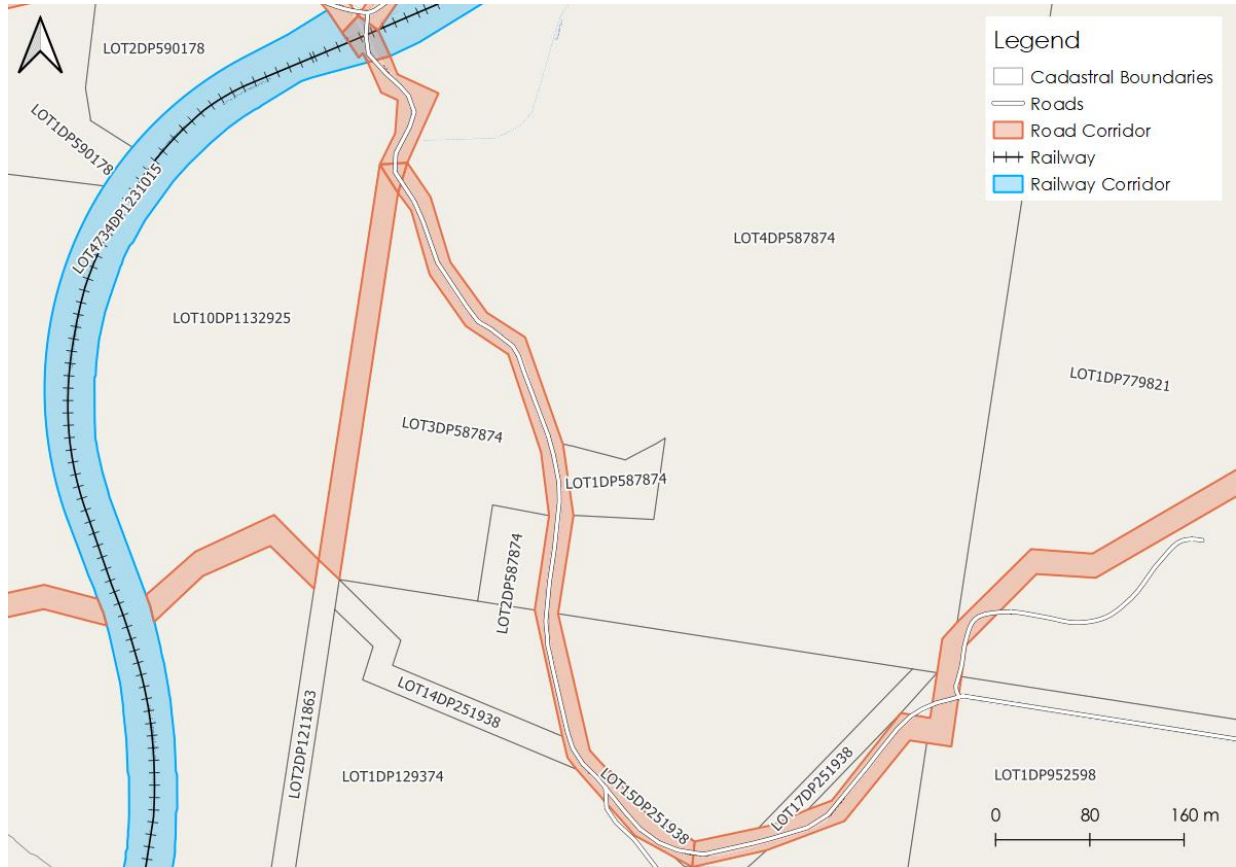


Figure 2-6 Cadastral boundaries - Coolamon Scenic Drive / Vallances Road intersection.

The following has been identified on the Vallances Road cadastral boundaries:

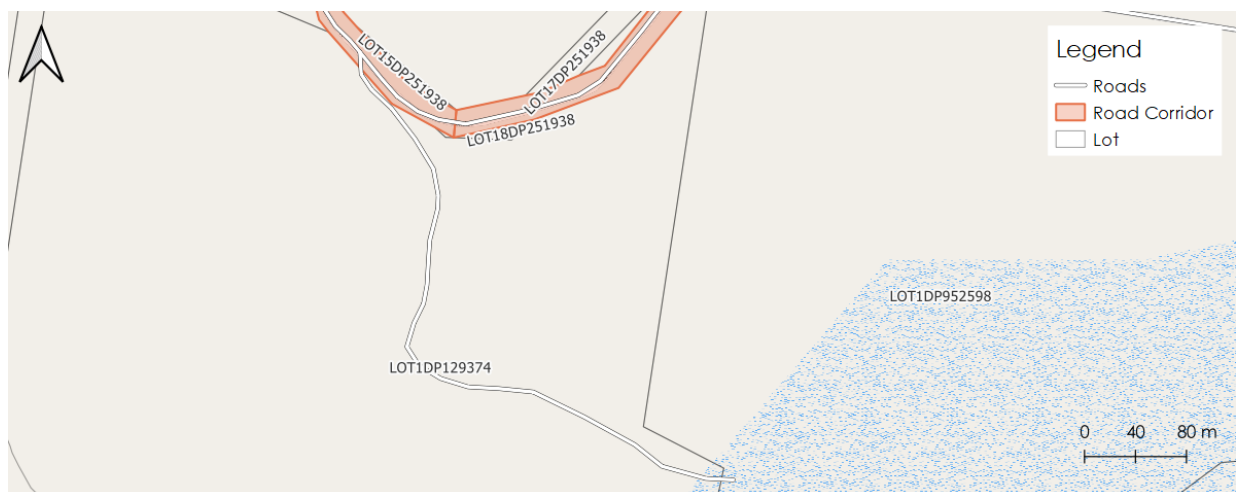
- The existing road alignment is mostly located in the centre of the road reserve, with one section to the south located closer to the western boundary edge.



**Figure 2-7 Cadastral boundaries – Vallances Road.**

The following cadastral boundary opportunities have been identified for the Old Nursery Access Road:

- The existing road is not located within a road reserve and can be widened / realigned without any need for property acquisition.

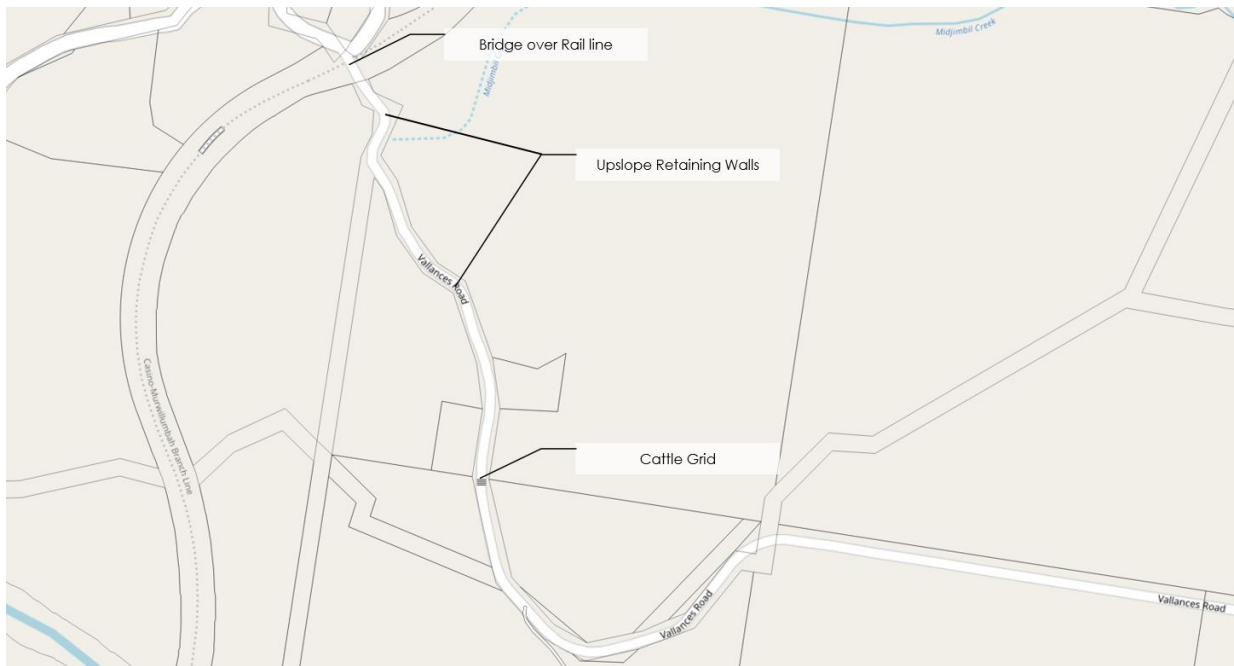


**Figure 2-8 Cadastral boundaries – Old Nursery Access Road.**

### 2.5.3 Existing Structures and Services

There are currently several structures along Vallances Road, refer to Figure 2-9, which will impact the constructability of any widening or improvement works to the road:

- Bridge over the disused Casino-Murwillumbah rail line, including a retaining wall on the downslope side;
- Two (2) Upslope retaining walls; and
- One (1) Cattle grid on Vallances Road and two (2) to adjacent properties of Vallances Road.



**Figure 2-9 Existing structures - Vallances Road.**

The rail crossing will limit any road widening on the ~100m before the intersection. Widening will need to occur on the upslope side as the retaining wall on the downslope side will cause constructability issues.



**Figure 2-10 Rail bridge and retaining wall (google maps, 2010).**

Along with the above structures, services for the residential lots and existing STP are a constraint that will impact the constructability of any infrastructure upgrades to the roads. The services noted on the survey include:

- Stormwater drainage consisting of:
- Several driveway culverts;
- Rock lined longitudinal drainage;
- HV electrical on the rail bridge - APA;
- Overhead Electrical poles and cables – Essential Energy;
- Underground Telstra cables and one (1) pit - Telstra;

#### **2.5.4 Vegetation**

In addition to the environmental significant vegetation discussed in section 2.5.1, there are several sections of vegetation that may need to be significantly cleared to enable any road widening or intersection improvements. The vegetation identified as needing to be cleared are shown on the concept design drawings included in Appendix A.



## 3 Concept Options

### 3.1 Identification of Road Upgrade Options and Criteria

#### 3.1.1 Road Upgrade (Vallances Road and the Old Nursery Access Road)

The following AADT threshold criteria have been adopted for the infrastructure requirements for Vallances Road and the Old Nursery Access Road.

**These are the ultimate decision-making criteria for the extent of the road upgrades** and are based on the requirements in Austroads and the NRLG Design Standards.

**Table 3-1 Road infrastructure AADT criteria.**

AADT Threshold Criteria	Guideline		Sealed Width (m)	Shoulder Width (m)	Total Carriageway Width (m)
<75	Option 1	Austroads Table 4.5 Rural Single Carriageway	3.7 (1 x 3.7)	2.5 or 0.5 <sup>(1)</sup>	8.7 or 4.7
75 - 150	Option 2	NRLG D1 – Minor Road up to 150 AADT	6 (2 x 3)	0.5	7
150 +	Option 3	NRLG D1 – Minor Road up to 500 AADT	6 (2 x 3)	1	8

<sup>(1)</sup> The unsealed shoulder width (2.5m) recommended by Austroads is considered excessive and therefore can be reduced to 0.5m with adequate passing opportunities.

#### 3.1.2 Intersection Upgrade (Coolamon Scenic Drive / Vallances Road Intersection)

The following increase in peak hour traffic threshold criteria have been adopted for the infrastructure requirements for the intersection of Coolamon Scenic Drive / Vallances Road.

**These are the ultimate decision-making criteria for the intersection upgrade** and are based on engineering judgement as no traffic modelling has been undertaken at this stage.

**Table 3-2 Intersection infrastructure peak hour criteria.**

Peak Hour (v / h) Threshold Criteria	Intersection Upgrade	
< 10	Option 1	Do Nothing
10 - 50	Option 2	Prohibit right-hand turns into Vallances Road with median strip, and upgrade the U-Turn Bay to the North
50 - 90	Option 3	Widening of Coolamon Scenic Drive to improve curve radius and site distance by cutting up-slope embankment
90 +	Option 4	Widening of Coolamon Scenic Drive to improve curve radius and site distance by cutting up-slope embankment and providing turning lanes
10+	Option 5	Small radius roundabout with mountable kerbs, reduction in speed limit, additional signage

Refer to the TIA provided in Appendix B for more details of the AADT and peak hour traffic thresholds discussed above. Option 5 is an additional option identified during the concept design development and is not included in the TIA.

In addition, as part of the concept options development, sub-options of the above have been identified. The purpose of the sub-options identification was to determine a range of potential options which address the different development scenarios of the project and also take into consideration the existing site constraints.

### 3.2 Description of Options

#### 3.2.1 Vallances Road

Four (4) potential options have been identified for the upgrade of Vallances Road based on the potential traffic numbers identified in the TIA, including one (1) sub-option of the proposed Option 1, refer to Table 3-3.

Option 1A and 1B keep the existing single lane carriageway on the existing alignment. Option 1A includes the Austroads recommended 2.5m shoulder and Option 1B reduces the shoulder width to 0.5m but includes passing bays at 200m intervals. Option 1B is considered the existing condition however, if this option is chosen as preferred, minor shoulder and passing bay improvements are recommended.

Option 2 and 3 involve widening to a two-lane road along the existing alignment, with shoulder widths of 0.5m and 1m, respectively.

Drawings for these proposed options are included in Appendix A.

**Table 3-3 Identified options for Vallances Road.**

Option	Road Width (m)		Shoulder Width (m)		Carriageway (m)	Additional Treatments
<b>Option 1A</b> < 75 AADT	3.7 (1 x 3.7)	Sealed	2.5	Unsealed	8.7	
<b>Option 1B <sup>(1)</sup></b> < 75 AADT	3.7 (1 x 3.7)	Sealed	0.5	Unsealed	4.7	Passing bays at 200m intervals and at blind corners.
<b>Option 2</b> 75–150 AADT	6 (2 x 3)	Sealed	0.5	Sealed	7	
<b>Option 3</b> 150+ AADT	6 (2 x 3)	Sealed	1	Sealed	8	

<sup>(1)</sup> Considered existing condition.

### 3.2.2 Old Nursery Access Road

A total of ten (10) options have been identified for the upgrade of the access road based on the potential traffic numbers identified in the TIA, including seven (7) sub options, refer to Table 3-4.

As the Old Nursery Access Road is not constrained to a road reserve, the sub options identified include realigning the road to follow the ridgeline to the east of the existing alignment, an approximate location of the realignment is shown in Figure 3-1.



**Figure 3-1 Old Nursery Road realignment option.**

Option 1A and 1B keep the existing single lane carriageway alignment, with widening to meet the road and shoulder width requirements. Option 1A includes the Austroads recommended 2.5m shoulder and Option 1B reduces the shoulder width to 0.5m but includes passing bays at 200m intervals.

Option 1C and 1D keep the existing single lane carriageway and involve realigning the road to avoid the constraints associated with the vegetated blind corner, with shoulder widths of 2.5m and 0.5m respectively.

Option 2A and 3A involve widening to a two-lane road along the existing alignment, with shoulder widths of 0.5m and 1m, respectively.

Options 2B and 3B involve widening to a two-lane road with a divided carriageway scenario where the entry road follows the new alignment, and the exit road follows the existing alignment with shoulder widths of 0.5m and 1m respectively.

Options 2C and 3C involve widening to a two-lane road following the new alignment, with shoulder widths of 0.5m and 1m respectively.

Drawings for these proposed options are included in Appendix A.

**Table 3-4 Identified options for Old Nursery Access Road.**

Option	Road Width (m)		Shoulder Width (m)		Carriageway (m)	Additional Treatments
<b>Option 1A</b> <75 AADT	3.7 (1 x 3.7)	Sealed	2.5	Unsealed	8.7	
<b>Option 1B</b> <75 AADT	3.7 (1 x 3.7)	Sealed	0.5	Unsealed	4.7	Passing bays at 200m intervals and at blind corner
<b>Option 1C</b> <75 AADT	3.7 (1 x 3.7)	Sealed	2.5	Unsealed	8.7	Entire road realignment onto ridgeline
<b>Option 1D</b> <75 AADT	3.7 (1 x 3.7)	Sealed	0.5	Unsealed	4.7	Entire road realignment onto ridgeline Passing bays at 200m intervals
<b>Option 2A</b> 75-100 AADT	6 (2 x 3)	Sealed	0.5	Sealed	7	
<b>Option 2B</b> 75-100 AADT	6 (2 x 3)	Sealed	0.5	Sealed	7	Divided road. Entry lane to follow ridgeline.
<b>Option 2C</b> 75-100 AADT	6 (2 x 3)	Sealed	0.5	Sealed	7	Entire road realignment onto ridgeline
<b>Option 3A</b> 150+ AADT	6 (2 x 3)	Sealed	1	Sealed	8	
<b>Option 3B</b> 150+ AADT	6 (2 x 3)	Sealed	1	Sealed	8	Divided road. Entry lane to follow ridgeline.
<b>Option 3C</b> 150+ AADT	6 (2 x 3)	Sealed	1	Sealed	8	Entire road realignment onto crest.

### 3.2.3 Intersection of Coolamon Scenic Drive / Vallances Road

Six (6) potential options have been identified for the upgrade of the Coolamon Scenic Drive / Vallances Road intersection based on the potential traffic numbers identified in the TIA, including one (1) new option and one (1) sub-option of the proposed Option 2, refer to Table 3-5.

Option 1 involves no changes to the geometry or functionality of the intersection. Although there are several known hazards with this intersection in its existing condition, it is considered sufficient for minor increases in traffic.

Option 2A and 2B involve the prohibition of right-hand turns from Coolamon Scenic Drive onto Vallances Road, with an associated upgrade of the previously used U-Turn Bay to the north. Option 2A involves the addition of a median strip in the centre lane to further prohibit this movement. Whereas option 2B has no median strip treatment. Option 2B is not recommended, however it has been included in the assessment for comparison purposes. Both options will include new signage noting the prohibited movement.

Option 3 and 4 involves improving on the poor site distance hazards around the sharp bend by cutting the upslope embankment, improving the curve radius, and widening the road. Option 4 involves further widening for the provision of turning lanes.

Option 5 involves the construction of a small radius roundabout with mountable kerbs. This additional option was identified during the concept design development as Option 3 and 4 result in significant road widening and clearing works which would likely limit the development options for the site. As per the DCP, the roundabout is to be designed in accordance with Austroads, however, given the site constraints, the proposed roundabout is non-compliant to Austroads Standards. A reduction in speed along with additional signage will be required on Coolamon Scenic Drive to ensure the safe operation of the roundabout. A risk assessment / Road Safety Audit will be needed on this option if it is considered.

Drawings for these proposed options are included in Appendix A.

**Table 3-5 Identified options for the Coolamon Scenic Drive / Vallances Road.**

Option	Upgrade
<b>Option 1</b> <10 v/h increase	Do nothing
<b>Option 2A</b> 10-50 v/h increase	Prohibit right-hand turns into Vallances Road with median strip, and upgrade the U-Turn Bay to the North
<b>Option 2B</b> 10-50 v/h increase	Prohibit right-hand turns into Vallances Road without median strip, and upgrade the U-Turn Bay to the North
<b>Option 3</b> 50-90 v/h increase	Widening of Coolamon Scenic Drive and improve curve radius and site distance by cutting up-slope embankment and clearing vegetation
<b>Option 4</b> 90+ v/h increase	Further widening of Coolamon Scenic Drive and improve curve radius and site distance by cutting up-slope embankment and clearing vegetation and provision of turning lanes
<b>Option 5</b> 10+ v/h increase	Small radius roundabout with mountable kerbs, reduction in speed limit, additional signage

### **3.3 Assessment of Options**

Each of the options has been developed with based on traffic generated by the developments determined by the TIA and have been assessed considering the impacts on:

- Planning and Environment;
- Health Safety in Design (HSiD);
- Constructability; and
- Operations and maintenance.

### 3.3.1 Vallances Road

**Table 3-6 Assessment of Vallances Road options.**

Vallances Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Existing</b> 3.7m (1 x 3.7)	50.4	<ul style="list-style-type: none"> <li>Limits development uses</li> </ul>	<ul style="list-style-type: none"> <li>Limited passing opportunities</li> <li>Poor site distance on curves</li> </ul>	<ul style="list-style-type: none"> <li>Nil impact</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance as per existing</li> </ul>
<b>Option 1A</b> 3.7m (1 x 3.7) 2.5m shoulders	<75	<ul style="list-style-type: none"> <li>Limits development uses</li> <li>Work within the disused rail corridor</li> <li>Impact to residential lot driveway accesses</li> <li>Requires clearing within road reserve of:               <ul style="list-style-type: none"> <li>Koala habitat</li> <li>Areas of high environmental value</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Wide road corridor will potentially result in cars overtaking unsafely as vehicles may operate as if it were a 2-lane road</li> <li>Increases road user safety by:               <ul style="list-style-type: none"> <li>Providing more regular passing opportunities</li> <li>Improves site distance on curves by clearing shoulders</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Vegetation clearing</li> <li>Multiple driveway accesses to be relocated / redesigned</li> <li>Relocation of multiple driveway culverts</li> <li>Impact on electrical power poles (current min distance from edge of bitumen is 3m)</li> <li>Potential issues with Telstra</li> </ul>	<ul style="list-style-type: none"> <li>Wider shoulders for maintenance</li> </ul>

Vallances Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 1B</b> 3.7m (1 x 3.7) 0.5m shoulders Passing bays	<75	<ul style="list-style-type: none"> <li>Limits development uses</li> <li>TBC - any additional passing bay locations with environmental constraints</li> </ul>	<ul style="list-style-type: none"> <li>Limited passing opportunities</li> <li>Poor site distance on curves</li> </ul>	<ul style="list-style-type: none"> <li>Minor improvements considered to have nil issues</li> <li>Potential issues with Telstra</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance as per existing</li> </ul>
<b>Option 2</b> 6m (2 x 3) 0.5m shoulders	75-150	<ul style="list-style-type: none"> <li>Work within the disused rail corridor</li> <li>Impact to residential lot driveway accesses</li> <li>Requires clearing within road reserve of:               <ul style="list-style-type: none"> <li>Koala habitat</li> <li>Areas of high environmental value</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Improving site distance on curves</li> <li>Allowing two vehicles to pass without a vehicle entering the shoulder or passing bay</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Vegetation clearing</li> <li>Multiple driveway accesses to be relocated</li> <li>Relocation of multiple driveway culverts</li> <li>Impact on electrical power poles (current min distance from edge of bitumen is 3m)</li> <li>Potential issues with Telstra</li> </ul>	<ul style="list-style-type: none"> <li>TBC</li> </ul>



Vallances Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 3</b> 6m (2 x 3) 1m shoulders	150-500	<ul style="list-style-type: none"> <li>• Work within the disused rail corridor</li> <li>• Impact to residential lot driveway accesses</li> <li>• Requires clearing within road reserve of:               <ul style="list-style-type: none"> <li>○ Koala habitat</li> <li>○ Areas of high environmental value</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Improves road user safety by:               <ul style="list-style-type: none"> <li>○ Improving site distance on curves</li> <li>○ Allowing two vehicles to pass without a vehicle entering the shoulder or passing bay</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Vegetation clearing</li> <li>• Multiple driveway accesses to be redesigned</li> <li>• Relocation of multiple driveway culverts</li> <li>• Impact on electrical power poles (current min distance from edge of bitumen is 3m)</li> <li>• Potential issues with Telstra</li> </ul>	<ul style="list-style-type: none"> <li>• TBC</li> </ul>

### 3.3.2 Old Nursery Access Road

**Table 3-7 Assessment of Old Nursery Access Road options.**

Old Nursery Access Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Existing</b> 2-3m (1 x 2-3)	50.4	<ul style="list-style-type: none"> <li>Limits development uses</li> </ul>	<ul style="list-style-type: none"> <li>No safe passing opportunities</li> <li>Poor site distance on curve</li> </ul>	<ul style="list-style-type: none"> <li>Nil impact</li> </ul>	<ul style="list-style-type: none"> <li>Regular unsealed road maintenance</li> <li>Drainage issues</li> </ul>
<b>Option 1A</b> 3.7m (1 x 3.7) 2.5m shoulders Unsealed Existing alignment	<75	<ul style="list-style-type: none"> <li>Limits development uses</li> <li>Requires clearing of:               <ul style="list-style-type: none"> <li>Areas of high environmental value</li> </ul> </li> <li>Access road located on lot and no need for land acquisition</li> </ul>	<ul style="list-style-type: none"> <li>Increases road user safety by               <ul style="list-style-type: none"> <li>Providing more regular passing opportunities</li> <li>Improves site distance</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Vegetation clearing</li> <li>Potential issues with comms cable – private and / or Telstra</li> </ul>	<ul style="list-style-type: none"> <li>Regular unsealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>

Old Nursery Access Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 1B</b> 3.7m (1 x 3.7) 0.5m shoulders Passing bays Unsealed Existing alignment	<75	<ul style="list-style-type: none"> <li>Requires clearing of:               <ul style="list-style-type: none"> <li>Areas of high environmental value</li> </ul> </li> <li>Access road located on lot and no need for land acquisition</li> </ul>	<ul style="list-style-type: none"> <li>Limited passing opportunities</li> <li>Poor site distance on curve</li> </ul>	<ul style="list-style-type: none"> <li>Vegetation clearing</li> <li>Potential issues with comms cable – private and / or Telstra</li> </ul>	<ul style="list-style-type: none"> <li>Regular unsealed road maintenance</li> </ul>
<b>Option 1C</b> 3.7m (1 x 3.7) 2.5m shoulders Unsealed Realigned	<75	<ul style="list-style-type: none"> <li>No clearing of vegetation</li> <li>No land acquisition</li> <li>Potentially reduces land able to be used for developments</li> <li>Access road located on lot and no need for land acquisition</li> </ul>	<ul style="list-style-type: none"> <li>Improved road user safety by:               <ul style="list-style-type: none"> <li>Improved site distance</li> <li>Improved alignment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>New road construction</li> <li>Potential issues with comms cable – private and / or Telstra</li> </ul>	<ul style="list-style-type: none"> <li>Regular unsealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>

Old Nursery Access Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 1D</b> 3.7m (1 x 3.7) 0.5m shoulders Passing bays Unsealed Realigned	<75	<ul style="list-style-type: none"> <li>No clearing of vegetation</li> <li>No land acquisition</li> <li>Potentially reduces land able to be used for developments</li> </ul>	<ul style="list-style-type: none"> <li>Limited passing opportunities</li> <li>Improved road user safety by:               <ul style="list-style-type: none"> <li>Improved site distance</li> <li>Improved alignment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>New road construction</li> <li>Potential issues with comms cable – private and / or Telstra</li> </ul>	<ul style="list-style-type: none"> <li>Regular unsealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>
<b>Option 2A</b> 6m (2 x 3) 0.5m shoulder Sealed Existing alignment	75-150	<ul style="list-style-type: none"> <li>Requires clearing of:               <ul style="list-style-type: none"> <li>Areas of high environmental value</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Improving site distance on curves</li> <li>Allowing two vehicles to pass without a vehicle entering the shoulder or passing bay</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Vegetation clearing</li> <li>Potential issues with comms cable – private and / or Telstra</li> </ul>	<ul style="list-style-type: none"> <li>No unsealed road maintenance</li> <li>Additional sealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>

Old Nursery Access Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 2B</b> 6m (2 x 3) 0.5m shoulder Sealed Divided road	75-150	<ul style="list-style-type: none"> <li>No clearing of vegetation</li> <li>No land acquisition</li> <li>Potentially reduces land able to be used for developments</li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Reduces need to improve site distance on blind corner</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Sealing of existing road</li> <li>New road construction</li> <li>Potential issues with comms cable – private and / or Telstra</li> </ul>	<ul style="list-style-type: none"> <li>No unsealed road maintenance</li> <li>Additional sealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>
<b>Option 2C</b> 6m (2 x 3) 0.5m shoulder Sealed Realigned	75-150	<ul style="list-style-type: none"> <li>No clearing of vegetation</li> <li>No land acquisition</li> <li>Potentially reduces land able to be used for developments</li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Reduces need to improve site distance on blind corner</li> <li>Allowing two vehicles to pass without a vehicle entering the shoulder or passing bay</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Sealing of existing road</li> <li>New road construction</li> </ul>	<ul style="list-style-type: none"> <li>No unsealed road maintenance</li> <li>Additional sealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>

Old Nursery Access Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 3A</b> 6m (2 x 3) 1m shoulder Sealed Existing alignment	150-500	<ul style="list-style-type: none"> <li>Requires clearing of:               <ul style="list-style-type: none"> <li>Areas of high environmental value</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Improving site distance on curves</li> <li>Allowing two vehicles to pass without a vehicle entering the shoulder or passing bay</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Vegetation clearing</li> <li>Potential issues with comms cable – private and / or Telstra</li> <li>Sealing of existing road</li> </ul>	<ul style="list-style-type: none"> <li>No unsealed road maintenance</li> <li>Additional sealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>
<b>Option 3B</b> 6m (2 x 3) 1m shoulder Sealed Divided road	150-500	<ul style="list-style-type: none"> <li>No clearing of vegetation</li> <li>No land acquisition</li> <li>Potentially reduces land able to be used for developments</li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Reduces need to improve site distance on blind corner</li> <li>Allowing two vehicles to pass without a vehicle entering the shoulder or passing bay</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Sealing of existing road</li> <li>Potential issues with comms cable – private and / or Telstra</li> <li>New road construction</li> </ul>	<ul style="list-style-type: none"> <li>No unsealed road maintenance</li> <li>Additional sealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>

Old Nursery Access Road					
Option	Traffic (AADT)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 3C</b> 6m (2 x 3) 1m shoulder Sealed Realigned	150-500	<ul style="list-style-type: none"> <li>No clearing of vegetation</li> <li>No land acquisition</li> <li>Potentially reduces land able to be used for developments</li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Reduces need to improve site distance on blind corner</li> <li>Allowing two vehicles to pass without a vehicle entering the shoulder or passing bay</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Sealing of existing road</li> <li>New road construction</li> <li>Potential issues with comms cable – private and / or Telstra</li> </ul>	<ul style="list-style-type: none"> <li>No unsealed road maintenance</li> <li>Additional sealed road maintenance</li> <li>Potential for drainage improvements i.e., table drains in shoulders</li> </ul>

### 3.3.3 Intersection of Coolamon Scenic Drive / Vallances Road

**Table 3-8 Assessment of Coolamon Scenic Drive / Vallances Road intersection options.**

Coolamon Scenic Drive / Vallances Road Intersection					
Option	Traffic (Peak Hour Increase)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Existing</b> T-intersection with poor site distance	<10	<ul style="list-style-type: none"> <li>Limits development uses</li> <li>No vegetation removal</li> <li>No changes to road reserve</li> </ul>	<ul style="list-style-type: none"> <li>Poor site distance</li> <li>High operating speed on Coolamon Scenic Drive makes right turns in potentially unsafe</li> <li>Poor curve radius</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance as per existing</li> </ul>
<b>Option 1</b> Do nothing					
<b>Option 2A</b> Prohibit right-hand turns Median strip U-Turn Bay	10-50	<ul style="list-style-type: none"> <li>Limits development uses</li> <li>Land acquisition for U-Turn Bay</li> <li>No vegetation removal</li> <li>No changes to road reserve</li> </ul>	<ul style="list-style-type: none"> <li>Removes unsafe right-turns by HV</li> <li>Does not fully remove unsafe right-turns by cars</li> </ul>	<ul style="list-style-type: none"> <li>Construction of U-Turn Bay</li> <li>Minimal construction of median strip</li> </ul>	<ul style="list-style-type: none"> <li>Additional maintenance of U-Turn Bay</li> </ul>



Coolamon Scenic Drive / Vallances Road Intersection					
Option	Traffic (Peak Hour Increase)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 2B</b> Prohibit right-hand turns U-Turn Bay	10-50	<ul style="list-style-type: none"> <li>Limits development uses</li> <li>Land acquisition for U-Turn Bay</li> <li>No vegetation removal</li> <li>No changes to road reserve lot</li> </ul>	<ul style="list-style-type: none"> <li>Vehicles may still complete the potentially unsafe right-turns</li> </ul>	<ul style="list-style-type: none"> <li>Construction of U-Turn Bay</li> <li>Minimal construction of Linemarking</li> </ul>	<ul style="list-style-type: none"> <li>Additional maintenance of U-Turn Bay</li> </ul>
<b>Option 3</b> Cut upslope Improve site distance and curve radius	50-90	<ul style="list-style-type: none"> <li>Land acquisition for intersection / road reserve</li> <li>Requires clearing of vegetation:               <ul style="list-style-type: none"> <li>Areas of high environmental value</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Improving site distance – providing minimum</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Significant cutting of upslope</li> <li>Additional sealed width / pavement widening on up and downslopes</li> </ul>	<ul style="list-style-type: none"> <li>TBC</li> </ul>

Coolamon Scenic Drive / Vallances Road Intersection					
Option	Traffic (Peak Hour Increase)	Planning and Environment	Health and Safety in Design (HSiD)	Constructability	Operations and Maintenance
<b>Option 4</b> Cut upslope Improve site distance and curve radius Turning lanes	90+	<ul style="list-style-type: none"> <li>Land acquisition for intersection / road reserve</li> <li>Requires clearing of vegetation:               <ul style="list-style-type: none"> <li>Areas of high environmental value</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Improves road user safety by:               <ul style="list-style-type: none"> <li>Improving site distance – providing minimum</li> <li>Vehicles turning into Vallances Road do not impact vehicles travelling on Coolamon Scenic Drive</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Significant cutting of upslope</li> <li>Additional sealed width / pavement widening on up and downslopes</li> <li>Potential widening of culvert on Coolamon Scenic Drive</li> </ul>	<ul style="list-style-type: none"> <li>TBC</li> </ul>
<b>Option 5</b> Small radius roundabout	10+	<ul style="list-style-type: none"> <li>TBC</li> </ul>	<ul style="list-style-type: none"> <li>TBC</li> </ul>	<ul style="list-style-type: none"> <li>TBC</li> </ul>	<ul style="list-style-type: none"> <li>TBC</li> </ul>

## 4 Conclusions and Recommendations

TBC

# Appendix A – Concept Designs



# Appendix B – Planning Report



# Appendix C – Traffic Impact Assessment